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Environmental Management Programme Report (EMPr) for the Wastewater Treatment Plant and Co-Disposal Facility for Maquasa East Operations

FINAL

November 2024

Kangra Coal (Pty) Ltd
GCS Project Number: 22-0161
Client Reference: KC/003/22
DMR Reference: MP 30/5/1/23/2/1/133 EM



GCS (Pty) Ltd. **Reg No:** 2004/000765/07 Est. 1987
Offices: **Johannesburg** (Head Office) | Durban | Gaborone | Maseru | Windhoek | Ostrava
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DOCUMENT ISSUE STATUS

Report Issue	FINAL		
GCS Reference Number	21-0161		
Client Reference	KC/003/22		
DMR Reference	MP 30/5/1/23/2/1/133 EM		
Title	Draft Environmental Management Programme Report (EMPr) for the Wastewater Treatment Plant and Co-Disposal Facility for Maquasa East Operations		
	Name	**Signature**	**Date**
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Document Reviewer	Gerda Bothma		November 2024

ACRONYMS AND ABBREVIATIONS

CA	Competent Authority
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
cEO	Contractor's Environmental Officer
CLO	Community Liaison Officer
DAFF	Department of Agriculture, Forestry and Fisheries
DFFE	Department of Environment, Forestry and Fisheries
DOT	Department of Transport
DSS	Developer Site Supervisor
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners of South Africa
EAR	Environmental Audit Report
ECA	Environmental Conservation Act, 1989 (Act No. 73 of 1989)
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMPr	Environmental Management Programme
EPC	Engineering, Procurement and Construction
ERAP	Emergency Response Action Plan
ESA	Ecological Support Area
FPA	Fire Protection Agency
FPO	Fire Protection Officer
FSR	Final Scoping Report
GCS	GCS Water and Environmental Consultants (Pty) Ltd
GIS	Geographic Information System
GN	Government Notice
GNR	Government Notice Regulation
ha	hectare
HCS	Hazardous Chemical Substance
HGM	Hydrogeomorphic
HIA	Heritage Impact Assessment
IEA	Integrated Environmental Authorisation
I&AP	Interested and Affected Party
km	kilometre

L	litres
m	metres
m^2	square metres
m^3	cubic metres
mamsl	metres above mean sea level
mm	millimetres
ML	megalitres
MW	megawatts
NCR	Noise Control Regulations
NEMA	National Environmental Management Act, 1998 (Act No, 107 of 1998)
NEM: AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM: BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM: WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NFA	National Forestry Act, 1998 (Act No. 4 of 1998)
NHRA	National Heritage Resources Agency
NFEPA	National Freshwater Ecosystems Priority Area
NPAES	National Protected Areas Expansion Strategy
NRTA	National Road Traffic Act, 1996 (Act No. 93 of 1996)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
PM	Project Manager
PPE	Personal Protective Equipment
PPP	Public Participation Process
SABS	South African Bureau of Standards
SACNASP	South African Council for Natural Scientific Professionals
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SALA	Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970)
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SAPS	South African Police Services
SARTSM	South African Road Traffic Signs Manual
SCC	Species of Conservation Concern
SDF	Spatial Development Framework
SDS	Safety Data Sheets
S&EIA	Scoping and Environmental Impact Assessment

SPLUMA	Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
SWMP	Stormwater management plan
WWTP	Wastewater Treatment Plant
WUL	Water Use Licence
WULA	Water Use Licence Application

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1 INTRODUCTION

GCS Water and Environmental Consultants (Pty) Ltd (GCS) has been appointed by Kangra Coal (Pty) Ltd (the Applicant/"Kangra") as the Environmental Assessment Practitioner (EAP) to undertake the Application for an Integrated Environmental Authorisation (IEA) for the Construction of a wastewater treatment plant (WWTP) for the treatment of effluent, and a new co-disposal facility (CDF), including supporting and associated infrastructure, at their Maquasa East (MQE) Operations (refer to Figure 1 and Figure 2).

An IEA and Waste Management Licence (WML) is required in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA), National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEMWA). This application is undertaken in terms of the 2014 NEMA Environmental Impact Assessment (EIA) Regulations, Government Notice 982 of 4 December 2014 (Government Gazette No. 38282), as amended.

Kangra's Maquasa mining operation is located near Piet Retief within the Mpumalanga Province. The mining area is situated approximately 45km west of Piet Retief and just off the N2 national road on a secondary road leading to the Heyshope Dam.

All mining and Project related infrastructure is located at MQE and includes a coal washing plant and associated infrastructure. This plant is used for the processing of all coal mined from Twyfelhoek and Balgarthen Adits. No mining is taking place at MQE as all of the coal reserves have already been mined.

The Project will entail the development of the infrastructure listed in Table 1. The Table also includes the property details over which the development is proposed.

