



ECC-88-234-REP-04-D

# ENVIRONMENTAL SCOPING REPORT

EXPLORATION ACTIVITIES ON EPL 7342 FOR BASE AND RARE METALS, INDUSTRIAL  
MINERALS, PRECIOUS METALS IN THE OTJOZONDJUPA REGION

PREPARED FOR



OCTOBER 2019

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## TITLE AND APPROVAL PAGE

|                            |                                                                                                                                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Name:</b>       | Exploration activities on EPL 7342 for base and rare metals, industrial minerals, precious metals in Otjozondjupa region, Namibia. |
| <b>Project Number</b>      | ECC-88-234-REP-04-D                                                                                                                |
| <b>Client Name:</b>        | Votorantim Metals Namibia (Pty) Ltd                                                                                                |
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## EXECUTIVE SUMMARY

Votorantim Metals Namibia (Pty) Ltd seeks to undertake exploration activities on Exclusive Prospecting Licence (EPL) 7342 for base and rare metals, industrial minerals, and precious metals in the Otjozondjupa region. EPL 7342 is located immediately north of Kombat and approximately 30 km east of Otavi via the B8 road.

The proposed project triggers listed activities in terms of the Environmental Management Act (EMA) No. 7 of 2007), therefore an environmental clearance certificate is required. As part of the environmental clearance certificate application, an Environmental Impact Assessment (EIA) has been undertaken to satisfy the requirements of the EMA. This environmental scoping report and Environmental Management Plan (EMP) shall be submitted to the competent authority as part of the application for the environmental clearance certificate.

The proposed exploration on EPL 7342 will include soil and rock sampling, geological mapping, electromagnetic and geophysical surveys, and drilling and core sampling. Some vegetation (excluding specially protected plant species) may be cleared for access tracks, to create working areas, installation and development of exploration drill holes. However, a vegetation management plan will be included in the EMP in order to minimise damage. The exploration activities are expected to be conducted over a 3-year period (duration of the mineral licence), but the period of each phase of the exploration programme will vary and will be refined as geological information becomes available. In the event that exploration is successful, and a commercially viable mineral resource is defined, exploration operations can potentially transcend into mining operations. This phase will be assessed in a separate and detailed environmental impact assessment at the appropriate stage.

EPL 7342 is found within the Tree-and-Shrub Savannah biome, with the vegetation types dominated by Karstveld and a mixed woodland structure. The area has various dominant landscape which consists of large mixed woodland, mainly thorn bush. The area supports a medium-high terrestrial diversity of animal and plant, with a plant diversity in the area approximately 400 – 500 species.

The EPL traverses seven (7) commercial farms where the land use is predominantly irrigated cultivation with large and small livestock farming.

Through the scoping process, the surrounding environmental assessment was completed by undertaking a desktop review. The impacts of exploration activities with respect to airborne dust are expected to be limited to vehicular traffic. There will be some release of exhaust fumes from machinery that will impact the immediate vicinity but will be of short duration. Additionally, there will be associated drilling and machinery noise, which could be a disturbance to immediate neighbours, but this will also be of short duration.

Through further investigation, it was determined that the effects from noise are considered to be of minor significance, however with additional mitigation, the significance is reduced to low. The additional mitigation measures include:

- No drilling when it is dark;
- No hammering of drill rods with steel hammers when in proximity of houses;
- Noise suppression measures shall be applied if drilling occurs in locations that may affect residents;
- Residents shall be provided at least two weeks' notice of drilling operations within 1 km of their property;
- and
- Continual engagement with residents shall be undertaken by the proponent to identify any concerns or issues, and appropriate mitigation and management measures shall be further agreed.

Water is a scarce resource in Namibia and, as such, must always be utilised sustainably. The hydrology of the area is made up of ephemeral streams and groundwater and the potential for contamination from the proposed activities is regarded as minimal. Protection of water quality is addressed in the EMP.

This study assessed that the creation of access tracks and drill campsites, where necessary, can potentially pose an environmental risk. Through further investigation, it was determined that the removal of vegetation for access is considered to be of low to moderate significance, however with additional mitigation, the significance can be reduced to minor. These additional mitigation measures will include:

- Use existing tracks and access roads wherever possible;
- No removal of large and established trees (tracks to go around);
- Where trees need to be removed, the regulatory permits must be obtained where necessary.

The overall potential impact of this proposed project is not considered significant as it does not widely exceed recognised levels of acceptable change, does not threaten the integrity of the receptors, and it is not material to the decision-making process. The assessment is considered to be comprehensive and sufficient to identify impacts, and it is concluded that no further assessment is required.

**On this basis, it is the opinion of ECC that an Environmental Clearance Certificate could be issued, on conditions that the management and mitigation measures specified in the EMP are implemented and adhered to.**

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## DEFINITIONS AND ABBREVIATIONS

|        |                                                             |
|--------|-------------------------------------------------------------|
| DEA    | Directorate of Environmental Affairs                        |
| EMP    | Environmental Management Plan                               |
| EIA    | Environmental Impact Assessment                             |
| EPL    | Exclusive Prospecting Licence                               |
| IFC    | International Finance Cooperation                           |
| MET    | Ministry of Environment and Tourism                         |
| I&AP   | Interested and affected parties                             |
| MME    | Ministry of Mines and Energy                                |
| MPMRAC | Minerals (Prospecting and Mining Rights) Advisory Committee |

## 1 INTRODUCTION

### 1.1 PURPOSE OF THIS REPORT

The purpose of this report is to present the findings of the scoping study for the proposed project. The proposed project is to undertake mineral exploration activities on Exclusive Prospecting Licence (EPL) 7342 for base and rare metals, industrial minerals and precious metals, which are described in detail throughout the report. This scoping report has been undertaken in terms of the requirements of the Environmental Management Act, 2007 and the Environmental Impact Assessment Regulations, 2007 (No. 30 of 2012) gazetted under the Environmental Management Act, 2007 (referred to herein as the EIA Regulations).

This scoping report plus appendices will be submitted to the Ministry of Mines and Energy (MME) and the Directorate of Environmental Affairs (DEA) at the Ministry of Environment and Tourism (MET) for review as part of the applications for an environmental clearance certificate.

This report has been prepared by Environmental Compliance Consultancy (ECC). ECC's terms of reference for the assessment is strictly to address potential effects, whether positive or negative and their relative significance, explore alternatives for technical recommendations and identify appropriate mitigation measures.

This report provides information to the public and stakeholders to aid in the decision-making process for the proposed project. The objectives are to:

- Provide a description of the proposed activity and the site on which the activity is to be undertaken, and the location of the activity on the site;
- Provide a description of the environment that may be affected by the activity;
- Identify the laws and guidelines that have been considered in the assessment and preparation of this report;
- Provide details of the public consultation process;
- Describe the need and desirability of the activity;
- Provide a high level of environmental and social impact assessment on feasible alternatives that were considered; and
- Report the assessment findings, identifying the significance of effects, including cumulative effects.

In addition to the environmental assessment, an Environmental Management Plan (EMP) (Appendix A) is also required in terms of the Environmental Management Act, 2007. An EMP has been developed to provide a management framework for the planning and implementation of exploration activities. The EMP provides exploration standards and arrangements to ensure that the potential environmental and social impacts are mitigated, prevented and/or minimised as far as reasonably practicable, and that statutory requirements and other legal obligations are fulfilled.

### 1.2 BACKGROUND TO THE PROPOSED PROJECT

Votorantim Metals Namibia (Pty) Ltd proposes to undertake mineral exploration activities on Exclusive Prospecting Licence (EPL) 7342 for base and rare metals, industrial minerals and precious metals in the Otjozondjupa region. EPL 7342 is located approximately 30 km from Otavi and immediately north of Kombat and covers the area of 3,266 ha (see 1).

FIGURE

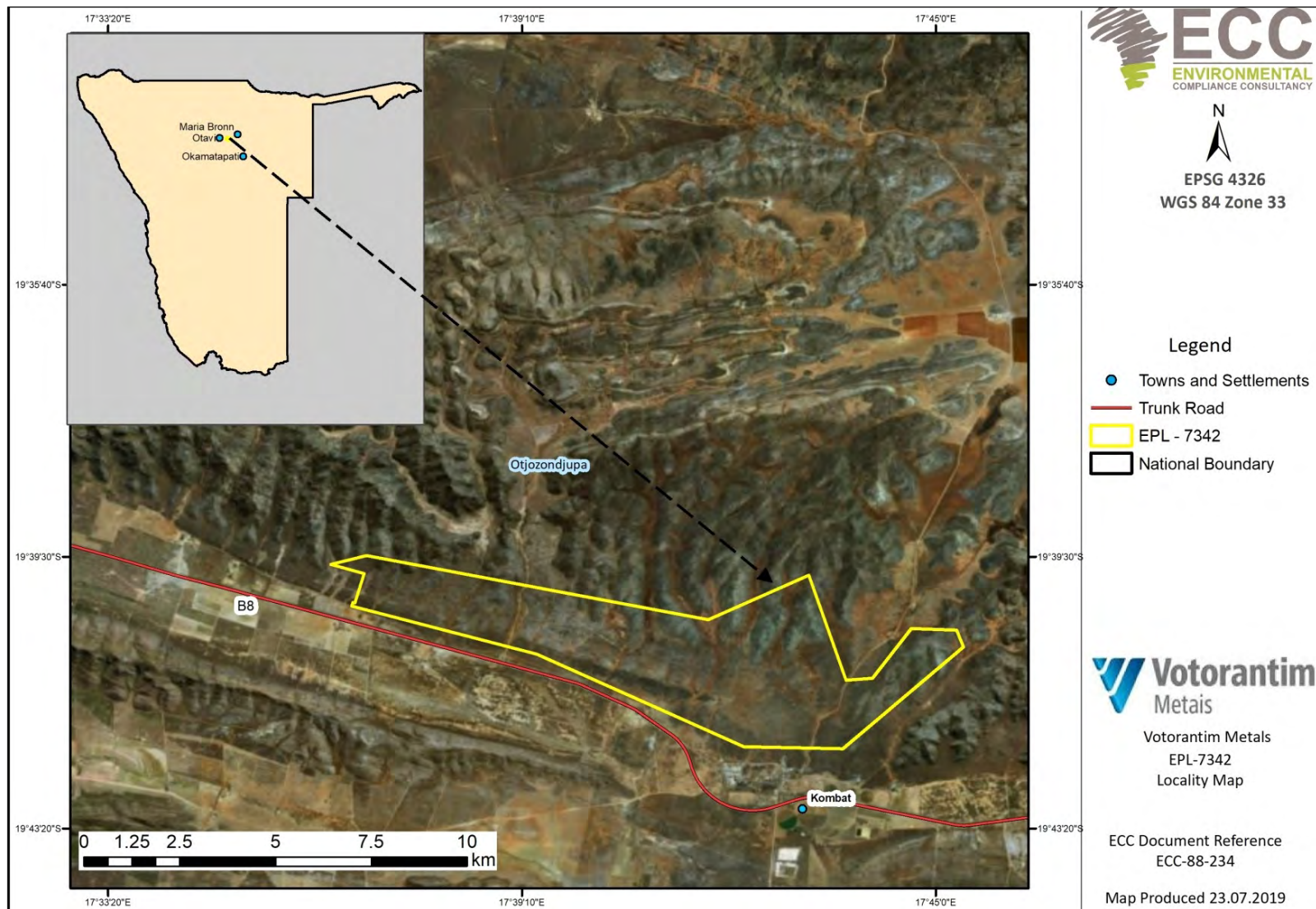


FIGURE 1 - LOCALITY MAP - EPL 7342

### 1.3 ENVIRONMENTAL REQUIREMENTS

The Environmental Management Act No.7 of 2007 stipulates that an environmental clearance certificate is required to undertake listed activities in terms of the Act and its regulations. Listed activities triggered by the proposed project in terms of the Environmental Management Act, 2007 and its regulations are as follows:

#### MINING AND QUARRYING ACTIVITIES

- The construction of facilities for any process or activities which requires a licence, right or other forms of authorisation, and the renewal of a licence, right or other forms of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992
  - o The proposed project requires a licence for the construction of exploration camps, drill sites and access roads
- Other forms of mining or extraction of any natural resources whether regulated by law or not
  - o Minerals will be sampled and explored for within the EPL 7342
- Resource extraction, manipulation, conservation, and related activities
  - o The proposed project will explore for base, rare and precious metals and industrial minerals

#### WATER RESOURCE DEVELOPMENT

- The abstraction of ground or surface water for industrial or commercial purposes
  - o Required for the drilling of exploration boreholes, ground and surface water will be abstracted.

### 1.4 THE PROPONENT OF THE PROPOSED PROJECT

TABLE 1 – PROPONENT DETAILS

| CONTACT                                                              | POSTAL ADDRESS                     | EMAIL ADDRESS                  | TELEPHONE       |
|----------------------------------------------------------------------|------------------------------------|--------------------------------|-----------------|
| VOTORANTIM METALS NAMIBIA (PTY) LTD<br>Yvonne Natalie Hass (Manager) | P O Box 2184,<br>Windhoek, Namibia | ext.yvonnenh@nexaresources.com | +264 61 22 1016 |

### 1.5 ENVIRONMENTAL CONSULTANCY

ECC, a Namibian consultancy (registration number Close Corporation2013/11401), has prepared this scoping report and impact assessment on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa, in both the public and private sectors. ECC is independent of the proponent and has no vested or financial interest in the proposed project, except for fair remuneration for professional services rendered.

All compliance and regulatory requirements regarding this EIA report should be forwarded by email or posted to the following address:

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## 1.6 REPORT STRUCTURE

The scoping report plus impact assessment is structured as per the contents set out in TABLE 2.

**TABLE 2 – ENVIRONMENTAL SCOPING REPORT SECTIONS**

| SECTION         | TITLE                               | CONTENT                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -               | Executive Summary                   | Executive summary of the EIA                                                                                                                                                                                                                                                                                                                                                                 |
| -               | Acronyms                            | A list of acronyms used during the report                                                                                                                                                                                                                                                                                                                                                    |
| 1               | Introduction                        | This section introduces the EIA and provides background information on the proposed project, proponent and purpose of the report                                                                                                                                                                                                                                                             |
| 2               | Regulatory Framework                | This chapter describes the Namibian environmental regulatory framework applicable to the project and how it has been considered in the assessment and the scoping report and EMP.                                                                                                                                                                                                            |
| 3               | Methodology and approach to the EIA | This chapter presents the methodology applied to the EIA                                                                                                                                                                                                                                                                                                                                     |
| 4               | Project Description                 | Presents a description of the proposed project and how the proposed project will be operated.                                                                                                                                                                                                                                                                                                |
| 5               | Environmental and social baseline   | This chapter presents the predicted potential environmental and social effects arising from the proposed project, and the mitigation and management strategies to be applied to avoid or reduce the effects.                                                                                                                                                                                 |
| 6               | Environmental Assessment findings   | This chapter predicts the potential environmental and social impacts arising from the project, the assessment of impacts including residual impact This chapter also outlines the proposed management strategies for monitoring commitments to ensure the actual and potential impacts on the environment are minimised to “As Low As Reasonably Practicable” (ALARP) this informs the EMP   |
| 7               | Environmental Management Plan       | This chapter provides a short description of the EMP used to take proactive action by addressing potential problems before they occur and outline mitigation measures for each impact                                                                                                                                                                                                        |
| 8               | Conclusions                         | Conclude the findings of the EIA                                                                                                                                                                                                                                                                                                                                                             |
|                 | References                          | A list of reference used for this report                                                                                                                                                                                                                                                                                                                                                     |
| <b>Appendix</b> | Appendices A-E                      | A list of appendices used for this report <ul style="list-style-type: none"> <li>- Appendix A: Environmental Management Plan</li> <li>- Appendix B: Non-Technical Summary</li> <li>- Appendix C: Evidence of Public Consultation, Site notice, Newspaper adverts, Project Registered Post and letter</li> <li>- Appendix D: List of Plant species</li> <li>- Appendix E: ECC CV's</li> </ul> |

## 2 REGULATORY FRAMEWORK

This chapter outlines the regulatory framework applicable to the proposed project. TABLE 3 provides a list of applicable legislation and the relevance to the project.

### 2.1 NATIONAL REGULATORY POLICES

TABLE 3 – LEGAL COMPLIANCE

| NATIONAL REGULATORY REGIME                                    | SUMMARY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | APPLICABILITY TO THE PROJECT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Minerals (Prospecting and Mining) Act No 33 of 1992</b>    | <p>Provides for the reconnaissance, prospecting and mining for, and disposal of, and the exercise of control, minerals in Namibia.</p> <p>Section 50 (i) requires <i>“an environmental impact assessment indicating the extent of any pollution of the environment before any prospecting operations or mining operations are being carried out and an estimate of any pollution, if any, likely to be caused by such prospecting operations or mining operations”</i></p> <p>Section 50 sets out that in addition to any term and condition contained in a mineral agreement and any term and condition contained in any mineral licence, it shall be a term and condition of any mineral licence that the holder of such mineral licence shall:</p> <p>Exercise any right granted to him or her in terms of the provisions of this Act reasonably and in such manner that the rights and interests of the owner of any land to which such licence relates are not adversely affected, except to the extent to which such owner is compensated.</p> <p>Section 52 sets out that the holder of a mineral licence shall not exercise any rights conferred upon such holder by this Act or under any terms and conditions of such mineral licence</p> <p>(a) In, on or under any private land until such time as such holder-</p> <p>(i) Has entered into an agreement in writing with the owner of such land containing terms and conditions relating to the payment of compensation, or the owner of such land has in writing waived any right to such compensation and has submitted a copy of such agreement or waiver to the Commissioner.</p> | <p>The proposed activity is prospecting for minerals; hence it requires an EIA to be carried out as it triggers listed activities in the Environmental Management Act regulations. This report presents the findings of the EIA.</p> <p>Works shall not commence until all conditions in the Act are met, which includes an agreement with the landowners and conditions of compensation have been agreed.</p> <p>The project shall be compliant with Section 76. With regards to records, maps, plans and financial statements, information, reports, and returns submitted.</p> <p>As the proponent will need to access privately owned land the proponent will ensure sections 50 and 52 are complied with.</p> |
| <b>Environmental Management Act, 2007 (Act No. 7 of 2007)</b> | <p>The Act aims to promote sustainable management of the environment and the use of natural resources by establishing principles for</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>This Environmental Scoping Report (and EMP) documents the findings of the environmental assessment undertaken for</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| NATIONAL REGULATORY REGIME                                                                                         | SUMMARY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | APPLICABILITY TO THE PROJECT                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2007) and its regulations, including the Environmental Impact Assessment Regulations, 2007 (No. 30 of 2012)</b> | <p>decision-making on matters affecting the environment.</p> <p>It sets the principles of environmental management as well as the functions and powers of the Minister. The Act requires certain activities to obtain an environmental clearance certificate prior to project development. The Act states an EIA may be undertaken and submitted as part of the environmental clearance certificate application.</p> <p>The MET is responsible for the protection and management of Namibia's natural environment. The Department of Environmental Affairs under the MET is responsible for the administration of the EIA process.</p> | <p>the proposed project, which will form part of the environmental clearance application. The assessment and report have been undertaken in line with the requirements under the Act and associated regulations.</p>                                                                                                                                                                                                                                |
| <b>Water Act, 1956</b>                                                                                             | <p>This Act provides for "the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain respect and for the control of certain activities on or in water in certain areas".</p> <p>The Ministry of Agriculture Water and Forestry Department of Water Affairs is responsible for the administration of the Water Act.</p> <p>The Minister may issue a Permit in terms of the regulations 5 and 9 of the government notice R1278 of 23 July 1971 as promulgated under section 30 (2) of the Water Act no. 54 of 1956, as amended.</p>             | <p>The Act stipulates obligations to prevent pollution of water. The EMP sets out measures to avoid polluting the water environment.</p> <p>Measures to minimise potential groundwater and surface water pollution are contained in the EMP.</p> <p>Should the project require drilling and abstraction of water from surface and or underground sources, an application should be submitted to the Minister of Agriculture Water and Forestry.</p> |
| <b>Soil Conservation Act No.76 of 1969</b>                                                                         | <p>Makes provision for the prevention and control of soil erosion and the protection, improvement and the conservation, improvement and manner of use of the soil and vegetation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Taken into consideration during the design of the works to be undertaken within EPL7342 sites. Measures in the EMP set out methods to avoid soil erosion.</p>                                                                                                                                                                                                                                                                                    |
| <b>National Heritage Act, No. 27 of 2004.</b>                                                                      | <p>The Act provides provision of the protection and conservation of places and objects with heritage significance.</p> <p>Section 55 stipulates that exploration companies must report any archaeological findings to the National Heritage Council after which a heritage permit needs to be issued</p>                                                                                                                                                                                                                                                                                                                               | <p>There is potential for heritage objects to be found on site, therefore the stipulations in the Act have been taken into consideration and are incorporated into the EMP.</p> <p>Section 55 compels exploration companies to report any archaeological findings to the National Heritage Council after which a permit needs to be issued before the find can be disturbed.</p>                                                                    |

## 2.2 MINERALS POLICY

The Minerals Policy was adopted in 2002 and sets guiding principles and direction for the development of the Namibian mining sector while communicating the values of the Namibian people. It sets out to achieve several objectives in line with the sustainable development of Namibia's natural resources. The policy strives to create an enabling environment for local and foreign investments in the mining sector and seeks to maximise the benefits for the Namibian people from the mining sector while encouraging local participation, amongst others.

The objectives of the Minerals Policy are in line with the objectives of the Fifth National Development Plan (NDP5) that include reduction of poverty, employment creation, and economic empowerment in Namibia. The proposed project is unlikely to use many employees during the exploration stages, but local staff will be used where applicable. Should exploration lead to a viable mineral resource deposit being defined, many more employment and local social benefit opportunities will be created.

## 2.3 PERMITS AND LICENCES

**TABLE 4 – PERMITS AND LICENCES REQUIREMENTS**

| PERMIT AND LICENCES                  | RELEVANT AUTHORITY                          | VALIDITY/DURATION                  |
|--------------------------------------|---------------------------------------------|------------------------------------|
| <b>WATER ABSTRACTION PERMITS</b>     | Ministry of Agriculture, Water and Forestry | Permit dependent                   |
| <b>EXCLUSIVE PROSPECTING LICENCE</b> | Ministry of Mines and Energy - Windhoek     | 3 years                            |
| <b>NOTICE OF INTENTION TO DRILL</b>  | Ministry of Mines and Energy - Windhoek     | To be submitted prior to drilling. |

### 2.3.1 EXCLUSIVE PROSPECTING LICENCE

EPL 7342 was granted on the 8<sup>th</sup> May 2019 and expires on the 7<sup>th</sup> May 2022. In terms of the Minerals (Prospecting and Mining) Act, 1992, an EPL may be renewed, however, this extension may only be extended twice for two-year periods if demonstrable progress is shown. Renewals beyond seven years require special approvals from the Minister (Ministry of Mines and Energy, 2018).

Such renewals are subject to a reduction in the size of the EPL. When a company applies for renewal of an EPL, the application must be lodged 90 days prior to the expiry date of the EPL or, with good reason, no later than the expiry date (Ministry of Environment and Tourism, Ministry of Mines and Energy, 2018).

If renewal is applied for, the MME must review the renewal application and make any comments and/or recommendations for consideration by the Minerals Prospecting and Mining Rights Advisory Committee (MPMRC). Amendments and revisions may be required for the EIA and EMP. Due consideration must be given when renewing the licence to ascertain whether there is justification to renew the licence. Once an EPL expires and a new EPL is issued, even if it is to the previous holder, the full screening process must be followed, with a full EIA process, before operations may commence (Ministry of Environment and Tourism, Ministry of Mines and Energy, 2018).

### 3 METHODOLOGY AND APPROACH TO THE EIA

#### 3.1 PURPOSE OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The EIA process in Namibia is governed and controlled by the Environmental Management, 2007 and the EIA Regulations No. 30 of 2012, which is administered by the Office of the Environmental Commissioner through the Department of Environmental Affairs (DEA) of the MET.

An EIA is a process of identifying, predicting, evaluating and mitigating the potential impacts of a proposed project on the natural and human environment. The aim of the scoping assessment and EIA process and subsequent report are to apply the principles of environmental management to proposed activities, reduce the negative and increase the positive impacts arising from a proposed project, provide an opportunity for the public to consider the environmental impacts of a proposed project through meaningful consultation, and to provide a vehicle to present the findings of the assessment process to competent authorities for decision making.

#### 3.2 THE ASSESSMENT PROCESS

The EIA methodology applied to this EIA has been developed using the International Finance Corporation (IFC) standards and models, in particular Performance Standard 1, 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017)(International Finance Corporation, 2012); Namibian draft procedures and guidance for EIA and EMP (Republic of Namibia, 2008); international and national best practice; and over 25 years of combined EIA experience. The process followed through the basic assessment is illustrated in FIGURE 2 and detailed further in the following sections.

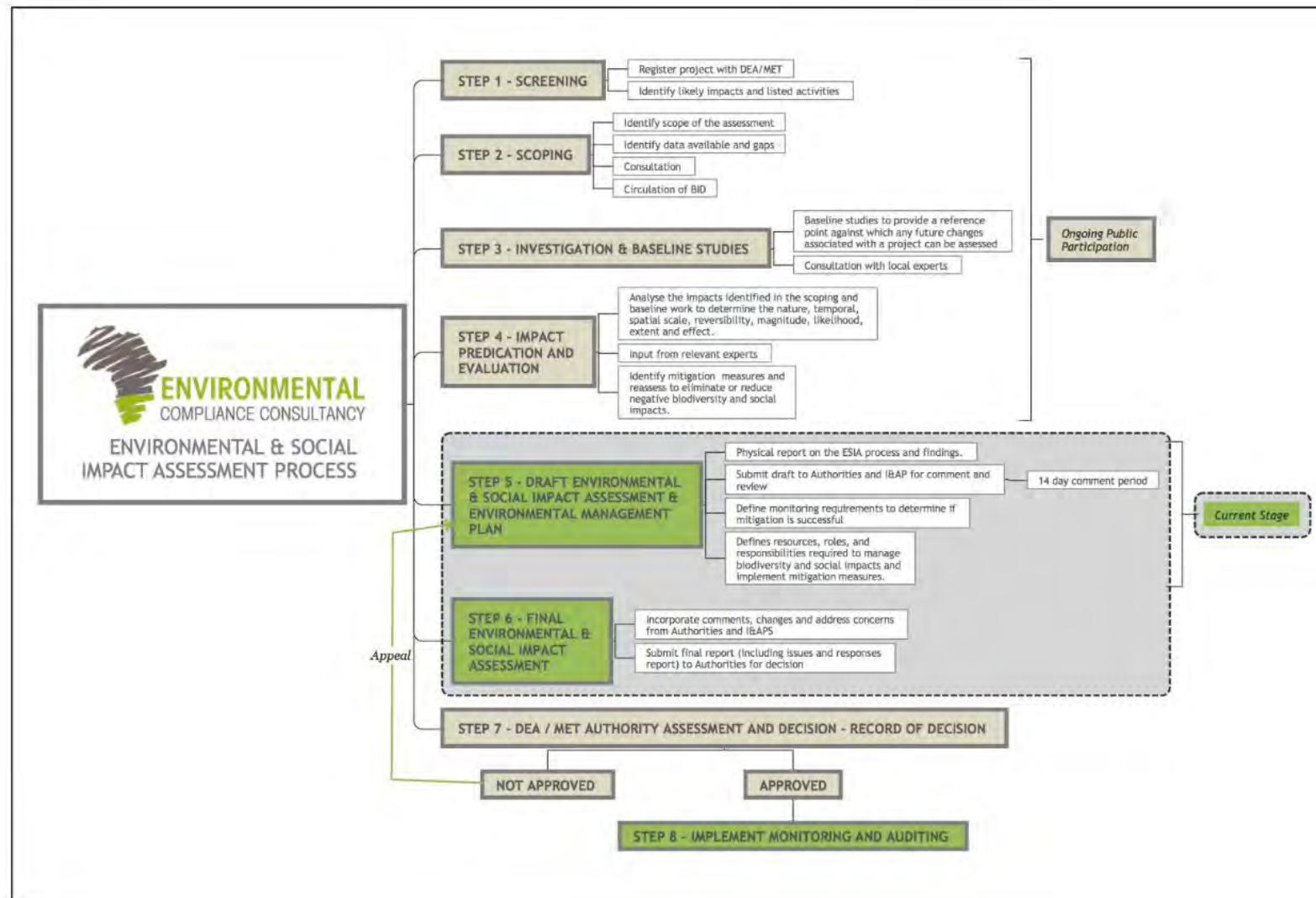


FIGURE 2 - ECC SCOPING PROCESS

### 3.3 METHODOLOGY FOR THE IMPACT ASSESSMENTS

This impact assessment is a formal process in which the effects of the project on the biophysical, social and economic environments are identified, assessed and reported, so that the effects can be taken into account when considering whether to grant project consent or to provide financial support.

Desktop studies on the national database are undertaken as part of the scoping stage to get information of the current status of the receiving environment. This provides a baseline where changes that occur as a result of the proposed project can be measured. This is verified through site data collection.

The environmental and social topics that may be affected by the proposed project are described in this section. The baseline focuses on receptors which could be affected by the proposed project.

### 3.4 SCREENING OF THE PROPOSED PROJECT

The first stages of the EIA process are to register the project with the Competent Authority and undertake a screening exercise. The screening exercise determines whether the proposed project is considered as a Listed Activity in terms of the Environmental Management Act, 2007 and associated regulations, and if significant impacts may arise. During this process, the location, scale and duration of project activities are considered against the receiving environment to determine the approach to the EIA.

### 3.5 SCOPING OF THE ENVIRONMENTAL ASSESSMENT

The purpose of the scoping stage in the EIA process is to identify the scope of assessment, undertake a high-level assessment to identify potential impacts, and confirm if further investigation is required to assign the severity of potential significant effects and allocate appropriate mitigation.

This report presents the findings of the scoping phase and high-level assessment and confirms that no further investigation is required. This conclusion is presented in Section 6.

### 3.6 BASELINE STUDIES

Baseline studies are undertaken as part of the scoping stage which involves collecting all pertinent information from the current status of the receiving environment. This provides a baseline against which changes that occur as a result of the proposed project can be measured.

For the proposed project, baseline information was obtained through a desk-top study, focussing on environmental receptors that could be affected by the proposed project and verified through site data. The baseline studies are presented in Section 5.

### 3.7 IMPACT PREDICTION AND EVALUATION

Impact prediction and evaluation involves predicting the possible changes to the environment as a result of the development/project. The recognized methodology was applied to determine the magnitude of impact and whether or not the impact was considered significant and thus warrant further investigation. The findings of the assessment are presented in Section 6.

### 3.8 EIA DETERMINATION OF SIGNIFICANCE

The evaluation and prediction of the environmental and social impacts require the assessment of the project characteristics against the baseline characteristics, ensuring all potentially significant impacts are identified and assessed.

The significance of an impact is determined by taking into consideration the combination of the sensitivity and importance/value of environmental and social receptors that may be affected by the proposed project, the

nature and characteristics of the impact, and the magnitude of potential change. The magnitude of change (the impact) is the identifiable changes to the existing environment which may be direct or indirect; temporary/short term, long-term or permanent; and either beneficial or adverse. These are described as follows and thresholds are provided in TABLE 5, 6 and 7.

