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B2Gold Namibia (Pty) Ltd

Scoping (Including Assessment) Report and EMP for Exploration Activities on EPL 2410 and 4309- Renewal Application

Project No.: 734.01023.00021

Report No.: Doc. no. 1

April 2016

B2GOLD NAMIBIA

B2Gold Namibia (Pty) Ltd

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EXECUTIVE SUMMARY

1. General Introduction

B2Gold Namibia (Pty) Ltd (B2Gold) is currently conducting comprehensive exploration programs over Exclusive Prospecting Licenses (EPLs) 2410 and 4309 for precious metals, base and rare metals and industrial minerals.

B2Gold has been conducting exploration activities in these areas since 2012. The EPLs were issued Environmental Clearance Certificates (ECCs) by the Ministry of Environment and Tourism (MET) prior to the requirement of conducting an Environmental Impact Assessment (EIA) Scoping Process and submitting an Environmental Management Plan (EMP). The current ECCs were issued in February 2013, are valid for three years and expire in February 2016 (Appendix A). Therefore, B2Gold requires the renewal of the ECCs to continue with their exploration activities.

The EPLs are located between Otavi and Otjiwarongo around B2Gold's Otjikoto Gold Mine. Refer to Figure 1 for the locality of the EPLs.

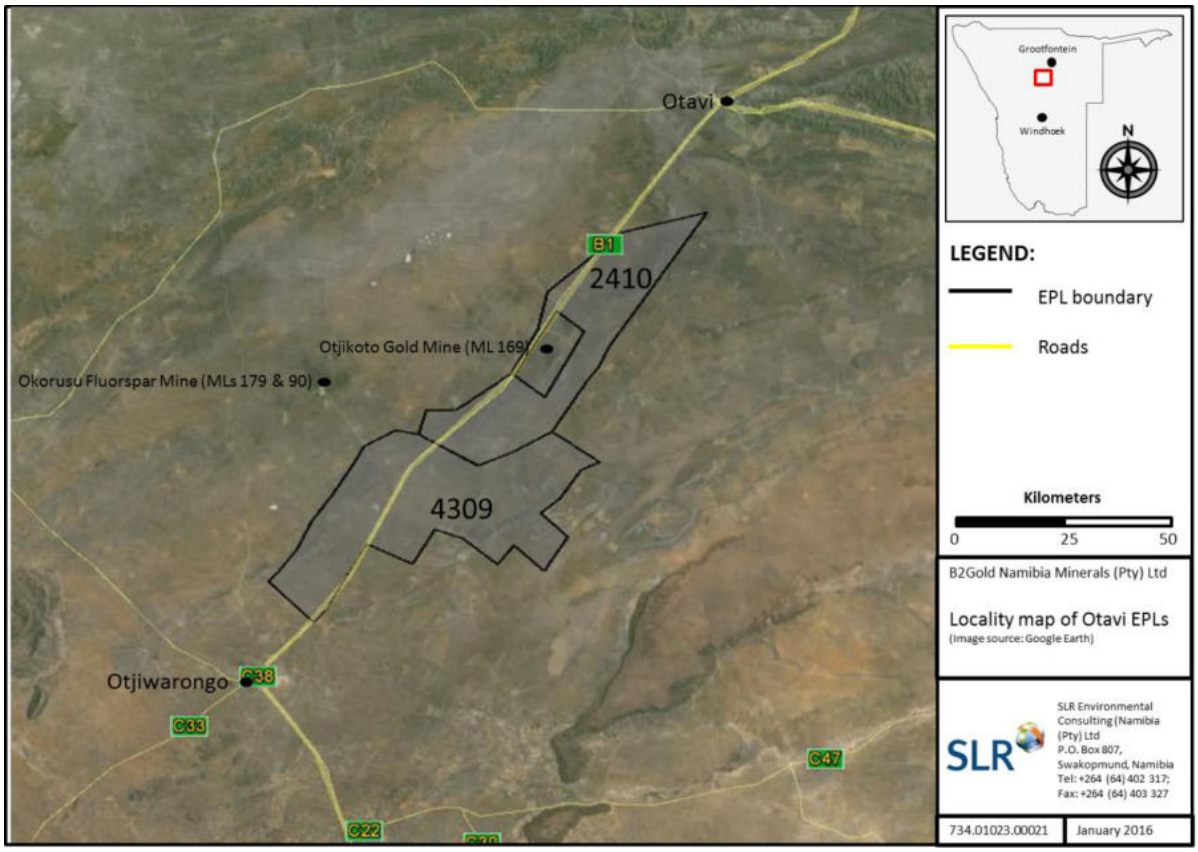

Figure 1: EPL locality map

2. EIA process for the renewal application

Renewal application forms were submitted to the Ministry of Environment and Tourism (MET): Department Environmental Affairs (DEA) for the renewal of the ECCs. B2Gold would like to continue with their exploration activities on EPLs 2410 and 4309. However, as they have not conducted an EIA with an EMP in the past an EIA (scoping) process is being conducted in terms of the Environmental Management Act, 7 of 2007. This process includes: a screening phase and a scoping phase, which includes an impact assessment (qualitative) and the production of an Environmental Management Plan (EMP).

The main purpose of the Scoping Report is to provide information relating to B2Gold's ongoing exploration activities on their EPLs and to indicate which environmental aspects and potential impacts have been identified during the Screening and Scoping phases. Due to the fact that B2Gold has been conducting activities in the area on their

respective EPLs, various Bi-annual Environmental Reports have been prepared and referred to as part of the Scoping process and the development of the report.

This report was further developed through site observations and consultation with relevant stakeholders, specifically the relevant Conservancy representatives and communal farmers. An Environmental Management Plan (EMP) is also included as part of this report

3. Project Motivation

The Directorate of Mines within the Ministry of Mines and Energy (MME) undertakes to exploit the country's mineral resources in a manner which integrates mining into the various economic sectors for the socio-economic development of the country. In order to achieve this, MME issues EPLs to various entities for the exploration of minerals within the country. B2Gold intends to continue exploring for base & rare metals, industrial minerals and precious metals in the above mentioned EPLs. The feasible Otjikoto Gold Mine ore body (currently being mined) located within EPL 2410, also provides strong motivation for continued exploration in the surrounding area.

Should a feasible resource be located, it could provide social and economic development within the region and the country, subject to a Mining Licence (ML) being issued by MME and a separate, comprehensive (full) environmental impact assessment (EIA) process.

B2Gold has been exploring in the area (over their EPLs) for a number of years and will continue to do so. However, the ECCs for the EPLs expired and renewal applications were submitted to MET. An EIA Scoping process has to be conducted as part of the renewal application process.

4. Activities relating to the exploration programme

B2Gold wishes to continue with their exploration program on EPLs 2410 and 4309 for base & rare, precious metals and industrial minerals. The exploration licences are valid for two years and might be renewed after this period.

B2Gold plans to continue with their current exploration activities on the above mentioned EPLs and have access agreements, as required by section 52 of the Minerals Act, between the applicant and the land-owners, on whose land existing exploration activities have been carried out, in place. Should the exploration activities move onto new farms, then access agreements will be entered into with the owners of those farms.

The following activities are still to take place on EPLs 2410 and 4309:

Follow-up ground work	Line cutting, line surveying, geochemical and geophysical surveys over selected geophysical anomalies. Line cutting will only start after the consent of the farmer is obtained
Reverse Circulation (RC) drilling and Diamond Drilling to test delineated anomalies	Depending on the outcomes of favourable results indicating the possible presence of minerals, B2Gold may choose to drill to test depth mineralisation.

5. Identification of environmental aspects

The exploration activities listed above have the potential to impact on the environment. Environmental aspects and potential impacts were identified during the screening and scoping phases of the EIA, in consultation with authorities, Interested and Affected Parties and the environmental team. As requested from the Ministry of Environment and Tourism, a Scoping Report with assessment and Environmental Management Plan have been prepared for the exploration activities.

6. Assessment findings

Air quality: This assessment was conducted in terms of dust generated from drilling and vehicle entrainment on gravel roads, in close proximity to residents. In the unmitigated scenario there is the potential for nuisance impacts relating to people residing in the

surrounding area. However, with appropriate mitigation and management the potential impacts are greatly reduced and the significance rating falls to low.

Biodiversity: A major aspect of the assessment for biodiversity relates to the impact that personnel performing exploration activities have on the surrounding fauna and vegetation. Specifically, the impacts associated with illegal hunting and poaching and the collection of firewood and other vegetation. In the unmitigated scenario the severity and the probability of the impacts were found to be medium, however, with mitigation and management measures both were reduced to a rating of low.

Some clearing of natural vegetation may occur as vehicles may have to drive off-track to access certain areas. However, it is very small scale, involving a limited number of vehicles.

Line cutting will require the removal of vegetation, which can have significant impacts especially if protected species have to be removed. This impact can be mitigated to a medium significance through the avoidance of protected tree species during line cutting.

Some animals are more sensitive to noise disturbance than others. The noise generated from the drill rig will be relatively minor and drilling will only be conducted during the day time. Therefore, the noise impact alone will have insignificant impacts on animal behaviour in the area. The noise impact together with the potential of poaching, general disturbance of wildlife, etc. as a result of unmanaged contractors could (cumulatively) result in loss of wildlife.

However, the activities are relatively small and the fact that the drilling team will not be very big, potential poaching, general disturbance and collection of firewood impacts can easily be managed through appropriate management and mitigation measures outlined in the EMP.

Therefore, cumulative impacts on wildlife associated with drilling activities can be minimised or avoided with the above mentioned mitigation measures.

Socio-Economic: The assessment of socio-economic impacts includes the inconvenience the exploration activities have on the local community. In the unmitigated scenario the significance rating is medium, however, with appropriate mitigation and management the potential impacts are greatly reduced and the significance rating falls to low.

In the case of the exploration team being allowed unsupervised access, there is the potential that gates may be left open, resulting in the movement of wildlife and livestock, as well as an increased risk of criminal activities. Of particular concern are potential game and livestock theft and poaching. The potential impact significance is medium unmitigated but can be reduced to low through careful management (refer to EMP commitments).

Visual: Cleared sites will create temporary “eye-sores”, which will have a visual impact and may impact sense of place and aesthetics. This impact is likely to be temporary in nature provided the measures outlined in the EMP are implemented and rehabilitation is carried out effectively.

Land-use: The predominant land uses within the EPLs are livestock (mainly cattle) and game (hunting and other tourism) farming. It must be noted that the spatial scale and severity of this impact will be low due to the relatively small exploration sites. In the unmitigated scenario there may be conflicting land use i.e. drilling activities could impact trophy hunting activities. However, the significance of these impacts can be reduces to low through careful planning to avoid farming and hunting activities and regular communication.

Heritage: The general area where the EPLs are located is not known to have any heritage sites present. However, the chance of finding such sites always exists. In the unmitigated scenario, the possibility of heritage impact occurring results in a medium impact significance rating. This can however be reduced to low through the avoidance of obvious heritage resources and the implementation of a chance find procedure.

Noise: The noise impacts relating to exploration activities taking place near a residence and resulting in a nuisance impact, and the severity of the impact is rated medium. In the mitigated scenario, the severity of the impact is reduced and is rated low.

Surface water / Groundwater: The Otjiwarongo Marble Aquifer (OMA) is situated approximately 10 km to the south-west of the Otjikoto Mine (with the exploration area) and supplies water to the Omarassa-Otjiwarongo Water Scheme that supplies water to the town of Otjiwarongo. This aquifer is also a sole source groundwater unit as groundwater is the only option for farmers.

Should drilling activities take place in close proximity to existing water supply boreholes and/or areas with a shallow water table, the groundwater quality could be impacted. The presence of boreholes indicates relatively shallower groundwater and/or possible fractures etc., which will expose the groundwater to potential contamination.

However, given the small area affected, per hole, this impact is likely to be insignificant. The reduction in the availability of groundwater due to abstraction could impact land use in the area. It is unlikely that the quantities required will impact groundwater levels. Nevertheless, impacts on groundwater in an arid area such as this could have an increased severity.

Waste management: Given the remote location and the land-use, the dumping of domestic waste within the exploration area could prove hazardous to wildlife and livestock, as well as impede agricultural production. However, given the small scale of the activities, a large amount of waste will not be generated. With mitigation and management measures in place the rating remains low.

7. Way forward

The way forward for the scoping phase is as follows:

- Submit the final Scoping Report (with comments) and EMP to MET.

- MET review the Scoping Report and EMP and provide record of decision

SCOPING (INCLUDING ASSESSMENT) REPORT AND EMP FOR EXPLORATION ACTIVITIES ON EPL 2410 AND 4309- RENEWAL APPLICATION

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ACRONYMS AND ABBREVIATIONS

Below a list of acronyms and abbreviations used in this report.

Acronyms / Abbreviations	**Definition**
EAPAN	Environmental Assessment Professionals' Association of Namibia
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPL	Exclusive Prospecting License
LAC	Legal Assistance Centre
MET	Ministry of Environment and Tourism
MET: DEA	Ministry of Environment and Tourism: Department of Environmental Affairs
MME	Ministry of Mines and Energy
TOC	Terms of Reference

SCOPING (INCLUDING ASSESSMENT) REPORT AND EMP FOR EXPLORATION ACTIVITIES ON EPL 2410 AND 4309- Renewal Application

1 INTRODUCTION

1.1 BACKGROUND TO THE ONGOING EXPLORATION ACTIVITIES

B2Gold Namibia (Pty) Ltd (B2Gold) is currently conducting comprehensive exploration programs over Exclusive Prospecting Licenses (EPLs) 2410 and 4309 for precious metals, base and rare metals and industrial minerals.

B2Gold has been conducting exploration activities in these areas since 2012. The EPLs were issued Environmental Clearance Certificates (ECCs) by the Ministry of Environment and Tourism (MET) prior to the requirement of conducting an Environmental Impact Assessment (EIA) Scoping Process and submitting an Environmental Management Plan (EMP). The current ECCs were issued in February 2013, are valid for three years and expire in February 2016 (Appendix A). Therefore, B2Gold requires the renewal of the ECCs to continue with their exploration activities.

The EPLs are located between Otavi and Otjiwarongo around B2Gold's Otjikoto Gold Mine. Refer to Figure 1-1 for the locality of the EPLs.

1.2 MOTIVATION FOR THE EXPLORATION ACTIVITIES AND RENEWAL PROCESS

The Directorate of Mines within the Ministry of Mines and Energy (MME) undertakes to exploit the country's mineral resources in a manner which integrates mining into the various economic sectors for the socio-economic development of the country. In order to achieve this, MME issues EPLs to various entities for the exploration of minerals within the country. B2Gold intends to continue exploring for base & rare metals, industrial minerals and precious metals in the above mentioned EPLs. The feasible Otjikoto Gold Mine ore body (currently being mined) located within EPL 2410, also provides strong motivation for continued exploration in the surrounding area.

Should a feasible resource be located, it could provide social and economic development within the region and the country, subject to a Mining Licence (ML) being

issued by MME and a separate, comprehensive (full) environmental impact assessment (EIA) process.

As described in section 1.1. B2Gold has been exploring in the area (over their EPLs) for a number of years and will continue to do so. However, the ECCs for the EPLs expired and renewal applications were submitted to MET. An EIA Scoping process has to be conducted as part of the renewal application process.

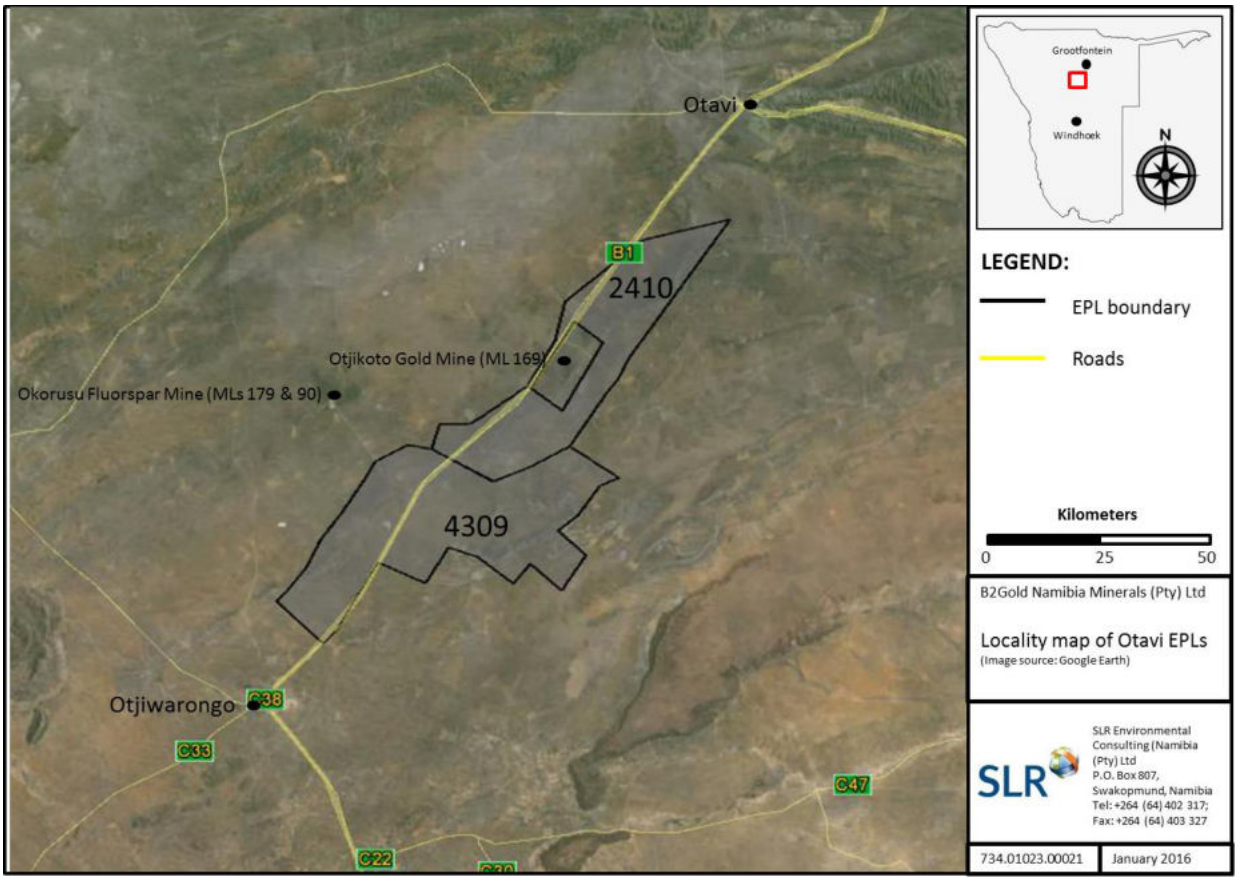

FIGURE 1-1: MAP INDICATING THE LOCATION OF EPLS 2410 AND 4309

1.3 INTRODUCTION TO THE ENVIRONMENTAL IMPACT ASSESSMENT FOR THE ECC RENEWAL APPLICATION PROCESS RELATING TO B2GOLD'S EXPLORATION ACTIVITIES ON EPLS 2410 AND 4309

Environmental Impact Assessments are regulated by the Ministry of Environment and Tourism (MET) in terms of the Environmental Management Act, 7 of 2007. This Act was gazetted on 27 December 2007 (Government Gazette No. 3966). The List of Activities

that may not be undertaken without an Environmental Clearance Certificate and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) were promulgated on 6 February 2012.

MET formally indicated in October 2015 at a Chamber of Mines meeting that if public consultation has not been carried out for EPLs; and EIA Scoping Reports and Environmental Management Plans (EMPs) not submitted, then a scoping level Environmental Impact Assessment (EIA) process for the EPL renewals needs to be carried out.

The following listed activities are relevant to the exploration activities:

Mining and Quarrying Activities

Activity 3.1: The construction of facilities for any process or activities which requires a licence, right or other form of authorisation, and the renewal of a licence, right or other form of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992.

Activity 3.2: Other forms of mining or extraction of any natural resources whether regulated by law or not.

Activity 3.3: Resource extraction, manipulation, conservation and related activities.

1.3.1 EIA PROCESS FOR THE RENEWAL APPLICATION PROCESS

Renewal application forms were submitted to the Ministry of Environment and Tourism (MET): Department Environmental Affairs (DEA) for the renewal of the ECCs. B2Gold would like to continue with their exploration activities on EPLs 2410 and 4309. However, as they have not conducted an EIA with an EMP in the past an EIA (scoping) process is being conducted in terms of the Environmental Management Act, 7 of 2007. This process includes: a screening phase and a scoping phase, which includes an impact assessment (qualitative) and the production of an Environmental Management Plan (EMP).

The main purpose of this report is to provide information relating to B2Gold's ongoing exploration activities on their EPLs and to indicate which environmental aspects and potential impacts have been identified during the Screening and Scoping phases. Due to the fact that B2Gold has been conducting activities in the area on their respective EPLs, various Bi-annual Environmental Reports have been prepared and referred to as part of the Scoping process and development of this report.