Table 1: Project Infrastructures and Property Description

Project	Property	SG Code	Local Municipality
Wastewater Treatment Plant (WWTP), Brine Treatment Plant, Brine Pollution Control Dam (PCD) & pipeline	Remaining Extent (RE) of the farm Roodekraal 21HT	T0HT00000000002100000	Mkhondo LM
WWTP discharge pipeline	Farm Roodekraal 21 HT	T0HT00000000002100000	Mkhondo LM
	RE of the farm Roodekraal 21HT	T0HT00000000002100000	
CDF	RE of the farm Rooikop 18HT	T0HT00000000001800000	Pixley Ka Seme LM
	RE of the farm Maquasa 19HT	T0HT00000000001900000	
CDF pipelines & external haul roads	RE of the farm Rooikop 18HT	T0HT00000000001800000	Pixley Ka Seme LM
	RE of the farm Roodekraal 21HT	T0HT00000000002100000	Mkhondo LM

The proposed developments are located within an area where anthropogenic impacts such as

alien vegetation encroachment, gravel roads, natural vegetation removal, hardening of surfaces to establish the mining infrastructure, fencing, grazing of animals and disturbances to the wetland systems around the site have been identified. The Terrestrial Critical Biodiversity Area (CBA) of the site is mixed between transformed areas and ecological support areas (ESA).

The proposed projects are crucial for the continued operation of the Maquasa Operations. The implementation of the proposed structures will allow for the improvement of MQE's contaminated water management practices, and the additional disposal capacity allow for the full Life of Mine (LoM) of Kangra's mining operations near Piet Retief to be achieved.

