

**NAMIBIA WATER CORPORATION LTD IN COLLABORATION WITH
OSINO GOLD EXPLORATION AND MINING (PTY) LTD
DRAFT SCOPING REPORT NON-TECHNICAL SUMMARY
PROPOSED ABSTRACTION OF GROUNDWATER FROM THE
KRANZBERG AQUIFER, ERONGO REGION, NAMIBIA**

17 March 2025



This summary contains underlined hyperlinks that provide readers of the electronic version with the option to access additional information on certain aspects, if interested.

1.0 Introduction

Osino Gold Exploration and Mining (Pty) Ltd (Osino) is currently developing the Twin Hills Gold Project, located 25 km northeast of Karibib within the Erongo Region. The Project is proposed to be a conventional open pit mine with a gold extraction process similar to the existing gold mines in Namibia. The deposit is an orogenic-style, sedimentary-hosted, structurally controlled gold deposit, which is contemplated as an open pit with associated infrastructure.

To this effect, Osino has conducted water supply investigations for the planned mining operations. Despite success of water supply investigations undertaken close to the Mine License Area, Osino still investigated other water sources to further secure water supply. To this end, NamWater, as the national bulk water supplier, in collaboration with Osino, investigated and confirmed feasibility to abstract groundwater from the Kranzberg Aquifer. This finding supports expansion of the Kranzberg Water Supply Scheme (Figure 2-1), operated by NamWater. Therefore, NamWater, in collaboration with Osino, propose to abstract groundwater from the Kranzberg Aquifer and expand the Kranzberg Water Supply Scheme, as an option to supply water to the Twin Hills Gold Mine.

2.0 Authorisation Requirements

The proposed Project triggers activities listed in the Government Notice (GN) No. 29 of the Environmental Impact Assessment (EIA) Regulations 2012, promulgated in terms of Section 56 of the Environmental Management Act, 2007 (No. 30 of 2007) (EMA) and, therefore, requires an Environmental Clearance Certificate (ECC) from the Ministry of Environment, Forestry and Tourism (MEFT), who are the regulatory authority, before these activities can commence. An EIA process must be undertaken in order for MEFT and the Ministry of Agriculture, Water and Land Reform (MAWLR) as the competent authority to consider an ECC application.

The activities listed in the EIA Regulations 2012 that are triggered by the proposed Project are as follows:

- 8.1 *The abstraction of ground or surface water for industrial or commercial purposes*
- 8.2 *The abstraction of groundwater at a volume exceeding the threshold authorised in terms of a law relating to water resources*

Purpose Of This Document

This document provides a **Non-Technical Summary (NTS) of the Draft DSR and EMP** and informs you about:

- The proposed Project and location;
- The project alternatives considered;
- The biophysical, cultural, and socio-economic baseline environment of the proposed Project area;
- The EIA process being followed;
- The impacts and mitigation measures identified and assessed for potential biophysical, cultural, and socio-economic impacts and related specialist input;
- The Environmental Management Plan (EMP); and
- How you can participate in the environmental assessment process.

Who Are the Consultants?

SLR Consulting Namibia (Pty) Ltd (SLR), an independent firm of environmental consultants, has been appointed by Osino to manage the environmental authorisation process.

Your Role and How Can You Be Involved

You can be involved by:

- Registering as an interested and / or affected party (I&AP) on the stakeholder database.
- Reviewing this document and providing your initial comments to SLR to ensure all potential environmental and social impacts that need to be addressed during the EIA process are identified. Initial comments should reach SLR by **14 April 2025**

Registered I&APs will also be given the opportunity to review and comment on the Draft Scoping Report and Environmental Management Plan (EMP).

How To Respond

Responses to this document can be submitted by means of the attached comments sheet, and/or by emailing to the project email listed below.

All comments received will be recorded and responded to in the Final Scoping Report.

Who To Contact?

