

Proponent: **COZA MINING (PTY) LTD**

Project: **COZA IRON ORE PROJECT**

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PROJECT INFORMATION SHEET

PROJECT:

COZA IRON ORE PROJECT

REPORT DETAILS

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Environmental Impact Assessment: Project Management.

EXECUTIVE SUMMARY

INTRODUCTION

COZA Mining (Pty) Ltd is a junior mining company proposing to develop the COZA Iron Ore Project located approximately 10 km north-northwest of Postmasburg Town in the Tsantsabane Local Municipality of the Northern Cape Province.

This is a green-fields project that will involve the mining of iron ore from two pits. Mining pits will be established on the Farm Driehoekspan 435 (Remaining Extent) (Driehoekspan) and Farm Doornpan 445 (Portion 1) (Doornpan). The proposed COZA Iron Ore Project will involve open pit mining that will be undertaken by means of truck and shovel. Mined ore will be crushed, screened and blended on site prior to being transported for further processing offsite. The processed ore will then be transported via rail to ArcelorMittal's steel plants.

Synergistics Environmental Services (Pty) Ltd has been appointed to undertake the Scoping and Environmental Impact Assessment (EIA) process required for the COZA Iron Ore Project. The EIA process is required in terms of South Africa's environmental legislation.

The purpose of this report is to present the results of the scoping assessment, which is the first phase of the environmental impact assessment process.

LEGISLATIVE REQUIREMENT

The COZA Iron Ore Project will require the following main environmental approvals before commencing:

- Environmental Authorisation: For activities listed under the 2010 EIA Regulations of the National Environmental Management Act (No. 107 of 1998) as amended (NEMA). Application has been submitted and assigned reference number: NC/EIA/04/SIY/TSA/POS/DRIE/2013/NCP/EIA/0000215/2013.
- Waste Management Licence: For activities listed under National Environmental Management: Waste Act (No. 59 of 2008) (NEM: WA). Application has been submitted and assigned reference number: 12/9/11/L1235/8.
- Mining Right: As required by Section 22 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002) as amended (MPRDA). Application to be submitted at the end of June for Doornpan and Driehoekspan will follow at a later stage.
- Integrated Water Use License (IWUL) and Integrated Water and Waste Management Plan (IWWMP): As required in terms of the National Water Act (No 36 of 1998) (NWA). Application will be submitted in November 2013.

In addition to the four main approvals, the following approvals will be required

- The South African Heritage Resources Agency needs to approve a heritage assessment, to be conducted as part of the overall EIA process, in terms of the National Heritage Resources Act (No 25 of 1999). Permits will be required for the destruction or removal of any heritage resources affected by the development.
- A permit for the removal of protected floral and faunal species in terms of the Northern Cape Nature Conservation Act (No 9 of 2009) (NCNCA and the National Forest Act (No 84 of 1998).

Other applicable legislation and guidelines are provided in Table 2.4. The EIA process for the COZA Iron Ore Project is still at its initial stages and no environmental approvals have been obtained.

METHODOLOGY APPLIED TO SCOPING

Study Objectives

In order to advise the various environmental applications a Scoping and Environmental Impact Assessment process is applicable for the COZA Iron Ore Project. A scoping process has been conducted for the proposed project with the following objectives:

- Obtain an overview of the baseline environmental and social conditions of the project area;
- To identify and notify potential interested and affected parties for the project; and
- To identify potential impacts of the project.

Baseline Environmental Description

The baseline environment represents the current prevailing environmental conditions prior to the construction of the proposed COZA Iron Ore Project. It is indicative of the status of the current environment and highlights any degradation due to naturally occurring phenomena and existing human activities such as mining, agricultural, residential development, traffic on existing roads, and existing infrastructure.

Baseline information was gathered through Synergistics visual inspection of the area, desktop studies, consultation with Interested and Affected Parties (IAPs) and the review of specialist baseline reports.

Public Participation and Authority Consultation

A public participation process is required in terms of Section 54 of NEMA and under the MPRDA. The public participation process followed to date included:

- Identification of interested and affected parties.
- Notifications to interested and affected parties and relevant authorities.

- Press and site advertisement.
- Registration of interested and affected parties.
- Distribution of a Background Information Document (BID).
- Public Information Sharing Meetings at Postmasburg Town Hall and Maremane Community Hall.

Review of the Scoping Report

This report will be made available for public review for 4 weeks (30 calendar days) and the authority review period will be for 8 weeks (60 calendar days). All registered IAPs will be notified in writing of the availability of the document for review and will be requested to submit written comments.

DESCRIPTION OF EXISTING ENVIRONMENT

The proposed COZA Iron Ore Project will be located on Farm Driehoekspan and Doornpan in the rural area of the Tsantsabane Local Municipality. The Maremane Community owns the property where the mine is proposed to be located and the land is registered under the Maremane Communal Property Association (MCPA). All members of the MCPA need to be confirmed and notified of the proposed development. The main land use at the project site is agriculture (stock farming) with some residences of the Maremane Community on Farm Driehoekspan. Other surrounding land uses include mining and infrastructure associated with mining such as power lines and railway lines.

In terms of the biophysical environment, the project is located in a semi-arid climatic region within the Eastern Kalahari Bushveld of the Savanna Biome. The soils in the region are generally shallow, normally exceeding more than 300 mm in depth. The area is flanked by hills with the Klipfontein range of hills to the east and the Bleskop Hill located on the area to be mined on Farm Doornpan. The drainage system of the area is an endorheic system, which means that the ephemeral drainage lines within the study area do not release to a river but rather to the surrounding pans. Groundwater is the main source of water in the area and is used for agriculture and domestic activities.

PUBLIC ISSUES OF CONCERN

Issues of concern that were raised are captured in Section 6.2 and copies of issues raised are included in Appendix A6. Below is a summary of issues that have been raised to date:

Authority Requirements

- The Northern Cape Department of Agriculture, Forestry and Fisheries advised that the Northern Cape Nature Conservation Act (No 9 of 2009) (NCNCA) should be considered if there is a requirement for the removal of protected faunal and floral species

Community Development and Upliftment

- The community requested a list of projects that will form part of COZA's local development projects under their Social and Labour Plan.
- COZA Mining's employment plans were requested.

COZA Mining's Future Prospecting

- A question on future exploration activities and mine expansions was raised.

Community Consultation

- Concerns were raised that not all the relevant IAPs were aware of the public information sharing meetings held in May 2013.
- A request was made that other local newspapers should be considered when placing press notices in future.
- Concern was raised that members of the Maremane Community not residing at Lohatla will be excluded from the public participation process.
- Maremane Community requested to be consulted when deciding on the local economic development projects in support of the Social and labour Plan.
- Maremane community was worried that the community will not be notified of progress with the EIA and subsequent decisions from the authorities.

Projects Environmental Impacts

- Concerns were raised on the mine's impact on groundwater resources. There was a concern that dewatering activities will result in the lowering of the water table.

A concern on the decrease in ambient air quality due to mining activities was raised.

Responses to these issues of concern are given in Section 6.2.

POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

The report provides a scoping-level identification of potential environmental and social impacts (physical, biological, social and economic) associated with the proposed COZA Iron Ore Project, as well as a strategy of how these impacts will be assessed further in the EIA phase. The project impacts are discussed in Section 7 of the report. The identified potential project impacts are listed below:

- Change in topography and resultant visual intrusion due to the mining of the Bleskop hill and location of infrastructure;
- Increase in dust levels due to construction and operation activities;
- Disturbance of the ephemeral stream of Farm Driehoekspan due to location of the mine pit and infrastructure area;
- Pollution of groundwater resources due to construction and operation activities;
- Lowering of the water table due to pit dewatering (if required);
- Removal of protected plant species due to site clearance;
- Contamination and loss of soils due to construction and mining activities;
- Increase in noise levels due to construction and operational activities at the mine;
- Disturbance of heritage resources due to construction and mining activities;
- Risk of social upheaval and social ills due to development of a new mine in the current volatile social environment;
- Positive socio-economic impacts such as employment opportunities and implementation of local economic development initiatives indicated in the mine's Social and Labour Plan;
- Loss of agricultural (grazing) land due to development of mine; and
- Increase in traffic levels and associated safety risks due to additional trucks on the R325.

PLAN OF STUDY FOR EIA

The plan of study for EIA (Section 8 of the report) includes a description of the EIA process and tasks, specialist studies and consultation to be undertaken during the EIA phase of the COZA Iron Ore Project, as well as a proposed impact assessment methodology and rating criteria.

Study Team

Synergistics Environmental Services (Pty) Ltd (Synergistics) has been appointed as an independent environmental consultant to undertake the EIA for the COZA Iron Ore Project. A full list of the study team and specialists, with qualifications and role in the project are provided in the main report (Table 8.3).

EIA Process

The EIA process has been developed to ensure that it complies with Regulation 543 Sections 26 to 33 of NEMA and its associated guidelines (see Section 2) as well as the requirements of the MPRDA. Specialist studies will be undertaken to advise the assessment of project impacts. The public will be afforded an opportunity for involvement by reviewing the draft and final reports. Meetings will be arranged with the relevant authorities and IAPs to give feedback on the results of the EIA phase.

Specialist Studies

Specialist input and studies will be conducted for the following environmental components, the scope of work for these studies is outlined in the main report:

- Faunal and Floral Impact Assessment
- Air Quality Impact Assessment
- Surface Water Impact Assessment
- Groundwater Impact Assessment
- Noise Impact Assessment
- Soil and Land Capability Survey
- Economic Impact Assessment
- Social Impact Assessment
- Traffic Impact Assessment
- Noise Impact Assessment
- Heritage Impact Assessment
- Visual Impact Assessment

CONCLUSIONS AND KEY FINDINGS

This report concludes the scoping phase of the environmental assessment for the COZA Iron Ore Project. It outlines the results of the public participation and authority consultation processes to date, and defines the plan of study for the Environmental Impact Assessment phase.

The baseline assessment has revealed the presence of heritage resources, surface water features and potential areas of ecological sensitivity within the mining area that will need to be further assessed during the EIA phase. It will also be important to ensure the identification and consultation of the other members of the Maremane Communal Property Association as the landowners of site where the project is proposed.

It is deemed that the environmental process followed to date meets the requirements of the legislation, NEMA NEM: WA and the MPRDA, to ensure that the regulatory authorities receive sufficient information to enable them to make an informed decision to accept the Scoping Report and approve the plan of study for EIA as outlined in Section 8 of this report.

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LIST OF ACRONYMS AND ABBREVIATIONS

AMSA	ArcelorMittal South Africa
DMR	Department of Minerals Resources
DENC	Department of Environment and Nature Conservation, Northern Cape
DWEA	National Department of Water and Environmental Affairs
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
EMP Report	Environmental Management Programme Report (synonym for EMPR)
EMPR	Environmental Management Programme Report (synonym for EMP Report)
ha	hectare
IAP	Interested or Affected Parties
km	Kilometre
LOM	Life of mine
m	Meter
m ³	cubic metre
MI	Million litres
mm	Millimetre
MRPDA	Mineral and Petroleum Resources Development Act, 28 of 2002
Mtpa	Million tonnes per annum
NEMA	National Environmental Management Act, 107 of 1998
pa	per annum
PM10	Particulate matter smaller than 10 microns (< 10 µm)
ROM	Run of Mine
Synergistics	Synergistics Environmental Services (Pty)
km/hr	Kilometres per hour
dBA	Decibel (measure of noise)

LIST OF TERMS

Assessment

The process of collecting, organising, analysing, interpreting and communicating data that is relevant to some decision.

Baseline Environment

The prevailing environmental conditions (or status quo) prior to the implementation of a new activity.

Baseline Level

The concentration / measurement of a pollutant (i.e. air, water, noise) prior to the implementation of a new activity.

Competent Authority

The organ of state charged with evaluating environmental impacts and with granting or refusing authorisation of an activity. The competent authority is also responsible for approving the EIA and EMP Report and future updates of the report.

Convictional rainfall

Is the formation of precipitation due to heating of the ground surface. The heating causes surface water to evaporate and moist air to rise. As the moist air rises it expands and cools, condensation occurs, forming clouds and eventually precipitation.

Dewatering

The removal of water from waterlogged workings by pumping or drainage, to maintain dry conditions in mine pit.

EMP commitments

Mitigation measures contained in the EMP. Legally required to be implemented after approval by Competent Authority.

Endorheic System

An Endorheic system is a closed drainage system that retains water and does not allow for outflow to other external bodies of water such as rivers or oceans.

Environment

Surroundings within which humans exist and that are made up of:

- The land, water, and atmosphere of the earth
- Micro-organisms, plant and animal life
- Any part or combination of (i) and (ii) and the inter-relationships among and between them; and
- The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being

Environmental Impact

The direct and indirect effect of human actions and activities on the environment.

Environmental Impact Assessment

A formal process used to predict the environmental consequences of a proposed development project or activity, to ensure that the potential problems are foreseen and addressed at an early stage in project planning and design. As a planning tool, it has both an information gathering and decision-making component, which provides the decision maker with an objective basis for granting or denying approval for a proposed development.

Environmental Impact Assessment (as per the Minerals and Petroleum Resources Development Act)

An EIA is an assessment of the positive and negative environmental consequences of the development of the proposed project. The primary objective of the EIA is to aid decision-making by providing factual information on the assessment of the impacts and determining their significance and on which to base valued judgements in choosing one alternative over another.

Environmental Management Programme

An action plan or system which addresses the how, when, who, where and what of integrating environmental mitigation and monitoring measures throughout an existing or proposed operation or activity. It encompasses all the elements that are sometimes addressed separately in mitigation, monitoring and action plans.

Fatal Flaw

A factor or situation that prevents the development of an environmentally acceptable project, except at prohibitive cost. Critical issues with the ability to stop a project's development.

Feasibility Study

A comprehensive design and costing study of the selected option for the development of a mineral project in which appropriate assessments have been made of realistically assumed geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational and all other modifying factors, which are considered in sufficient detail to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable) and the factors reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The overall confidence of the study should be stated.

Footprint

Refers to the surface area of land directly affected by a proposed development or activity. Directly related to the physical extent and size of the development or activity.

Frontal rainfall

Is caused by a weather front. A cold front, as an example, lifts warm, moist air, which becomes saturated and eventually causes precipitation to occur.

Interested and Affected Parties

Individuals or groups concerned with or affected by the environmental impacts and performance of a project. Interested groups include those exercising statutory environmental control over the project, local residents/communities (people living and/or working close to the project), the project's employees, customers, consumers, investors and insurers, environmental interest groups and the general public.

Iron Ore

Ferruginous rock containing one or more minerals from which metallic iron may be profitably extracted. The chief ores of iron consist mainly of the oxides: Fe_2O_3 ; goethite, $\alpha\text{-FeO(OH)}$; magnetite, Fe_3O_4 ; and the carbonate, siderite or chalybite, FeCO_3 .

Land Capability

The collective effects of soil, terrain and climate features, shows the most intensive long-term use of land for rain-fed agriculture and at the same time indicate the permanent limitations associated with the different agricultural land-use classes [<http://www.agis.agric.za>].

Land use

The activities that take place within a given area or space.

Life of Mine

Number of years that the operation is planning to mine and treat ore, and is taken from the current mine plan and is based on the defined mineral reserve and production rates.

Life of Mine Plan

A design and costing study of an existing operation in which appropriate assessments have been made of realistically assumed geological, mining, metallurgical, economic, marketing, legal, environmental, social, governmental, engineering, operational and all other modifying factors, which are considered in sufficient detail to demonstrate at the time of reporting that extraction is reasonably justified.

Mine Design

A framework of mining components and processes taking into account such aspects as mining methods used, access to the ore body, personnel and material handling, ventilation, water, power, and other technical requirements, such that mine planning can be undertaken.

Mine Planning

Production planning and scheduling, within the Mine Design, can be undertaken, taking into account such aspects as geological structures and mineralization and associated infrastructure and constraints.

Mineral

Any substance, whether in solid, liquid or gaseous form, occurring naturally in or on the earth or in or under water and which was formed by or subject to a geological process, and includes sand, stone, rock, gravel, clay, soil and any material occurring in residue stockpiles or in residue deposits, but excludes: Water, other than water taken from land or sea for the extraction of any material from such water; Petroleum; or Peat.

Mineral Reserve

A mineral reserve is the portion of the mineral resource, which is known to be economically feasible for extraction at the specific time of the reserve determination. A mineral reserve forms part of a mineral resource but excludes those portions of the mineral resource that are:

- Not sufficiently drilled and sampled
- Too deep to economically extract
- Too deep to technically extract
- Too low of grade to economically or technically extract
- Contaminated
- Of such nature to restrict the potential for beneficiation

A mineral reserve is sub-divided, in order of increasing confidence, into a probable mineral reserve and a proven mineral reserve.

Mineral Resource

An occurrence of material of economic interest that has been investigated, to some degree, in terms of location, quantity, grade, continuity and other geological characteristics, but where the economics has not been fully evaluated. It covers in situ mineral deposits as well as stockpiles and deposits that may have the potential for extraction. The mineral resource is sub divided in order of increasing confidence into inferred mineral resource, indicated mineral resource and measured mineral resource.

Mining

Mining is the making of any excavation for the purpose of winning a mineral on, in or under the earth , water or any residue deposit, whether by underground or open working or otherwise and includes any operation or activity incidental thereto.

Mining Area

Section 1 of the MPRDA defines a mining area as: the area for which the mining right or permit is granted and any adjacent or non-adjacent surface of land...upon which related incidental operations are being undertaken, including any area connected by such an area by means of road, railway line, power line, pipeline all buildings, structures, machinery, mine deposits or objects situated in that area which are used for the purpose of mining.

Mining Related Activities

Activities within the mining area that: are required for mine construction, operation and/or rehabilitation; serve no purpose other than to support the construction, operation and/or rehabilitation of the mine; and will be removed and rehabilitated at the end of the life of the mine unless they can be utilised as part of the end-use requirement of the mine and to the benefit of the local community and environment.

Mining Waste Dump

A facility for deposition (dumping) or stockpiling of mining waste rock.

Mitigation Measures

Measures designed to avoid, reduce or remedy adverse potential negative impacts. Includes measures to compensate for residual impacts.

Monitoring

The repetitive and continued observation, measurement and evaluation of environmental data to follow changes over a period of time to assess the efficiency of control measures.

Negative impact

A change that reduces the quality of the environment (for example, by reducing species diversity and the reproductive capacity of the ecosystem, by damaging health, property or by causing nuisance.

Overburden

Non-ore bearing / non-processable material overlying or interbedded between mineral deposits that must be stripped off before extraction can proceed. Regarded as mining waste rock.

Residual Environmental Impact

Impact that remains after mitigation measures have been implemented.

Run of Mine

The mined ore in its natural state, prior to treatment of any sort, as it is delivered by the haul trucks to the crushing plant.

Processing

In relation to any mineral, means the winning, extracting, concentrating, refining, calcining, classifying, crushing, screening, washing, reduction, smelting or gasification thereof.

Sensitive Area

A sensitive area or environment can be described as an area or environment where a unique ecosystem, habitat for plant and animal life, wetlands or conservation activity exists or where there is a high potential for eco-tourism.

Significant Impact

An impact can be deemed significant if consultation with the relevant authorities and other interested and affected parties, on the context and intensity of its effects, provide reasonable grounds for mitigating measures to be included in the environmental management report. The onus shall be on the proponent to include the relevant authorities and other interested and affected parties in the consultation process. Present and potential future, cumulative and synergistic effects should all be taken into account.

Stockpile

An accumulation of ore or mineral formed to create a reserve for processing, loading or other purposes or built up when demand slackens or when the treatment plant or beneficiation equipment is incomplete or temporarily unequal to handling the mine output.

Zone of Influence

Area within which a proposed development may have an influence or effect on the environment. This area will be defined in the EIA phase for the COZA Iron Ore Project.

COZA MINING (PTY) LTD

COZA IRON ORE PROJECT

DRAFT SCOPING REPORT

1. INTRODUCTION TO THE PROJECT

1.1 Introduction

COZA Mining (Pty) Ltd is a junior mining company proposing to develop the COZA Iron Ore Project located approximately 10 km north-northwest of Postmasburg Town in the Tsantsabane Local Municipality of the Northern Cape Province.

The proposed development is a green-fields project that will involve the mining of iron ore from two pits. Mining pits will be established on the Farm Driehoekspan 435 (Remaining Extent) (Driehoekspan) and Farm Doornpan 445 (Portion 1) (Doornpan) (refer to Figures 1.1 and 1.2). The proposed COZA Iron Ore Project will involve open pit mining that will be undertaken by means of truck and shovel. Mined ore will be crushed, screened and blended on site prior to being transported for further processing offsite (this area does not part of this assessment). The processed ore will then be transported via rail to ArcelorMittal (AMSA) steel plants.

Synergistics Environmental Services (Pty) Ltd has been appointed to undertake the Scoping and Environmental Impact Assessment (EIA) process required for the COZA Iron Ore Project. The EIA process will be undertaken to inform the following environmental applications:

- **Environmental Authorisation:** For activities listed under the 2010 EIA Regulations of the National Environmental Management Act (No. 107 of 1998) as amended (NEMA).
- **Waste Management Licence:** For activities listed under National Environmental Management: Waste Act (No. 59 of 2008) (NEM: WA).
- **Mining Right:** As required by Section 22 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002) as amended (MPRDA).
- **Integrated Water Use License (IWUL) and Integrated Water and Waste Management Plan (IWWMP):** As required in terms of the National Water Act (No 36 of 1998) (NWA).

This report presents the result of the scoping assessment, which is the first phase of the environmental impact assessment process. Included in this report are the preliminary results of the public participation process, description of the baseline environment and the plan of study for the EIA. The report has been compiled in accordance with the requirements of the MPRDA and the NEMA.

1.2 Project Location

The COZA Iron Ore Project is located in the Tsantsabane Local Municipal area in the Siyanda District in the Northern Cape Province (see Figure 1.1). The project is located on Farms Driehoekspan (RE) and Portion 1 of Doornpan.

The approximate location of the study area is 28°9'29.29"S and 23°3'16.36" E (Driehoekspan) and (28°12'31.53"S and 23°4'6.39"E) (Doornpan) which is approximately 10 km north-northwest of Postmasburg Town and 12 km southwest of the Lohatla Military Base.

1.3 Project Need and Desirability

Prospecting activities that were undertaken on the two farms have revealed that the iron ore resource has the potential of being mined economically.

The proposed development of the COZA Iron Ore Mine will have a number of positive outcomes for local communities and society in general. Development of the COZA Iron Ore Mine will result in direct employment opportunities during the construction and operation phase of the mine. Employed individuals, and their dependants, will benefit economically from the employment. Through employment, persons at the mine will also gain skills involved in the construction and operation of a mine. Persons from the local area employed at the mine will be spending their income in these communities therefore contributing to the local economy. The design, construction and operation of the mine could make use of the local consulting and manufacturing companies.

The proposed development will also ensure local economic development through the implementation of projects identified in the Social and Labour Plan. COZA Mining is fully committed to implementing development plans and projects that will facilitate local community and rural development in the area surrounding the COZA Iron Ore Project in line with the provisions of the Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry.

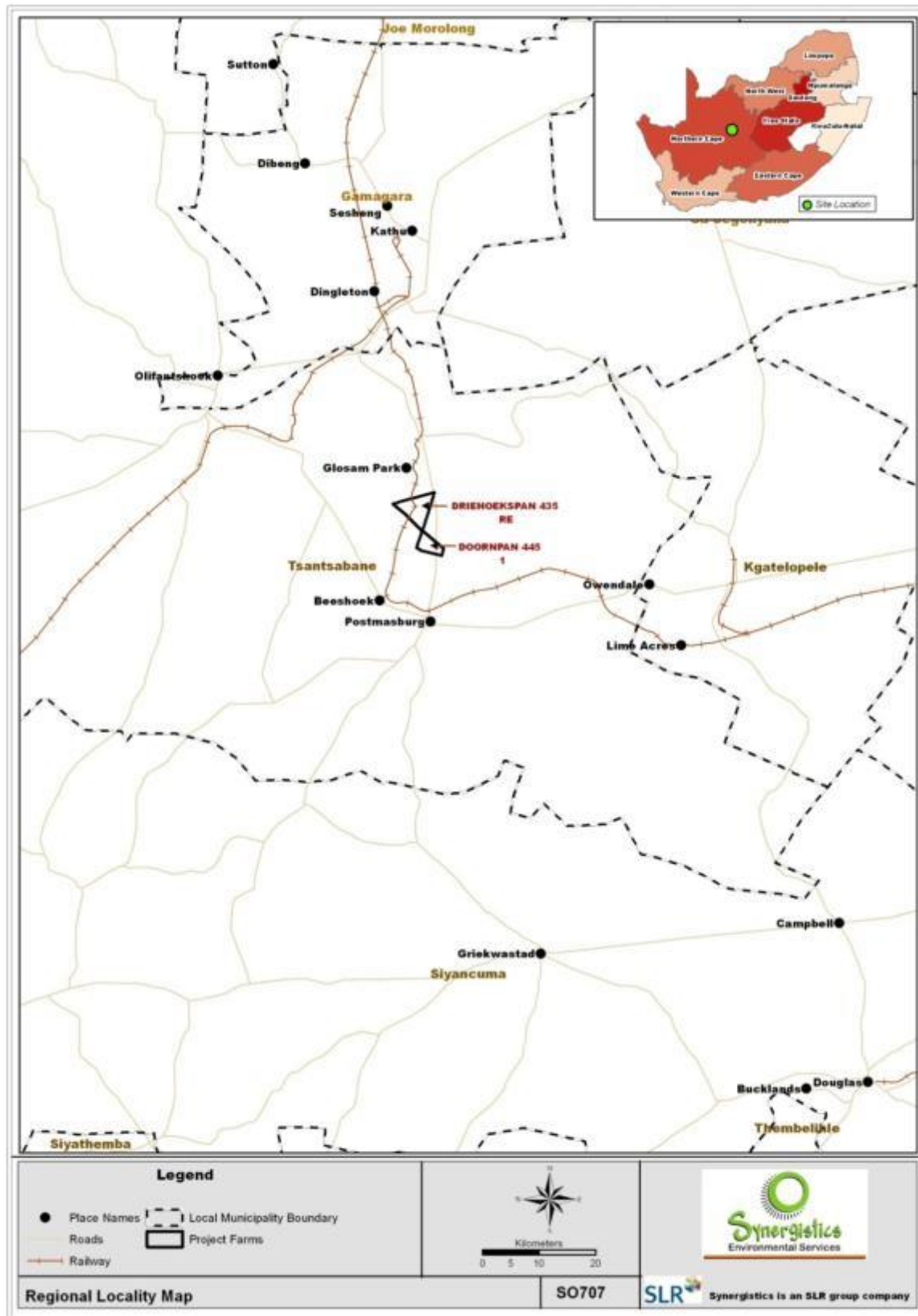


Figure 1.1 Regional Location of the COZA Iron Project

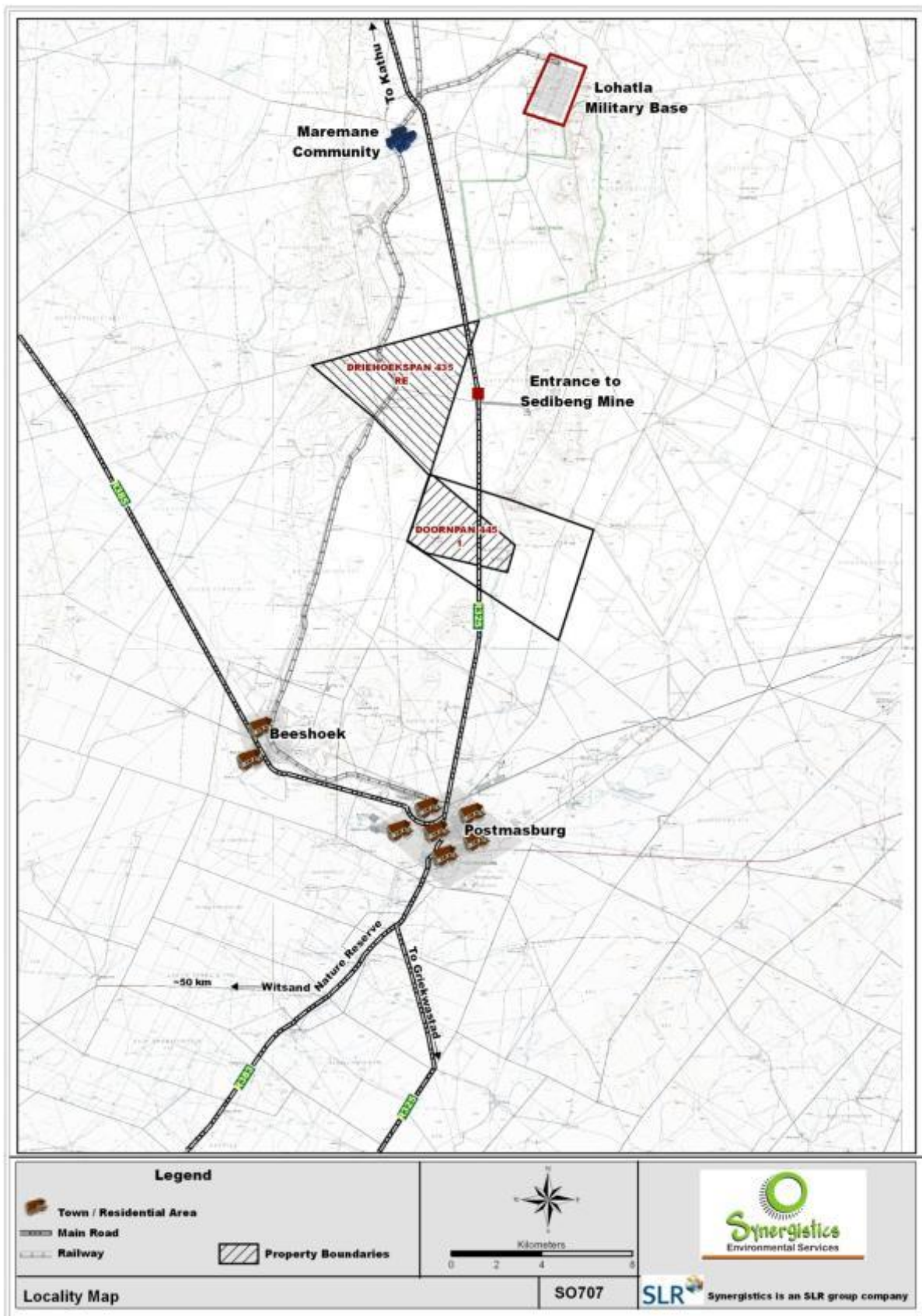


Figure 1.2: Approximate Location of the COZA Iron Ore Project

2. LEGISLATIVE REQUIREMENTS

2.1 Applicable Legislation and Approvals Required

2.1.1 Mineral and Petroleum Resources Development Act (No 28 of 2002)

COZA Mining (Pty) Ltd has prospecting rights over Farms Driehoekspan and Doornpan that they intend to convert to mining rights. The process for applying for mining rights is governed by the Minerals and Petroleum Resources Development Act (No 28 of 2002) (MPRDA) which is administered by the Department of Mineral Resources (DMR).