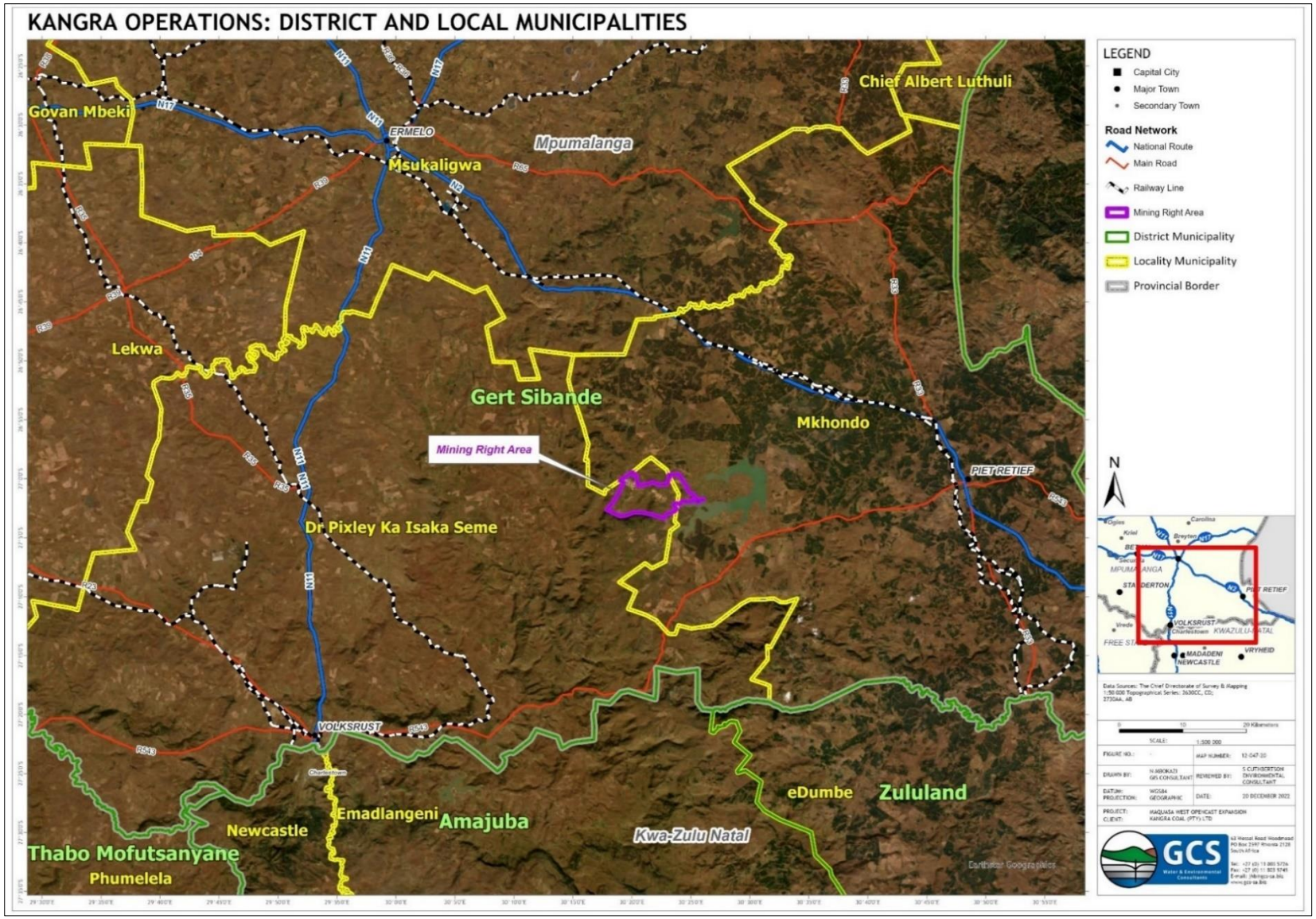

Figure 1: Regional Locality Map

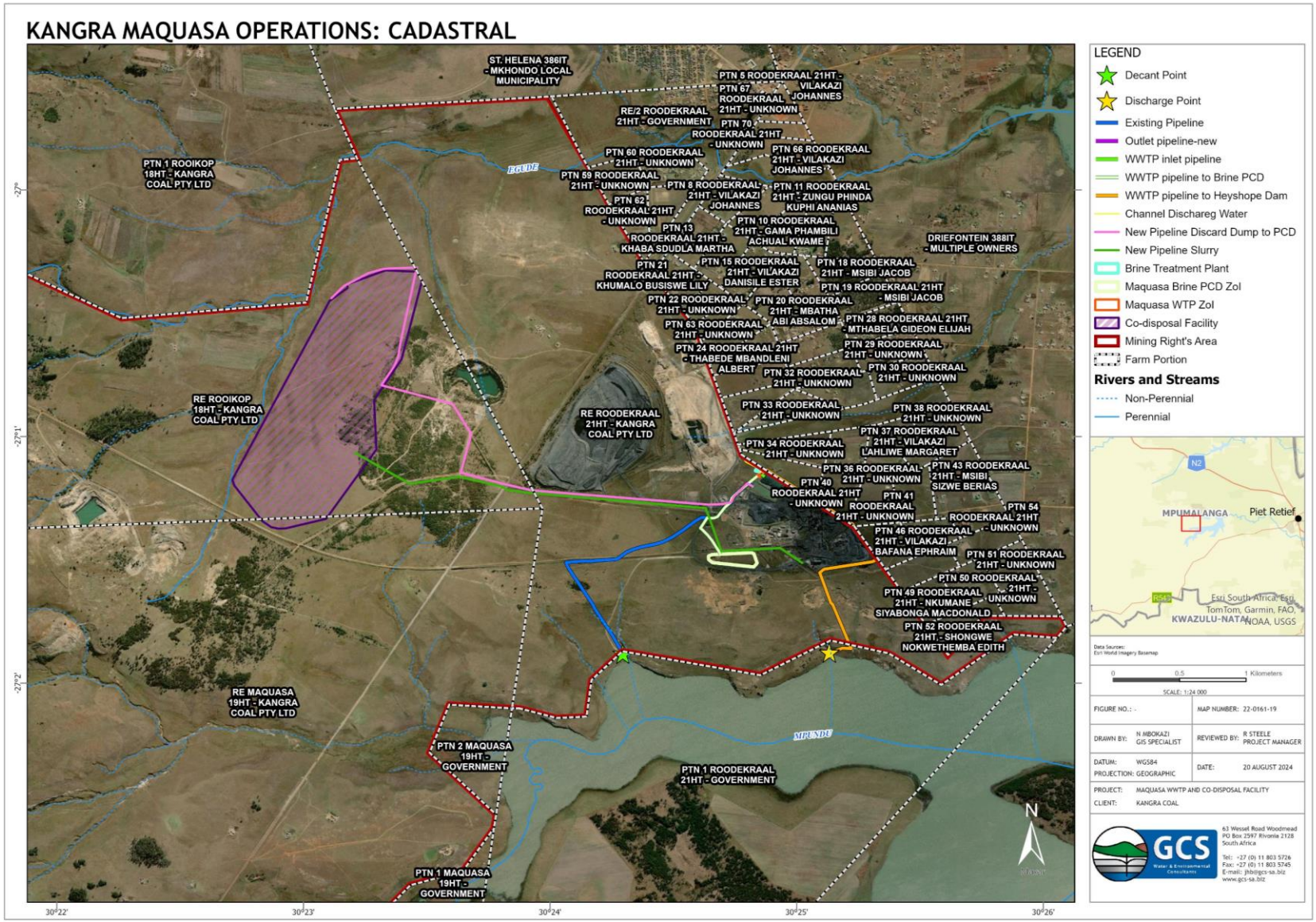

Figure 2: Site layout and affected properties

1.1 Purpose of the EMPr

Section 19 of the NEMA EIA Regulations (as amended), requires that the Applicant submit an EMPr to the Competent Authority (CA). This EMPr will form part of the EA for the proposed Project, once approved.

The EMPr is an important environmental management tool, developed in line with best practices under NEMA and other environmental legislation, and informed by the EAP's professional experience as well as any relevant specialist information. The EMPr provides management guidance for activities undertaken at the development site. If correctly followed, the EMPr ensures that any adverse environmental impacts which could result from the development are adequately managed and mitigated.

The EMPr outlines all environmental management and monitoring actions required throughout the Project lifecycle. The EMPr is legally binding and any person who contravenes the provisions herein is liable for imprisonment or a fine. This document should be viewed as "live" and thus, should be updated as and when necessary. The purpose of this document is therefore to guide environmental management throughout the various lifecycle phases of the proposed development.

The objectives of the EMPr are as follows:

- Ensure compliance with the relevant environmental legislation and conditions of the EA;
- Ensure that development activities are appropriately managed;
- Verify environmental performance through information on impacts as they occur;
- Respond to changes or unforeseen events; and
- Provide feedback on the continual improvement in environmental performance.

It is understood that all contract documentation related to the Construction, operation and decommissioning (if required) of the proposed development will include the conditions of the EA and provisions of the EMPr. ***It is important to note that the contractual obligations must include the recording of any complaints on the Project in the environmental register. Further, it is incumbent on the ECO to keep an accurate audit trail showing compliance with the EMPr during the Construction Phase.***

This EMPr will remain a dynamic document throughout the life of the Project. Following the issuance of an EA, the EMPr must be updated to include the specific conditions in the EA, as well as any required monitoring or reporting requirements of the CA.