SLR contact: Deshni Naicker / Robyn Christians

Tel: +264 61 231 287

Address: 8 General Murtala Muhammed Street, Eros, Windhoek

Email: kranzbergWSS@slrconsulting.com

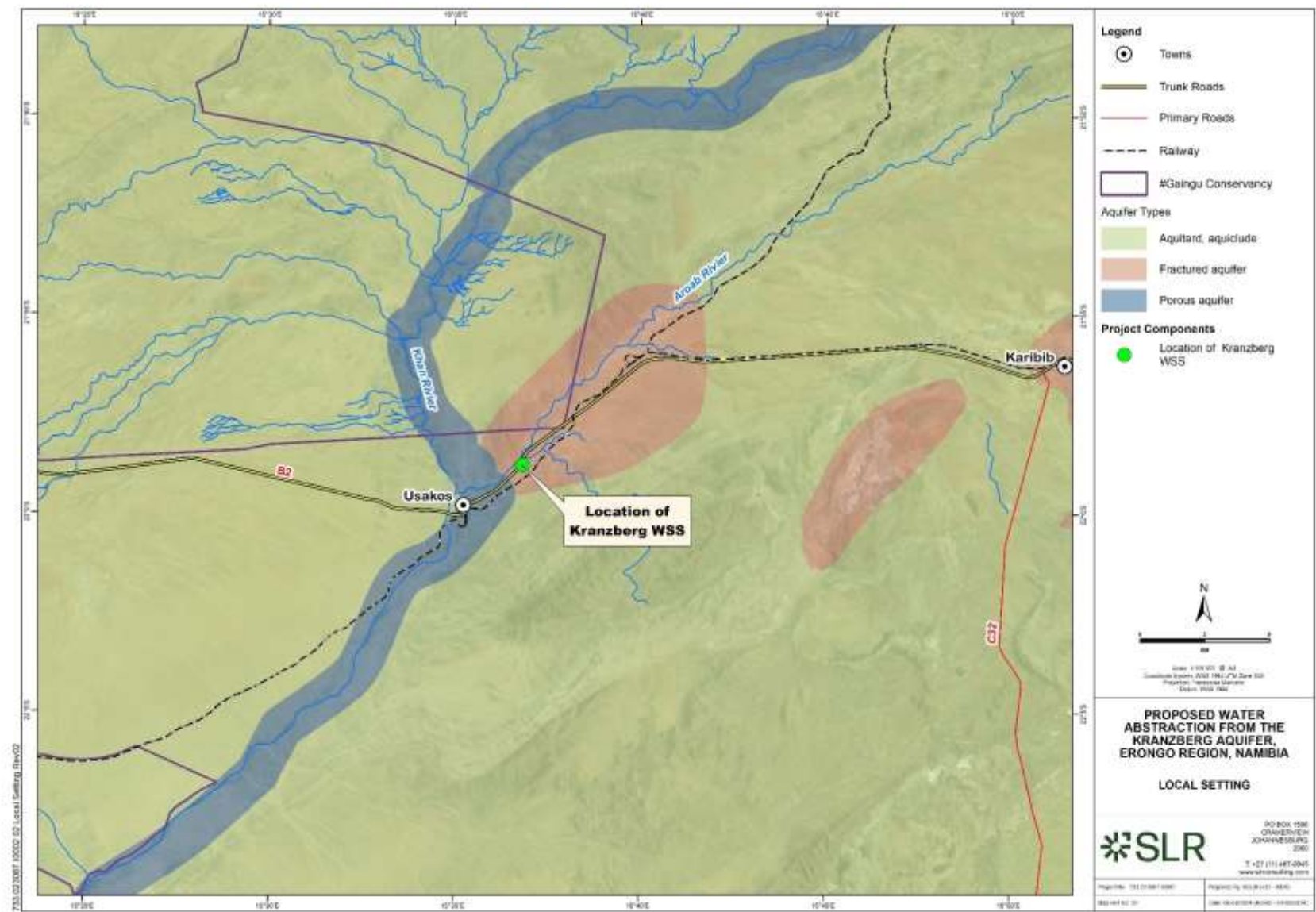


Figure 2-1: Locality Map



3.0 Environmental Impact Assessment Process

3.1 Introduction

The EIA Regulations 2012 set out the procedures and documentation that need to be complied with when undertaking an EIA process. The anticipated tasks and timing for the current EIA process are presented in Figure 3-1 below.