Any person that wishes to mine in South Africa has to submit a mining right application in terms of Section 22 of the MPRDA to the Department of Mineral Resources. COZA Mining will submit a mining right application for Doornpan at the end of June 2013 and Driehoekspan will follow at a later stage.

Once the application has been submitted, Northern Cape DMR will have 14 days to notify the applicant that additional information is required or accept the application. Should the application be accepted, the DMR will notify COZA Mining to:

- to conduct an environmental impact assessment and submit an environmental management programme for approval
- notify and consult with interested and affected parties within 180 days from the date of notification by the Department.

The environmental impact assessment process required in for the mining right application requires a Scoping Report to be submitted within 30 days of acknowledgement and an Environmental Impact Assessment (EIA) Report to be submitted within 180 days of acknowledgment.

The DMR launched the South African Mineral Resources Administration System, which facilitates online application for mining rights and subsequent submission of required documents. A standard template for the Scoping Report and EIA Report will be completed and submitted via the online application portal by COZA Mining. This scoping report contains information that will be submitted as required by the mining right application process.

2.1.2 National Environmental Management Act (No 107 of 1998)

The National Environmental Management Act (No 107 of 1998) (NEMA) sets out principles for environmental management and allows for the listing of activities that cannot commence without environmental authorisation. The Environmental Impact Assessment (EIA) Regulations (Government Notice Regulation) GNR 544-546 of June 2010 have been published in terms of Section 24 (2) of NEMA to list activities that require environmental authorisation. In order to obtain environmental authorisation, an assessment of environmental impacts is required to advise the decision makers of the potential environmental impact associated with the activity. The assessment procedure is stipulated in GRN 543 of the EIA Regulations where activities listed under GNR 545 require a Scoping and EIA to be undertaken, activities listed in GNR 544, and 546 require a Basic Assessment (BA) process. The COZA Iron Ore Project triggers activities listed under all three regulations and therefore a Scoping and EIA process will be undertaken.

An application for environmental authorisation for these activities was submitted to the Northern Cape Department of Environment and Nature Conservation (DENC) and accepted on 5 April 2013 and has been assigned the following reference number: NC/EIA/04/SIY/TSA /POS/DRIE/2013 /NCP/EIA/0000215/2013. Table 2.1 indicates the listed activities that were included in the application.

Table 2.1: Listed activities included in the NEMA application

Activity No.	Activity Description	Applicability to COZA Iron Ore Project
GNR 544, 18 June 2010		
1	The construction of facilities or infrastructure for the <u>generation of electricity</u> where: i. the electricity output is more than <u>10 megawatts</u> but less than 20 megawatts; or ii. the output is 10 megawatts or less but the total extent of the facility covers an <u>area in excess of 1 hectare</u> .	The use of backup generators in the case of power failures. Contractors' generator during the construction and operational phase. No electricity will be generated for external consumption.
9	The construction of facilities or infrastructure exceeding 1 000 meters in length for the <u>bulk transportation of water, sewage or storm water</u> – (i) with an internal diameter of 0.36 meters or more; or (ii) with a peak throughput of 120 liters per second or more, excluding where: a. such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or where such construction will occur within urban areas but further than 32 meters from a	Pipelines may be constructed for the transportation of water. Design specifications will be confirmed at a later stage.

Activity No.	Activity Description	Applicability to COZA Iron Ore Project
	watercourse, measured from the edge of the watercourse.	
10	<p>The construction of facilities or infrastructure for the <u>transmission and distribution of electricity</u> –</p> <ul style="list-style-type: none"> (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more. 	<p>The construction of a power line with a capacity of more than 33 kV for power supply purposes. Design specifications will be confirmed at a later stage.</p>
11	<p>The construction of:</p> <ul style="list-style-type: none"> (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square meters in size; (ix) slipways exceeding 50 square meters in size; (x) buildings exceeding 50 square meters in size; or (xi) <u>infrastructure or structures covering 50 square meters</u> or more <p>where such construction occurs <u>within a watercourse or within 32 meters of a watercourse, measured from the edge of a watercourse</u>, excluding where such construction will occur behind the development setback line.</p>	<p>Infrastructure may be constructed within 32 m of a watercourse for the Driehoekspan mine pit.</p> <p>Design specifications will be confirmed at a later stage.</p>
12	<p>The construction of facilities or infrastructure for the <u>off-stream storage of water</u>, including dams and reservoirs, <u>with a combined capacity of 50 000 cubic meters</u> or more, unless such storage falls within the ambit of activity 19 of Notice 545 of 2010;</p>	<p>Construction of pollution control dam/s or attenuation dams.</p> <p>Design specifications will be confirmed at a later stage.</p>
13	<p>The construction of facilities or infrastructure for the <u>storage, or for the storage and handling, of a dangerous good</u>, where such storage occurs in containers with a <u>combined capacity of 80 but not exceeding 500 cubic meters [80 000 to 500 000 litres]</u>;</p>	<p>Construction of a fuel storage facility with a capacity to store in excess of 80 m³ of diesel. Dependent on contractor requirements and arrangements during construction phase.</p> <p>Design specifications will be confirmed at a later stage.</p>

Activity No.	Activity Description	Applicability to COZA Iron Ore Project
18	<p>The <u>infilling or depositing of any material of more than 5 cubic meters into</u>, or the dredging, <u>excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock</u> [of more than 5 cubic meters] from:</p> <ul style="list-style-type: none"> (i) a <u>watercourse</u>; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 meters inland of the high-water mark of the sea or an estuary, whichever distance is the greater- but excluding where such infilling, depositing, dredging, excavation, removal or moving (a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or occurs behind the development setback line. 	<p>The mining activities and the construction of infrastructure will cross a watercourse on the Farm Driehoekspan.</p>
GNR 544, 18 June 2010		
22	<p>The construction of a <u>road, outside urban areas</u>,</p> <ul style="list-style-type: none"> i. with a <u>reserve wider than 13,5 meters</u> or, ii. where no reserve exists where the road is <u>wider than 8 metres</u>, or iii. for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010. 	<p>New haul roads and other roads will be required, e.g. service roads for construction of linear infrastructure. Some of the roads will be wider than 8 meters.</p> <p>Design specifications will be confirmed at a later stage.</p>
41	<p>The expansion of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, where the combined capacity will be increased by 50000 cubic meters or more.</p>	<p>Water for the construction and operation phase will be stored in reservoirs/dams.</p>
47	<p>The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre –</p> <ul style="list-style-type: none"> i. where the existing reserve is wider than 13,5 meters; or ii. where no reserve exists, where the existing road is wider than 8 metres – 	<p>The main access roads to the properties may require widening to accommodate the movement of heavy machinery on site.</p> <p>Design specifications will be confirmed at a later stage.</p>

Activity No.	Activity Description	Applicability to COZA Iron Ore Project
	excluding widening or lengthening occurring inside urban areas.	
GNR 545, 18 June 2010		
3	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.	<p>Construction of a fuel storage facility with a capacity to store in excess of 500 m³ of diesel. Dependent on contractor requirements and arrangements during construction phase.</p> <p>Design specifications will be confirmed at a later stage.</p>
5	The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.	<p>The construction of a permanent immobile fuel storage facility which stores in excess of 500m³ requires an atmospheric emissions license in terms of. NEMAQA.</p> <p>In addition, waste rock dumps, pollution control dams and the sewage treatment plant requires a water use license in terms of the NWA which governs the release of waste.</p> <p>Design specifications will be confirmed at a later stage.</p>
10	The construction of facilities or infrastructure for the transfer of 50 000 cubic metres or more water per day, from and to or between any combination of the following: <ul style="list-style-type: none"> i. water catchments, ii. water treatment works; or iii. impoundments, excluding treatment works where water is to be treated for drinking purposes.	<p>Water sourced from pit dewatering may be transferred off-site to other catchments. Large storm water canals can potentially transfer up to 50 000 m³ of water a day between impoundments/attenuation dams on site during peak flows.</p> <p>Unlikely, but confirmation of the design details will be available at a later stage.</p>
15	Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; <p>except where such physical alteration takes place for:</p> <ul style="list-style-type: none"> i. linear development activities; or ii. agriculture or afforestation where activity 16 in this Schedule will apply. 	<p>The project will involve the transformation of approximately 1 400 ha of undeveloped land to mining/industrial use.</p>
19	The construction of a dam, where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the	<p>Construction of pollution control dam/s or attenuation dams.</p> <p>Design specifications will be confirmed at a later</p>

Activity No.	Activity Description	Applicability to COZA Iron Ore Project
	wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.	stage
26	Commencing of an activity, which requires an atmospheric emission license in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), except where such commencement requires basic assessment in terms of Notice of No. R544 of 2010	<p>The construction of a permanent immobile fuel storage facility which stores in excess of 500m³ requires an atmospheric emissions license in terms of NEMAQA.</p> <p>Unlikely, but confirmation of the design details will be available at a later stage.</p>
GNR 546, 18 June 2010		
14	<p>The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:</p> <p>(1) purposes of agriculture or afforestation, inside areas identified in spatial instruments adopted by the competent authority for agriculture or afforestation purposes;</p> <p>(2) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be exclude from this list;</p> <p>(3) the undertaking of a linear activity falling below the</p> <p>(1) thresholds in Notice 544 of 2010.</p>	<p>The proposed development is a green-fields development, which will result in the clearance of approximately 325 ha of indigenous vegetation.</p>

2.1.3 National Water Act (No 36 of 1998)

The proposed COZA Iron Ore Project will engage in water uses listed under Section 21 of the National Water Act (No 36 of 1998) (NWA). Any person wishing to use water in terms of Section 21 must either register the water use or submit an application for a Water Use Licence to the Department of Water Affairs prior to commencement. Table 2.2 below provides a preliminary list of activities that might be undertaken as part of the COZA Iron Ore Project. This list will be confirmed in the EIA Report.

Table 2.2: Section 21 Water Uses Applicable for the COZA Iron Ore Project

Section 21 Water Use	Applicability to the project
(a) taking water from a water resource	Abstraction of water from boreholes during the construction and operational phase and pit dewatering if required.
(b) storing water	Storage of drinking and raw water for the mine.
(c): impeding or diverting the flow of water in a watercourse	Disturbance of the ephemeral watercourse on Farm Driehoekspan.
(g) disposing of waste in a manner, which may detrimentally impact on a water resource.	Construction and operation of the waste rock dumps, Pollution control dams, temporary waste storage facilities and sewage treatment plant.
(i) altering the bed, banks, course or characteristics of a watercourse.	Disturbance of the ephemeral watercourse on Farm Driehoekspan.
(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for safety of people.	Pending specialist findings, the mine might have to engage in dewatering activities.

An Integrated Water Use Licence (IWUL) application together with an Integrated Water and Waste Management Plan (IWWMP) will be prepared and submitted to the DWA. The IWUL will be prepared for waste related and non-waste related water uses. The IWWMP containing specific information and designs for the water uses will be prepared by Synergistics with input from the feasibility team. The EIA will form the basis for the IWWMP. The IWWMP will be circulated for public and authority comment in November 2013.

2.1.4 National Environmental Management: Waste Act (No 59 of 2008)

The National Environmental Management: Waste Act (No 59 of 2008) (NEM: WA) administers the management of waste activities to protect health and the environment. NEM:WA is however not applicable to radioactive waste, mine waste such as tailings facilities and waste rock dumps, disposal of explosives and disposal of animal carcasses. Regulation 718 of NEM: WA lists activities that require a licence prior to construction and operation. Table 2.3 below indicates the applicable waste management activities that will require a licence for the project.

Table 2.3: Preliminary list of NEM:WA activities for the COZA Iron Ore Project

GN R 718 of July 2009	Description	Project Applicability
A(1)	The storage, including the temporary storage of general waste at a facility that has the capacity to store in excess of 100 m ³ of general waste at any one time, excluding the storage of waste in lagoons	A temporary waste storage facility will be operated at the mine.
A(2)	The storage including the temporary storage of hazardous waste at a facility that has the capacity to store in excess of 35 m ³ of hazardous waste at any one time, excluding the storage of hazardous waste in lagoons.	A temporary hazardous waste storage facility will be operated at the mine.
A(4)	The storage of waste tyres in a storage area exceeding 50 m ² .	Waste tyres will be stored at the workshop area.
A(5)	The sorting, shredding, grinding or bailing of general waste at a facility that has the capacity to process in excess of one ton of general waste per day.	Waste will be sorted prior to being taken to the waste storage facilities.
A(18)	The construction of facilities for activities listed in Category A of this Schedule (not in isolation to associated activity)	This activity will be applicable for the construction of the waste storage and sorting facilities.
B(7)	The treatment of effluent, wastewater or sewage with an annual throughput capacity of 15 000 m ³ or more.	A sewage treatment facility will be operated at the mine.
B(11)	The construction of facilities for activities listed in Category B of this schedule (not in isolation to associated activity)	This activity will be applicable for the construction of the sewage treatment plant.

2.1.5 National Environmental Management: Air Quality Act (No 39 of 2004)

Depending on the quantities of fuel to be stored at the mine, an Atmospheric Emissions Licence (AEL) will be required for the project. Regulation 248 of the National Environmental Management: Air Quality Act (No 39 of 2004) (NEM: AQA) lists activities that cannot be conducted without an AEL. The quantities of fuel required for the construction and operation of the mine will be confirmed once the pre-feasibility study has been completed. Should the study reveal that quantities trigger the requirement for an AEL, an application will be submitted for Category 2 Subcategory 2.2 as listed under Regulation 248 of NEM: AQA.

2.2 Other Legislation and Guidelines Applicable to the COZA Iron Ore Project

Table 2.4 below summarises other applicable guidelines and legislation that have been considered when preparing the Scoping Report and planning for the EIA.

Table 2.4: Other Applicable Legislation and Guidelines

	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication
Guidelines for the EIA Process	National Environmental Management Act No 107 of 1998	2006 EIA Guidelines: Guideline 5: Assessment of Alternatives	Provides guidance for the consideration of project alternatives	Cognisance has been given to the guideline when considering alternatives for the proposed COZA Iron Ore Project. This guideline will be consulted throughout the EIA process.
		2010 Guideline Series 5: Companion to the NEMA EIA Regulations of 2010	Provides guidance on the practical implementation of the EIA regulations. The guideline also provides clarity on the processes to be followed when applying for an environmental authorisation.	Cognisance has been given to the guideline when undertaking the scoping process. This guideline will be consulted throughout the EIA process.
		2010 Guideline 6: Environmental Management Framework Regulation, 2010	Provides guidance for the development of EMF. EMF's developed by the Minister, MEC or local authority are in turn used in the decision making process for the environmental authorisation process.	Cognisance will be given to the Siyanda District's 2008 EMF.
		2010 Guideline Series 7: Public Participation	Provides guidance on methods to be used when identifying and consulting with interested and affected parties.	Cognisance has been given to the guideline when conducting the public consultation process for the development. This guideline will be consulted throughout the EIA process.
		2010 Guideline Series 9: Need and Desirability	Provides guidance for considering the need and desirability of a proposed development within the context of sustainable development. It is stated that the authorities support economic growth and the promotion of social inclusion however, such growth should be ecologically sustainable.	The need and desirability of the project will need to be assessed within the context of sustainable development.

	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication
Mining	Minerals and Petroleum Resources Development Act No 28 of 2002	Consultation Guideline	Provides guideline for consulting with communities	Cognisance was given to the guideline when undertaking the scoping process.
		Scoping Report Guideline	Provides guidance on completing a scoping report	Cognisance was given to the guideline when undertaking completing the scoping report.
		Guideline for Financial Provision	Provides guidance for developing financial provision for the mine	Cognisance will be given to the guideline when undertaking the EIA.
Biodiversity	Northern Cape Nature Conservation Act (No 9 of 2009)		No person may remove provincially protected plant species without a licence from the competent department	A permit will be required for the relocation/removal of protected plant species if these are found on site and will be disturbed by the project.
	National Environmental Management: Biodiversity Act 10 of 2004	Regulation 151 Publication of critically endangered, vulnerable and protected species	No person may carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit.	A permit will be required if there is a need to capture faunal protected species on site for search and rescue measures.

	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication
	National Forests Act No 84 of 1998	Notice 835 List of Protected tree species under the Act	No person may carry out a restricted activity on any protected tree except if there is a licence granted by the minister.	A permit will be required prior to removing any protected trees on site if required.
Water Use	Regulation 704 of the National Water Act (No 36 of 1998)	GNR 704	Provides guidelines for the use of water in accordance with the National Water Act (No 36 of 1998) for mining related activities and is aimed at the protection of water resources	Cognisance to specific sections within GNR 704 will be given when preparing the Integrated Water Use Licence Application and the EIA report. This guideline will also need to be consulted when commencing with the operation of the mine.
Heritage Resources	National Heritage Resources Act	Section 38	(1).....any person who intends to undertake a development categorised as: (c) any development or other activity which will change the character of a site- (i) exceeding 5000 m ² in extent must notify the responsible authority at the very early stages and give details regarding the location nature and extent of the proposed development.	South African Heritage Resources Agency (SAHRA) has been notified of the development.
		Section 38(2)	The responsible heritage resources authority must within 14 days of receipt of a notification in terms of subsection (1) – (a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report.	A Heritage Impact Assessment will be undertaken as part of the EIA and the report will be submitted to SAHRA for commenting.

	Legislation	Regulations / Guidelines	Description / Requirement	Project Implication
Noise	National Environmental Management: Air Quality Act	Section 34	Minister may prescribe national standards to: -control noise in general, by specific machinery, activities or in specified places or areas; -for determining definition for noise and maximum levels of noise.	Applicant is to adhere to the national standards for noise.
Health	Environmental Health Impact Assessment (EHIA) in South Africa: Guidelines 2010	Department of Health: 2010 Guidelines	The Department of Environmental Affairs should consult with Environmental Health (Department of Health) to conduct a screening process to determine if a project requires a Health Impact Assessment.	The scoping report will have to be submitted to the Department of Health to determine if a Health Impact Assessment will be required.
Land use	Northern Cape Planning and Development Act (No 7 of 1998)	Section 44 (1)	'Any application made to amend or alter land use rights, including rezoning, departures and consent, regardless of whether the site concerned was previously administered in terms of the Black Communities 'Development Act, 1984 (Act No 4 of 1984), or any other act or ordinance, shall be processed in accordance with the procedure specified in Schedule A'.	Application for rezoning will be submitted by COZA Mining at a later stage following a procedure specified in Schedule A of the Act.

2.3 Legislative Requirements for the Structure of the Scoping Report

The scoping report is structured in accordance with GNR 543 (EIA regulations) in terms of the NEMA, as well as Regulation 49 of the MPRDA. The tables below provide a summary of the requirements of these regulations, with cross references to the report sections where these requirements have been addressed.

Table 2.5: Structuring of the Scoping Report in terms of GNR543 Requirements (NEMA)

Legal and Regulatory Requirement	Cross Reference to Report Section
GNR 543 Section 27	
After having submitted an application, the EAP managing the application must:	
(f) Prepare a scoping report in accordance with regulation 28	This report.
GNR 543 Section 28(1)	
A scoping report must contain all information that is necessary for a proper understanding of the nature of the issues identified during scoping and must include:	
a) Details of: (i) the EAP who prepared the report; and (ii) the expertise of the EAP to carry out scoping procedures;	Project Information Sheet
b) A description of the proposed activity ;	Section 4
c) A description of any feasible and reasonable alternatives that have been identified;	Section 4.7
d) A description of the property on which the activity is to be undertaken and the location of the activity on the property, or if it is: (i) a linear activity, a description of the route of the activity; or (ii) an ocean-based activity, the coordinates where the activity is to be undertaken;	Section 1.2
e) A description of the environment that may be affected by the activity and the manner in which activity may be affected by the environment;	Section 5
f) An identification of all legislation and guidelines that have been considered in the preparation of the scoping report;	Section 2
g) A description of environmental issues and potential impacts, including cumulative impacts , that have been identified;	Section 7
h) Details of the public participation process conducted in terms of regulation 27(a), including: (i) The steps that were taken to notify potentially interested and affected parties of the application; (ii) Proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the application have been displayed, placed or given; (iii) A list of all persons or organisations that were identified and registered in terms of regulation 55 as interested and affected parties in relation to the application; and (iv) A summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues ;	Section 3.5

Legal and Regulatory Requirement	Cross Reference to Report Section
i) A description of the need and desirability of the proposed activity;	Section 1.3
j) A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;	Section 4.7
k) Copies of any representations, and comments received in connection with the application or the scoping report from interested and affected parties;	Appendix A6
l) Copies of the minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants; and	Appendix A5
m) Any responses by the EAP to those representations and comments and views;	Appendix A6 and Section 6
n) A plan of study for environmental impact assessment which sets out the proposed approach to the environmental impact assessment of the application, which must include:	Section 8
(i) A description of the tasks that will be undertaken as part of the environmental impact assessment process, and the manner in which such tasks will be undertaken;	Section 8
(ii) An indication of the stages at which the competent authority will be consulted ;	Section 8
(iii) A description of the proposed method of assessing the environmental issues and alternatives , including the option of not proceeding with the activity;	Section 8
(iv) Particulars of the public participation process that will be conducted during the environmental impact assessment;	Section 8
o) Any specific information required by the competent authority; and	Not applicable at this stage
p) Any other matters required in terms of sections 24(4) (a) and (b) of the Act.	Not applicable at this stage
In addition, a scoping report must take into account any guidelines applicable to the kind of activity which is the subject of the application.	Section 2.2
GNR 543 Section 28(3):	
The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4) (b) (i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub regulation (1) (c), exist.	Not applicable at this stage

Table 2.6: Structuring of the Scoping Report in terms of Regulation 49 of the MPRDA

Legal and Regulatory Requirement	Cross Reference to Report Section
(a) describe the methodology applied to conduct scoping;	Section 3

Legal and Regulatory Requirement	Cross Reference to Report Section
(b) describe the existing status of the environment prior to the mining operation;	Section 5
(c) identify and describe the anticipated environmental, social and cultural impacts, including the cumulative effects, where applicable;	Section 7
(d) identify and describe reasonable land use or development alternatives to the proposed operation, alternative means of carrying out the proposed operation and the consequences of not proceeding with the proposed operation;	Section 4.7
(e) describe the most appropriate procedure to plan and develop the proposed mining operations;	Section 8
(f) describe the process of engagement of identified interested and affected persons, including their views and concerns; and	Section 3, 6 and 8
(g) Describe the nature and extent of further investigations required in the environmental impact assessment report.	Section 8

3. THE METHODOLOGY APPLIED TO SCOPING

3.1 Study Objectives

The specific objectives for the scoping phase of the EIA process are to:

- Collate project technical information on the COZA Iron Ore Project;
- Engage with environmental authorities and confirm legal and administrative requirements;
- Collate available baseline environmental data for the site and surrounds;
- Identify landowners, adjacent landowners, surrounding communities, authorities as well as other stakeholders which may be affected by the project, or that may have an interest in the environmental impacts of the project;
- Notify Interested and Affected Parties (IAPs) of the proposed development;
- Collate and document issues of concern from IAPs;
- Identify feasible alternatives for consideration in the EIA process;
- Identify potential environmental issues associated with the COZA Iron Ore Project; and
- Identify the nature and extent of further investigation and specialist input required in the EIA phase.

3.2 Identification of Alternatives

COZA Mining is currently conducting the concept study for the mining of Driehoekspan and Doornpan pits. A preliminary discussion on alternatives is given in Section 4.7. Specialists have commenced investigations to determine the presence of sensitive sites within the project area, this information will be used to establish site alternatives for mine infrastructure.

3.3 Determining the Study Area

The study area will be the zone of influence as defined by the different specialists. This area will be defined during the EIA phase once all specialist studies have been completed.

3.4 Baseline Environmental Description

The baseline environment represents the current prevailing environmental conditions prior to the construction of the proposed COZA Iron Ore Project. It is indicative of the status of the current environment and highlights any degradation due to naturally occurring phenomena and existing human activities such as mining, agricultural, residential development, traffic on existing roads, and existing infrastructure.