This report was further developed through site observations and consultation with relevant stakeholders, specifically the surrounding farm owners. An Environmental Management Plan (EMP) is also included as part of this report (Section 8).

With reference to the EIA regulations and a workshop held between the MET and the Environmental Assessment Professionals' Association of Namibia (EAPAN) in May 2013, MET indicated that the requirements for the EIA process relating to mineral exploration activities are as follows:

- Conduct a Scoping process (including public participation)
- Prepare a Scoping Report and Environmental Management Plan (EMP)
- Submit the final report to MET for a decision and Environmental Clearance (Environmental Clearance Certificate).

With reference to section 1.3, MET also informed the Chamber of Mines in October 2015 to follow a similar approach for the relevant renewal applications.

This report is the Scoping Report and EMP. Taking the above mentioned into consideration, this report will provide sufficient information for the MET to make an informed decision regarding the renewal of the ECCs for B2Gold's ongoing exploration activities on EPLs 2410 and 4309.

More detailed information on the Scoping Report and EMP is provided in Section 2.2.

1.3.2 EIA SCOPING PROCESS

The process that was followed to develop this Scoping Report and EMP process and corresponding activities are outlined in Table 1-1 below.

Table 1-1: Scoping process

Objectives	Corresponding activities
Project initiation/screening phase (December 2015)	
• Identify environmental aspects and potential impacts internally. • Finalise TOR for study. • Initiate the Scoping process.	• Project initiation discussions with B2Gold. Identify environmental and social issues and determine legal requirements.
MET Submissions (February 2016)	
• Notify MET	• Application forms and letter submission to MET
Scoping phase (including assessment of impacts) (January – April 2016)	
• Further identify potential environmental issues associated with the proposed project. • Consider alternatives. • Provide a description of the potentially affected environment. • Assessment of potential environmental impacts associated with the proposed project. • Develop management and mitigation measures.	• Site visits and public meeting in Otjiwarongo • Compilation of Scoping Report and EMP • Distribute Scoping Report to Interested and Affected Parties (IAPS) for comment • Submission of Application form to MET. • Forward finalised Scoping Report and EMP with IAPs comments to MET for decision making.

1.3.3 ENVIRONMENTAL TEAM

SLR Environmental Consulting (Namibia) (Pty) Ltd (SLR) is an independent firm of consultants who were appointed to undertake the Scoping exercise. Simon Charter is the project manager and has 10 years of experience of EIA preparation, compilation of

EMPs, conducting audits and reviewing relevant reports. Werner Petrick is the reviewer and has over seventeen years of relevant experience in conducting / managing EIAs, compiling EMPs and implementing EMPs and Environmental Management Systems. Simon and Werner are both certified as a lead practitioners and reviewers under the Environmental Assessments Professionals of Namibia (EAPAN). The relevant curriculum vitae documentation is attached in Appendix B. The environmental project team is outlined in Table 1-2 below.

Table 1-2: The environmental project team

Team	Name	Designation	Tasks and roles	Company
B2Gold' s Project Team	Volker Petzel	Regional Exploration Manager	Responsible for the interface between B2Gold and the environmental team, and for ensuring implementation of the EMP.	B2Gold
	Stephen Frindt	Senior Geologist		
	Dixon Bernardu	Geologist		
Project management	Simon Charter	Project Manager	Management of the process. Public consultation. Report compilation.	SLR
	Nadine Soutschka	Project Assistant	Project administration, report compilation, etc.	
	Werner Petrick	Reviewer	Review of process and documentation.	

2 SCOPING METHODOLOGY

2.1 INFORMATION COLLECTION

SLR used various sources to identify the environmental issues associated with the exploration activities. The main sources of information for the preparation of this Scoping Report include:

- Information relating to the exploration activities provided by B2Gold which includes:
    - Exploration activity description
    - Maps indicating exploration locations
    - Description of associated activities
    - Bi-annual Environmental Reports
    - Environmental questionnaire
- Site visit by SLR
- Literature research
    - Atlas of Namibia (Mendelsohn et. al, 2009)
    - Trees and Shrubs of Namibia (Mannheimer and Curtis, 2009)
- Previously carried out environmental assessment in the area:
    - Otjikoto Gold Mine EIA (SLR, 2012)
- Input from biodiversity specialist for EPL 4259 environmental assessment
- Consultation with neighbouring farmers

2.2 SCOPING REPORT

The main purpose of this Scoping Report is to indicate which environmental aspects relating to the ongoing exploration activities might have an impact on the environment, to assess them and to provide management and mitigation measures to avoid or

reduce these impacts. Table 2-1 outlines the Scoping Report requirements contained in Section 8 of the Environmental Impact Assessment Regulations promulgated in February 2012 under the Environmental Management Act, 7 of 2007. The table includes reference to the relevant sections in the report.

Table 2-1: Scoping report requirements stipulated in the EIA regulation

Requirements for a Scoping Report in terms of the February 2012 regulations	Reference in report
a) the curriculum vitae of the EAP who prepared the report;	Appendix H
b) a description of the proposed activity;	Sections 1 & 4
c) a description of the site on which the activities are being undertaken (and planned) and the location of the activity on the site	Section 5
d) a description of the environment that may be affected by the activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the listed activity;	Sections 5 &7
e) an identification of laws and guidelines that have been considered in the preparation of the Scoping Report;	Section 3
f) details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including - i. the steps that were taken to notify potentially interested and affected parties of the proposed application; ii. proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given; iii. a list of all persons, organisations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application; and iv. a summary of the issues raised by interested and affected	Section 2, Appendices A,B,C,D

Requirements for a Scoping Report in terms of the February 2012 regulations	Reference in report
parties, the date of receipt of and the response of the EAP to those issues;	
g) a description of the need and desirability of the listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	Sections 1.2
h) a description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Section 7
i) terms of reference for the detailed assessment; and	
j) a draft management plan, which includes - i. information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure; ii. as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and iii. a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or	Section 8

Requirements for a Scoping Report in terms of the February 2012 regulations	Reference in report
process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.	

2.3 PUBLIC PARTICIPATION PROCESS

The public participation process for the exploration activities aimed at ensuring that all persons (i.e. farmers, residents, authorities, etc.) and/or organisations that may be affected by, or interested in, the proposed activities were informed of the project and could register their views and concerns. By consulting with IAPs the range of environmental issues to be considered in the Scoping Report (including the assessment of impacts) has been given specific context and focus.

Included below is a summary of the people consulted, the process that was followed, and the issues that were identified.

2.3.1 STAKEHOLDERS

The following table (Table 2-2) provides a broad list of stakeholders that are relevant to the project. They were informed about the current and future exploration activities, the requirements for the renewal of the ECCs and the related public consultation process.

Table 2-2: Stakeholders

Stakeholder Grouping	Organisation
Government Ministries	• Ministry of Environment and Tourism (MET) ○ Department of Environmental Affairs • Ministry of Mines and Energy • Ministry of Water Affairs and Forestry
Residents and farmers	• Residents and farmers within the area

Stakeholder Grouping	Organisation
Other interested and affected parties	Any other people with an interest in, or who may be affected by, the proposed project.

The full stakeholder database for this project is included in Appendix C of the report.

2.3.2 STEPS IN THE CONSULTATION PROCESS

Table 2-3 sets out the steps in the consultation process that were conducted during the EIA Scoping process:

Table 2-3: Consultation process with IAPs

TASK	DESCRIPTION	DATE
Notification - regulatory authorities and IAPs		
IAP identification	The stakeholder database was created and has been updated throughout the EIA Scoping process, where required. A copy of the IAP database is attached in Appendix C.	December 2015
Distribution of background information document (BID) and telephone calls	Hard copies of the BID were made available during the public meeting. The purpose of the BID was to inform IAPs about the ongoing exploration activities, the EIA (Scoping) process being followed, possible environmental impacts and means of providing input to the EIA (Scoping) renewal process. Attached to the BID was a registration and response form, which provided IAPs with an opportunity to submit their names, contact details and comments on the project. A copy of the BID is attached in Appendix A.	February 2016

TASK	DESCRIPTION	DATE
Site notices	Site notices were erected at the NG Kerk in Otjiwarongo and the Spar in Otavi. A photo of the site notice is attached in Appendix D.	February 2016
Newspaper Advertisements	Block advertisements were placed as follows: • The Republikein (21 and 28 January 2016) • The Namibian (21 and 28 January 2016) Copies of the advertisements are attached in Appendix C.	January 2016
Public Meeting and submission of comments		
Focus group meetings Submission of Comments	A public meeting was held in Otjiwarongo on the 1 February 2016. The minutes of this meeting and attendance register are included in Appendix F. In addition, comment forms were submitted to SLR from various IAPs. The information shared is attached in Appendix F.	February 2016
Comments and Responses	All comments received by email, fax, telephone conversations and through the meetings (minutes) are attached in Appendix F. A Summary Issues and Response Report is attached Appendix G.	
Review of draft Scoping Report		
IAPs and authorities (excluding MET) review of Scoping Report and EMP	The Scoping Report was distributed to all IAPs that are registered on the IAP database via e-mail (where available). An electronic copy (CD format) was made available, on request to SLR. A hard copy of the document was also made available in the B2Gold office in Otjiwarongo. IAPs have 10 working days to review the Scoping Report and submit comments in writing to SLR. The	March – April 2016

TASK	DESCRIPTION	DATE
	closing date for comments is 13 April 2016.	
Comments on the Scoping Report	All comments received will be considered and the Scoping Report and EMP amended, where relevant at the end of the comment period.	End of the comment period
MET review of Scoping Report and EMP	A copy of the final Scoping Report, including authority and IAP review comments, will be delivered to MET on completion of the public review process, for their review and decision.	April 2016

2.3.3 SUMMARY OF ISSUES RAISED

All issues that have been raised to date by IAPs are provided in Appendix E of the Scoping Report. Issues raised pertain to:

- Line cutting in rainy season
- Access agreements
- Employment opportunities

An Issues & Responses Report is attached in Appendix G.

3 LEGAL FRAMEWORK

The environmental legal requirements are summarised below.

The Republic of Namibia has five tiers of law and a number of policies relevant to environmental assessment and protection, which includes:

- The Constitution.
- Statutory law.
- Common law.
- Customary law.
- International law.

Key policies currently in force include:

- The EIA Policy (1995).
- Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1994).

As the main source of legislation, the Constitution of the Republic of Namibia (1990) makes provision for the creation and enforcement of applicable legislation. In this context and in accordance with its constitution, Namibia has passed numerous laws intended to protect the natural environment and mitigate against adverse environmental impacts.

3.1 APPLICABLE LAWS AND POLICIES

In the context of the proposed exploration activities, there are several laws and policies currently applicable. They are reflected in Table 3.1.

TABLE 3-1: RELEVANT LEGISLATION AND POLICIES FOR EXPLORATION ACTIVITIES

YEAR	NAME	Natural Resource Use (energy & water)	Emissions to air (fumes, dust & odours)	Emissions to land (non-hazardous & hazardous	Emissions to water (industrial & domestic)	Noise (remote only)	Visual	Vibrations	Impact on Land use	Impact on biodiversity	Impact on Archeology	Emergency situations	Socio-economic	Safety & Health
1990	The Constitution of the Republic of Namibia of 1990	X	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
1997	Namibian Water Corporation Act, 12 of 1997	**X**											**X**	
1992	The Minerals (Prospecting and Mining) Act 33 of 1992	**X**	**X**	**X**	**X**					**X**				
2001	The Forestry Act 12 of 2001	**X**							**X**	**X**				
2013	Water Resources Management Act 11 of 2013	**X**			**X**								**X**	
2004	National Heritage Act 27 of 2004										**X**			**X**
2007	Environmental Management, Act 7 of 2007	X	X	X	X	X	X	X	X	X	X		X	X
2012	Regulations promulgated in terms of the Environmental Management, Act 7													

YEAR	NAME	Natural Resource Use (energy & water)	Emissions to air (fumes, dust & odours)	Emissions to land (non-hazardous & hazardous	Emissions to water (industrial & domestic)	Noise (remote only)	Visual	Vibrations	Impact on Land use	Impact on biodiversity	Impact on Archeology	Emergency situations	Socio-economic	Safety & Health
	of 2007													
1975	Nature Conservation Ordinance 14 of 1975	X			X					X	X			
1976	Atmospheric Pollution Prevention Ordinance 11 of 1976		X											
1995	Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation	X	X	X	X	X	X	X	X	X	X	X		X

4 DESCRIPTION OF THE EXPLORATION PROGRAM

B2Gold wishes to continue with their exploration program on EPLs 2410 and 4309 for base & rare, precious metals and industrial minerals. The exploration licences are valid for two years and might be renewed after this period.

B2Gold plans to continue with their current exploration activities on the above mentioned EPLs and have access agreements, as required by section 52 of the Minerals Act, between the applicant and the land-owners, on whose land existing exploration activities have been carried out, in place. Should the exploration activities move onto new farms, then access agreements will be entered into with the owners of those farms.

The exploration activities include follow up ground work (line cutting, geochemical and geophysical surveys) and drilling. These target areas (and activities per target area) might be extended into other areas on the EPL, depending on the outcome of the exploration results.

4.1 PAST EXPLORATION ACTIVITIES CONDUCTED

The following activities have already been undertaken on the EPLs:

TABLE 4-1: ACTIVITIES ALREADY UNDERTAKEN ON EPLS

	EPL 2410	**EPL 4309**
Line cutting	133.8km	55km
Ionic leach sampling	1919 samples taken	972 samples taken
pH soil sampling	1919 samples taken	972 samples taken
Soil sampling (hand auger drill)	3300 samples taken	2739 samples taken
Diamond drilling	12 holes drilled (about 150m each)	6 holes drilled (each about 150m deep)
RAB drilling	360 holes drilled (maximum depth 20m)	-

TABLE 4-2: ENVIRONMENTAL COMMITMENTS AND ACTIVITIES CONDUCTED ON EACH EPL IN THE PAST THREE YEARS.

EPL	Activities carried out to date
2410	1) Access agreements exist with all farmers on areas worked on. 2) All diamond drilling holes drilled were rehabilitated. No diamond drilling camps were established in the licence area. Exploration crews operated out of Otjiwarongo. 3) Field toilets (pit latrines) were established at each drill site, and were rehabilitated at the end of the drilling programme. 4) All RAB holes drilled were rehabilitated. 5) All handheld auger holes were rehabilitated 6) Where possible, sampling was conducted along existing farm fences. 7) Lines had to be cut, where no fences existed. Farmers wanted to keep cut lines to start de-bushing programmes 8) No exploration camps were established in the licence area. Exploration crews operated out of Otjiwarongo. 9) Small fly camps for RAB drilling crews (4 people, 1RAB drill, 3 support vehicles) were established close to drilling sites. Field toilets (pit latrines) were established at the camps. All camp sites were rehabilitated and all waste was taken to the Otjiwarongo refuse dump site.
4309	1) Access agreements exist with all farmers on areas worked on. 2) All diamond drilling holes drilled were rehabilitated. 3) All handheld auger holes were rehabilitated 4) A lot of sampling was conducted along existing farm fences.

	5) Lines had to be cut, where no fences existed. Farmers wanted to keep cut lines to start de-bushing programmes. The entire farm Houmoed (located in the north-eastern portion of the licence area) is de-bushed and therefore no lines had to be cut. Sample sites were determined by GPS. 6) No exploration camps were established in the licence area. Exploration and drilling crews operated out of Otjiwarongo.

4.2 PLANNED EXPLORATION ACTIVITIES

The following activities are still to take place on EPLs 2410 and 4309:

Follow-up ground work	Line cutting, line surveying, geochemical and geophysical surveys over selected geophysical anomalies. Line cutting will only start after the consent of the farmer is obtained
Reverse Circulation (RC) drilling and Diamond Drilling to test delineated anomalies	Depending on the outcomes of favourable results indicating the possible presence of minerals, B2Gold may choose to drill to test depth mineralisation.

B2Gold plans to continue with activities as soon as the environmental clearance certificate has been issued.

4.3 GEOPHYSICAL INTERPRETATION

Geophysical surveys are conducted in order to ascertain the mineralisation of a given area and entail the collection of information of the substrata, by air or ground, through sensors such as magnetic, electromagnetic or gravity, to detect any mineralisation in the area. Follow up ground geophysical surveys would be carried out using sensors mounted on vehicles or carried by staff. The data obtained will be further interpreted

and mapped. This includes the review of geophysical maps of the area and updating the maps where relevant information has been obtained.

4.4 LINE CUTTING

Line cutting is carried out by clearing straight lines of vegetation along straight transects (or as straight as possible). This is to allow for vehicles to travel through the area and to get samples, and possibly drill at a later stage, along as straight a line as possible.

4.5 GEOCHEMICAL SAMPLING

With guidance from the geophysical mapping, samples of soil and vegetation are collected and sent for geochemical major and trace element analysis to determine if sufficient quantities of base & rare or precious metals or industrial minerals are present. These analyses are conducted by analytical chemistry laboratories.

4.6 DRILLING

Depending on the outcomes of favourable results indicating the possible presence of minerals, B2Gold may choose to drill to test depth mineralisation. In other words, drilling would only be undertaken upon satisfactory results of sampling and mapping of the mineralisation. The drilling programme at target locations has already been identified (from previous exploration activities) or will be decided upon result obtained from the mapping and sampling conducted.

Exploration drilling is the process of sampling rock below surface from an area, where it is suspected that there may be mineralisation. There are various drilling methods available and B2Gold will utilise reverse circulation drilling as well as diamond-core drilling.

A typical drilling pad/area will consist of a drill-rig, an area where the drill core and geological samples can be stored and a storage area for drill equipment, fuel and lubricants. This area is cordoned off and off-limits to those not part of the exploration team. The drilling pad/area is usually cleared and levelled and is approximately 15 m x

15 m. Drill-water will be collected in lined drill-sumps and recycled. The sumps will be managed to prevent overflows. Non-toxic and biodegradable drilling lubricant will be used.

Samples taken during drilling will be sent away for analysis, specifically to determine the mineral composition and the level of metals within the samples. Samples are taken during drilling by either the geologists or geological assistants and can be in either rock chip, sand, or drill core form.

4.6.1 Reverse Circulation (RC) Drilling

The drilling mechanism is a pneumatic reciprocating piston known as a "hammer" driving a tungsten-steel drill bit. RC drilling utilises much larger rigs and machinery.

4.6.2 Diamond-core Drilling

Diamond core drilling uses an annular diamond-impregnated drill bit attached to the end of hollow drill rods to cut a cylindrical core of solid rock. Holes within the bit allow water to be delivered to the cutting face. This provides three essential functions — lubrication, cooling, and removal of drill cuttings from the hole.

Diamond core drilling requires a water supply. This water will either be obtained from existing water sources, with permission from the land-owner, or new boreholes will be required (refer to Section 4.8.4 for further details regarding water supply).

4.7 Machinery/vehicles

The table below described the machinery/vehicles requirement during exploration:

TABLE 4-3: MACHINERY DURING EXPLORATION ACTIVITIES

Type	Details	Number
Vehicles	Toyota Land Cruiser 4x4	2 - 3
Drilling equipment	Diamond drilling rig Truck mounted RC rig	1 - 3 1

Support vehicles	Water trucks and supporting vehicles 6x6	2-6
Construction Vehicle	Frontend loader for dozing roads and sampling lines	1

4.8 PERSONNEL

It is anticipated that the following personnel will be employed to carry out the above-mentioned activities:

Number of persons to be employed	The work they will do
20	Exploration activities
6 per drilling rig	Diamond drilling / RC drilling
5	RAB drilling

Where possible, the exploration and drilling teams will be housed in accommodation located on or near the EPL areas. In remote areas; camp sites close to the drill sites will be established to accommodate the geological (i.e. B2Gold) and drilling contractor teams. The camp sites will consist of tents and ablution facilities. The geological and drilling campsites will be cleared from vegetation (except trees with stem diameter bigger than 10cm) and will have a footprint of approximately 30m x 30m and 50m by 30m respectively. Permission will be obtained from the land owners prior to the establishment of these camp sites.

4.8.1 WASTE MANAGEMENT

The following types of waste will be generated during the exploration activities, in small volumes:

- Domestic waste (non-hazardous)

Domestic waste will be stored in a manner that there can be no discharge of contamination to the environment and removed from the area for disposal in a designated municipal landfill site. Recyclable items to be sorted, stored in temporary containers and removed to Otjiwarongo recycling centres. All waste (organic and

inorganic) to be removed from site, reused and/or disposed of in designated, registered, municipal dump site.

Industrial waste, such as oil cans and drums will be stored at the camp at designated areas. The areas are to be lined and bunded to ensure that no contamination of the ground is taking place.

Potential hydrocarbon spills from vehicles and drilling equipment might lead to soil contamination and needs to be treated as a hazardous waste if not bio-remediated. This waste will be taken to a licensed hazardous waste site for disposal.

4.8.2 CHEMICALS AND OTHER HAZARDOUS SUBSTANCES

The table below describes the hazardous substances that will be stored and utilised on site.