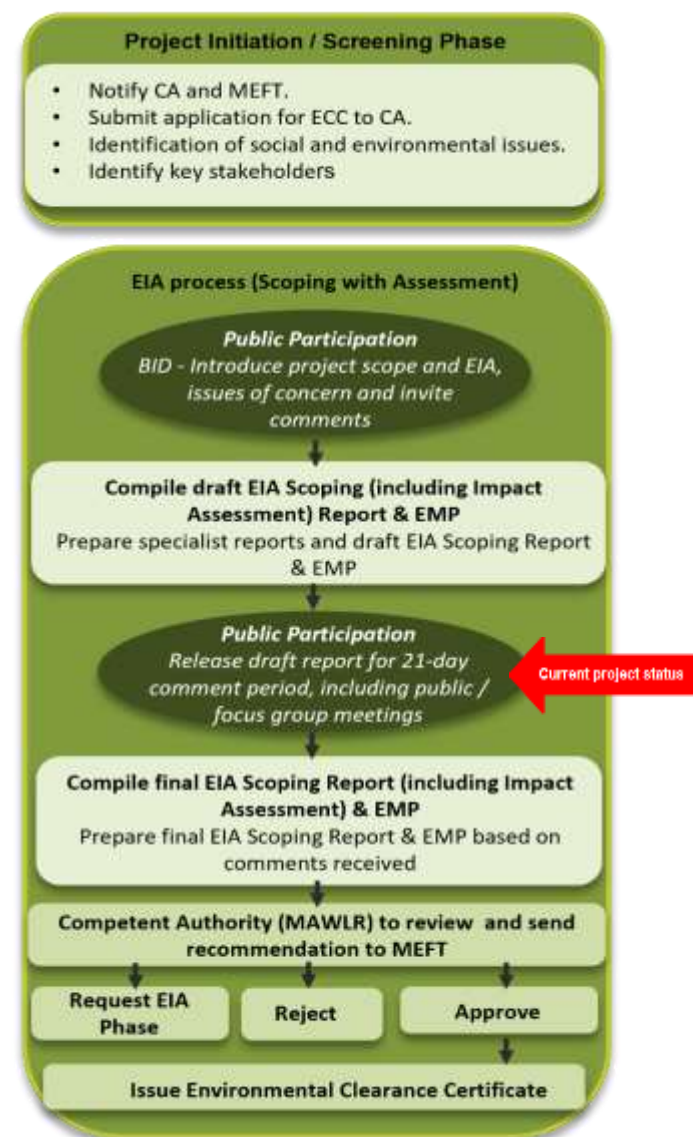


Figure 3-1: Illustration of the EIA Process

4.0 Public Consultation Process

The purpose of the public consultation process is to notify I&APs of the proposed project, to share information about the proposed project, EIA Process and public participation process, to provide them with the opportunity to raise issues or concerns regarding the proposed Project. In this regard, I&APs have been identified and included in a stakeholder database.

4.1 Opportunity to Comment

This Draft Scoping Report (inclusive of EMP and specialist assessment) is made available for a review and comment (21-days) from **17 March 2025 to 14 April 2025**.

Copies of the full report will be available on the SLR website (at <https://www.slrconsulting.com/en/public-documents/>) and at the following location:

- Usakos Community Library – Theo Ben Gurirab Street, Usakos. Tel: (064) 530099

Comments should be received by SLR at the address, telephone number or e-mail address shown below by no later than **14 April 2025** for them to be included in the final EIA Scoping Report and EMP for submission to MEFT (as the regulatory authority) and MAWLR (as the competent authority) for acceptance and decision-making purposes.

Attention: Deshni Naicker / Robyn Christians
Postal Address: 8 General Murtala Muhammed Ave, Eros Windhoek
Tel: 061 231 287
E-mail: kranzbergWSS@slrconsulting.com
SLR Website: <https://www.slrconsulting.com/en/public-documents/>

4.2 Public Meeting

Stakeholders are invited to attend a public meeting to be held on the **04 April 2025 (Usakos Town Hall, 18:00)**, where you can learn more about the Project and provide your feedback.

All registered I&APs will be notified of the date, time and venue of the planned meeting.