1.2 Content of the EMPr

According to Appendix 4 of the NEMA EIA Regulations (as amended), the EMPr for a Project must include certain information. Table 2 describes how this report meets those requirements.

Table 2: Contents of this Environmental Management Programme (EMPr)

Requirement	Section In This Report
Details of— i. the EAP who prepared the EMPr; and ii. the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Section 1.3 and Appendix A
A detailed description of the aspects of the activity that are covered by the EMPr as identified by the Project description;	Section 1.7
A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Figure 3
A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the EIA process for all phases of the development including— i. Planning and design; ii. Pre-Construction activities; iii. Construction activities; iv. Rehabilitation of the environment after Construction and where applicable post-closure; and v. Where relevant, operation activities;	Section 5
A description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated above will be achieved, and must, where applicable, include actions to— i. Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; ii. Comply with any prescribed environmental management standards or practices; iii. Comply with any applicable provisions of the Act regarding the closure, where applicable;	Section 5
The method of monitoring the implementation of the impact management actions;	Section 5
The frequency of monitoring the implementation of the impact management actions;	Section 5
An indication of the persons who will be responsible for the implementation of the impact management actions;	Section 5
The time periods within which the impact management actions must be implemented;	Section 5
The mechanism for monitoring compliance with the impact management actions;	Section 5
A programme for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 5
An environmental awareness plan describing the manner in which— i. The Applicant intends to inform his or her employees of any environmental risk which may result from their work; and ii. Risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 4.15 Section 5
Any specific information that may be required by the CA.	N/A

1.3 Details of the EAP

The details of the EAP who prepared this report can be found in Table 3. The EAP CV and registrations are attached as **Appendix A.**

Table 3: Details of the EAP

Item	Details
Company Name	GCS Water and Environmental (Pty) Ltd
Company Representative	Gerda Bothma
EAP	Reneé Steele
EAP Professional Registrations	• Registered EAP with the Environmental Assessment Practitioners Association of South Africa (Reference: 2022/4847). • Professional Natural Scientist with the South African Council for Natural and Scientific Professionals (SACNASP) (Reference: 008920).
EAP Qualifications	• BSc Honours Environmental Monitoring and Modelling, UNISA • BSc Zoology, University of KwaZulu-Natal
Telephone No.	+27 (0)11 803 5726
Facsimile No.	+27 (0)11 803 5745
E-mail Address	gerdab@gcs-sa.biz
Postal Address	P.O. Box 2597, Rivonia, 2128

1.4 Details of the Applicant

The Applicant is Kangra Coal (Pty) Ltd. The relevant contact details for the Applicant are provided in Table 4.

Table 4: Details of the Applicant

Item	Details
Company Name	Kangra Coal (Pty) Ltd
Company Representative	Paul Redelinghuys
Contact Person	Mahlatse Monareng
Telephone No.	+27 (13) 110 6309
E-mail Address	mahlatse.monareng@kangracoal.co.za
Postal Address	Kangra Group (Pty) Ltd, P.O. Box 745, Piet Retief

1.5 Assumptions and Limitations

This EMPr has been drafted with the acknowledgement of the following assumptions and limitations:

- Information used to guide the development of this EMPr was gained through the national web-based screening tool, through specialist input and using the EAP's experience in such developments;
- It is assumed that all information received from the proponent is correct, with nothing

withheld; and

- It is assumed that the proponent will be developing the proposed projects as described within this report and that no deviation will be required.

1.6 Applicable legislation, policy and best practice guidelines

The EMPr has been developed using knowledge of relevant national, provincial and local legislation and policy as well as best practice guidelines. The Applicant is bound to comply with the legislation and policy provisions throughout the life cycle of the Project. Table 5 lists the relevant legislation and guidelines applicable to the development.

The environment is composed of biophysical, ecological, economic and social components. Construction is a disruptive activity, and all due consideration must be given to the environment, including the social environment during the execution of the Project to minimise negative impacts on affected parties. Minimisation of areas disturbed by Construction activities (i.e. the footprint of the development area) should reduce many of the Construction-related environmental impacts of the Project and reduce rehabilitation requirements and costs. All relevant standards relating to international, national, provincial and local legislation, as applicable, should be adhered to. This includes requirements relating to waste generation and emissions, waste disposal practices, noise regulations, road traffic ordinances, etc. Every effort should be made to minimise, reclaim, and/or recycle waste materials.