TABLE 4-4: HAZARDOUS SUBSTANCES

Substance	Purpose	Storage
Diesel fuel	Fuel for vehicles and camp generators	Sealed drums and containers, kept in pvc lined storage facility or drip trays.
Petrol fuel	Fuel for chain saws, vehicles and camp generators	Sealed drums and containers, kept in pvc lined storage facility or drip trays
Oil, grease and lubricants	For vehicles and equipment	Sealed containers kept in lined pvc storage facility or drip trays. Drip pans/trays and absorbent material will be kept under drill rig and equipment as needed

4.8.3 SANITATION

As activities will be conducted in a remote location, geological and drilling teams will establish long drop pit latrine toilet. Due to health and safety concerns, personnel may not relieve themselves in the surrounding bush.

All effluent water from drill and/or geological camp washing facility will be disposed of in properly constructed French drain that is located at least 100m away from any stream, pan or water borehole. Only domestic effluents are allowed to enter this drain.

4.8.4 WATER SUPPLY

Table 4-5 describes the water requirements during the exploration programme as well as the proposed methods for conserving water.

TABLE 4-5: WATER SUPPLY REQUIREMENTS

Activity or category of use	Quantity of water needed per month (l's)	Water saving methods
Human consumption	2000 litres/person	Used sparingly and wastage avoided
RC drilling team (approx. 6 people)	3500 litres	Used sparingly and wastage avoided
RC drilling per rig		Hardly any water has to be used conducting RC drilling
Diamond drilling per rig	10,000 litres per day	Try to recycle as much water as possible

Water will be required for drilling activities (approximately 10 000 litres/day). Where possible, water will be supplied through one or more of the existing boreholes in the area. Permission for the use of this water will be obtained from the land-owner.

Should no existing water source exist, B2Gold will drill new borehole(s) provided they first get permission from the land owners and obtain the necessary permits from the Ministry of Agriculture, Water and Forestry.

The land-owner will be compensated for water used for exploration. The details of this compensation will be included in the access agreements.

4.8.5 POWER SUPPLY

The various machinery and equipment required for drilling have their own power supplies and or generators attached. Fuel (diesel) will be stored as described in Table 4-4.

4.8.6 ACCESS ROUTES

As far as is practicable, no new roads or tracks will be developed. Motorised access will be limited to existing tracks during sampling and geophysical surveys. New access routes to the drill sites will be identified and demarcated prior to the commencement of drilling. The final alignment of new access tracks will be discussed and agreed upon with the Land owner prior to the commencement of exploration activities.

4.8.7 FIRE MANAGEMENT

A fire break around the drill sites and camp areas will be established. To avoid starting a fire, smoking will only be allowed in dedicated smoking areas with a sand filled drum or similar container for disposal of cigarette butts. Open fires for cooking will only be permitted in designated areas away from any vegetation that may catch fire. Furthermore, fire extinguishers and an evacuation program will be available at each site.

4.9 REHABILITATION

Rehabilitation will be carried out as follows:

Tracks / Grids:

All newly established tracks and gridlines will be ripped. Where necessary erosion prevention barricades will be constructed. Should the land owners wish to keep the newly established track, the exploration company will leave the track, but will ensure that the erosion potential is kept at a minimum. Any newly erected gate or fence, which is not required by the farm owner, will be removed.

Drill Sites:

All drill sites will be cleaned and rehabilitated. All diamond drilling sumps and holes will be filled and raked. Chips recovered during RC drilling and which are not used for exploration purposes will either be buried on site, or transported and disposed at a site indicated by the farmer owner.

Bush camps:

All French drains and long drops will be filled and compacted. All semi-permanent structures will be removed from site.

Monitoring:

Annual independent environmental audits will be conducted, investigating the compliance with the environmental requirements. If possible, photos will be taken from drill sites at the beginning and rehabilitated site.

5 DESCRIPTION OF THE CURRENT ENVIRONMENT

The information presented in the section below was derived from the following sources:

- Visual observations during a site visit by SLR.
- Discussions with local residents and authorities
- Atlas of Namibia (Mendelsohn et al., 2009)
- Google Earth and spatial data from Environmental Information Services (EIS) Namibia (http://www.the-eis.com)
- Other EIAs in the same area:
    - Otjikoto Gold Mine EIA (SLR, 2012)

5.1 LANDSCAPE AND ELEVATIONS

The EPLs are located within the central-western plains, much of which lie between 500 and 1000 m above sea level. The plains were largely formed by erosion cutting back into higher ground (Mendelsohn, et al. 2009).

5.2 SOILS

EPL 4309 and the southern part of EPL 2410 have Chromic Cambisols (soils with bright colours and good water holding capacity), the norther part of EPL 2401 has Mollic Leptosols (soils with good surface structure that were formed in actively eroding landscapes).

5.3 CLIMATE

Most rainfall is during the summer months of January and February. The area receives a mean annual rainfall of about 450 mm, with a coefficient of variation of about 30%, meaning that rainfall is fairly unpredictable. The mean annual evaporation rate is about 2,000 mm.

5.4 GEOLOGY

The EPL area is underlain by the Swakop Subgroup strata of the Damara Supergroup. Deposition and metamorphism of the intracratonic sediments took place between 830-760 Ma. The Swakop Subgroup comprises amongst others the Okanguari Formation schist and the Karibib Formation marble, both of which have been intruded by Salem Suite granites. The mica schist both overlies and underlies the marble.

5.5 BIODIVERSITY

According to Mendelsohn et al (2009) and EIS (2002) the EPLs fall within the tree- and-shrub Savanna Biome dominated by Acacia species and annual and perennial grasses. The landscape is characterized by dense tree and bush savanna where the bush density and grass composition are largely determined by micro-habitat conditions and rangeland management practices. Throughout this area the vegetation is dense and highly bush-encroached (mainly by *A. mellifera subsp. Detinen)*

Dominant plant species found in the area are Blackthorn (*Acacia millifera),* Red Umbrella Thorn (*Acacia reficiens)*, Sand-veld Acacia (*Acacia fleckii)* and Shepherd Tree *Boscia albitrunca* (EIS, 2002).

There are a number of protected tree species that are known to occur in the area. These include:

- *Acacia erioloba*
- *Adansonia digitata*
- *Albizia anthelmintica*
- *Berchemia discolor*
- *Boscia albitrunca*
- *Burkea africana*
- *Combretum imberbe*
- *Elaeodendron transvaalensis (= Cassine transvaalensis)*

- *Erythrina decora*
- *Ficus thonningii*
- *Kirkia acuminate*
- *Maerua schinzii*
- *Ochna pulchra*
- *Ozoroa crassinervia*
- *Peltophorum africanum*
- *Pterocarpus anglolensis*
- *Rhus lancea*
- *Securidaca longepedunculata*
- *Spirostachys africana*

The seventy-eight (78) species of mammals can be expected to occur throughout the area. Sixteen (16) species of mammals are listed as Protected Game under the Nature Conservation Ordnance no. 4 of 1975:

- Aardwolf *(Proteles cristatus),*
- Bat-eared Fox *(Otocyon megalotis*),
- Cape Fox (*Vulpes chama),*
- Leopard *(Panthera pardus),*
- Cheetah (*Acinonyx jubatus),*
- Honey Badger (*Mellivora capensis*),
- Aardvark (*Orycteropus afer),*
- Pangolin (*Manis temminckii),*
- Hedgehog (*Atelerix frontalis),*
- Bushbaby (*Galago moholi),*

- Damara Dik-Dik (*Madoqua damarensis),*
- Blue Wildebeest (*Connochaetes taurinus),*
- Duiker (*Sylvicapra grimmia),*
- Red Hartebeest (*Alcelaphus buselaphus),*
- Steenbok (*Raphicerus campestris*), and
- Eland (*Tragelaphus oryx)*

The EPLs encompass a large section of land within what is considered the core area of the Namibian cheetah population, which is the largest population of cheetah in the world.

The seventy-eight (78) species of reptiles expected to occur in the EPL areas. Four species of reptiles are Protected Game under the Nature Conservation Ordinance no. 4 of 1975, as follows:

- Leopard Tortoise (*Geochelone pardalis*),
- Kalahari Tent Tortoise (*Psammobates oculiferus*),
- Veld Leguaan (*Varanus albigularis*), and
- Southern African Python (*Python natalis*).

Because of the semi-arid character and variable rainfall, many bird species found in the EPL area (as in other parts of Namibia) are highly nomadic, moving from place to place in search of appropriate conditions. Six Red Data species have been recorded in the area. All are birds of prey and they are listed below:

- Booted Eagle;
- Whitebacked Vulture;
- Lappetfaced Vulture;
- Tawny Eagle;
- Martial Eagle; and
- Bateleur.

Since there is a lack of permanent free water in the region, the frog fauna (of 14 species) is adapted to opportunistic breeding in temporary pans and rainwater pools. These breeding opportunities exist, more or less uniformly throughout the EPL areas.

5.6 WATER

The EPL areas are located in the most eastern parts of the Ugab catchment, an ephemeral river catchment draining westwards into the Atlantic Sea. There are no permanent surface water bodies in the area.

The Otjiwarongo Marble Aquifer (OMA) is situated approximately 10 km to the south-west of the Otjikoto Mine and supplies water to the Omarassa-Otjiwarongo Water Scheme that supplies water to the town of Otjiwarongo. The Otjikoto Mine is situated on the eastern margin of the Platveld Basin of which the dominant geology consists of quarts-biotite schists, calcitic and dolimitic marble. This aquifer is also a sole source groundwater unit as groundwater is the only option for farmers.

5.7 AIR QUALITY

The main activity in the area is farming. The national road B1 cuts through the EPLs and a few unpaved farm roads are found in the area. The Otjikoto Gold Mine is also found in the area. These activities are likely result in particulate emissions at a localised scale and gas emissions from veld burning. Traffic on the national road will add to both the particulate and gaseous emissions whereas windblown dust from exposed tilled land could be a significant source of particulate emissions. Currently air quality monitoring is taking place at the Otjikoto Gold Mine.

5.8 NOISE

The Otjikoto ML is found within the EPL 2410 and the national road B1 cuts through both EPLs. The area is mainly rural with no major sources of noise besides that generated by traffic on the B1 and from the Otjikoto Mine.

5.9 ARCHAEOLOGY

The map below shows the regional distribution of known archaeological sites. Although the density of archaeological sites in this part of Namibia is rather low, it is considered to reflect the limited extent of field survey to date, as well as poor visibility due to the dense thornbush cover that is characteristic of this region.

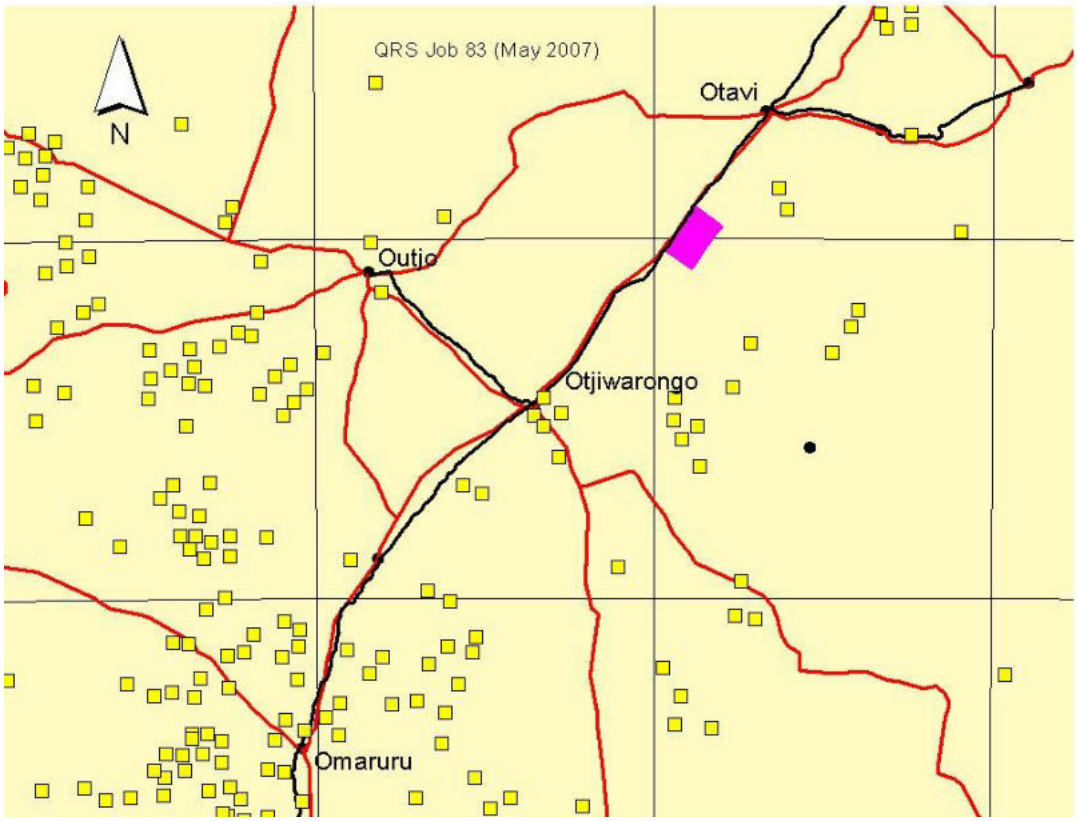

FIGURE 5-1: REGIONAL SETTING OF THE OTJIKOTO MINE AND THE DISTRIBUTION OF THE KNOW ARCHAEOLOGICAL SITES (FIGURE TAKEN FROM QRS JOB 160)

Due to the extremely large scale of the EPLs, carrying out an archaeological assessment over the full area is impractical and financially not feasible. However, a chance find procedure has been included in the EMP in order to minimise the risk of the proposed exploration activities to heritage resources.

5.10 LAND USE

The EPLs are found on agricultural and tourism freehold land meaning the land is privately owned. The predominant land uses within the EPLs are livestock (mainly cattle) and game (hunting and other tourism) farming.

6 ALTERNATIVES

6.1 ACCESS ROUTE ALTERNATIVES

All the access routes to the explorations sites (or target areas) have not yet been determined, however, the shortest route is usually the preferred option. However, in most instances, these access routes will create new tracks across the area, which might cause additional impacts to the environment (i.e. dust, general disturbance to biodiversity, visual impacts, land use impacts etc.). Instead of this approach, in order to limit the clearing of vegetation and other potential impacts, existing tracks can be utilized. The land-owners are often aware of existing tracks on their properties and could provide details regarding the locations of existing tracks.

6.2 DRILLING OPTIONS

As explained in section 4.6 of this report, various drilling options exist. Diamond core drilling can achieve greater depths, delivers core samples to the surface, provides an idea of the hard rock and rock conditions that can be expected below ground and is a form of wet drilling. Wet drilling is favourable as it minimises the nuisance dust impact, from both an occupational health and an environmental point of view. However, considering the difficulty associated with obtaining water in certain areas, this may be a more difficult form of drilling to achieve.

Percussion drilling is cheaper and faster to perform, however there is less accuracy, as rock samples are returned to the surface as powder or small cuttings and the below ground rock condition cannot be ascertained. It can, however, give an indication of the mineralisation (within specific limits/range).

6.3 NO-GO OPTION

This option entails that no further activities are undertaken on the EPL area and upon expiration it will revert back to the Ministry of Mines and Energy. Should this happen, the geology and mineralisation of the area EPL cannot be understood or defined.

The advantage of this option would be that no more drilling activities would take place on the land owner area and will not impact on the environment and/or the local residents.

7 IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS AND IMPACT ASSESSMENT

The ongoing exploration activities on EPLs 2410 and 4309 have the potential to impact on the environment. Environmental aspects and potential impacts were identified during the screening and scoping phases, in consultation with authorities, IAPs and the environmental team. The work that has been undertaken by B2Gold and their associated Environmental Reports were also taken into consideration. Given the relatively small scale of the proposed project activities and taking the existing environment into consideration, the potential impacts were also qualitatively assessed by SLR.

Table 7-2 below provides a summary of the activities associated with the exploration activities, the associated environmental aspects and potential impacts on the environment and also a qualitative assessment of these impacts (before and after mitigation). The aspect identification and impact assessment is based on the “worst case scenario” – taking into consideration that the activities might in future be extended into other areas on the EPL (refer to section 4.1).

Table 7-1 shows the methodology used to conduct the qualitative assessment.

TABLE 7-1: CRITERIA FOR ASSESSING IMPACTS

PART A: DEFINITION AND CRITERIA		
Definition of SIGNIFICANCE		**Significance = consequence x probability**
Definition of CONSEQUENCE		**Consequence is a function of severity, spatial extent and duration**
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	**H**	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	**L**	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	**L**	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

PART B: DETERMINING CONSEQUENCE					
SEVERITY = L					
DURATION	Long term	**H**	**Medium**	**Medium**	**Medium**
	Medium term	**M**	**Low**	**Low**	**Medium**
	Short term	**L**	**Low**	**Low**	**Medium**
SEVERITY = M					
DURATION	Long term	**H**	**Medium**	**High**	**High**
	Medium term	**M**	**Medium**	**Medium**	**High**
	Short term	**L**	**Low**	**Medium**	**Medium**
SEVERITY = H					
DURATION	Long term	**H**	**High**	**High**	**High**
	Medium term	**M**	**Medium**	**Medium**	**High**
	Short term	**L**	**Medium**	**Medium**	**High**
			L	**M**	**H**
			Localised Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
			SPATIAL SCALE		
PART C: DETERMINING SIGNIFICANCE					
PROBABILITY (of exposure to impacts)	Definite/ Continuous	**H**	**Medium**	**Medium**	**High**
	Possible/ frequent	**M**	**Medium**	**Medium**	**High**
	Unlikely/ seldom	**L**	**Low**	**Low**	**Medium**
			L	**M**	**H**
			CONSEQUENCE		

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	**Decision guideline**
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

Table 7-2: Environmental aspects and potential impacts associated with proposed exploration

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
Prospecting and geological mapping Line cutting Soil sampling Vegetation sampling	Socio-economic	Impacts on residents	In the case of the exploration team being allowed unsupervised access, there is the potential that gates may be left open, resulting in the movement of wildlife and livestock, as well as an increased risk of criminal activities. Of particular concern are potential game and livestock theft and poaching.	Without	M	M	L	M	M	**M**	1
				With	L	L	L	L	L	**L**	
	Biodiversity	Potential impact on fauna and flora (General disturbance and clearing of vegetation)	Some clearing of natural vegetation may occur as vehicles may have to drive off-track to access certain areas. However, it is very small scale, involving a limited number of vehicles. Line cutting will require the removal of vegetation, which can have significant impacts especially if protected species have to be removed (refer to section 5.4).	Without	M	M	L	M	H	**H**	2
				With	M	L	L	M	M	**M**	
		Destruction of vegetation due to	The quantities of vegetation that will be	Without	L	M	L	L	L	**L**	3

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
		vegetation sampling	removed are relatively insignificant and no protected plant species will be used/removed. It is therefore important that sampling of protected plant species does not occur.	With	L	L	L	L	L	**L**	
	Air quality	Increase in dust levels (nuisance & health impacts)	Dust generation through the establishment of an access track (if necessary). Air pollution through vehicle entrainment is expected to be negligible due to the small scale of the project. However, where vehicles travel close to residences, the dust from the roads might be a nuisance to the residents. Air pollution through vehicle emissions (i.e. exhaust fumes) is expected to be negligible due to the small scale of the project.	Without	L	L	M	M	M	**M**	4
				With	L	L	L	L	L	**L**	
	Heritage	Activities could result in possible	Heritage sites will have to be avoided	Without	M	H	L	M	M	**M**	5

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
		damage to/destruction of heritage resources.	during exploration. With reference to section 5.9 the general area where the EPLs are located is not known to have any heritage sites present. However, the chance of finding such sites always exists. A chance find procedure has also been included in the EMP.	With	L	H	L	M	L	**L**	
	Visual	Cleared sites and excavations (i.e. cut lines) can create visual impacts	Cleared sites will create temporary "eye-sores", which will have a visual impact and may impact sense of place and aesthetics. This impact is likely to be temporary in nature provided the measures outlined in the EMP are implemented and rehabilitation is carried out effectively.	Without	L	L	L	L	M	**M**	6
				With	L	L	L	L	L	**L**	
	Noise	Noise generated by excavation machinery	Noise generated by the machinery would create a noise disturbance for local residences. It could also disturb local fauna. However, the limited and isolated nature of the activities and reduces the	Without	L	L	M	M	M	**M**	7
				With	L	L	M	L	M	**L**	