- The **sensitivity and value of a receptor** is determined by identifying how sensitive and vulnerable a receptor is to change, and the importance of the receptor (internationally, nationally, regionally and locally).
- The **nature and characteristics of the impact** is determined through consideration of the frequency, duration, reversibility and probability of the impact occurring.
- The **magnitude of change** measures the scale or extent of the change from the baseline condition, irrespective of the value. The magnitude of change may alter over time, therefore temporal variation is considered (short-term, medium-term; long-term, reversible, irreversible or permanent).

**TABLE 5 – SENSITIVITY AND VALUE OF RECEPTOR**

| SENSITIVITY AND VALUE | DESCRIPTION                                                                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>High</b>           | Of value, importance or rarity on an international and national scale, and with very limited potential for substitution; and/or very sensitive to change or has little capacity to accommodate a change. |
| <b>Medium</b>         | Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or moderate sensitivity to change, or moderate capacity to accommodate a change.                    |
| <b>Low</b>            | Of value, importance or rarity on a local scale; and/or not particularly sensitive to change or has considerable capacity to accommodate a change.                                                       |

**TABLE 6 – NATURE OF IMPACT**

| NATURE                           | DESCRIPTION                                                                                                                                                                               |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Positive                         | An impact that is considered to represent an improvement on the baseline or introduces a positive change.                                                                                 |
| Negative                         | An impact that is considered to represent an adverse change from the baseline or introduces a new undesirable factor.                                                                     |
| Direct                           | Impacts causing an impact through direct interaction between a planned project activity and the receiving environment/receptors.                                                          |
| Indirect                         | Impacts that result from other activities that are encouraged to happen as a result / consequence of the Project. Associated with the project and may occur at a later time or wider area |
| <b>Extent / Geographic Scale</b> |                                                                                                                                                                                           |
| On-site                          | Impacts that are limited to the boundaries of the proposed project site                                                                                                                   |
| Local                            | Impacts that occur in the local area of influence, including around the proposed site and within the wider community                                                                      |
| Regional                         | Impacts that affect a receptor that is regionally important by virtue of scale, designation, quality or rarity.                                                                           |
| National                         | Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.                                                                           |
| International                    | Impacts that affect a receptor that is internationally important by virtue of scale, designation, quality or rarity.                                                                      |
| <b>Duration</b>                  |                                                                                                                                                                                           |
| Short-term                       | Impacts that are likely to last for the duration of the activity causing the impact and are recoverable                                                                                   |
| Medium-                          | Impacts that are likely to continue after the activity causing the impact and are recoverable                                                                                             |

|                         |                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| term                    |                                                                                                                     |
| Long-term               | Impacts that are likely to last far beyond the end of the activity causing the damage but are recoverable over time |
| <b>Reversibility</b>    |                                                                                                                     |
| Permanent /Irreversible | Impacts which are not reversible and are permanent                                                                  |
| Temporary / Reversible  | Impacts are reversible and recoverable in the future                                                                |
| <b>Likelihood</b>       |                                                                                                                     |
| Certain                 | The impact is likely to occur                                                                                       |
| Likely                  | The impact is likely to occur under most circumstances                                                              |
| Unlikely                | The impact is unlikely to occur                                                                                     |

**TABLE 7 – MAGNITUDE OF CHANGE**

| MAGNITUDE OF CHANGE | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Major</b>        | Loss of resource, and quality and integrity of resource; severe damage to key characteristics, features or elements; or<br>Large-scale or major improvement of resources quality; extensive restoration or enhancement; major improvement of attribute quality.                                                                                                |
| <b>Moderate</b>     | Loss of resource, but not adversely affecting its integrity; partial loss of/damage to key characteristics, features or elements; or<br>Benefit to, or addition of, key characteristics, features or elements; improvements of attribute quality.                                                                                                              |
| <b>Minor</b>        | Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (or maybe more) key characteristic, feature or element; or<br>Minor benefit to, or addition of, one (or maybe more) key characteristic, feature or element; some beneficial effect on attribute quality or a reduced risk of a negative effect occurring. |
| <b>Negligible</b>   | Very minor loss or detrimental alteration to one (or maybe more) characteristic, feature or element; or<br>Very minor benefit to, or positive addition of, one (or maybe more) characteristic, feature or element.                                                                                                                                             |

The level of certainty has also been applied to the assessment to demonstrate how certain the assessment conclusions are and where there is potential for misinterpretation or a requirement to identify further mitigation measures, thereby adopting a precautionary approach. Where there is a low degree of certainty, monitoring and management measures can be implemented to determine if the impacts are worse than predicted and support the identification of additional mitigation measures through the life time of the proposed project. TABLE 8 provides the levels of certainty applied to the assessment, as well as a description.

**TABLE 8– LEVEL OF CERTAINTY**

| LEVEL OF CERTAINTY | DESCRIPTION                                                                                                                                                                                                                                                                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High               | <ul style="list-style-type: none"> <li>– Likely changes are well understood</li> <li>– Design/information/data used to determine impacts is very comprehensive</li> <li>– Interactions are well understood and documented</li> <li>– Predictions are modelled, and maps based on interpretations are supported by a large volume of data, and</li> </ul> |

|        |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <ul style="list-style-type: none"> <li>Design/information/data has very comprehensive spatial coverage or resolution.</li> </ul>                                                                                                                                                                                                                                                                                    |
| Medium | <ul style="list-style-type: none"> <li>Likely changes are understood</li> <li>Design/information/data used to determine impacts include a moderate level of detail</li> <li>Interactions are understood with some documented evidence</li> <li>Predictions are modelled but not yet validated and/or calibrated, and</li> <li>Mapped outputs are supported by a moderate spatial coverage or resolution.</li> </ul> |
| Low    | <ul style="list-style-type: none"> <li>Interactions are currently poorly understood and not documented.</li> <li>Predictions are not modelled, and the assessment is based on expert interpretation using little or no quantitative data.</li> <li>Design is not fully developed, or information has poor spatial coverage or resolution.</li> </ul>                                                                |

The significance of impacts has been derived using professional judgment and applying the identified thresholds for receptor sensitivity and magnitude of change (as discussed above) and guided by the matrix presented in TABLE 9. The matrix is applicable for impacts that are either positive or negative. The distinction and description of significance and whether the impact is positive, or negative is provided in TABLE 10.

**TABLE 9 – GUIDE TO SIGNIFICANCE RATINGS**

| Magnitude of Change |              |              |              | Sensitivity |
|---------------------|--------------|--------------|--------------|-------------|
| Negligible          | Minor        | Moderate     | Major        |             |
| Minor (3)           | Moderate (6) | Major (9)    | Major (12)   |             |
| Low (2)             | Minor (4)    | Moderate (6) | Major (8)    |             |
| Low (1)             | Low (2)      | Minor (3)    | Moderate (4) | Low         |

Significance is not defined in the Namibian EIA Regulations, however the Draft Procedure and Guidance for EIA and EMP states that the significance of a predicted impact depends upon its context and intensity. Accordingly, definitions for each level of significance has been provided in TABLE 9. These definitions were used to check the conclusions of the assessment of receptor sensitivity, nature of impact and magnitude of impact was appropriate.

**TABLE 10 – SIGNIFICANCE DESCRIPTION**

| SIGNIFICANCE OF IMPACT | DESCRIPTION |
|------------------------|-------------|
|------------------------|-------------|

|                                 |                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Major (negative)</b>         | Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors.<br>Impacts are expected to be permanent and non- reversible on a national scale and/or have international significance or result in a legislative non- compliance.            |
| <b>Moderate (negative)</b>      | Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.                                              |
| <b>Minor (negative)</b>         | Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent. |
| <b>Low (negative)</b>           | Impacts are considered to be local factors that are unlikely to be critical to decision-making.                                                                                                                                                                                                                                                                                      |
| <b>Low – Major (Beneficial)</b> | Impacts are considered to be beneficial to the environment and society:                                                                                                                                                                                                                                                                                                              |

To ensure the beneficial impacts are brought out in the assessment, green has been applied to ensure the different type of impact is clear. The description for each level of significance presented in TABLE 10 was also followed when determining the level of significance for a beneficial impact.

The significance of impacts has been derived using professional judgment and applying the identified thresholds for receptor sensitivity and magnitude of change, as well as the definition for significance. In most instances, moderate and major adverse impacts are considered as significant, and however, there may be some instances where impacts are lower than this but are considered to be significant. The following thresholds were therefore used to double check if the assessment of significance has been applied appropriately; a significant impact would meet at least one of the following criteria:

- It exceeds widely recognized levels of acceptable change
- It threatens or enhances the viability or integrity of a receptor or receptor group of concern, and
- It is likely to be material to the ultimate decision about whether or not the environmental clearance certificate is granted.

### 3.9 EIA CONSULTATION

Public participation and consultation are a requirement in terms of in section 21 of the Environmental Management Act No.7 of 2007 and its regulations for a project that requires an environmental clearance certificate. Consultation is a compulsory and critical component in the EIA process, aimed at achieving transparent decision-making, and can provide many benefits.

A key aim of the consultation process is to inform stakeholders and interested and affected parties (I&AP) about the proposed project. The methods undertaken for the proposed project are detailed as follows, which are in line with the requirements of the EIA regulations.

### 3.9.1 NON-TECHNICAL SUMMARY

The Non-Technical Summary (NTS) presents a high-level description of the proposed project; sets out the EIA process and when and how consultation is undertaken. The contact details for further enquiries are made available to all registered I&APS and the NTS can be found in Appendix B.

### 3.9.2 NEWSPAPER ADVERTISEMENTS

Notices regarding the proposed project and associated activities were circulated in two newspapers namely the 'Namibian' and the 'Informante' on the 11<sup>th</sup> and 18<sup>th</sup> of July 2019 (see Appendix C). The purpose of this was to commence the consultation process by informing the public about the project and enabling I&APs to register an interest with the project.

### 3.9.3 SITE NOTICES

A site notice ensures neighbouring properties and stakeholders are made aware of the proposed project. The notice was set up at the boundary of the EPL as illustrated in Appendix C.

### 3.9.4 CONSULTATION FEEDBACK

No issues or concerns were raised by the I&APs during consultation period.

## 4 PROJECT DESCRIPTION

### 4.1 NEED FOR THE PROPOSED PROJECT

Namibia is rich in a variety of minerals including uranium, diamonds, copper, lead, gold, zinc, iron, limestone and fluorspar. The mining sector in Namibia contributes significantly to the country's Gross Domestic Product (GDP), government tax receipts and export revenues. For this reason, exploration activities are encouraged in Namibia and the vision of the Minerals Policy being to *"further attract investment and enable the private sector to take the lead in exploration, mining, mineral beneficiation and marketing"* supports the development.

The proposed project is in line with this vision and has the potential to create employment in local communities in the Otjozondjupa region. In the event that exploration activities are successful, and a resource can be defined, with commercially viable mineral concentrations, exploration operations can potentially transcend into mining operations which can result in socio-economic development in the area.

### 4.2 ALTERNATIVES CONSIDERED

#### 4.2.1 NO-GO ALTERNATIVE

Should exploration activities within EPL 7342 not take place, the anticipated environmental impacts from exploration activities would not occur, however, the social and economic benefits associated with project would also not be realised.

There would not be an opportunity to define resources within the project area, this would be a missed opportunity for geological mapping and data collection that would add to regional knowledge of Namibia's mineral wealth and, if found to be viable for mining, could benefit the Namibian economy.

### 4.3 PROPOSED EXPLORATION ACTIVITIES

The exploration activities on EPL 7342 will include some or all of the following methods: aerial or remote sensing, geological mapping, geochemical sampling, geophysical surveys and drilling. Details of these methods are described below.

Existing tracks will be used as far as reasonably practical. In the event that new tracks are required they will be developed by hand or using a bulldozer if the area is heavily bush-encroached or hilly. Vegetation clearance shall be required for drill access tracks, drill pads and for a drillers' camp. This will also be carried out by hand or bulldozer depending on the bush thickness and the required clearance distances.

**REMOTE SENSING** techniques in mineral exploration enable explorers to evaluate large areas of the earth remotely without having to undertake ground-based exploration operations. Remote sensing may be used to map the geology and existing faults and fractures that localise the ore deposits, or maybe used to identify rocks which have been hydrothermally altered. Remote sensing involves the use of aircraft or satellite-based equipment to obtain data to record spectral data from the surface of the earth. Remote sensing includes a number of tools and techniques including geographical information systems, radar and sonar. Typically, satellites or high-flying aircraft are used in the data collection process. It is a useful tool when searching for minerals and can give an indication of where deposits could be located. Remote sensing aids in narrowing down the field survey area and helps to identify target areas that may be considered for more detailed investigation and possible drilling.

**GEOLOGICAL MAPPING** of outcrops is used to describe the primary lithology and morphology of rock bodies as well as age relationships between rock units. Mapping is a crucial part of refining subsurface

targets, as it provides structural information and can be used to predict the subsurface geology. This will be conducted concurrently with the geochemical sampling.

**GEOCHEMICAL SAMPLING (soil and rock sampling)** is a non-invasive technique to determine the existence and extent of a potential resource. Soil sampling and rock chip sampling are undertaken to define the location and possible extent of mineralization. Geochemical data are used to focus on areas of higher mineral potential as the project advances and help to define drill targets. They assist the company to drill more selectively and thereby increase the chances of intersecting mineralised zones during exploration, and reduce the overall footprint of exploration and environmental impact in the area. Geochemical surveys will be the first ground exploration method to be undertaken by Votorantim Metals Namibia (Pty) Ltd in the licence area.

**GEOPHYSICAL GROUND SURVEYS** will be undertaken to collect data that give an indication of rock properties, particularly at depth. They are also used to map the geological structures. Induced Polarization (IP) surveys will be undertaken involving high voltage electrical currents measured via electrodes in the ground along linear cut-lines up to 3 km long to provide access to electrical cables. Small holes in the ground (0.2m x 0.2m x 0.3m) will be required for IP electrodes every 50m along a survey line. Copper sulphate solution will be used to improve the conduction of electrodes during the IP survey. During Audio - Magnetotelluric (AMT) surveys the same lines and small holes in the ground will be used, but without the application of high voltage electrical currents.

**DIAMOND DRILLING** entails the use of a diamond drill in order to obtain core samples. Bio-degradable drill additives will be used during diamond core drilling.

Soil, rock and drill core samples will be stored at the site office. Exploration activities are usually undertaken in phases, with periods of no field activity between them, which allows for awaiting analytical results, and the integration and interpretation of data to decide on the next phase of exploration.

The area to be cleared for drill site access and/or temporary campsites, shall not be more than 15ha, and therefore would not trigger the Forest Act, 2001 (Section 23). In addition, any established or large trees shall not be removed and access roads will be routed to avoid these wherever possible and permits will be obtained as necessary. Impacts and effects of geochemical surveys and drilling programmes are likely to be low (see Section 5.4 and the EMP).

#### 4.3.1 EXPLORATION SCHEDULE

Field exploration activities, using techniques as discussed above, are anticipated to be carried out over the licence validity period. Remote sensing studies and planning phases for the prospecting programme will require 2-6 months. Geochemical sampling may be undertaken concurrently with geological mapping for approximately 2-6 months. Geophysical surveys may then be carried out over a period of about two (2) months after which the project will advance reverse circulation or core drilling.

The duration of drilling programs is variable, and usually depends on the information that is gained from drilling. Applications for the environmental clearance certificate, along with all required permits will be submitted during this period should a second renewal of the EPL be required.

#### 4.3.2 EQUIPMENT AND MATERIALS

During the exploration phase double and single cab vehicles will be used to transport workers to and from and around the site. A drilling truck will be brought to site for core drilling, along with a water truck and supporting trucks for use during drilling. Drilling equipment, diesel fuel and consumables shall be brought to the exploration site to support exploration activities as and when needed.

#### 4.3.3 WORKERS AND ACCOMMODATION

Approximately 16 workers will be employed during the exploration phase and they will be mainly sourced from the local area e.g. Kombat and Otavi. The 16 workers will be deployed at various stages of exploration including soil sampling, geological mapping, geophysical surveys and drilling operations

It is envisaged that for most of the exploration programme workers will reside in Otavi or Kombat and be transported to and from the site. Transport will be provided by the company. However, during the latter part of the prospecting (drilling) workers may be required to stay at the exploration site in campsites or in existing housing rented from the property owner. The proponent shall provide suitable living facilities including showers and portable toilets, during this period. Furthermore, the camping equipment shall include tents and a portable kitchen.

#### 4.3.4 RESOURCE USE AND WASTE MANAGEMENT

Water will be required for various uses including human consumption during the planned exploration activities. It will most likely be sourced from an existing water source on site, after permission has been obtained from the farm owner. Alternatively, water will be trucked in or where many holes are to be drilled in an area, a borehole will be drilled. In this case the required water borehole permits, and abstraction permit shall be obtained from the Ministry of Agriculture Water and Forestry.

Waste produced on site will include sewerage and solid waste such as packaging. All solid waste shall be collected, taken off site and disposed of at the nearest approved waste management facility. Mobile toilets will be used on site, sewerage generated shall be managed by the toilet contractor. The proponent shall ensure waste transport certificates are provided by the toilet contractor for sewerage waste removed from site. No waste will be discharged into the environment.

#### 4.4 SITE REHABILITATION

Once exploration activities are completed the areas shall be rehabilitated to a condition as close to the original state as far as possible. Rehabilitation shall be determined during the exploration programme and shall be agreed with the landowner and the MET. Before and after photographs will be used to monitor rehabilitation success.

## 5 ENVIRONMENTAL AND SOCIAL BASELINE

### 5.1 INTRODUCTION

This section provides an overview of the existing biophysical environment through the analysis of the baseline data regarding the existing natural and socio-economic environment. Desktop studies on the national database are undertaken as part of the scoping stage to get information of the current status of the receiving environment. This provides a baseline where changes that occur as a result of the proposed project can be measured. This section also incorporates consultation and public participation of the proposed project.

### 5.2 THE PROJECT SITE LOCATION AND SURROUNDING ENVIRONMENT

EPL 7342 is located approximately 30 km east of Otavi and immediately north of Kombat (FIGURE 1)

There are a few tourist attractions in the vicinity of Otavi, such as the Hoba Meteorite, Lake Otjikoto, Ghaub Cave the Mundulea Nature Reserve and the Khorab Memorial. It is unlikely that prospecting activities will interfere with any of these tourist activities as they do not fall within the exploration area. Additionally, EPL 7342 covers seven (7) farms, as seen in FIGURE 4. Most farms have well-kept fences with access tracks on one side which can be used for exploration vehicles.

The land-use of the area is predominantly livestock, maize and lucern farming and lies in the “maize triangle” that is formed by Otavi, Grootfontein and Tsumeb, at the points of the triangle. Constant communication with the farmers will need to be maintained during exploration activities and prospecting of the site. The site can be accessed via the D2863 district road which goes from Kombat northwards (FIGURE 4).

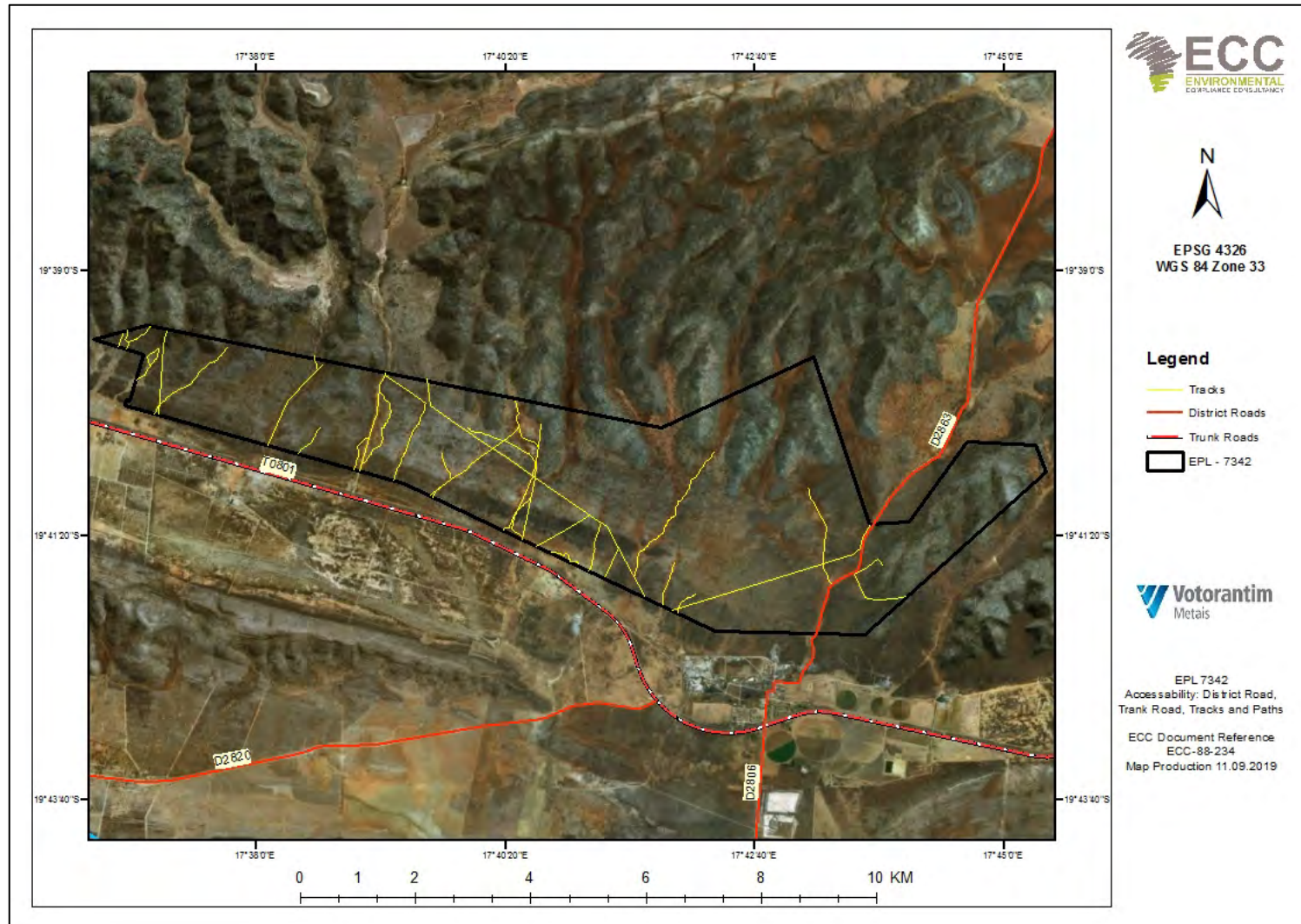


FIGURE 3 ACCESSIBILITY MAP OF EPL 7342

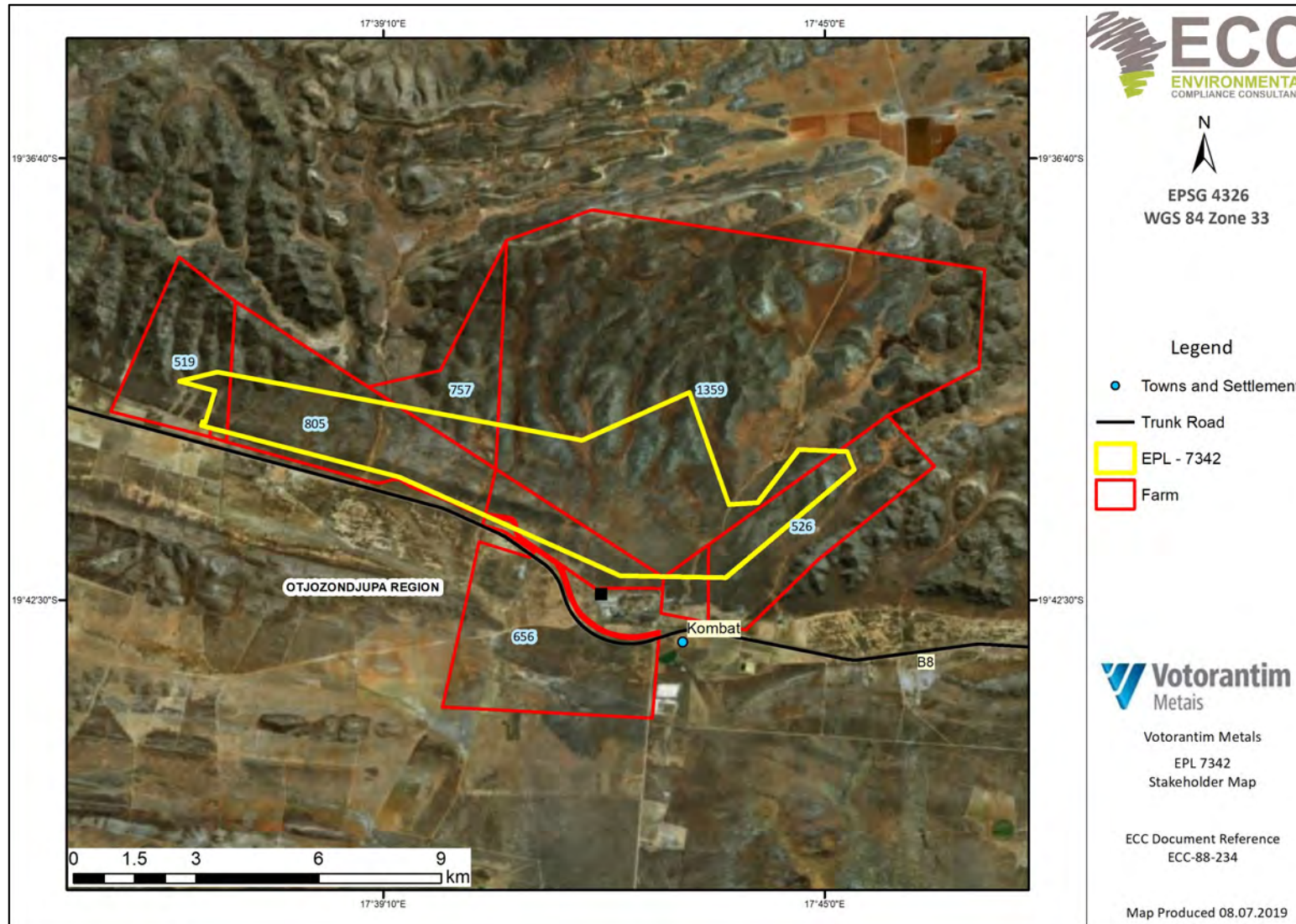


FIGURE 4 – EPL 7342 LOCATION RELATIVE TO NEIGHBOURING FARMS AND STAKEHOLDERS

### 5.3 CLIMATE

The average annual temperatures in the EPL area are 20°C - 22°C. Temperatures in the area reach a maximum up to 40°C (Weather Spark, 2019). The average minimum temperature in the area ranges between 4°C and 6°C. The area is semi-arid with an average rainfall ranging from 300 mm to 900 mm (mean 500 mm) per annum (Weather Spark, 2019). The wind blows predominately Predominant wind direction is from north to east, with average wind speeds between 1 and 7 meters per second, while 21.4% of the year there is no wind see FIGURE 5 (Iowa State University, 2019).

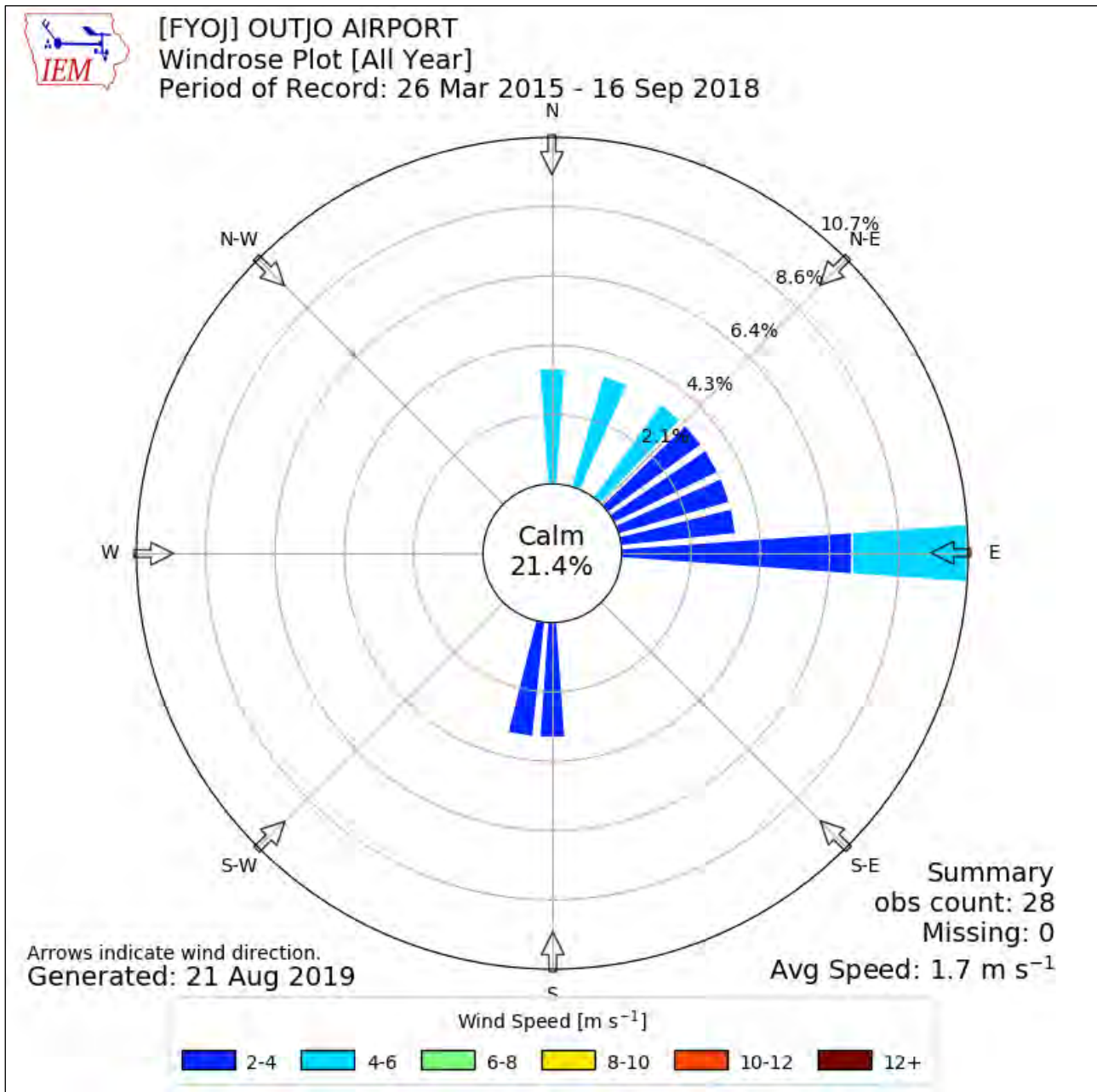


FIGURE 5 – PREVAILING WIND DIRECTION AND WIND SPEED IN THE AREA OF THE PROPOSED PROJECT

### 5.4 FLORA AND FAUNA

EPL 7342 is found within the Tree-and-Shrub Savannah biome, with the vegetation types dominated by Karstveld and a mixed woodland structure (Mendelsohn *et al.*, 2003). The area have various dominant landscape which consists of

large mixed woodland, mainly thorn bush (FIGURE 6). The area supports a medium-high terrestrial diversity of animal and plant, with a plant diversity in the area approximately 400 – 500 species (Mendelsohn *et al.*, 2003).