Baseline information was gathered through Synergistics visual inspection of the area, desktop studies and review of specialist baseline reports. Table 3.1 below indicates the documents that were examined in preparing the baseline environment section:

Table 3.1: Baseline Specialist Reports reviewed for the COZA Iron Ore Project

Environmental Section	Baseline	Source of Information
Climate		<ul style="list-style-type: none"> • Jeffares & Green Consulting Engineers, (May 2013), <i>COZA Iron Ore Project, Desktop Hydrology Assessment</i> • Airshed Planning Professionals (2010). <i>Kolomela Mine Air Quality Impact Assessment</i>
Air Quality		<ul style="list-style-type: none"> • Observations during a site visit by Synergistics on 20 March 2013
Topography		<ul style="list-style-type: none"> • Google Earth and site observations
Geology and Soils		<ul style="list-style-type: none"> • COZA Mining (Pty) Ltd (2013) <i>Doompan Draft Mine Works Programme</i> • PGS Heritage: (6 May 2013), <i>Heritage Scoping Report for the COZA Iron Ore Project</i>.
Groundwater		<ul style="list-style-type: none"> • Groundwater Complete: Hydro-census data.
Surface Water		<ul style="list-style-type: none"> • Jeffares & Green Consulting Engineers, (May 2013), <i>COZA Iron Ore Project, Desktop Hydrology Assessment</i>
Land Capability and Land Use		<ul style="list-style-type: none"> • Agricultural Research Council (GIS Data) • South African National Biodiversity Institute (SANBI) GIS META DATA • Site visit by Synergistics on 9-10 May 2013
Biodiversity		<ul style="list-style-type: none"> • Beryl Wilson, (April 2013), <i>Faunal Specialist Study for the proposed COZA Iron Ore</i>

Environmental Section	Baseline	Source of Information
		<p><i>Mine Project in the Tsantsabane Local Municipality, Scoping Report.</i></p> <ul style="list-style-type: none"> Tania Anderson (April 2013) <i>Environmental Scoping Report: Specialist vegetation study on the potential impacts of the proposed COZA Iron Ore Mine project near Postmasburg, Northern Cape.</i>
Noise		<ul style="list-style-type: none"> Observations during a site visit by Synergistics on 20 March 2013
Cultural Heritage		<ul style="list-style-type: none"> PGS Heritage: (6 May 2013), <i>Heritage Scoping Report for the COZA Iron Ore Project.</i>
Visual		<ul style="list-style-type: none"> Visual Inspections during site visit by Synergistics on 20 March 2013
Socio-Economics		<ul style="list-style-type: none"> Demacon Market Studies, (May 2013), <i>COZA Iron Ore Project Economic Impact Assessment (Baseline Report).</i>

3.5 Public Participation

3.5.1 Identification of Interested and Affected Parties

Potential Interested and Affected Parties (IAPs) were identified using existing databases for similar developments in the Postmasburg and Sishen area. The databases included authorities, ratepayers association, farmers union and surrounding mines. The contact details of the IAPs were verified and updated where necessary. Landowners on and surrounding the project sites were identified using LexisNexis title deed search and networking. Identification of new IAPs was done using the following methods:

- Site visit on the 9-10 May to deliver Background Information Documents (BID). During this visit, the Maremane Community was identified and key contacts were included in the IAP database.
- Requesting registered IAPs to identify any additional people that may be affected by the development.
- Placement of site and press advertisement.

The following stakeholders have been identified thus far:

3.5.1.1 Historically Disadvantaged Communities

The historically disadvantaged communities as defined in the DMR guideline include the Maremane Community. Figure 5.15 indicates the areas where members of the Maremane Community reside.

3.5.1.2 Historically Disadvantaged Community Land Ownership

The Maremane Community as a historically disadvantaged community is also the landowner of the property on which the development is proposed.

3.5.1.3 Department of Land Affairs

As required by the MPRDA, the Northern Cape Department of Agriculture, Land reform and Rural Development has been identified as an IAP for the project. The Department was emailed the Background Information Document (BID) and invited to the public Information Sharing meeting. No response has been received from the Department to date. Synergistics will forward the Draft Scoping Report (DSR) to the Department. The Department will also be invited to the authorities meetings to ensure that they are fully engaged throughout the EIA process.

3.5.1.4 Land Claimants

There are no land claimants for Farms Driehoekspan and Doornpan. It should be noted that these farms were given to the Maremane Community following a successful land claim in 2010. See section 5.2.3 for more detail.

3.5.1.5 Relevant Traditional Authority

The area on which the project will be located does not fall under any traditional authority. The land is owned by the Maremane Community with the Maremane Communal Property Association (MCPA) as the owners in the title deed.

3.5.1.6 Landowners

The Maremane Community represented by MCPA owns farm Doornpan and Driehoekspan. Mr More Matsididi represents the MCPA. Synergistics is currently in the process of identifying other members of the MCPA to ensure that they are also consulted.

3.5.1.7 Lawful Occupiers

There are currently members of the Maremane Community living on Farm Driehoekspan. These members are involved in agricultural (goat farming) activities on the property.

3.5.1.8 Relevant Local Authority

The proposed development is located in the Tsantsabane Local Municipality's area of jurisdiction. It should however be noted that the areas where the Maremane community are residing are not included in the local municipality's town planning scheme.

3.5.1.9 Other Stakeholders

The following other stakeholders have been identified:

- Ward Councillors and representatives of the ratepayers association;
- Surrounding Landowners;
- Surrounding Mines;
- National and Provincial Authorities with an interest on the project; and
- General Public.

A list of all parties that have been identified thus far is included as Appendix A1.

3.5.2 **Notification of Landowners, Lawful Occupiers and IAPs**

The scoping public consultation process has been carried out between May-June 2013. As part of the consultation process, IAPs should be notified of the proposed development and Scoping and EIA process being undertaken. Notifications to IAPs were provided in English, Afrikaans and Setswana where required. Potential IAPs were notified of the project by means of:

- Direct letter to the landowners, a letter was sent to Mr More Matsididi as a representative of the Maremane Community. Mr Matsididi signed the acknowledgment of receipt on the 8th of March 2013 and signed consent to undertake the waste management listed activities in terms of NEM: WA on Driehoekspan and Doornpan.
- Distribution of the BID by hand during site visit, via email and at the information sharing meetings (see Section 3.5.2.2 for further detail)
- Press and site notification (see Section 3.5.2.1 for further detail)
- Two Public Information Sharing meetings (see Section 3.5.2.3 for further detail)

Responses received during this process are captured in Table 6.1 under Section 6. Comments received are included in in Appendix A6.

3.5.2.1 Media Advertisements and Site Notices

Press adverts were placed in the following newspapers:

- Kathu Gazette in English on the 18th of May 2013
- Volksblad in Afrikaans on the 15 May 2013

Site notices (A2 and A3) were placed on the 9 and 10th of May 2013 at the following areas:

- Main entrance to Farms Driehoekspan and Doornpan (English and Afrikaans)

- Tsantsabane Local Municipality's notice board (English, Afrikaans and Setswana)
- Maremane Community at the local shop (Setswana)

The press and site notification was undertaken to elicit interest from other IAPs that might not have been identified during the stakeholder identification process. The advert and site notice and proof of notification are included in Appendix A3.

3.5.2.2 Background Information Document

A Background Information Document (BID) (Appendix A4) was circulated by hand between the 9th and 10th of May 2013 to all adjacent landowner, mines and communities. Other IAPs received the BID via email. The BID was also provided at the information sharing meeting on 23 May 2013.

The BID provided background information on the COZA Iron Ore Project and provided an explanation of the Scoping and EIA process that is currently being undertaken for the project. The BID also invited members of the public to register as IAPs and participate in the EIA process. A response sheet was attached the BID on which IAPs could provide written comments on the proposed development.

3.5.2.3 Information Sharing Meetings

Information sharing meetings were held on the 23rd of May 2013. Meetings were held at the following areas:

- Postmasburg Town Hall at 10h00 -12h00
- Maremane Community Hall at 13h30-15h30

The purpose of the meetings was to introduce the COZA Iron Project to IAPs as well as to advise them of the EIA process that is currently being undertaken by Synergistics. The meeting also afforded IAPs the opportunity to raise any issues of concern regarding the project and the EIA process. The meeting in Postmasburg was held in English whilst the Maremane Community meeting was held in Setswana. The list of attendees and minutes of the meeting are attached as Appendix A5.

3.5.3 **Registration of Interested and Affected Parties**

People and/or organisations were registered as IAPs for the project if they:

- Are landowners or tenants adjacent to or within 100 m from the proposed study area
- Are the local municipality/ ward councillor with jurisdiction in the area
- Represent the ratepayers association
- Are an authority or organ of state having jurisdiction in respect of any aspect of the activity
- Responded to the BID, press advertisements and site posters
- Attended one of the information sharing meetings

- Own, operate or administrate infrastructure affected by the project.
- Contacted Synergistics telephonically, or via fax, e-mail or post regarding the project

3.5.4 Review of Draft Scoping Report

The draft report will be made available for public review for 30 calendar days (4 weeks). The report will be made available at the Tsantsabane Local Municipality (municipal library) and the Maremane Community's local shop. The report will also be published on the Synergistics website at www.synergistics.co.za from where it can be downloaded. All registered IAPs will be notified in writing or via sms of the availability of the Scoping Report.

Electronic copies of the report will be emailed or made available on CD-ROM to IAPs on request. The report will be made available for review from 4 June 2013 - 4 August 2013.

3.6 Authorities Responsible for Various Aspects of the Activities of the Project

3.6.1 Notification of Competent Authorities

3.6.1.1 Northern Cape Department of Environment and Nature Conservation (DENC)

An application for environmental authorisation in terms of NEMA was submitted to the DENC on the 5th of April 2013 and has been assigned the reference number NC/EIA/04/SIY/TSA/POS/DRIE/2013/NCP/EIA/0000215/2013. The officer in charge of the project is Ms A. Yaphi.

3.6.1.2 National Department of Environmental Affairs (DEA)

An application for a waste management licence was submitted to the DEA in terms of NEM: WA on 17 April 2013 and has been assigned the reference number 12/9/11/L1235/8. The application will be handled by Mr Shiba Sebone.

3.6.1.3 Northern Cape Department of Mineral Resources (DMR)

As part of the public participation process, a BID was also emailed to the Department. A mining right application will be submitted by COZA Mining to the DMR at the end of June 2013. Following the submission of the mining right, the scoping report will be submitted to the Department to provide details of the consultation process and the baseline environment.

3.6.1.4 Northern Cape Department of Water Affairs (DWA)

The DWA has been notified of the project through the circulation of the BID on the 10th of May 2013. A water use licence will be submitted in December 2013 to DWA in terms of the NWA.

3.6.2 Notification of Other Authorities

In addition to the authorities listed above, the BID was circulated to the following commenting authorities:

- Tsantsabane Local Municipality
- Siyanda District Local Municipality
- Northern Cape Department of Agriculture, Land Reform and Rural Development
- Northern Cape Department of Health
- South African National Roads Agency
- Northern Cape Department of Agriculture, Forestry and Fisheries
- South African Heritage Resources Agency

Authorities were also invited to attend the information-sharing meeting held on the 23rd of May 2013. The following authorities attended the meeting:

- Department of Cooperative Governance, Human Settlements & Traditional Affairs
- Department of Roads and Public Works

3.6.3 Authorities Meeting

An authorities meeting will be set up during the scoping review period to discuss the findings of the scoping report as well as to establish additional legislative requirements.

3.6.4 Review of Draft Scoping Report

Copies of the draft scoping report will be provided to the authorities for a 60 calendar-day review period (8 weeks). The reports will be circulated to authorities listed above and that have been included in the IAP Database.

4. PROJECT DESCRIPTION

The COZA Iron Ore Project is currently at the concept phase and the details of the project are still being determined. It should therefore be noted that information presented in this section is subject to change based on the findings of the concept, pre-feasibility, feasibility studies and specialists input.

4.1 Proposed Mine Plan

The proposed COZA Iron Project will involve the mining of iron ore from two separate open pits to be located on Farm Driehoekspan and Doornpan. The proposed development will be a green-fields project with an estimated area of disturbance of 150 ha at Doornpan and 175 ha at Driehoekspan. A preliminary layout plan has been developed for the Doornpan mining area (refer to Figure 4.1). The Driehoekspan layout will be developed once the concept study has been completed, however Figure 4.1 indicates the location of the pit area and the general area where infrastructure will be located.

Mining from the two pits will be undertaken simultaneously by means of truck and shovel. It is estimated that the pits will reach an average depth of 80 -100m below surface. Should mining activities reach the water table, dewatering activities may be required at the mine. Mining will involve the following activities:

- Site clearance which will involve the removal of vegetation (indigenous and alien) within the mine footprint area of approximately 352 ha;
- Removal of available soils and stockpiling at designated areas for rehabilitation purposes;
- Drilling and blasting of overburden material;
- Loading and haulage of overburden to the waste rock dump site within the mine infrastructure areas; and
- Material containing iron ore will be mined out by means of truck and shovel and taken to the crushing and screening plant.

The resource estimation process is being undertaken to determine the available resource. The current estimated production rates from the two pits is 500 000 tons of ore per annum over a life of mine of 10-20 years.

4.2 Processing

It is expected that crushing, screening, and blending will take place on site. These processing activities will be adjacent to the pit. Crushed ore will then be blended prior to transport off-site. No tailings facilities will be required at the mine further processing of iron ore will be undertaken at another facility off-site (this area does not form part of this assessment).

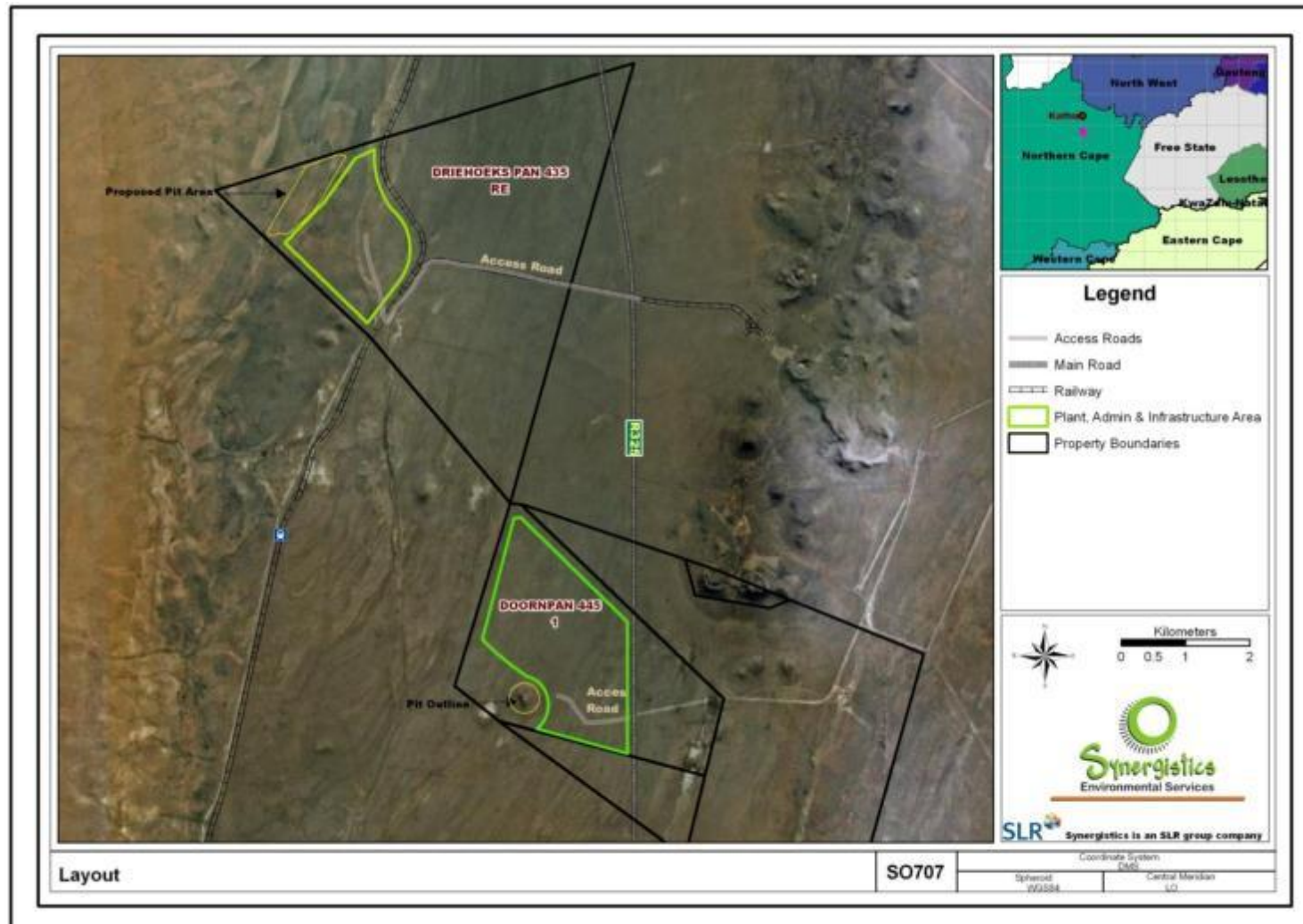


Figure 4.1: Preliminary Mine Layout Plan for COZA Iron Ore Project

4.3 Transportation Requirements and Access Roads

Construction phase access to site will be via the existing access roads that link to the R325 (refer to Figure 4.1). The existing gravel access roads linking to the R325 will be upgraded to cater for operational phase traffic. Upgrading activities will include widening and lengthening of gravel roads. Ore will be further transported by 34t trucks via the R325 to existing mines for further processing. A number of possible processing sites are located within a 30 km radius of the proposed mine site. The project's trip generation and traffic loads will be determined during the pre-feasibility phase of the project and included in the EIA.

Processed ore will then be transported via rail to AMSA's steel plants. The rail transportation of ore does not form part of this assessment.

4.4 Water Supply

Water requirements for the construction and operation phase for the mine are still being determined. Water for mining activities will be sourced either from the Vaal Gamagara Water Scheme, boreholes or from pit dewatering (if required). Potable and raw water will be required for domestic purposes, mine construction and mine operations activities such as dust suppression and washing of mine machinery and vehicles at the wash bay. An environmental water balance will be developed for Doornpan and Driehoekspan mining operations and presented in the EIA report.

4.5 Labour Requirements

There will be labour required for the construction and operational phase. The total staff requirement at full production for both mining operations is estimated at 140 persons. Employment numbers during the construction phase will be confirmed during the EIA once the project description has been finalised. It should be noted that contractors will be appointed for the construction and operation of the mine.

4.6 Supporting Infrastructure

The support infrastructure given below will be required at both mining areas i.e. Doornpan and Driehoekspan.

4.6.1 Water Management Infrastructure

Water management infrastructure will be required for the management of clean and dirty water at the mine during the construction and operation phase. Water management infrastructure will include water storage facilities for clean and dirty water, pipelines, canals and berms. The diversion of the ephemeral stream between the pit and mining infrastructure area at Driehoekspan may be required, as such, diversion infrastructure such as canals and berms may be required. As a general plan, berms will be constructed upstream of the mining area to prevent clean water from entering the dirty areas and canals will be constructed to channel water to designated clean or dirty water areas. A detailed stormwater plan will be developed for the mine and included in the EIA. The capacities of the water management infrastructure will also be included in the EIA report.

4.6.2 Waste Management

4.6.2.1 Mineralogical Waste

Mine waste (overburden) will be discarded at the waste rock dump. No tailings facilities will be constructed at both mining areas. The footprint and size of the waste rock dump will be confirmed in the EIA report.

4.6.2.2 Non-Mineralogical Waste

4.6.2.3 General and Hazardous Waste

General and hazardous waste as defined under NEM:WA will be generated at Driehoekspan and Doornpan. General waste will comprise of concrete, rubble, glass, plastics and recyclable metals and hazardous waste will include used oils, oily rags and some paints. Temporary waste storage facilities will be constructed for hazardous and general waste within the mine infrastructure area. A facility for the bailing and sorting of waste will be provided for within the temporary storage areas.

No disposal of waste will take place at the mine, waste will be disposed at a permitted hazardous waste facility or a municipal general waste disposal facility in Postmasburg.

4.6.2.4 Storage of Waste tyres

Mine vehicles tyres will be changed at the service area within the workshop areas for Driehoekspan and Doornpan. Any waste tyres will then be stored at the workshop area. The area and number of waste tyres to be stored will be included in the EIA report.

4.6.2.5 Sewage

A sewage treatment plant will be required at Driehoekspan and Doornpan for the treatment of domestic effluent produced at the workshop and administration areas during the construction and operation phase. The plant will be located within the mine infrastructure area. The sewage treatment plant will be a packaged plant, which will involve the biological treatment of sewage using aerobic and anaerobic methods with final chemical treatment of effluent. The capacity and operations of the plant will be included in the EIA report.

A waste management plan for the waste storage areas and the sewage treatment plant will be developed and included in the EIA report.

4.6.3 **Storage of Dangerous Goods**

Fuel will be required at Driehoekspan and Doornpan for machinery and mine vehicles. Facilities for the storage of diesel, petrol and oil will be constructed at the mine. These facilities will be provided with the necessary management measures such as bunding and concrete flooring to prevent spillage and fire management equipment. The quantities of fuel required at the mine are not known at this stage and will be included in the EIA report.

An explosive magazine will also be constructed at the mine for the storage of explosives and chemicals to be used during blasting activities. The storage and fencing of the magazine will be in line with the legal requirements in terms of Explosives Magazine Act (No 15 of 2003). The layout plan with the different chemicals and quantities to be stored at the magazine will be included in the EIA report.

4.6.4 **Staff Accommodation**

Temporary staff accommodation facilities will be constructed at the project site for the construction phase. During the operation phase, staff is expected to be accommodated within existing areas in Postmasburg or Kathu. The type of housing facilities that will be required for construction and operational phase will be included in the EIA report.

4.6.5 **Power Supply**

During the construction phase power will be sourced from diesel generators, diesel powered construction infrastructure will also be used during this phase. Eskom will be approached to supply power to the mine during the operation phase. Distribution powerlines will be constructed to connect to Eskom's main powerline. Back up diesel generators will also be used during the operation phase. The capacity of power generation and distribution infrastructure will be determined during the pre-feasibility phase and included in the EIA.

4.7 Project Alternatives

4.7.1 No-Go Alternative

In accordance with the NEMA Regulations, the no-go alternative is required to be investigated and assessed. The no-go alternative would mean that the COZA Iron Ore Project is not undertaken and therefore the associated negative environmental and social impacts will not occur. This alternative will need to be weighed against the findings of the EIA as well as the potential socio-economic benefits that may result from the project. The results of the assessment will be presented in the EIA report.

4.7.2 Water Supply Alternatives

Two alternatives are being considered for water supply at the mine. These include abstraction from site boreholes and pit dewatering or linking to Sedibeng Water's Vaal Gamagara Pipeline located east of the study area. These two alternatives will be investigated further during the EIA where the best environmentally and economically feasible option will be selected. The results will be presented in the EIA Report.

4.7.3 Location of Support Infrastructure

Although the location of the pit is fixed as a result of accessing the mineral reserves, alternatives will be considered as far as possible for the location of waste sites as well as plant and administration infrastructure based on the findings of specialist studies. The proposed infrastructure area is reflected in Figure 4.1, alternative sites for infrastructure will be considered within this area.

4.7.4 Final Land Use Alternatives

The current land use that exists on the property is livestock grazing (goats and sheep). Section 5.3.1 provides the detail on surrounding land uses. The current land use will be considered and assessed in the EIA as a possibility for the final land use after mining. Other possible land uses taking due consideration of the land capability will be investigated and assessed in the EIA report.

5. DESCRIPTION OF THE EXISTING STATUS OF THE ENVIRONMENT

5.1 Existing Status of Cultural and Heritage Environment

5.1.1 Cultural and Heritage and Resources

In 2010 a Heritage Impact Assessment was undertaken by Lita Webley and David Halkett in terms of proposed prospecting activities on the farms Driehoekspan and Doornpan (Webley & Halkett, 2010a & b). A total of three sites were identified on Driehoekspan, which included one findspot comprising a Quartzite Early Stone Age core, a historic structure of unknown function as well as a possible Later Stone Age knapping site. One Early and one Middle Stone Age findspot were also identified on Doornpan.

PGS Heritage & Grave Relocation Consultants undertook a scoping level heritage impact study of the study area in May 2013 (See Appendix C5). Archival and historical research has revealed a long and significant history in terms of the surroundings of the study area (PGS Heritage, 2013). The surroundings of Postmasburg and the study area also contain a number of well-known pre-colonial mining sites, rock art sites as well as Stone Age sites, most notably Blinkloppkop, a pre-colonial specularite mine located approximately 10km southeast of the study area.

Based on archival and historical maps of the study area, three farmsteads, two located on the farm Driehoekspan and one on the farm Doornpan, could be at least 85 years old (PGS Heritage, 2013). As such, these farmsteads could constitute significant heritage resources. These farmsteads are however not located near the proposed mining sites and will not likely be disturbed by the proposed development.

5.1.2 Paleontological Resources

With respect to paleontological resources, the study areas are underlain by chemical and clastic sedimentary sequences of the Campbell and Postmasburg Groups of the Transvaal Supergroup. These sedimentary sequences are associated with banded iron formations in the Postmasburg region where mining is envisaged. The dolomite sequences can contain good examples of stromatolite structures that are of medium paleontological significance.



Plate 1. Typical stromatolite structures usually associated with dolomite deposits such as is found in the study area (Photograph from Wikipedia 201 en.wikipedia.org/wiki/Stromatolite).

It must be noted however that the presence (or absence) of these sites can only be confirmed during fieldwork to be conducted during the EIA phase of the project.

5.2 Existing Status of the Socio-Economic Environment

5.2.1 Current Land use

The study area is within a rural district zoned for agricultural use. The dominant land use in the area surrounding the COZA Iron Ore project is livestock farming. Due to the arid nature of the climate, intensive commercial agriculture is not possible. There is also human settlement to the east and northern of the study areas, these include two local farmers and the Maremane Community. Mining activities and the infrastructure associated with mining activities (powerlines and railway) are also prevalent in the area, due to the presence of Iron Ore.

East of the proposed mining area on Driehoekspan and west of Doornpan's proposed mining area is the Transnet Railway Line linking Beeshoek Mine to Sishen Mine and ultimately to the Sishen Saldanha export line. There are a number of abandoned buildings associated with the railway line on Farm Driehoekspan. The R325 to Kathu crosses farm Doornpan east of the proposed mining area.

Approximately 3 km east of Driehoekspan is the Sedibeng Mine. Approximately 10 km northeast of the project area is the Lohatla Military Base, which is used as a training area for the South African National Defence Force. The military base is located in an area that was proclaimed as a nature reserve (Ga-Thlose Nature Reserve) in 1890. Part of the farm where the military base is located is now currently used as a game park.