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
			impact significance.								
Drill site and camp site establishment: • Access the drill site using new tracks • Set-up drilling rig with drip trays and groundsheets • Establish temporary safety fencing around the drill site • Set-up ablution	Noise	Noise generated by the establishment of access tracks and site clearing/ establishment activities.	The noise associated with the vehicles using the access track can be classified as insignificant as it will be a very limited number of vehicles used only during the day time. Should the activities take place in close proximity to a residence, the noise from these activities might be a nuisance impact.	Without	M	L	M	M	M	**M**	8
				With	L	L	L	L	L	**L**	
	Biodiversity	Potential impact on fauna and flora. (General disturbance and clearing of vegetation) Drilling contractors and employees that are not well managed can impact on the biodiversity through illegal collection of firewood, poaching, general disturbance to wildlife, road kills etc.	With reference to section 5, there are a number of game farms in the area. Due to the fact that the activities are relatively small and the fact that the drilling team will not be very big, potential poaching, general disturbance and collection of firewood impacts can easily be managed through appropriate management and mitigation measures outlined in the EMP.	Without	M	M	L	M	M	**M**	9
				With	L	L	L	L	L	**L**	

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
facilities • Set-up fuel and lubricants storage area • Waste management • Fire management		Loss of economic function of disturbed area during clearing and camp establishment activities and potential loss of land capability.									
		Drilling contractors and associated activities might trigger field fires.	Big areas of dry grass pose a risk of field fires. Improper management of contractors could lead to a fire starting and causing a big field fire which in turn can cause disturbance of biodiversity and therefore impact the farmers' resources. These impacts can however be easily managed through appropriate management and mitigation measures outlined in the EMP.	Without	H	M	M	M	M - H	**M**	10
				With	L	L	L	L	L	**L**	
	Land use	Loss off land capability due site clearance. Conflict between various land	With reference to section 5.10, the predominant land uses within the EPLs are livestock (mainly cattle) and game	Without	L	M	L	L	L	**L**	11
				With	L	L	L	L	L	**L**	

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
		users	(hunting and other tourism) farming. The area to be cleared for drilling activities and camping is however small, limiting or avoiding any possible loss of land capability.								
	Visual	Cleared sites can create visual impacts	Impact reference: 6								6
	Heritage	Impact reference: 5									5
	Socio-economic and community safety	The proposed activities may have the potential to result in an increase in crime and/or poaching on the surrounding privately owned farms. Given that access to explorations/drill sites may be gained through the use of farms roads, this could pose a threat to	Given the location of the exploration area and need for a close working relationship with the land-owners, these potential impacts can be mitigated through the implementation of the EMP.	Without	M	L	M	M	M	**M**	12
				With	M	L	M	L	L	**L**	

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
		community safety.									
	Waste Management	The dumping of general waste within the camp, drilling sites and surrounding areas could prove hazardous to wildlife and livestock and visual impacts to the farm owners. This could also lead to general environmental degradation.	Waste generation is likely to be limited on site and will primarily be domestic waste. This material will be stored properly until safe disposal off-site. Through the effective implementation of the management and mitigation measures, as described in the EMP (Section 8) the potential impacts relating to waste management can be avoided/mitigated.	Without	M	L	M	M	M	**M**	13
				With	M	L	M	L	L	**L**	
Drilling	Soils	Spillages of hydrocarbon, lubricants, or possible spills from ablution facilities leading to soil pollution	Soil loss and contamination could have an impact on grazing animals. However, the area to be disturbed is very localised and on a small-scale, and impacts can be easily mitigated.	Without	L	L	L	L	L	**L**	14
				With	L	L	L	L	L	**L**	
	Surface water	Spillages of hydrocarbon,	Given the small area to be impacted per	Without	L	L	L	L	L	**L**	15

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
		lubricants, or possible spills from ablution facilities leading to surface water contamination	hole and the lack of surface water resources (refer to section 5.5), this impact is likely to be insignificant. Mitigation measures can be found in the EMP.	With	L	L	L	L	L	**L**	
	Groundwater	Groundwater could become polluted due to pollutants entering aquifers via surface water infiltration. A number of boreholes in the area exist which are utilised by farmers	With reference to section 5.6, the Otjiwarongo Marble Aquifer (OMA) is situated approximately 10 km to the south-west of the Otjikoto Mine (with the exploration area) and supplies water to the Omarassa-Otjiwarongo Water Scheme that supplies water to the town of Otjiwarongo. This aquifer is also a sole source groundwater unit as groundwater is the only option for farmers. Should drilling activities take place in close proximity to existing water supply boreholes and/or areas with a shallow water table, the groundwater quality could be impacted. The presence of boreholes	Without	M	M	M	M	L	**M**	16
				With	L	L	L	L	L	**L**	

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
			indicates relatively shallower groundwater and/or possible fractures etc., which will expose the groundwater to potential contamination. However, given the small area affected, per hole, this impact is likely to be insignificant.								
	Air quality	Dust generation through using the access track. Air pollution from exhaust fumes. Dust generation through drilling activities	Air pollution through vehicle entrainment is expected to be negligible due to the small scale of the project.	Without	L	L	L	L	L	**L**	17
				With	L	L	L	L	L	**L**	
	Noise	Impact reference: 8									8
	Biodiversity	General disturbance to wildlife as a	Some animals are more sensitive to	Without	M	M	L	M	M	**M**	18

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
		result of noise from drilling and associated activities. Drilling contractors and employees that are not well managed can impact on the biodiversity through illegal collection of firewood, poaching, general disturbance to wildlife, road kills etc. Loss of economic function of disturbed area during drilling activities and potential loss of income from hunting.	noise disturbance than others. The noise generated from the drill rig will be relatively minor and drilling will only be conducted during the day time. Therefore, the noise impact alone will have insignificant impacts on animal behaviour in the area. The noise impact together with the potential of poaching, general disturbance of wildlife, etc. as a result of unmanaged contractors could (cumulatively) result in loss of wildlife. However, the activities are relatively small and the fact that the drilling team will not be very big, potential poaching, general disturbance and collection of firewood impacts can easily be managed through appropriate management and mitigation measures outlined in the EMP. Therefore, cumulative impacts on wildlife associated with drilling activities can be	With	L	L	L	L	L	**L**	

ACTIVITY / ASPECT	PARAMETER	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION with& without	SEVERITY	DURATION	SPATIAL	CONSEQUENC	PROBABILITY	SIGNIFICANCE	REFERENCE
			minimised or avoided with the above mentioned mitigation measures.								
	Health & safety issues	Sanitation issues relating to provision of toilet facilities	If suitable toilet facilities are not provided for the drilling team, they will relieve themselves in the environment which could lead to potential health and safety issues to 3rd parties and environmental degradation.	Without	L	L	M	L	M	**M**	19
				With	L	L	L	L	L	**L**	
Groundwater abstraction (if required)	Groundwater	Reduction in availability of groundwater	The reduction in the availability of groundwater could impact land use in the area. It is unlikely that the quantities required will impact groundwater levels. Nevertheless, impacts on groundwater in an arid area such as this could have an increased severity.	Without	M	M	M	M	M	**M**	20
				With	L	L	L	L	L	**L**	
Rehabilitate drilling and camp sites	Biodiversity	Return site to natural state. No overall impacts.	The impacted sites will be rehabilitated in accordance with the EMP requirements.	Without	N/A						21
				With	N/A						

With reference to Table 7.1, it can be seen that the activities and facilities associated with the drilling activities will have low significant impacts with mitigation, as presented in the EMP below.

8 ENVIRONMENTAL MANAGEMENT PLAN

8.1 AIMS

The aim of the Environmental Management Plan (EMP) is to detail the actions required to effectively implement mitigation and management measures. These actions are required to minimise negative impacts and enhance positive impacts associated with the drilling and associated activities.

The EMP gives the environmental commitments, which will form the basis for the contract between B2Gold and the relevant land-owners.

8.2 ACTION PLANS TO ACHIEVE OBJECTIVES

Action plans to achieve the objectives are listed in tabular format together, separated by activities. The exploration manager is ultimately responsible or the implementation of the EMP. However, all members of the exploration team are expected to understand the EMP requirements and implement them.

TABLE 8-1: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – FIELD MAPPING, GEOPHYSICAL SURVEYS, LINE CUTTING AND SOIL SAMPLING

Activity	Potential Impact	Management and Mitigation Measures
Ground survey, mapping, line cutting and soil sampling	Socio-economic	- Honour agreements set out in the site-access contracts - No new access tracks are created during mapping and soil sampling if not otherwise agreed with the land owner during the land access agreement. - No firearms are allowed - Consult and provide feedback regarding activities - Provide contact details of a designated B2Gold person, who will serve as liaison between the land owners and the exploration teams - Poaching and plant theft will not be tolerated and staff found in possession will be prosecuted - Land owner is to be provided with a list of all people working on site along with a photographic key for easy identification. - Staff will be provided with visible identification. - All staff operating on site will be provided with identification and proof that they are working for the applicant - Ensure gates are closed after entry and exit. - Scheduling/planning along with land owner - Notify land owner in advance of planned exploration activities - Include in agreement that no smoking is permitted in the veld
	Biodiversity	- No protected tree species or trees with a stem diameter over 10 cm may be cut down. - Tree removal permits will be obtained for the removal of all protected tree species (as is required by the Forestry Act) - The footprint of the area to be disturbed for surveying/mapping and for providing access to survey sites will be minimised as far as is practically possible.

Activity	Potential Impact	Management and Mitigation Measures
		- B2Gold will implement a zero tolerance policy with regards to the killing or collecting of any biodiversity. This applies to people directly employed by B2Gold as well as any contractors working on their behalf. - Employees and contractors will be shown the value of biodiversity and the need to conserve the species and systems that occur within the area. - Inform B2Gold of botanical sensitive areas, include no-go areas in the access agreements - Open fires will only be permitted in designated areas where the risk of vegetation catching on fire is minimised. - Speed limits will be enforced so as to prevent road kills. - Permits will be required for the removal of protected tree species. - No excavations will be left open overnight unless fenced off. - Consult land-owners to help identify important sites and species.
	Air quality	- Vehicle speeds will be limited to 40km/h on access routes to limit dust.
	Heritage	- Consult with land owner to identify known archaeological sites - In the event that archaeological resources are discovered, a chance find emergency procedure will be implemented which includes the following: o All work at the find will be stopped to prevent damage; o An appropriate heritage specialist will be appointed to assess the find and related impacts; and o Permitting applications will be made to the necessary authorities, if required. - In the event that any graves are discovered during the exploration activities, these will be avoided and preserved as a first priority. If damage is unavoidable, prior to damaging or destroying any identified graves, permission for the exhumation and relocation of graves must be obtained from the relevant descendants (if known) and the relevant authorities.

TABLE 8-2: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – DRILL SITE ESTABLISHMENT

Activities	Potential Impact	Management and Mitigation Measures
- Access the drill site using an existing access track where necessary - Set-up drilling machine with drip trays and groundsheets - Set-up ablution facilities - Set-up fuel and lubricants storage area - Waste management - Fire management	Air quality – dust and gaseous emissions	- The movement of drilling related vehicles on the unpaved access track will be on a small scale - Vehicle speeds will be limited to 30km/h on site near the community - Vehicles and the drilling rig will be maintained in good working order - Avoid new access route development where possible.
	Noise	- Vehicles will travel maximum 30 km/hour near communities/residents
	Biodiversity	- The footprint of the area to be disturbed for drill site establishment and camp site and for providing access to drill sites will be minimised as far as is practically possible. - B2Gold will implement a zero tolerance policy with regards to the killing or collecting of any biodiversity. This applies to people directly employed by B2Gold as well as any contractors working on their behalf. - No protected tree species or trees with a stem diameter over 10 cm may be cut down. - Tree removal permits will be obtained for the removal of all protected tree species (as is required by the Forestry Act) - Employees and contractors will be shown the value of biodiversity and the need to conserve the species and systems that occur within the project area through appropriate training. - A fire break around the drill sites and camp areas will be established. To avoid starting a fire, smoking will only be allowed in dedicated smoking areas with a sand filled drum or similar for disposal of cigarette butts and no open fires will be allowed for cooking. Food will be cooked with gas-cookers. Furthermore, a minimum of two fire extinguishers and an evacuation program will be available at each site. Zero tolerance rule will be implemented for this measure. - Speed limits will be enforced so as to prevent road kills. Honour agreements set out in the site-

Activities	Potential Impact	Management and Mitigation Measures
		access contracts, specifically relating to the areas utilised for hunting and livestock farming. - Provide appropriate toilet facilities (long drop with chloride or lime) for the drilling team on the site. - Avoid as far as possible line cutting after primary vegetating growth after the rain season.
	Land use	- Access agreements to be prepared and approved prior to drill site establishment. - The footprint of the area to be disturbed will be minimised as far as is practically possible. - Areas used as laydown areas are to be raked and/or ploughed to encourage re-vegetation
	Heritage	- In the event that archaeological resources are discovered, a chance find emergency procedure will be implemented which includes the following: o All work at the find will be stopped to prevent damage; o An appropriate heritage specialist will be appointed to assess the find and related impacts; and o Permitting applications will be made to the necessary authorities, if required. - In the event that any graves are discovered during the drilling or associated activities, these will be avoided and preserved. - An archaeological desktop assessment of all drill sites will be carried out prior to project implementation.
	Socio-economic	- Honour agreements set out in the site-access contracts - Consult with land owners and provide feedback regarding activities - Provide contact details to a designated person, who will serve as liaison between land owner and the drilling team - Land owners to be provided with a list of all people working on site - All staff operating on site will be provided with identification and proof that they are working for the drilling team
	Waste Management	- Suitable receptacles for waste disposal will be provided at appropriate locations on site. These receptacles will be clearly marked. - Employees and contractors will be shown the importance of correct waste disposal and

Activities	Potential Impact	Management and Mitigation Measures
		minimization through appropriate training. - Waste will be removed from site and disposed of at a suitable licensed waste disposal facility. - Hazardous waste (including hydrocarbon contaminated material/soil) will be disposed of at a licenced hazardous waste disposal facility.

TABLE 8-3: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – DRILLING

Activities	Potential Impact	Management and Mitigation Measures
- Exploration drilling - Contain all drilling water in the sump and allow to settle - Place drill core in core trays - Maintain ablution facilities	Contamination of soil/Hydrocarbon spillages	- In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances. - All refuelling and any maintenance of vehicles will take place with protective measures to ensure no contamination of the surface. - Pollution will be prevented through basic infrastructure design and through maintenance of equipment. - Spill kits will be readily available on site. Employees and/or contractors will be shown to use the spill kits to enable containment and remediation of pollution incidents. - B2Gold will establish environmental awareness in employees and contractors - A PVC lined sump will be used for collection of drill lubricants and silt contained in the drilling water - Any spills will be contained and cleaned up immediately - Non-toxic and biodegradable drilling lubricant will be used
	Groundwater and surface water contamination	- Refer to management measures relating to contamination of soils above - Provide appropriate toilet facilities (long drop with chloride or lime) for the drilling team on the site.
	Air quality	- Vehicle speeds will be limited to 40km/h on access routes to limit dust.

Activities	Potential Impact	Management and Mitigation Measures
	deterioration	
	Noise generation	- Vehicles will travel maximum 30 km/h near communities and residents. - Drilling will only take place during daylight hours when being carried out within 2 km of residents.
	Land use	- Refer to land use management measures relating to drill site establishment (- Table **8-3**)
	Social – provision of toilet facilities	- Provide appropriate toilet facilities (long drop with chloride or lime) for the drilling team on the site. The facility must be properly closed up at the end of the drilling activities.
Water abstraction	Groundwater quantity	- Water use licenses in terms of the Water Resource Management Act (Act No. 11 of 2013) will be obtained for any new boreholes. - Agreements to be included in contract between B2Gold and land owners for borehole use. - Water levels will be measured prior to abstraction, during abstraction (daily) and after completion. Levels will be reported to the land owners.

TABLE 8-4: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – CLOSURE AND REHABILITATION

Activities	Potential Impact	Management and Mitigation Measures
General closure activities	Groundwater and surface water contamination	- Refer to management and mitigation measures relating to water contamination in previous tables.
	Noise pollution	- Vehicles will travel maximum 30 km/h near houses/settlements.
	Contamination	- Refer to management measures relating to contamination of water (TABLE 8-4)

Activities	Potential Impact	Management and Mitigation Measures
	of soils	
	Air quality deterioration	- Vehicle speeds will be limited to 40km/h on access routes to limit dust. - The movement of drilling related vehicles on unpaved access track will be on a small scale.
	Soil erosion	- Impacted footprints are to be ripped and raked to encourage re-vegetation - A monitoring program will be implemented to establish re-vegetation progress
	Waste management	- Decommission ablution facilities - Ensure that all waste generated during activities is removed from the site and disposed of appropriately
	Land use	- The land owners will be invited to carry out site inspections following rehabilitation in order to ensure that it has been carried out suitably. - Tracks / Grids: o All newly established tracks and gridlines will be ripped. Where necessary erosion prevention barricades will be constructed. Should the land owners wish to keep the newly established track, the exploration company will leave the track, but will ensure that the erosion potential is kept at a minimum. Any newly erected gate or fence, which is not required by the farm owner or community, will be removed. - Drill Sites: o All drill sites will be cleaned and rehabilitated. All diamond drilling sumps and holes will be filled and raked. Chips recovered during RC drilling and which are not used for exploration purposes will either be buried on site, or transported and disposed at a site indicated by the land owner. - Bush camps: o All French drains and long drops will be filled and compacted. All semi-permanent structures will be removed from site. - Monitoring: o Bi-annual environmental monitoring visits will be conducted, investigating the compliance with the environmental requirements. Photos will be taken from drill sites at the beginning and rehabilitated site. Informal visits by the land owner could be

Activities	Potential Impact	Management and Mitigation Measures
		carried out, as well as formal visits with Committee Representatives and B2Gold Management as per the requirements of the land-owners.

9 WAY FORWARD

9.1 WAY FORWARD FOR THE SCOPING REPORT

The way forward for the scoping phase is as follows:

- Submit the final Scoping Report (with comments) and EMP to MET.
- MET review the Scoping Report and EMP and provide record of decision

10 CONCLUSION

The environmental aspects associated with the ongoing exploration activities have been successfully identified and assessed as part of this EIA Scoping process. Relevant mitigation measures have been provided and are included in the EMP that accompanies this scoping report.

SLR believes that a thorough assessment of the proposed project has been achieved and that the environmental clearance certificate could be renewed on condition that the management and mitigation measure in the EMP be adhered to.

Simon Charter	**Nadine Soutschka**	**Werner Petrick**
(Project Manager)	**(Project Assistant)**	**(Reviewer)**

11 REFERENCES

Environmental Information Service Namibia. 2002. Shapefile data.

Mannheimer, C.A. and Curtis, B.A. (eds) 2009. Le Roux and Müller's Field Guide to the Trees and Shrubs of Namibia. Windhoek: Macmillian Education Namibia.

Mendelsohn, J; Jarvis, A; Roberts, C; Robertson, T. 2010. Atlas of Namibia- A portrait of the land and its people. Sunbird Publishers. Reprint of 3rd edition, Cape Town, South Africa

SLR. 2014. Water boreholes in the Mangetti Duin and western Daneib areas

SLR. 2012. Otjikoto Gold Mine EIA.

APPENDIX A: ENVIRONMENTAL CLEARANCE CERTIFICATES AND RECENT BI-ANNUAL REPORTS

APPENDIX B: BACKGROUND INFORMATION DOCUMENT

APPENDIX C: INTERESTED AND AFFECTED PARTIES DATABASE

APPENDIX D: NEWSPAPER ADVERTISEMENTS

APPENDIX E: PICTURE OF SITE NOTICE

APPENDIX F: FOCUS GROUP MINUTES AND COMMENTS RECEIVED

APPENDIX G: ISSUES AND RESPONSE REPORT

APPENDIX H: CURRICULUM VITAE

RECORD OF REPORT DISTRIBUTION

SLR Reference:	734.01023.00021:
Title:	Scoping (Including Assessment) Report and EMP for Exploration Activities on EPL 2410 and 4309- Renewal Application
Report Number:	Report No.: 1
Proponent:	B2Gold Namibia (Pty) Ltd

Name	Entity	Format	Date issued	Issuer

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REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT AND TOURISM

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Enquiries: Ms. Saima Angula

OFFICE OF THE PERMANENT SECRETARY

Auryx Gold Namibia (Pty) Ltd
P.O. Box 80363
Windhoek
Namibia

Dear Sir / Madam

ENVIRONMENTAL CLEARANCE FOR EXCLUSIVE PROSPECTING LICENCE 4309 SITUATED IN OTJIWARONGO DISTRICT, OTJOZONDJUPA REGION

We acknowledge receipt of all the necessary documents, which constitute the Environmental Contract between you and the Government of the Republic of Namibia.

On the basis of these documents, we are satisfied that you have provided sufficient commitment to limit unnecessary environmental impacts for the duration of your exploration activities.

We trust that you will adhere to the conditions in the Environmental Contract, and this Ministry hereby gives you Environmental Clearance on the basis of, inter alia these conditions.

Yours sincerely,

Dr. Kalumbi Shangula
Permanent Secretary

Ministry of Environment & Tourism
22 AUG 2011
Office of the
DEPUTY PERMANENT
SECRETARY
REPUBLIC OF
NAMIBIA

ENVIRONMENTAL REPORT (ER)
(Mineral Licence Holders)
EPL4309

INSTRUCTIONS:

1. An Environmental Report shall be submitted to the Ministry of Environment and Tourism (MET) by the following dates each year: -

December to June and from June to December (biannually)

2. This form shall be the minimum reporting format. Mineral Licence Holders are expected to attach a map of the area to this report. Mineral Licence Holders are welcome to attach any other information they like, such as copies of new agreements, letters of explanation, aerial photographs, or anything else of interest.