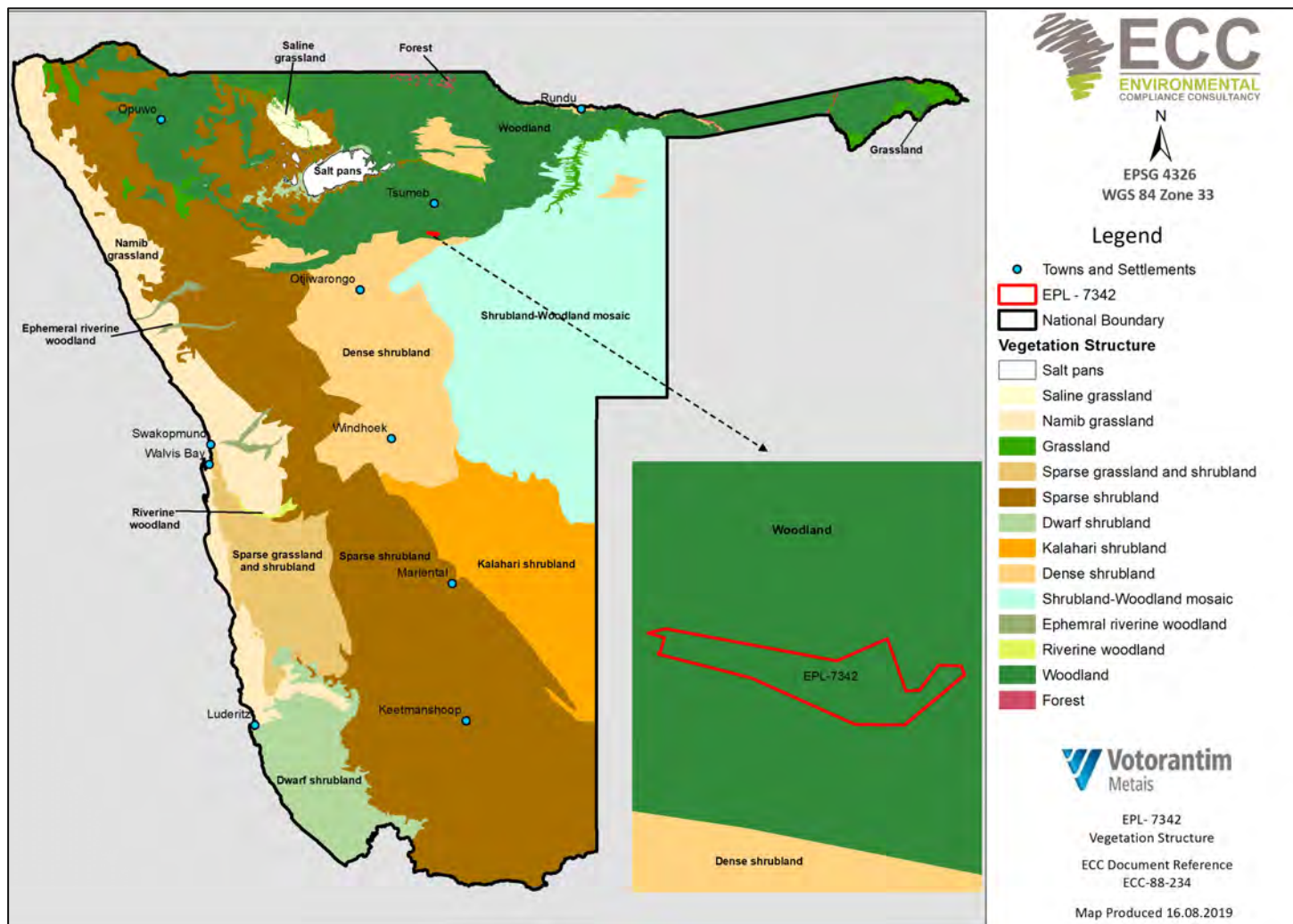


FIGURE 6 – REGIONAL AND LOCAL VEGETATION TYPE

## 5.5 LANDSCAPE AND GEOLOGY

The local geology of EPL 7342 comprises a syncline with the Tschudi and Kombat formations at the surface and underlain by the Tsumeb Subgroup and Abenab Subgroup of the Otavi Group, respectively (FIGURE 7). These formations form part of the Carbonate Platform of the Damara Orogen which comprises a thick sequence of late Proterozoic to early Phanerozoic (1000 to 541 Million) Otavi Group carbonates deposited on Nosib and basement rocks (Trigon Metals,, 2019). EPL 7342 is situated in the Karstveld geological landscape, dominated by limestone with little or no surface run-off. This rock type promotes strong development of sinkholes and caves. The other major rock types in the area are dolomite and metamorphic sedimentary rocks.

## 5.6 SOILS

A variety of soil types can be found within EPL 7342 including eutric regosols which are medium or fine textured soils with high base saturation and are relatively fertile and chromic luvisols which have a well-drained, porous and aerated structure and typically have bright colours (FIGURE 8). There are numerous rock outcrops scattered across the area.

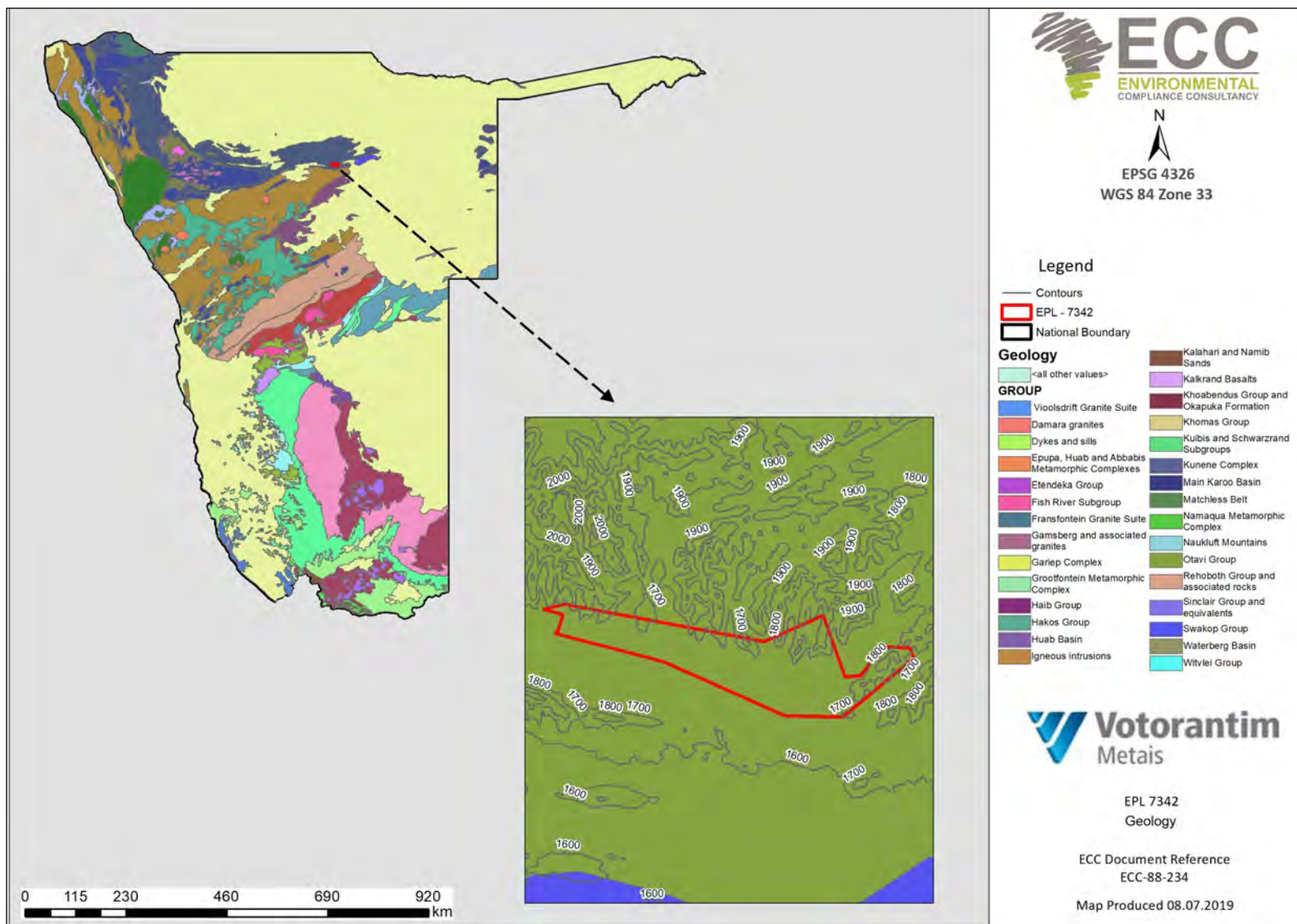


FIGURE 7 – EPL 7342 LOCATION RELATIVE TO GEOLOGICAL MAP

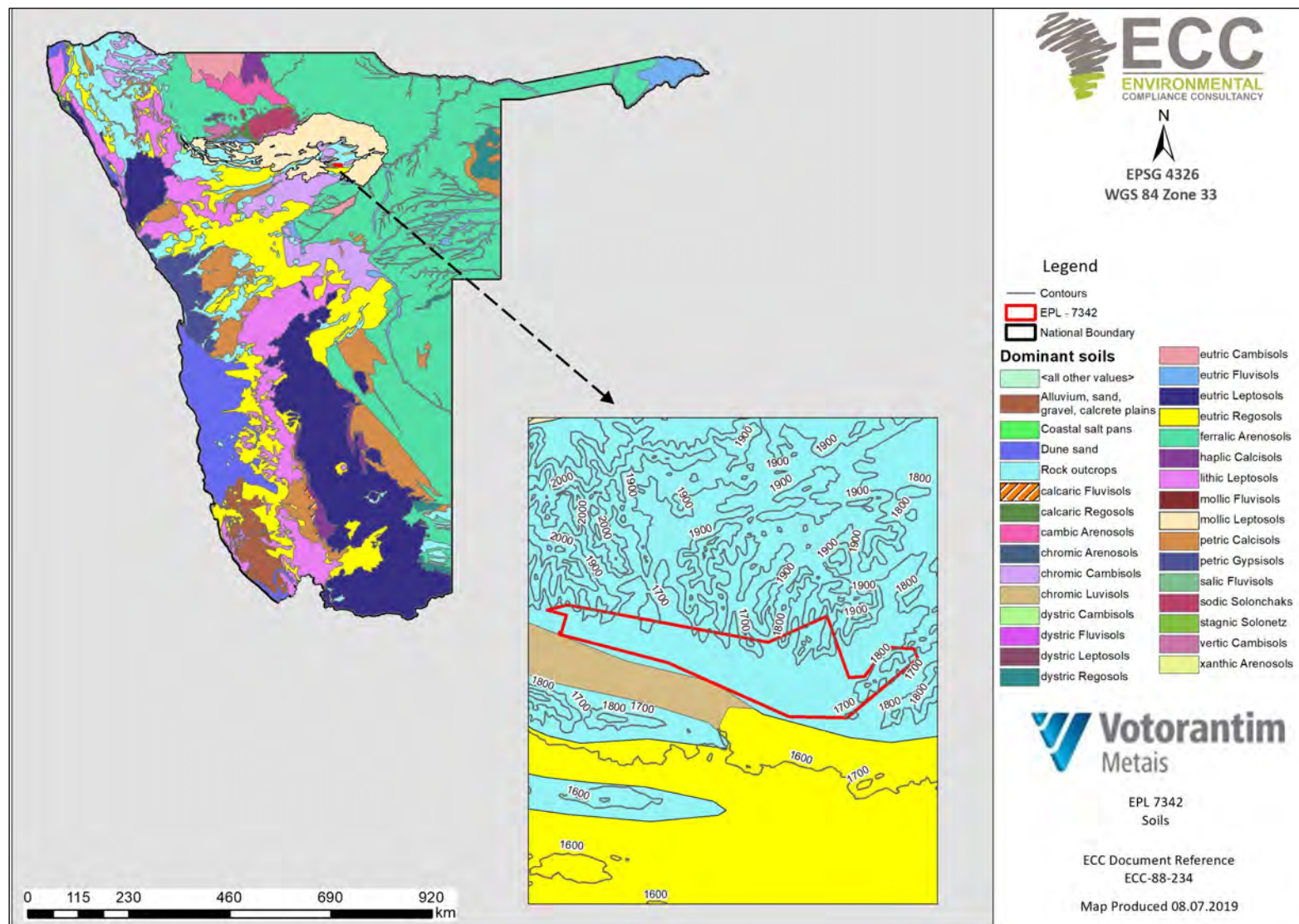


FIGURE 8 – EPL 7342 LOCATION RELATIVE TO SOIL MAP

## 5.7 SURFACE AND GROUNDWATER

EPL 7342 is characterised by gently rolling hills with rugged karst topographical outcrops caused by the dolomitic nature of the majority of underlying rocks with an elevation profile ranging between 1600 m to 1800 m (FIGURE 9). EPL 7342 is most likely situated within the Kombat aquifer which is largely hydraulic fracture controlled (Mukendwa, 2009), with extensive drainage lines (FIGURE 10). Ground water is used predominantly for domestic purposes, subsistence and small-scale and large-scale commercial farming. Given the nature and scale of drilling exploration envisaged, it is unlikely to impact ground water.

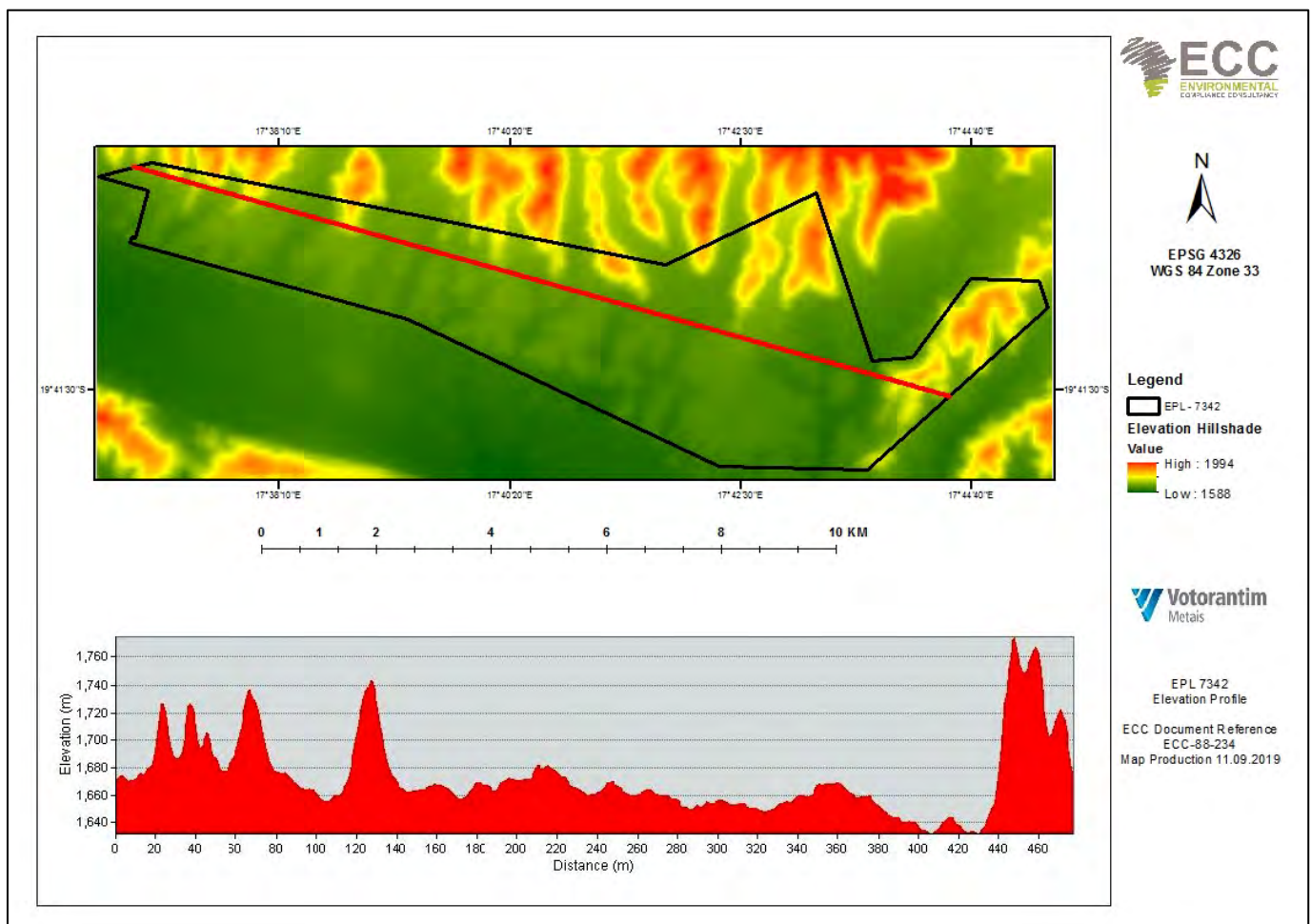


FIGURE 9 – ELEVATION PROFILE ALONG EPL 7342

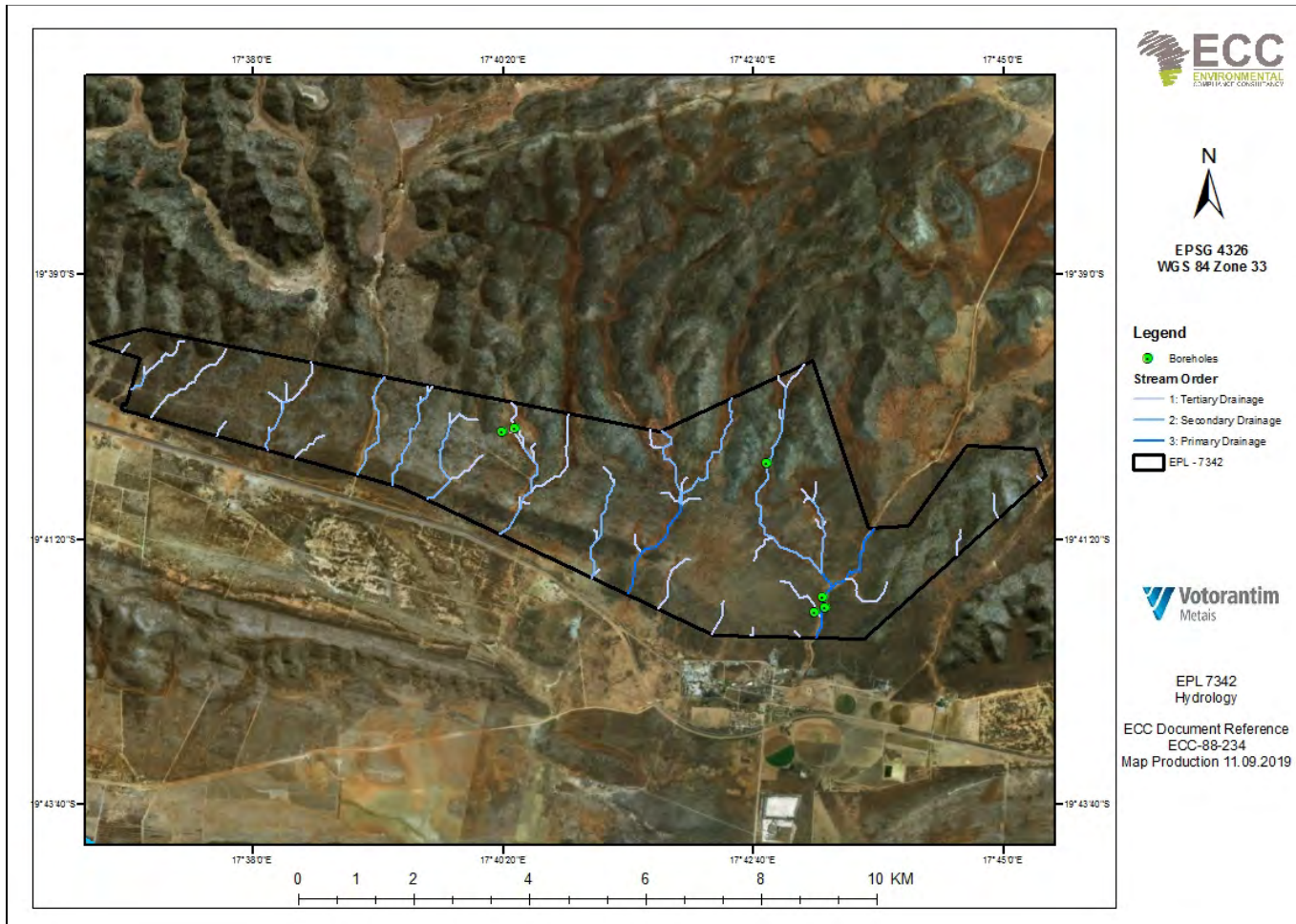


FIGURE 10 – HYDROLOGY OF EPL 7342

## 5.8 SOCIO-ECONOMIC

### 5.8.1 GOVERNANCE

Namibia was established in 1990 and is led by a democratically-elected and stable government. The country ranked top fifth out of 54 African countries in the Ibrahim Index of African Governance in 2015 for the indicators including the quality of governance and the government's ability to support human development, sustainable economic opportunity, rule of law and human rights (National Planning Commission, 2017).

As a result of sound governance and stable macroeconomic management, Namibia has experienced rapid socioeconomic development. Namibia has achieved the level of 'medium human development' and ranks 125th on the Human Development Index out of 188 countries (National Planning Commission, 2017).

### 5.8.2 DEMOGRAPHIC PROFILE

Namibia is one of the least densely populated countries in the world, with a population of 2.3 million people. Life expectancy is 65 years and expected years of schooling is 11.7 (National Planning Commission, 2017).

Namibia's population is expected to increase from an estimated 2.11 million in 2011 to 3.44 million by 2041 (63%). In the 2011 Census, the population of the Otjozondjupa region was 143,903 (Namibia Statistics Agency, 2011).

### 5.8.3 HIV/AIDS IN NAMIBIA

HIV/AIDS is a critical public health issue in Namibia and is one of the leading causes of death. Namibia has a general HIV epidemic, meaning that there is a high HIV prevalence among the whole population. The epidemic is now starting to stabilise, after a rapid increase from the time that the first case of HIV was reported in 1986 through peaking in 2002. HIV prevalence in Namibia is not yet measured through a population-based survey, instead, HIV prevalence among pregnant women attending Ante Natal Clinics is used. In 2010, 18.8% of pregnant women were HIV positive, a reduction from the high of 22% in 2002. However, HIV prevalence is unevenly distributed throughout the country, and this figure therefore not representative. The overall trend illustrates that HIV prevalence is stabilising rather than increasing (UNICEF, 2011).

### 5.8.4 EMPLOYMENT

Unemployment rates in Namibia particularly, among the youth are exceedingly high. According to the Namibia Labour Survey (2018), the unemployment rate of the country was 33.4% in 2018, with the Otjozondjupa region making up to 36.1% in the unemployment.

The labour force participation rate is the proportion of the economically active people in a given population group, which is calculated as the number of economically active people divided by the total population in the same population group. The labour force participation for the country was 71.2% (Namibia Labour Force Survey 2018).

### 5.8.5 ECONOMIC ACTIVITIES

The Namibian economy has grown on average by 4.6% per year between 2012 and 2016, however, slowed down in 2016 to 0.2% due to a reduction in productivity in the farming industry. Nearly 18% of the population lived in poverty in 2016, largely due to high unemployment, despite the increasing growth rate. A lack of industrialisation and infrastructure has contributed to Namibia's economic imbalance. The 5th Namibian NDP (National Planning Commission (2017) states that, by modernization and industrialization of the major sectors of agriculture, fisheries,

manufacturing, mining and tourism, and the provision of trading opportunities will enable workers can upgrade their skills. Namibia will create jobs in a diverse range of industries which will improve the economy.

The mining and quarrying sector is the largest sectoral income which contributed an overall 11.3 percent to GDP and 64.2 percent to gross primary industry contribution to GDP, which is then followed by the tourism, fishing and manufacturing sectors (National Planning Commission, 2018).

#### 5.8.6 CULTURAL HERITAGE

A review of the National Heritage Council database was conducted, and no known heritage sites were identified in the project area. In cases where heritage sites are discovered the chance find procedure will be used.

#### 5.8.7 NOISE AND VIBRATIONS

EPL 7342 is located approximately 30 km east of Otavi and immediately north of Kombat bordering up to seven (7) farms. The EPL lies in the “maize triangle” that is formed by Otavi, Grootfontein and Tsumeb, at the points of the triangle. It is likely that noise in the area could affect these sensitive receptors of the area. It is therefore advised that constant communication with the farmers will need to be maintained during exploration activities and prospecting of the site.

## 6 ENVIRONMENTAL ASSESSMENT FINDINGS

### 6.1 SCOPING ASSESSMENTS FINDINGS

When undertaking the scoping exercise, the design of the proposed project and best practice measures were considered. This is to ensure the likely significant effects and any necessary additional mitigation measures were identified. The following topics were considered during the scoping phase:

- Surface water and groundwater (including geomorphology);
- Soils and geology;
- Landscape (visual impacts, change in landscape, sense of place);
- Socio-economics (employment, local businesses, community, demographics & tourism, land use);
- Noise;
- Ecology (fauna & flora);
- Human environment (infrastructural services, traffic and transport);
- Air quality (including dust); and
- Cultural heritage and palaeontology resources.

The source-pathway-receptor model was used to evaluate the potential impacts of the proposed project and determine if further assessment is required. These include:

- Source of potential impact - where does the impact come from, e.g. the activity, ground excavation, which emits dust;
- The potential pathway – how can the pollution / impact travel through the environment e.g. wind direction and speed; and
- The receptor and effect – what can be affected and how e.g. water body, sedimentation, water quality affected.

TABLE 11 sets out the findings of the scoping assessment phase. Activities that could be the source of an impact have been listed, followed by receptors that could be affected. The pathway between the source and the receptor has been identified where both are present. Where an activity and/or receptor has not been identified, an impact is unlikely, thus no further assessment or justification is provided. Where the activity, receptor and pathway have been identified, a justification has been provided documenting if further assessment is required or not required.

Due to the nature and localised scale of the exploration activities, and the environmental context of the site, the potential environmental and social effects are limited and unlikely to be significant. The only area where uncertainty remained during the scoping phase was the potential effects on human receptors from the increase in noise levels, namely residents in farm houses. Further consideration of the potential effects on humans was therefore undertaken and results are presented in the next section.

TABLE 11 - SCOPING ASSESSMENT FINDINGS

| RECEPTOR             | DESCRIPTION OF ACTIVITY                                                                                                                                                                  | DESCRIPTION OF POTENTIAL IMPACT/S                                                                                                                                                                                                                                                                    | EFFECT/DESCRIPTION OF MAGNITUDE                                                                                                                        | VALUE OF SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF IMPACT | IMPACT MANAGEMENT/CONTROL MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RESIDUAL IMPACT AFTER MITIGATION |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Groundwater and Soil | <ul style="list-style-type: none"> <li>- Fuel handling and storage, lubrication of equipment</li> <li>- Drilling and the use of equipment can cause reduction to soil quality</li> </ul> | <ul style="list-style-type: none"> <li>- Spillage may lead to soil and groundwater contamination</li> <li>- Drilling can cause reduction in soil quality (through soil contamination)</li> <li>- Soil erosion can be caused through vegetation clearance and possible creation of tracks.</li> </ul> | <ul style="list-style-type: none"> <li>- Direct</li> <li>- On-site</li> <li>- Short-term</li> <li>- Temporary /reversible</li> <li>- Likely</li> </ul> | Medium               | Moderate            | <b>Moderate (6)</b>    | <p><b>Safe delivery and handling:</b></p> <ul style="list-style-type: none"> <li>- Training employees and toolbox talks</li> <li>- Good housekeeping across the site</li> <li>- Spill kits to be placed at designated areas across the site,</li> <li>- Absorption material should be available and at hand. Where saw dust is used, it should be cleaned up immediately and not left for long periods as this poses a fire hazard</li> <li>- Any major spill is reported to the project manager and Ministry of Mines and Energy</li> <li>- Equipment to be well maintained and serviced regularly</li> <li>- The use of hydrocarbons under 200 litres can be used for mobile refuelling or servicing</li> <li>- Extraction volumes of water shall be minimal during exploration and where possible,</li> </ul> | <b>Low (2)</b>                   |

|                                             |                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                    |        |     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------|-----|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                                             |                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                    |        |     |           | <p>water from existing water sources shall be used</p> <p><b>Storage:</b></p> <p>All tanks to be stored on a non-porous floor and bunded area</p> <ul style="list-style-type: none"> <li>- Bund need to be capable of storing at least 110% of the volume of the tank</li> <li>- All containers should be suitable for use and not damaged</li> <li>- Topsoil should be separately stockpiled to be re-spread when backfilling, and</li> <li>- Equipment must be in good condition to ensure that the oil spills do not contaminate the site</li> </ul> <p><b>Refuelling:</b></p> <ul style="list-style-type: none"> <li>- Drip tray to be used during refueling of vehicles</li> <li>- A funnel or similar should be available and used to avoid spillage during decanting</li> <li>- Equipment must be in good condition to ensure that the oil spills do not contaminate the site</li> </ul> |         |
| <b>Terrestrial Ecology and biodiversity</b> | <ul style="list-style-type: none"> <li>- Exploration activities in sensitive environments</li> <li>- Vegetation</li> </ul> | <ul style="list-style-type: none"> <li>- Possible injury or death of animals</li> <li>- Poaching</li> <li>- Habitat fragmentation from clearing</li> <li>- Habitat loss</li> </ul> | <ul style="list-style-type: none"> <li>- Direct</li> <li>- Local</li> <li>- Short-term</li> <li>- Temporary /reversible</li> </ul> | Medium | Low | Minor (2) | <ul style="list-style-type: none"> <li>- Soil quality is relatively good in the area and where areas are cleared should be separately stockpiled for re-spreading when rehabilitating</li> <li>- Use existing tracks where</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Low (2) |

|                  |                                                             |                                                                                        |                                                                |     |       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |
|------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------|-----|-------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|                  | clearing,<br>and<br>- Equipment<br>and vehicle<br>movements |                                                                                        | - Certain                                                      |     |       |                  | possible<br>- Route new tracks around<br>established and protected trees,<br>and clumps of vegetation<br>- Identify rare, endangered,<br>threatened and protected<br>species and demarcate them<br>and avoid removing them<br>- All workers on-site are to be<br>notified to avoid any excluded<br>areas or species<br>- Progressive rehabilitation during<br>the exploration phase should be<br>applied<br>- No camping within river beds<br>- Avoid setting exploration sites<br>and camps on visible game<br>tracks because they are used as<br>movement routes to access<br>grazing and water resources<br>- Natural drainage patterns<br>should be restored if disturbed<br>- Relocation of protected plant<br>species if disturbance cannot be<br>avoided. |                |
| <b>Community</b> | Dust creation<br>due to drilling<br>activities              | - Impacts of public<br>health and visibility,<br>and<br>- Impact on fauna and<br>flora | - Direct<br>- Local<br>- Temporary<br>- Reversible<br>- Likely | Low | Minor | <b>Minor (3)</b> | - Avoid off-road driving<br>- Selected drilling method to<br>prevent dust                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Low (2)</b> |