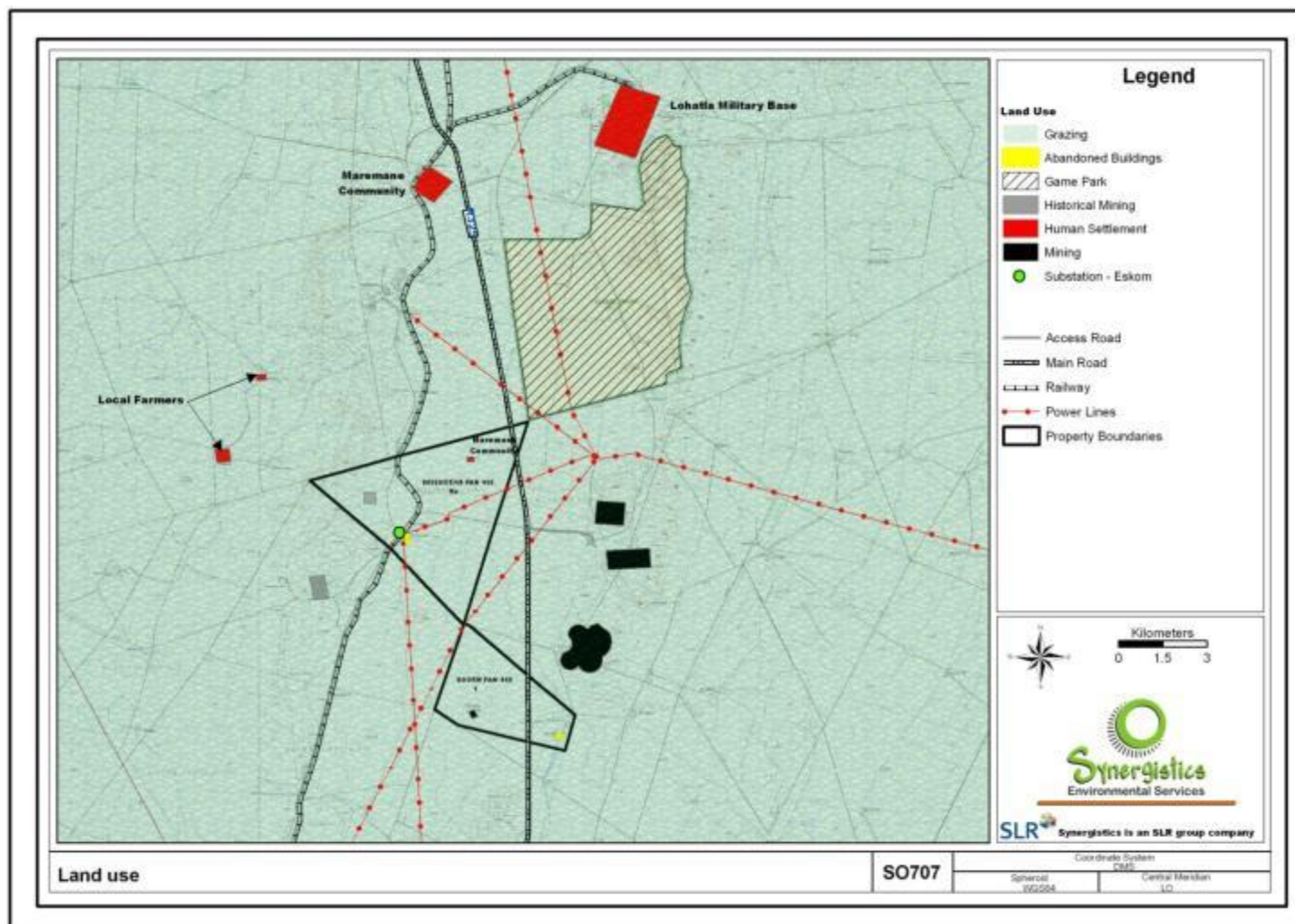


Figure 5.1: Land Use surrounding the Study Area

5.2.2 Existing Status of Infrastructure that may be affected

Please refer to Figure 5.15 for surface infrastructure. The following existing infrastructure may be affected by the project:

- **R325:** the R325 will be impacted on the by addition of traffic from the mine during the operation and construction phase. The R325 is largely used for the transportation of ore by existing mining companies. This road is currently being upgraded.
- **Railway line to Sishen Mine from Beeshoek:** traffic from the mine will cross this railway on a daily basis. The railway bridge is in a good condition but it may require upgrading to cater for additional mine traffic.
- **Eskom Powerline and substation:** power during the operational phase will be sourced from Eskom. The use of the existing substation for mine power supply will be investigated. Impacts on the substation will be investigated in the EIA should the project require to use it for electricity supply.
- **Housing in Postmasburg and Kathu:** mine employees will require accommodation within existing towns during the operation phase. The Postmasburg and Kathu areas are currently experiencing pressure on housing due to increase development in the area. COZA Mining will consult with the municipality to establish where COZA Mining employees will be accommodated.
- **Vaal Gamagara Water Pipeline:** one of the options for water supply is to source water from the Vaal Gamagara Water Pipeline, which is located east of the proposed mining area. Current indications are that there are not enough water users for the pipeline and therefore water from the surrounding mines cannot be accepted by the pipeline. The COZA Iron Ore Project presents a potential water user and the use of water by the project will assist in the management of excess water from mines in the Postmasburg area. COZA Mining will consult with Sedibeng Water to establish the possibility of using the pipeline for water supply at the mine.

5.2.3 Socio-Economic Profile

5.2.4 Land Tenure

The proposed study area is located on land owned by the Maremane Community. The land is registered under the Maremane Communal Property Association (MCPA). The MCPA represents members of the community that have legal right over the land.

Mr More Mastididi was consulted as a representative of the community, however, consultations with the other members of the Maremane community have revealed that there are other members of the CPA that need to be consulted. Synergistics is currently in the process of identifying the relevant members of the CPA to ensure that they are notified of the proposed project

5.2.5 Description of Local Communities

5.2.5.1 Maremane Community

Members of the Maremane community were dispossessed of their land for the purposes of establishing the Lohatla Military Base in the 1970's. The displaced people were taken to places such as Laxey, Pepsi and the surrounding areas of Kuruman (The New Age, 24 April 2012). According to the Rural Development and Land Reform's former deputy minister in 2010 Mr Thulas Nxesi, the Maremane community lost approximately 12 million hectares of land (South African Government Information, 4 December 2010). Post 1994 the community lodged a claim to have their land returned and in 2010 the community was handed over 11 200 ha of land on properties surrounding the military base. Figure 5.16 illustrates areas where some members of the Maremane Community are currently located near the study area. The majority of the people are currently residing in an informal settlement located on Farm Lohatla this settlement area is currently referred to as Lohatla by its inhabitants. There are little economic activities occurring in the area except for a local shop and a crèche. During the public meeting held with the community, it was evident that the unemployment rate is low. There are also a small number of people forming part of the Maremane community located on Farm Driehoekspan. This group of people is involved in agricultural activities (goat and sheep farming).

The current areas where the Maremane community are residing are not included in the local municipality's town planning scheme and therefore there are some challenges with service delivery.

5.2.5.2 Farming Community

Two local farmers who are involved in low intensity stock farming (cattle and sheep) also surround the study area (see Figure 6.13 for location of farmers). There is a game farms approximately 6 km northeast of Driehoekspan.

5.2.6 Social Baseline Description

5.2.6.1 Regional Demographic Information

Demacon Market Studies conducted a baseline socio-economic assessment of the study area. A 50 km radius as illustrated in Figure 6.14 was determined as the area of the study for the baseline description. The area has an estimated population of 63 243 or 17 931 households in 2013. The average household size amounts to approximately 3.5 members per household. The population growth is averaged at 1.4% per annum (Demacon, 2013).

Figure 6.13 shows the age profiles within the study area. The study area is characterised by a relative large percentage of young adults between the ages of 20-34 years (30.5%). This can be attributed to the employment opportunities due to mining developments in the area.

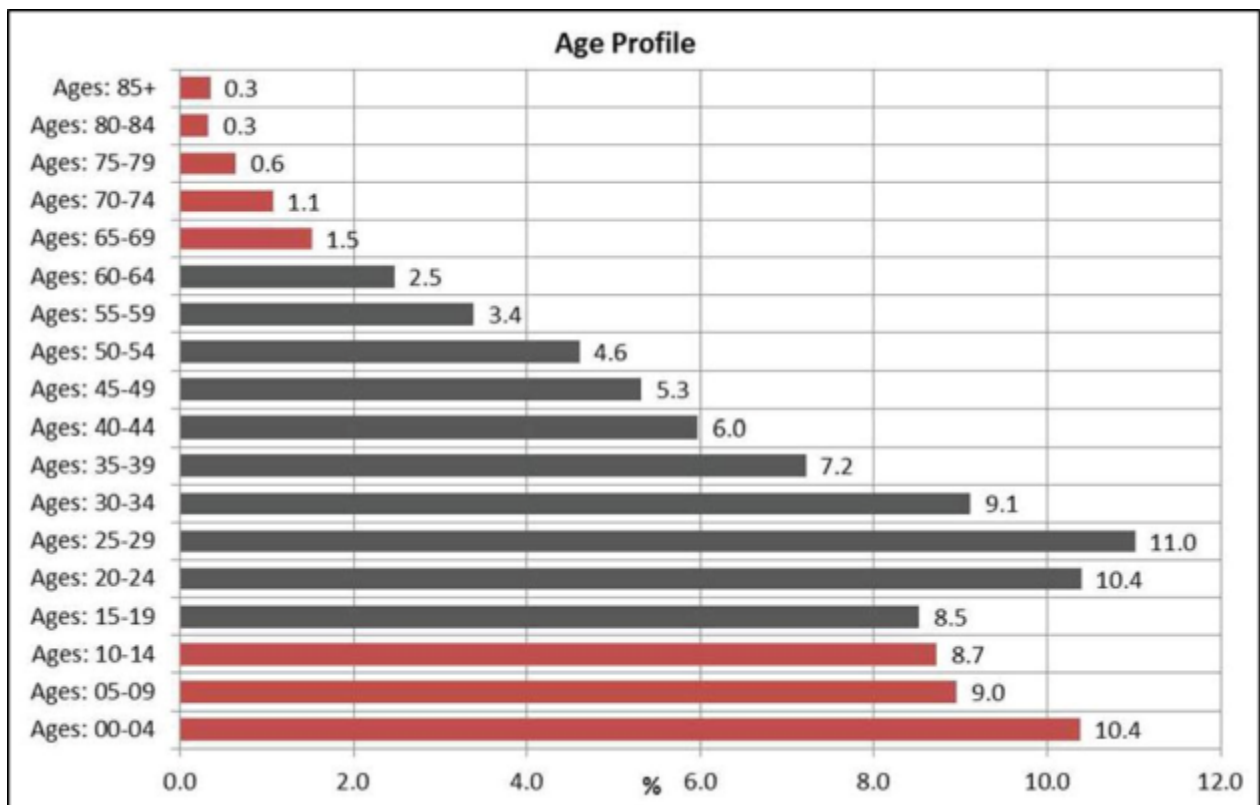


Figure 5.2: Age Profile within the study area (Source: Demacon Market Studies, 2013)

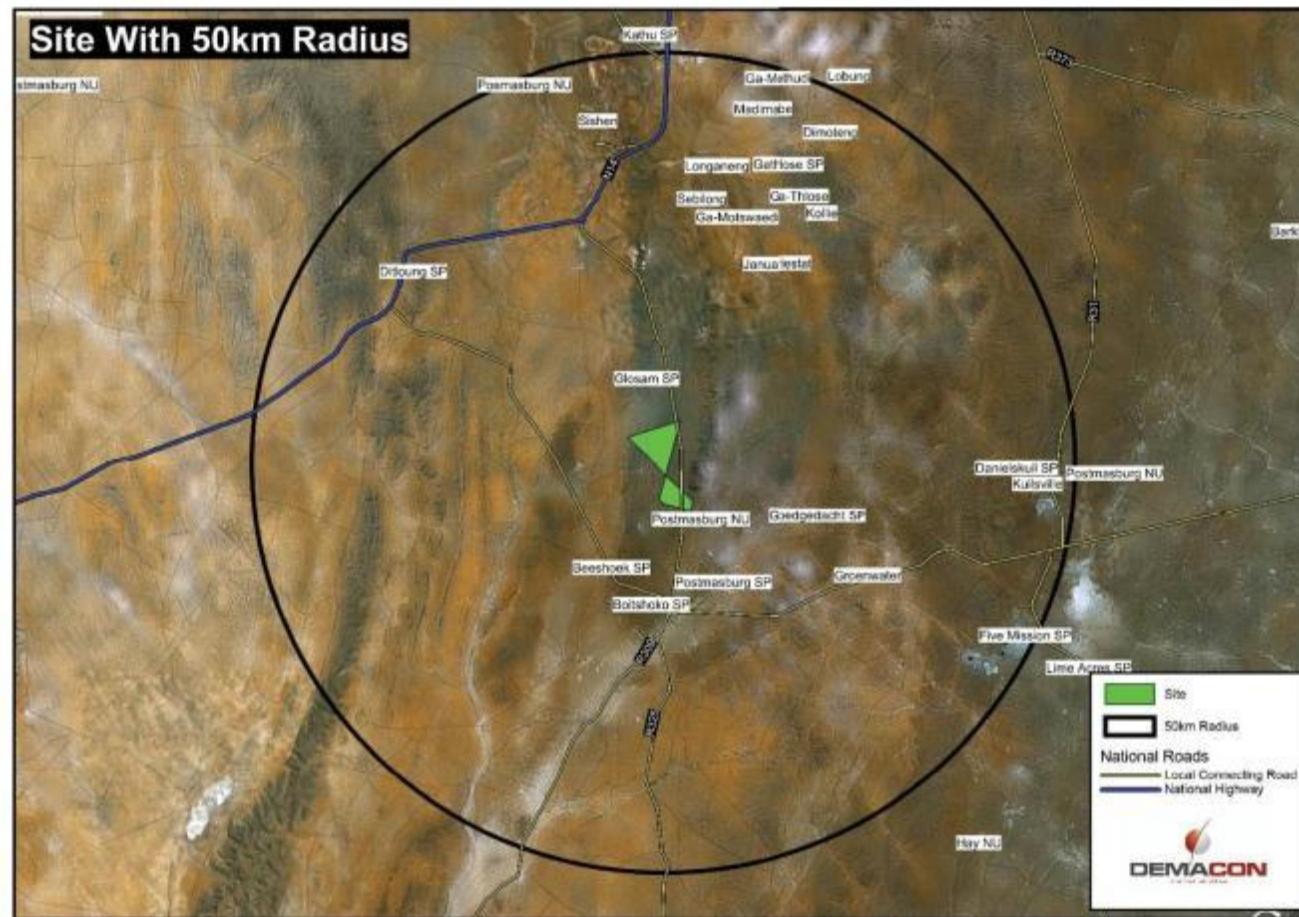


Figure 5.3: Socio-Economic Study Area (Demacon Market Studies, 2013)

5.2.7 Economic Outline

5.2.7.1 Regional and local economic structure

Tsantsabane's local economy contributes to approximately 17% of the district's economy and it is the third largest economy in the district. The municipality hosts one of the country's largest iron ore reserves, and as such, mining is an important sector within the municipality contributing approximately 39% of the local economy in 2011, see Figure 6.16.

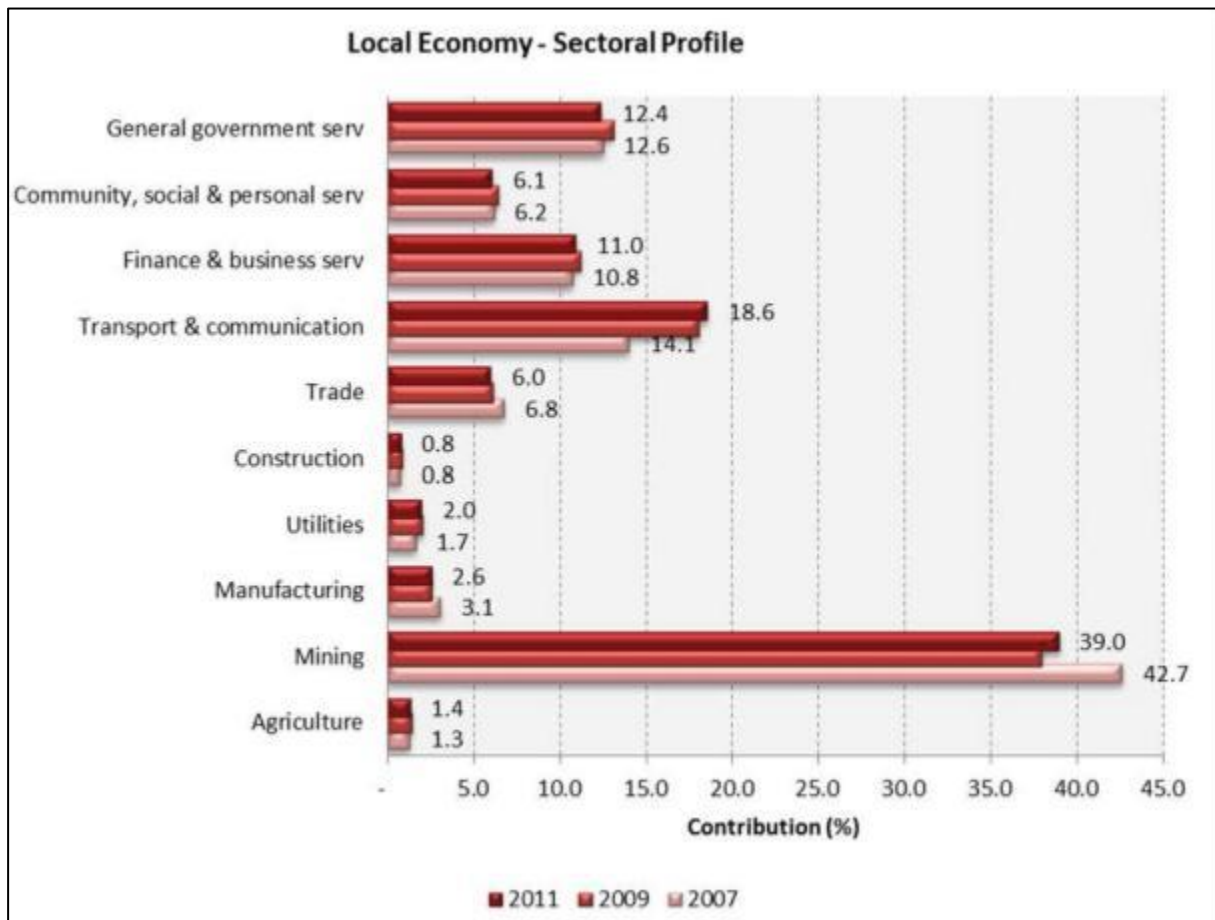


Figure 5.4: Economic Structure and Performance (GVA), 2011 (Demacon Market Studies, 2013)

5.2.7.2 Level of Economic Diversity

The level of economic diversity of a region can be measured using the tress index. A tress index of zero represents a totally diversified economy and the higher the tress index (closer to 100), the more concentrated or vulnerable the region's economy. Figure 5.19 shows the tress index for the nation, province and on a local level. Tsantsabane local economy dependence on its driving sectors decreased from 64.1 in 2001 to 60.2 in 2011. The growth in transport and communications sector over the past few years has led to the decrease in dependency on the mining sector.

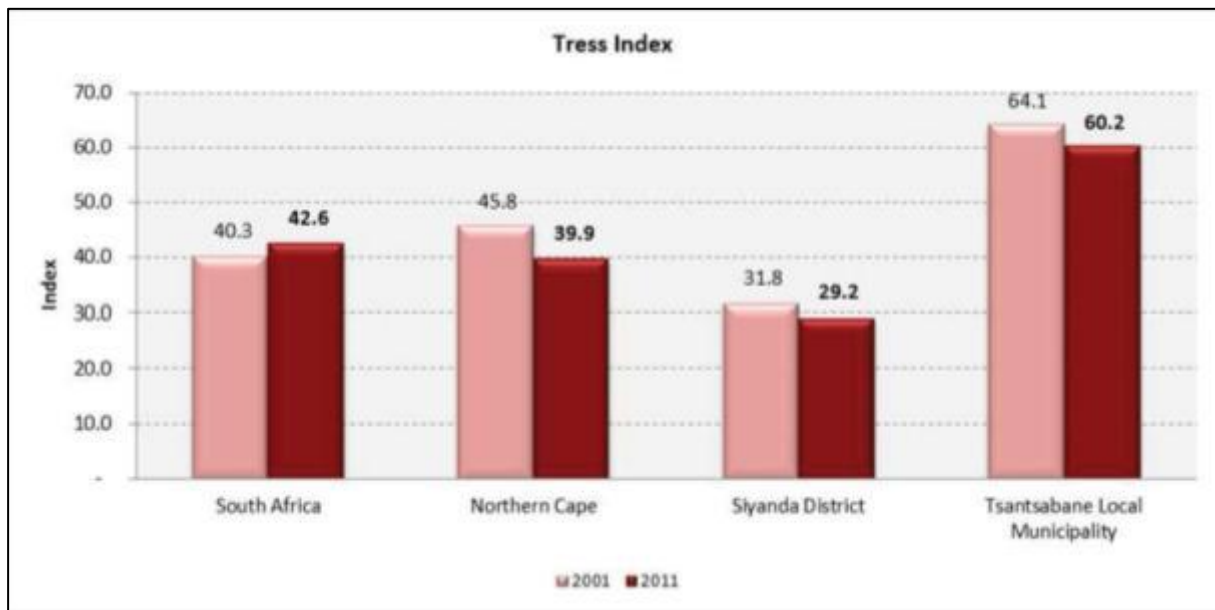


Figure 5.5 Tress Index for the affected administrative areas (Demacon Market Studies, 2013)

5.2.7.3 Education Profile

The education profile of the study area is indicated in Figure 5.21. The area has moderate figures of illiteracy with 9.3 % having had no schooling. 27.6% of the market population has at least Grade 12 or obtained higher education. The education profile of the surrounding communities will be determined during the EIA phase

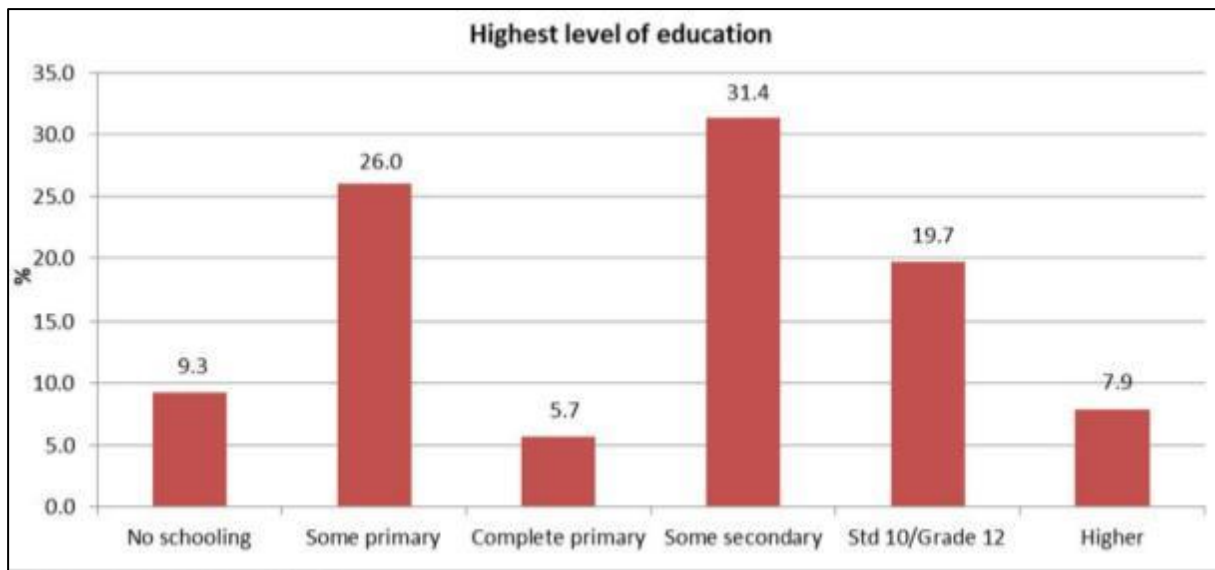


Figure 5.6: Education Profile (Demacon Market Studies, 2013)

5.2.7.4 Employment Profile

The majority of the market population is economically active (88.6%) while 11.4% are not economically active. Figure 5.22 shows that of the 88.6 % that are economically active, 84.4 % are employed while 15.6% are unemployed. The low level of unemployment can be ascribed to the rural nature of the study area, with people only moving in the area for employment purposes to work in the mining or government sectors as the major employment sectors.

The employment profile of the surrounding communities is likely to be different from the overall study area as described above. The data for these communities will be collated during the EIA process.

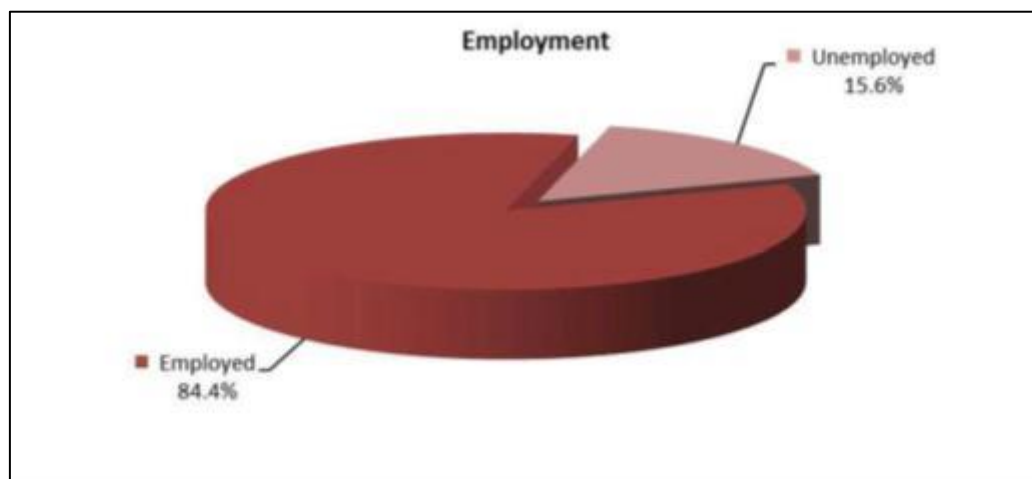


Figure 5.7: Employment Profile (Demacon Market Studies, 2013)

5.3 Existing Status of the Biophysical Environment

5.3.1 Climate

5.3.1.1 Regional Climate

The COZA Iron Ore project falls in an area with a regional climate that is semi-arid with a mean annual precipitation of 318 mm.

5.3.1.2 Ambient Temperatures

Temperature data for the area of the project site was obtained from the South African Weather Service (SAWS) station 0321141 W. This station is located approximately 20 km south of the project area, as depicted in Figure 2.1. The average monthly temperatures for the project site, calculated from the weather station are presented in Table 5.1. The maximum temperature recorded at this weather station is 46.5 °C and the minimum is -8.4 °C.

Table 5.1: Long-term minimum and maximum average monthly temperatures for the study area for the period 2008-2010 (Jeffares & Green, 2013).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min Temp (°C)	16.2	15.1	13.8	10.3	6.0	2.1	1.9	4.4	6.9	10.0	13.4	15.6
Max Temp (°C)	32.0	29.3	28.6	25.0	22.3	17.1	18.0	20.7	24.4	27.0	29.7	31.2

5.3.1.3 Precipitation and Evaporation

Rainfall data for the area of the COZA Iron Ore project site was obtained from the SAWS rainfall station 0320828 W. This rainfall station is located approximately 14 km southwest of the project site (see Figure 5.2). The mean monthly rainfall over the period 1950 to 2000 is presented in Figure 5.1. From the Figure, it is evident that the precipitation tends to fall in summer and autumn (November to April). It is also noted that small amounts of rainfall are recorded over the winter and spring months (May to October).

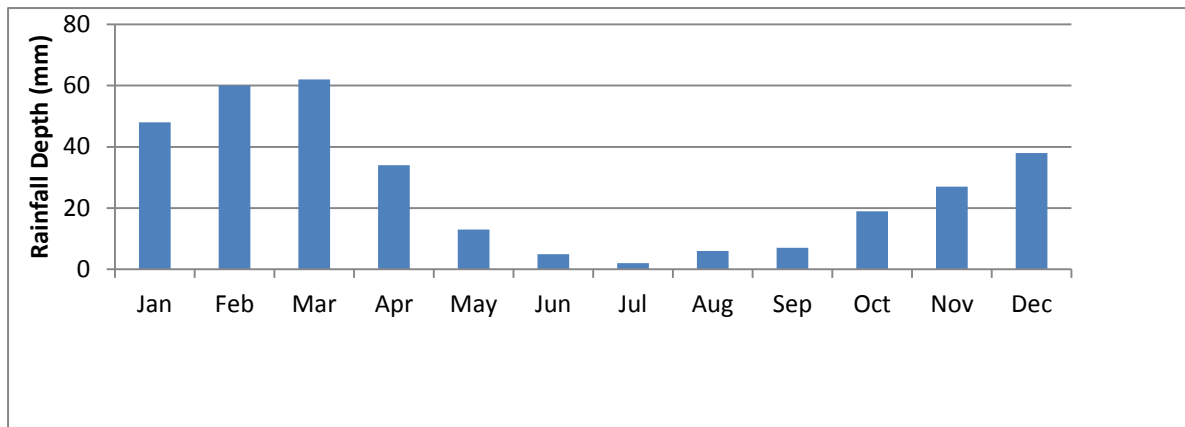


Figure 5.8: Long-term average monthly rainfall for the study area for the period 1950 to 2000 (Jeffares & Green, 2013)

The annual potential evaporation rate for the COZA Iron Ore study area is 2 450 mm. From Table 6.2, the highest evaporation rates occur during the hotter summer months of October to March. The mean annual evaporation is higher than mean annual precipitation (318 mm) which results in a net moisture deficit of 2 132 mm over the year.