1.0 Project Overview

The current Definitive Feasibility Study (DFS) mine infrastructure and plant designs indicate a daily water demand of 3 300 m³/day or 1,1 million m³/annum. Various water supply options are being investigated to secure water supply to the mine.

To this end, NamWater, as the national bulk water supplier, in collaboration with Osino, investigated and confirmed the feasibility to abstract groundwater from the Kranzberg Aquifer. This finding supports expansion of Kranzberg Water Supply Scheme. Therefore, NamWater, in collaboration with Osino, propose to abstract groundwater from the Kranzberg Aquifer and expand the existing Kranzberg Water Supply Scheme, as an option to supply water to the Twin Hills Gold Mine. Groundwater will be abstracted from the Kranzberg Water Supply Scheme boreholes and transported along a pipeline from the boreholes via Karibib to the terminal reservoir on the Twin Hills mine site. Based on the works completed to date, it is known that:

- The Kranzberg Aquifer has two sub-aquifers, namely the Kranzberg- and Aroab sub-aquifers covering a combined area of 2.29 km². A volume of approximately 700 000 m³/annum is recharged to the 'Abstraction Area' from local runoff alone. Groundwater recharge was refined through independent methods namely, water level fluctuation, compartment runoff model with subsequent calculation of transmission losses as an exponential function, as well as daily rainfall-runoff model with a physically based flood infiltration. All methods yield groundwater recharge rates between 500 000 and 600 000 m³/annum.
- Abstraction of 460 800 m³/annum was recommended from five (5) recently drilled production boreholes. A groundwater numerical model to assess sustainable abstraction was constructed as a 3-dimensional flow and mass transport model, using FEFLOW (DHI-Wasy) – finite elements code, widely used in mining and environmental applications.
- A scenario of no recharge representing a worst-case scenario, in which recharge 0 (zero) was considered for the duration of the simulation. Results show that residual drawdown occurring in the paleochannel after 13 years of operation is approximately 7 meters.

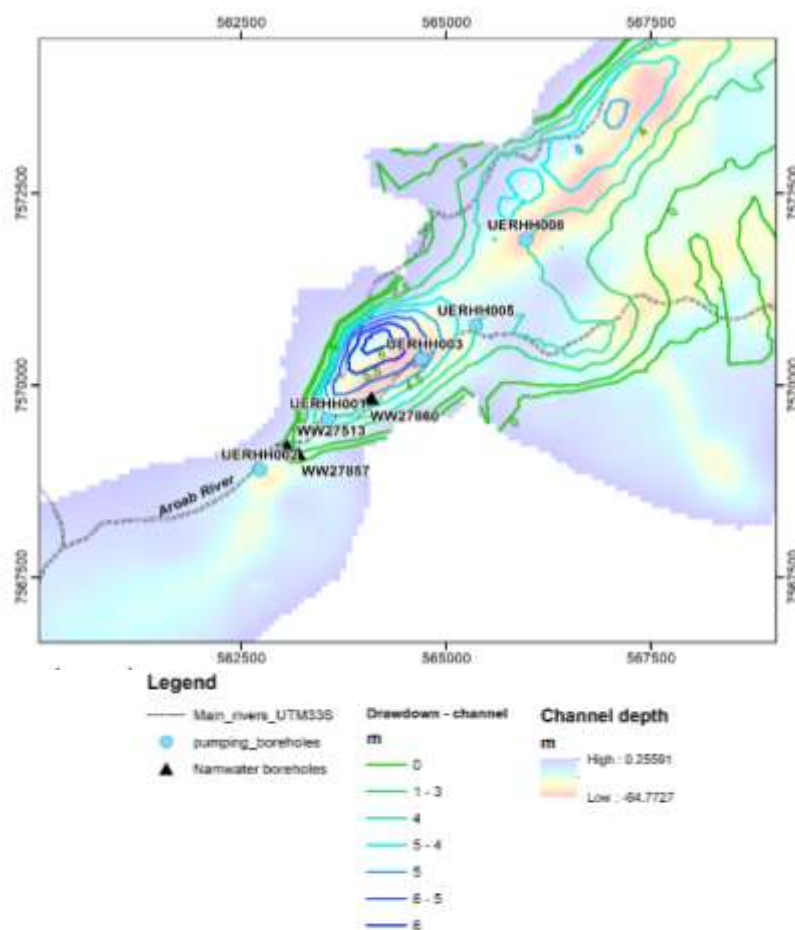


Figure 1-1: Scenario 2 – water level drawdown in the paleochannel after 13 years pumping from five production boreholes and two NamWater boreholes (no recharge, worst case scenario)