|                                  |                                                                                                         |                                                                                                                                                                                                                                 |                                                                                                                                            |        |            |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
|----------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Community and environment</b> | Noise generation through the use of airborne equipment<br>– Drilling operations,<br>– Vehicle movements | <ul style="list-style-type: none"> <li>- Short-term increase in noise levels heard by farmers (disruption)</li> </ul>                                                                                                           | <ul style="list-style-type: none"> <li>- Direct</li> <li>- Local</li> <li>- Temporary</li> <li>- Reversible</li> <li>- Likely</li> </ul>   | Low    | Negligible | <b>Low (2)</b>      | <ul style="list-style-type: none"> <li>– Correspond with wildlife authorities and ensure minimal noise pollution especially after sunset or before sunrise.</li> <li>– If aerial equipment is to be used ensure permits are obtained from MET prior to use.</li> <li>– A detailed assessment is not required, however, due to the uncertainty surrounding the risk of affecting sensitive receptors due to the increase in noise levels, further investigation was deemed necessary.</li> </ul> | <b>Low (1)</b>   |
| <b>Stakeholders/ Tourists</b>    | Visual impact from drill rigs, equipment                                                                | <ul style="list-style-type: none"> <li>- Eyesore due to poor housekeeping</li> <li>- Change in landscape</li> <li>- Obscuring views</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>- Direct</li> <li>- Local</li> <li>- Short-term</li> <li>- Reversible</li> <li>- Certain</li> </ul> | Low    | Minor      | <b>Minor (3)</b>    | <ul style="list-style-type: none"> <li>– Avoid setting up exploration sites on tourists' routes</li> <li>– If it can't be avoided, ensure the site is minimal, clean and maintain to exceptional housekeeping standards.</li> </ul>                                                                                                                                                                                                                                                             | <b>Minor (3)</b> |
| <b>Topography and landscape</b>  | Creation of new tracks and roads<br>– Presence of equipment and possibly campsites                      | <ul style="list-style-type: none"> <li>- Environmental disturbance</li> <li>- Loss of flora and fauna</li> <li>- Disturbance of migratory animals in the area</li> <li>- Changes to views (people's perception), and</li> </ul> | <ul style="list-style-type: none"> <li>- Direct</li> <li>- Local</li> <li>- Short-term</li> <li>- Reversible</li> <li>- Likely</li> </ul>  | Medium | Moderate   | <b>Moderate (6)</b> | <ul style="list-style-type: none"> <li>– Make use of existing tracks if available</li> <li>– When developing a new track from an existing road ensure the junction is discreet but is also safe</li> <li>– Avoid creating new access tracks on visible game tracks</li> </ul>                                                                                                                                                                                                                   | <b>Low (2)</b>   |

|                 |                                                                                                                                       |                                                              |                                                                                                                                      |      |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------|-------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                 |                                                                                                                                       | - Changes to the local landscape                             |                                                                                                                                      |      |       |            | <ul style="list-style-type: none"> <li>Monitor the condition of the track before, during, and after use</li> <li>Do not needlessly remove vegetation from either side of the road</li> <li>Rehabilitate tracks after use.</li> <li>Short-term duration for the presence of equipment, which shall move frequently and shall not result in long-term effects, and</li> <li>With the mitigation and management measures listed in the EMP, these effects would be minimised and no likely significant affect anticipated.</li> </ul> |           |
| <b>Heritage</b> | <p>Exploration can encounter and if not managed destroy heritage remains</p> <p>Direct and indirect impacts to cultural resources</p> | Impact on view shed /landscape surrounding heritage features | <ul style="list-style-type: none"> <li>Direct</li> <li>On site</li> <li>Long-term</li> <li>Irreversible</li> <li>Unlikely</li> </ul> | High | Major | Major (12) | <p>If discovery of unearthed archaeological remains is to be uncovered, the following measures (chance find procedure) shall be applied:</p> <ul style="list-style-type: none"> <li>Works to cease, area to be demarcated with appropriate tape by the site supervisor, and the Site Manager to be informed</li> <li>Site Manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary</li> <li>If work cannot proceed without</li> </ul>                                 | Minor (4) |

|                        |                                            |                                                                                                                                                                           |                                                                                                                                              |        |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |
|------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|                        |                                            |                                                                                                                                                                           |                                                                                                                                              |        |       |           | <p>damage to findings, Site Manager is to inform the Environmental Manager who will get in touch with an archaeologist for advice</p> <ul style="list-style-type: none"> <li>– Archaeological specialist is to evaluate the significance of the remains and identify appropriate action, for example, record and remove; relocate or leave in situ (depending on the nature and value of the remains)</li> <li>– Inform the police if the remains are human, and</li> <li>– Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as appropriate.</li> </ul> |                |
| <b>Social Economic</b> | Job creation due to exploration activities | <ul style="list-style-type: none"> <li>– Employment creation and skills development</li> <li>– Opportunities during the exploration phase (Approx. 10-20 jobs)</li> </ul> | <ul style="list-style-type: none"> <li>- Direct</li> <li>- Regional</li> <li>- Long-term</li> <li>- Reversible</li> <li>- Certain</li> </ul> | Medium | Minor | Minor (4) | <ul style="list-style-type: none"> <li>– Maximise local employment and local business opportunities to promote and improve the local economy</li> <li>– Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained, and</li> <li>– Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.</li> </ul>                                                                                                                                                            | Low beneficial |

|                    |                                                   |                                                                          |                                                                                                                                             |          |     |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |
|--------------------|---------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------|-----|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Environment</b> | Generation of waste due to exploration activities | Nuisances (odours and visual), and Litter (nuisance and ecological risk) | <ul style="list-style-type: none"> <li>- Direct</li> <li>- On-site</li> <li>- Short-term</li> <li>- Reversible</li> <li>- Likely</li> </ul> | Moderate | Low | Minor (3) | <ul style="list-style-type: none"> <li>- Training and toolbox talk to workers shall be provided</li> <li>- Ensure good housekeeping</li> <li>- Implement the waste management hierarchy across the site: avoid, reuse, and recycle</li> <li>- Waste shall be collected and shall be removed from site.</li> <li>- It is unlikely that hazardous material and waste will be produced, however in the event that they are, they shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials.</li> <li>- Hazardous and non-hazardous waste shall be stored separately and ensure compliance with the Radiation Protection &amp; Waste Disposal Regulations (No 221 of 2011) at all times.</li> </ul> | Low (2) |
|--------------------|---------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------|-----|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

## 6.2 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS

Some limitations and uncertainties were acknowledged during the EIA process, which are summarised in TABLE , along with the assumptions made to manage them. In line with EIA best practice, assumptions have been made based on realistic worst-case scenarios, thereby ensuring that the worst-case potential environmental impacts are identified and assessed.

**TABLE 12 – LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS**

| LIMITATION / UNCERTAINTY                              | ASSUMPTION                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water source is unconfirmed                           | Water will be acquired from existing sources on site (sites yet to be defined). If this is not possible, a borehole will be drilled, and the required permit shall be obtained from MAWF.                                                                                                                                                                                                                                |
| Number of access roads and temporary drill campsites. | The number and length of access roads required to reach drill sites is unknown at this point. While every effort will be made to minimize environmental damage, in some cases it will be necessary to clear some bush to create small roads may be required for equipment to reach the site and for temporary campsites. Once other stages of the prospecting programme are complete this information will be available. |

### 6.2.1 FURTHER CONSIDERATION: NOISE LEVELS

Due to the rural nature of the EPL site and the lack of noisy activities in the area, the average noise levels across the EPL is most likely below the South African National Standards (SANS) 10103 for rural districts (45dBA).

Drilling operations have the potential to increase the noise levels which could affect sensitive receptors. This nuisance noise could affect the lifestyle and daily tasks of residents and livestock and could also cause health issues, such as sleeping problems if conducted at inappropriate times of day.

Due to the rural lifestyle of the residents in the project area and given that the receptors are used to a quiet environment, the potential impact is therefore considered as medium sensitivity due to a potential increase in noise levels from drilling operations. Drilling operations have the potential to increase the baseline level, however this change would be for temporary and short-term. Through the application of the EIA methodology it was concluded that without additional mitigation the significance of effect is expected to be minor. With additional mitigation as listed below, the effects on human receptors from noise impacts would be reduced to low significance. No additional studies are considered necessary to further assess this risk of impact.

**TABLE 13 – SUMMARY OF EFFECTS**

| Activity | Receptor | Impact                    | Nature of impact                                     | Value & Sensitivity | Magnitude of change | Significance of impact |
|----------|----------|---------------------------|------------------------------------------------------|---------------------|---------------------|------------------------|
| Drilling | Humans   | Nuisance<br>Health Impact | Short term<br>Temporary<br>Local / on-site<br>Direct | Medium              | Minor               | Minor<br>adverse       |

| Activity | Receptor | Impact | Nature of impact  | Value & Sensitivity | Magnitude of change | Significance of impact |
|----------|----------|--------|-------------------|---------------------|---------------------|------------------------|
|          |          |        | Adverse<br>Likely |                     |                     |                        |

The following additional mitigation measures have been identified in addition to those presented in the EMP and shall be communicated to the proponent to ensure environmental effects are minimised as reasonably practicable:

- No drilling when it is dark;
- No hammering of drill rods with steel hammers;
- Drill equipment shall be suitably positioned to ensure that noisy equipment is as far away from human receptors as possible;
- Noise suppression measures shall be applied by all drilling staff (e.g. ear-muffs are mandatory) and if drilling occurs in locations that may affect residents;
- Residents shall be provided at least two weeks' notice of drilling operations within 1km of their property; and
- Continual engagement with residents shall be undertaken by the proponent.

The potential impact therefore is not considered significant as it does not widely exceed recognised levels of acceptable change; does not threaten the integrity of the receptors, nor is it material to the decision making.

## 7 ENVIRONMENTAL MANAGEMENT PLAN

The EMP for the proposed project is presented in Appendix A. It provides management options to ensure the impacts of the proposed project are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary.

The management measures should be adhered to during all stages of the exploration activities. All persons involved and partaking in the proposed activities should be made aware of the measures outlined in the EMP to ensure activities are conducted in an environmentally responsible manner.

The objectives of the EMP are:

- To include all components of the development and operations of the project;
- To prescribe the best practicable control methods to lessen the environmental impacts associated with the project;
- To monitor and audit the performance of operational personnel in applying such controls; and
- To ensure that appropriate environmental training is provided to responsible operational personnel.

## 8 CONCLUSIONS

ECC's EIA methodology was used to undertake the environmental assessment for the proposed project to identify if there is potential for significant effects to occur as a result of the prospecting project. Through the scoping process, the only risk to the environment was the potential for noise levels to increase thereby impacting human receptors in the area. All other social and environmental receptors were scoped out as significant effects were unlikely and therefore no further assessment was deemed necessary. Through further analysis and identification of mitigation and management methods, the assessment concludes that the likely significance of effects on humans from noise impacts is expected to be minor. Various best practice and mitigation measures have been identified to avoid and reduce effects as far as reasonably practical, as well as ensure the environment is protected and unforeseen effects and environmental disturbances are avoided.

**On this basis, it is the opinion of ECC that an Environmental Clearance Certificate could be issued, on condition that the management and mitigation measures specified in the EMP are implemented and adhered to.**

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## APPENDIX A - EMP

## APPENDIX B - NON-TECHNICAL SUMMARY



ECC-88-234-NTS-09-A

### NON-TECHNICAL SUMMARY

#### EXPLORATION ACTIVITIES ON EPLs 7213, 7214 & 7342

FOR BASE AND RARE METALS, INDUSTRIAL MINERALS AND PRECIOUS METALS

*PREPARED FOR*

VOTORANTIM METALS NAMIBIA (PTY) LTD



JULY 2019

PO BOX 91193 Windhoek Namibia  
Environmental Compliance Consultancy CC

## NON-TECHNICAL SUMMARY

### PROPOSED EXPLORATION ACTIVITIES ON EPLS 7213, 7214 & 7342 FOR BASE AND RARE METALS, INDUSTRIAL MINERALS, AND PRECIOUS METALS

#### 1 PURPOSE OF THIS DOCUMENT

The purpose of this Non-Technical Summary (NTS) is to provide Interested and Affected Parties (I&APs) a background to the proposed project and to invite I&APs to register as part of the Environmental Impact Assessment (EIA) process. The project involves exploration activities on EPL 7213, EPL 7214 and EPL 7342 for Base and Rare Metals, Industrial Minerals and Precious Metals. Through registering, all I&APs will be kept informed throughout the EIA process, and a platform for participation will be provided to submit comments/recommendations pertaining to the project.

This NTS includes the following information on:

- The proposed project and location
- The necessity of the project, benefits or adverse impacts anticipated
- The alternatives to the project have been considered and assessed
- How the EIA process works
- The public participation process and how to become involved, and
- Next steps and the way forward.

#### 2 DESCRIPTION OF PROPOSED PROJECT

##### 2.1 BRIEF INTRODUCTION

Environmental Compliance Consultancy (ECC) has been engaged by the proponent (Votorantim Metals Namibia (Pty) Ltd) to undertake an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) in terms of the Environmental Management Act, 2007 and its Regulations. An environmental clearance application will be submitted to the relevant competent authorities; the Ministry of Mines and Energy (MME) and Ministry of Environment and Tourism (MET).

##### 2.2 LOCATION

The project is located in the Kunene and Otjozondjupa Regions. Refer to the location map provided in FIGURE 1.

##### 2.3 WHAT IS PROPOSED

Nexa Resources is an invested company of the Votorantim portfolio; the company is listed on the New York Stock Exchange in the United States and the Toronto Stock Exchange in Canada.

Votorantim undertakes mineral exploration in Namibia and propose to undertake low impact exploration activities on EPL 7213, EPL 7214 and EPL 7342 for Base and Rare Metals, Industrial Minerals and Precious Metals in the Kunene and Otjozondjupa Regions.

##### 2.4 OPERATION PHASE

The proposed exploration activities are low-impact and non-intrusive. The following are envisaged during the proposed project:

- Potential creation of access tracks, where existing tracks cannot be utilised
- Limited vegetation clearing for the creation of tracks
- Drilling of exploration boreholes, and
- Exploration methods may include soil and rock sampling, geological mapping, electromagnetic surveys, drilling and drill-core sampling.

##### 2.5 WHY IS THE PROJECT NEEDED

Votorantim Metals intends to pursue exploration opportunities with the aim of identifying new mining prospects. Namibia is rich with natural resources and the minerals sector is a key contributor to the nations GDP in Namibia. Exploration could lead to mining activities which would contribute to the national and local economy.

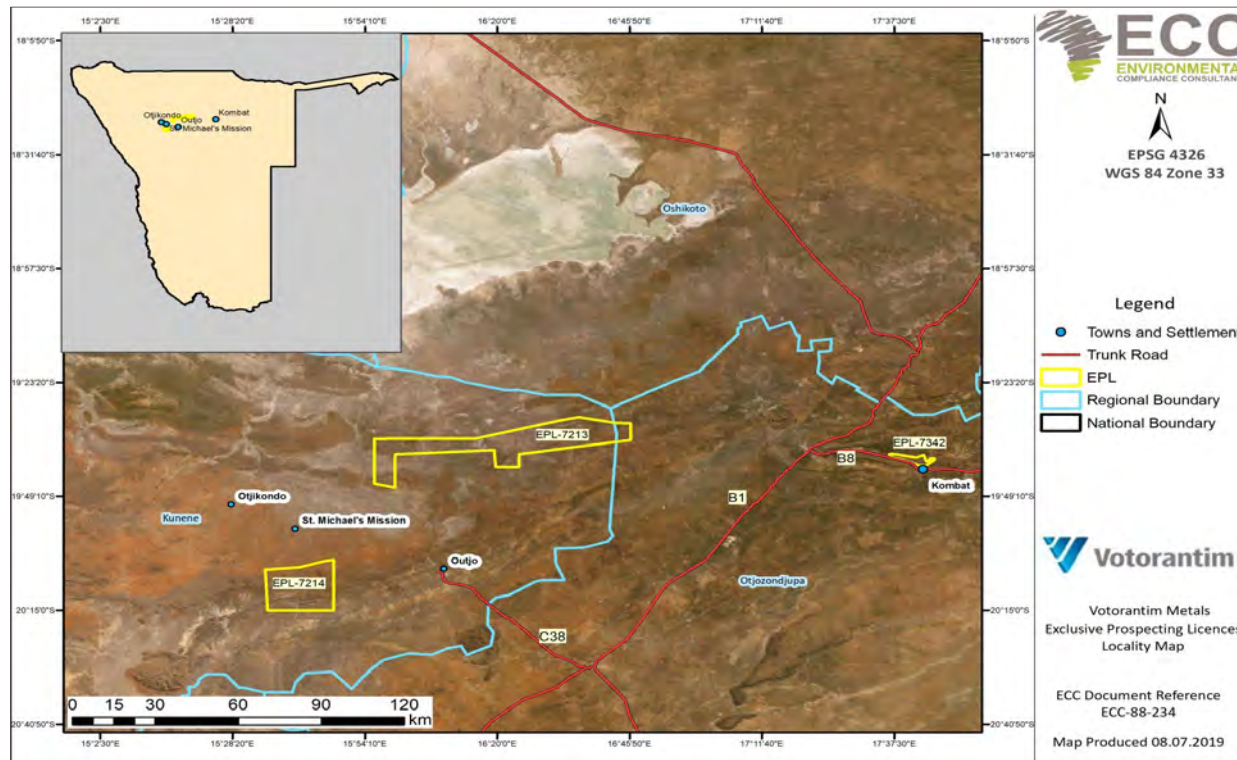


FIGURE 1 – LOCATION MAP OF THE PROPOSED PROJECT

## 2.6 POTENTIAL IMPACTS OF THE PROJECT

### 2.6.1 SOCIO-ECONOMIC

The potential social impacts are anticipated to be of low significance, and those that may transpire shall be confined within the EPL site, these potential impacts may include the following:

- Potential to unearth, damage or destroy undiscovered heritage remains
- Minor disruption to the residents of the farms within the EPL, including some increase in noise levels and dust arising from drilling and vehicle use
- Some jobs will be created as a result of the project; and
- There will be economic benefits due to increased investment and investor confidence in the Namibian minerals sector.

### 2.6.2 ENVIRONMENTAL

The potential environmental impacts are anticipated to be of minor significance, and those that may occur shall be contained within the EPL site, these potential impacts may include the following:

- Some potential vegetation loss due to possible tracks creation;
- Potential use of resources, including surface and groundwater; and
- Minor risk of loss of contaminant of hydrocarbon, chemical or drill fluids from exploration activities potentially leading to localised ground contamination.

## 3 CONSIDERATION OF ALTERNATIVES

Best practice environmental assessment methodology calls for consideration and assessment of alternatives to a proposed project.

In a project such as this one, it is difficult to identify alternatives to satisfy the need of the proposed project; the activities shall be specific to the EPL 7213, EPL 7214 and EPL 7342, which were granted by the MME on the 20<sup>th</sup> of March and 8<sup>th</sup> of May 2019.

During the assessment, alternatives will take the form of a consideration of optimisation and efficiency to reduce potential effects e.g. different types of technology or operations, route access and exploration methods.

## 4 THE ENVIRONMENTAL ASSESSMENT PROCESS

This EIA, conducted by ECC, is undertaken in terms of the Environmental Management Act, 2007 and its regulations.

The process followed in this EIA is set out in the flowchart in

FIGURE 2 below.

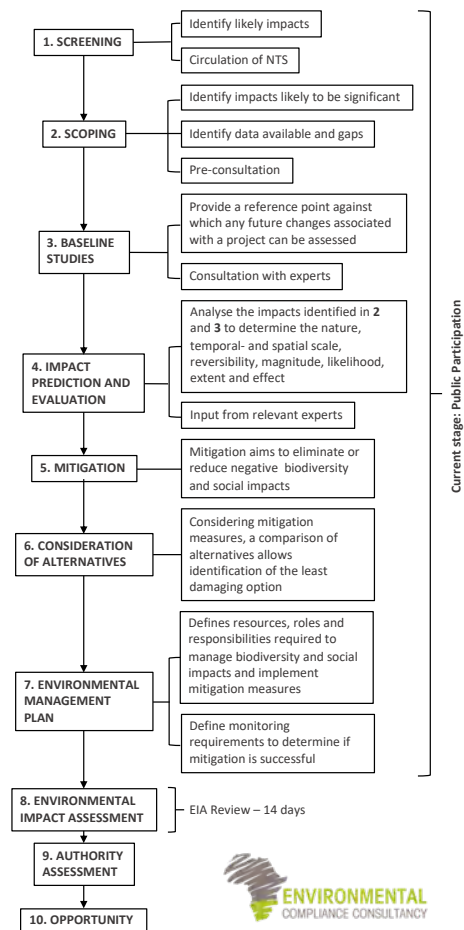


FIGURE 2 - FLOWCHART OF THE ENVIRONMENTAL ASSESSMENT PROCESS



NON-TECHNICAL SUMMARY  
VOTORANTIM METALS NAMIBIA (PTY) LTD

#### 4.1 SCREENING

A review of the proposed project screening findings against the listed activities was conducted; the findings of which are summarised below.

##### MINING AND QUARRYING ACTIVITIES

(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

- The proposed project requires a licence for extraction of metals and industrial minerals

(3.2) Other forms of mining or extraction of any natural resources whether regulated by law or not

- Minerals (soil and sand), metals will be sourced out within the project's footprint/locally as far as possible

(3.3) Resource extraction, manipulation, conservation and related activities

- The proposed project will extract Base and Rare Metals, Industrial Minerals and Precious Metals

##### WATER RESOURCE DEVELOPMENT

(8.1) The abstraction of ground or surface water for industrial or commercial purposes

- Due to the drilling of exploration boreholes, ground and surface water will be abstracted

(8.5) Construction of dams, reservoirs, levees and weirs

- The proposed project is required to drill exploration boreholes within the project footprint

##### INFRASTRUCTURE

10.1 The construction of

(b) Public roads

- With this proposed project there is a potential creation of access tracks where existing tracks cannot be utilised

The potential environmental and social effects are anticipated to be of minor significance, and those that may occur shall be contained on the EPL 7213, EPL 7214 and EPL 7342 sites.

#### 4.2 SCOPING

Due to the nature of the proposed project, and the implementation of industry best practice mitigation measures during the mineral exploration phase of the

project, the effects on the environment and society are expected to be minimal and localised.

#### 4.3 BASELINE STUDIES

For the proposed project, baseline information was obtained through a desk-based study and site verification processes through focusing on the environmental receptors that could be affected by the proposed project. ECC will also engage with stakeholders, I&APs and the proponents to seek input into the assessment.

#### 4.4 IMPACT ASSESSMENT

Impacts will be assessed using the ECC EIA methodology. The EIA will be conducted in terms of the Environmental Management Act, 2007 and its regulations. ECCs methodology for impact assessments was developed using IFC standards in particular Performance Standard 1 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2017), (International Finance Corporation, 2012) and Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008) including international and national best practice with over 25 years of combined EIA experience.

#### 4.5 ENVIRONMENTAL MANAGEMENT PLAN

An EMP shall be developed for the proposed project setting out auditable management actions for Votorantim Metals Namibia (Pty) Ltd to ensure careful and sustainable management measures are implemented for their activities in respect of the surrounding environment and community.

#### 4.6 PUBLIC PARTICIPATION AND ADVERTISING

Public participation is an important part of the EIA process; it allows the public and other stakeholders to raise concerns or provide valuable local environmental knowledge that can benefit the assessment, in addition it can aid the design process. This project is currently at the scoping phase and public participation phase.

At this phase ECC will perform the following:



NON-TECHNICAL SUMMARY  
VOTORANTIM METALS NAMIBIA (PTY) LTD

- Identify key stakeholders, authorities, municipalities, environmental groups and interested or affected members of the public, hereafter referred to as I&APs
- Distribute the NTS for the proposed project (this document)
- Advertise the environmental application in two national newspapers
- Place notices on-site at or near the boundary
- If required host a public meeting to encourage stakeholder participation and engagement, and provide details of issues identified by the environmental practitioner, stakeholders and I&APs
- Record all comments of I&APs and present such comments, as well as responses provided by ECC, in the comments and responses report, which will be included in the scoping report that shall be submitted with the application, and
- Circulate I&AP comments to the project team for consideration of project design.

Comments must be submitted in writing and can be emailed using the details in the contact us section below.

CONTACT US

We welcome any enquiries regarding this document and its content. Please contact:

**Environmental Compliance Consultancy (ECC)**

[info@eccenvironmental.com](mailto:info@eccenvironmental.com)

Tel: +264 816 697 608

[www.eccenvironmental.com](http://www.eccenvironmental.com)

At ECC we make sure all information is easily accessible to the public.

Follow us online to be kept up to date:



## APPENDIX C - EVIDENCE OF PUBLIC CONSULTATION / REGISTERED POST AND LETTER / SITE NOTICES

ENVIRONMENTAL COMPLIANCE CONSULTANCY  
CC/2013/11464

**LIST OF REGISTERED ITEMS POSTED**  
13 JUL 2019

Environmental Compliance Consultancy  
P.O. Box 91193 081669 7608  
by Klein-Wittke

ENVIRONMENTAL  
COMPLIANCE CONSULTANCY  
www.eccenvironmental.com



| Sender's reference no. | Addressee's name and address                                                         | Registration no. |
|------------------------|--------------------------------------------------------------------------------------|------------------|
| 1                      | TO: Government of Namibia<br>Farm Uranus<br>P/Bag 13343, Windhoek                    | RR 012180525 NA  |
| 2                      | TO: CAUAS FARMING CC<br>FARM MALCHIN<br>P.O. BOX 11199, WINDHOEK                     | RR 012180534 NA  |
| 3                      | TO: CAUAS FARMING CC<br>FARM CAUAS<br>P.O. BOX 11199, WINDHOEK                       | RR 012180548 NA  |
| 4                      | TO: IZAK JACOBUS AND ANNY M<br>PTN 1 OF BRADLEY FARM<br>P.O. BOX 90800, WINDHOEK     | RR 012180551 NA  |
| 5                      | TO: GOVERNMENT OF NAMIBIA<br>REM. OF BRADLEY FARM<br>P/BAG 13343, WINDHOEK           | RR 012180565 NA  |
| 6                      | TO: MORE & MORE INVESTMENTS<br>PTN 1 OF GEUKSPOORT<br>P.O. BOX 1216, OTJIWARONGO     | RR 012180579 NA  |
| 7                      | TO: MORE & MORE INVESTMENTS<br>REM. OF MOOILANGTE FARM<br>P.O. BOX 1216, OTJIWARONGO | RR 012180582 NA  |
| 8                      | TO: MORE & MORE INVESTMENTS<br>FARM STEINGELK<br>P.O. BOX 47, OTJIWARONGO            | RR 012180596 NA  |
| 9                      | TO: JOHN MULLER<br>FARM VUARD<br>P.O. BOX 436, OUTJO                                 | RR 012180605 NA  |
| 10                     | TO: G. THEA SKORA<br>FARM KILLARNEY<br>P.O. BOX 277, OUTJO                           | RR 012180619 NA  |
| 11                     | TO: GEUKSPOORT GUEST FARM<br>REM. OF GEUKSPOORT FARM<br>P.O. BOX 158, OUTJO          | RR 012180622 NA  |
| 12                     | TO: OZONDUNDU FARMING<br>FARM GEUKSPOORT PTN. 2<br>P.O. BOX 549, OUTJO               | RR 012180636 NA  |
| 13                     | TO: G. ARNOLD<br>FARM PTN 1 OF MOOILANGTE<br>P.O. BOX 128, OUTJO                     | RR 012180640 NA  |

studio print 13647

Number of items 13 Received by John

No compensation will be considered unless enquiry regarding this postal article is made within one year after the date of posting.