Table 5.2: Calculated monthly mean evaporation rates for the study area (Jeffares & Green, 2013)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Evaporation Rate (mm)	333	256	221	154	111	85	98	133	184	247	292	336	2450

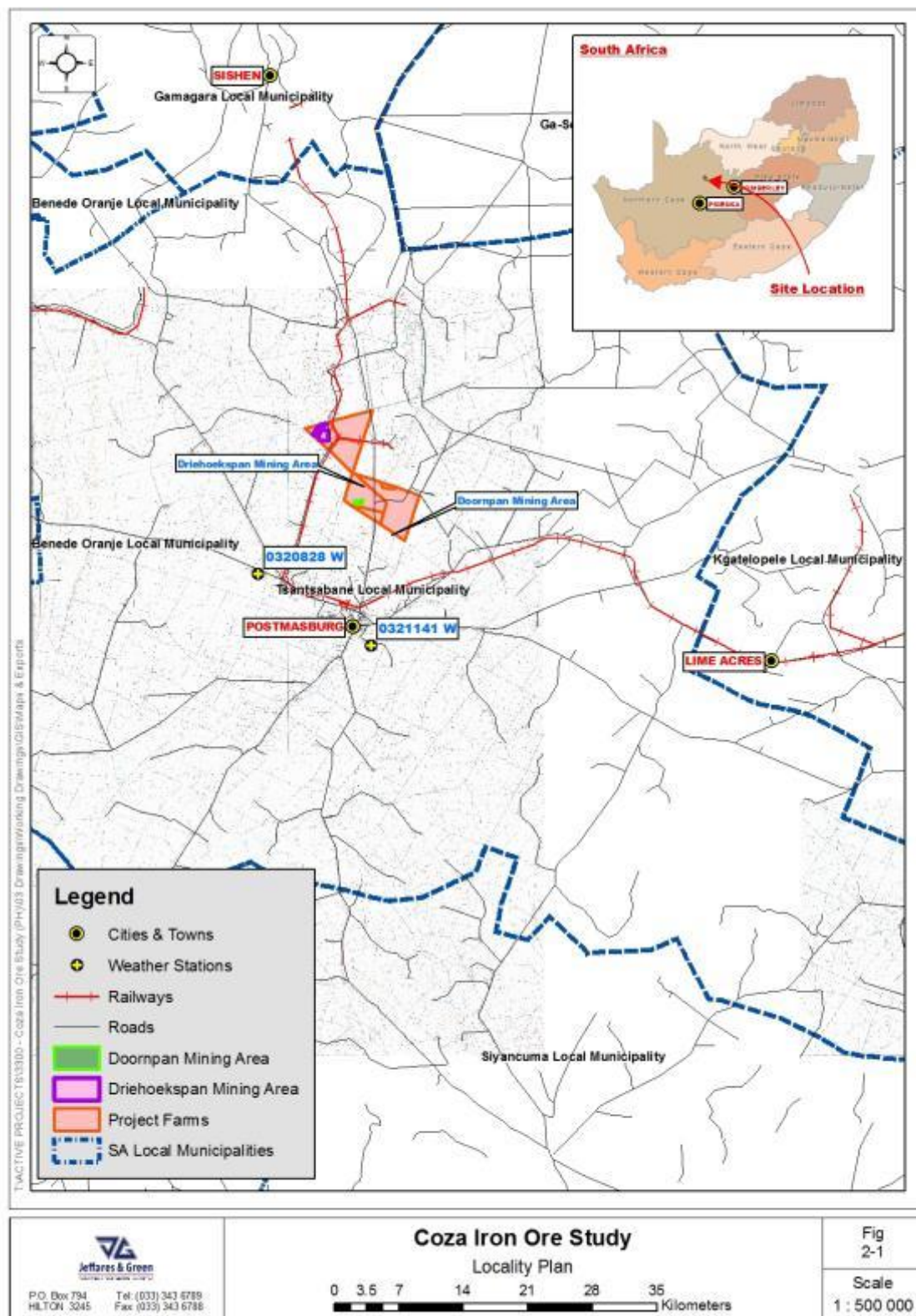


Figure 5.9 Location of Weather Stations (Jeffares & Green, 2013).

5.3.1.4 Wind direction and speed

Wind direction data was obtained from the Postmasburg Weather Station. Daytime and night-time wind roses are provided in Figure 5.3. The prevailing wind direction is from the north (14% of the time) in the day and the northeast (25% of the time) during the night-time. These are generally associated with weak winds. The less frequent south-westerly winds have higher velocities. Similarly, infrequent strong winds are indicated from the north and north northwest. Stronger winds occur during the daytime with weaker winds associated with night-time.

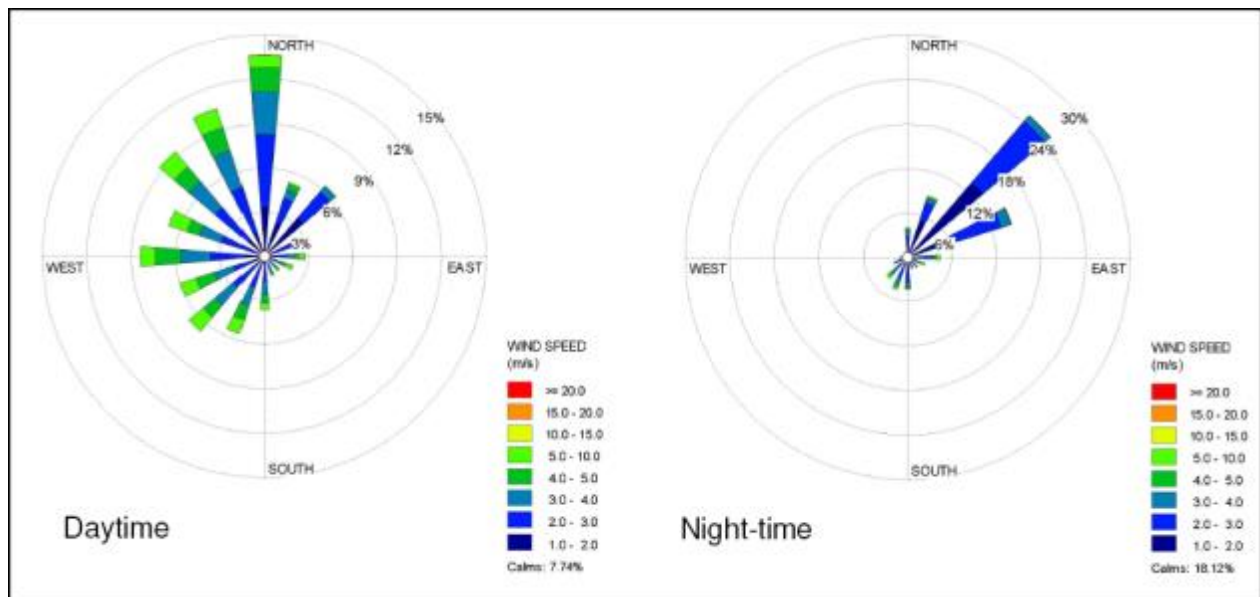


Figure 5.10: Day and night time wind roses from 2002-2006 (Airshed, 2010)

5.3.2 Topography

The study area is flanked by hills to the west and east (Figure 5.4). The Klipfontein range of hills to the east of the study area runs in a north to south direction. The general topography within the study area is flat to undulating with an average surface elevation of approximately 1 370 m above mean sea level (mamsl).

On the western edge of Farm Driehoekspan is a hill with an elevation of approximately 1 445 mamsl. Mining activities are proposed to occur east of this hill. There are ephemeral drainage lines to the west of the property between the proposed infrastructure and mine pit area (Refer to Figure 5.9 under the Surface Water Section).

On the south-western part of Farm Doornpan is the Bleskop Hill, which is proposed to be mined as part of the COZA Iron Ore Project. The hill has elevation of 1 429 (AMSL). Other key topographical features on the farm include a wetland/pan located west of the hill and an ephemeral drainage line southeast of the proposed mining area.

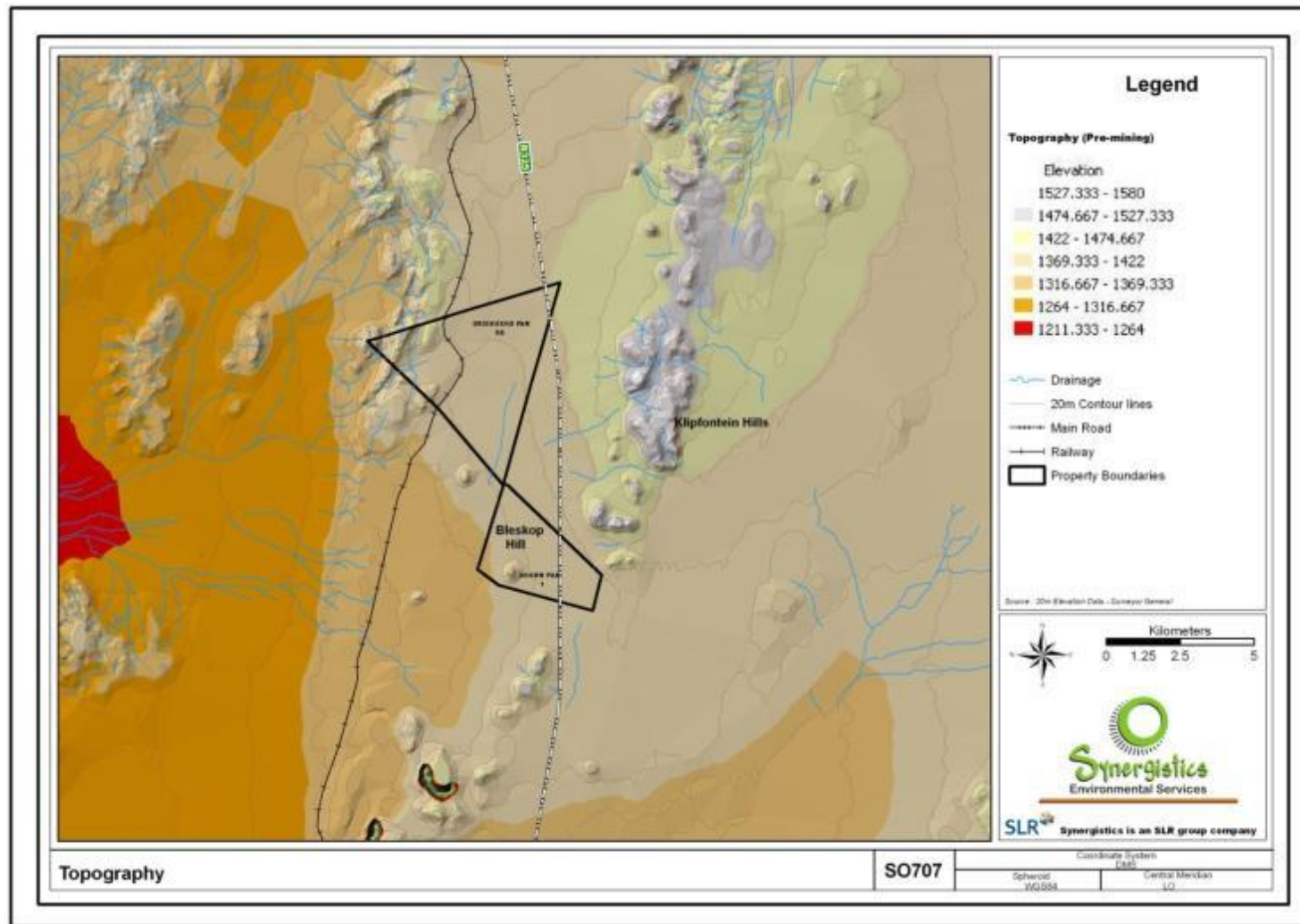


Figure 5.11 Topography of the study area

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5.3.3 Geology

The majority of the area is underlain by the Campbellrand Group which contains carbonate rocks. These carbonate rocks are unconformably overlain by the Asbestos Hills Subgroup which comprises the Wolhaarkop Breccia (chert-rich breccia) which grades upwards into the Manganore Iron Formation. A series of uplift, weathering and deformational events lead to the enrichment of iron formation to form the high grade hematite deposit ($> 60\%$ Fe) as well as its distribution (COZA Mining, 2013).

According to Moen (as cited in PGS Heritage, 2013) the farm Driehoekspan is underlain by rocks of the Gamagara Formation (Vg) of the Postmasburg Group as well as rocks of the Lime Acres Member of the Ghaapplato Formation (Vgl) of the Campbell Group. The rocks of the Gamagara Formation underlie the Western Corner of the Farm. This formation consists of quartzites, conglomerates, flagstones and shales and constitutes the base of the Postmasburg Group. The formation lies unconformably upon the Ghaapplato and Asbesberge Formations. Lenticular basal conglomerates contain pebbles of jasper and banded iron stone and are completely ferruginised in places. The shales contain lenses of conglomerate and are also locally ferruginised or manganised. Ferruginous flagstone and white, purple and brown quartzites form the top of the formation. Rocks of the Lime Acres Member of the Ghaapplato Formation of the Campbell Group consist of dolomitic limestone with subordinate coarsely crystalline dolomite and chert with lenses of limestone. Stromatolitic puckered limestone consisting of alternating dark and light bands can be found. Lenticular bodies of limestone occurring in the dolomite are probably the result of irregular dolomitisation of the original limestone.

The farm Doornpan according to Moen (as cited in PGS Heritage, 2013) is mainly underlain by dolomitic limestone with subordinate coarsely crystalline dolomite, and chert with lenses of limestone of the Lime Acres Member of the Ghaapplato Formation of the Campbell Group. Some of the hills on the farm consist of rocks of the upper section of the Lime Acres Member of the Ghaapplato Formation. These rocks consist of chert and chert breccia (silica breccia or manganese marker) containing a thin ferruginous layer of shale that grades southwards into red jasper with chert. This ferruginous layer is fairly constant throughout the area and serves as a marker. Stromatolitic puckered limestone consisting of alternating dark and light bands lies underneath the chert member which forms the top of the Ghaapplato Formation. Lenticular bodies of limestone occurring in the dolomite are probably the result of irregular dolomitisation of the original limestone.

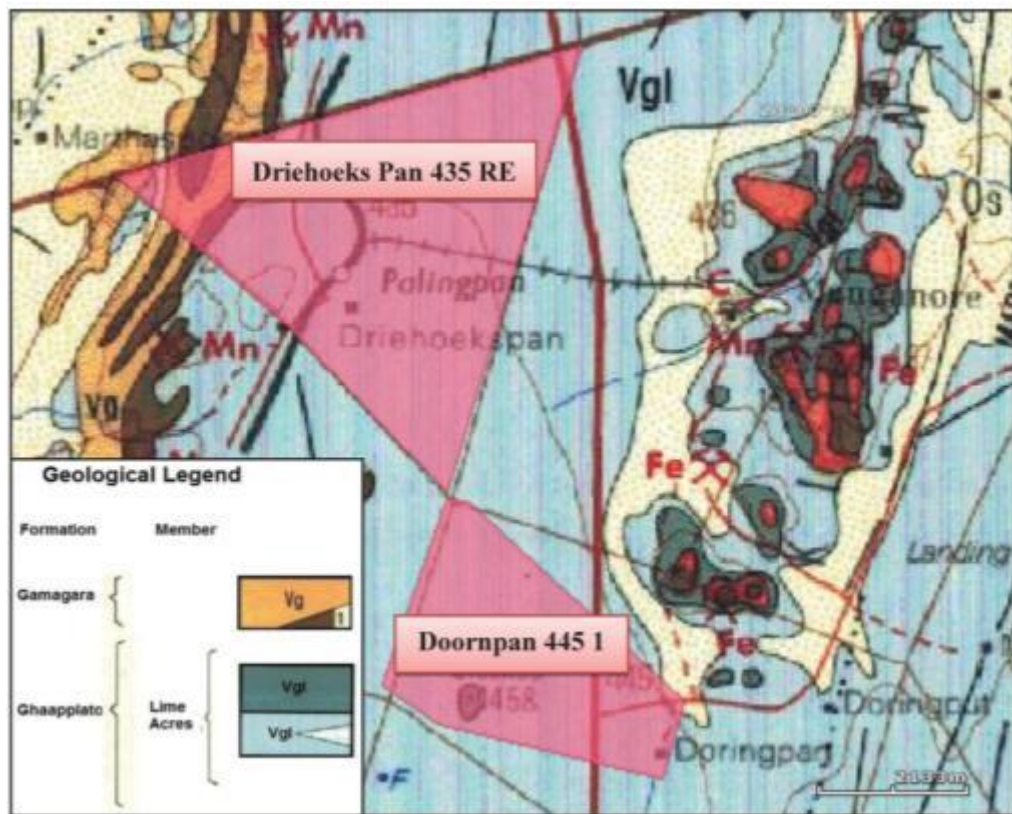


Figure 5.12: Geology of the Study Area (PGS Heritage ,2013)

5.3.4 Soils and Land Capabilities

The soils in the region are generally shallow, normally not exceeding more than 300 mm in depth (PGS Consulting, 2013). The predominant soil types are those of Glenrosa and Mispah. The Glenrosa type soil is characterised by an Orthic A horizon over a Lithocutanic B horizon, whereas the Mispah type soil is characterised by an Orthic A horizon over bedrock.

The study area's land capabilities are wilderness and grazing (Figure 5.7). Approximately 7 % of the mining right application area is wilderness and the remaining 93% is grazing (see Table 5.3).

Table 5.3: Land capability for the study area (ARC Institute, 2002)

FARM NAME	DESCRIPTION	GROUPING	Hectares	%
Driehoekspan / Re 435	Wilderness	Wilderness	211.3748499	7.21
Doornpan 1/ 445	Non-arable; low potential grazing land	Grazing	946.2793909	32.28
Driehoekspan / Re 435	Non-arable; low potential grazing land	Grazing	1773.619014	60.5

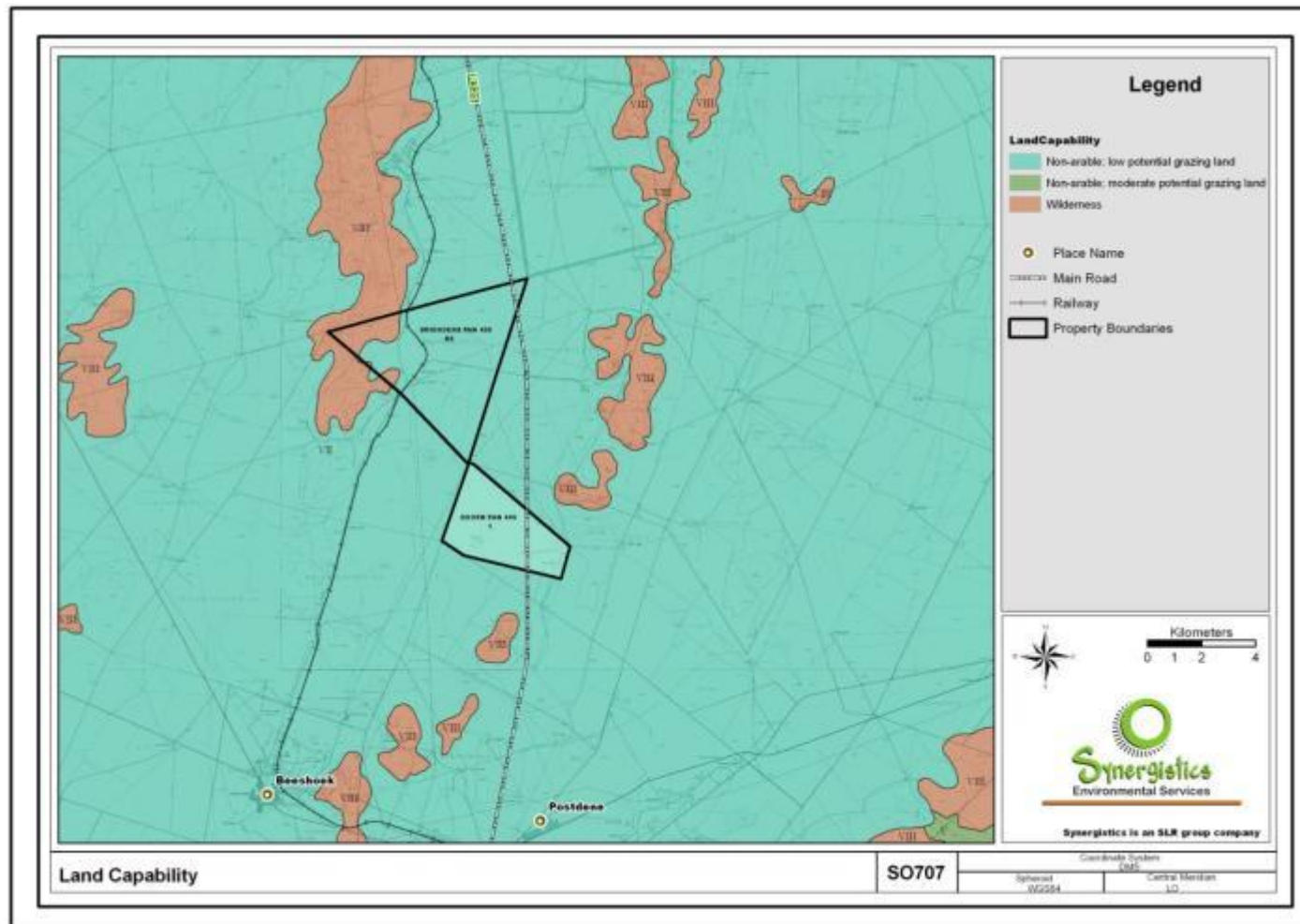


Figure 5.13: Land Capability

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5.3.5 Groundwater

The general geohydrological regime in the area is made up of two aquifer systems. The first, upper, semi-confined to unconfined aquifer occurs in the calcrete underlain by a clayey layer. This aquifer has been a reliable source of water supply for many decades to the farming community. The second, deeper aquifer is associated with the fractures, fissures and joints and other discontinuities within the older Transvaal Supergroup rocks (Synergistics, 2011).

A hydro-census was conducted on the 13-17 May 2013 by Aquatico to determine groundwater use, levels, and qualities as well as to conduct pump testing for the purposes of defining the aquifers on site. Boreholes that were included in the hydro-census are illustrated in Figure 6.8. The water users in the area are farmers, mines and communities. The farmers rely heavily on groundwater for domestic and agricultural activities. The information collated during the hydro-census is given in Tables 6.4 and 6.5. It is evident from the table that the groundwater levels range between 7-37m on a surface elevation of between 1270-1480 (AMSL). The groundwater quality is generally within the SANS 241 (2011) drinking water standards for most boreholes. Of the 37 boreholes sampled, there were few boreholes where the water quality exceeds drinking water standards for Nitrates (8 samples), Ammonia (1 sample) and Iron (1 sample). The high nitrates and ammonia could be because of the farmers using fertilizers and the high iron could be attributed to the geology of the area.



Table 5.4: Results of the Hydro-census

Borehole Description	Borehole Location		Farm Name	Owner	Elevation	Water level	Water Use	Sampled
	South (WGS84)	East (WGS84)						
DRIE01	-28.15453	23.04500	Drieboekspan	More Matsididi & Basil Louw	1385	-	-	Yes
DRIE02	-28.14572	23.03075	Drieboekspan	More Matsididi & Basil Louw	1380	-	-	Yes
DRIE03	-28.09194	23.05519	Gloucester	More Matsididi & Basil Louw	1390	-	-	Yes
DP04	-28.16928	23.07611	Kapstewel	More Matsididi & Onkemetse Gill	1385	-	-	Yes
B08	-28.20831	22.96312	Vlakfontein	Adam Wahl & Mark Oosthuizen & Christiaan Claasens	1480	7.0	-	Yes
DP01	-28.20814	23.09285	Doornpan	More Matsididi & Onkemetse Gill	1390	15.8	-	Yes
DP02	-28.21489	23.09053	Doornpan	More Matsididi & Onkemetse Gill	1390	14.9	-	Yes
DP03	-28.07689	23.07689	Thaakwameng	More Matsididi & Onkemetse Gill	1385	-	-	Yes
GO102NC	-28.23340	23.06590	Plaas 450	Mark Oosthuizen	1385	-	-	Yes
KAR06	-28.24250	23.07760	Plaas 450	More Matsididi & Onkemetse Gill	1435	36.0	-	Yes
DOOR01	-28.24170	23.02900	Doornfontein	Mark Oosthuizen	1348	13.9	-	Yes
DOOR02	-28.24740	23.03190	Doornfontein	Mark Oosthuizen	1356	7.4	-	Yes
DOOR07	-28.23660	23.04070	Doornfontein	Mark Oosthuizen	1355	-	-	-
DOOR10	-28.24120	23.03410	Doornfontein	Mark Oosthuizen	1353	3.1	-	Yes
CC01	-28.13076	23.00103	Morolong	Christiaan Claasens & Louis Claasens	1315	-	Irrigation, Livestock	Yes
CC02	-28.13341	23.00146	Morolong	Christiaan Claasens & Louis Claasens	1319	11.3	Irrigation, Livestock	Yes
CC03	-28.11254	23.01716	Morolong	Christiaan Claasens & Louis Claasens	1340	32.9	Irrigation, Livestock	Yes
CC04	-28.12964	23.01777	Morolong	Christiaan Claasens & Louis Claasens	1343	36.3	Irrigation, Livestock	Yes
CC05	-28.12955	22.99029	Morolong	Christiaan Claasens & Louis Claasens	1311	6.0	-	-
CC06	-28.12958	22.99044	Morolong	Christiaan Claasens & Louis Claasens	1310	17.4	-	Yes
KVF01	-28.18895	22.96762	Vlakfontein	Christiaan Claasens	1278	-	Irrigation, Livestock	Yes
KVF02	-28.18558	22.98623	Vlakfontein	Christiaan Claasens	1296	-	-	Yes
FARM446	-28.06285	22.96258	Lomoteng	Assmang	1338	12.0	-	Yes
GLOU_COMM	-28.07956	22.37280		Gloucester mining area	1412	-	-	Yes
GLOU1	-28.09951	23.07181	Gloucester	Gloucester	1416	-	-	Yes
KAPSTEWEL	-28.20391	22.96276	Vlakfontein	Kapstewel	1416	7.0	-	Yes
FARM437	-28.20382	23.96301		Farm437	1279	-	-	Yes
N01	-28.18706	22.95180	Vlakfontein	No Farmer	1276	-	Irrigation, livestock	Yes
N02	-28.16630	22.95929	Vlakfontein	No Farmer	1276	-	Irrigation, livestock	Yes
NIEMAND	-28.18911	22.96706	Vlakfontein	No Farmer	1281	-	Irrigation, livestock	Yes
CHRISJAN	-28.13119	22.98676	Morolong	Chrisjan Claasen	1310	12.1	Irrigation, livestock, domestic	Yes
CC02	-28.12869	22.90909	Morolong	Chrisjan Claasen	1306	-	Irrigation, livestock, domestic	Yes
WVR01	-28.15420	22.97397	Vlakfontein	Willem van Rensburg	1297	-	Irrigation, livestock, domestic	Yes
WVR02	28.15420	22.97397	Vlakfontein	Willem van Rensburg	1297	-	Irrigation, livestock,	Yes