3. The map shall be used to indicate the following:

* areas where activities has taken place,
* roads or tracks made and/or used,
* houses and other infrastructure erected,
* excavations or other scars that have been rehabilitated,
* conflict areas, etc….

4. It is recommended (but not compulsory) that Holders attach photographs to their report, which visually illustrate the activities described in their report.

5. Failure to submit an Environmental Report shall constitute a breach of the Environmental Contract, which could result in steps taken against the Holder.

6. All information contained in the Environmental Report shall be treated as confidential.

7. The Holder shall ensure that all the information recorded in the Environmental Report is, to their best knowledge, accurate and correct.

Completed Environmental Reports should be sent to:

The Permanent Secretary
Ministry of Environment and Tourism
Private Bag 13306
Windhoek

For Attention: Ms. C. Claassen

A. HOLDER DETAILS AND REPORTING PERIOD:

Name of Holder: B2Gold Namibia (Pty) Ltd.

Address of Holder: 20 Nachtigal Street, PO Box 80363, Windhoek, Namibia

Telephone: 067 306518 Fax number: 61 416 499 cell: 081 2089319
E-mail: vpetzel@b2gold.com

Name of person compiling report: Volker Petzel

Reference number(s) of Mining Claim area / block / license: EPL 4309

Geographical location of area / block / license: Otjiwarongo District / Otjozondjupa Region

This report is for the period of: (tick the relevant box and fill in the year)

☒ **January - June 2015**
☐ **July - December 2015**

Other (please specify) ……

B. POLLUTION AND WASTE

Has all domestic refuse (eg. Household waste, bottles, tins, paper, plastic, etc) been removed from the mining claim area? **Yes** ☒ **no** ☐

If "yes" above, specify the site where such refuse has been deposited: Otjiwarongo Municipal waste site

How often is refuse removed to the site mentioned above? :
every week ☐
every two weeks ☐
every three weeks ☐
once a month ☐
at irregular intervals ☒

If refuse has not been removed, where has it been dumped?

As far as litter is concerned, would you describe your mineral licence area as : **Very clean** ☒ **Reasonably clean** ☐ **Filthy** ☐

If your mineral licence area is littered with refuse, please indicate how you intend cleaning it up :
……

Are toilets provided for all staff employed by the holder : **yes** ☒ **no** ☐

If "yes" above, are they : **Flush toilets** ☐ **Chemical Toilets** ☐ **Pit Latrines** ☒ **Other** ☐

If chemical toilets are used, how are old chemicals disposed of :
Deposited in evaporation ponds ☐ **Deposited in a municipal refuse dump** ☐
Buried on site ☐ **Other (specify)** ☐

C. VEHICLES AND EARTHMOVING EQUIPMENT

Indicate the types and number of vehicles and earthmoving equipment used on site during the reporting period (tick box in front of the category of vehicles used and then fill in the next boxes to indicate numbers)

☒	**Pick-up trucks ("bakkies"), either 2x4 or 4x4**	**How many in use 3**
☐	**Lorries / trucks between 5 - 10 ton capacity**	**How many in use**
☐	**Lorries / trucks larger than 10 ton capacity**	**How many in use** ☐☐
☐	**Bulldozer of any size**	**How many in use 0**
☐	**Road Grader of any size**	**How many in use** ☐☐
☐	**Front-end loader of any size**	**How many in use** ☐☐
☐	**Drilling machine of any type**	**How many in use**
☐	**Other (specify) …….**	**How many in use** ☐☐

D. ROADS AND TRACKS *In addition to ticking the following boxes, please draw roads/tracks made on an accompanying map in blue ink. Roads which have been rehabilitated (ie. restored to their natural state) can be scratched out in red pen.*

Have new roads or tracks been made during the reporting period ? yes ☐ no ☒

If "yes" above how long are these (in kilometres) ?

If "yes" above are these still in use ? yes ☐ no ☐

If "no" above have any of these roads or tracks been rehabilitated ? yes ☐ no ☐

If "yes" above, how have you done such rehabilitation ? : Ripping ☐ Raking ☐ sweeping ☐
Other (specify) ☐……

If road / track rehabilitation has taken place, how many kilometres of roads or tracks have been rehabilitated ? ☐☐☐ kilometres

E. TRENCHES OR PITS: *If new trenches or pits were made in the site / area during the reporting period, please indicate these by ticking the appropriate boxes AND by means of illustrating them on the same map described above. New pits or trenches made, should be numbered and drawn as a CIRCLE in blue ink, while pits or trenches which were rehabilitated during the reporting period should be scratched out in RED ink.*

Have new trenches or pits been excavated in your area during the reporting period ? yes☐ no☒

If "yes" above, what are their approximate sizes or dimensions ? (in metres)

1. Trench / pit No. : Size / dimensions : length breath depth

Were any holes/trenches rehabilitated during this period of reporting ? yes☐(show on map) no☐

F. INFRASTRUCTURAL DEVELOPMENT

Infrastructural Developments means any offices, houses, sheds, cement slabs, or other buildings or foundations for buildings. It also includes storage tanks (for water, fuel or other substances), temporary housing such as mobile homes & caravans, prefab units and tented camps. Please report on new construction or additions to buildings you reported on, in your previous Environmental Report.

Was any NEW infrastructure established during this period ? yes ☐ No ☒
If "yes" above, is this infrastructure : Permanent ☐ Temporary ☐ A combination ☐

Describe infrastructure by ticking boxes : Offices ☐ Housing ☐ Sheds ☐
Prefab structure ☐ Garages ☐ Storage tanks ☐
Cement slabs ☐ Foundations ☐ Other ☐
If "other", please specify : ……..

G. BOREHOLES, SAMPLE HOLES OR OTHER DRILLING

This category includes holes drilled for water, for taking mineral or other samples, for setting explosives, for testing mineral quality, or any other purpose.

Were any holes drilled during this period ? yes ☐ no ☒

If "yes", for which purpose were they drilled ? Water ☐ depth ☐☐☐ Quantity ☐☐
Sampling ☐ depth ☐☐☐ Quantity ☐☐☐
Explosives ☐ depth ☐☐☐ Quantity ☐☐☐

Other ☐ **(specify) ……** depth Quantity

H. WATER

Your estimated <u>monthly</u> water consumption during this period was : 0 cubic metres

Water was obtained from : River☐ Borehole☐ Dam☐ Water Affairs☐ Other ☐
Reservoir/pond

Please estimate the percentage of water used for the following activities during this period:

Human consumption	**0 %**
Toilets	☐☐ %
Prospecting activities	**0%**
Washing vehicles & equipment	☐☐ %
Dust control	☐☐ %
Building activities	☐☐ %
Gardens	☐☐ %
Recreation	☐☐ %
Other (specify)	☐☐ %

Were there any accidents which caused a loss of water ? yes ☐ no ■

If "yes", please give details
:……..
……

I. PROTECTION OF FAUNA AND FLORA

Please answer the following questions by ticking the appropriate boxes :

Question :	Yes	No	Unsure
Were any mammals, birds, reptiles or fish killed or wounded (purposefully or accidentally) in the mining claim site or area ?	☐	☒	☐
Were any plants (excluding grasses) picked, damaged or removed ?	☐	☒	☐
Was there any wood collecting in the area ?	☐	☒	☐

J. RELATIONS WITH NEIGHBOURS, OFFICIALS AND/OR THE GENERAL PUBLIC

Were there any conflicts with neighbours, land-owners, Government Officials or the public during this period ? Yes ☐ No ☒

If "yes" above, what was the nature of these conflicts ? (tick boxes to provide answers)

People entered the area without permission or prior arrangement	☐
Complaints about reduced access to water or other resources	☐
Complaints about danger posed to livestock or wildlife	☐
Allegations about stock-theft or poaching	☐
Complaints about vehicle or equipment movement on access roads / tracks	☐
Complaints about litter or other types of pollution (eg. Noise, dust, etc.)	☐
Complaints about the activities / actions of Holder staff	☐
Allegations that the Holder was not adhering to contracts / agreements	☐
Allegations that the Holder damaged property or installations	☐
Allegations that gates were left open or unlocked	☐
Other (specify)	☐

If conflicts arose, indicate how these were resolved ? (tick boxes)

Verbal agreement after discussions……	☐
Written agreement by special contract……	☐
Instructions to Holder staff to avoid conflicts……..	☐
Holder rectified its mistakes and undertook to avoid future wrong-doing..	☐
Court action or other third party arbitration……	☐
Other (specify) ……..	☐
The conflicts remain unsolved……...	☐

Any other comments or information :

The farm Houmoed 95 has been de-bushed by the farmer, and therefore there is no need to cut sampling lines, and Geochemical sample positions are determined by GPS. Geochemical samples are taken from surface at a depth of about 2cm, at a sampling interval of 40m (see figure 2). A total of 448 samples were collected on this farm during the reporting period.
The relationship with the commercial farmer Mr. Liebenberg can be described as very good. An access agreement with him is in place

……..

See next page for more space for "additional comments"……

Additional comments continued ……

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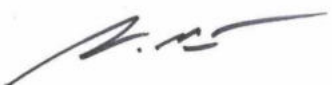
I declare that the information provided in this Environmental Report is, to the best of my knowledge, accurate and correct.



17th July 2015

…… …… **……..**

Holder **Date**

Regional Exploration Manager

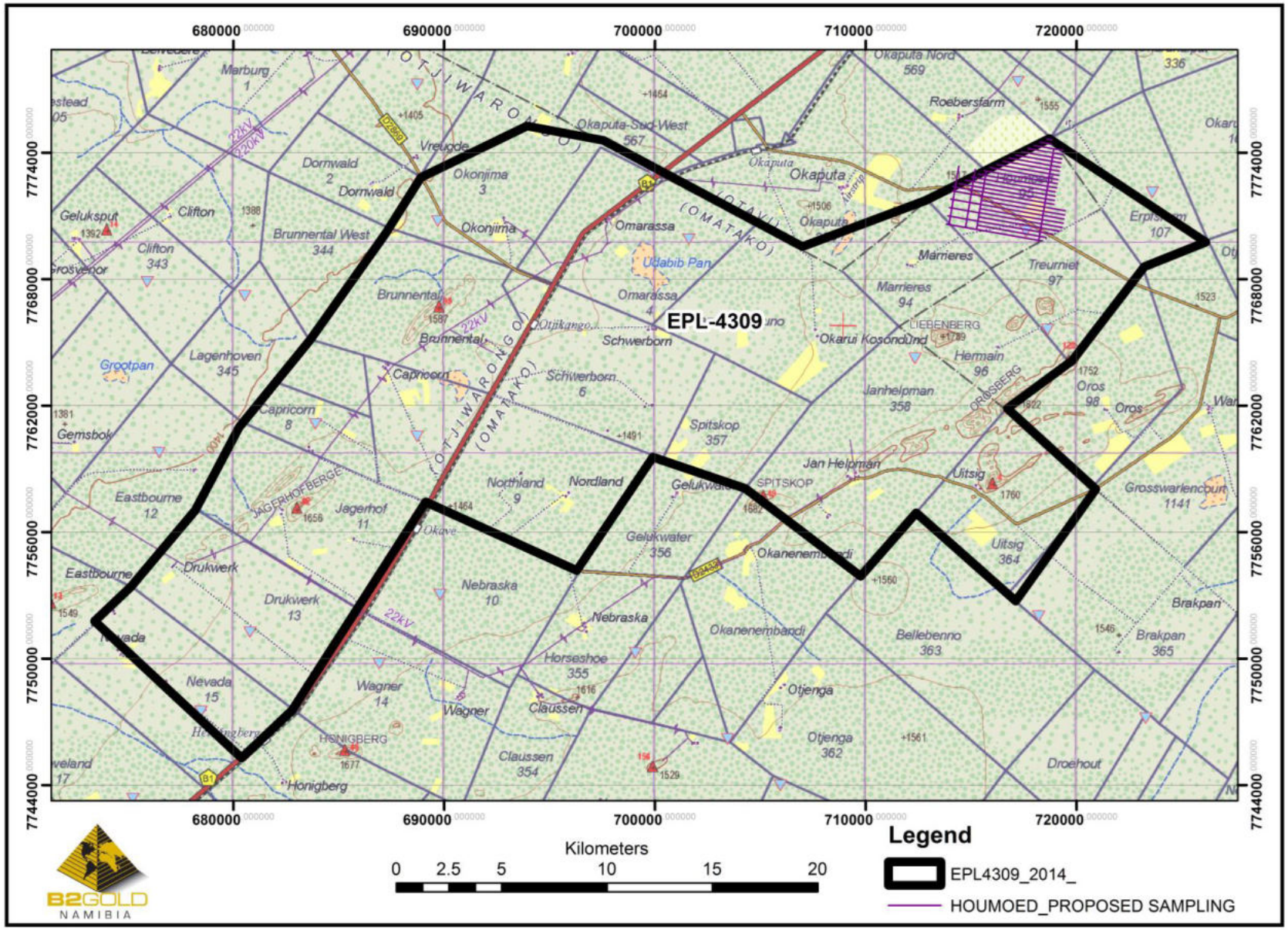


Figure 1: EPL4309 locality plan and also indicating proposed sampling grid on the farm Houmoed 95

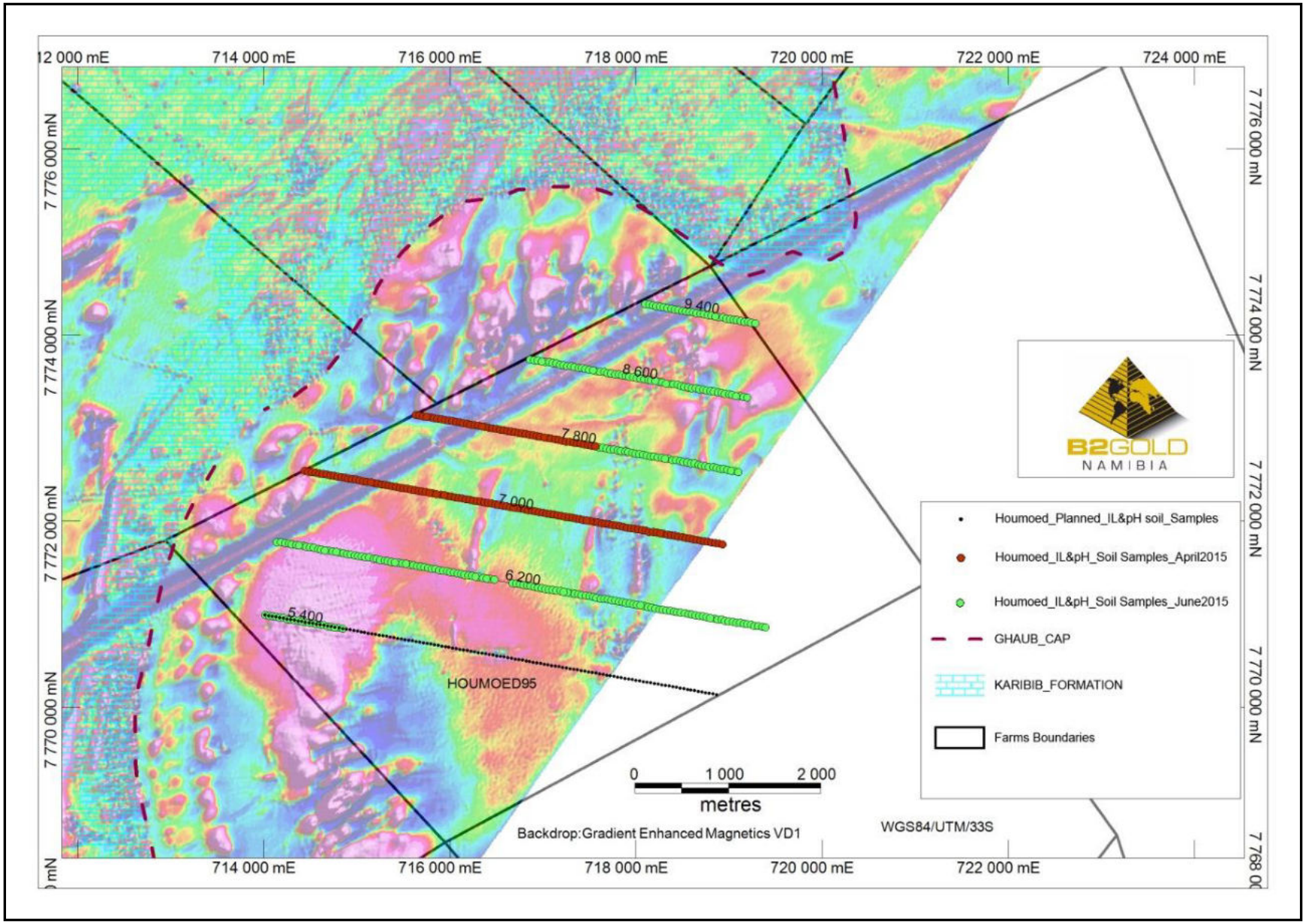


Figure 2: Locality plan of geochemical samples taken on the farm Houmoed 95 / EPL4309 during the period of reporting

ENVIRONMENTAL REPORT (ER)
(Mineral Licence Holders)
EPL 2410

INSTRUCTIONS:

1. An Environmental Report shall be submitted to the Ministry of Environment and Tourism (MET) by the following dates each year: -

December to June and from June to December (biannually)

2. This form shall be the minimum reporting format. Mineral Licence Holders are expected to attach a map of the area to this report. Mineral Licence Holders are welcome to attach any other information they like, such as copies of new agreements, letters of explanation, aerial photographs, or anything else of interest.

3. The map shall be used to indicate the following:

* areas where activities has taken place,
* roads or tracks made and/or used,
* houses and other infrastructure erected,
* excavations or other scars that have been rehabilitated,
* conflict areas, etc….

4. It is recommended (but not compulsory) that Holders attach photographs to their report, which visually illustrate the activities described in their report.

5. Failure to submit an Environmental Report shall constitute a breach of the Environmental Contract, which could result in steps taken against the Holder.

6. All information contained in the Environmental Report shall be treated as confidential.

7. The Holder shall ensure that all the information recorded in the Environmental Report is, to their best knowledge, accurate and correct.

Completed Environmental Reports should be sent to:

The Permanent Secretary
Ministry of Environment and Tourism
Private Bag 13306
Windhoek

For Attention: Ms. C. Claassen

A. HOLDER DETAILS AND REPORTING PERIOD :

Name of Holder: B2Gold Namibia (Pty) Ltd.

Address of Holder: 20 Nachtigal Street, PO Box 80363, Windhoek, Namibia

Telephone: 067 306518 Fax number: 61 416 499 cell: 0812089319
E-mail: vpetzel@b2gold.com

Name of person compiling report: Volker Petzel

Reference number(s) of Mining Claim area / block / licence: EPL2410

Geographical location of area / block / license: Grootfontein District, Otjozondjupa Region

This report is for the period of: (tick the relevant box and fill in the year)

☒ **January - June 2015**
☐ **July - December 2015**

Other (please specify) ……

B. POLLUTION AND WASTE

Has all domestic refuse (eg. Household waste, bottles, tins, paper, plastic, etc) been removed from the mineral licence area? **Yes** ☒ **no** ☐

If "yes" above, specify the site where such refuse has been deposited: Otjiwarongo Municipal waste site

How often is refuse removed to the site mentioned above? :
every week ☐
every two weeks ☐
every three weeks ☐
once a month ☐
at irregular intervals ☒

If refuse has not been removed, where has it been dumped?