2.0 Need and Desirability

The Twin Hills Gold Mine will be a key stakeholder within the mining industry and a major contributor to Namibia's economy. Once the mine is operational the Namibian economy can expect benefits from revenues during the construction phase, royalties and taxes during the life of mine (LoM), and a positive contribution towards employment.

Based on current mine plans, between 1000 and 1500 people will be employed during construction, and approximately 450 for the operational phase, providing jobs and livelihoods for them, and their families, for a minimum of 16.5 years (ECC, 2022).

Although the primary source of water will be from groundwater abstracted on the mine site, several water supply options are being investigated to supply additional mine make up water to compensate for any water deficit but also to alleviate reliance on a single source supply. Thus, the option to abstract water from the Kranzberg Water Supply Scheme boreholes in conjunction with the additional options listed in section 4.5 are being investigated in order to alleviate pressure on a single water resource for the mine.

The issue of water scarcity and climate variability is known. Therefore, water conservation and reuse are at the forefront of Osino's water supply strategy. The mine plant process design is aimed at maximising the re-use of water through a filtration system in the plant, which will reduce moisture content in the tailings from 50% to below 15% (dry stack tailings).

In terms of water security, expansion of the Kranzberg Water Supply Scheme stands to diversify available supply options that will benefit the Twin Hills Gold Mine, as well as the basin within which it operates. The pipeline through which the water will be transported (assessed through a separate EIA) will pass through Karibib and thus it will also serve as a backup supply for the town. Further, infrastructure will be owned by NamWater, who will continue to supply the area beyond mining operations.

3.0 Project Alternatives

The primary source of water for the Twin Hills mine is groundwater from the boreholes located within the mining licence area. Osino is currently investigating various water supply options to secure water supply to the mine. The options being considered and which are subject to separate EIA processes are listed below:

- Khan Water Supply Scheme which includes the development of a sand storage dam on the Khan River; and
- Desalinated water supply from Orano desalination plant at Wlotzkasbaken.

4.0 Specialist Studies to Inform the EIA Process

The assessment process followed included the undertaking of one specialist assessment, namely a Groundwater Impact Assessment deemed necessary to adequately identify and assess the potential impacts related to the increased abstraction of groundwater proposed from the aquifer.

4.1 Groundwater Impact Assessment

Groundwater investigations at the KWSS included drilling and testing of boreholes, development of a conceptual groundwater model and numerical model. This was to understand and evaluate the potential and sustainability of abstracting an additional 460 000 m³/a of groundwater from the KWSS. The outcome of the groundwater modelling informed the groundwater impact assessment.

Based on the recharge estimates as well as numerical modelling, the Kranzberg aquifer should be able to sustain the additional groundwater volume of 460 000 m³/a with very low negative and very high positive impacts. No fatal flaws were identified during this assessment, thus from a groundwater perspective the project can go ahead. The impacts identified can be mitigated with appropriate groundwater monitoring and management.

Overall, it is affirmed that implementation of all recommendations and mitigations measures will ensure sustainable utilisation of the aquifer.

5.0 Conclusion and Recommendations

5.1 Impact Assessment and Mitigation Summary

The most significant impacts associated with the proposed project are related to the following:

- Destruction of vertebrate fauna, especially protected species: Trench operations and continuous vehicle movement along the service road(s), could result in the continued destruction of vertebrate fauna (i.e., especially slow-moving species) while open trenches left overnight could act as a large pitfall trap for various animals. The impact is assessed to be of **very low** significance after the implementation of mitigation measures.