Borehole Description	Borehole Location		Farm Name	Owner	Elevation	Water level	Water Use	Sampled
	South (WGS84)	East (WGS84)						
							domestic	
KOOT01	28.08497	22.97538	Magoloring	Koot Claasen	1416	-	Irrigation, livestock, domestic	Yes
KOOT02	28.08497	22.97538	Magoloring	Koot Claasen	1416	-	Irrigation, livestock, domestic	Yes
KOOT03	28.08497	22.97538	Magoloring	Koot Claasen	1416	12.0	Irrigation, livestock,	Yes

Table 5.5: Results of Chemical Analysis

Borehole Description	Date Meas.	pH	EC mS/m	TDS mg/l	Malk mg/l	Cl mg/l	SO4 mg/l	NO3-N mg/l	NH4 mg/l	PO4 mg/l	F mg/l	Ca mg/l	Mg mg/l	Na mg/l	K mg/l	Al mg/l	Fe mg/l
SANS 241 (2011)	Drinking Water	≥5 - ≥9.7	≤170	≤1200		≤300	≤500 (acute health) ≤250 (aesthetic)	≤11	≤1.5		≤1.5			≤200		≤0.3	≤2 (chronic health) ≤0.3 (aesthetic)
Risk Type		Operational	Aesthetic	Aesthetic		Aesthetic	Acute Health -1 and Aesthetic	Acute health -1	Aesthetic		Chronic health			Aesthetic		Operational	Chronic health and aesthetic
B08	2013/05/24	8.45	11.30	49.00	48.00	<0.423	<0.04	0.15	0.26	0.08	0.19	16.10	2.82	<0.013	0.34	<0.003	<0.003
CC01	2013/05/24	8.25	59.20	346.00	255.00	7.03	60.70	0.09	0.10	0.05	0.66	76.50	31.20	14.30	2.25	<0.003	<0.003
CC02	2013/05/24	8.19	55.50	324.00	228.00	3.66	70.60	0.10	0.10	0.03	0.81	71.70	26.80	11.60	1.86	<0.003	<0.003
CC03	2013/05/24	7.75	73.50	423.00	325.00	19.90	54.10	0.65	0.12	0.05	0.36	89.30	39.60	21.60	2.93	<0.003	<0.003
CC04	2013/05/24	7.91	56.50	309.00	248.00	12.40	35.70	0.34	0.18	0.03	0.28	55.50	20.20	33.00	2.37	<0.003	<0.003
CC06	2013/05/24	7.92	96.50	436.00	295.00	97.60	<0.04	0.16	49.40	<0.008	0.22	35.10	31.70	17.70	26.60	<0.003	1.71
DOOR01	2013/05/24	7.75	106.00	567.00	560.00	12.10	20.90	9.20	0.61	0.03	0.33	95.80	82.40	5.19	4.34	<0.003	<0.003
DOOR02	2013/05/24	7.77	86.70	460.00	452.00	12.50	12.90	4.27	0.14	0.06	0.31	88.50	64.60	4.49	0.94	<0.003	<0.003
DOOR10	2013/05/24	8.09	95.90	513.00	488.00	13.00	21.00	8.81	0.09	0.05	0.30	97.50	74.00	4.71	0.73	<0.003	<0.003
DP01	2013/05/24	7.78	77.50	397.00	386.00	14.40	4.81	5.13	0.13	0.03	0.26	77.80	56.70	4.75	1.08	<0.003	<0.003
DP02	2013/05/24	9.07	74.30	409.00	373.00	38.30	15.00	1.80	0.64	0.01	0.24	6.39	103.00	17.30	3.24	<0.003	<0.003
DP03	2013/05/24	8.33	111.00	655.00	646.00	18.80	35.60	2.92	0.14	0.15	0.34	97.90	96.80	10.10	5.42	<0.003	<0.003
DP04	2013/05/24	7.78	110.00	593.00	526.00	41.00	26.70	14.90	0.07	0.04	0.26	92.60	83.20	15.20	3.47	<0.003	<0.003
DRIE01	2013/05/24	7.66	104.00	580.00	576.00	12.80	24.50	5.34	0.06	0.04	0.26	109.00	80.40	1.92	<0.018	<0.003	<0.003
GO102NC	2013/05/24	8.01	114.00	665.00	619.00	22.40	43.20	5.75	0.11	0.04	0.31	124.00	89.30	8.08	0.19	<0.003	<0.003
KVF01	2013/05/24	8.52	76.20	429.00	341.00	21.80	36.20	8.42	0.09	0.04	0.31	87.80	58.90	10.10	1.06	<0.003	<0.003
KVF02	2013/05/24	8.44	83.80	484.00	476.00	9.87	9.82	2.05	0.07	0.04	0.31	100.00	69.70	4.75	1.23	<0.003	<0.003
KOOT01	2013/05/24	8.42	91.40	463.00	254.00	66.10	29.50	33.20	0.05	0.04	0.25	89.20	63.50	25.80	2.91	<0.003	<0.003
KOOT02	2013/05/24	8.30	91.60	453.00	256.00	66.30	30.20	32.80	0.06	0.05	0.27	82.00	59.50	25.60	2.63	<0.003	<0.003
KOOT03	2013/05/24	8.47	92.70	462.00	264.00	66.80	30.50	32.30	0.06	0.04	0.30	86.10	59.40	25.40	2.69	<0.003	<0.003
CHRISJAN01	2013/05/24	8.04	77.30	432.00	334.00	27.30	33.50	6.00	0.05	0.04	0.37	99.10	40.30	22.30	2.41	<0.003	<0.003
CHRISJAN02	2013/05/24	8.44	51.10	281.00	245.00	9.40	20.90	1.76	0.21	0.21	0.34	54.10	38.90	8.04	0.97	<0.003	<0.003
WVR01	2013/05/24	7.77	73.10	382.00	172.00	46.10	57.90	26.70	0.06	0.04	0.24	90.90	41.50	15.70	0.30	<0.003	<0.003
WVR02	2013/05/24	7.73	72.90	380.00	172.00	45.90	57.80	26.20	0.05	0.04	2.45	91.10	39.40	14.40	0.19	<0.003	<0.003
NIEMAND01	2013/05/24	8.10	65.90	359.00	243.00	25.20	31.10	15.80	0.27	0.04	0.32	87.00	35.90	18.10	0.16	<0.003	<0.003
NIEMAND02	2013/05/24	8.55	75.30	417.00	327.00	24.50	33.60	8.66	0.06	0.04	0.32	90.60	53.20	9.51	0.77	<0.003	<0.003
FARM446	2013/05/24	8.70	60.60	355.00	279.00	12.40	43.30	0.30	0.75	0.04	0.95	47.10	40.80	40.70	0.75	<0.003	<0.003
GLOU_COMM	2013/05/24	8.50	88.00	552.00	340.00	63.40	78.80	1.94	0.01	0.04	0.42	88.80	55.40	53.10	5.64	<0.003	<0.003

Borehole Description	Date Meas.	pH	EC mS/m	TDS mg/l	Malk mg/l	Cl mg/l	SO4 mg/l	NO3-N mg/l	NH4 mg/l	PO4 mg/l	F mg/l	Ca mg/l	Mg mg/l	Na mg/l	K mg/l	Al mg/l	Fe mg/l
SANS 241 (2011)	Drinking Water	≥5 - ≥9.7	≤170	≤1200		≤300	≤500 (acute health) ≤250 (aesthetic)	≤11	≤1.5		≤1.5			≤200		≤0.3	≤2 (chronic health) ≤0.3 (aesthetic)
Risk Type		Operational	Aesthetic	Aesthetic		Aesthetic	Acute Health -1 and Aesthetic	Acute health -1	Aesthetic		Chronic health			Aesthetic		Operational	Chronic health and aesthetic
GLOU1	2013/05/24	8.47	116.00	689.00	395.00	83.70	127.00	1.23	0.09	0.04	0.25	91.80	85.00	62.50	0.47	<0.003	<0.003
KAPSTEWEL	2013/05/24	8.59	77.00	420.00	398.00	15.60	5.91	4.91	0.09	0.04	0.26	83.10	64.10	6.03	1.04	<0.003	<0.003
FARM437	2013/05/24	8.28	90.50	549.00	426.00	54.30	36.70	7.97	0.09	0.04	0.35	94.40	88.70	10.20	0.70	<0.003	<0.003
DRP20	2013/05/24	8.04	17.80	76.00	47.80	3.35	11.80	2.89	0.10	0.04	0.26	13.60	9.10	2.66	3.15	<0.003	<0.003
WATER_HOLE	2013/05/24	8.32	91.80	560.00	484.00	26.20	44.30	2.63	0.11	0.05	0.32	90.70	92.50	12.00	1.19	<0.003	<0.003
SWART_MODDER01	2013/05/24	8.67	82.10	429.00	379.00	21.90	12.30	9.43	0.14	0.04	0.35	75.80	71.70	8.71	0.99	<0.003	<0.003
FARM434	2013/05/24	8.54	63.50	297.00	219.00	17.50	16.30	13.40	0.14	0.04	0.33	65.40	32.90	19.00	0.76	<0.003	<0.003
W02	2013/05/24	8.57	76.60	430.00	300.00	33.30	43.50	9.72	0.09	0.03	0.42	99.80	42.00	18.70	2.61	<0.003	<0.003

5.3.6 Surface Water

The project site is located within quaternary catchment D73A of the Lower Vaal Management Area which in turn falls within the Orange River Basin. According to the Water Resources of South Africa 2005 study (WR2005), quaternary catchment D73A is classified as an endorheic system. Rainfall in this system does not exit the catchment as surface flow, but may only leave as evaporation and seepage. Information on the quaternary catchment D73A is provided in Table 6.1. It is evident from the table that the area is in a semi-arid environment with annual precipitation of 323 mm. The mean annual runoff is zero due to the endorheic nature of the catchment even though the MAR depth is 14.7mm (Jeffares &Green, 2013).

Table 5.6 Quaternary Catchment D73A Details (Jeffares &Green, 2013)

Quaternary Catchment	Catchment Area (km ²)	Evaporation Zone	Rain Zone	Water Management Area	MAR (MCM)	MAR Depth (mm)	MAP (mm)
D73A	3 236	7A	D7C	10	0	14.7	323

5.3.6.1 Surface Water Features

Jeffares &Green conducted a desktop analysis to determine the surface water features on site. The desktop analysis was conducted using information from the National Freshwater Priority Areas (NFEPA, 2011) and the Environmental Potential Atlas (ENPAT, 2000 & 2002). Wetlands were identified within the study area and its surrounds and are illustrated in Figure 6.9. According to NFEPA data, there is a wetland between the proposed open pit and infrastructure footprint area on Farm Driehoekspan. With regard to Farm Doornpan, there are no wetlands or pans within the mining and infrastructure footprint area. A wetland has however been delineated using Google Earth imagery to the west of the proposed Doornpan mining area (see Figure 6.9).

A site visit was undertaken by Jeffares and Green to verify the desktop results and it was established that there is no wetland between the mining and infrastructure area on Farm Driehoekspan, however, a drainage channel exists. The presence of additional drainage channels within the study area will be confirmed during the EIA phase.

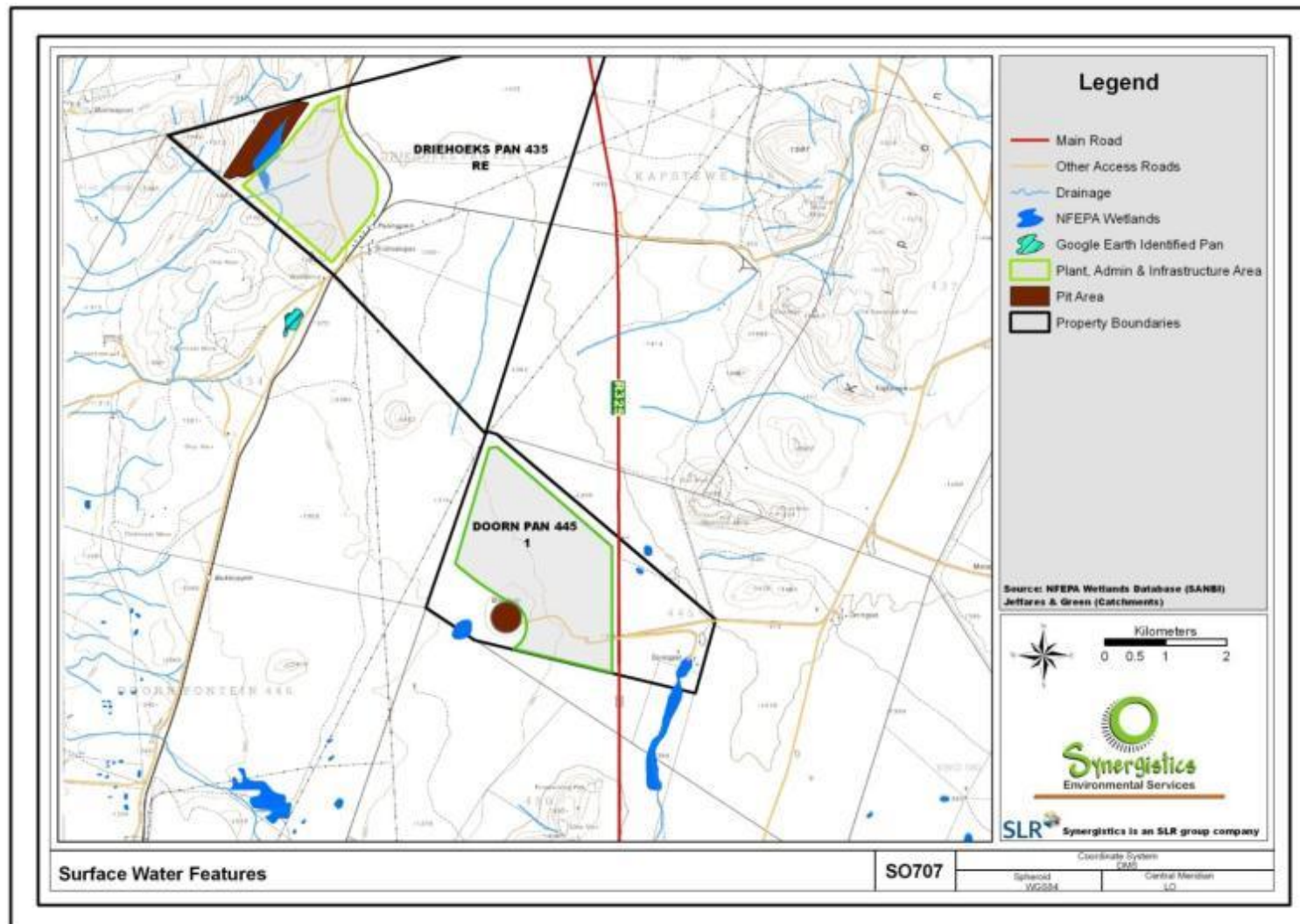


Figure 5.15: Surface Water Features and Catchment Areas for the COZA Iron Ore Project

5.3.7 Flora

The study area falls within the Eastern Kalahari Bushveld Bioregion of the Savanna Biome (Mucina & Rutherford 2006). The vegetation of the southern Kalahari in general is relatively species-poor and less than 2.5% of the total species list of the southern Kalahari is regarded as endemic, while less than 6% of the plant species is regarded as near-endemic species (Van Rooyen & Van Rooyen 1998).

The proposed development area does however fall within the Griqualand West Centre of Endemism (GWC). The GWC is considered a priority area for conservation in the Northern Cape, as the number of threats to the area is increasing rapidly, little research has been done and it is poorly understood.

According to the vegetation classification of South Africa by Mucina & Rutherford (2006, Biodiversity GIS vegetation map), there are two vegetation types present in the study areas – Kuruman Thornveld and Kuruman Mountain Bushveld (Figure 5.11). The two vegetation types are described in more detail below. The vegetation units will be verified during the field survey for the EIA.

The **Kuruman Thornveld** occurs on flats from the vicinity of Postmasburg and Danielskuil (west of the Kuruman Hills) in the south extending via Kuruman to Tsineng and Dewar in the north (Mucina & Rutherford 2006). Its features are usually flat rocky plains and some sloping hills with a very well developed, closed shrub layer and well developed open tree stratum consisting of camel thorn (*Acacia erioloba*). Smaller trees in this vegetation unit include Blackthorn (*Acacia mellifera* subsp. *Detinens*) and Shepherd's tree (*Boscia albitrunca*). Taller shrubs are Velvet Brandybush (*Grewia flava*), River Honeythorn (*Lycium hirsutum*), Camphor Bush (*Tarchonanthus camphoratus*) and Common Spike-Thorn (*Gymnosporia buxifolia*). Small shrubs present are Besembossie (*Gnidia polycephala*), *Helichrysum* species (e.g. Golden Everlasting), *Hermannia* species (e.g. Doll's Rose) and *Plinthus sericeus*. Common grasses are Arrowfeather Threawn *Aristida meridionalis*, *A. stipitata* and Lehmann Lovegrass (*Eragrostis lehmanniana*).

The **Kuruman Mountain Bushveld** covers the hills with generally gentle to moderate slopes and hill pediment areas, with an open to closed shrubveld. The grass layer is fairly well developed. Common large shrubs include Blackthorn (*Acacia mellifera* ssp. *Detinens*), common Guarri *Euclea undulate*, Bloubos *Diospyros lycioides*, *Searsia tridactyla*, Yellow Pomegranate (*Rhigozum obovatum*) and Vaalbos (*Tarchonanthus camphoratus* and *T. obovatus*). Shepherd's trees (*Boscia albitrunca*) are occasional. Several rock figs (*Ficus cordata*) grow on the peaks of the hills where large boulders or sheer rock outcrops are a feature. Common grasses include Black Spear Grass (*Heteropogon contortus*, *Enneapogon* sp., *Eragrostis* sp.), Koperdraadgras (*Aristida diffusa*) and Oxtail Buffalo Grass (*Cenchrus ciliaris*). Dwarf shrubs and herbaceous species include (*Hermannia* species, *Eriocephalus* sp., *Helichrysum*) species and a variety of small legume species such as *Indigofera* sp.

A floral specialist, Tania Anderson, was commissioned to compile a list of floral species of conservation concern that could occur in the development areas and immediate surrounds (Anderson, 2013 – See Specialist Vegetation Study, Appendix C2). It was found that a total of 116 plant species may be present in the study area, of which 61 species were recorded during a field survey of the area (See Appendix C2). Of these, 18 species of conservation concern could potentially be present in the study area, of which 8 have been confirmed to occur in the area. Species of conservation concern include those listed in the relevant Red Data Book or Threatened or Protected Species.

Three tree species protected under the National Forests Act (NFA 1998) are found in this region. These include the Camel Thorn Tree (*Acacia erioloba*), the Grey Camel Thorn (*Acacia haematoxylon*), and the shepherd's tree (*Boscia albitrunca*) (Seymour & Milton 2003). The camel thorn tree has been confirmed to occur within the proposed mining area.

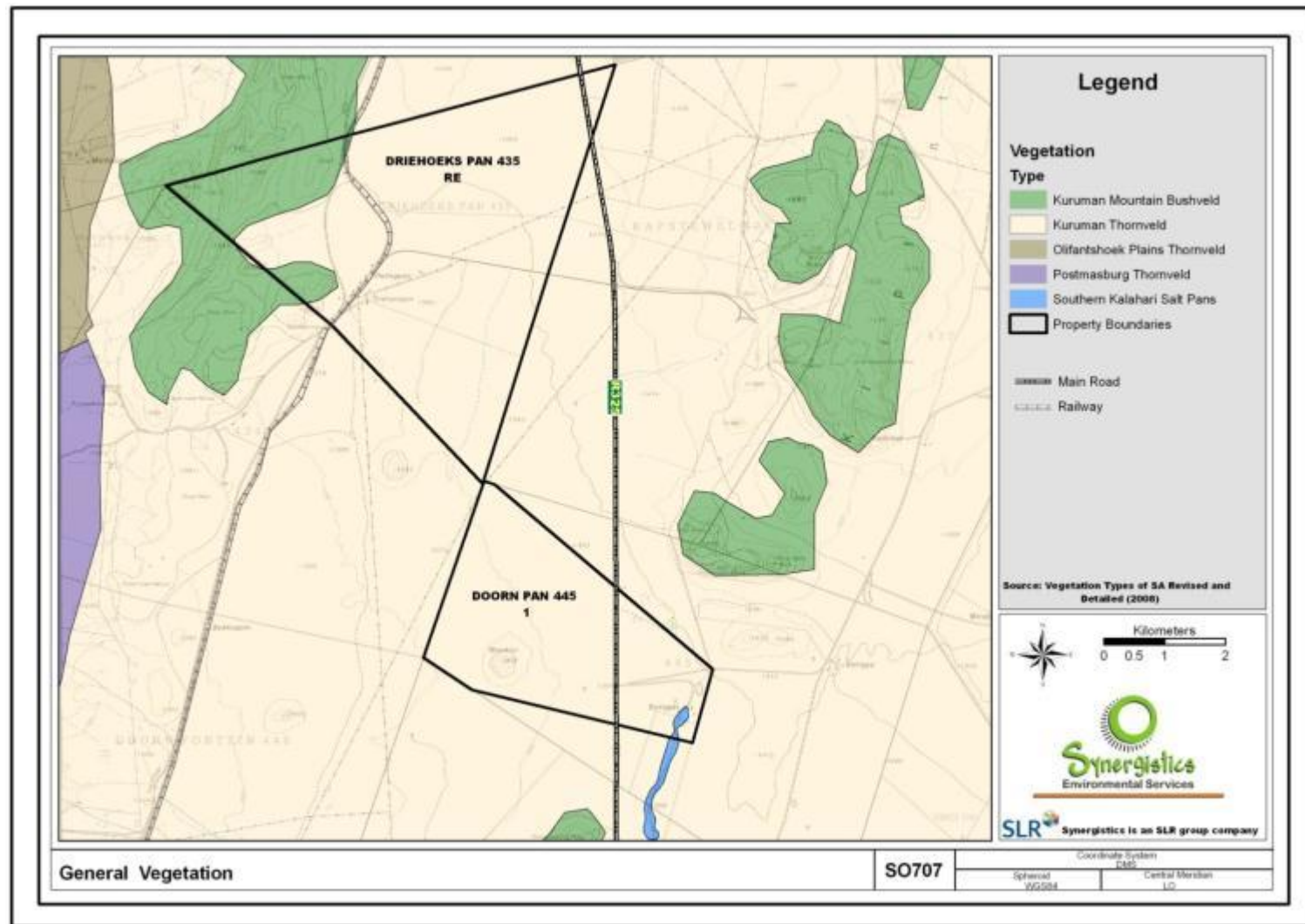


Figure 5.16. Vegetation map of the vegetation types in the mining areas

5.3.8 Fauna

Faunal species diversity and numbers in the region is relatively low as is typical of semi-desert areas (Wilson, 2013). The area proposed for development and its immediate surrounds is largely undeveloped. However, considerable degradation of the natural habitat has occurred in the region due mainly to mining, especially on the iron and manganese ore hills and outcrops between Kathu and Postmasburg. A number of game farms are found in the region; most notably a game farm on the farm Thaakwaneng 675, situated directly adjacent and north east of Driehoekspan 435.

A faunal specialist, Beryl Wilson, was commissioned to compile a list of any fauna of conservation concern that could be in the development areas and immediate surrounds (Wilson, 2013 – See Faunal Specialist Study, Appendix C1). Current literature, museum records and various past surveys in the region by the specialist indicated an approximate total of 56 mammal, 265 bird, 45 reptile and 11 amphibian and uncalculated arachnid naturally-occurring species to have been recorded in the region (Wilson, 2013). Of these, 14 mammal, 14 bird, two reptile, one amphibian and five arachnid species of conservation significance are thought to potentially occur in the general area of which only 6 are predicted as having a high chance of occurrence (Wilson, 2013). The 6 that have a high chance of occurrence include the Bushveld Sengi (*Elephantulus intufi*) (Data Deficient), the African Wild Cat *Felis silvestris lybica* (Least Concern / Protected Species), Rock Monitor *Varanus albigularis* (Globally Vulnerable / Protected Species), two species of Burrowing Scorpion (Protected Species), and a species of Creeping Scorpion (Protected Species). Species of conservation concern include those listed in the relevant Red Data Book or Threatened or Protected Species. The presence of these species will be confirmed in the EIA phase.

5.3.9 Ecological Sensitivity

The ecosystem status of vegetation types in the study area is considered to be least threatened, meaning that no significant disruption of ecosystem functioning as more than 80% of their original extent is untransformed (Anderson, 2013). In general, the habitat is not predicted to be critical to the survival, in terms of breeding, roosting or foraging of any of the locally occurring conservation-worthy faunal species (Wilson, 2013).

A scoping phase analysis indicated that the vast majority of the sites where proposed development will take place comprise medium to medium-high sensitivity areas in terms of their floral assemblages (Anderson, 2013). The watercourse, which is present on Driehoekspan, supports a number of protected camel thorn trees and is deemed to be of high sensitivity (Anderson, 2013). Figure 5.12 indicates the sensitivity of natural features within the proposed development sites.

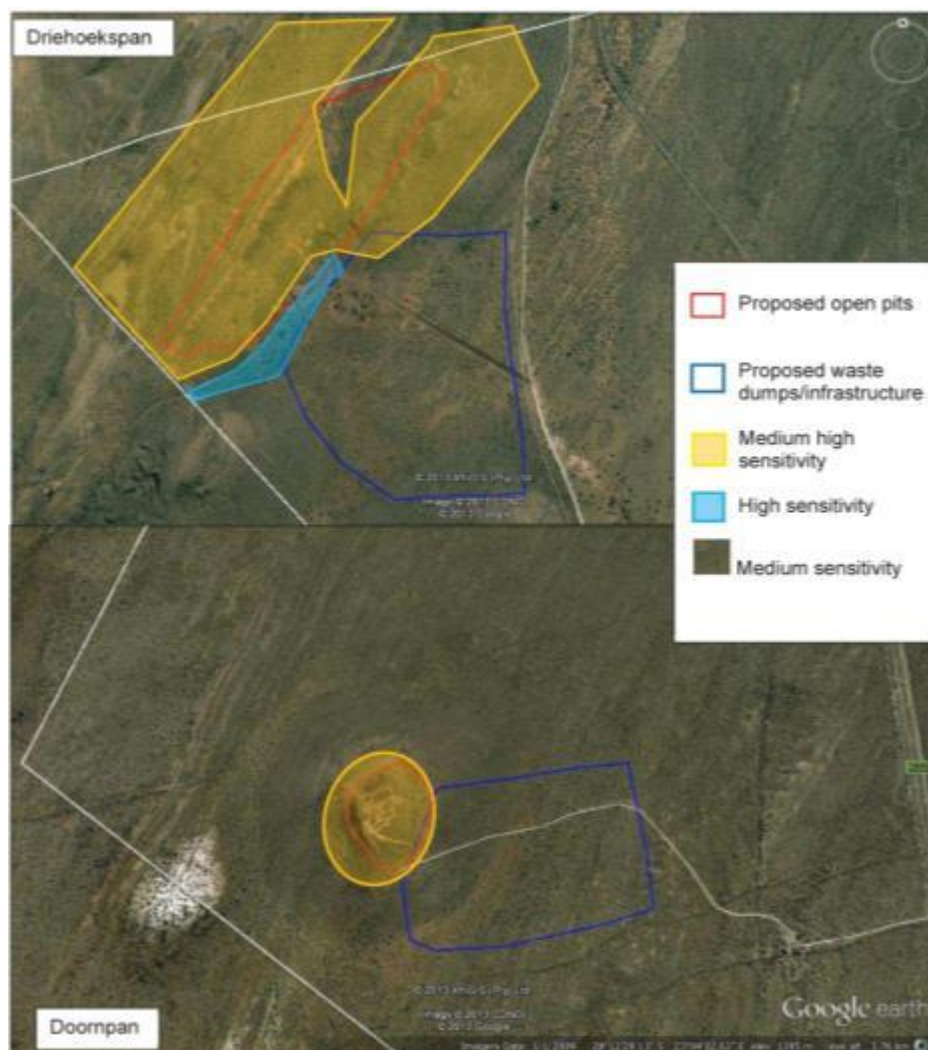


Figure 5.17 Preliminary sensitivity map of the proposed development sites (Anderson, 2013).