Table 5: Applicable legislation, policy and best practice guidelines

Legislation/Guideline	Objective & Relevance
Legislation	
Constitution of the Republic of South Africa (Act 108 of 1996)	The Constitution is the supreme law governing all other legislation. Environmental legislation is shaped by the Bill of Rights set out in the Constitution. It sets out the rights of every citizen of South Africa and aims to address past social injustices. With respect to the environment, Section 24 of the Constitution states that: *"Everyone has the right:* *a) To an environment that is not harmful to their health or well-being.* *b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:* *i. Prevent pollution and ecological degradation;* *ii. Promote conservation; and* iii. *Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".* In fulfilment of its constitutional mandate to take reasonable legislative measures that give effect to Section 24, the government has promulgated several environmental laws. These laws provide a legal framework that embodies internationally recognised legal principles. The principal act governing activities that affect the environment is NEMA. The Constitution itself has no permitting requirements. However, the way the environmental right is applied implies that environmental impacts associated with developments should be considered separately and cumulatively. Furthermore, Section 24 includes the notion that justifiable economic and social development should be promoted, through using natural resources and ecologically sustainable development. ***MQE must ensure that significant environmental impacts are avoided; and where impacts cannot altogether avoided, they must be minimised and mitigated throughout the lifecycle of the proposed projects.***
Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)	• Access to information is a right, not a privilege. • S 32 of the Constitution protects the right to access to information, and applies vertically, in that it imposes a duty on the state to provide access to information to someone requesting the information, and horizontally, in that it imposes a duty on natural and juristic persons to provide access to information. • In the case of natural and juristic persons, the information must be required by the requester for the protection of the right, but this restriction does not apply where information is requested from the state. • The Promotion of Access to Information Act, 2000 (Act 2 of 2000) (PAIA) was enacted to give effect to the right, in pursuit of a culture of openness, transparency and justification in South Africa, shifting away from a culture of secrecy and authoritarianism. ***The act assists the public in requesting information, and all have the right to access information***
Environmental Conservation Act, 1989 (73 of 1989) (ECA), as amended	The ECA has now largely been replaced by the NEMA but certain provisions remain in force. The National Noise Control Regulations[1] (NCR) were promulgated in terms of Section 25 of the ECA, relating to noise, vibration and shock. The NCRs were revised[2] to make it obligatory for all authorities to apply the regulations. Under the ECA, the following SANS for assessing and controlling noise include:

[1] GNR 154 in Government Gazette No. 13717 dated 10 January 1992
[2] Under GN155 of 10 January 1992

Legislation/Guideline	Objective & Relevance
	• 10328:2008 "Methods for environmental noise impact assessments"; and • 10103:2004 "The measurement and rating of environmental noise with respect to annoyance and speech communication". ***The proposed projects are likely to increase ambient noise levels during the Construction (temporary) and operational phases. Noise impacts are closely related to Construction activities and heavy traffic volumes. The SANS published under ECA will be considered for the purposes of the noise impact assessment in the EIA and the EMPr will include mitigation measures relating to the mitigation of noise impacts***
National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA), as amended.	NEMA is the framework law giving effect to the constitutional environmental right and for regulatory tools with respect to environmental impacts. Section 28(1) includes a statutory duty of care, providing that *"Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by-law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment"*. In terms of sections 24(2) and 24D of NEMA, the then Minister of Environmental Affairs promulgated certain listed activities that may not commence without an EA. Activities promulgated in terms of GN983 and GN9835 require a basic assessment process, while activities promulgated in terms of GN984 require that a full scoping and EIA process be conducted.[3]. Section 24C(2A) of NEMA indicates that "*where listed activities are directly related to the extraction and primary processing of a mineral resource*" the Minister of Mineral Resources and Energy is the CA or official/s at the Department of Mineral Resources and Energy (DMRE) and which power he has delegated to the relevant Regional Managers (RMs). The National Environmental Laws Amendment Act, 2022 (Act 2 of 2022) (NEMA Amendment Act) was promulgated on 24 June 2022. It will introduce a major shift in South Africa's environmental legislation on a date to be fixed and proclaimed by the President (which has yet to occur). This includes: • Residue stockpiles and residue deposits (RS) will be excluded from NEMWA and will therefore no longer be regarded as waste for which a WML is required. Instead, RS and deposits will be regulated under NEMA. • The RMs will be the CA "*where the listed or specified activity is a mining activity*". ***Note that, should the NEMA Amendment Act commence prior to Construction, Kangra would no longer require a WML for the CDF and it would be governed under NEMA.***
NEMA EIA Regulations, 2014 (GNR 326, as amended)	Chapter 6 of the 2014 EIA Regulations provides for the requirements for public participation, which must be carried out as part of the EA and WML application process. In terms of Regulations 21 and 23, the outcome of the PPP must be reported in the FSR and Environmental Impact Report submitted to the CA. The PPP, "*must give all potential or registered parties (I&APs), including the CA, a period of at least 30 days to submit comments on each of the EMPr, Scoping and Environmental Impact Reporting (S&EIRs), and where applicable the closure plan, as well as the report contemplated in regulation 32, if such reports or plans are submitted at different times*" (Regulation 40 (1)). PPP will be undertaken in accordance with Chapter 6 of the EIA Regulations, 2014. It must: • provide access to all information that reasonably has or may have the potential to influence any decision regarding an application; • involve consultation with the CA, every state department that administers a law relating to the environment relevant to the application, all relevant organs of state, and all I&APs; and • provide opportunity for I&APs to comment on reports and plans prior to submission of an application and once an application has been submitted to the CA. The process must include:

[3] GNs 983, 984 and 985 are promulgated under NEMA in GG 38282 of 4 December 2014 (as amended).