- Destruction of vegetation, especially protected species: The land clearing activities by mechanical methods could result in protected tree species being eradicated. Vertebrate fauna (e.g., cavity dwellers such as bats, gallago, hornbills, parrots, various reptiles, etc. including various raptors e.g., eagles, vultures using such trees as perching/ roosting/ breeding) associated with these trees, especially the old/ large specimens, could be killed and/or displaced. The impact is assessed to be of **very low** significance after the implementation of mitigation measures.
- Destruction of sensitive habitats: The land clearing activities by mechanical methods, could result in some sensitive habitats being destroyed and/or detrimentally affected. Fauna and flora associated with these sensitive habitats, could be killed and/or displaced. The impact is assessed to be of **very low** significance after the implementation of mitigation measures.
- Introduction and spread of alien invasive plant species: Invasive alien plant species could become established on disturbed areas and could also inadvertently be continuously transported into the area as seed on the various vehicles accessing the area. The impact is assessed to be of **low** significance after the implementation of mitigation measures.
- Soil erosion: Typical construction activities, including continuous vehicle movement along the various access routes, could result in continued erosion issues if not properly maintained. The impact is assessed to be of **low** significance after the implementation of mitigation measures.
- Lowering of the local water table and impact on other groundwater users: The possibility of over-abstraction from the aquifer, would affect the groundwater system as a whole, and this this could negatively impact the surrounding groundwater users such as Usakos as well as groundwater-dependent ecosystems which rely on the upper 6 m of the aquifer. The impact is assessed to be of **very low** significance after the implementation of mitigation measures.
- Impact on regional groundwater table and water security potential: Due to the proximity of the project to the town of Usakos, there is a potential for enhanced water security for the town in times of emergency or extreme conditions. The impact is assessed to be of **positive very high** significance.

The field assessment indicates that no visible archaeological or historical heritage sites will be affected in any way by the Project design as it currently stands, therefore, the interpretation of significance is considered to be insignificant, or inconsequential and will not require any further consideration. A **chance find procedure** is included within the Environmental Management Plan should there be any discoveries during construction and operation.

The management and mitigation measures are included in more detail in the EMP attached as an appendix to the DSR.

5.2 Concluding Statement

Following the impact assessment process, the identified residual impacts are assessed to be of **LOW to VERY LOW** significance with the implementation of the recommended mitigation measures. The potential impacts can be adequately mitigated with the implementation of the proposed mitigation measures (as included in the EMP), which follows the principle of the mitigation hierarchy by firstly avoiding identified sensitive areas, and then reducing/ minimising the impact, and lastly rehabilitating disturbed sites.



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17 March 2025



Particulars of the Interested and Affected Party		Date		
Name				
Organisation/Company				
Postal Address				
Postal Address				
Postal Address		Postal Code		
Telephone Number				
E-Mail Address				
Please register me as an interested & affected party (I&AP) so that I may receive further information and notifications during the environmental authorisation process				YES <input type="checkbox"/>
				NO <input type="checkbox"/>
How would you like to receive your notifications?				
E-mail:				
Post:				
SMS:				
Please write your comments and questions here (please use separate sheets if you wish)				
Please include the following of my colleagues/friends/neighbours as i&aps for this project:				
Please return completed forms to:				
SLR contact:		Deshni Naicker / Robyn Christians		
Tel:		+264 61 231 287		
Email:		kranzbergWSS@slrconsulting.com		
<p>By providing your personal information to be registered as an I&AP for this Project you consent to SLR managing your information in accordance with the Protection of Personal Information Act 4 of 2013. If you register and supply your contact details as an Interested and Affected Party (IAP) for this Project, you will be included in the SLR I&AP database. It is assumed that as an I&AP for this Project you authorise SLR to retain and use your Personal Information as part of a contact database for this and/or other Social and Environmental Impact Assessments (ESIA) and that you confirm your acceptance for SLR to contact you regarding this and/or other ESIA processes. SLR will not process your Personal Information, other than as permitted or required by ESIA processes, or as required by law or public policy. SLR will use reasonable, appropriate security safeguards in order to protect Personal Information, and to reasonably prevent any damage to, loss of, or unauthorised access or disclosure of Personal Information, other than as required for ESIA processes or as required by any Law or public policy. You may request for your Personal Information to be deleted from the I&AP database at any time by contacting SLR.</p>				

THANK YOU FOR YOUR CONTRIBUTION!!