5.3.10 Air Quality

Current potential air emissions sources within the study area include mining activities, blasting activities from the nearby military base and mines, the use gravel access roads, vehicle exhaust emissions and farming activities. Available baseline air quality data will be confirmed and presented in the EIA report that will be prepared for the project.

5.3.11 Noise

The study area is located in an area that can be classified as a rural district. Table 6.7 indicates the allowable noise levels as per SANS 10103 for different districts. For the study area, it is likely that the rural noise levels may be exceeded within certain areas along the R325, along the Postmasburg railway line and near mining areas. Baseline noise levels will be identified during the EIA phase of the project.

Table 5.7: Equivalent Continuous Rating Levels for Outdoor Noise (SANS 10103)

Type of District	SANS 10103 Table 2: Equivalent Continuous Rating Levels for Outdoor Noise (dBA)		
	Day/Night	Day	Night
Rural districts	45	45	35
Suburban districts with little road traffic	50	50	40
Urban districts	55	55	45
Urban districts with one or more of the following: workshops, business premises and main roads.	60	60	50
Central business districts	65	65	55
Industrial districts	70	70	60

5.4 Agreement on Existing Status of Environment

A notification letter will be circulated to IAPs notifying them of the availability of the DSR. A response sheet will be included with the notification letter and IAPs will be requested to provide information on whether they agree with the description of the existing status of the environment. This section will therefore be updated in the final scoping report.

6. DESCRIPTION OF THE PROCESS OF ENGAGEMENT OF IAPS, INCLUDING THEIR VIEWS AND CONCERNS

6.1 Notification of IAPs on the COZA Iron Ore Project

IAPs were notified in accordance with Section 54 of GNR543 of the EIA Regulation published under NEMA. Information on the IAP notification process is provided in detail under Section 3.5.10.

6.2 Summary of Issues raised by IAPs

Issues and concerns relating to the COZA Iron Ore Project have been captured by means of:

- Written, email and telephonic responses received following public notification of the project (Appendix A2 and A6).
- Minutes from the public meeting held at the Postmasburg Town Hall and Lohatla Village (Appendix A5); and

A summary of issues and concerns raised by IAPs is provided in **Error! Reference source not found.** 6.1, with the names of the I&AP and the date the issue or concern was raised. Responses to all concerns are provided in the table and attached as Appendix A6.

Table 6.1: Summary of Public Issues and Concerns

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
Authority Requirements	15 May 2013	Ms Jacoline Mans Department of Agriculture, Forestry and Fisheries	Tel: 054 334 0030 Email: JaolineMans@daff.gov.za	<ul style="list-style-type: none"> The BID stated that the affected areas of the proposed open pit iron ore and associated infrastructure will be approximately 25 hectares on the farm Doornpan and 80 ha on farm Driehoekspan. Since vegetation clearance will be required, you may need a Forest Act Licence (from DAFF) and a Flora Permit (from Nature Conservation) The BID listed the most important environmental legislation applicable to the project. The Northern Cape Nature Conservation Act (Act 9 of 2009) (NCNCA) should also be consulted Kindly supply this office with copies of the relevant document for comments, especially the specialist biodiversity, /ecological assessment and EMPR (once available). Please note that the office cannot download such documentation from the internet and it should be provided on a CD or in hardcopy format 	<ul style="list-style-type: none"> Applications will be submitted to the relevant authorities for the removal of protected plant and tree species. The act will be considered throughout the Scoping and EIA process. A CD copy of the EIA and EMPR report together with specialist studies will be submitted to the Department

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
				<ul style="list-style-type: none"> Please ensure that the anticipated impacts on protected trees are assessed and try to design the mine in such a manner as to minimise the impact (if any) on such slow growing tree species. Where impacts cannot be avoided, appropriate mitigation may be required. 	<ul style="list-style-type: none"> Impacts of flora will be assessed in the EIA report. A floral (vegetation) impact assessment will be undertaken to determine impacts on vegetation. Where required, mitigation measures will be identified and a vegetation management plan will be developed. This information will be included in the EIA and EMPR that will be circulated for authority and public review.
Registration as an Interested and Affected Party	20 May 2013	Mr. S.E Fiff Transnet Limited	P O Box 17308, Bainsvlei 9338 Tel: (051) 408 2565	<ul style="list-style-type: none"> Requested to be registered as an IAP 	<ul style="list-style-type: none"> Mr Fiff has been registered in the IAP database, Refer to Appendix A1
	22 May 2013	Mr Tumisang Tugane Afribits	Tel: 079 874 0504 Email: infor@afribits.co.za	<ul style="list-style-type: none"> Requested to be registered as an IAP 	<ul style="list-style-type: none"> Mr Tugane has been registered in the IAP database, Refer to Appendix A1

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
	24 June 2013	Mrs Alretha Erasmus Postmasburg Landbou Unie	Tel: 053 313 1333 Email: jimbosalretha@gmail.com	<ul style="list-style-type: none"> Requested to be registered as an IAP 	<ul style="list-style-type: none"> Mrs Erasmus has been registered in the IAP database, Refer to Appendix A1
Community Benefits and Upliftment	23 May 2013	Graig Katz	10 Jakaranda Lane, Postdene, Postmasburg, 8420 Cell: 073 258 9846 Email: gregorygrraig101@gmail.com	<ul style="list-style-type: none"> Asked how the community will benefit from the project in terms of employment. Asked how the project will be able to decrease the high unemployment. 	<ul style="list-style-type: none"> The proposed development will require approximately 140 employees during the operational phase. COZA Mining will endeavour to employ local persons as much as possible but this will be dependent on the type of skills required and availability of required skills locally. It should also be noted that as part of the mining right application, COZA Mining will be required to prepare a Social and Labour Plan which details a plan for socio-economic Upliftment for the area hosting the COZA Iron Ore Project. The details of the plan are still being developed in consultation with the relevant authorities and community representatives.

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
	23 May 2013	Rowena Jacobs	14 Jakaranda Lane, Postdene, Postmasburg, 8420 Cell: 079 146 9083	<ul style="list-style-type: none"> Requested that they be kept up to date with the project and asked how the community will benefit from the project. 	<ul style="list-style-type: none"> IAPs registered on the IAP database will receive project communication information throughout the EIA process. As part of the mining right application, COZA Mining will be required to prepare a Social and Labour Plan which details a plan for socio-economic Upliftment for area hosting the COZA Iron Ore Project. The details of the plan are still being developed in consultation with the relevant authorities and community representatives.
	23 May 2013	Mr Boniface Masame	Maremane Community P O Box 688 Postmasburg, 8420 072 830 4739	<ul style="list-style-type: none"> Asked if any people from the communities are required for the process in terms of labour (specialist studies). 	<ul style="list-style-type: none"> Specialist studies are done by qualified specialists who go to site to scope the area to gather data. They are usually only there for approximately 1 day. The specialist work does not require labour as they do the work themselves. As such, specialist studies do not provide opportunities to the people from the community in terms of labour.
	23 May 2013	Itumeleng Moss	23 J.P Ketuiles Postmasburg, Boischoko, 073 435 6332	<ul style="list-style-type: none"> Enquired as to how the project and mining will benefit local communities. 	<ul style="list-style-type: none"> A Social and Labour Plan will be developed for the mine which will identify local economic development projects that will benefit the host community.
	23 May	Mr Ephraim	Maremane Community	<ul style="list-style-type: none"> Questioned whether the people from the 	<ul style="list-style-type: none"> The resource at Driehoekspan and

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
	2013	Sibanda	P O Box 688 Postmasburg, 8420	Maremane Community would benefit in terms of employment if the processing will be undertaken elsewhere. He indicated that he believes processing creates more employment opportunities than mining.	Doornpan does not warrant the location of a processing plant within the mine areas. There is another area of interest for COZA that may have sufficient resource to support a processing plant. In terms of job opportunities, COZA's Social and Labour Plan (SLP) would have to consider the people at the three mining areas i.e. Driehoekspan, Doornpan and the other area of interest.
	23 May 2013	Lebogang Kunere	Maremane Community P O Box 688 Postmasburg, 8420 076 327 8305	<ul style="list-style-type: none"> Asked what would be done for the community once they start to mine and they gain profit. He indicated that the community needs to get an idea of what benefits they will receive from the project. 	<ul style="list-style-type: none"> A SLP is currently being developed as part of the mining right application. The community will be consulted on community development projects that will form part of the SLP. Because the SLP is currently in the process of being developed, COZA is not as yet in a position to communicate the community benefits. This information will be communicated once the SLP has been finalised.
	23 May 2013	Mathapelo Kgotlaekae	Maremane Community P O Box 688 Postmasburg, 8420 076 346 6498	<ul style="list-style-type: none"> Indicated that the community is fearful that once COZA is granted a mining right, there will be no benefits for the community. Requested that the community must be consulted when preparing the SLP 	<ul style="list-style-type: none"> The SLP is still being drafted. This document will present the plans for community involvement. These will be communicated with the community once the plans have been drafted The SLP is being drafted and he believes that there has been some interactions with the community. He

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
					indicated that he will confirm if there has been any interactions and establish who was consulted when drafting the SLP and provide response.
	5 June 2013	Mr Brandon Adams	Tel: (053) 313 3172 Email: adamsbrandon49@gmail.com	<ul style="list-style-type: none"> When projects of this magnitude are undertaken, the locals are generally excluded to participate in the development and wealth of their minerals mined. Lack of excess to this wealth creation opportunity is hampered by "red tape" rules and regulations, that make it impossible to participate and once the investors are making their riches, they vanish and left the local residents high & dry. 	<ul style="list-style-type: none"> COZA are fully committed to implementing development plans and projects that will facilitate local community and rural development as part of their Social and Labour Plan (SLP). However, the project is still in its initial stages and COZA are still formulating their SLP. At this stage no specific information can be provided on the different community development initiatives that will be implemented by COZA. As part of the Environmental Impact Assessment for the COZA Iron Ore Project however, a social impact assessment will be conducted which will provide information on the benefits the project is likely to have for local communities. This information will be made available in the Environmental Impact Report, a draft version of which will be made available for public review by early November 2013.

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
Future Prospecting	23 May 2013	Islay Jane Sparks of Kumba Iron Ore's Kolumela Mine	PO Box 1420, Postmasburg, 8420 Cell: 081 038 2368 Email: islay-jane-sparks@angloamerican.com	<ul style="list-style-type: none"> Asked how much the mine will produce Enquired about the possibility for further expansion and whether exploration is still continuing. 	<ul style="list-style-type: none"> Since the project is still in the concept phase it is difficult to estimate, but the quantity will be approximately 500 000 million tons per annum during the operational phase. There are opportunities for further expansion. COZA is currently working on their resource estimation. There are also other areas of mining interest for COZA Mining in the Northern Cape.
	23 May 2013	Itumeleng Moss	23 J.P Ketuiles Postmasburg, Boischoko, 073 435 6332	<ul style="list-style-type: none"> Also queried whether the municipality was consulted 	<ul style="list-style-type: none"> Invitations were sent to the Municipal Mayor, Manager and Environmental Manager as well as the local Economic Development Officer. The ward councillor, who was also consulted, responded and requested Synergistics to also hold a meeting with the Maremane community
Community Consultation	23 May 2013	Mr Boniface Masiame	Maremane Community P O Box 688 Postmasburg, 8420 072 830 4739	<ul style="list-style-type: none"> Raised the issue that the information of the meeting was not appropriately marketed toward the Maremane Community. 	<ul style="list-style-type: none"> The community were identified through the distribution of BIDs. Synergistics also consulted Mpho, the ward councillor, and Joseph, who are representatives of the Maremane community. The Maremane community said they knew of the Postmasburg meeting but it was too far, thus another meeting was organised for them at the Maremane Community Hall.

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
					<ul style="list-style-type: none"> It would be appreciated if the community would advise Synergistics on how best to involve communities.
Community Consultation	23 May 2013	Mr Boniface Masiambe	Maremane Community P O Box 688 Postmasburg, 8420 072 830 4739	<ul style="list-style-type: none"> Asked if the Department of Rural Development and Land Reform (RDLR). Was consulted as they were key in the Maremane Community land claim process Indicated that there are people that are not in the area but who at a later stage will be relocated to the land and will be affected by this development. He asked how these people would be accommodated. Raised the issue that some of the people from the Maremane Community are from the Kuruman area and this meeting and the project is very far from Kuruman. As such the people will not know what is happening 	<ul style="list-style-type: none"> Regarding the department of Rural Development and Land Reform, the Department has been notified of the project, received BIDs and have been notified of the EIA process. The Department of Mineral Resources (DMR), in their report, also wants to find out if the Department of RDLR has been consulted. It will be appreciated if the community would advise us of the various community leaders that should be registered in the IAP database. The identified representatives will be informed of the project developments and in turn they can report back to the other members of the Maremane Community. It would not be possible to have meetings with people from all over the area like Kuruman. We are dealing with people that are most likely to be directly impacted by the project. People from Kuruman are not being excluded

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
				<ul style="list-style-type: none"> Asked whether meetings can be held in Kuruman Raised a concern that Maremane community members from Kuruman are being excluded from the public participation process and problems may arise if people come to Maremane from Kuruman. 	<p>however, it would be ideal to have leaders of the various communities to come to the scheduled meetings.</p> <ul style="list-style-type: none"> Kuruman is too far for the people from Maremane and Kuruman is not an area that will be directly affected by the project. The ideal option would for the leaders of the Kuruman communities to come to the Maremane meetings and give feedback to the people of the community. People who register will be kept informed throughout the process. Synergistics would like the leaders to get involved to inform the other communities.
	23 May 2013	Hilda Sibanda Maremane Community Member	Maremane Community P O Box 688 Postmasburg, 8420 071 979 5017	<ul style="list-style-type: none"> Indicated that she is reluctant of believing independent environmental consultant. She indicated that the community was previously consulted by independent consultants for the Sedibeng Mine, however they were not notified when the mine started. She indicated that they community was fearful that the same process would occur with the COZA project. 	<ul style="list-style-type: none"> As consultants Synergistics are bound by law to notify IAPs of authority decisions in terms of the National Environmental Management Act (No 107 of 1998) (NEMA). As such the Maremane community will be notified via post or sms. She indicated that members of the community will be kept informed of progress throughout the EIA process. She explained that the

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
				<ul style="list-style-type: none"> Asked why the application to the Northern Department of Environment and Nature Conservation was submitted before consultation with communities? 	<p>Public Participation Process (PPP) allows for the involvement of communities</p> <ul style="list-style-type: none"> The NEMA application was submitted as it was required by law. She advised that the application serves to notify the Department of the intention to commence with the EIA process
	23 May 2013	Mathapelo Kgotlaekae	Maremane Community P O Box 688 Postmasburg, 8420 076 346 6498	<ul style="list-style-type: none"> Indicated that the Maremane Community are sceptical that Synergistics will return to meet with the community 	<ul style="list-style-type: none"> There will be a feedback meeting, where Synergistics presents the findings of the EIA. She indicated that the community would also be notified of the availability of the environment reports for review as well as the authority decisions.
	5 June 2013	Mr Brandon Adams	Tel: (053) 313 3172 Email: adamsbrandon49@gmail.com	<ul style="list-style-type: none"> An information sharing meeting was held on 23 May 2013, however no prior notice was given to Interested and Affected parties. The meeting should have been communicated in the local newspaper (The Ghaap, Diamond Field Advertiser. 	<ul style="list-style-type: none"> The information sharing meeting was advertised in the Kalahari Bulletin and Kathu Gazette. These newspapers circulate in the study area and its surroundings. Please refer to Section 3.5 on the IAP notification process.

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
Mine Cumulative Impacts	23 May 2013	Mimi Swart	P O Box 777, Postmasburg, 8420 083 292 2540 Swami5353@gmail.com	<ul style="list-style-type: none"> Raised a concern regarding the prominence of mining in the area and the many problems that are not being appropriately dealt with. Indicated that there are problems related to groundwater and dust due to mining in the area. She raised a concern regarding the potential cumulative impacts of the mining in the area. 	<ul style="list-style-type: none"> The impacts that this study will have on the area will be assessed in the context of what the project will add to the current baseline condition which include any existing impacts. Groundwater and air related impacts will be addressed in the EIA.
Project's Environmental Impacts	5 June 2013	Mr Brandon Adams	Tel: (053) 313 3172 Email: adamsbrandon49@gmail.com	<ul style="list-style-type: none"> Pollution will affect all communities around the operations, what remedies will be available to alleviate this 	<ul style="list-style-type: none"> An environmental impact assessment will be undertaken to identify the projects environmental and socio-economic impacts. Please refer to Section 7 for the preliminary list of potential impacts and Section 8 for the plan of study for the EIA.
Project Phasing	23 May 2013	Mimi Swart	P O Box 777, Postmasburg, 8420 083 292 2540 Swami5353@gmail.com	<ul style="list-style-type: none"> Asked what stage the process is at currently. 	<ul style="list-style-type: none"> The process is at its initial phase the scoping phase where consultation with IAPs takes place, potential issues are identified and terms of reference for specialist studies are developed.

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
Project Location	23 May 2013	Alfred Pegram	Private Bag X5005, Kimberley, 8300 apegram@ncpg.gov.za	<ul style="list-style-type: none"> Asked how far the project will be from Portion 3 of the Farm 445. 	<ul style="list-style-type: none"> The mining area will be approximately 3 km from Portion 3 of the Farm 445.
Prospecting Activities	23 May 2013	Mr Boniface Masiambe	Maremane Community P O Box 688 Postmasburg, 8420 072 830 4739	<ul style="list-style-type: none"> Referring to a DMR document from 2010, the IAP asked about the prospecting and mining right and why COZA are not mining in all the areas. 	<ul style="list-style-type: none"> COZA were granted prospecting rights for various farms but only plan to mine on the Portion 1 of Doornpan and Remaining Extent of Driehoekspan at this stage.
	23 May 2013	Lebogang Kunere	Maremane Community P O Box 688 Postmasburg, 8420 076 327 8305	<ul style="list-style-type: none"> Queried if there would be a survey of the resource before mining commences. Enquired what income was received from prospecting and where was the money spent 	<ul style="list-style-type: none"> Prospecting activities have already been undertaken for the project and the project team is currently at the resource estimation process. No money was obtained from prospecting
Information on Applicant	23 May 2013	Mr Ephraim Sibanda	Maremane Community P O Box 688 Postmasburg, 8420	<ul style="list-style-type: none"> Requested an organogram for COZA Mining. 	<ul style="list-style-type: none"> COZA Mining is still a new company and an organogram is not yet available. The community should liaise with Synergistics and the project manager Mr Tabi Kowet.

ISSUE OF CONCERN	DATE	NAME	CONTACT DETAILS	COMMENTS	RESPONSE
Application Process	23 May 2013	Mr Ephraim Sibanda	Maremane Community P O Box 688 Postmasburg, 8420	<ul style="list-style-type: none"> Queried if COZA Mining has a mining licence. 	<ul style="list-style-type: none"> COZA does not have a mining right but have a prospecting right. The current EIA process is undertaken to apply for a mining right. The mining right application will be submitted at the end of June 2013.

7. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

A scoping level identification of potential environmental impacts (physical, biological, social and economic) associated with the proposed COZA Iron Ore Project are listed in Table 7.1 below, with a framework for further work during the EIA phase also provided. The significance of these impacts will be systematically assessed and rated, using the assessment methodology described in Section 8.3, once the results of the various specialist studies are available. Further details of the scope of work to be undertaken during the EIA phase, including the specialist studies, are provided in Section 8

Table 7.1: Potential Environmental and Social Impacts

IMPACT	IMPACT SOURCE	COMMENT	SCOPE OF WORK FOR EIA / FURTHER WORK
CLIMATE			
Contribution to climate change	Emission of greenhouse gases (GHGs) from vehicles and machinery used on site.	The project will not have a significant contribution to GHG emissions, however efforts should be made to minimise such emissions where practicable.	Measures for the minimisation of GHG emissions to be investigated by Synergistics.
TOPOGRAPHY			
Change in the natural topography.	The mining of the Blesbok hill will result in the change in topography. Waste rock dump and infrastructure will also change the topography during the operational phase of the mine.	This impact is likely to be significant given the flattish nature of the study area and that the Blesbok hill will be mined.	A visual assessment will be required to establish the significance of the impacts and ensure in the identification of appropriate management measures.
NOISE			
Increase in ambient noise levels.	Operation of machinery, movement of vehicles and blasting during construction and operation.	Noise receptors in the area are limited to the surrounding farmers and members of the Maremane community currently residing on Driehoekspan.	A noise impact assessment will be required to determine the noise impacts on receptors. Mitigation measures to be identified if unacceptable impacts identified.

IMPACT	IMPACT SOURCE	COMMENT	SCOPE OF WORK FOR EIA / FURTHER WORK
AIR QUALITY			
Increase in ambient dust levels.	Construction and operation activities at the mine	This impact is likely to be significant given the arid climatic conditions. Increased dust levels may lead to secondary impacts such as, decrease in palatability of grazing land, possible loss of faunal and floral habitats and public nuisance.	Emissions inventory to be developed and the contribution of various sources to fallout dust and PM10s to be identified. Air quality modelling to be undertaken to determine the possible dispersion of pollutants from sources. Mitigation measures to address impacts on, land capability, ecology and surrounding communities that have been identified.
SOILS			
Loss of available soil.	Soil stripping to allow for the establishment of the mine.	Large volumes of soil will need to be stripped to allow for the construction of mine infrastructure and to allow access to mineral resources.	Soil specialist study will be undertaken to determine the type and volume of soils that will be disturbed. The suitability of soils for rehabilitation is to be investigated. A soil balance is to be undertaken to determine the volumes of soil required and available for rehabilitation at the mine. A soil management plan is to be developed to allow for the appropriate stripping, stockpiling and management of soils to promote effective use in rehabilitation.
Contamination of soils.	Spillage of material with potential to pollute during the construction and operation of the mine.	Key contaminants include hydrocarbons such as fuels, oils and greases stored on site and used in machinery and vehicles during both the construction and operation phases.	Sources of contamination will be identified and mitigation measures to prevent spillages as well as emergency procedures for clean-up will be identified.

IMPACT	IMPACT SOURCE	COMMENT	SCOPE OF WORK FOR EIA / FURTHER WORK
GEOLOGY			
Loss of geological resource	Removal of ore for processing and export.	Feasibility study will address the economical mining and processing of ore.	This impact is an inevitable consequence of mining and cannot be mitigated.
SURFACE WATER			
Disturbance of surface water resources	Disturbance of the ephemeral drainage line on farm Driehoekspan due to mining activities.	The impact of the disturbance on the ephemeral drainage line is not considered to be significant as it does not flow regularly .	The watercourse may need to be diverted to ensure that mining does not result in the permanent loss of flow. A water management plan will be developed as part of the Hydrological assessment.
Contamination of surface water resources.	Contamination of stormwater run-off with sediment and other chemical contaminants originating on site during both construction and operation.	Contaminated stormwater may drain into the drainage lines within the area. This impact is likely to be limited to the study area as the drainage lines are ephemeral and the catchment is endorheic and there will be no discharge into other watercourses outside of the catchment.	Sources of contamination are to be identified. Measures for the management of stormwater, discharges and seepage are to be put in place as part of the environmental management measures.
GROUNDWATER			
Contamination of groundwater resources	Seepage of contaminants from sources originating during construction and operational activities at the mine.	Seepage sources could possibly include waste rock dumps, exposed ore, workshops and fuel storage areas	Sources of contamination are to be identified. Transport modelling of major contaminants to be included in geohydrological modelling. Baseline monitoring to be undertaken to establish pre-mining conditions. Mitigation measures to be identified to address impacts.
Impact on aquifer recharge	Dewatering to allow for safe mining.	Mining may continue below the water table therefore requiring dewatering to access workings below these levels.	Groundwater investigations to be undertaken to identify aquifer parameters. Geohydrological modelling to be undertaken to determine dewatering requirements. Mitigation measures to be identified to address

IMPACT	IMPACT SOURCE	COMMENT	SCOPE OF WORK FOR EIA / FURTHER WORK
			impacts.
Impact on groundwater resources for surrounding farmers	Dewatering and contamination of groundwater resources may result in such resources not being available to surrounding users.	Local farmers currently rely on groundwater for agricultural activities and domestic supply.	Groundwater users to be identified and geohydrological modelling to address impacts on such users. Magnitude and extent of the dewatering cone as well as the transport of contaminants to be predicted through geohydrological modelling. Baseline monitoring (including groundwater levels and quality) to establish pre-mining conditions.
ECOLOGY			
Loss of systems, habitats or species of conservation importance	Clearance of the mining footprint area. Disturbance of floral and faunal habitats due to the development of the mine. Secondary impacts disturbing ecological habitats such as noise, fallout dust, contamination of resources.	Species of conservation importance do occur in the area to be disturbed by the mine.	Systems, habitats and species of conservation importance occurring in the area are to be identified and mapped. Layout alternatives which promote the preservation of the above are to be given due consideration. Mitigation and management measures to be identified for unavoidable impacts.
ARCHAEOLOGY & CULTURAL HERITAGE			
Disturbance of sites of archaeological importance	Site clearance, deposition of overburden, waste and earth moving activities to allow for the construction of mine infrastructure and the development of the mine.	There are sites of archaeological importance that have been identified at the proposed mining areas.	Heritage impact assessment to be completed in accordance with the requirements of the National Heritage Act. Layout alternatives which promote the preservation of the above are to be given due consideration. Mitigation and management measures to be

IMPACT	IMPACT SOURCE	COMMENT	SCOPE OF WORK FOR EIA / FURTHER WORK
			identified for unavoidable impacts.
Disturbance of sites of paleontological importance	Mining at a depth of 80 -100 m below surface.	The dolomite deposits in the study area might contain stromatolite structures which are considered to be of medium paleontological importance	A heritage impact assessment study will also investigate the presence of paleontological resources in the study area. Mitigation and management measures to be identified for unavoidable impacts
SOCIAL & ECONOMIC ENVIRONMENT			
Risk of social upheaval	Lack of consultation with the community when planning for local economic development projects	Current lack of community cohesion within the Maremane community is likely to increase due to belief that the mining development will favour some members of the community.	A consultation process is to ensure that members of the Maremane Communal Property Association are consulted throughout the EIA process.
Creation of informal settlements nearby the mining area	Influx of people in search of employment opportunities	The development of a new mining project will result in interest from the local and regional community in search of employment opportunities.	A social impact assessment will be undertaken to determine the number of planned and unplanned influxes into the study area. Once the impacts have been identified, a plan will be developed for the management of influx and creation of informal settlement.
Spread of HIV/AIDS within the study area	Migrant labour and introduction of stable income to the local community. Enhancement of the sex industry within the study area.	The development of a new mine in the area will result in the change in social dynamics of the surrounding communities. With the introduction of migrant labour, it is possible that the activities leading to the spread of HIV will increase. The introduction of money is also likely to increase the consumption of alcohol that leaves people vulnerable to risky behaviour.	A social impact assessment will be undertaken to determine the role of the project in the spread of HIV or new infections. A HIV management plan will be developed for the project.