Legislation/Guideline	Objective & Relevance
	• notification of the application to all I&APs, as stipulated in Regulation 41; • registration of all I&APs, as required in Regulations 42 and 43; and • a Comment and Response Report and records of meetings of and with I&APs, as outlined in Regulation 44. Regulation 39 of the EIA Regulations, 2014 requires that: "*(1) If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.* *(2) Sub-regulation (1) does not apply in respect of—* *(b) activities constituting, or activities directly related to prospecting … of a mineral …resource or extraction and primary processing of a mineral…resource.*"
NEMA and Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA): Financial Provision (FP)	NEMA requires *inter alia* mining right holders to hold in place FP for the rehabilitation, closure and ongoing post-decommissioning management of negative environmental impacts. FP assessments were previously governed by the MPRDA and the quantum calculated according to the DMRE published rates. On 20 November 2015, the NEMA Financial Provisioning Regulations, 2015[4] (2015 FP Regulations) were promulgated, resulting in significant changes from the MPRDA's requirements. Five (5) further draft updated iterations of the 2015 NEMA FP Regulations were published by the DFEE, with the last iteration published in 2022. The 2015 FP Regulations were immediately applicable to applicants for a new mineral right but not to mineral rights holders where the right was granted before the commencement of the 2016 FP Regulations. Under the 2015 FP Regulations' transitional provisions, holders of a mineral right granted prior to the commencement of the 2015 NEMA FP Regulations (Existing Holders) were able to elect to comply either within three (3) months of their financial year-end or 15 months from the promulgation of the 2015 FP Regulations. Various extensions of this transitional period have subsequently been published, with the latest extension date being 19 September 2023. ***Kangra will comply with the relevant FP Regulations when required to do so.*** ***The DMRE will require that FP be provided by Kangra before issuing it with an EA / WML.***
DFFE Web-Based Screening Tool	In terms of Regulation 16(1)(b)(v), read with Regulation 21 of the 2014 EIA Regulations, it is compulsory for an EIA application to include a sensitivity report generated by the national web-based environmental screening tool.[5] (DFFE Screening Tool). The content of specialist reports for certain of the themes is prescribed in the Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes.[6] (Assessment Protocols); and Appendix 4 of the EIA Regulations will not apply to such themes. Two Assessment Protocols have been gazetted, in March and October 2020. ***Specialist studies have been undertaken to verify the sensitivity themes as identified in the DFFE Screening Tool. Specific requirements for the content of the EIA specialist reports are included in the Assessment Protocols and these specialist reports will comply with the aforesaid for purposes of the EIA.***
National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA), as amended	The NEMWA's purpose is to: assist in regulating waste management; ensure the protection of human health; and prevent pollution and environmental

[4] GN 1147 of 20 November 2015: Regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GG 39425)
[5] GN R960 of GG 42561, dated 5 July 2019
[6] In terms of in terms of sections 24(5)(a) and (h) and 44 of NEMA and GN R320 of GG 43110 on 20 March 2020 and GN R1150 of GG 43855 on 30 October 2020

Legislation/Guideline	Objective & Relevance
	degradation through sound waste management principles and guidelines. The NEMWA defines waste broadly.[7] It furthermore provides for: • national norms and standards for regulating waste management by all spheres of government; • licensing and control of waste management activities; • remediation of contaminated land; • a national waste information system; and • provision for compliance and enforcement. The NEMWA imposes a general duty upon waste holders to take reasonable measures to avoid waste generation and, where this is impossible, to: minimise the toxicity and quantities of waste generated; reuse, reduce, recycle and recover waste; and ensure that it is treated and disposed of in an environmentally sound way. Failure to do so is a criminal offence, with a maximum fine of R10 million or imprisonment of up to 10 years, or both.
Regulations published under NEMWA in GN 921 of Government Gazette 37083 on 29 November 2013 (2013 WML Regulations)	It is necessary to hold a WML for defined waste management activities. The 2013 WML Regulations, provide that a WML is required for undertaking certain waste management activities ("Waste Listed Activities"). The Waste Listed Activities are separated into three (3) categories, namely Category A, B and C. Category A and B Waste Listed Activities require a WML, for which either a basic assessment or an EIA process needs to be undertaken that complies with the 2014 EIA Regulations. Category C activities do not require a WML but must comply with *inter alia* the Norms and Standards for Storage of Waste, 2013.[8] ***On commencement of the NEMA Amendment Act, RS will be excluded from NEMWA and will therefore no longer be regarded as waste for which a WML is required. Instead, RS will be under NEMA.*** ***As the NEMA Amendment Act has still not commenced, Kangra has submitted an application for a WML for the proposed RS (i.e., the CDF), which is a Category B Waste Listed Activities in the 2013 WML Regulations, which is part of the S&EIR process.***
NEMWA Regulations regarding the Planning and Management of RS Deposits, published in GN 632 of GG 39020 on 24 July 2015 (Residue Regulations)	The Residue Regulations provide the tools for and correspond to the statutory provision relating to managing RS in the manner prescribed in Section 43A of the NEMWA. They regulate the planning, management and reporting of RS, including: • The assessment of impacts and analyses of risks relating to the management of RS; • Characterisation and classification of RS; • Conducting feasibility studies for the investigation and the selection of site for RS, including geotechnical and hydrological investigations, by competent persons and a registered professional civil / mining engineer; • Design of the RS;[9]

[7] *(a) any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as defined in Schedule 3 to this Act; or*
(b) any other substance, material or object that is not included in Schedule 3 that may be defined as a waste by the Minister by notice in the Gazette but any waste or portion of waste, referred to in paragraphs (a) and (b), ceases to be a waste—
(i) once an application for its re-use, recycling or recovery has been approved or, after such approval, once it is, or has been re-used, recycled or recovered;
(ii) where approval is not required, once a waste is, or has been re-used, recycled or recovered;
(iii) where the Minister has, in terms of section 74, exempted any waste or a portion of waste generated by a particular process from the definition of waste; or
(iv) where the Minister has, in the prescribed manner, excluded any waste stream or a portion of a waste stream from the definition of waste.