Date-stamp  
KLEIN WINDHOEK  
2019 JUL 13  
NAMIBIA

**LIST OF REGISTERED ITEMS POSTED**  
Environmental Compliance Consultancy  
P.O. Box 91193  
by Klein HNR 051669 7608  
051669 7608  
11 JUL 2019  
www.environmental.com

| Sender's reference no. | Addressee's name and address                                                          | Registration no. |
|------------------------|---------------------------------------------------------------------------------------|------------------|
| 14                     | TO: MORG H MORE INVESTMENTS<br>RGM. EXT OF SUMITSAUB<br>P.O. BOX 141, OUTJO           | RR 012180653 NA  |
| 15                     | TO: OZONDUND FARMING CC<br>FARM WOLFGESGRUND<br>P.O. BOX 549, OUTJO                   | RR 012180667 NA  |
| 16                     | TO: NAMT INVESTMENTS 103<br>FARM GOREIS SWID<br>P.O. BOX 703, OUTJO                   | RR 012180675 NA  |
| 17                     | TO: J. C. MULLER<br>PTN. OF KHAIKUB FAR<br>P.O. BOX 436, OUTJO                        | RR 012180684 NA  |
| 18                     | TO: ROCKMUEHL<br>FARM ISUWANDEN<br>P.O. BOX 74, OUTJO                                 | RR 012180698 NA  |
| 19                     | TO: ESAN SAMABER<br>FARM VOLUNTEER<br>P.O. BOX 7, KHORTIN                             | RR 012180707 NA  |
| 20                     | TO: BERG - EN - DAL FARMING<br>PTN. OF HILLENDALE CREEK<br>P.O. BOX 132, KROONDAAL 03 | RR 012180715 NA  |
| 21                     | TO: Petrus Tilenge Damaseb<br>Farm Hotsaids<br>P.O. Box 21429, Windhoek               | RR 012180724 NA  |
| 22                     | TO: Komona Jatyua<br>Farm Silverweg<br>P.O. Box 13289, Windhoek                       | RR 012180738 NA  |
| 23                     | TO: WITKO Kaura<br>Farm GUB<br>P.O. Box 21921, Windhoek                               | RR 012180741 NA  |
| 24                     | TO: Harold T. Kaura<br>Farm Pn 1 of Alexander<br>P.O. Box 21699, Windhoek             | RR 012180755 NA  |
| 25                     | TO: Government of Namibia<br>FARM MOWBY<br>P/Bag 13343, Windhoek                      | RR 012180769 NA  |
| 26                     | TO: D. ELIAS KATHUNA<br>Farm Cunningham<br>P.O. Box 10435, Khomasdal, Windhoek        | RR 012180772 NA  |

Number of items 13 Received by J. C.  
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Environmental Compliance Consultancy  
P.O. Box 91193  
by Klein HNR 051669 7608  
051669 7608  
11 JUL 2019  
www.environmental.com

| Sender's reference no. | Addressee's name and address                                                             | Registration no. |
|------------------------|------------------------------------------------------------------------------------------|------------------|
| 27                     | TO: Smahuel Koonetshahi & H. Jibele<br>Farm Ruele<br>P.O. Box 7063, Windhoek             | RR 012180786 NA  |
| 28                     | TO: Nathaniel K. Kaura<br>Farm Moreson<br>P.O. Box 2014, Windhoek                        | RR 012180790 NA  |
| 29                     | TO: Benny Kaura<br>Farm Heimrose<br>P.O. Box 554, Windhoek                               | RR 012180809 NA  |
| 30                     | TO: Martin Lazarus & Hume Shikongo<br>Farm De Huk<br>P.O. Box 70091, Khomasdal, Windhoek | RR 012180812 NA  |
| 31                     | TO: Government of Namibia<br>Farm Pn of Choro<br>P/Bag 13343, Windhoek                   | RR 012180826 NA  |
| 32                     | TO: Government of Namibia<br>Farm Demsey<br>P/Bag 13343, Windhoek                        | RR 012180830 NA  |
| 33                     | TO: H. Hilde Katuru<br>Pn 1 of Farm Alexander<br>P.O. Box 5555, Bachibicht, Windhoek     | RR 012180843 NA  |
| 34                     | TO: Christel C. Kaputu<br>Rem. Ext of Farm Choro<br>P.O. Box 5555, Bachibicht, Windhoek  | RR 012180857 NA  |
| 35                     | TO: Ernestus Kustoo<br>Farm Hude<br>P.O. Box 61209, Katutura                             | RR 012180865 NA  |
| 36                     | TO: G. Katuru<br>Rem. Pn of Farm Uliob<br>P.O. Box 62203, Katutura                       | RR 012180874 NA  |
| 37                     | TO: Nullem Kadiinda<br>Pn 1 of Farm Silverweg<br>P.O. Box 21699, Windhoek                | RR 012180888 NA  |
| 38                     | TO: J. PA Coetzee<br>Farm Teiler<br>P.O. Box 193, Otjomuho                               | RR 012180891 NA  |
| 39                     | TO: Francis Mantzila & Frank<br>Farm Kakamba<br>P.O. Box 1869, Otjomuho                  | RR 012180905 NA  |

Number of items 13 Received by J. C.  
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**LIST OF REGISTERED ITEMS POSTED**  
11 JUL 2019

Env. Compliance Consultancy  
by P.O. Box 91193  
Klein Windhoek

ENVIRONMENTAL COMPLIANCE CONSULTANCY  
www.eccenvironmental.com

**NAM POST**

| Sender's reference no. | Addressee's name and address                                                        | Registration no. |
|------------------------|-------------------------------------------------------------------------------------|------------------|
| 40                     | To: JB Coetzee<br>Farm U18<br>P.O. Box 271, Otavi                                   | RR 012180914 NA  |
| 41                     | To: Johannes Muirjo<br>Farm Pen 1 of Koenig-Noord<br>P.O. Box 266's, Otavi          | RR 012180928 NA  |
| 42                     | To: Burdijica Egi Muborukus<br>Rem of De Gaulte Farm<br>P.O. Box 64, Otavi          | RR 012180931 NA  |
| 43                     | To: Samuel Regina Purize<br>Rem of Koenig-Suid<br>P.O. Box 64, Otavi                | RR 012180945 NA  |
| 44                     | To: AP Venter<br>Farm Teanus<br>P.O. Box 111, Otavi                                 | RR 012180959 NA  |
| 45                     | To: Susanna C P Van Der Merwe<br>Farm Spatzhu<br>P.O. Box 155, Otavi                | RR 012180962 NA  |
| 46                     | To: Eduard Tjokua<br>Farm Teanus<br>P.O. Box 516, Otavi                             | RR 012180973 NA  |
| 47                     | To: Levi Katjagab Samiriel Katjagab<br>Farm Rem of Vlakplaat<br>P.O. Box 226, Otavi | RR 012180980 NA  |
| 48                     | Alexandrine Kate Murenga<br>Farm Pat 2 of Hotsaus<br>P.O. Box 603, Otavi            | RR 012180986 NA  |
| 49                     | To: Magonie Ontspannings Klub<br>Pen 1 of Farm Vlakplaat<br>P.O. Box 202, Otavi     | RR 012180989 NA  |
| 50                     | To: Jk Johannes & Graue<br>Farm Katzaas<br>P.O. Box 133, Otavi                      | RR 012180985 NA  |
| 51                     | P.J. Pringlos<br>Farm Rem of Teanus<br>P.O. Box 435, Otavi                          | RR 012180942 NA  |
| 52                     | Petrus Brand<br>Farm Rem of Teanus<br>P.O. Box 316, Otavi                           | RR 012180981 NA  |

Number of items 13 Received by 13

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11 JUL 2019

**LIST OF REGISTERED ITEMS POSTED**

Environmental Compliance Consultancy  
by P.O. Box 91193 Klein Windhoek 0610697 7608

**NAM POST**

| Sender's reference no. | Addressee's name and address                                                     | Registration no. |
|------------------------|----------------------------------------------------------------------------------|------------------|
| 53                     | To: Willem Brand<br>Farm Mooidam<br>P.O. Box 396, Otavi                          | RR 012180908 NA  |
| 54                     | To: Soms CC<br>Farm Soms<br>P.O. Box 316, Otavi                                  | RR 012180909 NA  |
| 55                     | To: Cornelis T. Van Tonder<br>Farm Skusbrand<br>P.O. Box 32, Otavi               | RR 012180985 NA  |
| 56                     | To: Douglas Mote<br>Pen 1 of De Gaulte Farm<br>P.O. Box 68, Otavi                | RR 012180971 NA  |
| 57                     | To: FERDINAND M. KAMATUKA<br>FARM ALBERTA<br>P.O. Box 214, OTAVI                 | RR 012180968 NA  |
| 58                     | To: SS DU TOIT<br>PNT 1 OF FARM THOR<br>P.O. Box 93, KOMBAT                      | RR 012180954 NA  |
| 59                     | To: GOVERNMENT OF THE REPUBLIC<br>NEU SOMMERAU FARM<br>P/BAG 133 13343, WINDHOEK | RR 012180945 NA  |
| 60                     | To: HORST SCHULTZ<br>FARM ASIS<br>P.O. Box 16, KOMBAT                            | RR 012180937 NA  |
| 61                     | To: BONATATI FARMS (PTY) LTD<br>GROSS OTAVI<br>P.O. Box 255, OTAVI               | RR 012180923 NA  |
| 62                     | To: BONATATI FARMS (PTY) LTD<br>PNT 1 OF FARM SOMMERAU<br>P.O. Box 255, OTAVI    | RR 012180910 NA  |
| 63                     | To: SCHULTZ HELMUT<br>FARM ASIS BLOCK V<br>P/BAG 133 43, WINDHOEK                | RR 012180906 NA  |
| 64                     | To: NAMIBIA WATER CORP<br>P/BAG 133 89, WINDHOEK                                 | RR 012180983 NA  |
| 65                     | To: SS DU TOIT<br>REM OF FARM THOR<br>P.O. Box 93, KOMBAT                        | RR 012180997 NA  |

Number of items 13 Received by 13

No compensation will be considered unless enquiry regarding this postal article is made within one year after the date of posting.

11 JUL 2019

info@eccenvironmental.com  
www.eccenvironmental.com  
+264812627872  
+264816531214



REFERENCE: ECC-88-234-LET-07-A  
10<sup>th</sup> of July 2019

Identified Stakeholder and or Potentially Interested Party for:  
Votorantim Metals Namibia Exploration Activities on EPL 7342

Dear Sir or Madam:

**RE: ENVIRONMENTAL CLEARANCE CERTIFICATE FOR EXPLORATION ACTIVITIES ON EPL 7342 FOR BASE AND RARE METALS, INDUSTRIAL MINERALS, PRECIOUS METALS, SEMI-PRECIOUS STONES IN OTJOZONDJUPA REGION, NAMIBIA.**

Environmental Compliance Consultancy (ECC) has been engaged by Votorantim Metals Namibia (Pty) Ltd (the Proponent) to act on their behalf for the Environmental Clearance Certificate application for the proposed exploration activities for base and rare metals, industrial minerals, precious metals, semi-precious stones on EPL 7342, in Otjozondjupa Region, Namibia.

ECC is conducting the Environmental Impact Assessment (EIA) in terms of the Environmental Management Act, 2007.

The proposed project is to conduct mineral exploration activities on EPL 7342. As part of the proposed low impact, non-intrusive exploration project, the following activities are envisaged, which shall be confirmed as the exploration program is refined:

- Potential creation of access tracks, where existing tracks are not available or cannot be utilised;
- Limited vegetation clearing for the potential creation of tracks;
- Drilling of exploration boreholes;
- Exploration methods may include soil and rock sampling, electromagnetic surveys, drilling and drill-core sampling; and
- Transport and storage of soil, rock and drill-core (all mineral) samples.

This letter is intended to engage stakeholders and potentially Interested and Affected Parties (I&APs) of the project and provide a communication channel to ECC, the environmental consultants for the project. You have been identified as either a stakeholder, interested or affected party, therefore ECC wishes to provide you with the details as to how you can become involved in the project.

Public participation is an important part of the EIA process, as it allows public and stakeholders to obtain information about the proposed project. Public participation occurs at various stages throughout a project lifecycle including:

- Advertising in newspapers.
- Distributing a Non-Technical Summary (NTS) to identified stakeholders and I&APs.
- Registered I&APs will also be informed of the available draft scoping report for a 21 comment and review period, during this period I&APs will have the opportunity to review the draft document and raise

PO BOX 91193 Windhoek, Namibia  
Environmental Compliance Consultancy CC  
CC/2013/1140

✉ [info@eccenvironmental.com](mailto:info@eccenvironmental.com)  
🌐 [www.eccenvironmental.com](http://www.eccenvironmental.com)  
☎ +264812627872  
☎ +264816531214



any issues or concerns.

- Stakeholders and I&APs who wish to register as an I&APs must do so on the ECC website as per the link provided below: <https://eccenvironmental.com/projects/>

If you are unable to complete the registration form online please email [info@eccenvironmental.com](mailto:info@eccenvironmental.com) and request an electronic copy of the form that you can complete, sign, scan and return via email to [info@eccenvironmental.com](mailto:info@eccenvironmental.com) to register as an I&AP for the project.

ECC values community input and participation in our projects and we look forward to working with you as the project develops. The Non-Technical Summary (NTS) can be obtained from our website (or emailed to you upon request) and provides a brief overview of the proposed project <https://eccenvironmental.com/project/>

Should you have any questions or require additional information please do not hesitate to contact either Mr. Stephan Bezuidenhout or Mrs. Jessica Mooney.

Yours sincerely,



Stephan Bezuidenhout  
Environmental Compliance Consultancy  
Office: +264 81 669 7608  
Email: [stephan@eccenvironmental.com](mailto:stephan@eccenvironmental.com)



Jessica Mooney  
Environmental Compliance Consultancy  
Office: +264 81 669 7608  
Email: [jessica@eccenvironmental.com](mailto:jessica@eccenvironmental.com)

28 THURSDAY 11 JULY 2019

THE NAMIBIAN



**NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS**

**EXPLORATION ACTIVITIES ON EPL 7213, 7214 & 7342  
KUNENE AND OTJOZONDJUPA REGIONS, NAMIBIA**

Environmental Compliance Consultancy CC (ECC) hereby gives notice to the public that an application for an Environmental Clearance Certificate in terms of the Environmental Management Act, 2007 will be made as per the following:

**Applicant:** Votorantim Metals Namibia (Pty) Ltd  
**Environmental Assessment Practitioner (EAP):** Environmental Compliance Consultancy  
**Location:** Kunene and Otjozondjupa Regions, Namibia

**Project:** Exploration activities on EPL 7213, EPL 7214 and EPL 7342 for Base and Rare Metals, Industrial Minerals, Precious Metals, Semi-Precious Stones in the Kunene and Otjozondjupa Regions, Namibia.

**Proposed Activity:** The proponent proposes to carry out low impact, non-intrusive exploration activities for Base and Rare Metals, Industrial Minerals, Precious Metals, Semi-Precious Stones. Exploration methods may include geochemical surveys (soil and rock sampling), geophysical surveys (electromagnetic surveys), drilling and drill-core sampling.

**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, No. 7 of 2007, ECC on behalf of Votorantim Metals Namibia (Pty) Ltd is required to apply for environmental clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Purpose of the Review and Comment Period:** The purpose of the review and comment period is to present the proposed project and to afford I&APs an opportunity to comment on the project to ensure that all issues and concerns are captured and considered in the assessment.

**Review Period:** The review and comment period is effective from **11<sup>th</sup> of July 2019 - 1<sup>st</sup> August 2019**.

**How you can participate:** ECC is undertaking the required environmental assessment and public participation process in terms of the Act. Interested and affected parties (I&APs) and stakeholders are required to register for the project at: <https://www.environmental.com/projects/>

ECC is a member of the Environmental Compliance Consultancy Association  
Registration Number: CC/2013/11404  
Members: Mr. J. Beeldt (Chairman) and Mrs. J. Moseley  
P.O. Box 84 688, Klein Windhoek  
T: +264 61 883 7028  
E: [info@ecc.com.na](mailto:info@ecc.com.na)  
Website: <http://www.environmental.com>  
Project ID: ECC-88-234-REP-04-C




**PUBLIC NOTICE**

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR SEGMENT 4 OF THE  
AFRICA COAST TO EUROPE (ACE) SUBMARINE CABLE SYSTEM TO BE  
LANDED IN SWAKOPMUND, NAMIBIA**

**INVITATION TO A PUBLIC MEETING**

Tortoise Environmental Consultants (TEC) hereby notifies all interested and affected parties (I&APs) that an application for Environmental Clearance Certificate will be submitted to the Environmental Commissioner, in accordance with the provisions of the Environmental Management Act (No. 7 of 2007) and EIA Regulations (GN 30 of 2012) as follows:

**Project Name:** Installing Africa Coast to Europe (ACE) submarine cable system

**Proponent:** Ebenos Technology Solution (Pty) Ltd

**Project Location:**  
**Onshore (A) Land Section:** Swakopmund Townlands, ERF 365 Extension 1, measuring 8,990.92m<sup>2</sup>, zoned Local Business, Erongo Region  
**Offshore (B) Marine Section:** Namibian Coast (west of Swakopmund) circa 500km

**Public Meeting Date:** Friday, 19<sup>th</sup> July 2019  
**Venue:** Swakopmund Plaza Hotel, No 42, Linderla Anaschla Street, Swakopmund  
**Time:** 10h00 – 13h00  
**Deadline for comments:** 26<sup>th</sup> July 2019



To register, please submit your details to:

**Marine Section**  
Tortoise Environmental Consultants (TEC)  
Email: [info@tec.com.na](mailto:info@tec.com.na)  
Mobile: 081 147 7380

**Land Section**  
Centre for Geosciences Research of  
**CEGEOR**  
Email: [cegeor@unam.na](mailto:cegeor@unam.na)  
Mobile: 095 641 9511

**LIST OF PROPOSED LEASE PORTIONS FOR  
OUTDOOR CABINETS ON MUNICIPAL SIDE WALK**

**Proposed MSAN Sites for Copper Shoertening Windhoek**

| #  | SITE NAME | ERF     | STREET NAME                             | SUBURB         | SIZE (m <sup>2</sup> ) |
|----|-----------|---------|-----------------------------------------|----------------|------------------------|
| 1  | NDR MSAN  | 6539    | Newcastle                               | Windhoek       | 2                      |
| 2  | VDB MSAN  | 3516    | Isser                                   | Windhoek       | 2                      |
| 3  | THO MSAN  | 6330    | Thompson                                | Windhoek       | 2                      |
| 4  | BCN MSAN  | 137     | Rendsburg                               | Laurenz        | 2                      |
| 5  | ETA MSAN  | RE/5718 | c/o Etienne Rousseau & Anton Rupert     | Windhoek       | 2                      |
| 6  | ARE MSAN  | 1       | c/o Arebrosch & Omatjane                | Combebasia     | 2                      |
| 7  | MMC MSAN  | 109     | c/o Michelle McLean & Nickel            | Prosperita     | 2                      |
| 8  | COB MSAN  | 78      | c/o Michelle McLean & Cobalt            | Prosperita     | 2                      |
| 9  | PIT MSAN  | 8/49    | c/o Michelle McLean & Platinum          | Prosperita     | 2                      |
| 10 | OPR MSAN  | 343     | c/o Ongoporo & Nickel                   | Prosperita     | 2                      |
| 11 | GST MSAN  | 202     | c/o Gold & Silver                       | Prosperita     | 2                      |
| 12 | KIK MSAN  | 330     | c/o Klemme Kuppe & Rottfahnen           | Kleine Kuppe   | 2                      |
| 13 | ERS MSAN  | 1374    | Erasmus                                 | Pionierspark   | 2                      |
| 14 | SCH MSAN  | RE/1336 | Scheppmann                              | Pionierspark   | 2                      |
| 15 | TAG MSAN  | 1261    | Robert                                  | Hochland Park  | 2                      |
| 16 | IND MSAN  | 5492    | c/o Independence Ave & Dr. Aby May      | Windhoek       | 2                      |
| 17 | TAL MSAN  | 1/8/291 | c/o Tal & Vening                        | Windhoek       | 2                      |
| 18 | GAR MSAN  | 5378    | c/o Independence Ave & Garten           | Windhoek       | 2                      |
| 19 | PAS MSAN  | 3691    | c/o Pasteur & van Rijn                  | Windhoek       | 2                      |
| 20 | PAY MSAN  | 675     | c/o Pavlov & John Albrecht              | Windhoek       | 2                      |
| 21 | PUL MSAN  | 3917    | c/o Pullman & Rowan                     | Windhoek       | 2                      |
| 22 | KUS MSAN  | 115     | c/o Kusel & Olaf Palme                  | Eros Park      | 2                      |
| 23 | SCA MSAN  | RE/132  | c/o Schanzel & Nelson Mandela Ave       | Klein Windhoek | 2                      |
| 24 | OLF MSAN  | R/1     | c/o Von Eckenbrecher & Olaf Palme       | Klein Windhoek | 2                      |
| 25 | JMI MSAN  | 2455    | c/o Gwers & Joseph Mukwayu Ithana       | Klein Windhoek | 2                      |
| 26 | GEV MSAN  | 907     | c/o Gwers & Joseph Mukwayu Ithana       | Klein Windhoek | 2                      |
| 27 | NDR MSAN  | 3469    | Namdarney/St Michaelis                  | Klein Windhoek | 2                      |
| 28 | BAB MSAN  | RE/2048 | c/o Babs & Joseph Mukwayu Ithana        | Klein Windhoek | 2                      |
| 29 | SCU MSAN  | 720     | Sculptor                                | Dorado Park    | 2                      |
| 30 | HER MSAN  | 33      | Hercules                                | Dorado Park    | 2                      |
| 31 | HYD MSAN  | 188     | c/o Abdromeda & Hydra                   | Dorado Park    | 2                      |
| 32 | VIR MSAN  | 1925    | c/o Martha & Visarend                   | Khomasdal      | 2                      |
| 33 | GLD MSAN  | 6352    | c/o Gladia & Visarend                   | Khomasdal      | 2                      |
| 34 | KRN MSAN  | 307     | Kornalyn                                | Khomasdal      | 2                      |
| 35 | PTS MSAN  | 4335    | Petersen                                | Khomasdal      | 2                      |
| 36 | KLP MSAN  | 6396    | Andrew Kloggers                         | Khomasdal      | 2                      |
| 37 | BEI MSAN  | 155     | c/o Beig & Bank                         | Otjomise       | 2                      |
| 38 | BON MSAN  | 2727    | Bonn                                    | Otjomise       | 2                      |
| 39 | DIS MSAN  | 10577   | c/o Claudius Kandavaru & Hendrik Isak   | Katutura       | 8.3                    |
| 40 | PEH MSAN  | 9896    | Suktor & Penning                        | Katutura       | 2                      |
| 41 | SUK MSAN  | 9896    | Suktor & Clemence Kapulu                | Katutura       | 2                      |
| 42 | ANM MSAN  | 1506    | c/o Andrew Mogalle & Claudius Kandavaru | Katutura       | 2                      |
| 43 | KRI MSAN  | 8779    | c/o Shanghai & Kindergarten             | Katutura       | 2                      |
| 44 | SAC MSAN  | 158     | c/o Shanghai & Andrew Mogalle           | Katutura       | 8.3                    |
| 45 | HDS MSAN  | RE/7350 | Hans-Dieter Genschler                   | Katutura       | 2                      |
| 46 | TJ MSAN   | RE/7349 | Hans-Dieter Genschler & Tjikat          | Katutura       | 2                      |



Republic of Namibia



African Development Bank

**MINISTRY OF EDUCATION, ARTS AND CULTURE**

**EDUCATION AND TRAINING QUALITY IMPROVEMENT PROJECT (ETQIP)**

**INVITATION FOR BID**

This invitation for Bids (IFB) follows the General Procurement Notice (GPN) for this Education and Training Quality Improvement Project that appeared in United Nations Development Business online (UNDB online) No. 1 of 27 April 2018, on the African Development Bank's Internet Website; and in the local newspapers on 27 April 2018.

The Ministry of Education, Arts & Culture hereby invites interested, reputable and experienced companies to bid for the **Renovations and Refurbishment of Dabasene Secondary School in Okombah, Erongo Region, and Okakarara Secondary School in Okakarara, Otjozondjupa Region.**

The Ministry of Education, Arts and Culture, on behalf of the Government of the Republic of Namibia has resolved a loan from the African Development Bank (ADB) towards the cost of the Education and Training Quality Improvement (ETQIP). It is intended that part of the proceeds of this loan will be applied to eligible payments under the contract for renovations and rehabilitation/upgrading of schools and hostels, construction and expansion of Technical, Vocational Education and Training (TVET) centres, and UNAM Veterinary Teaching Hospital.

| A.DESCRPTION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | B.DESCRPTION:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RENOVATION AND REFINISHMENT OF DIBASENE SECONDARY SCHOOL IN OKOMBABE, ERONGO REGION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | RENOVATION AND REFINISHMENT OF OKAKARARA SECONDARY SCHOOL IN OKAKARARA, OTJOZONDJUPA REGION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Procurement Reference Number:</b> W/ONB/010-04/2019/20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Procurement Reference Number:</b> W/ONB/010-03/2019/ 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>BIDDING DOCUMENTS:</b> Available from 11th July 2019 at: Government Office Park, Room 109, 1st Floor, Left wing Windhoek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>BIDDING DOCUMENTS:</b> Available from 11th July 2019 at: Government Office Park, Room 109, 1st Floor, Left wing Windhoek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>LEVY:</b> N\$300.00 (Non-refundable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>LEVY:</b> N\$300.00 (Non-refundable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>SITE-VISIT:</b> 29 July 2019 at 10:00, Lovelace Junior Secondary School in Okombah, Erongo Region                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>SITE-VISIT:</b> 20th July 2019 at 10:00 at Mateneke High School in Okakara, Otjozondjupa Region                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>CLOSING DATE:</b> 09th August 2019 at 10h00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>CLOSING DATE:</b> 09th August 2019 at 10h00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>OPENING:</b> 09th August 2019 at 10h00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>OPENING:</b> 09th August 2019 at 10h00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>REQUIREMENTS:</b> Interested bidders must provide information indicating that they are qualified to perform the services including:<br>i. Proof that they have a minimum average construction turnover of N\$1,750,000.00 over the last 5 years.<br>ii. A profile of the company indicating the capacity, proof of owning the relevant equipment, financial soundness and experience in undertaking construction of such extent.<br>iii. A detailed project plan outlining the implementation schedule and methodology in executing the envisaged project.<br>iv. Proof of the following statutory and professional industry registration requirements:<br>• Valid company registration certificate<br>• Original valid / certified good standing Tax Certificate<br>• Original valid Good Standing from the Social Security Commission<br>• Valid certified Affirmative Action compliance certificate from the Office of the Employment Equity Commissioner<br>• Written undertaking that the salaries are in terms of the Labor Act. | <b>REQUIREMENTS:</b> Interested bidders must provide information indicating that they are qualified to perform the services including:<br>i. Proof that they have a minimum average construction turnover of N\$1,750,000.00 over the last 5 years.<br>ii. A profile of the company, indicating the capacity, proof of owning the relevant equipment, financial soundness and experience in undertaking earthworks of such extent.<br>iii. A detailed project plan outlining the implementation schedule and methodology in executing the envisaged project.<br>iv. Proof of the following statutory and professional industry registration requirements:<br>• Valid company registration certificate<br>• Original valid / Certified good standing Tax Certificate<br>• Original valid Good Standing from the Social Security Commission<br>• Valid certified Affirmative Action compliance certificate from the Office of the Employment Equity Commissioner<br>• Written undertaking that the salaries are in terms of the Labor Act. |

**ENQUIRIES:** Mr. G. Besser / Mr. S. Kandjaveva  
Geoff.Besser@moe.gov.na, 061- 293 3045  
Siegfried.Kandjaveva@moe.gov.na, 061- 293 3510

22 FRIDAY 19 JULY 2019

THE NAMIBIAN



**NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS**

**EXPLORATION ACTIVITIES ON EPLs 7213, 7214 & 7342  
KUNENE AND OTJOZONDJIPA REGIONS, NAMIBIA**

Environmental Compliance Consultancy (ECC) hereby gives notice to the public that an application for an Environmental Clearance Certificate in terms of the Environmental Management Act, 2007 will be made as per the following:

**Applicant:** Votorantim Metals Namibia (Pty) Ltd  
**Environmental Assessment Practitioner (EAP):** Environmental Compliance Consultancy  
**Location:** Kunene and Otjozondjipa Regions, Namibia

**Project:** Exploration activities on EPL 7213, EPL 7214 and EPL 7342 for Base and Rare Metals, Industrial Minerals, Precious Metals, Semi-Precious Stones in the Kunene and Otjozondjipa Regions, Namibia.

**Proposed Activity:** The proponent proposes to carry out low impact, non-intrusive exploration activities for Base and Rare Metals, Industrial Minerals, Precious Metals, Semi-Precious Stones. Exploration methods may include geochemical surveys (soil and rock sampling), geophysical surveys (electromagnetic surveys), drilling and drill-core sampling.

**Application for Environmental Clearance Certificate:** In terms of the Environmental Management Act, No. 7 of 2007, ECC on behalf of Votorantim Metals Namibia (Pty) Ltd is required to apply for environmental clearance to the Competent Authority and the Ministry of Environment and Tourism for the above-mentioned project.

**Purpose of the Review and Comment Period:** The purpose of the review and comment period is to present the proposed project and to afford I&APs an opportunity to comment on the project to ensure that all issues and concerns are captured and considered in the assessment.

**Review Period:** The review and comment period is effective from 11<sup>th</sup> of July 2019 – 1<sup>st</sup> August 2019.

**How you can participate:** ECC is undertaking the required environmental assessment and public participation process in terms of the Act. Interested and affected parties (I&APs) and Stakeholders are required to register for the project at: <https://ecenvironmental.com/ewestv/>

Environmental Compliance Consultancy  
Registration Number: CC/2013/11404  
Missions: 101 01 Brandendust in Mts | Windhoek  
P.O. Box 1120, Silver Windhoek  
Tel: +264 61 247 2020  
E-mail: [info@ecenvironmental.com](mailto:info@ecenvironmental.com)  
Website: <http://www.ecenvironmental.com>  
Project ID: 9-CC-00-234-001-09-C




**Expression of Interest to:**

Support the establishment of a Start-up Center in Windhoek

**Background:**  
INTEGRATION ([www.integration.org](http://www.integration.org)) is participating in a tender for a GIZ-funded project to establish a Start-up Center in Windhoek. Tentative start-date is 1 December 2019. Project duration: 30 Months. For this tender, we are looking for candidates to fill six long-term (i.e. full time) positions with the following profiles:

**Languages:** very good English language skills, local languages are an asset  
**General professional experience:** preferably a minimum of 3 years working experience in economic development, private sector development, SME promotion or business incubation, or innovation management

**Specific professional experience:**

- At least 1 expert with two years proven work experience as a training coordinator, trainer, training facilitator or similar role
- At least 1 expert with professional knowledge of a range of digital and analogue fabrication methods and processes, and specific experience and demonstrable proficiency in at least four of the following areas: 3D Printers, Laser Cutters (Hobby & Industrial), CNC Routers/Mills, Model Making, Carpentry/Woodworking, Metal Fabrication & Cold Work, Sewing & Embroidery
- At least 1 expert with two years proven experience in the ICT sector
- At least 1 expert with two years proven experience in communication, marketing or similar field
- Experience of human centred design thinking is an advantage
- All experts with good knowledge of the Namibian economy

Interested candidates are invited to submit an updated CV including relevant information by 31<sup>st</sup> July 2019 at the latest to Dr Musulwe [nmusulwe@integration.org](mailto:nmusulwe@integration.org) or [nmusulwe66@yahoo.com](mailto:nmusulwe66@yahoo.com).

**INVITATION TO BID**



NamPower hereby invites qualified, competent and Namibian registered companies to submit their Bid for the under-mentioned:

| Bid Numbers        | Bid Descriptions                                                                                       |
|--------------------|--------------------------------------------------------------------------------------------------------|
| G/ONB/NPWR-01/2020 | Designing, Manufacturing, Testing, Supply and Delivering of 2x 2.5MVA 66/22kV Dyn11 Power Transformers |
| G/ONB/NPWR-02/2020 | Designing, Manufacturing, Testing, Supply, and Delivering of various Distribution Transformers         |

**Closing Date:** Friday, 23 August 2019 at 11h00 a.m. (Namibian time)

**Cost per set of documents:** Free

**Bid documents availability:** Documents for these bids are available on the NamPower website [www.nampower.com.na](http://www.nampower.com.na)

**Details of Bid Submission:**  
Kindly submit your bid in a sealed envelope, clearly marked with the "BID NUMBER AND DESCRIPTION" as stated above, to be deposited in the Bid box located at the entrance foyer at NamPower Centre, 15 Luther Street, Windhoek.

**For Enquiries Contact:**  
**Tel:** +264 61 205 2324  
**Email address:** [bidclarifications@nampower.com.na](mailto:bidclarifications@nampower.com.na)



**SALE OF CAR**

The Joint United Nations Programme on HIV/AIDS (UNAIDS) is selling in "as-is" and "where-is" status the following equipment.

The Car is located at the UN House in Klein Windhoek, 38 Stein Street and can be inspected from 22 July 2019 from 09:00Hrs to 16:00Hrs

The interested individuals can send their offers by email to [negongas@unaids.org](mailto:negongas@unaids.org) indicating the amount of their offer which must be the same or higher than the base price.

The email must contain contact information to notify the bidder if his/her offer is the winning offer.

The deadline for submitting offers is 09 August 2019 at 12:00Hrs

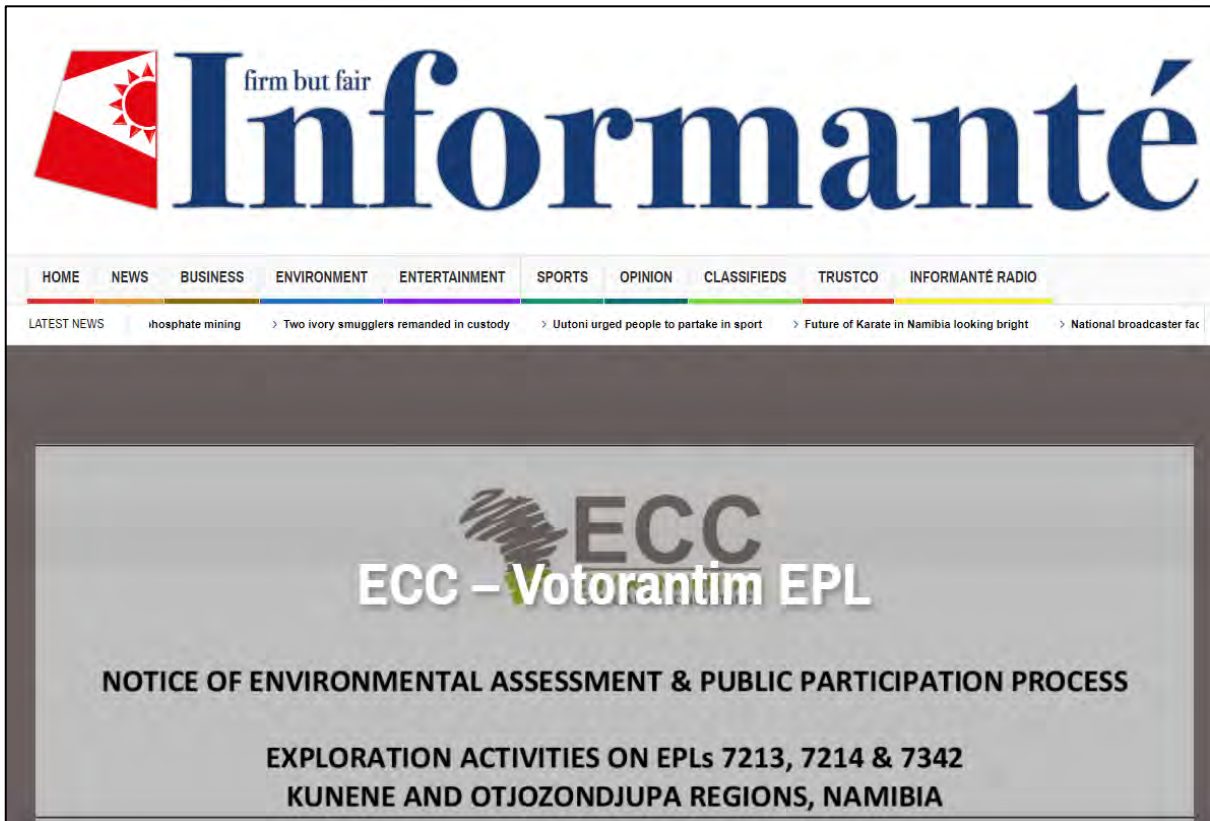
The item will be allocated to the best offer one day after the deadline and they must be fully paid and retired latest on 30 August 2019.