As far as litter is concerned, would you describe your mineral licence area as : **Very clean** ☒ **Reasonably clean** ☐ **Filthy** ☐

If your mineral licence area is littered with refuse, please indicate how you intend cleaning it up :
……

Are toilets provided for all staff employed by the holder : **yes** ☒ **no** ☐

If "yes" above, are they : **Flush toilets** ☐ **Chemical Toilets** ☐ **Pit Latrines** ☒ **Other** ☐

If chemical toilets are used, how are old chemicals disposed of :
Deposited in evaporation ponds ☐ **Deposited in a municipal refuse dump** ☐
Buried on site ☐ **Other (specify)** ☐

C. VEHICLES AND EARTHMOVING EQUIPMENT

Indicate the types and number of vehicles and earthmoving equipment used on site during the reporting period (tick box in front of the category of vehicles used and then fill in the next boxes to indicate numbers)

☒	**Pick-up trucks ("bakkies"), either 2x4 or 4x4**	**How many in use 5**
☐	**Lorries / trucks between 5 - 10 ton capacity**	**How many in use 0**
☐	**Lorries / trucks larger than 10 ton capacity**	**How many in use ☐☐**
☐	**Bulldozer of any size**	**How many in use 0**
☐	**Road Grader of any size**	**How many in use ☐☐**
☒	**Front-end loader of any size**	**How many in use 1**
☒	**Drilling machine of any type**	**How many in use 1**
☐	**Other (specify) …….**	**How many in use ☐☐**

D. ROADS AND TRACKS *In addition to ticking the following boxes, please draw roads/tracks made on an accompanying map in blue ink. Roads which have been rehabilitated (ie. restored to their natural state) can be scratched out in red pen.*

Have new roads or tracks been made during the reporting period ? yes ☒ no ☐
sampling lines

If "yes" above how long are these (in kilometres) ? 14 km

If "yes" above are these still in use ? yes ☒ no ☐

If "no" above have any of these roads or tracks been rehabilitated ? yes ☐ no ☐

If "yes" above, how have you done such rehabilitation ? : Ripping ☐ Raking ☐ sweeping ☐
Other (specify) ☐……

If road / track rehabilitation has taken place, how many kilometres of roads or tracks have been rehabilitated ? ☐☐☐ kilometres

E. TRENCHES OR PITS: *If new trenches or pits were made in the site / area during the reporting period, please indicate these by ticking the appropriate boxes AND by means of illustrating them on the same map described above. New pits or trenches made, should be numbered and drawn as a CIRCLE in blue ink, while pits or trenches which were rehabilitated during the reporting period should be scratched out in RED ink.*

Have new trenches or pits been excavated in your area during the reporting period ? yes☐ no☒

If "yes" above, what are their approximate sizes or dimensions ? (in metres)

Were any holes/trenches rehabilitated during this period of reporting ? yes☐(show on map) no☐

F. INFRASTRUCTURAL DEVELOPMENT

Infrastructural Developments means any offices, houses, sheds, cement slabs, or other buildings or foundations for buildings. It also includes storage tanks (for water, fuel or other substances), temporary housing such as mobile homes & caravans, prefab units and tented camps. Please report on new construction or additions to buildings you reported on, in your previous Environmental Report.

Was any NEW infrastructure established during this period ? yes ☐ No ☒
If "yes" above, is this infrastructure : Permanent ☐ Temporary ☐ A combination ☐

Describe infrastructure by ticking boxes : Offices ☐ Housing ☐ Sheds ☐
Prefab structure ☐ Garages ☐ Storage tanks ☐
Cement slabs ☐ Foundations ☐ Other ☐
If "other", please specify : ……..

G. BOREHOLES, SAMPLE HOLES OR OTHER DRILLING

This category includes holes drilled for water, for taking mineral or other samples, for setting explosives, for testing mineral quality, or any other purpose.

Were any holes drilled during this period ? yes ☒ no ☐

If "yes", for which purpose were they drilled ? Water ☐ depth ☐☐☐ Quantity ☐☐
Sampling ☒ depth 20m Quantity 113
Explosives ☐ depth ☐☐☐ Quantity ☐☐☐

Other ☐ **(specify)**

H. WATER

Your estimated monthly water consumption during this period was : 5 cubic metres

Water was obtained from : River☐ Borehole☒ Dam☐ Water Affairs☐ Other ☐

Please estimate the percentage of water used for the following activities during this period:

Human consumption	**40 %**
Toilets	☐☐ %
Prospecting activities	**60 %**
Washing vehicles & equipment	☐☐ %
Dust control	☐☐ %
Building activities	☐☐ %
Gardens	☐☐ %
Recreation	☐☐ %
Other (specify)	☐☐ %

Were there any accidents which caused a loss of water ? yes ☐ no ■

If "yes", please give details
……..
……

I. PROTECTION OF FAUNA AND FLORA

Please answer the following questions by ticking the appropriate boxes :

Question :	Yes	No	Unsure
Were any mammals, birds, reptiles or fish killed or wounded (purposefully or accidentally) in the mining licence site or area ?	☐	☒	☐
Were any plants (excluding grasses) picked, damaged or removed ?	☐	☒	☐
Was there any wood collecting in the area ?	☐	☒	☐

J. RELATIONS WITH NEIGHBOURS, OFFICIALS AND/OR THE GENERAL PUBLIC

Were there any conflicts with neighbours, land-owners, Government Officials or the public during this period ? Yes ☐ No ☒

If "yes" above, what was the nature of these conflicts ? (tick boxes to provide answers)

- People entered the area without permission or prior arrangement ☐
- Complaints about reduced access to water or other resources ☐
- Complaints about danger posed to livestock or wildlife ☐
- Allegations about stock-theft or poaching ☐
- Complaints about vehicle or equipment movement on access roads / tracks ☐
- Complaints about litter or other types of pollution (eg. Noise, dust, etc.) ☐
- Complaints about the activities / actions of Holder staff ☐
- Allegations that the Holder was not adhering to contracts / agreements ☐
- Allegations that the Holder damaged property or installations ☐
- Allegations that gates were left open or unlocked ☐
- Other (specify)…… ☐

If conflicts arose, indicate how these were resolved ? (tick boxes)

- Verbal agreement after discussions…… ☐
- Written agreement by special contract…… ☐
- Instructions to Holder staff to avoid conflicts…….. ☐
- Holder rectified its mistakes and undertook to avoid future wrong-doing.. ☐
- Court action or other third party arbitration…… ☐
- Other (specify) …….. ☐
- The conflicts remain unsolved……... ☐

Any other comments or information :

A shallow RAB (percussion) drilling programme (20m maximum depth) is currently conducted on a grid on the farms Egue 578 and Ego 579 (see map figures 1and 2 for locality). Geochemical soil sampling lines were cut (14km) by means of a frontend loader (where there are no fence lines available). Soil samples were taken at 40m interval from surface, at a depth of 2cm, along the lines (for locality see attached map figure 3).
The relationship with the farmers can be described as very good.

See next page for more space for "additional comments"……

Additional comments continued ……

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I declare that the information provided in this Environmental Report is, to the best of my knowledge, accurate and correct.

16th July 2015

…… **……..**

Holder **Date**

Regional Exploration Manager

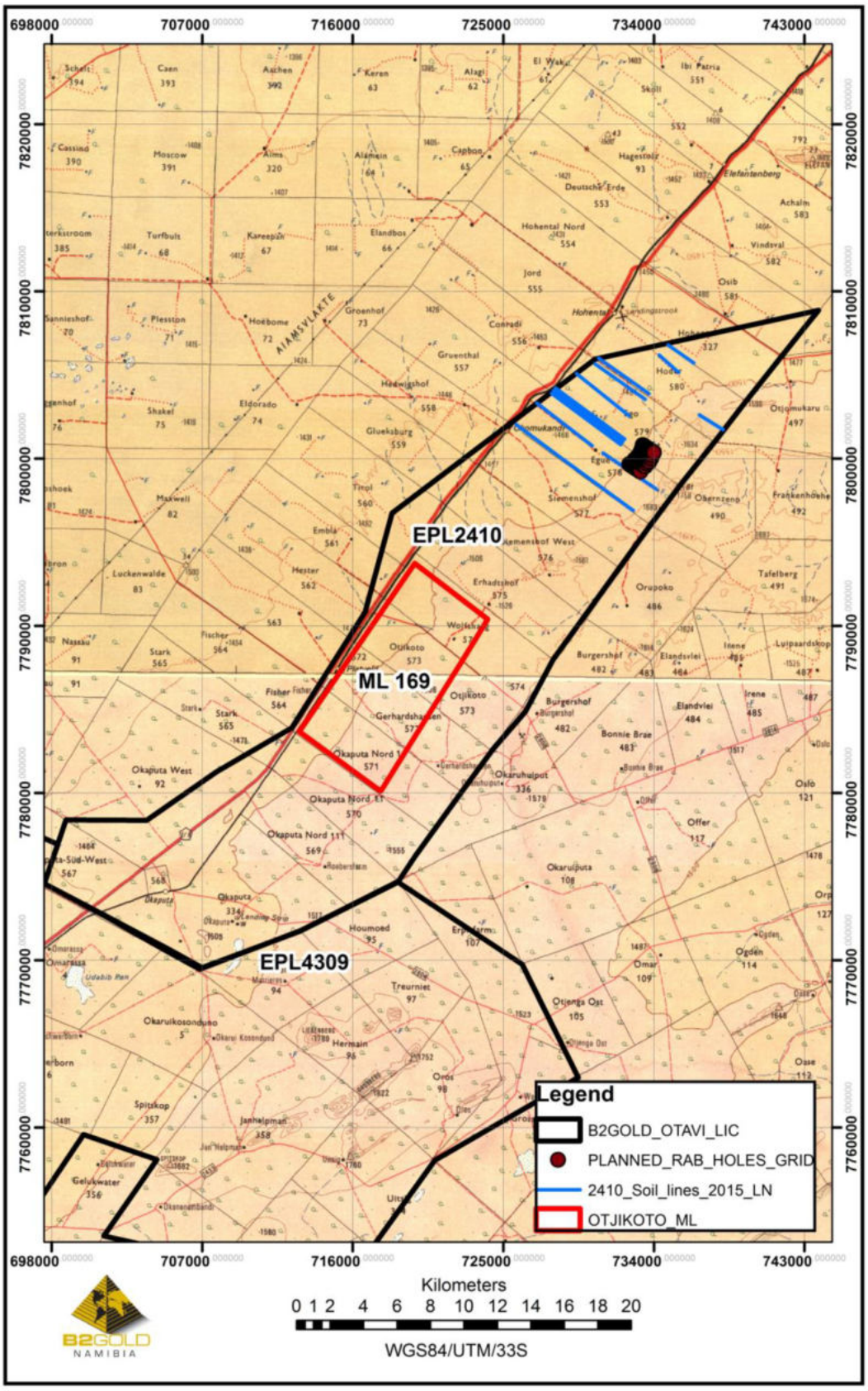


Figure 1: Locality plan of EPL2410, indicating exploration conducted during reporting period.

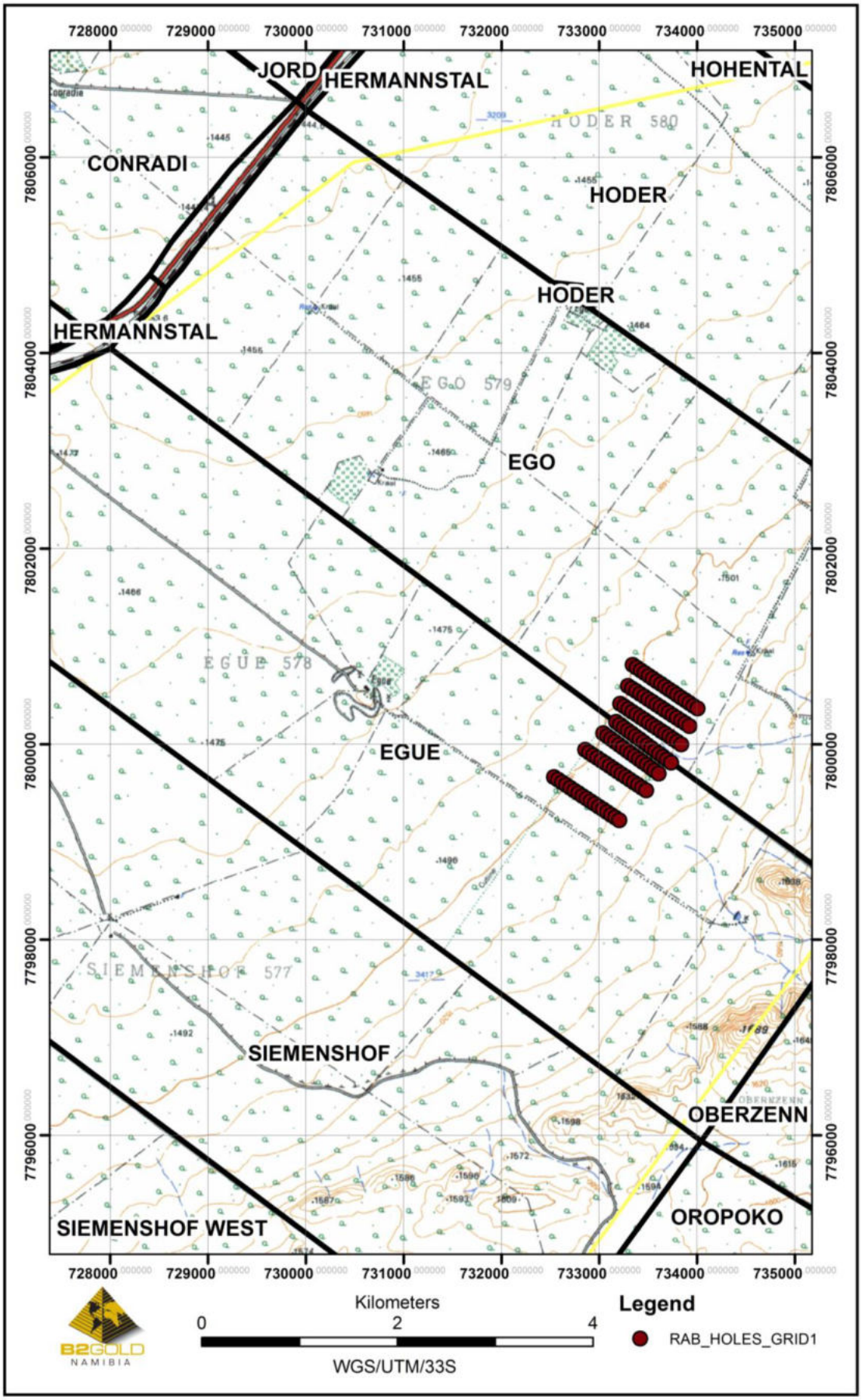


Figure 2: Locality plan of RAB holes.

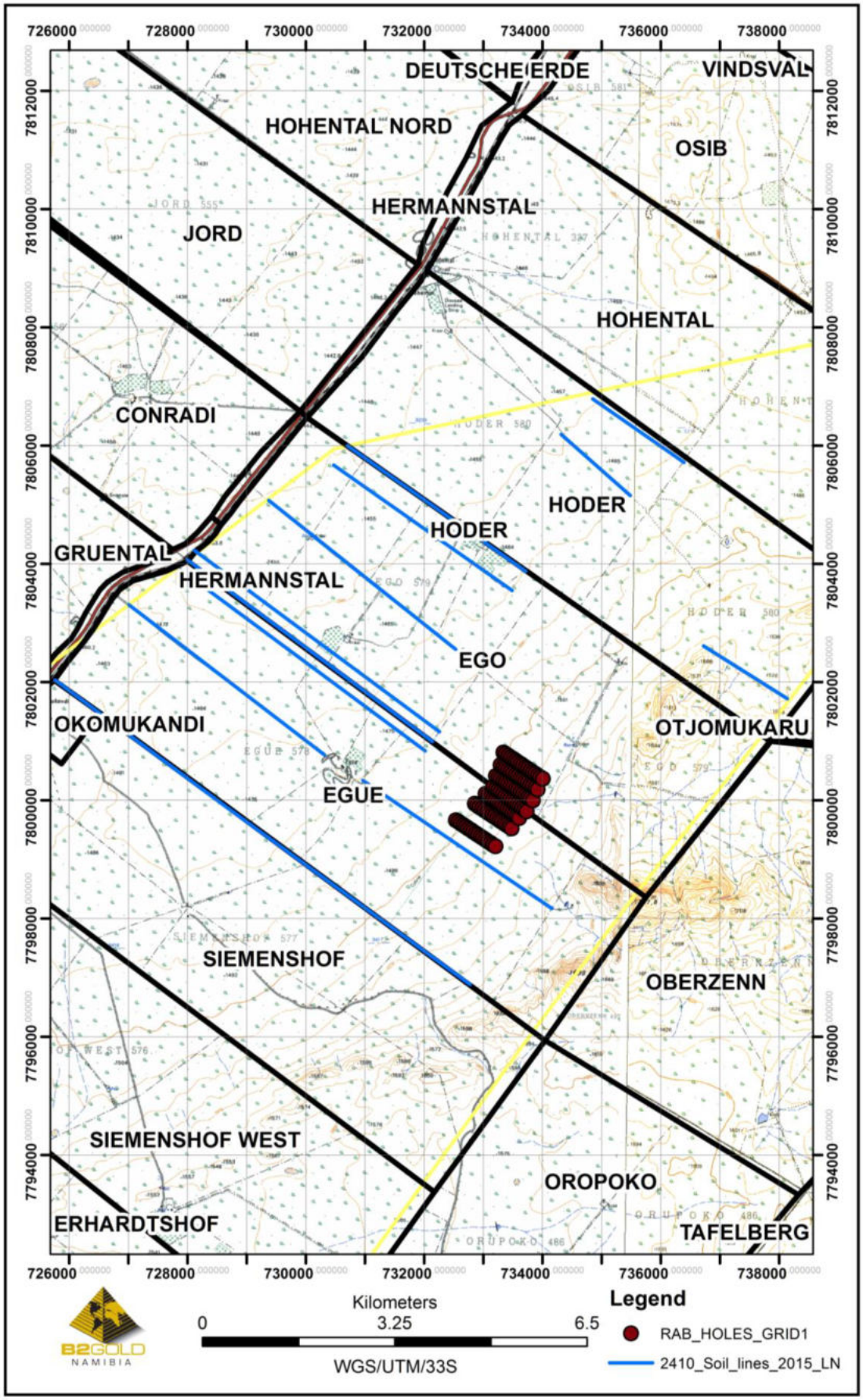


Figure 3: geochemical soil sampling localities (blue lines)

B2GOLD'S EXPLORATION ACTIVITIES ON EPLS 2410 and 4309

INTRODUCTION

B2Gold Namibia (Pty) Ltd (B2Gold) is currently conducting comprehensive exploration programs over Exclusive Prospecting License (EPL) 2410 and 4309 for precious metals, base and rare metals and industrial minerals. B2Gold would like to renew the environmental clearance certificates for the existing exploration activities on the above-mentioned EPLs.

The EPLs are located in the Otjozondjupa Region between Otjiwarongo and Otavi. Please see the Map for an indication of the locations of the EPLs.

ENVIRONMENTAL APPROVALS

An EIA Scoping process will be conducted as part of the renewal process. Separate applications for environmental clearance certificates will be submitted to the Ministry of Environment and Tourism (Environmental Commissioner) in terms of the Environmental Management Act, 7 of 2007 for the activities associated with each EPL.

DESCRIPTION OF THE PROJECT

NATURE OF ACTIVITIES

B2Gold is currently conducting comprehensive exploration programs over the EPLs for precious metals, base and rare metals and industrial minerals. The following activities have already been undertaken on the EPLs:

	EPL 2410	**EPL 4309**
Line cutting	133.8km	55km
Ionic leach sampling	1919 samples taken	972 samples taken
pH soil sampling	1919 samples taken	972 samples taken
Soil sampling (hand auger drill)	3300 samples taken	2739 samples taken
Diamond drilling	12 holes drilled (about 150m each)	6 holes drilled (each about 150m deep)
RAB drilling	360 holes drilled (maximum depth 20m)	-

The following activities are still to take place:

Follow-up ground work	Line cutting, line surveying, geochemical and geophysical surveys over selected geophysical anomalies. Line cutting will only start after the consent of the farmer is obtained
Reverse Circulation (RC) drilling and Diamond Drilling to test delineated anomalies	Access tracks to the drill sites will be kept at a minimum and where possible, the existing grid lines will be used. The farmers will be informed on the locality of the drill sites before drilling starts. If required the drill sites will be fenced off for the duration of the drill activities until rehabilitation has been carried out. Drip pans and / or oil absorbent mats will be placed under the drilling rig to contain oil and fuel spills. The water sumps needed for the Diamond drilling will be lined with PVC to minimise the water loss. All drill sites and access tracks will be rehabilitated.