IMPACT	IMPACT SOURCE	COMMENT	SCOPE OF WORK FOR EIA / FURTHER WORK
Increase in social ills such as crime	Introduction of stable income which may entice criminals to operate in the area and the influx of people into the study area	The development of the mine will attract new people in the area that might not be employed by the mine. The new people might be tempted to engage in criminal activities	A social impact assessment will be undertaken to determine the significance of this impact and to develop appropriate management and mitigation measures.
Contribution to employment and local economy	Opportunities for the employment of local persons and engagement of local procurement.	Skilled people around the mine are currently employed by existing mines. Education and skills levels are low at the nearest community where labourers could be sourced.	Identification of skills availability and opportunities for employment of local persons. Mitigation measures to be identified to promote local employment and procurement. Incorporation of community Upliftment projects as detailed in the Social and Labour Plan.
LAND USE AND LAND CAPABILITY			
Loss of grazing land capability	Change of land use from livestock grazing to mining.	There are part of Farm Driehoekspan that is currently used for cattle and sheep farming.	The land capability needs to be investigated and understood in order to assess the significance of the impact. An assessment of economic benefits of mining vs. agriculture will be undertaken to assess the benefit of changing the land use. Land management plan to be developed. Closure objectives are to be defined at the outset and mine planning and rehabilitation planned with these objectives in mind.
Reduction in land use of surrounding areas.	Impact on groundwater availability. Dust dispersion from site establishment and operations at the mine.	Impact on neighbouring groundwater resources and dust deposition on surrounding grazing areas would render the land less suitable for livestock farming.	Results of groundwater and air quality modelling will be used to assess the significance of the impact.
VISUAL ENVIRONMENT			
Disturbance of natural views and sense of place.	View of construction and mining operations from surrounding receptors and general operations at the site.	This impact is likely to be significant given the fact that mining activities will be visible to surrounding communities and local game	Visual receptors to be identified. Lines of site to be determined. Mitigation measures to be identified as required.

IMPACT	IMPACT SOURCE	COMMENT	SCOPE OF WORK FOR EIA / FURTHER WORK
		farmers.	
TRAFFIC			
Compromise in safety for motorists and pedestrians.	Increase in heavy vehicles using public roads.	Traffic from the mine will make use of the R325	Traffic impact study to be undertaken to assess safety risks because of increase in traffic flow.
Damage to road pavement.	Increase in heavy vehicles using public roads.	Public roads are currently used by heavy vehicles from operating mines.	Traffic impact study to be undertaken to assess impacts of additional heavy trucks on the road pavement. Mitigation measures to be identified.

8. PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT

8.1 EIA Process and Key Project Timeframes

The EIA will address potential impacts and benefits of the proposed COZA Iron Ore Project near Postmasburg on the socio-economic and biophysical environment. Impacts, direct, indirect and cumulative, associated with the project and all its phases will be assessed. The EIA will also aim to identify appropriate mitigation and management measures for the significant impacts.

The EIA assessment process has been developed to ensure that it complies with GNR 543 Section 26 to 33 and the associated guidelines. The proposed EIA process and public consultation activities are illustrated below, with specific reference to the opportunities for consultation and participation for IAPs, Competent Authorities, and relevant State Departments and Organs of State.

Table 8.1: EIA Process and Opportunities for Involvement

Project Phase	Tasks	Opportunities for Participation by Competent Authorities, I&APs, State Departments and Organs of State	Schedule
SCOPING PROCESS	<u>Review of Draft Scoping Report</u>	Competent authority, I&APs, state department and other organs of state	End June to August 2013
	<u>Review of Final Scoping Report</u>	Competent authority, I&APs, state department and other organs of state	end July to 26 August 2012
	<u>Authority response of Scoping Report</u>	Competent Authorities (DMR and DENC)	Late August 2012
EIA PROCESS	<u>Review of Draft EIR and EMPR</u>	Competent authority, I&APs, state department and other organs of state	Early November to Mid December 2013
	<u>Feedback Meetings</u>	Competent authority, I&APs, state department and other organs of state	Early to Late November 2013
	<u>Submission of Final EIR</u>	Competent Authority (DMR)	Mid December

Project Phase	Tasks	Opportunities for Participation by Competent Authorities, I&APs, State Departments and Organs of State	Schedule
	DMR		2013
	DENC	Competent Authority (DENC)	Mid-March 2014
	<u>Review</u>	Competent Authority (DENC)	Mid-March to Mid May 2014
	<u>Decision</u>	Competent Authority (DMR and DENC)	July 2014
	<u>Appeal Process</u>	I&APS	June to July 2014
Water Use License Application Process	<u>Submission of IWULA and IWWMP</u>	Competent Authority (DWA)	Early December 2013

8.2 Development Alternatives to be investigated in the EIA Phase

The following alternatives as described in Section 4.7 will be assessed during the EIA phase:

- No-Go Alternative
- Water Supply Alternatives
- Location of Support Infrastructure within the project site
- Final Land Use Alternatives

8.3 Environmental Impact Assessment Methodology

8.3.1 Impact Ranking Criteria

The criteria used for assessing the significance of the impact are given in Table 8.2. The impact assessment method takes into account the current environment, the details of the proposed project and the findings of the specialist studies. Cognisance will be given to both positive and negative impacts that may result from the development. The significance of the impact is dependent on the consequence and the probability that the impact will occur.

$$\text{impact significance} = (\text{consequence} \times \text{probability})$$

Where:

$$\text{consequence} = (\text{severity} + \text{extent})/2$$

and

$$\text{severity} = [\text{intensity} + \text{frequency} + \text{duration}]/3$$

Each criterion is given a score from 1 to 5 based on the definitions given in Table 8.2. Although the criteria used for the assessment of impacts attempts to quantify the significance, it is important to note that the assessment is generally a qualitative process and therefore the application of this criteria is open to interpretation. The process adopted will therefore include the application of scientific measurements and professional judgement to determine the significance of environmental impacts associated with the project. The assessment thus largely

relies on experience of the environmental assessment practitioner (EAP) and the information provided by the specialists appointed to undertake studies for the EIA.

Where the consequence of an event is not known or cannot be determined, the “precautionary principle” will be adhered to and the worst-case scenario assumed. Where possible, mitigation measures to reduce the significance of negative impacts and enhance positive impacts will be recommended. The detailed actions, which are required to ensure that mitigation is successful, will be provided in the EMPR, which will form part of the EIA report.

Consideration will be given to the phase of the project during which the impact occurs. The phase of the development during which the impact will occur will be noted to assist with the scheduling and implementation of management measures.

Table 8.2: Criteria for Assessing the Impact Significance

SEVERITY CRITERIA

INTENSITY = MAGNITUDE OF IMPACT	RATING
Insignificant: impact is of a very low magnitude	1
Low: impact is of low magnitude	2
Medium: impact is of medium magnitude	3
High: impact is of high magnitude	4
Very high: impact is of highest order possible	5

FREQUENCY = HOW OFTEN THE IMPACT OCCURS	RATING
Seldom: impact occurs once or twice	1
Occasional: impact occurs every now and then	2
Regular: impact is intermittent but does not occur often	3
Often: impact is intermittent but occurs often	4
Continuous: the impact occurs all the time	5

DURATION = HOW LONG THE IMPACT LASTS	RATING
Very short-term: impact lasts for a very short time (less than a month)	1
Short-term: impact lasts for a short time (months but less than a year)	2
Medium-term: impact lasts for the for more than a year but less than the life of operation.	3
Long-term: impact occurs over the operational life of the proposed extension.	4
Residual: impact is permanent (remains after mine closure)	5

EXTENT = SPATIAL SCOPE OF IMPACT/ FOOTPRINT AREA / NUMBER OF RECEPTORS	RATING
Limited: impact affects the mine site	1

Small: impact extends to the whole farm portion	2
Medium: impact extends to neighbouring properties	3
Large: impact affects the surrounding community	4
Very Large: The impact affects an area larger the municipal area	5

PROBABILITY

PROBABILITY = LIKELIHOOD THAT THE IMPACT WILL OCCUR	RATING
Highly unlikely: the impact is highly unlikely to occur	0.2
Unlikely: the impact is unlikely to occur	0.4
Possible: the impact could possibly occur	0.6
Probable: the impact will probably occur	0.8
Definite: the impact will occur	1

IMPACT SIGNIFICANCE

NEGATIVE IMPACTS

≤1	Very low	Impact is negligible. No mitigation required.
>1≤2	Low	Impact is of a low order. Mitigation could be considered to reduce impacts. But does not affect environmental acceptability.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts. Mitigation should be implemented to reduce impacts.
>3≤4	High	Impact is substantial. Mitigation is required to lower impacts to acceptable levels.
>4≤5	Very High	Impact is of the highest order possible. Mitigation is required to lower impacts to acceptable levels. Potential Fatal Flaw.

POSITIVE IMPACTS

≤1	Very low	Impact is negligible.
>1≤2	Low	Impact is of a low order.
>2≤3	Moderate	Impact is real but not substantial in relation to other impacts.
>3≤4	High	Impact is substantial.
>4≤5	Very High	Impact is of the highest order possible.

Cumulative Impacts

In accordance with Regulation 584 of NEMA, cumulative impacts are defined as: “the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area”. Taking into consideration the above definition, the cumulative impacts for the COZA Iron Ore Project will be assessed by considering the potential impacts of the mine and the current status of the environment in which the project will be developed.

8.3.2 Project Phases

The environmental impacts for the project will be assessed over the five phases of the project i.e. the planning and design, construction, operation, decommissioning and post-closure phase.

The planning and design phase refers to the stage when the feasibility studies are being undertaken, the project description is being developed and the mine is being designed. During this phase the EIA is completed and environmental authorisations are applied for. This phase commenced early 2013 and is anticipated to be completed in third quarter of 2014.

The construction phase will commence after the mining right and environmental authorisations have been obtained. This phase will involve the physical construction of the mine and its associated infrastructure. Construction is anticipated to commence in last quarter of 2016 until the second quarter of 2017.

The mine operation is anticipated to commence in 2017. Operational activities are anticipated to proceed for about 10 to 20 years.

The decommissioning phase refers to the time in the mine life when mining operations are reduced in preparation for closure. This phase will occur once the resource has been mined optimally and economically. It is anticipated that mining activities will last 10 to 20 years.

The closure phase refers to when the mine is shut down and no mining activities are undertaken, this phase will occur after successful decommissioning has been achieved.

8.3.3 Mitigation Measures

A **no net loss** approach will be adopted in terms of the management of impacts at the COZA Iron Ore Project.

- **Avoidance** – impacts are to be avoided where practicable e.g. through the implementation of alternatives.
- **Mitigation** – should it not be possible to avoid all impacts, the remaining impacts are to be mitigated to acceptable levels.

- **Offset** – should it not be possible to avoid and mitigate all impacts to acceptable levels it will be necessary to offset the remaining impacts. Suitable offsets will need to be identified.

Mitigation measures for significant impacts which cannot be avoided will be identified. The impacts will be ranked before and after the implementation of the mitigation measures. Consideration will also be given to the confidence level that can be placed on the successful implementation of the mitigation level as follows:

- **High Confidence:** mitigation measure easy and inexpensive to implement.
- **Medium Confidence:** mitigation measure expensive or difficult to implement.
- **Low Confidence:** mitigation measure expensive and difficult to implement.

Where mitigation is not sufficient to reduce the impact to acceptable levels offsets will need to be considered.

8.4 Study Team

The environmental study team members and specialists that will be involved in the environmental impact assessment are listed in Table 8.3. Curriculum vitae of practitioners and specialists are given in Appendix D.

Table 8.3: Study Team

Name and Affiliation	Qualification	Role
Environmental Study Team		
Kerry Fairley Synergistics Environmental Services	B.Sc. (Hons) Botany Pr.Sci.Nat CEAPSA	<ul style="list-style-type: none"> - Environmental Assessment Practitioner - Project Director - Quality Control and Review - EIA report and EMPR - Social Impact Assessment

Name and Affiliation	Qualification	Role
Zama Khumalo Synergistics Environmental Services	BA Geography	<ul style="list-style-type: none"> - Project Coordinator - EIA report and EMPR - Public Consultation - Social Impact Assessment - Integrated Water and Waste Management Plan - Waste Management License Application
Rudi de Jager Synergistics Environmental Services	B.Sc. Biological Sciences B.Sc. (Hons) Ecology	<ul style="list-style-type: none"> - EIA report and EMPR - Public Consultation - Integrated Water Use License Application - Integrated Water and Waste Management Plan - Waste Management License Application
Bheki Khumalo Synergistics Environmental Services	B.Sc. Geology and Applied Geology B.Sc. (Hons) Environmental Modelling and Monitoring	<ul style="list-style-type: none"> - GIS and Mapping
Gerhard Steenekamp Groundwater Complete	M.Sc. Geology Pr.Sci.Nat	<ul style="list-style-type: none"> - Geohydrological Assessment and Modelling
Phillip Hull Jeffares & Green	M.Sc. Hydrology Pr. Sci. Nat	<ul style="list-style-type: none"> - Hydrological Assessment and Modelling - Environmental Water Balance
Ryan Paul Gray Jeffares & Green	M.Sc. Hydrology Pr. Sci. Nat	<ul style="list-style-type: none"> - Hydrological Assessment and Modelling - Environmental Water Balance

Name and Affiliation	Qualification	Role
Tania Anderson Plant Ecologist	M.Sc. Environmental Management	- Floral Assessment
Beryl Wilson McGregor Museum	M.Sc. Zoology	- Faunal Assessment
Hanlie Liebenberg-Enslin Airshed Planning Professionals	M.Sc. Chemical Engineering	- Air Quality Impact Assessment
Nicolette von Reiche Airshed Planning Professionals	B.Eng Hons. Mechanical Engineering	- Air Quality Impact Assessment
David Dayson Demacon Market Studies	B.Sc. Tourism & Business Management & Economics	- Economic Assessment
Polke Birkholtz PGS Heritage & Grave Relocation Consultants	BA, Archaeology, Anthropology and History	- Heritage, Archaeological and Palaeontological Survey
Garry Patterson ARC Institute for Soil, Climate & Water	M.Sc. Soil Science	- Soil Survey - Land Capability Impact Assessment
Andries Joubert Jeffares & Green	B.Sc. Civil engineering, B.Eng. (Hons) (Tpt), M.Eng (Tpt)	- Traffic Impact Assessment

8.5 Consultation Process

The following opportunities will be provided to IAPs, Competent Authorities, relevant State Departments and Organs of State for input into the EIA process:

8.5.1 Public Participation Process

8.5.1.1 Public Review of the Scoping Report

Following the public review of the Draft Scoping Report (DSR) the final scoping report will be made available for public review for three weeks (21 calendar days). The report will be circulated to the public and commenting authorities. Any new issues raised during review of the scoping report will be forwarded to the competent authority and incorporated in the draft EIA report.

8.5.1.2 Public Feedback Meeting during EIA

On completion of the EIA, a public meeting will be arranged to present the results of the specialist studies and the identified environmental and social impacts of the development. Landowners and registered I&APs will be invited to attend the meeting. Additional focus group meetings may be arranged as and when required.

8.5.1.3 Public Review of the EIA Report

Both the draft and final EIA reports will be made available for public review. Six weeks (40 calendar days) will be allowed for review of the draft report and three weeks (21 calendar days) for review of the final report.

8.5.1.4 Report Distribution

The final scoping and EIA reports will be made available for review using the following means:

- Placement at Postmasburg Library
- Maremane Community
- Synergistics Website www.synergistics.co.za
- On request from Rudi de Jager of Synergistics: Tel: 011 326 4158, email: rudi@synergistics.co.za

8.5.2 Consultation with Competent Authorities, State Departments and Organs of State

8.5.2.1 Review of the Final Scoping

Following the review of the DSR in accordance with DENC's general NEMA timeframes, organs of state will be afforded 21 calendar days to review the report and submit comments to the competent authority and Synergistics Environmental Services. Any comments raised during this period will be included in the EIA phase.

The competent authorities will have 30 days after acknowledging receipt of the scoping report to accept, request additional information or reject the scoping report. For the review of the EIA report, the competent authority will have to 60 days from acknowledging receipt of the report to accept, request additional information or reject the report. After 45 days of acceptance of the report, the competent authority must issue a decision on the application.

8.5.2.2 Review of EIA Report

Both the draft and final EIA reports will be made available for review. Eight weeks (60 calendar days) will be allowed for review of the draft report and three weeks (21 calendar days) for review of the final report.

8.5.2.3 Authorities Feedback Meetings

General authorities meetings will be arranged during the Scoping and EIA phase of the project. Consultation meetings will be held with DMR, DENC, DWA, DEA and DAFF to provide feedback on the results of the specialist studies and the identified environmental and social impacts.

8.6 Specialist Studies

Where the EAP does not have sufficient expertise or information in a particular field to adequately determine the baseline environmental conditions or to assess the impacts, specialists in those fields will be appointed to provide the necessary information required to facilitate the EIA.

Specialist studies will be required to assess impacts on air quality, surface and groundwater resources, soils and land capability, socio-economics, heritage resources, traffic, and flora and fauna, visual and noise.

The following outlines the scope of work for specialist studies to inform the environmental impact assessment and environmental management programme. Should it be deemed necessary that

additional specialist studies are required, terms of reference will be drawn up and these will then be included in the EIA report.

Specialist reports will be structured in terms of GNR 543 Section 32. The specialist studies identified thus far are discussed below.

8.6.1 Faunal and Floral Assessment

The proposed COZA Iron Ore Project is located within the Eastern Kalahari Bushveld Bioregion of the Savanna Biome, an area that can potentially support a number of protected species. Sensitive environments including ephemeral watercourses and pans occur in the area. The project is also located within the Griqualand West Centre of Endemism. Because the proposed development may disturb these sensitive environments, it has been deemed necessary to conduct a Faunal and Floral Assessment of the area. The tasks that will be conducted as part of the assessment are given below.

8.6.1.1 Faunal Assessment

- Conduct a spring and autumn survey to identify presence of faunal sensitive species.
- Provide a description of the dominant fauna species occurring in the area;
- Identify endangered, rare or protected species; and
- Map potential habitat for species (based on relevant databases), with an indication of the relative importance of the specific community in the area under investigation

8.6.1.2 Floral Assessment

- Conduct a spring and autumn survey to identify presence of faunal sensitive species.
- Provide a description of the dominant flora species occurring in the area, including floral species composition and structure, and distinguish clearly between areas containing predominantly exotic and predominantly natural vegetation; and
- Describe the endangered, rare or protected species
- Map potential habitat that occur on the study area

8.6.2 Air Quality

A number of activities associated with the proposed COZA Iron Ore Project during the construction and operation phase will have the potential to produce large amounts of emissions and dust. An air quality assessment will determine the sources of emissions and areas likely to be affected by dust/emissions, as well as provide recommendations for the mitigation of dust impacts. The terms of reference for the air quality assessment are as follows:

- Provide baseline air quality characterisation for the area;
- Compile an emissions inventory for the project and contribution of various sources of fallout dust and PM10 to be identified;
- Describe legal requirements and standards;
- Perform dispersion modelling; incremental for the different phases of the development as well as cumulative impacts;
- Predict dust fallout and fine particulate (PM10) concentrations;
- Define dust nuisance (dust fallout) and potential health impact areas;
- Propose dust control measures for construction and operation, particularly for areas within the air quality buffer and management zones; and
- Provide recommendations for air quality monitoring

8.6.3 Surface Water Assessment Impact Assessment

A surface water assessment study will be undertaken to establish current baseline conditions of surface water in the study area and identify and evaluate the current and potential impacts of the project on surface water flow and water quality conditions. As part of the study the following tasks will be undertaken:

- Evaluate current water quality status;
- Determine flood hydrology of the area;
- Compile a site wide Environmental Water Balance;
- Identify impact sources;

- Recommend mitigation measures,
- Develop a Stormwater Management Plan; and
- Recommend monitoring program.

This study will also act as an input into the required IWWMP for the Project.

8.6.4 Groundwater Impact Assessment

A specialist groundwater (geohydrological) study will be conducted to assess the potential risk that the COZA Iron Ore Project will place on groundwater quantity and quality. The terms of reference for the study are as follows:

- Perform a hydro-census of the study area;
- Baseline assessment: Analyse and describe ground water use, current water levels and qualities and aquifer parameters;
- Assess the potential impacts of the mining project on the groundwater environment;
- Calculate dewatering rates, cones of depression and inflows into the pit areas;
- Develop a transport model to determine the dispersion plume; and
- Develop a monitoring and management plan for groundwater.

8.6.5 Soil and Land Capability Survey

The soil survey is required in order to determine the types of soils that will be disturbed by the development and the amounts of top - and residual soil that needs to be stockpiled in order to rehabilitate the mine after mining has occurred. The land capability survey is required to determine the potential value of the land to be mined and the impact that the project is likely to have on land capability. The soils and land capability survey will therefore entail the following:

- Classify the types and volumes of soils that will be disturbed;
- Investigate the suitability of soils for rehabilitation;
- Conduct a soil balance to determine the volumes of soil required and available for rehabilitation; and

- Develop a soil management plan to allow for stripping, stockpiling and management of soils to promote effective use in rehabilitation.

8.6.6 Economic Impact Assessment

An economic study will be conducted to evaluate the economic benefits and/or impacts of the proposed development. The following activities will form part of the socio-economic impact assessment:

- Base Profiling and Trend Analysis of the study area;
- Identification of economic indicators to reflect the state of the market;
- Develop and analyse community demographics and profiles at regional level;
- Assess the economic benefits of mining vs. agriculture
- Estimate value of impacts to the local economy due to project investment;
- Model Development and Impact Assessment; and
- Development of recommendations and Mitigation Plan.

8.6.7 Heritage Impact Assessment

The Heritage Impact Assessment will be undertaken to identify and map heritage resources that might be affected by the proposed mining operation. The study will comprise the following components:

- An aerial photographic survey to identify and map heritage resources in the affected area;
- A physical survey of the area consisting of a walkthrough of the proposed development footprint areas aimed at locating heritage resources falling within and directly adjacent to the proposed development footprint areas;
- The mapping of all heritage resources in the affected area;
- An assessment of the significance of such resources using heritage assessment criteria;
- An assessment of the impact of the development of such heritage resources;

- If heritage resources will be adversely affected by the proposed development, consideration of the alternatives; and
- Propose mitigation of any adverse effects during and after the completion of the proposed development.

8.6.8 Social Impact Assessment

The Social Impact Assessment will be undertaken by Synergistics Environmental Services to establish the projects social impacts. The following tasks will be undertaken as part of the Social Impact Study:

- Review existing social documentation
- Establish local social baseline at a local level
- Determine the project's social impacts
- Identify opportunities for social development
- Identify methods for future consultation with the surrounding communities

8.6.9 Traffic Impact Assessment

The Traffic Impact Study will be undertaken to identify the traffic impact of the traffic to and from the proposed mine and assess the safety risks of the proposed new access route or routes to the mine. The following tasks will be undertaken as part of the Traffic Impact Study:

- Determine baseline traffic conditions;
- Conduct traffic counts;
- Determination of trip generation, distribution and assignment due to mining operation;
- Intersection and access analysis;
- Safety assessment, including safe sight distances and pedestrian safety as well as the railway crossing;
- Impact of the proposed project on existing road pavements and traffic conditions; and
- Development of recommendations & Mitigation Plan.

8.6.10 Noise Impact Assessment

The project area is located in an area that is classified as rural district. The introduction of mining activities will result in a disturbance to ambient noise levels. There are some sensitive receptors located on Driehoekspan and the surrounding that might be impacted on as a result of mining. A noise impact assessment will therefore be required as part of the EIA assessment. The assessment will include the following:

- Identification of sensitive receptors;
- Description of legal requirements and standards;
- Baseline noise levels monitoring on the project site and at key sensitive receptors around the project location e.g. communities, neighbouring farmers, roads, etc.;
- Defining existing ambient noise levels in the area;
- Estimation of noise output and emissions during construction and operation;

8.6.11 Visual Impact Assessment

The proposed COZA Iron Ore Project will include the mining of the Bleskop Hill and development of surface infrastructure such as waste rock dumps and soils stockpiles. These mining activities will have an impact of the current visual environment in the study area. A visual impact assessment will be therefore need to be undertaken for the development. The assessment will include the following:

- Conducting a viewshed analysis for the study area and its surrounds
- Identification of sensitive receptors for the different visual intrusions
- Identify management and mitigation measures for identified impact

8.6.12 Content of EIA Report

The content of the EIA Report will be structured in terms of:

- GNR 543 Section 31 (EIA regulations in terms of the NEMA), and
- Regulation 50 of the MPRDA regulations, as contemplated in Section 39(1) of the MPRDA.

8.6.13 Draft EMP

A draft EMP will be submitted as a supporting document to the EIA Report. The EMP will be structured in terms of:

- GNR 543 Section 33 (EIA regulations in terms of the NEMA).
- Regulation 51 of MPRDA Regulation 527 will be adhered to.
- The DWA guidelines for IWWMPs will also be considered.

It will provide recommendations on how to construct, operate and maintain the COZA Iron Ore Mine and associated infrastructure. If and when approved by the relevant authorities, the provisions of the EMP will be legally binding on the project applicant and all its contractors and suppliers.

9. CONCLUSIONS AND KEY FINDINGS

This report concludes the scoping phase of the environmental assessment for the COZA Iron Ore Project. It outlines the results of the public participation and authority consultation processes to date, and defines the plan of study for the Environmental Impact Assessment phase.

The baseline assessment has revealed the presence of heritage resources, surface water features and potential areas of ecological sensitivity within the mining footprint that will need to be further assessed during the EIA phase. It will also be important to ensure the identification and consultation of the other members of the Maremane Communal Property Association as the landowners of site where the project is proposed.

It is deemed that the environmental process followed to date meets the requirements of the legislation, NEMA NEM: WA and the MPRDA, to ensure that the regulatory authorities receive sufficient information to enable them to make an informed decision to accept the Scoping Report and approve the plan of study for EIA as outlined in Section 8 of this report.

10. REFERENCES

- Airshed Planning Professionals (2010). *Kolomela Mine Air Quality Impact Assessment*
- ARC –Institute for Soil, Climate and Water, (2002) Development and Application of a Land Capability Classification System for South Africa
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- COZA Mining (Pty) Ltd, (2013), Draft Mining Work Programme: Doornpan
- Demacon Market Studies, (May 2013), *COZA Iron Ore Project Economic Impact Assessment (Baseline Report)*.
- Jeffares &Green Consulting Engineers, (May 2013), *COZA Iron Ore Project, Desktop Hydrology Assessment*
- PGS Heritage: (6 May 2013), *Heritage Scoping Report for the COZA Iron Ore Project*.
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- Tania Anderson (April 2013) *Environmental Scoping Report: Specialist vegetation study on the potential impacts of the proposed COZA Iron Ore Mine project near Postmasburg, Northern Cape*.
- The New Age (24 April 2012) *Mines “must plough back”*
<http://www.thenewage.co.za/mobi/Detail.aspx?NewsID=49236&CatID=1015>

11. APPENDICES

Appendix 1: Public Participation Information

- A1: IAP Database
- A2: Landowner notification and consent letter
- A3: Press and site notification
- A4: BID
- A5: Minutes of meeting
- A6: Correspondence to and from IAPS

Appendix 2: Authority consultation

- B1: DENC acknowledgement letter
- B2: DEA acknowledgement

Appendix 3: Specialist Baseline Reports

- C1: Faunal Specialists Study
- C2: Specialist Vegetation Study
- C3: Desktop Hydrology Assessment Report
- C4: Economic Baseline Report
- C5: Heritage Scoping Report

Appendix 4: Study Team CVs

CONSULTANT'S EXPERIENCE
AND
DECLARATION OF INDEPENDENCE

Synergistics Environmental Services (Pty) Ltd is part of the SLR Group of companies. The company has extensive experience in environmental impact assessments; environmental management plans, programmes and systems; environmental auditing; environmental monitoring reporting; environmental performance assessments; closure and rehabilitation costing and planning; and development of environmental action plans.

The undersigned herewith declare that this report represents an independent, objective assessment of the environmental impacts associated with the proposed COZA Iron Ore Project.

	Name	Designation	Signature	Date
Prepared by:	Zama Khumalo	Project Manager		
	Rudi de Jager	Environmental Scientist		
Reviewed by:	Alex Pheiffer	Director		

APPLICANT'S DECLARATION AND UNDERTAKING

The undersigned herewith declare that the information presented this report is in accordance to the current plans of the company and undertake to comply with the mitigation and management measures as described in this report..

Signed: _____

Name: _____

Designation: _____

Dated: _____