For more information contact Selma Negonga on 061 - 204 6221.

| ITEM | DESCRIPTION                                | QTY | BASE PRICE |
|------|--------------------------------------------|-----|------------|
| 1    | Toyota Land Cruiser, 2006 Model. KM 95 000 | 1   | 150,000.00 |



The following was advertised in the Informanté on the 11<sup>th</sup> July and 18<sup>th</sup> July 2019, (online newspaper).



The screenshot shows the homepage of the Informanté website. The header features the Informanté logo with the tagline "firm but fair" and a navigation menu with links: HOME, NEWS, BUSINESS, ENVIRONMENT, ENTERTAINMENT, SPORTS, OPINION, CLASSIFIEDS, TRUSTCO, and INFORMANTÉ RADIO. Below the menu is a "LATEST NEWS" section with several headlines. The main content area displays a large advertisement for ECC - Votorantim EPL. The advertisement includes the ECC logo and the text: "ECC – Votorantim EPL", "NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS", and "EXPLORATION ACTIVITIES ON EPLs 7213, 7214 & 7342 KUNENE AND OTJOZONDJUPA REGIONS, NAMIBIA".

**NOTICE OF ENVIRONMENTAL ASSESSMENT & PUBLIC PARTICIPATION PROCESS****EXPLORATION ACTIVITIES ON EPLs 7213, 7214 & 7342  
KUNENE AND OTJOZONDJUPA REGIONS, NAMIBIA**

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|                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <b>Applicant:</b>                                   | <b>Votorantim Metals Namibia (Pty) Ltd</b>      |
| <b>Environmental Assessment Practitioner (EAP):</b> | <b>Environmental Compliance Consultancy</b>     |
| <b>Location:</b>                                    | <b>Kunene and Otjozondjupa Regions, Namibia</b> |

**Project:** Exploration activities on EPL 7213, EPL 7214 and EPL 7342 for Base and Rare Metals, Industrial Minerals, Precious Metals, Semi-Precious Stones in the Kunene and Otjozondjupa Regions, Namibia.

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Environmental Compliance Consultancy  
Registration Number: CC/2013/11404  
Members: Mr JS Bezuidenhout or Mrs J Mooney  
PO Box 91193, Klein Windhoek  
Tel: +264 81 669 7608  
E-mail: [info@eccenvironmental.com](mailto:info@eccenvironmental.com)  
Website: <http://www.eccenvironmental.com>  
Project ID: ECC-88-234-ADT-08-C



## APPENDIX D - LIST OF PLANT SPECIES ON EPL 7342

| SPECIES                                                                       | PLANT DESCRIPTION                                                                                                                                                        | LOCATION NOTES                                                                                                |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <i>Acacia ataxacantha</i> DC.                                                 | Small tree. Flowers white.                                                                                                                                               | Bushland. West of Grootfontein, close to B 8). Kupferberg 515 Farm                                            |
| <i>Acacia fleckii</i> Schinz                                                  | Small much-branched tree, 4.0 m high. Flowers cream in spicate inflorescence.                                                                                            | Otavi District just north of Kombat. Gauss 46 Farm                                                            |
| <i>Acacia hebeclada</i> DC. subsp. <i>tristis</i> (Welw. ex Oliv.) A.Schreib. | Several stemmed tree. Rough, light greyish-brown bark.                                                                                                                   | In sandy valley NNW of homestead. Kupferberg 515 Farm                                                         |
| <i>Acacia hereroensis</i> Engl.                                               | Tree, 6 m high. Trunk dividing into two branches fairly low down. Bark dark grey, longit fissured, very fine hooked thorns paired, tiny leaflets. Flowers creamy spikes. | Northern Hills. Kupferberg 515 Farm                                                                           |
| <i>Acacia karroo</i> Hayne                                                    | Flowers yellow, with odour. Grows up to 20 meter high.                                                                                                                   | Grootfontein District. Collected at Gaub in calcium soil.                                                     |
| <i>Actinopterys radiata</i> (J.König ex Sw.) Link                             |                                                                                                                                                                          | Dolomite mountain slope between rocks in mountain forest. Auros 595 Farm                                      |
| <i>Aerva leucura</i> Moq.                                                     | Low rounded bushes to 40 cm.                                                                                                                                             | Grootfontein: Farm Auros, about 38 km from Otavi (10 km north of Grootfontein road); north facing shale hill. |
| <i>Alectra orobanchoides</i> Benth.                                           | Flowers golden yellow with dark venation.                                                                                                                                | Farm Auros 595, open mountain slope behind homestead.                                                         |
| <i>Aloe hereroensis</i> Engl. var. <i>hereroensis</i>                         | Flowers deep coral pink. Leaves bluish-grey, with irregular elongated white spots. Raceme with 14 capitate heads, about 1 m tall.                                        | At Kombat.                                                                                                    |
| <i>Alternanthera nodiflora</i> R.Br.                                          | Prostrate, with up to 45 cm long runners. Flowers axillary, white and frilled. Often rooting at the nodes.                                                               | Farm Kaiserfield 758 (17,5 km from Otavi to Grootfontein) Plane between mountains.                            |
| <i>Androcymbium melanthioides</i> Willd. subsp. <i>melanthioides</i>          | Plant up to 0.30 m high above the ground. Bracts whitish-pink folded at the tips to form a cup like a tulip.                                                             | Auros 595 Farm                                                                                                |
| <i>Antheophora pubescens</i> Nees                                             | Graminoid. Glaucous.                                                                                                                                                     | Otavi Mountains, 40 km north of Kombat on road to Grootfontein via farm Guass 46.                             |
| <i>Anthospermum rigidum</i> Eckl. & Zeyh. subsp. <i>pumilum</i> (Sond.) Puff  | Small, many-stemmed dwarf shrub, up to 35 cm tall.                                                                                                                       | Farm Askevold: GR 525. On slope of base of Croton shrub in grass.                                             |
| <i>Aptosimum</i>                                                              | Flowers purple - colourless.                                                                                                                                             | Collected at Gaub 47.                                                                                         |

| SPECIES                                                             | PLANT DESCRIPTION                                                                                                                                                                | LOCATION NOTES                                                                                                 |
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| <i>decumbens</i> Schinz                                             |                                                                                                                                                                                  |                                                                                                                |
| <i>Aristida effusa</i><br>Henrard                                   | Grass.                                                                                                                                                                           | Farm Ais.                                                                                                      |
| <i>Aristida hordeacea</i><br>Kunth                                  | Grass.                                                                                                                                                                           | Farm Sumas: GR 746                                                                                             |
| <i>Aristida meridionalis</i><br>Henrard                             | Grass 1 m tall.                                                                                                                                                                  | Otavi Mountains, 40 km north of Kombat, road to Grootfontein via Gauss Farm 46.                                |
| <i>Aspilia eenii</i><br>S.Moore                                     | Perennial several stemmed shrub, 1 m high. Flowers yellow, aster-like. Stem: 1.5 - 2 cm in diameter at base.                                                                     | Farm Auros west of homestead on hill slope.                                                                    |
| <i>Astripomoea rotundata</i> (Pilg.)<br>A.Meeuse                    | Plants creeping, flowers purple.                                                                                                                                                 | Grootfontein: Kombat, along road.                                                                              |
| <i>Babiana hypogea</i><br>Burch. var. <i>ensifolia</i><br>G.J.Lewis | Flowers close above soil surface, blue with pale yellow marks in throat.                                                                                                         | Farm Auros (GR 595), dolomite mountain, on upper mountain slope, very common in stands of grass.               |
| <i>Barleria macrostegia</i> Nees                                    | Shoots prostrate. Flowers blue.                                                                                                                                                  | Askevold Suid 525 Farm                                                                                         |
| <i>Berchemia discolor</i><br>(Klotzsch) Hemsl.                      |                                                                                                                                                                                  | Otavi Mountain Area. Farm Auros.                                                                               |
| <i>Bidens biternata</i><br>(Lour.) Merr. & Sherff                   | Herb, 30 cm high, aromatic. Leaves opposite, pinnately lobed. Stem squarose, hairy at leaf axils. Inflorescence terminal, heterogamous, ray florets yellow, disc florets yellow. | Farm Kupferberg 515, in maize field on an overcast day.                                                        |
| <i>Blepharis leendertziae</i><br>Oberm.                             | Erect, annual herb up to 0.30 m high, branched. Inflorescence axillary. Flowers blue, very small, seldom protruding from bracts.                                                 | Kaiserfelden 758 Farm                                                                                          |
| <i>Boerhavia coccinea</i><br>Mill.                                  | Prostrate herb with long trailing stems. Flowers small, pink.                                                                                                                    | North of Kombat on way to Farm Gaub.                                                                           |
| <i>Boscia albitrunca</i><br>(Burch.) Gilg & Gilg-Ben.               | Tree, 5.5 m high. Light-grey trunk streaked with rough dark bark. Leaves narrow. Very drooping crown. Sterile.                                                                   | Northern Hills. Kupferberg 515 Farm                                                                            |
| <i>Bothriochloa insculpta</i> (Hochst. ex A.Rich.) A.Camus          | Grass. Stolons present.                                                                                                                                                          | Northern side of Otavi Mountains; north of Kombat on road to Grootfontein via farm Gauss 46. Wide open valley. |
| <i>Brachiaria malacodes</i> (Mez & K.Schum.) Scholz                 | Grass.                                                                                                                                                                           | Auros on a wooded dolomite slope.                                                                              |
| <i>Brachystelma stenophyllum</i>                                    |                                                                                                                                                                                  | Kombat, in vicinity of mine.                                                                                   |

| SPECIES                                                                                     | PLANT DESCRIPTION                                                                                                                                                                                              | LOCATION NOTES                                                                                                 |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <i>(Schltr.) R.A.Dyer</i>                                                                   |                                                                                                                                                                                                                |                                                                                                                |
| <i>Buchnera longespicata</i> Schinz                                                         | Erect herb, woody at the base, up to 30 cm high. Flowers pale blue-violet.                                                                                                                                     | Farm Auros 595; dolomite mountain, common on upper mountain slope.                                             |
| <i>Burkea africana</i> Hook.                                                                | Tree up to 6 m high. Flowers together with leaves at twig ends.                                                                                                                                                | Tsumeb district. Farm Gaub Pad: GR 759. Sandveld island.                                                       |
| <i>Cardiospermum corindum</i> L.                                                            | Climber with white flowers.                                                                                                                                                                                    | Near Mission Farm Gaub, south of Tsumeb.                                                                       |
| <i>Carissa edulis</i> (Forssk.) Vahl                                                        | Shrub, sometimes tree-like. Bark black, corky. Flowers white, smelling sweet. Young berries green, turning red.                                                                                                | On mountain slope near spring at farm house. Auros 595 Farm                                                    |
| <i>Carissa spinarum</i> L.                                                                  | Multi stemmed tree with a spreading dark crown of fairly thick softly hairy leaves, 3.5 m high. Flowers white, small, tubular with 5 re-curved pointed lobes. Fruit small, green. Leaves slightly paler below. | South of homestead. Kupferberg 515 Farm                                                                        |
| <i>Cenchrus ciliaris</i> L.                                                                 | Grass.                                                                                                                                                                                                         | Northern side of Otavi Mountains; north of Kombat on road to Grootfontein via farm Gauss 46. Wide open valley. |
| <i>Ceropegia crassifolia</i> Schltr. var. <i>copleyae</i> (E.A.Bruce & P.R.O.Bally) H.Huber | Succulent. Roots thick, succulent. Leaves succulent. Ascending in shrubs, winding.                                                                                                                             | Live plant (sterile) collected April 1965. Farm Kombat 656, near mine. Flower in hort. W. Giess.               |
| <i>Ceropegia nilotica</i> Kotschy var. <i>nilotica</i>                                      | Shrub. Winding in shrubs.                                                                                                                                                                                      | Farm Kombat 656; plains between mountains south of Kombat Station.                                             |

| SPECIES                                                                            | PLANT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LOCATION NOTES                                                                 |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <i>Ceropegia stenoloba</i> Hochst. ex Chiov. var. <i>stenoloba</i>                 | Tuber flat, about 6 cm in diameter and 2 - 2,5 cm thick. Plant winding up to 1,50 m high. Leaves not succulent ( very limp and soft). Peduncle 7 mm long, loose softly pubescent, calyx as well. Flowers in lower part are globose enlarged. Globose part - 4 mm long and in diameter. Flower tube 6 mm long, greenish white with red-violet marks/blotches. Globose part somewhat darker. Tips 5 mm long, rolled up towards formina a spherical basket hanging together at tips, olive-violet with long hairs on the margins and in lower part of the tips. Tube glabrous on inside, in globose part greenish white with little red-violet marks at base, higher up red-violet concolorous and up to tips red-violet striped longitudinally. Outer corona triangular protruding towards outside, serving as support, pale with violet marks under the very long pale glidingrail under which a hollow is formed, covered by a thin tissue. Inner corona pale with basal violet strips (or longitudinal marks) up to height of filament. Tip pale, almost double the height of filament tube and tips leaning towards each other. | Original plant on Farm Kombat 659. Cultivated in garden of W. Giess, Windhoek. |
| <i>Chamaecrista biensis</i> (Steyaert) Lock                                        | Yellow flowers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Stony bushland on Farm kupferberg (west of Grootfontein, along B8).            |
| <i>Chamaecrista falcinella</i> (Oliv.) Lock var. <i>parviflora</i> (Steyaert) Lock | Decumbent herb. Flowers yellow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Otavi District: just north of Kombat on Farm Gauss.                            |
| <i>Chascanum pinnatifidum</i> (L.f.) E.Mey. var. <i>pinnatifidum</i>               | Flowers white. Frequently great.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Collected at Gaub in calcium soil.                                             |
| <i>Cheilanthes dinteri</i> Brause                                                  | Fern, 20 cm high.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Farm Auros on hill opposite homestead.                                         |
| <i>Cheilanthes marlothii</i> (Hieron.) Schelpe                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hoba Holls near meteorite.                                                     |
| <i>Cheilanthes pentagona</i> Schelpe & N.C.Anthony                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hoba Hills near meteorite.                                                     |

| SPECIES                                                                               | PLANT DESCRIPTION                                                                                                                                                                                                                                                                                                                                      | LOCATION NOTES                                            |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <i>Chenopodium album</i> L.                                                           | A 1.50 m high annual herb in home garden.                                                                                                                                                                                                                                                                                                              | Farm Auros 595.                                           |
| <i>Chenopodium murale</i> L. var. <i>acutidentatum</i> Aellen                         | Flowers greenish - frequent great.                                                                                                                                                                                                                                                                                                                     | Tsumeb. Collected at Gaub in Calcium soil.                |
| <i>Chloris pycnothrix</i> Trin.                                                       | Grass.                                                                                                                                                                                                                                                                                                                                                 | Grows against southern slope of mountain. Farm Auros 595. |
| <i>Chlorophytum anceps</i> (Baker) Kativu                                             | Roots fibrous with tubers. Leaves over 1 cm wide, below with a sharp keel, partially folded. Inflorescence stem flattened off, sharp squared. Flowers white with brown tips, slightly zygomorph. Stamens pointing upwards, style pointing downwards.                                                                                                   | Red loam plain below mountain. Gross Otavi 805 Farm       |
| <i>Chlorophytum calyptrocarpum</i> (Baker) Kativu                                     | Perennial herb, 5 cm high. Inflorescence a few-flowered raceme, flaccid, emerging from the side. Flowers star-shaped, white with a green central stripe, reflexed, anthers yellow, filaments white. Leaves many, grass-like, in a basal rosette, green, folded along the midrib, surrounded by a dense tuft of fibers at the base. Roots many, fleshy. | Otavi, Farm Kupferberg, along track to homestead.         |
| <i>Cissampelos mucronata</i> A.Rich.                                                  |                                                                                                                                                                                                                                                                                                                                                        | Otavi mountains. Auros 595 Farm                           |
| <i>Cissus nymphaeifolia</i> (Welw. ex Baker) Planch.                                  | Up to 3 m high shrub with linear end shoots. Flowers yellow-green. Bark dark brown.                                                                                                                                                                                                                                                                    | Farm Gross Otavi 805. (Tsumeb).                           |
| <i>Clematis brachiata</i> Thunb.                                                      |                                                                                                                                                                                                                                                                                                                                                        | Kombat, on the road.                                      |
| <i>Clematopsis scabiosifolia</i> (DC.) Hutch. subsp. <i>stanleyi</i> (Hook.) Brummitt | Herb to 1 m high. Flowers whitish pink.                                                                                                                                                                                                                                                                                                                | Gaub in calcareous soil.                                  |
| <i>Cleome monophylla</i> L.                                                           | Small erect annual herb, up to 20 cm tall. Flowers pink.                                                                                                                                                                                                                                                                                               | Just north of Kombat on Farm Gauss 46.                    |
| <i>Clerodendrum ternatum</i> Schinz                                                   | Small erect aromatic herb arising from a woody base. Growing in shade of trees. Flowers tubular, white; stamens purple, exerted                                                                                                                                                                                                                        | North of Kombat on way to Farm Gaub.                      |
| <i>Combretum apiculatum</i> Sond. subsp. <i>apiculatum</i>                            | Perennial single stemmed tree, 500 cm high. Leaves: not hairy, shiny.                                                                                                                                                                                                                                                                                  | 'Ombanie Posten'.                                         |

| SPECIES                                                                      | PLANT DESCRIPTION                                                                                                                                                | LOCATION NOTES                                                                                                       |
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| <i>Combretum apiculatum</i> Sond.<br><i>subsp. leutweinii</i> (Schinz) Exell | Tree, 6 m tall. Still in flower, together with <i>Carissa edulis</i> .                                                                                           | Farm Auros: GR 595. Rocky slope not far from spring at farmhouse.                                                    |
| <i>Combretum imberbe</i> Wawra                                               | Tree to 20 fthigh. Flowers yellow, with odour.                                                                                                                   | Collected at Gaub.                                                                                                   |
| <i>Commelina africana</i> L. var. <i>africana</i>                            | Spreading annual herb. Leaves elliptic, almost glabrous, green, sessile, alternate. Flowers yellow to orange, 3 tepal lobes, bracts not fused on the keel.       | Edge of maize field. Kupferberg 515 Farm                                                                             |
| <i>Commelina livingstonii</i> C.B.Clarke                                     | Flowers blue.                                                                                                                                                    | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46. Steep hill with road passing over. |
| <i>Commicarpus decipiens</i> Meikle                                          | Forb, creeping over other plants in shade, 0.3-0.5 m high. Leaves sticky. Crushed leaves spicy. Cut twigs exude clear sap. Flowers white.                        | North of Kombat, between Gauss and Gaup Farms. Dolomite hills and valleys.                                           |
| <i>Commicarpus pentandrus</i> (Burch.) Heimerl                               | Flowers purple.                                                                                                                                                  | Collected at Gaub in calcium soil.                                                                                   |
| <i>Commiphora glandulosa</i> Schinz                                          | Single stemmed with more or less round crowns, 5 m high. Bark green, Pseudaril light red with 4 arms reaching up to tip, covering the whole fruit, 1 involueral. | Farm Gross Otavi 805. On dolomite mountain slope.                                                                    |
| <i>Commiphora glaucescens</i> Engl.                                          | Tall tree 3 - 6 m. Succulent-looking trunk - top layer peels off, flesh coloured. Leaves blue/green. Fruits red.                                                 | Grootfontein District: Otavi area; north of Kombat, between Gauss and Gaub Farms.                                    |
| <i>Commiphora tenuipetiolata</i> Engl.                                       | Tree 6 mhigh, wide protruding tree. Bark brown, fine cutaneous peeling. Unripe fruit globose, 1 centimetre in diameter, 3-7 leaflets.                            | Farm Gross Otavi 805.                                                                                                |
| <i>Convolvulus sagittatus</i> Thunb. var. <i>latifolius</i> C.H.Wright       | Annual twiner. Flowers white, infundibular. Leaves lanceolate with a deeply lobed base. Stems herbaceous, soft, green, winding.                                  | Farm Kupferberg, next to maize field.                                                                                |
| <i>Corallocarpus bainesii</i> (Hook.f.) A.Meeuse                             |                                                                                                                                                                  | Farm Auros 595. Otavi Bergland.                                                                                      |
| <i>Corchorus asplenifolius</i> Burch.                                        | Prostrate herb with short trailing stems. Flowers showy, bright yellow, opening late afternoon.                                                                  | Just north of Kombat on Farm Gauss, 4 km from campsite.                                                              |

| SPECIES                                                                        | PLANT DESCRIPTION                                                                                                                                                                                                                                                                | LOCATION NOTES                                                            |
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| <i>Cotyledon orbiculata</i> L. var. <i>orbiculata</i>                          | Perennial, woody subshrub 1 m high. Bark gives a peeling appearance. On old, dead specimens, woody remains. Leaves succulent, basal, covered with white film, red margin, leaves in pairs.                                                                                       | On Okonjati mountain range on farm Okonjati 516.                          |
| <i>Crassocephalum coeruleum</i> (O.Hoffm.) R.E.Fr.                             | Flowers pale brown.                                                                                                                                                                                                                                                              | Kombat, on the road.                                                      |
| <i>Craterostigma plantagineum</i> Hochst.                                      | Leaves a rosette like, prostrate. Flowers blue-white.                                                                                                                                                                                                                            | Farm Askevold 525, in Omuramba in thick grass stands.                     |
| <i>Crotalaria distans</i> Benth. subsp. <i>distans</i>                         | Slender, erect, much-branched herb. Trifoliate. Flowers bright yellow.                                                                                                                                                                                                           | Just North of Kombat on Farm Gauss.                                       |
| <i>Crotalaria platysepala</i> Harv.                                            | Annual, erect herb, up to 55 cm high. Flowers bright yellow. Standard with violet venation. Pods 1.5 cm long and with a diameter of 1 cm.                                                                                                                                        | Farm Kaiserfeld: GR 758. Grey loamy soil between Otavi Mountains.         |
| <i>Croton gratissimus</i> Burch. var. <i>subgratissimus</i> (Prain) Burtt Davy | Shrub 1.8 - 2.5 m tall. Never seen the flowers open, always only brown buds. Crushed leaves non-aromatic. Cut twigs exude no sap.                                                                                                                                                | Otavi area; about 15 km east of Otavi.                                    |
| <i>Cucumis africanus</i> L.f.                                                  | Vigorous climber on other plants, densely hairy with coarse hairs. Flowers yellow.                                                                                                                                                                                               | Just north of Kombat on Farm Gauss.                                       |
| <i>Cucumis meeusei</i> C.Jeffrey                                               | Perennial. Climber in shrubs.                                                                                                                                                                                                                                                    | Farm Gross Otavi 805.                                                     |
| <i>Cullen tomentosum</i> (Thunb.) J.W.Grimes                                   | Shrubby herb with a pungent smell, 40 cm high. Flowers small, in axillary clusters, purple. Leaves trifoliate, grey-green, erect, wavy, petiole long, margins dented, leaflets obovate. Fruit immature, elongated-ovoid. Stems many arising from the base, curved, rigid, green. | Otavi, Kombat, on road verge.                                             |
| <i>Cynodon dactylon</i> (L.) Pers.                                             | Mat forming. Plants erect.                                                                                                                                                                                                                                                       | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Gauss. |
| <i>Cyperus esculentus</i> L. var. <i>esculentus</i>                            | Plant up to 0.60 m high. Spikelets brown-golden yellow.                                                                                                                                                                                                                          | At old spring. Auros 595 Farm                                             |
| <i>Cyphostemma congestum</i> (Baker) Desc. ex Wild & R.B.Drumm.                | Stalk about 3 m long, not succulent. Leaves thickish.                                                                                                                                                                                                                            | Kaiser Wilhelm mountain at Okahandja.                                     |
| <i>Cyphostemma hereroense</i> (Schinz) Desc. ex Wild & R.B.Drumm.              |                                                                                                                                                                                                                                                                                  | Farm Gauss GR46.<br>(Tsumeb)                                              |

| SPECIES                                                                                                      | PLANT DESCRIPTION                                                                                                                                                                                                                                                              | LOCATION NOTES                                                                          |
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| <i>Cyphostemma juttae</i> (Dinter & Gilg) Desc.                                                              | Pachycaul, 1 m high. Main stem thick, bottle shaped, unbranched in lower half, bark yellow, papery, peeling off in large pieces. Lateral branches short. Leaves large, trifoliate, blue-green, succulent, petiole winged. Fruit in terminal sprays, grape-like, fleshy, green. | Farm Kupferberg, near homestead.                                                        |
| <i>Danthoniopsis ramosa</i> (Stapf) Clayton                                                                  | Graminoid; Notes: Strong tufted grass, up to 1.20 m high and 60 cm in diameter, strongly branched.                                                                                                                                                                             | Farm Auros GR 595. In dead valley, north-east of the Nagaib.                            |
| <i>Datura ferox</i> L.                                                                                       | Herb, 80 cm high. Leaves alternate, ovate, margin dentate, veins prominent on undersurface. Flowers terminal, axillary, lilac, petal lobes free ending in a thin tip.                                                                                                          | Farm Kupferberg 515, in maize field on an overcast day.                                 |
| <i>Datura stramonium</i> L.                                                                                  | Herb 0.80 m high. Tall, erect aromatic. Flowers white, tubular. Fruit with spiny projections.                                                                                                                                                                                  | Just north of Kombat on Farm Gauss.                                                     |
| <i>Dichrostachys cinerea</i> (L.) Wight & Arn. subsp. <i>africana</i> Brenan & Brummitt var. <i>africana</i> | A low shrub. Branches ending in sharp spines. Flowers deep pink and yellow.                                                                                                                                                                                                    | Just north of Kombat on Farm Gauss.                                                     |
| <i>Dicoma anomala</i> Sond. subsp. <i>gerrardii</i> (Harv. ex F.C.Wilson) S.Ortiz & Rodr.Oubiña              | Low, erect herb from woody basis, up to 20 cm high. Leaves linear, felty, sickle shaped. Disc florets violet.                                                                                                                                                                  | Farm Auros 595, on 'alpine' treeless dolomite mountain slope.                           |
| <i>Digitaria eriantha</i> Steud.                                                                             | Grass. Large tufts.                                                                                                                                                                                                                                                            | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Gauss. Small valley. |
| <i>Digitaria seriata</i> Stapf                                                                               | Grass. Up to 80 cm high with runners. Racemes green.                                                                                                                                                                                                                           | Farm Auros 595.                                                                         |
| <i>Diospyros lycioides</i> Desf. subsp. <i>sericea</i> (Bernh.) De Winter                                    | Perennial, big tree/woody, 6 m high. Scrambler with black bark, smooth peeling in rings when dry. Soft wood. Young stems very hairy and red, no old leaves.                                                                                                                    | On Farm Okonjati close to Elephant camp.                                                |
| <i>Dipcadi viride</i> (L.) Moench                                                                            | Flowers dirty brown. Leaves slightly glaucous to bright near base.                                                                                                                                                                                                             | North of Kombat on northern side of Otavi Mountains. Wide valley.                       |
| <i>Dolichos</i> sp.                                                                                          | A vigorous climber on other plants. Flowers deep pink.                                                                                                                                                                                                                         | Otavi District: just north of Kombat on Farm Gauss.                                     |

| SPECIES                                                                             | PLANT DESCRIPTION                                                                                                                 | LOCATION NOTES                                                                                                              |
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| <i>Dombeya rotundifolia</i> (Hochst.) Planch. var. <i>rotundifolia</i>              | Tree. Leaves: simple, roundish almost circular, 6 midveins, hairs on both sides, margin toothed. Stem grey, hairs on young stems. | Farm Gauss 46, by Kombat.                                                                                                   |
| <i>Duvalia polita</i> N.E.Br. var. <i>parviflora</i> (L.Bolus) A.C.White & B.Sloane |                                                                                                                                   | Kombat.                                                                                                                     |
| <i>Elephantorrhiza schinziana</i> Dinter                                            | Perennial several stemmed shrub, 250 cm high.                                                                                     | Farm Auros 'Bei den Klippdacksen' south of homestead.                                                                       |
| <i>Emilia schinzii</i> (O.Hoffm.) Cron                                              | Herb; Notes: Herb. Woody. Up to 1 m. Flowers pink.                                                                                | 40 km N of Grootfontein on road to Rundu. Roadside.                                                                         |
| <i>Enneapogon scoparius</i> Stapf                                                   | Grass.                                                                                                                            | Otavi Mountains. 40 km north of Kombat, road to Grootfontein via Gauss.                                                     |
| <i>Enteropogon macrostachyus</i> (Hochst. ex A.Rich.) Munro ex Benth.               | Grass. Tufts under trees taller and denser.                                                                                       | North side of Otavi Mountains, north of Kombat on road to Grootfontein via Gauss 46 Farm. Wide open valley.                 |
| <i>Eragrostis cilianensis</i> (All.) Vignolo ex Janch.                              | Annual grass.                                                                                                                     | 23,5 miles east of Otavi on road to Grootfontein.                                                                           |
| <i>Eragrostis echinochloidea</i> Stapf                                              | Grass.                                                                                                                            | Otavi Mountains; about 40 km north of Kombat on road to Grootfontein via farm Gauss 46. Steep hill with road passing over.  |
| <i>Eragrostis glandulosipedata</i> De Winter                                        | Grass.                                                                                                                            | On roadside. 23,5 miles east of Otavi on road to Grootfontein.                                                              |
| <i>Eragrostis nindensis</i> Ficalho & Hiern                                         | Tufted grass.                                                                                                                     | Otavi Mountains, 40 km north of Kombat on road to Grootfontein via Gauss 46 Farm. Small valley. On north-west facing slope. |
| <i>Eragrostis pilgeriana</i> Dinter ex Pilg.                                        | Graass.                                                                                                                           | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46.                                           |
| <i>Eragrostis scopelophila</i> Pilg.                                                | Densely branched shrubby grass up to 80 cm high and diameter.                                                                     | Farm Auros 595.                                                                                                             |
| <i>Eragrostis superba</i> Peyr.                                                     | Erect grass.                                                                                                                      | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Gauss 46.                                                |