[8] Published in GN 926 of GG 37088 on 29 November 2013

[9] Including the general layout; type of deposition method used; rate of rise; design of the pollution control barrier system; stormwater control; freeboard; pooling; required factor of safety; control of decanting of excess water; retention of polluted water; design of the penstock; outfall pipe, under-drainage system and return water dams; height of the phreatic surface; slope angles and method of construction of the outer walls and their effects on shear stability; slope erosion by wind and water, and its control by vegetation, berms or catchment paddocks; and the potential for pollution.

Legislation/Guideline	Objective & Relevance
	• Impact management; • Duties of the holder of the right or permit; • Monitoring and reporting systems; • Dust management and control; and • Decommissioning, closure and post-closure management requirements. When the NEMA Amendment Act commences, the Residue Regulations [10] will remain operational and shall be deemed to have been made under NEMA.[11]
NEMWA Waste Classification and Management Regulations (Waste Classification Regulations) and other Regulations.	Classification of certain waste streams is required in terms of the Waste Classification and Management Regulations,[12] to ensure that the correct waste management standards and disposal methods are implemented. The National Norms and Standards for the Assessment of Waste for Landfill Disposal and the National Norms and Standards for the Disposal of Waste to Landfill[13] provide the norms and standards for disposal of waste to landfill. ***A Waste Classification was undertaken, based on the current prescribed criteria. It was concluded that the waste streams classify as a Type 3 (low risk) waste, which requires a Class C liner (pollution barrier).*** ***When the NEMA Amendment Act commences none of these Regulations will be applicable to RS.***
National Waste Information Regulations[14]	These Regulations regulate the collection of data and information to fulfil the objectives of the national waste information system, as set out in Section 61 of the NEMWA, and include reporting obligations. A registered person must keep a record of the information submitted to the South African Waste Information System or the DFFE. ***Kangra will comply with these regulations.***
National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) (NEM: AQA)	NEM:AQA was promulgated to ensure the protection and regulation of air quality and provide measures that will prevent pollution and sustainability. Under NEM:AQA, the Minister of Environmental Affairs, Forestry and Fisheries must identify substances in ambient air which present a threat to health, well-being or the environment and establish national standards for ambient air quality, including the permissible quantity or concentration of each substance in ambient air. The "Listed Activities and Associated Minimum Emission Standards"[15], list activities that could result in atmospheric emissions requiring an atmospheric emissions licence (AEL) before being undertaken. The "National Dust Control Regulations"[16], provide that an acceptable dust fallout rate for a non-residential area is considered more than 600mg/m^2/day but less than 1200mg/m^2/day (30-day average), with maximum allowable two exceedances per year, provided these exceedances do not take place in consecutive months. Where the dust fallout rate is exceeded, a prescribed dust fallout monitoring programme must be developed and include: • the establishment of a network of dust monitoring points, using method ASTM D1739:1970 (or an equivalent standard), sufficient in number to: establish the contribution to dust fallout in residential and non-residential areas near the premises; monitor identified or likely sensitive

[10] Published in Government Notice R632 in Government Gazette 39020 on 24 July 2015.
[11] Proposed by section 86 of the NEMLA IV Bill.
[12] Published in GN634 of GG 36784 on 23 August 2013
[13] Published under GN R635 and GN R636 respectively in GG 36784 of 23 August 2013
[14] Published in GN 625 of GG 35583 on 13 August 2012
[15] Published in GN 893 of GG 37054 on 22 November 2013
[16] Published in GN 827 of GG 36974 on 1 November 2013