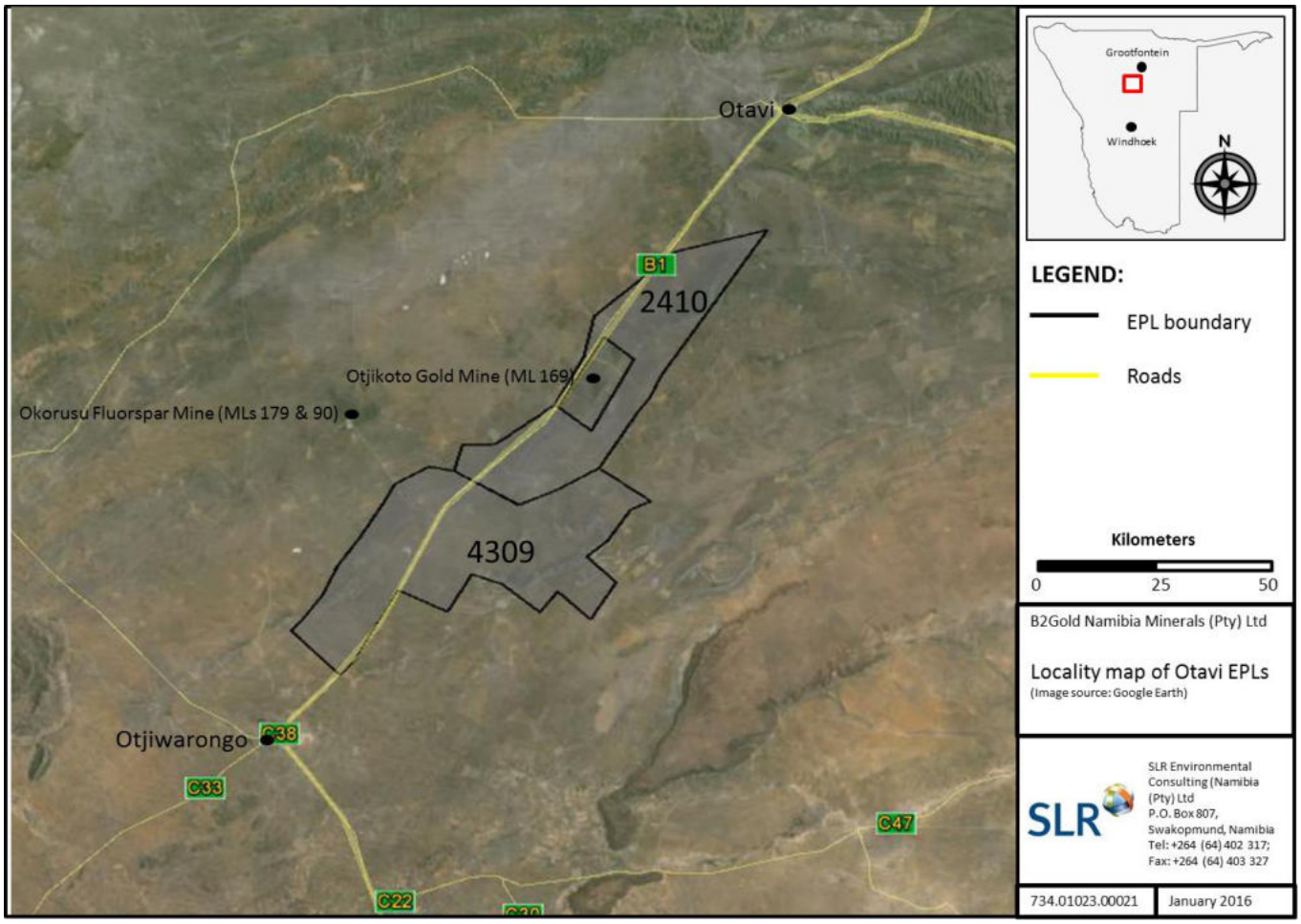
It is anticipated that the following personnel will be employed to carry out the above-mentioned activities:

Number of persons to be employed	**The work they will do**
20	Exploration activities
6 per drilling rig	Diamond drilling / RC drilling
5	RAB drilling

The following vehicles and machinery will be utilised:

Vehicles	Toyota Land Cruiser 4x4 2 - 3
Drilling equipment	Diamond drilling rig 1- 3, Truck mounted RC rig 1
Support vehicles	Water trucks and supporting vehicles 6x6 2-6
Construction Vehicle	Frontend loader for dozing roads and sampling lines

LOCALITY MAP



HOW TO RESPOND

If you would like your comments to be addressed in the EIA scoping report please submit them by 3 February 2016.

WHO TO CONTACT

Simon Charter: Email: scharter@slrconsulting.com

Tel: +264 64 402 317
Fax: +264 64 403 327

Appendix C – IAP database

EPL 4309

	FARM	OWNER
1	Nevada	Min of Lands & R
2	Drukwerk	Anita & Hector Jooste
3	Jaegerhof	Louis Pienaar Jehova's Witnesses
4	Capricorn	Sigi & Anneline Haeniche
5	Brunnental Ged i	Lukas Malakia Gerhard Steyn Kilo 40
6	Okonjima	Johan en joan botha vir Haib Bonsmaras?
7	Omarassa	Piet Schrader
8	Schwerborn	ditto
9	Northland	Carl-Dieter Gerhardt
10	Spitskop	Frans Indonga Alf Walter
11	Okaruikosonduno	
12	Janhelpman	Cheetah Conservation Fund
13	Uitsig	Jörg Diekmann
14	Hermain	HD Mbumba
15	Marrieres	Jan Fourie
16	Treurniet	HD Mbumba
17	Houmoed	Fielies Liebenberg
18	Erpfsfarm	Lukas Malakia
	Otjenga	Hans Erpf

EPL 2410

	FARM	OWNER
1	Okaputa	Jan Fourie
2	Okaputa Südwest	Min of Lands & R
4	Okaputa West	Min of Lands & R
5	Roebersfarm	Jochen Roeber Pieter Gouws
6	Okaputa Nord ii	
7	Felsenquelle	B2Gold
8	Gerhardshausen	B2Gold
9	Otjikoto	B2Gold
10	Wolfshag	B2Gold
11	Embla	Paul Smit Jr
12	Tirol	Elke de Fries
13	Glücksburg	Elke de Fries
14	Erhardshof	B2Gold
15	Siemenshof West	Chicco
16	Siemenshof	Petrus Enkali
17	Egue	
18	Ego	
19	Hoder	Matthew Shilungu
20	Hohental	Matthew Shilungu
21	Osib	Mr Nashandi

SLR

ENVIRONMENTAL IMPACT ASSESSMENT RENEWAL PROCESS FOR B2GOLD'S EXPLORATION ON EXCLUSIVE PROSPECTING LICENCES (EPLs) 2410, 4309, 4277, 4278, 4279, 4280 AND 4314

B2Gold herewith give notice in terms of the Environmental Management Act, 7 of 2007 and Regulation 21 of the environmental impact assessment (EIA) Regulations (January 2012), of renewing the environmental clearance certificates for the existing exploration activities on the above-mentioned EPLs.

Two separate EIA Scoping processes will be conducted as part of the renewal process (grouped according to region). The first will be for EPLs 2410 and 4309 (Otavi Licences) and the second for EPLs 4277, 4278, 4279, 4280 and 4314 (Gunib Licences). Separate applications for environmental clearance certificates will be submitted to the Ministry of Environment and Tourism (Environmental Commissioner) in terms of the abovementioned regulations for the activities associated with each EPL. This advertisement is the start of the EIA public participation processes.

Name of proponents
B2Gold Namibia Minerals (Pty) Ltd (Gunib Licences) & B2Gold Namibia (Pty) Ltd (Otavi Licences)

Description/nature of activities
B2Gold is currently conducting comprehensive exploration programs over the EPLs for precious metals, base and rare metals and industrial minerals.

Location of the EPL areas
- Otavi Licences:
  - EPLs 2410 and 4309: Otjozondjupa Region between Otjiwarongo and Otavi
- Gunib Licences:
  - EPL 4277, 4278, 4279, 4280 and 4314: Omaheke and Otjozondjupa Regions, Ondjou Conservancy

Name of consultant to contact for further information
SLR Environmental Consulting (Namibia) (Pty) Ltd (SLR)
Contact person: Mr Simon Charter
Tel: +264 (0) 64 402 317
Fax: +264 (0) 64 403 327
E-mail: scharter@slrconsulting.com

Registration of IAPs and availability of a background information document
To ensure that you are identified as an interested and/or affected party (IAP), please submit your name, contact details and interest in the exploration program to the SLR address given above. More details regarding the project are available in a Background Information Document (BID). A copy of the BID can also be made available on request to SLR.

Submission of comments
To ensure that your issues and/or comments are included in the EIA scoping report, these should be provided to SLR in writing to the addresses provided above by **5 February 2016**.

Meetings for Interested and Affected Parties
Focus group meetings will be arranged with the relevant Traditional Authorities, conservancies, land owners and residents to discuss the exploration activities and related environmental issues.

DM0201600200708 LVW

THE NAMIBIAN THURSDAY 21 JANUARY 2016

SLR

ENVIRONMENTAL IMPACT ASSESSMENT RENEWAL PROCESS FOR B2GOLD'S EXPLORATION ON EXCLUSIVE PROSPECTING LICENCES (EPLs) 2410, 4309, 4277, 4278, 4279, 4280 AND 4314

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- Gunib Licences:
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SLR Environmental Consulting (Namibia) (Pty) Ltd (SLR)
Contact person: Mr Simon Charter
Tel: +264 (0) 64 402 317
Fax: +264 (0) 64 403 327
E-mail: scharter@slrconsulting.com

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Submission of comments
To ensure that your issues and/or comments are included in the EIA scoping report, these should be provided to SLR in writing to the addresses provided above by **5 February 2016.**

Meetings for Interested and Affected Parties
Focus group meetings will be arranged with the relevant Traditional Authorities, conservancies, land owners and residents to discuss the exploration activities and related environmental issues.

SLR

ENVIRONMENTAL IMPACT ASSESSMENT RENEWAL PROCESS FOR B2GOLD'S EXPLORATION ON EXCLUSIVE PROSPECTING LICENCES (EPLs) 2410, 4309, 4277, 4278, 4279, 4280 AND 4314

B2Gold herewith give notice in terms of the Environmental Management Act, 7 of 2007 and Regulation 21 of the environmental impact assessment (EIA) Regulations (January 2012), of renewing the environmental clearance certificates for the existing exploration activities on the above-mentioned EPLs.

Two separate EIA Scoping processes will be conducted as part of the renewal process (grouped according to region). The first will be for EPLs 2410 and 4309 (Otavi Licences) and the second for EPLs 4277, 4278, 4279, 4280 and 4314 (Gunib Licences). Separate applications for environmental clearance certificates will be submitted to the Ministry of Environment and Tourism (Environmental Commissioner) in terms of the abovementioned regulations for the activities associated with each EPL. This advertisement is the start of the EIA public participation processes.

Name of proponents
B2Gold Namibia Minerals (Pty) Ltd (Gunib Licences) & B2Gold Namibia (Pty) Ltd (Otavi Licences)

Description/nature of activities
B2Gold is currently conducting comprehensive exploration programs over the EPLs for precious metals, base and rare metals and industrial minerals.

Location of the EPL areas
- Otavi Licences:
  - EPLs 2410 and 4309: Otjozondjupa Region between Otjiwarongo and Otavi
- Gunib Licences:
  - EPL 4277, 4278, 4279, 4280 and 4314: Omaheke and Otjozondjupa Regions, Ondjou Conservancy

Name of consultant to contact for further information
SLR Environmental Consulting (Namibia) (Pty) Ltd (SLR)
Contact person: Mr Simon Charter
Tel: +264 (0) 64 402 317
Fax: +264 (0) 64 403 327
E-mail: scharter@slrconsulting.com

Registration of IAPs and availability of a background information document
To ensure that you are identified as an interested and/or affected party (IAP), please submit your name, contact details and interest in the exploration program to the SLR address given above. More details regarding the project are available in a Background Information Document (BID). A copy of the BID can also be made available on request to SLR.

Submission of comments
To ensure that your issues and/or comments are included in the EIA scoping report, these should be provided to SLR in writing to the addresses provided above by **5 February 2016**.

Meetings for Interested and Affected Parties
Focus group meetings will be arranged with the relevant Traditional Authorities, conservancies, land owners and residents to discuss the exploration activities and related environmental issues.

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SLR

ENVIRONMENTAL IMPACT ASSESSMENT RENEWAL PROCESS FOR B2GOLD'S EXPLORATION ON EXCLUSIVE PROSPECTING LICENCES (EPLs) 2410, 4309, 4277, 4278, 4279, 4280 AND 4314

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Meetings for Interested and Affected Parties
Focus group meetings will be arranged with the relevant Traditional Authorities, conservancies, land owners and residents to discuss the exploration activities and related environmental issues.

Appendix E – Site notices

Notice 1: Otjiwarongo NK Kerk

Notice 2: Otavi Spar entrance

B2Gold EPLs 2410 and 4309 ECC Renewal
Public Meeting

DATE	Monday, 1 February 2016, 11:00
VENUE:	Dutch Reform Church, Otjiwarongo
PROJECT:	B2Gold EPLs 2410 and 4309 ECC renewals
PROJECT NUMBER:	734.01023.00021
PURPOSE:	The purpose of the meeting was to: • Present the Environmental Impact Assessment (EIA) process being followed • Discuss potential social and environmental impacts
ATTENDANCE:	See attendance register attached in Appendix 1.

1. OPEN AND INTRODUCTION

Simon Charter (SC) from SLR welcomed all to the meeting and introduced himself. This was followed by a short introduction to the purpose of the meeting.

2. PRESENTATION

SC presented the project background/motivation as well as the description of the project and various project components.

He also presented the EIA process being followed and explained the potential social and environmental issues that were identified as part of the screening phase of the EIA. He ended the formal presentation by discussing the way forward regarding the EIA process.

A copy of the presentation is Appended to the Scoping Report.

3. DISCUSSION

Any issues and concerns raised during the meeting have been recorded in Table 1. Where a response was provided the response has also been included in Table 1.

TABLE 1: RECORD OF ISSUES RAISED AND RESPONSES GIVEN

Issue raised/ comment	Response
Exploration activities, particularly line cutting, should not be undertaken during or immediately after the rainy season. Winter is fine	Noted
How long does an access agreement last?	Indefinitely unless stipulated otherwise in the contract.
What is the point of raising comments if a contract is already in place?	The EMP commitments will be legally binging. This will allow for further environmental commitments in addition to those included in the contracts.
How often is the ECC renewed?	Every three years.
Do farmers need abstraction permits?	If water is abstracted for commercial or industrial purposes then an abstraction permit is required.

4. CLOSE

SC thanked everyone for attending and closed the meeting.

Project: RZ LEAD EPL 2610 & EPL 4304 RENEWAL

SLR Company: **SLR ENVIRONMENTAL CONSULTING (NAMIBIA)**

Date and time: 1 FEBRUARY 2016 - 11:00 AM

Meeting: OTJIWARONGO - NG KERK

Name and Surname	Interest in project	Contact numbers	E-mail / postal address
RAOUL KREPETSCH	FARM CAPRICORN	0816968730	RAOUL@LIVE.CO.ZA
Anita Jooste	Druckwerk	0812611281	ajooste@iway.na
Louis Pienaar	Jägerhof	081 313 1028	l.pienaar@iway.na
S.G. LIEBENBERG	HOUNDS	081 283 6868	ohalieb@gmail.com.

ISSUES AND RESPONSE REPORT FOR OTAVI EPLS

Meeting abbreviations

Date	Description	Abbreviation
1 February 2016	Public Meeting Otjiwarongo	M1

NAME & COMMENT DETAILS	COMMENTS	RESPONSE
Land Use		
M1	Exploration activities, particularly line cutting, should not be undertaken during or immediately after the rainy season. Winter is fine.	Noted. Included in the EMP.
Groundwater		
M1	Do farmers need abstraction permits?	Yes – commercial or industrial purposes.
Socio-Economic		
M1	How long does an access agreement last?	As long as is stipulated in the agreement.
General		
M1	How often is the ECC renewed?	ECC expire after 3 years.
EIA Process		
M1	What is the point of raising comments if a contract is already in place?	Public consultation is required as part of the scoping process.

Simon Charter
Senior Environmental Scientist

Curriculum Vitae

Date of Birth	17 January 1983
Nationality	South African (Namibian Domicile)

Qualifications and Education

MSc 2006	Environmental Science and Geography (University of Cape Town)
BSc (Hons) 2004	Environmental Science and Geography (University of Cape Town)
BSc 2003	Environmental Science and Zoology(University of Cape Town) - UCT Entrance Scholarship - Dean's Merit List

Professional affiliations and registrations

Other training

Management Systems Auditor - 2008	Registrar Accreditation Board / Quality Society of Australia International (RABQSA): Environmental (14001:2004). Quality (ISO 9001:2001) AND Occupational Health and Safety (OHSAS 18001:1999) Management Systems Auditing Techniques; Southern African Auditor & Training Certification Association (SAATCA): Environmental Management Systems Auditing (ISO 14001:2004)
Environmental Management Systems implementation -2008	ISO 1400:2004 – Centre for Environmental Management (North – West University)
Carbon Footprint Analysis - 2009	Aspects International Limited / IEMA

Countries of work experience

South Africa , Namibia , Swaziland , Botswana , Nigeria , Egypt , Kenya , Ghana

Languages

	Speaking	**Reading**	**Writing**
English (mother tongue)	-	-	-
Afrikaans	Good	Good	Good

Employment record

2013 - present	SLR Consulting, Senior Environmental Consultant (Synergistics purchased by SLR Consulting in 2013)
2011 - 2013	Synergistics Environmental Services, Namibian Manager / Environmental Project Manager
2009 - 2011	GCS Environmental, Namibian Manager / Environmental Project Manager
2008 - 2009	Sole Proprietor, Environmental Project Manager
2006 - 2008	Chinese Overseas Engineering Company, Environmental Officer

Associations

Environmental Assessment Practitioners Association of Namibia (EAPAN):

Membership categories:

- Lead Practitioner
- Practitioner
- Reviewer

Member of the Executive Committee:

- 2011 / 2012 Treasurer and Membership Management Portfolio (founding Committee)
- 2012 / 2013 Treasurer and Membership Management Portfolio
- 2013 / 2014 Treasurer and Membership Management Portfolio
- 2014 / 2015 Vice President, Treasurer and Membership Management Portfolio
- 2015 / 2016 President

Summary of Experience and Capability

My ability and experience lie in the preparation and/or review of project environmental impact assessments, environmental management plans, environmental compliance (project implementation and operational), environmental auditing (performance and legal), public consultation, health and safety auditing and environmental planning. These abilities have allowed me to gain first–hand experience in: the mining industry, industrial development, agriculture, property development, commercial development, food and beverages, petrochemicals, infrastructural development, rural development, energy generation, sanitation and water supply, town planning, tourism and the automotive industry. My experience has been focussed on developing countries in Africa, having been involved in projects in South Africa, Namibia, Swaziland, Botswana, Kenya, Egypt and Nigeria. This experience has exposed me to the diverse biophysical and socioeconomic pressures, constraints and opportunities within the developing world. I currently live in Namibia where I am primarily involved with the rapidly growing mining and industrial sectors.

Project experience

Year: 2016 (current)

Location: Walvis Bay and Wlotzkasbaken, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: EIA for the generation of 120Mw by offshore power ships

Client: Karkey Karadeniz Elektrik Üretim A.Ş.

Project features: Supply of 120MW of power, through generation on a floating vessel (Powership), located on an offshore site either in the proximity of the Wlotzkasbaken desalination plant substation or Walvis Bay.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation

Year: 2016 (current)

Location: Otjozondjupa and Omaheke Regions, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development

Client: B2Gold Exploration and Mining

Project features: Environmental Impact Assessment process for the exploration process on Exclusive Prospecting Licenses 2410, 4309, 4277, 4278, 4279, 4280 and 4314.

Activities performed: Extensive public participation in rural/communal environment (conservancies and villages), environmental Impact Assessment, Environmental Management Plan development, project management

Year: 2016 (current)

Location: Kunene Region, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development

Client: Teck Namibia Limited

Project features: Environmental Impact Assessment process for the exploration process on Exclusive Prospecting Licenses 3349, 3350, 3354, 3357, 3687, 4541, 4542, 4543, 4544, 4545 and 4557.

Activities performed: Extensive public participation in rural/communal environment (conservancies and villages), environmental Impact Assessment, Environmental Management Plan development, project management

Year: 2015 (current)

Location: Walvis Bay, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: EIA for the storage and handling of reagents at the Manica Logistics Centre and Container Yard

Client: Manica

Project features: The storage and handling of hazardous reagents at the Manica Logistics Centre and Container Yard and the transport of these reagents to the processing plant at the Husab Uranium Mine.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation

Year: 2015 (current)

Location: Cape Cross, Erongo Region, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Cape Cross Salt Project

Client: Gecko Salt

Project features: The project involved the mining of natural rock-salt of up to 1 million tons per annum, the establishment of salt crystallization pans as well as the production of 2 million tons of crystallized salt by solar evaporation.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management, specialist management

Year: 2015 (current)

Location: Nkurenkuru, Kavango Region, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Zone Irrigation Project

Client: Ministry of Agriculture. Water and Forestry

Project features: The development an irrigation project of roughly 2500ha on outside of Nkurenkuru.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management, specialist management

Year: 2015 (current)

Location: Khorixas, Kunene Region

Positions held: Socio-economic Impact Specialist

Assignment: Lofdal Rare Earths Mine

Client: Namibia Rare Earths Incorporated (NRE)

Project features: NRE planned the development of an open-pit mine and processing plant at Lofdal that will produce a concentrate consisting mainly of 'rare earths'

Activities performed: Socio-economic Impact Assessment as part of the specialist team

Year: 2015

Location: Katima Mulilo, Zambezi Region, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Katima Farm and Liselo Irrigation Project

Client: Ministry of Agriculture. Water and Forestry

Project features: The complete re-design and construction of the original Katima Farm and the development an irrigation project of an additional 2000ha on Liselo adjacent to Katima Farm.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management, specialist management

Year: 2015

Location: Walvis Bay, Namibia

Positions held: Environmental Assessment

Assignment: EIA for the storage and handling of reagents at the Walvis Bay Port

Client: Swakop Uranium

Project features: The storage and handling of hazardous reagents at the Walvis Bay Port and the transport of these reagents to the processing plant at the Husab Uranium Mine.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation

Year: 2015

Location: Swakopmund, Namibia

Positions held: Environmental Consultant

Assignment: Husab Uranium Mine

Client: Swakop Uranium / CGNPC

Project features: Provided environmental input into the ISO 14001 (environmental) aspects of the implementation of an Integrated Management System (IMS) for the Husab Uranium Mine

Activities performed: Procedure development, impacts and aspects registers, objectives and targets development, risk assessments, training material development

Year: 2015

Location: Swakopmund, Namibia

Positions held: Environmental Supervisor

Assignment: Husab Uranium Mine

Client: Swakop Uranium / CGNPC

Project features: Carried out the role of interim Environmental Supervisor following resignation of previous Environmental Supervisor. Carried out handover to newly appointed Environmental Supervisor.