| SPECIES                                                               | PLANT DESCRIPTION                                                                                                                                                                             | LOCATION NOTES                                                                                                       |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <i>Eragrostis trichophora</i> Coss. & Durieu                          | Erect grass.                                                                                                                                                                                  | Otavi Mountains 40 km north of Kombat, road to Grootfontein via Gauss 1932.570 S 1744.048 E.                         |
| <i>Erucastrum arabicum</i> Fisch. & C.A.Mey.                          | Slender, erect annual herb. Flowers small, yellow, terminal.                                                                                                                                  | Just north of Kombat on Farm Gauss.                                                                                  |
| <i>Euclea undulata</i> Thunb.                                         | Flowers cream colour.                                                                                                                                                                         | Collected at Gaub in calcium soil.                                                                                   |
| <i>Euphorbia crotonoides</i> Boiss. subsp. <i>crotonoides</i>         | Annual, upright shrub, branched capsules up to 8 mm in diameter with red style.                                                                                                               | At Farm Kombat 656.                                                                                                  |
| <i>Euphorbia guerichiana</i> Pax                                      | Shrub 2 m high. Leaves elliptic, tapering and entire. Bark yellow/orange peeling, milky latex.                                                                                                | Near Kombat. Gauss 46 Farm                                                                                           |
| <i>Euphorbia otavimontana</i> Swanepoel                               | Shrub, 100 cm high. Stems glaucous - green, some plants with yellow bands. Inflorescence cymose, 1-3 cyathia per flowering eye. Flowers greenish-yellow.                                      | Otavi mountains. Hillside opposite farmhouse. Auros 595 Farm                                                         |
| <i>Eustachys paspaloides</i> (Vahl) Lanza & Mattei                    | Grass.                                                                                                                                                                                        | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46. Steep hill with road passing over. |
| <i>Evolvulus alsinoides</i> (L.) L.                                   | A decumbent herb, closely leafy. Flowers blue.                                                                                                                                                | Just north of Kombat on Farm Gauss.                                                                                  |
| <i>Evolvulus alsinoides</i> (L.) L. var. <i>linifolius</i> (L.) Baker | Herbaceous erect forb 20 cm tall. Silvery-haired leaves. Light blue flowers. Fruit absent. Crushed leaves non-aromatic. Cut twigs exude no sap.                                               | Otavi area: North of Kombat, between Gauss and Gaub Farms. Valley between hills (dolomite).                          |
| <i>Felicia muricata</i> (Thunb.) Nees subsp. <i>cinerascens</i> Grau  | Grey-green dwarf shrub, 30 cm high. Older branches black bark. Flowers violet.                                                                                                                | Farm Auros 595. On alpine tree-less dolomite mountain slope.                                                         |
| <i>Ficus burkei</i> (Miq.) Miq.                                       | Perennial double stemmed shrub, 700 cm high. Leaves green in comparison to LH 348, right next to it. Stem grey trunk, milky latex, one very inconspicuous indication of a former aerial root. | Farm Auros, next to old house.                                                                                       |

| SPECIES                                                                   | PLANT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                 | LOCATION NOTES                                                                              |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <i>Ficus cordata</i><br><i>Thunb. subsp. cordata</i>                      | Tree with compact crown, has coppery foliage spring (as my brother almost daily travels along this road he is sure of this fact). Could it be <i>Ficus ingens</i> . Height: approximately 6 m. This tree has strangled what seems to be a <i>Dichrostachys</i> , judging by the strip of trunk still visible. According to local population the fruit is soft. There was (or is it, 'were') no fruit on the tree. | On hill along road from Farm Jakkalomuramba (H.K.Volkmann) to Farm Halaberg (H.K.Volkmann). |
| <i>Ficus petersii</i> Warb.                                               | Large tree 45 feet high. Bark grey. Fruits borne on young twigs, sessile.                                                                                                                                                                                                                                                                                                                                         | 23,5 miles east of Otavi on road to Grootfontein.                                           |
| <i>Fingerhuthia africana</i> Lehm.                                        | Grass.                                                                                                                                                                                                                                                                                                                                                                                                            | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46.           |
| <i>Flueggea virosa</i> (Roxb. ex Willd.)<br><i>Voigt subsp. virosa</i>    | Small, much-branched, spiny tree 3 m tall. Fruit small, globose berries.                                                                                                                                                                                                                                                                                                                                          | Just north of Kombat on Farm Gauss 46.                                                      |
| <i>Geigeria ornativa</i> O.Hoffm.                                         | Flowers yellow.                                                                                                                                                                                                                                                                                                                                                                                                   | Collected at Farm Gaub.                                                                     |
| <i>Geigeria otaviensis</i> (Merxm.) Merxm.                                | Perennial. Leaves up to 6 cm long. Heads yellow.                                                                                                                                                                                                                                                                                                                                                                  | Farm Auros 595. On alpine tree less dolomite mountain slope.                                |
| <i>Gisekia africana</i> (Lour.) Kuntze var. <i>africana</i>               | Prostrate annual herb, with trailing stems. Flowers purple with white throat.                                                                                                                                                                                                                                                                                                                                     | Just north of Kombat on Farm Gauss.                                                         |
| <i>Gisekia pharnacioides</i> L. var. <i>pharnacioides</i>                 | Prostrate annual without stamens.                                                                                                                                                                                                                                                                                                                                                                                 | Farm Pierre.                                                                                |
| <i>Gloriosa superba</i> L.                                                | Herb, up to 12 cm high. Flowers red and yellow. Odourless.                                                                                                                                                                                                                                                                                                                                                        | Collected at Farm Gaub, in calcium soil.                                                    |
| <i>Gomphocarpus fruticosus</i> (L.)<br><i>W.T.Aiton subsp. fruticosus</i> | Tall, erect much-branches shrublet 1.0 m tall. Flowers pale yellow in terminal umbels.                                                                                                                                                                                                                                                                                                                            | North of Kombat on way to Farm Gaub.                                                        |
| <i>Gossypium triphyllum</i> (Harv.) Hochr.                                | Shrub to 8 ft high. Flowers purplish blue.                                                                                                                                                                                                                                                                                                                                                                        | Collected at Farm Gaub                                                                      |
| <i>Grewia bicolor</i> Juss.                                               | Perennial several stemmed shrub, 4 m high. Flowers yellow, star-shaped numerous, sweet scented in sunshine, without scent in overcast weather. Bark shallowly longitudinally fissured, yellow short hairs on new growth.                                                                                                                                                                                          | Farm Auros, south of homestead 'Bei den Klippdachsen'.                                      |
| <i>Grewia flavescens</i> Juss.                                            | Commonly known as Arib. Flowers yellow. Fruit brown - edible.                                                                                                                                                                                                                                                                                                                                                     | Collected at Farm Gaub in Calcium soil.                                                     |

| SPECIES                                                                              | PLANT DESCRIPTION                                                                                                                                                                                                | LOCATION NOTES                                                                    |
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| <i>Grewia subspathulata</i> N.E.Br.                                                  | Multi-stemmed shrub, 0.70 m high. Flowers grey.                                                                                                                                                                  | Otavi mountains. Auros 595 Farm                                                   |
| <i>Gymnosporia senegalensis</i> (Lam.) Loes.                                         | Several stemmed shrub. Stem 3 cm diameter and less. Bark light grey, fissured and peeling on old stems. Smooth grey on younger growth. Old pieces grey, opposite in two's. Younger branches spinescent. Sterile. | Along mielieland north of homestead on Kupferberg 515 Farm, south of tarred road. |
| <i>Helichrysum candolleianum</i> H.Buek                                              | Plant 0.20 m high. Small, decumbent herb, grey velvety throughout. Flowers papery, pink.                                                                                                                         | Otavi District: just north of Kombat on Farm Gauss 46.                            |
| <i>Helichrysum fleckii</i> S.Moore var. <i>dinteri</i> (S.Moore) Merxm. & A.Schreib. | Dwarf shrub 5 - 8 cm high.                                                                                                                                                                                       | Farm Auros: on 'Signalberg' - highest mountain in area.                           |
| <i>Helinus integrifolius</i> (Lam.) Kuntze                                           | Shrublet 1 m high. Branches ending in tendrils. Flowers small, yellow.                                                                                                                                           | Just north of Kombat on Farm Gauss.                                               |
| <i>Helinus spartioides</i> (Engl.) Schinz ex Engl.                                   | Squarrosely branched or dense half shrub up to 1 m high. Flowers greenish with yellow anthers.                                                                                                                   | Farm Askevold: GR 525. Loamy plain of Omuramba.                                   |
| <i>Heliotropium ciliatum</i> Kaplan                                                  | Robust, erect, much-branched herb. Flowers white in branched terminal inflorescences.                                                                                                                            | Gauss 46 Farm                                                                     |
| <i>Heliotropium nelsonii</i> C.H.Wright                                              | Grows to 0.60 m high.                                                                                                                                                                                            | Collected at Gaub 47 Farm                                                         |
| <i>Heliotropium ovalifolium</i> Forssk.                                              | Herb with white flowers.                                                                                                                                                                                         | 40 km north of Grootfontein on road to Rundu.                                     |
| <i>Hermannia eenii</i> Baker f.                                                      | Prostrate herb with long, decumbent stems. Flowers pink, axillary.                                                                                                                                               | Just north of Kombat on Farm Gauss.                                               |
| <i>Hermannia modesta</i> (Ehrenb.) Mast.                                             | Herb. 20 cm high. Flowers pink.                                                                                                                                                                                  | 40 km north of Grootfontein on road to Rundu.                                     |
| <i>Hermannia quartiniana</i> A.Rich.                                                 | Prostrate herb, closely leafy, with trailing stems, flat slope. Flowers are pale yellow.                                                                                                                         | Just north of Kombat on farm Gauss 46.                                            |
| <i>Hermestaedia odorata</i> (Burch.) T.Cooke var. <i>odorata</i>                     | Notes: Flowers pale pink - odourless.                                                                                                                                                                            | Collected at Farm Gaub in calcuim soil.                                           |
| <i>Heteromorpha papillosa</i> C.C.Towns.                                             | Erect shrub with 6 - 8 reed-like branches, up to 1 m high, from the base, bark light brown. Leaves 3 - 5 partite.                                                                                                | Farm Auros 595. In dolomite, at mountainfoot.                                     |
| <i>Heteromorpha stenophylla</i> Welw. ex Schinz var. <i>stenophylla</i>              | Spreading shrub up to 1.20 m high. Flowers yellow.                                                                                                                                                               | At Kombat 659.                                                                    |

| SPECIES                                                                           | PLANT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                   | LOCATION NOTES                                                                    |
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| <i>Heteropogon contortus</i> (L.) Roem. & Schult.                                 |                                                                                                                                                                                                                                                                                                                                                                                                     | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Farm Gauss 46. |
| <i>Hibiscus calyphyllus</i> Cav.                                                  | Upright or low herb, up to 40 cm in diameter, woody base. Flowers almost 10 cm in diameter, bright lemon yellow with red blotches at the base of the petals.                                                                                                                                                                                                                                        | Farm Kaiserfeld 758.                                                              |
| <i>Hibiscus pusillus</i> Thunb.                                                   | Small decumbent annual herb 0.20 m tall. Flowers yellow with red centre.                                                                                                                                                                                                                                                                                                                            | Just north of Kombat on Farm Gauss.                                               |
| <i>Hibiscus sidiformis</i> Baill.                                                 | Prostrate herb. Flowers campanulate, light yellow, calyx lobes cream with green veins and margins, drawn out into pointed tips. Leaves cordate or 3-lobed, fairly small, green.                                                                                                                                                                                                                     | Otavi, Farm Kupferberg.                                                           |
| <i>Hibiscus trionum</i> L.                                                        | Annual herb, 20 cm high. Leaves palmate, green with maroon margin, margins sinuate, petioles long, sparsely hairy. Stems erect, green, round, mostly unbranched, sparsely covered with long erect hairs. Flowers showy, pale yellow with a deep maroon base, anthers orange. Calyx membranous, light green with dark purple raised venation. Epicalyx lobes many, linear, covered with erect hairs. | Farm Kupferberg, at edge of maize field.                                          |
| <i>Hilliardiella oligocephala</i> (DC.) H. Rob.                                   | A half-shrub that can grow to a height of 65 cm. The little heads are red-violet in colour.                                                                                                                                                                                                                                                                                                         | Farm Auros ( GR 595 ); Dolomite mountain, on an open mountain slope.              |
| <i>Hirpicium gazanioides</i> (Harv.) Roessler                                     | Flowers yellow. Annual.                                                                                                                                                                                                                                                                                                                                                                             | Farm Kupferberg 515 (west of Grootfontein, close to B8)..                         |
| <i>Hyparrhenia filipendula</i> (Hochst.) Stapf var. <i>pilosa</i> (Hochst.) Stapf | Grass.                                                                                                                                                                                                                                                                                                                                                                                              | 13.9 miles east of Otavi on road to Grootfontein.                                 |
| <i>Hyparrhenia quarrei</i> Robyns                                                 | Dense, tufted grass, up to 1.50 m high in omuramba.                                                                                                                                                                                                                                                                                                                                                 | Farm Auros 595. In death valley north-east of Nagaib.                             |
| <i>Hyperthelia dissoluta</i> (Nees ex Steud.) Clayton                             | Tall yellow-green tufts in dense stands.                                                                                                                                                                                                                                                                                                                                                            | 13.9 miles east of Otavi on road to Grootfontein.                                 |
| <i>Hypoestes forskaolii</i> (Vahl) R.Br. subsp. <i>forskaolii</i>                 | Shrub up to 0.35 m high. Flowers white.                                                                                                                                                                                                                                                                                                                                                             | Approximately 38 km from Otavi (10 km north of Grootfontein road). Auros 595 Farm |

| SPECIES                                                                                                        | PLANT DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                 | LOCATION NOTES                                                           |
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| <i>Hypoxis iridifolia</i><br>Baker                                                                             | Bulb 8 cm long, 4 cm in diameter, dark brown. Flesh in cross section yellow. Flowers yellow.                                                                                                                                                                                                                                                                                      | At gate farm Gauss Alpine grass highland.                                |
| <i>Hypoxis obtusa</i><br>Burch. ex Edwards                                                                     | Bulb, 8 cm in diameter and 12 cm long, yellow in cross section, at base of leaves with fibres. Rooting in upper part of bulb.                                                                                                                                                                                                                                                     | On road above farmhouse. Auros 595 Farm                                  |
| <i>Hypoxis obtusa</i> Ker<br>Gawl. [2]                                                                         | Bulb ovate. In diameter upper half with fibrous wreath. Roots starting at upper half, lower half without roots. Flowers yellow.                                                                                                                                                                                                                                                   | Gross Otavi 805 Farm. Red loam plain below mountain slope.               |
| <i>Indigastrium</i><br><i>costatum</i> (Guill. &<br>Perr.) Schrire subsp.<br><i>macrum</i> (E.Mey.)<br>Schrire | Small erect annual herb 0.15 m tall. Flowers small, pink, in axillary, long-stalked inflorescences.                                                                                                                                                                                                                                                                               | Just north of Kombat on Farm Gauss.                                      |
| <i>Indigofera</i><br><i>daleoides</i> Benth. ex<br>Harv. var. <i>daleoides</i>                                 | A robust, semi-erect herb arising from a thick woody rootstock. Flowers small, red in dense axillary clusters.                                                                                                                                                                                                                                                                    | Just north of Kombat on Farm Gauss, 4 km from campsite.                  |
| <i>Indigofera vicioides</i><br>Jaub. & Spach var.<br><i>vicioides</i>                                          | Flowers blue.                                                                                                                                                                                                                                                                                                                                                                     | Farm Kupferberg. West of Grootfontein, close to B8, stony bushland.      |
| <i>Ipomoea holubii</i><br>Baker                                                                                | Vigorous climber on other plants. Flowers large, showy deep pink.                                                                                                                                                                                                                                                                                                                 | Otavi District: just north of Kombat on Farm Gauss, 4 km from Campsite.  |
| <i>Ipomoea oblongata</i><br>E.Mey. ex Choisy                                                                   |                                                                                                                                                                                                                                                                                                                                                                                   | Farm Auros, Otavi.                                                       |
| <i>Ipomoea verbascoidea</i><br>Choisy                                                                          | Perennial climber, 4.5 m high. Several photo's taken. Flowers mauve trumpet-shaped, large. Leaves dark green above, silvery grey underneath branches also silvery grey, leaves covered with fine hairs above below. Stem: as on photo, I have never seen a stem this thick and strong. Fruit: small capsule as in specimen, this moth eaten thing was the only reachable foliage. | Farm Auros, behind Brunnendamm to the west of windmill west of borehole. |
| <i>Jamesbrittenia</i><br><i>atropurpurea</i><br>(Benth.) Hilliard<br>subsp. <i>pubescens</i><br>Hilliard       | Perennial, small shrub 15 cm high.                                                                                                                                                                                                                                                                                                                                                | Auros: on 'Signalberg'.                                                  |
| <i>Jamesbrittenia</i><br><i>fragilis</i> (Pilg.)<br>Hilliard                                                   | Annual, delicate herb, sticky, flowers violet-blue with yellow throat.                                                                                                                                                                                                                                                                                                            | Farm Auros (GR 595), close to farm house.                                |
| <i>Justicia exigua</i><br>S.Moore                                                                              | Upright, annual, delicate herb, 0.30 m high. Flowers small, pure white.                                                                                                                                                                                                                                                                                                           | Kaiserfelden 758 Farm                                                    |

| SPECIES                                                                              | PLANT DESCRIPTION                                                                                                                                                                                                                                                                 | LOCATION NOTES                                                                                                        |
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| <i>Kedrostis hirtella</i> (Naudin) Cogn.                                             | Flowers yellow. Leaves bright green on top and paler below.                                                                                                                                                                                                                       | Otavi Mountains: About 40 km north of Kombat on road to Grootfontein via Gauss 46.                                    |
| <i>Kirkia acuminata</i> Oliv.                                                        | Large spreading tree 5 - 7 m high. Bark grey, patchy. Leaves shiny. Fruit present.                                                                                                                                                                                                | North of Kombat, between Gauss and Gaub Farms.                                                                        |
| <i>Kyllinga alba</i> Nees                                                            | A 40 cm high sedge. Culm triangular. Leaves linear, curling when dry. Inflorescence terminal, globose, subtended by 3 leafy bracts, spikelets white.                                                                                                                              | Farm Kupferberg 515, in maize field on an overcast day.                                                               |
| <i>Laggera decurrens</i> (Vahl) Hepper & J.R.I. Wood                                 | Woody herb, 1.2 m high. Stem yellow-brown. Leaves softly pubescent, aromatic, decurrent, venation prominent on undersurface. Heads clustered, terminal, homogamous, yellow.                                                                                                       | Farm Kupferberg 515, in maize field on an overcast day.                                                               |
| <i>Lannea discolor</i> (Sond.) Engl.                                                 | Up to 8 m tree.                                                                                                                                                                                                                                                                   | Farm Askevold 525.                                                                                                    |
| <i>Lantana rugosa</i> Thunb.                                                         | Shrub, up to 65 cm tall. Flowers lilac-violet. Fruits white.                                                                                                                                                                                                                      | Farm Auros (GR 595) on mountain slope (1800 m) higher.                                                                |
| <i>Lapeirousia otaviensis</i> R.C. Foster                                            | Upright, profusely flowering. Perianth tube almost 5 cm long, pale with dark mark at the throat.                                                                                                                                                                                  | Farm Auros (Gr 595) open mountain slope behind farmhouse, often in grass stands.                                      |
| <i>Leobordea platycarpa</i> (Viv.) B.-E. van Wyk & Boatwr. [2]                       | Procumbent with creeping endshoots. Annual herb. Flowers big, yellow.                                                                                                                                                                                                             | Farm Auros 595. In dead valley, north east of Nagaib on the grass plains of the Omaramba valley at foot of mountains. |
| <i>Leonotis ocymifolia</i> (Burm.f.) Iwarsson                                        | Annual forb, 1.5 m high. Flowers arranged in dense balls and regular intervals along the peduncle, tubular, orange, hairy outside, calyx spiny. Stems erect, long and unbranched, herbaceous, 4-angled, hairy. Leaves opposite, lanceolate, hairy, green above, grey-green below. | Otavi, Kombat, on roadverge.                                                                                          |
| <i>Leonotis ocymifolia</i> (Burm.f.) Iwarsson var. <i>raineriana</i> (Vis.) Iwarsson | Herbaceous 70 - 80 cm tall. Dark orange flowers. Crushed leaves non-aromatic. Cut twigs exude no sap.                                                                                                                                                                             | North of Kombat, between Gaub and Gauss Farms.                                                                        |
| <i>Leonotis ocymifolia</i> (Burm.f.) Iwarsson var. <i>schinzii</i> (Gürke) Iwarsson  | Upright suffrutex. Usually unbranched, young plants, up to 1 m tall. Flowers orange-red, hairy.                                                                                                                                                                                   | Farm Kombat: GR 656.                                                                                                  |

| SPECIES                                                                                             | PLANT DESCRIPTION                                                                                                                                                                                                                  | LOCATION NOTES                                                                        |
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| <i>Leucas pechuelii</i><br>(Kuntze) Gürke                                                           | Shrub, 60 cm high. Flowers white, in dense axillary clusters. Calyx and corolla hairy. Leaves opposite, distichous, sessile, ovate, softly pubescent. Stems woody at the base, erect, brown to cream. Dark brown loam.             | Farm Kupferberg, next to maize field.                                                 |
| <i>Lightfootia dinteri</i><br>Engl. ex Dinter                                                       | Small dwarf shrub, very dense, flowers pure white.                                                                                                                                                                                 | Farm Auros 595; on open mountain slope, up to 1800 m.                                 |
| <i>Limeum argute-carinatum</i> Wawra<br>ex Wawra & Peyr.<br>var. <i>argute-carinatum</i>            | Herb 25 cm high, lush green. Leaves linear, alternate. Flowers terminal, clustered, white with grey-green stripe down middle of petal.                                                                                             | Farm Kupferberg 515, in maize field on an overcast day.                               |
| <i>Limeum sulcatum</i><br>(Klotzsch) Hutch.<br>var. <i>gracile</i><br>Friedrich                     | Slender erect, annual herb, branched from base. Flowers small, white in axillary clusters.                                                                                                                                         | Just north of Kombat on Farm Gauss.                                                   |
| <i>Lippia rehmannii</i><br>H.Pearson                                                                | Shrub 0.70 m high. Robust, erect, much-branched. Aromatic. Flowers small, white.                                                                                                                                                   | Just north of Kombat on Farm Gauss.                                                   |
| <i>Lippia wilmsii</i><br>H.Pearson                                                                  | Shrub, 6 m high with bright green leaves. Crushed leaves aromatic. Cut twigs exude no sap. Flowers: light cream.                                                                                                                   | North of Kombat. Between Gauss and Gaup farms. Dolomite hills and valley running E/W. |
| <i>Listia bainesii</i> (Bak.)<br>B.-E. van Wyk &<br>Boatwr.                                         | Annual. Creeper, 5 cm high, branches prostrate, radiating from centre, red. Leaves trifoliate, leaflets linear. Flowers in umbellate inflorescences, yellow, standard with reddish venation, especially midrib. Thickened taproot. | Plain between mountains, 21 km along road D2863 from turn-off at D3022. Farm Gauss    |
| <i>Listia heterophylla</i><br>E.Mey.                                                                |                                                                                                                                                                                                                                    | 8.3 miles east of Otavi.                                                              |
| <i>Lycium cinereum</i><br>Thunb.                                                                    | Several stemmed untidy shrub, 1.60 m high. Bark: dark grey - due to water? Flowers pale mauve. One green small round fruit.                                                                                                        | Along D3028.                                                                          |
| <i>Maerua schinzii</i> Pax                                                                          |                                                                                                                                                                                                                                    | Farm Auros 595, Otavi. Otavi mountain area.                                           |
| <i>Megalochlamys marlothii</i> (Engl.)<br>Lindau                                                    | Upright small shrub, 0.45 m high. Flowers with 1.3 cm long tube, pale blue.                                                                                                                                                        | Kaiserfelden 758 Farm                                                                 |
| <i>Melanthera scandens</i><br>(Schumach. &<br>Thonn.) Roberty<br>subsp. <i>dregei</i> (DC.)<br>Wild | Flowers yellow.                                                                                                                                                                                                                    | Collected at Farm Gaub, in calcium soil.                                              |
| <i>Melhania virescens</i><br>(K.Schum.)<br>K.Schum.                                                 | Compact, grey leaved perennial. Flowers yellow.                                                                                                                                                                                    | About 6.5 km from Otavi on main road of Grootfontein. Acacia veld.                    |

| SPECIES                                                                                     | PLANT DESCRIPTION                                                                                                                                                                                | LOCATION NOTES                                                                                                      |
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| <i>Melianthus comosus</i> Vahl                                                              | Shrub 2 m high. Flowers red clusters. Leaves compound, hairy, leaflets large and margins dentated.                                                                                               | Farm Auros.                                                                                                         |
| <i>Melianthus pectinatus</i> Harv. subsp. <i>gariepinus</i> (Merxm. & Roessler) S.A.Tansley | Several stemmed shrub, 1.5 m high. Flowers trumpet shaped, red (not present). Leaves typical smell when crushed. Fruits four-winged, can be 'plopped' when green.                                | Farm Auros, in old kraals south of homestead.                                                                       |
| <i>Melinis repens</i> (Willd.) Zizka subsp. <i>grandiflora</i> (Hochst.) Zizka              | Graminoid.                                                                                                                                                                                       | Otavi Mountains, 40 km north of Kombat on road to Grootfontein via Gauss.                                           |
| <i>Melinis repens</i> (Willd.) Zizka subsp. <i>repens</i>                                   | Grass.                                                                                                                                                                                           | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Gauss. Steep hill with road passing over.        |
| <i>Merremia palmata</i> Hallier f.                                                          | Herb. Creeper. Flowers yellow with maroon centre tubular.                                                                                                                                        | Tsumeb. 40 km north of Grootfontein on road to Rundu.                                                               |
| <i>Microchloa caffra</i> Nees                                                               | Grass.                                                                                                                                                                                           | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Gauss 46. Small valley. On top of low mountains. |
| <i>Momordica boivinii</i> Baill.                                                            | Climber 2 m tall. Bright leaves. (Cut leaves exude no sap). Flower light green.                                                                                                                  | Grootfontein/Otavi District: Farm Gauss; Valley after hills on way to Grootfontein.                                 |
| <i>Momordica humilis</i> (Cogn.) C.Jeffrey                                                  | Annual climber. Leaves alternate, round with scalloped margins. Stems thin, ridged, green, with leaf opposed tendrils. Flowers cup-shaped, bright orange with dark brown markings in the centre. | Farm Kupferberg, dolomite outcrop west of homestead.                                                                |
| <i>Monechma divaricatum</i> (Nees) C.B.Clarke                                               | Low, dwarf shrub, 0.35 m high, somewhat spreading. Flowers purple.                                                                                                                               | On plain on summit. Auros 595 Farm                                                                                  |
| <i>Monechma genistifolium</i> (Engl.) C.B.Clarke subsp. <i>genistifolium</i>                | Erect dwarf shrub, 0.45 m high. Stem white throughout pubescent. Flowers light blue.                                                                                                             | Grey clay marlaceous area between the Otavi mountains. Kaiserfelden 758 Farm                                        |
| <i>Monsonia glauca</i> R.Knuth                                                              |                                                                                                                                                                                                  | Farm Askevold 525. In grass stand in omuramba.                                                                      |
| <i>Montinia caryophyllacea</i> Thunb.                                                       | Multi stemmed shrub, 0.75 m high. Flowers single, white. Leaves grey-green.                                                                                                                      | Northern Hills. Kupferberg 515 Farm                                                                                 |
| <i>Mundulea sericea</i> (Willd.) A.Chev.                                                    | Small attractive tree up to 4 m tall. Flowers showy, purple.                                                                                                                                     | Just north of Kombat on Farm Gauss.                                                                                 |

| SPECIES                                                                                           | PLANT DESCRIPTION                                                                                                                       | LOCATION NOTES                                                                                                            |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <i>Nidorella resedifolia</i> DC. subsp. <i>resedifolia</i>                                        | Densely pubescent, herb, which is woody at base. Capitula golden yellow.                                                                | Farm Auros (GR 595); on open mountain slope (up to 1800 m).                                                               |
| <i>Ocimum americanum</i> L. var. <i>americanum</i>                                                | Annual herb with strong eucalyptus oil smell. Flowers pale mauve.                                                                       | 4,7 miles east of Otavi on road to Grootfontein                                                                           |
| <i>Ocimum filamentosum</i> Forssk.                                                                | Herb, woody at base, upright, up to 40 cm tall and 30 cm in diameter. Flowers 1 cm long, pale purple. Stamens and style far protruding. | Farm Kaiserfeld: GR 758. In small depressions.                                                                            |
| <i>Ornithoglossum vulgare</i> B.Nord.                                                             | Plant glaucous. Leaves twisted. Tepals dark maroon with pale base; anthers maroon; buds green; bulbs pale green.                        | North of Kombat on northern side of Otavi Mountains. Wide valley.                                                         |
| <i>Oropetium capense</i> Stapf                                                                    | Grass.                                                                                                                                  | Otavi Mountains, 40 km north of Kombat on road to Grootfontein via farm. Steep hill with road passing over. Gauss 46 Farm |
| <i>Osteospermum muricatum</i> E.Mey. ex DC. subsp. <i>muricatum</i>                               | Upright herb, up to 35 cm and 45 cm in diameter. Capitula with ray florets, 1.5 cm in diameter, yellow.                                 | Farm Kaiserfeld 758. Between Otavi Mountains.                                                                             |
| <i>Otoptera burchellii</i> DC.                                                                    | Herb. Leaves glaucous. Flowers purple, sweetly scented.                                                                                 | Just north of Kombat on Farm Gauss.                                                                                       |
| <i>Oxalis depressa</i> Eckl. & Zeyh.                                                              | Low up to 12 cm tall, flowers purple with yellow throat.                                                                                | Farm Auros, GR 595; in stands of grass of an valley.                                                                      |
| <i>Oxalis purpurascens</i> T.M.Salter                                                             | Up to 35 cm tall. Flowers purple.                                                                                                       | Farm Auros (GR 595); in stands of grass in an open valley.                                                                |
| <i>Oxygonum alatum</i> Burch. var. <i>alatum</i>                                                  | Herb. Prostrate. Flowers white fleshy.                                                                                                  | Tsumeb. 40 km north of Grootfontein on road to Rundu. Roadside.                                                           |
| <i>Ozoroa crassinervia</i> (Engl.) R.Fern. & A.Fern.                                              | Perennial several stemmed sturdy shrub, 3.7 m high.                                                                                     | Farm Auros, along road to rose garden, not far from homestead.                                                            |
| <i>Ozoroa insignis</i> Delile subsp. <i>reticulata</i> (Baker f.) J.B.Gillett                     | Tree 4 m high tree. Bark smooth, light grey.                                                                                            | Farm Obanje: GR 787.                                                                                                      |
| <i>Ozoroa paniculosa</i> (Sond.) R.Fern. & A.Fern. var. <i>paniculosa</i>                         | Shrub to small tree-shrub with pale grey, smooth bark.                                                                                  | Farm Askevold: GR 525.                                                                                                    |
| <i>Ozoroa paniculosa</i> (Sond.) R.Fern. & A.Fern. var. <i>salicina</i> (Sond.) R.Fern. & A.Fern. | Tree 3 - 4 m tall. Fruits black and wrinkled when dry. Cut twigs exude white sap. Common.                                               | North of Kombat.                                                                                                          |
| <i>Panicum arcurameum</i> Stapf                                                                   | Grass.                                                                                                                                  | Farm Auros, in moist places.                                                                                              |