Activities performed: Environmental management, staff supervision, monitoring programme supervision, decision-related input and reviews

Year: 2015

Location: Otjozondjupa and Omaheke Regions, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development

Client: B2Gold Exploration and Mining

Project features: Environmental Impact Assessment process for the proposed exploration process on Exclusive Prospecting Licenses 4496, 4497 and 4498.

Activities performed: Extensive public participation in rural/communal environment (conservancies and villages), environmental Impact Assessment, Environmental Management Plan development, project management

Year: 2015
Location: Gobabis, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Annasruh Feedlot
Client: The Meat Corporation of Namibia
Project features: EIA for a feedlot capable of accommodating up to 12 000 head of cattle at any time (42 000 per annum).
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation

Year: 2015
Location: Khomas Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: 120kV power line for the Omitiomire Copper Mine
Client: Craton Mining and Exploration
Project features: Construction of a 70 km 120kV power line to supply power to the proposed Omitiomire Copper Mine
Activities performed: Route selection, public consultation, Environmental Impact Assessment, Environmental Management Plan development

Year: 2015
Location: Windhoek, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: EIA for the upgrade of the Gammams Wastewater Treatment Plant
Client: City of Windhoek
Project features: The expansion of the Gammams Wastewater Treatment Plant from an intake capacity of 26 26 Ml/day to 55 26 Ml/day. The expansion involved the construction of a new membrane bioreactor (MBR) activated sludge process to supplement the existing conventional activated sludge process (CASP).
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014 / 2015
Location: Lüderitz, Namibia
Positions held: Environmental Assessment Practitioner, public consultation facilitator
Assignment: proposed exploration well drilling in licence blocks 2613a and 2613b off the coast of Namibia
Client: Murphy Lüderitz Oil (Pty) Ltd
Project features: Murphy planned to drill up to two possible exploration wells in the their license blocks in order to fully appraise the hydrocarbon potential of the geological structure or "prospect". An Environmental Impact Assessment was carried out for the planned exploration well drilling.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, Namibian authority liaison

Year: 2014 / 2015

Location: Windhoek, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development for all of the City of Windhoek's wastewater treatment plants

Client: City of Windhoek

Project features: The Ministry of Environment and Tourism required that the City of Windhoek develop Environmental Management Plans (EMPs) for their existing wastewater treatment in order to ensure that the environmental impacts emanating from them can be effectively managed. Desktop environmental assessments were carried out and EMPs developed for the following facilities:

- Gammams Wastewater Treatment Plant
- Old Goreangab Reclamation Plant
- Havana Pond
- Otjomuise Wastewater Treatment Plant

Activities performed: Environmental Management Plan development, desktop environmental impact assessment, project management

Year : 2014 / 2015

Location: Tsumeb, Namibia

Assignment: Hazardous Waste Site Clearance Amendment

Client: Dundee Precious Metals Limited (Namibia Customs Smelters)

Positions held: Environmental Assessment Practitioner / Project Manager

Project features: Clearance conditions amendment to allow for additional waste streams. This included waste classification, engineering input, air quality assessment and an environmental assessment.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2013 / 2015

Location: Khomas region, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Client: Craton Mining and Exploration

Assignment: Environmental Impact Assessment and Environmental Management Plan development for the Omitiomire Copper Oxide Mine

Project features: Development of Phase 1 oxide ore mining and beneficiation operation at Omitiomire to mine near-surface areas of weathered copper oxide. In broad terms the project included: 3 open pits; 3 waste rock dumps (WRDs); oxide processing plant; tailings storage facility (TSF); water management infrastructure and support services and facilities

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, extensive public participation, project management

Year: 2014

Location: Swakopmund, Namibia

Positions held: Environmental Assessment Practitioner

Assignment: Environmental Impact Assessment and Environmental Management Plan development for the Mile 4 desalination plant

Client: Rössing Uranium(Rio Tinto)

Project features: Rössing Uranium investigated an alternate source for desalinated seawater in an effort to reduce the cost of its mining operations and enhance its commercial sustainability. Rössing Uranium therefore planned to design, construct and operate a new desalination plant, ±6 km north of Swakopmund, for their water supply needs. An Environmental Impact Assessment was carried out for the planned desalination plant.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development,

public participation.

Year: 2014
Location: Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development
Client: Epangelo Mining
Project features: Environmental Impact Assessment process for the proposed exploration process on Exclusive Prospecting Licenses 4817, 4818 and 4833
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014
Location: Erongo and Otjozondjupa Regions, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development
Client: Epangelo Mining
Project features: Proposed exploration process on Exclusive Prospecting Licenses 4880 and 4925
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014
Location: Khomas Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development
Client: Osho Resources
Project features: Proposed exploration process on Exclusive Prospecting Licenses 4107 and 5313
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014
Location: Otjozondjupa Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development
Client: Sabre Resources
Project features: Proposed exploration process on Exclusive Prospecting License 3542
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014
Location: Otjozondjupa Region , Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development
Client: Gazania Investments
Project features: Proposed exploration process on Exclusive Prospecting License 3520
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014
Location: Otjozondjupa Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development
Client: Huab Energy
Project features: Proposed exploration process on Exclusive Prospecting License 3542
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014
Location: Karas Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development for exploration activities
Client: Kanabeam Zinc
Project features: Proposed exploration process on Exclusive Prospecting License 3711
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014
Location: Otjozondjupa Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development for exploration activities
Client: Oshivela Mining
Project features: Proposed exploration process on Exclusive Prospecting Licenses 3743, 3744 and 3745
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014 / 2015
Location: Husab Mine, Namibia
Positions held: Trainer
Assignment: Environmental training
Client: Swakop Uranium
Project features: Environmental Control Officer, spill management and waste management training
Activities performed: Environmental training

Year: 2013 /2014
Location: Omaheke Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development for exploration activities
Client: Otjitombo Mining
Project features: Proposed exploration process on Exclusive Prospecting Licenses 5272 and 5273
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2013 /2014
Location: Kunene Region, Namibia
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development for exploration activities
Client: Votorantim
Project features: Proposed exploration process on Exclusive Prospecting Licenses 5423, 5404, 5458, 5400,

5402, 5399 and 5482

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2014

Location: Tsumeb, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development for the Tsumeb Smelter Sewage Treatment Plant

Client: Dundee Precious Metals Limited

Project features: The construction of a sewage treatment plant at the Tsumeb Smelter Complex.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2013

Location: Tsumeb, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development for the Bobos Silica Quarry

Client: Ongopolo / Weatherly Mining Plc

Project features: Silica quarrying

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2013

Location: Tsumeb, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development for exploration activities

Client: Ongopolo / Weatherly Mining Plc

Project features: Proposed exploration process on EPL 132A and ML 73E

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2013

Location: Okorusu Mine, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Client: Okorusu Fluorspar Mine

Assignment: Okorusu Fluorite Mine Expansion

Project features: Environmental Impact Assessment and Environmental Management Plan development for the Okorusu Fluorite Mine. This involved the opening of a new pit and the construction of a primary processing plant adjacent to the new pit.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2013 / 2014

Location: Walvis Bay, Namibia

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Environmental Impact Assessment and Environmental Management Plan development for Walvis Bay Salt Works Expansion

Client: Walvis Bay Salt Holdings

Project features: Expansion of the Walvis Bay Salt from 4500 ha to 6000ha and associated infrastructural requirements.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

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Year: 2013 / 2014

Location: Otavi, Namibia

Client: Otavi Rebar Manufacturing

Positions held: Environmental Assessment Practitioner / Project Manager

Assignment: Otavi Rebar Manufacturing Plant

Project features: Construction of a rebar manufacturing plant, which will produce roughly 150,000 tons of steel rebars from scrap metal per annum.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

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Year: 2013

Location: Walvis Bay, Namibia

Client: Walvis Bay Cargo Terminals / APS

Positions held: Environmental Assessment Practitioner

Assignment: Sulphur throughput facility at the Walvis Bay Port

Project features: Storage and handling of sulphur at a storage facility at the Walvis Bay Harbour. This included a risk assessment and planning for emergency events.

Activities performed: Throughput Facility

Year : 2013

Location: Tsumeb, Namibia

Assignment: Tsumeb Smelter waste disposal site

Client: Dundee Precious Metals Limited (Namibia Customs Smelters)

Positions held: Environmental Assessment Practitioner / Project Manager

Project features: Environmental Impact Assessment and Environmental Management Plan development for the Tsumeb Smelter general waste site.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

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Year: 2013

Location: Namibia

Client: Swakop Uranium

Assignment: Husab Uranium Mine performance audit

Positions held: Lead Auditor

Project features: Performance assessment against Husab Mine Environmental Management Plan and legal requirements.

Activities performed: Performance Audit

Year: 2012 / 2013

Location: Tsumeb, Namibia

Client: Ongopolo / Weatherly Mining

Positions held: Environmental Assessment Practitioner

Assignment: Tschudi Copper Mine

Project features: Environmental Impact Assessment and Environmental Management plan amendment to include working below groundwater and heap leaching.

Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation

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Year : 2012 / 2013

Location: Tsumeb, Namibia
Assignment: Kiliplime Silica Quarry
Client: Dundee Precious Metals Limited (Namibia Custom Smelters)
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: Silica quarrying
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2012
Location: Grootfontein, Namibia
Assignment: Berg Aukas Mine
Client: Weatherly International
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: Initiation of the EIA process for the re-opening of the Berk Aukas Vanadium Mine. Only public participation took place as the project was put on hold by the client.
Activities performed: Public consultation

Year : 2011 / 2012
Location: Khomas Region, Namibia
Assignment: Otjihase Copper Mine
Client: Ongopolo / Weatherly Mining Plc
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: Environmental Impact Assessment and Environmental Management Plan development for the existing Otjihase Copper Mine. The reason for this was to ensure compliance with the newly enacted Namibian environmental management regulation.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2011 / 2012
Location: Khomas Region, Namibia
Assignment: Matchless Copper Mine
Client: Ongopolo / Weatherly Mining Plc
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: Environmental Impact Assessment and Environmental Management Plan development for the existing Matchless Copper Mine. The reason for this was to ensure compliance with the newly enacted Namibian environmental management regulation. Included in this study was an
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2012
Location: Tsumeb, Namibia
Assignment: Tschudi Copper Mine electrical substation
Client: NamPower
POSITIONS HELD: Environmental Assessment Practitioner / Project Manager
Project features: Environmental Impact Assessment and Environmental Management Plan development for an electrical substation for the Tscudi Copper Mine
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2012
Location: Kunene Region, Namibia
Assignment: Hoanib River Camp
Client: Wilderness Safaris
Positions held: Environmental Assessment Practitioner / Project Manager

Project features: Environmental Impact Assessment and Environmental Management Plan development for the Hoanib Tented Camp. This site falls within the Palmwag Concession area in the Kunene Region, which has significant environmental sensitivities. A tourism management plan was included.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, tourism management plan

Year : 2012
Location: Tsumeb, Namibia
Assignment: Tsumeb Mining License 73D Environmental Liability Assessment
Positions held: Lead Auditor
Client: Ongopolo / Weatherly Mining
Project features: Environmental Phase 1 Due Diligence audit of Mining License 73D
Activities performed: Phase 1 Due Diligence Audit

Year : 2012
Location: Tsumeb, Namibia
Assignment: Tsumeb Smelter Tailings Reworking Project
Client: Ongopolo / Weatherly Mining
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: Initiation of the EIA process for the reworking of the Tsumeb Smelter tailings. Only public participation took place as the project was put on hold by the client.
Activities performed: Public consultation

Year : 2011
Location: Rosh Pinah, Namibia
Assignment: Skorpion Zinc Mine
Client: Namzinc (Pty) Ltd
Positions held: Project Manager
Project features: Mine Closure and Rehabilitation Plan for the Skorpion Zinc Mine
Activities performed: Closure Plan, Rehabilitation plan, closure liability costing, public consultation

Year: 2011
Location: Otjozondu, Namibia
Assignment: Otjozondu Manganese Mine
Client: Shaw River Resources
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: Environmental Impact Assessment and Environmental Management Plan development for the Otjozondu Manganese Mine.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation

Year : 2009 / 2010
Location: Kathu, South Africa
Client: Assmang / DRA
Positions held: Environmental Assessment Practitioner / Project Manager
Assignment: Environmental Impact Assessment and Environmental Management Plan development Khumani Iron Ore Mine Phase 2 expansion
Project features: Amendment of EIA/EMP to allow for changes on site and an increase in production rate.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year: 2010
Location: Walvis Bay, Namibia

Assignment: Walvis Bay Salts Works
Client: Walvis Bay Salt Holdings
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: Environmental Assessments
Activities performed: EIA and EMP

Year: 2009 / 2010 / 2011
Location: Kathu, South Africa
Client: Khumani Iron Ore Mine
Assignment: Khumani Iron Ore Mine
Positions held: Lead Auditor
Project features: Performance assessment against the Khumani Iron Ore Mine Environmental Management Plan and legal requirements.
Activities performed: Monthly performance audits

Year : 2010
Location: Namibia
Assignment: Strategic Environmental Assessments (SEA) for biofuel production in the Caprivi (Zambezi) and Kavango Regions of the northern Namibia.
Client: Ministry of Environment and Tourism
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: The Government was considering allocating 300 000ha of land to biofuel production.
Activities performed: Strategic Environmental Assessment, public consultation

Year : 2010
Location: Windhoek, Namibia
Assignment: Strategic Environmental Assessment for the City of Windhoek
Client: City of Windhoek
Project features: Environmental priority identification and planning for the City of Windhoek.
Positions held: Environmental Assessment Practitioner / Project Manager
Activities performed: Strategic Environmental Assessment, public consultation

Year : 2009 / 2010 / 2011
Location: Hotazel, South Africa
Client: Kalagadi Manganese
Assignment: Kalagadi Manganese Mine
Positions held: Lead Auditor
Project features: Performance assessment against the Kalagadi Manganese Mine Environmental Management Plan and legal requirements.
Activities performed: Quarterly Performance Assessments (December 2009 – November 2011)

Year : 2009
Location: Kathu, South Africa
Assignment: Khumani Iron Ore Mine
Client: Assmang
Positions held: Environmental Assessment Practitioner / Project Manager
Project features: The Khumani Iron Ore Mine EMP required that the mine impact footprint be offset.
Activities performed: Offset identification

Year : 2009
Location: Mpumalanga, Namibia
Assignment: Kleinkoppje Colliery
Client: Forbes Coal
Positions held: Lead Auditor

Project features: Environmental Phase 1 Due Diligence audit and closure liability costing of Kleinkopje Colliery

Activities performed: Due Diligence Audit, closure liability costing

Year : 2009 - 2010

Location: Namibia, South Africa, Ghana, Nigeria, Botswana, Swaziland, Kenya, Egyp

Assignment: All Cadbury / Craft African facilities

Client: Cadbury / Kraft

Project features: Cadbury / Kraft Environmental Health and Safety Legal Compliance audits at the Following Facilities :

- *South Africa* (Port Elizabeth)
- *Namibia (Windhoek)*
- *Botswana(Gabarone)*
- *Ghana(Accra)*
- *Nigeria(Lagos)*
- *Nigeria (Ondo)*
- *Egypt (Cairo)*
- *Egypt (Alexandria)*
- *Kenya (Nairobi)*
- *Swaziland(Matsapha)*

Positions held: Lead Auditor

Activities performed: Environmental Health and Safety Legal Compliance audits

Year : 2009

Location: Gauteng, South Africa

Client: Arcelor Mittal

Assignment: Cleaning of Coke Oven Gas & Water Project Audit

Positions held: Lead Auditor

Project features: Performance assessment against the Environmental Management Plan and legal requirements.

Activities performed: Performance audit

Year : 2009

Location: Port Elizabeth

Client: General Motors

Assignment: General Motors Port Elizabeth facility

Positions held: Lead Auditor

Project features: Environmental Due Diligence Audit / Phase 1 Environmental Sit Assessment of the General Motors Port Elizabeth Facility.

Activities performed: Environmental Due Diligence Audit / Phase 1 Environmental Sit Assessment

Year : 2009

Location: Kwa-Zulu Natal, South Africa

Client: Tendele Coal Mining (Pty) Ltd

Assignment: Somkele Anthracite Mine performance assessment

Positions held: Lead Auditor

Project features: Performance assessment against the Environmental Management Plan and legal requirements.

Activities performed: Performance audit

Year : 2009

Location: Northern Province, South Africa

Assignment: Lephalale coal Bed Methane

Client: Angolo Coal

Positions held: Lead Auditor
Project features: Performance assessment against the Environmental Management Plan and legal requirements.
Activities performed: Performance audit

Year : 2009
Location: Namibia
Assignment: All BP facilities in Namibia
Client: BP Environmental
Project features: Due Diligence Audits of all fuel retail sites and depots in Namibia (34 site) prior to asset sale.
Positions held: Lead Auditor
Activities performed: Due Diligence Audits

Year: 2009
Location: Namibia
Client: Total Coal
Assignment: Environmental Performance Assessments for the following four Total Coal Mines:

- Dorstfontein
- Forzando North
- Forzando South
- Tumelo

Position held: Lead Auditor
Project features: Performance assessment against the Environmental Management Plan and legal requirements.
Activities performed: Performance audits

Year: 2008
Location: Lanseria, Namibia
Assignment: Lanseria X32, X26 and X27 Sewerage works
Client: Lanseria Trust Two
Positions held: Project Manager
Project features: Environmental Impact Assessment and Environmental Management Plan development for the Lanseria X32, X26 and X27 Sewerage works
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2008
Location: Nelspruit, South Africa
Assignment: Silululmanzi Sewerage and Water Works
Client: Silululmanzi Sewerage and Water Works
Positions held: Environmental Auditor
Project features: Sewerage and Water Works SHEQ Audit (ISO 140001) (40 hours)
Activities performed: EMS Audit

Year : 2008
Location: Port Elizabeth, South Africa
Assignment: Nelson Mandela Bay Precinct Project
Client: Magnolia Ridge (Pty) Ltd
Positions held: Environmental Assessment Practitioner
Project features: Commercial development within the Nelson Mandela Bay Precinct
Activities performed: Environmental Impact Assessment, Environmental Management Plan development

Year : 2008
Location: Pretoria, South Africa
Assignment: Plumari Game Reserve Lodges
Client: Plumari Ranch
Positions held: Environmental Assessment Practitioner/ Project Manager
Project features: Lodge development.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2008
Location: Johannesburg, South Africa
Assignment: Pomona: Warehousing
Client: Imbani Projects (Pty) Ltd
Positions held: Environmental Assessment Practitioner/ Project Manager
Project features: Industrial development.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2008
Location: Johannesburg, South Africa
Assignment: Maroun Square: Shopping Centre
Client: Abacus Asset Management
Positions held: Environmental Assessment Practitioner/ Project Manager
Project features: Commercial development.
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2007
Location: Johannesburg, South Africa
Assignment: Olievenhoutbosch: Residential development
Client: Al Tawheen Islamic Centre
Positions held: Environmental Assessment Practitioner/ Project Manager
Project features: Residential development (30ha)
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2007
Location: Pretoria, South Africa
Assignment: Olifantsvlei: Residential and business development
Client: Cherokee Rose Properties CC
Positions held: Environmental Assessment Practitioner/ Project Manager
Project features: Residential development (35ha)
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2007
Location: Pretoria, South Africa
Assignment: Zandspruit: Residential development
Client: Blue Dot Properties 1468 cc
Positions held: Environmental Assessment Practitioner/ Project Manager
Project features: Residential development (96ha)
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2007

Location: Pretoria, South Africa
Assignment: Willowbrae Agricultural Holdings: Mixed industrial use
Client: Vexma Properties 183
Positions held: Environmental Assessment Practitioner/ Project Manager
Project features: Residential development (77ha)
Activities performed: Environmental Impact Assessment, Environmental Management Plan development, public participation, project management

Year : 2006 / 2007
Location: Vaal Marina, South Africa
Assignment: Vaal River Eastern Sub-System Augmentation Project
Client: Chinese Overseas Engineering Company (COVEC)
Positions held: Environmental Auditor
Project features: Construction of a pump station for a water pipeline between the Vaal Dam and Sekunda (120km)
Activities performed: Environmental Control Officer