| SPECIES                                                                                     | PLANT DESCRIPTION                                                                                                                 | LOCATION NOTES                                                                                                         |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <i>Panicum coloratum</i><br><i>L. var. coloratum</i>                                        |                                                                                                                                   | Northern side of Otavi Mountains, north of Kombat on road to Grootfontein via Gauss. Wide open valley.                 |
| <i>Panicum maximum</i><br><i>Jacq.</i>                                                      | Graminoid. Plants only starting to flower after rains. Large tufts.                                                               | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Gauss 46. Small valley. Lower eastern facing slope. |
| <i>Pavetta zeyheri</i><br><i>Sond.</i>                                                      | Flowers white - odour slight.                                                                                                     | Collected at Farm Gaub in calcium soil.                                                                                |
| <i>Pavonia burchellii</i><br><i>(DC.) R.A.Dyer</i>                                          | Flowers yellow - odourless.                                                                                                       | Collected at Farm Gaub in calcium soil.                                                                                |
| <i>Pellaea calomelanos</i> (Sw.)<br><i>Link var. calomelanos</i>                            |                                                                                                                                   | Otavi Mountains: About 40 km north of Kombat on road via Gauss 46 to Grootfontein.                                     |
| <i>Peltophorum africanum</i> Sond.                                                          | Tall, much branched tree. Flowers showy, bright yellow.                                                                           | Just north of Kombat on Farm Gauss.                                                                                    |
| <i>Pergularia daemia</i><br><i>(Forssk.) Chiov. var. daemia</i>                             |                                                                                                                                   | Farm Auros, Otavi. Otavi Bergland.                                                                                     |
| <i>Petalidium englerianum</i><br><i>(Schinz) C.B. Clarke</i>                                | Upright shrub, 0.70 m high, silver-grey. Flowers from pure yellow to yellow-brown with bright yellow corolla lobe.                | Between Otavi mountains. Kaiserfelden 758 Farm                                                                         |
| <i>Petalidium variabile</i><br><i>(Engl.) C.B. Clarke var. spectabile</i><br><i>Mildbr.</i> | Spherical dwarf shrub, 0.35 m high and 45 cm in diameter. Outer branches prostrate, grey-green. Flowers brownish-pink.            | Askevold Suid 525 Farm                                                                                                 |
| <i>Phragmanthera glaucocarpa</i> (Peyr.)<br><i>Balle</i>                                    | Flowers red inside, felty outside.                                                                                                | Farm Auros (GR 595) on mountain slope (1800 m).                                                                        |
| <i>Phyllanthus maderaspatensis</i> L.                                                       | Herbaceous 20 - 30 cm tall. Flowers light green tipped with maroon. Crushed leaves non-aromatic. Cut twigs exude no sap.          | Grootfontein District: Otavi area; north of Kombat, between Gaub 47 and Gauss 46 Farms.                                |
| <i>Plectranthus dinteri</i><br><i>Briq.</i>                                                 | Woody at base. Unpleasantly aromatic. Leaves juicy. Flowers racemes up to 35 cm long. Calyx and flowers violet.                   | Farm Auros (GR 595); dolomite mountain, on lower mountain slope.                                                       |
| <i>Plectranthus hereroensis</i> Engl.                                                       | Annual, upright herb, usually in semi-shade of trees.                                                                             | Farm Auros (GR 595) in mountain woodland on dolomite mountain slope.                                                   |
| <i>Plectranthus neochilus</i> Schltr.                                                       | Upright herb with somewhat juicy leaves. Inflorescence racemes. Flowers up to 2 cm long, pale violet.                             | Farm Kaiserfeld: GR 758; 17.5 km from Otavi towards Grootfontein. Plain between mountains.                             |
| <i>Plicosepalus</i> sp.                                                                     | On <i>Acacia hereroensis</i> , creeping along branches with many haustoria. Flowers always between two stipules, plain coral red. | Farm Askevold 316.                                                                                                     |

| SPECIES                                                                     | PLANT DESCRIPTION                                                                                                                   | LOCATION NOTES                                                                                                       |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <i>Plumbago sp.</i>                                                         | Herbaceous 1.2 m tall. Flower: white. Crushed leaves non-aromatic. Cut twigs exude no sap.                                          | Grootfontein District: Otavi area; about 15 km east of Otavi.                                                        |
| <i>Pogonarthria squarrosa</i> (Roem. & Schult.) Pilg.                       | Grass.                                                                                                                              | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46. Steep hill with road passing over. |
| <i>Pouzolzia mixta</i> Solms                                                | Shrub 1.5 m high. Bark light brown. Leaves discolourous white hairs beneath.                                                        | Tsumeb. Farm Auros: GR 595. On North-Western slope of dolomite mountain. Between boulders.                           |
| <i>Pteronia eenii</i> S.Moore                                               | Dwarf shrub. The leaves are silvery-grey. Growing to a height about and diameter of 50 cm. The little heads are yellow.             | Farm Rietfontein: GR 344. Grey calcrete ground.                                                                      |
| <i>Pterothrix spinescens</i> DC.                                            | Dwarf shrub 10 cm high. Leaves small, inconspicuous. Stems thorny, long, very slender.                                              | Farm Auros: on 'Signalberg' - highest point in area.                                                                 |
| <i>Rhus tenuinervis</i> Engl. var. <i>tenuinervis</i>                       | Shrub, 160 cm high. Rough dark bark. No groove on petiole. Leaves softly hairy, almost concolorous.                                 | Farm Gaub.                                                                                                           |
| <i>Rhus ciliata</i> Licht. ex Schult.                                       | Perennial shrub. Flowers: similar to <i>Rhus</i> sp. Leaves 3-foliate, margin entire, distinct midrib and lateral veins especially. | Near Kombat soccerfield (road to Gauss).                                                                             |
| <i>Rhus marlothii</i> Engl.                                                 | Shrubs, dense up to 2 m high. Bark light grey with brownish lenticels. Flowers small, greenish.                                     | Farm Askevold 525. Southern mountain slope.                                                                          |
| <i>Rhynchosia minima</i> (L.) DC. var. <i>minima</i>                        | Vigorous climber (on other plants). Flowers are small. Spirit material.                                                             | Just north of Kombat on Farm Gauss.                                                                                  |
| <i>Rhynchosia totta</i> (Thunb.) DC. var. <i>totta</i>                      | Vigorous trailing herb. Trifoliate; leaflets silvery hairy. Flowers yellow. Spirit material.                                        | Just north of Kombat on farm Gauss, 4 km from campsite.                                                              |
| <i>Rhynchosia venulosa</i> (Hiern) K.Schum.                                 | A scrambling climber on other plants. Flowers yellow with red veins on standard and tip of keel. Spirit material.                   | Just north of Kombat on Farm Gauss.                                                                                  |
| <i>Rorippa fluviatilis</i> (E.Mey. ex Sond.) Thell. var. <i>fluviatilis</i> | Erect, annual herb. Flowers yellow.                                                                                                 | Farm Auros 595, on spring riverbank.                                                                                 |
| <i>Rothea myricoides</i> (Hochst.) Steane & Mabb. var. <i>myricoides</i>    | A small, much branched tree. Flowers showy, purple with stamens curved, exserted.                                                   | Just north of Kombat on Farm Gauss.                                                                                  |
| <i>Ruellia damarensis</i> S.Moore                                           | Prostrate herb with long trailing stems. Bracts spiny. Flowers tubular, purple.                                                     | North of Kombat on way to Farm Gaub.                                                                                 |
| <i>Scabiosa</i>                                                             |                                                                                                                                     | Collected at Gaub in calcium soil.                                                                                   |

| SPECIES                                                                  | PLANT DESCRIPTION                                                                                                                                                             | LOCATION NOTES                                                                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <i>columbaria</i> L.                                                     |                                                                                                                                                                               |                                                                                                                |
| <i>Schizoglossum capense</i> (Schltr.) H. Huber                          | Upright, up to 35 cm. Linear leaves. Flowers in clusters on 2.5 cm long pedicels.                                                                                             | Farm Askevold GR 525. In stands of grass in omuramba.                                                          |
| <i>Schmidtia pappophoroides</i> Steud.                                   | Grass.                                                                                                                                                                        | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via Gauss 46.                                   |
| <i>Schoenoplectus muricinux</i> (C.B. Clarke) J. Raynal                  |                                                                                                                                                                               | Kombat, next to road.                                                                                          |
| <i>Searsia marlothii</i> (Engl.) Moffett                                 | Many stemmed shrub, 1.5 m high. Old bark brown. Grooved leaf stalk, no wings. Small flowerbuds on one branch. Branchlets only slightly spinescent. Flowers and fruits absent. | Along Mielieland Kupferberg. South of south east of homestead, across tarred road. Kupferberg 515 Farm         |
| <i>Searsia quartiniiana</i> (A. Rich.) A. J. Mill.                       | Shrub 1 m high. Only one stem, grey brown. Sterile.                                                                                                                           | Along Mielieland Kupferberg. South of south east of homestead, across tarred road. Kupferberg 515 Farm         |
| <i>Securidaca longepedunculata</i> Fresen. var. <i>longepedunculata</i>  | Perennial many stemmed tree, 3.5 m high. Fruit: young.                                                                                                                        | Farm Gaub Pad: opposite roadside parking area underneath <i>Kirkia acuminata</i> at fence, near edge of field. |
| <i>Seddera suffruticosa</i> (Schinz) Hallier f. var. <i>suffruticosa</i> | Robust herb with decumbent stems branching from base. Flowers white.                                                                                                          | North of Kombat on way to Farm Gaub. Bushveld.                                                                 |
| <i>Sericorema sericea</i> (Schinz) Lopr.                                 | Erect annual 50 c high.                                                                                                                                                       | 4 miles from Otavi to Grootfontein.                                                                            |
| <i>Sesamum triphyllum</i> Welw. ex Asch. var. <i>triphyllum</i>          | Plants 3 m high. Flowers red to blueish.                                                                                                                                      | Kombat, along the road.                                                                                        |
| <i>Sesbania macowaniana</i> Schinz                                       | Herb up to 1.5 m high. Flowers and pods in axillary clusters. Flowers yellow with violet variation, 1 cm long.                                                                | Farm Kaiserfeld 758.                                                                                           |
| <i>Sida cordifolia</i> L.                                                | Upright herb up to 1 m high. Branched. Flowers orange-yellow, 1.5 cm in diameter.                                                                                             | Farm Kaiserfeld 758. Plains between mountains.                                                                 |
| <i>Sida ovata</i> Forssk.                                                | Tall, robust, erect shrublet. Flowers yellow-orange, long stalked, axillary.                                                                                                  | Just north of Kombat on Farm Gauss 46.                                                                         |
| <i>Solanum delagoense</i> Dunal                                          | Grows to 2 ft high. Flower mauve.                                                                                                                                             | Collected at Far Gaub in calcium soil.                                                                         |

| SPECIES                                                                                                    | PLANT DESCRIPTION                                                                                                                                                                                                                                                                                                 | LOCATION NOTES                                                                                                 |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <i>Solanum incanum</i> L.                                                                                  | Shrub 1.2 m high. Leaves large, lobed, green above, white below, softly pubescent, with a few thorns on the midrib. Flowers single or up to 3, axillary, pale purple, star-shaped, stamens yellow, arising in a central column. Fruit subspherical, 2 cm in diameter, green with cream marmorations, calyx spiny. | Farm Kupferberg, next to maize field.                                                                          |
| <i>Solanum multiglandulosum</i> Bitter                                                                     | A small, thorny herb growing in shade of other plants. Flowers purple, stamens yellow.                                                                                                                                                                                                                            | Just north of Kombat on Farm Gauss.                                                                            |
| <i>Sorghum bicolor</i> (L.) Moench subsp. <i>arundinaceum</i> (Desv.) De Wet & Harlan                      | Grass 2 m high, sturdy, rhizomatous. Culm reed-like. Leaves ovate, tapering to a sharp point, midvein visible as a light stripe on the upper surface, margin ciliate. Ligule a fringed membrane.                                                                                                                  | Otavi - Grootfontein, just past Kombat turn-off.                                                               |
| <i>Sphenoclea zeylanica</i> Gaertn.                                                                        | Annual up to 65 cm high. Stem clavately thickened at the base. Inflorescence a dense spike. Flowers small, violet.                                                                                                                                                                                                | Farm Falkenhain 303. Growing in and at water of valley.                                                        |
| <i>Sporobolus festivus</i> Hochst. ex A.Rich.                                                              | Grass.                                                                                                                                                                                                                                                                                                            | Farm Asis 656.                                                                                                 |
| <i>Sporobolus fimbriatus</i> (Trin.) Nees                                                                  | Grass.                                                                                                                                                                                                                                                                                                            | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46.                              |
| <i>Sporobolus panicoides</i> A.Rich.                                                                       | Grass.                                                                                                                                                                                                                                                                                                            | At Far Auros.                                                                                                  |
| <i>Stipagrostis hirtigluma</i> (Steud. ex Trin. & Rupr.) De Winter subsp. <i>patula</i> (Hack.) De Winter  | Grass.                                                                                                                                                                                                                                                                                                            | Northern side of Otavi Mountains; north of Kombat on road to Grootfontein via farm Gauss 46. Wide open valley. |
| <i>Talinum arnotii</i> Hook.f.                                                                             | Very fleshy, decumbent herb. Flowers bright yellow, opening late afternoon.                                                                                                                                                                                                                                       | Just north of Kombat on Farm Gauss.                                                                            |
| <i>Talinum crispatum</i> Dinter ex Poelln.                                                                 | Nodule red in incision procumbent, lush herb. Flowers yellow.                                                                                                                                                                                                                                                     | Farm Auros (GR 595) red brown loam floor in valley.                                                            |
| <i>Tapinanthus cinereus</i> (Engl.) Danser                                                                 | Flowers yellow half torn open.                                                                                                                                                                                                                                                                                    | Farm Gross Otavi: GR 805. Dolomite mountain slope.                                                             |
| <i>Tephrosia purpurea</i> (L.) Pers. subsp. <i>leptostachya</i> (DC.) Brummitt var. <i>pubescens</i> Baker | A prostrate herb with trailing stems. Flowers purple.                                                                                                                                                                                                                                                             | Just north of Kombat on Farm Gauss.                                                                            |

| SPECIES                                                                                                 | PLANT DESCRIPTION                                                                                                                   | LOCATION NOTES                                                                                                    |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <i>Terminalia prunioides</i><br>M.A.Lawson                                                              | Tree 4 m high. Trunk grey longit fissured. Leaves in tufts at end of branches. Fruit 2 winged, wine red when ripe.                  | Along Mielieland Kupferberg. South of south east of homestead, across tarred road. Kupferberg 515 Farm            |
| <i>Terminalia sericea</i><br>Burch. ex DC.                                                              | Tree, 5 m high. Single trunk. Bark dark longit fissured. Fruit present.                                                             | Northern Hills. Kupferberg 515 Farm                                                                               |
| <i>Tetradenia riparia</i><br>(Hochst.) Codd                                                             | Loosely scrambling shrub, 150 cm high. Leaves: aromatic scent when crushed. Bark brownish grey, light coloured knobs on old growth. | Farm Auros, hill opposite homestead.                                                                              |
| <i>Themeda triandra</i><br>Forssk.                                                                      | Grass.                                                                                                                              | At Station Kombat.                                                                                                |
| <i>Thesium megalocarpum</i><br>A.W.Hill                                                                 | Shrub up to 50 cm high.                                                                                                             | Farm Askevold GR 525. In transition zone to omuramba.                                                             |
| <i>Tinnea rhodesiana</i><br>S.Moore                                                                     | Shrub 1 m high. Flowers dark red-brown, almost black.                                                                               | Farm Askevold, GR 525. southern slope with shallow soils.                                                         |
| <i>Trachyandra saltii</i><br>(Baker) Oberm. var. <i>saltii</i>                                          | Many leaves, up to 70 cm tall, sterile. Roots cylindrical, juicy, up to 2.5 mm in diameter.                                         | Farm Askevold 525. In omuramba.                                                                                   |
| <i>Tragia dinteri</i> Pax                                                                               | Semi-decumbent herb, with stinging hairs.                                                                                           | On Farm Hoba 13, 20 miles west of Grootfontein.                                                                   |
| <i>Tragus racemosus</i><br>(L.) All.                                                                    | Grass.                                                                                                                              | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46.                                 |
| <i>Tribulus cristatus</i><br>C.Presl                                                                    | Prostrate herb with long trailing stems. Flowers large, yellow.                                                                     | Just north of Kombat on Farm Gauss.                                                                               |
| <i>Tribulus terrestris</i> L.                                                                           | Prostrate herb with long trailing stems. Flowers small, yellow.                                                                     | Just north of Kombat on Farm Gauss 46.                                                                            |
| <i>Tripogon minimus</i><br>(A.Rich.) Steud.                                                             | Grass.                                                                                                                              | Northern side of Otavi Mountains; north of Kombat 656 Farm on road to Grootfontein.                               |
| <i>Trochomeria debilis</i><br>(Sond.) Hook.f.                                                           | Vigorous twiner on other plants. Tendrils present. Flowers yellow, with slender linear lobes.                                       | Just north of Kombat on Farm Gauss.                                                                               |
| <i>Trochomeria macrocarpa</i> (Sond.)<br>Hook.f. subsp. <i>vitifolia</i> (Hook.f.)<br>R.Fern. & A.Fern. | Climbing over <i>Rhus ciliata</i> . Flowers with long tube and even longer corolla beaks, yellowish-green. From corm.               | Farm Askevold 525.                                                                                                |
| <i>Urochloa brachyura</i><br>(Hack.) Stapf                                                              | Prostrate to decumbent grass.                                                                                                       | Otavi Mountains; 40 km north of Kombat on road to Grootfontein via farm Gauss 46. Small valley. Growing on plain. |
| <i>Urochloa</i>                                                                                         | Grass.                                                                                                                              | Farm Asis.                                                                                                        |

| SPECIES                                                                         | PLANT DESCRIPTION                                                                                                                                                                                                                                        | LOCATION NOTES                                                            |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <i>oligotricha</i> (Fig. & De Not.) Henrard                                     |                                                                                                                                                                                                                                                          |                                                                           |
| <i>Vangueriopsis lanciflora</i> (Hiern) Robyns                                  | Perennial small erect tree/shrub, 400 cm high. Stems very conspicuously reddish brown.                                                                                                                                                                   | Behind 'Keilberg' north of Keilberg on Farm Jakkalomuramba (H.K.Volkman). |
| <i>Vernonia fastigiata</i> Oliv. & Hiern                                        | Herb 60 cm high, lush green. Stems striate. Leaves linear, margins with prickles, alternate, midvein prominent. Inflorescence terminal, homogamous. Involucral bracts dark brown, recurved. Florets lilac. Uncommon in loamy soil, partially under bush. | Farm Kupferberg 515, in maize field on an overcast day.                   |
| <i>Vigna frutescens</i> A.Rich. subsp. <i>frutescens</i> var. <i>frutescens</i> | A prostrate herb with long trailing stems. Flowers purple.                                                                                                                                                                                               | Just north of Kombat on Farm Gauss.                                       |
| <i>Wahlenbergia denticulata</i> (Burch.) A.DC. var. <i>denticulata</i>          | Woody at base, many-stemmed, 30 cm high. Flowers pale blue with paler centre.                                                                                                                                                                            | At Kombat: GR 659.                                                        |
| <i>Xerophyta humilis</i> (Baker) T.Durand & Schinz                              | Small, erect herb forming dense mats. Leaves forming old leaf-fibres. Flowers purple.                                                                                                                                                                    | Bushveld. North of Kombat on way to Farm Gaub.                            |
| <i>Xysmalobium undulatum</i> (L.) Aiton f. var. <i>undulatum</i>                | Upright suffrutex up to 1 m high. Flowers in clusters in the upper leaf axils, yellowish.                                                                                                                                                                | Farm Askevold 525.                                                        |
| <i>Ziziphus mucronata</i> Willd. subsp. <i>mucronata</i>                        | Tree, to 11 feet high. Flowers yellow-greenish.                                                                                                                                                                                                          | Collected at Gaub in calcium soil.                                        |
| <i>Zornia milneana</i> Mohlenbr.                                                | Small erect herb, up to 20 cm high. Leaflets large. Flowers bright yellow.                                                                                                                                                                               | Just north of Kombat on Farm Gauss.                                       |

## APPENDIX E -ECC CVS



**ECC**  
ENVIRONMENTAL  
COMPLIANCE CONSULTANCY

# Jessica Mooney

Director & Principal  
Environmental Practitioner



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Hello! :)



**ABOUT ME**

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Jessica Mooney

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Jessica Mooney 

**Federation University**  
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2003-2006

**Additional Qualifications**

Bachelor of Applied Science -Environmental Management

Management Systems Leadership  
ICAM - Incident Cause Analysis Method  
Certificate II in Metalliferous Mining core safety and risk management  
Certificate III in Mine Emergency Response & Rescue  
Level 3 – HLTF402B Apply Advanced first Aid  
Emergency Rope Rescue  
Level 2 - 21593VIC First Aid level 2  
Bonded Asbestos Removal >10m2  
Leading and Managing People –  
Brisbane North Institute of TAFE



**Current**

**Environment Specialist**

Environmental Compliance Consultancy  
With 13 years international experience, Jessica provides professional consulting services to clients in Namibia with particular focus on approvals, ECCs, reporting and compliance.

- ECC Approvals
- Mine Closure Plans
- Rehabilitation
- Strategic Environmental Impact Assessments
- Social Impact Assessments
- ARD/AMD Assessments and Reporting
- IMS (ISO14001 and 18001)

Nov 2013-  
Feb 2016

**Group HSE Manager**

Weatherly Mining Namibia  
An exciting role covering the breadth of two operational underground mines (Otjihase and Matchless) and the construction of a new open pit mine (Tschudi) working for Weatherly Mining in Namibia, Africa.

- Managed company's SHEQ portfolio
- Full scale construction of new greenfield mine into operational copper mine
- Reduced LTIFR by 90% from 23.1 to 2.4 in 22 months!
- Implemented integrated management system
- Approvals, ECC renewals and EMPs
- Established the first mining environmental forums in Namibia
- Implemented SAFE COPPER cultural change programme



# Jessica Mooney

## Environment Specialist

### References

*Feel free to ask the boss*

**MR CRAIG THOMAS**

Managing Director  
Weatherly Mining

**MR COLIN BULLEN**

Managing Director  
Imerys (client)

Group Manager Lihir Gold

**MR NICK CURREY**

Director at Sustainable Mining  
Strategies

*Or ask those who have worked*

*for me?*

**Ms Asteria Salmon**

Worked as Control Room Operator  
WMN

**Mr. Hermanus Lamprecht**

Paramedic Safety Officer

### Professional Associations

- Chamber of Mines Namibia
- Women on Boards
- The Chamber of Minerals and Energy of Western Australia Industry Member – Mining, Minerals and Resources

### Fun Facts:

- I can deadlift 135kg
- To keep fit I Olympic weight lift
- I run ultra Marathons & the longest run yet the fish river Canyon 65km
- I am one of 6 children - do you think that means 4 of us suffer middle child syndrome?

### Words I live by:

‘The journey will bring you  
happiest, not the  
destination’



### Experience & Work History

#### Environmental Consultant

Ensolve Pty Ltd - Australia

In February 2013 an opportunity came about to launch my own business, Blue Wren Environmental Services.

During this time I have worked alongside Ensolve Pty Ltd to deliver several environmental projects including:

- A mine closure project taking an operating mine site into the rehabilitation and closure phase. This project involved the full development of a mine closure plan, facilitation of the government approvals, stakeholder engagement and technical environmental studies to inform the mine closure plan
- Sustainability reporting in accordance with the Global Reporting Initiative
- Rehabilitation of historic exploration sites and obtaining associated government approvals for relinquishment of bonds.

#### Site Environmental Manager

Panoramic Resources – Australia

- Brought the site into full compliance with the Environmental Licence within 1 year.
- Managed projects relating to the expansions of the current mine tailings dams including obtaining approvals under the Mining Act 1978 and Environmental Protection Act 1986.
- Managed the environmental and community aspects of three operations; Savannah Nickel Mine, Copernicus Nickel Mine (currently in care and maintenance) and the operations at Wyndham Port
- Responsible for the environment, sustainability and social reporting portfolio
- Developed productive working relationships with local government environmental agencies and non-government agencies, which assisted with the approvals process.
- Developed strategies for the recruitment and retention of local Indigenous personnel

#### Environmental Systems Coordinator

Lihir Gold Limited – Australia

Working on site to provide technical environmental and community advice to ensure all regulatory and licence obligations were met or exceeded

- Regulatory Approvals (State and Federal Government)
- Environment and social aspects of the international cyanide management code
- Operational budgeting and bond management for mine closure
- Compliance with the legislative framework
- Community engagement



# Stephan Bezuidenhout

## ENVIRONMENTAL ASSESSMENT PRACTITIONER

Hello! :)



### Name

Jacobus Stephan Bezuidenhout  
- But you can call me Stephan -

### Born

11 April 1989



### Phone Current

+264 81 262 7872

### Email

stephan@eccenvironmental.com

### Website

www.eccenvironmental.com

*Contact me!*

### How to reach me!

kid.bezuidenhout 

+264812627872 

Stephan  
Bezuidenhout 



University of Pretoria  
South Africa  
2012

University of Stellenbosch  
South Africa  
2008

### Additional Qualifications:

### Education & Qualifications

*Postgraduate Degree in Environmental  
Management & Analysis*

*Bachelors in Applied Science*

- Snake Bite and Snake Handling
- Level 1 & 2 First Aid
- Industrial Environmental Compliance

*N.S., et al., Some ecological side-effects of  
chemical and physical bush clearing in a  
southern African rangeland ecosystem, Southern  
African Journal of Botany (2015),  
<http://dx.doi.org/10.1016/j.sajb.2015.07.012>*

### Publications:

*The FSC National Forest Stewardship Standard  
of Namibia (Draft V 4). Co-authored by S  
Bezuidenhout, P Cunningham, A Ashby, F  
Detering, W Enslin & D Honsbein*

### Experience & Work History

#### Managing Director

Since 2012, Stephan has been working as an environmental assessment practitioner. Stephan has a strong ecological background and has gained more than seven years' experience in the environmental industry. As a lead practitioner, Stephan has successfully driven environmental impact assessments and compliance assessments within Southern Africa. His hands on and practical experience and knowledge of international standards, such as IFC and World Bank standards allows Stephan to advise his clients and teams constructively and effectively.

#### ENVIRONMENTAL CONSULTANT & PRACTITIONER

Stephan manages a dynamic team of environmental practitioners and graduates at Environmental Compliance Consultancy. The firms' core objective is to improve the national standard of environmental compliance by developing local capacity. To date Stephan and his team have successfully completed over 30 projects for various industries, including mining, energy, infrastructure, conservation and tourism.



**ENVIRONMENTAL**  
COMPLIANCE CONSULTANCY

## Stephan Bezuidenhout

Managing Director

+264 81 262 7872

### References

*Feel free to ask the boss :)*

**SALOME BEESLAAR**

Environmental Practitioner

Pr.Sci.Nat: 400385/14

**ESCA COETZEE**

Environmental Scientist

Sasol Technology

**PHIL BARKER**

Pipeline Construction Superintendent

Worley Parsons

*Or ask those who have worked for me?*

**Michael Moreland**

Environmental Scientist

CSP Solar Energy Projects

### Professional Associations

- South African Institute of Ecologists and Environmental Scientists (SAIE&ES)
- Environmental Assessment Practitioners Association of Namibia (EAPAN#172).
- Member of FSC Environmental Chamber
- Executive Committee Member of Namibian Chamber of Environment

### Fun Facts:

- Keen fisherman
- Passionate Hunter & Conservationist
- 21ft vessel certified skipper
- Summated Kilimanjaro
- Have survived scorpion stings and snakebites!
- Did I mention I love camping?

### Words I live by:

‘Do what makes you happy  
the rest will follow’

### Experience & Work History

Over the past two years he has mentored over eight interns (of which most still work closely with him) building their careers in environmental management, conservation and rangeland management.

Examples of projects successfully completed include:

- **Abengoa Solar SA Paulputs CSP (Pty) Ltd. 150 MW CSP Tower** Environmental Assessment Practitioner during EIA Process  
Northern Cape Province, South Africa
- **Abengoa Solar SA, Xina Solar One (200 MW) CSP Trough** Environmental Control Officer during construction phase. Northern Cape Province, South Africa
- **Abengoa Solar SA, Khi Solar One (50 MW) CSP Tower.** Environmental Control Officer during commissioning and rehabilitation phases. Northern Cape Province, South Africa for Abengoa Solar
- **Isondlo Project Support (IPS) (Pty) Ltd.** Soil Remediation and commissioning report of NGALA Camp. Gauteng, South Africa
- **Berekisanang Empowerment Farm.** Annual external Water Use Licence audit and 70 hectare agricultural development. Northern Cape, South Africa.

### Environmental Coordinator

ROMPCO PIPELINE – Worley Parsons

Mozambique and South Africa

Stephan was employed by the Procurement, Management and Construction (PMC) consultant, Worley Parsons to manage the environmental aspects of the proposed linear development. Stephan managed a team of 12 positions for the duration of the project ensuring compliance of National and best practice such as IFC standards.



# Titus Shuuya

## SENIOR SCIENTIST ENVIRONMENTAL PRACTITIONER

Hello! :)



### ABOUT ME

#### Name

Titus Shuuya

#### Born

14 April 1983

#### Email

titus@eccenvironmental.com

#### Website

www.eccenvironmental.com

### Contact me!

### How to reach me!

+264 85 301 3777 

+264 85 301 3777 

### References

#### JESSICA MOONEY

Environmental and Safety Consultant

#### DR. GILLIAN MAGGS-KÖLLING

Executive Director  
Gobabeb Research and Training Centre

### Words I live by:

'A slow movement of a cheetah  
is not a mistake but a  
calculated accuracy'



### Education & Qualifications

Namibia University of  
Science and Technology,  
Namibia  
2016

*Master of Science in Natural Resources  
Management*

University of Namibia,  
Namibia  
2013

*Bachelor of Science in Integrated Environmental  
Science*



### Experience & Work History

#### Current

Senior Scientist Environmental  
Practitioner

Environmental Compliance Consultancy

- Providing professional consulting services to clients
- Environmental Assessment activities
- Participate in environmental requirements of projects, including licences, monitoring and reporting
- Field work and on-site support
- Conduct training

Jul 2012 - Jul  
2019

Senior Researcher

Gobabeb Research and Training Centre

- Managing all planning and logistical implementation of field projects, particularly with reference to the Biodiversity Research and Monitoring Program
- Data analysis and report writing
- Develop long-term ecological monitoring program for the uranium mines in fulfilment of their EMP requirements

Dec 2015 -  
Apr 2016

Ecologist

Cheetah Conservation Fund of Namibia (CCF)

- Assist in all aspects of CCF's ecology research
- Write research proposals and scientific publications
- Coordinate the de-bushing project and harvest and horticulture activities