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	receptor locations; and establish the baseline dust fall for the district; and • a schedule for submitting to the air quality officer dust fallout monitoring reports annually or at more frequent intervals, if requested by the air quality officer. Greenhouse gases have been declared priority pollutants under the "Declaration of Greenhouse Gases as Priority Air Pollutants"[17]. ***An AEL will not be required for the proposed projects; however, a duty of care should be employed during Construction and operation to minimise air pollution as far as possible. MQE must take all reasonable measures to minimise the generation of dust and ensure compliance with the Dust Control Regulations.***
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) (NEM: BA)	In line with the Convention on Biological Diversity, NEM:BA aims to legally provide for biodiversity conservation, sustainable use and equitable access and benefit sharing. NEM:BA creates a basic legal framework for the formation of a national biodiversity strategy and action plan and identification of biodiversity hotspots and bioregions, which may then be given legal recognition. It imposes obligations on landowners (state or private) regarding alien invasive species (AIS). NEM:BA requires that provision be made by a site Developer to remove any aliens which have been introduced to the site or are present on the site. The NEMBA also provides for listing of threatened or protected ecosystems in one of four (4) categories: critically endangered, endangered, vulnerable or protected. Threatened ecosystems are listed to reduce the rate of ecosystem and species extinction, by preventing further degradation and loss of structure, function and composition of threatened ecosystems. The purpose of listing protected ecosystems is primarily to conserve sites of exceptionally high conservation value. Section 53 of NEM: BA provides that: *"(1) The Minister may, by notice in the Gazette, identify any process or activity in a listed ecosystem as a threatening process.* *(2) A threatening process identified in terms of subsection (1) must be regarded as a specified activity contemplated in Section 24(2)(b) of the NEMA and a listed ecosystem must be regarded as an area identified for the purpose of that Section."* No notices have been published yet under this Section. Picking parts of, or cutting, chopping off, uprooting, damaging or destroying, any specimen of a listed threatened or protected species is a restricted activity under NEMBA. A permit is required for a restricted activity involving a listed threatened or protected (TOPS) species without a permit. Chapter 7 of the NEMBA regulates the process for the application of a permit under NEMBA. The following notices have been published in terms of Section 56(1) of NEMBA: • National List of Ecosystems that are Threatened and in need of protection (TOPS List),[18] which contains the National List of Ecosystems that are threatened and in need of protection. This includes preventing further degradation and loss of structure, function and composition of threatened ecosystems and preserving witness sites of exceptionally high conservation value. The purpose of listing threatened ecosystems is primarily to reduce the rate of ecosystem and species extinction. • Lists of Critically Endangered, Endangered, Vulnerable and Protected Species;[19] and • Threatened and Protected Species Regulations.[20] Chapter 5 of NEMBA pertains to AIS and provides that a person may not carry out a restricted activity involving a specimen of an AIS without a permit issued in terms of Chapter 7 of NEMBA. Such permit can only be issued after a prescribed assessment of risks and potential impacts on biodiversity is

[17] Published in GN 710 of GG 40996 on 21 July 2017
[18] Published under GN1002 in GG34809 of 9 December 2012
[19] Published under GNR151 in GG 29567 of 23 February 2007
[20] Published under GNR152 in GG 29657 of 23 February 2007

Legislation/Guideline	Objective & Relevance
	carried out. Applicable, and exempted AIS are contained within the Alien and Invasive Species List 2020.[21] The NEMBA Alien and Invasive Species Regulations[22] categorises the different types of alien and invasive plant and animal species and how they should be managed. The Revised National Biodiversity Framework 2019 – 2024 was recently published.[23] ***It is not anticipated that the proposed projects will disturb more than 10ha of indigenous vegetation, with the Project Area mainly being in already disturbed areas or low biodiversity sensitive areas, within the MQE MR surface infrastructure area.*** ***MQE must control and eradicate AIS in line with the NEMBA Alien and Invasive Species Regulations.***
Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (CARA)	In terms of CARA, landowners are legally responsible for the control of weeds and alien vegetation. CARA makes provision for three (3) categories of AIS: • Category 1a: must immediately be removed and destroyed; • Category 1b: need to be immediately removed and contained; • Category 2: requires a permit to retain the species on-site and it must be ensured that they do not spread. All Category 2 plants in riparian zones need to be removed; and • Category 3: require a permit to retain these species. All Category 3 plants in the riparian zone need to be removed. CARA also regulates the conservation of soil and states that degradation of the agricultural potential is illegal. It furthermore requires the protection of land against soil erosion and the prevention of water logging and associated salinisation. Permissions / permits are required under CARA for the 'cultivation' of 'virgin soil'; cultivation and/or draining vlei(s), marshes or water sponges; and cultivation of an area within a watercourse's flood area. ***MQE will comply with CARA in relation to AIS control and soil conservation.*** ***No permits under CARA are envisaged to be required for the proposed projects.***
National Veld and Forest Fire Act, 1998 (Act 101 of 1998) (NVFFA)	The NVFFA's purpose is to prevent and combat veld, forest and mountain fires throughout South Africa. It applies to the open countryside beyond the urban limit and puts in place a range of requirements. The NVFFA sets out the responsibilities of landowners or persons in control of the land which includes: • Prepare and maintain firebreaks on their side of the boundary if there is a reasonable risk of veld fire. The NVFFA sets out the procedure in this regard and the role of neighbouring landowners and the fire protection association: • Have such equipment, protective clothing and trained personnel for extinguishing fires as are prescribed (in the regulations); • If there are no regulations, reasonably required in the circumstances, take all reasonable steps to notify the FPO of the local FPA (if there is one) when a fire breaks out; and • Do everything in their power to stop the spread of the fire. Landowners must ensure that: (i) firebreaks are wide and long enough to have a reasonable chance of preventing a veldfire from spreading to or from neighbouring property, (ii) that it does not cause soil erosion; and (iii) it is reasonably free of inflammable material capable of carrying a veldfire across it. ***The projects are in the countryside beyond the urban limit, and thus the provisions of the Act are applicable. Measures to mitigate the risk of veld fires will be included in the EMPr.***

[21] Published under GNR 1003 in GG 43726 of 18 September 2020
[22] Published under GNR1020 dated 25 September 2020
[23] In terms of GN 2423 of 26 August 2022,

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National Forests Act, 1998 (Act 84 of 1998) (NFA)	In terms of Section 15(3) of the NFA, the Minister published a list of protected tree species.[24] The effect thereof is that no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any product derived from a protected tree, except under a licence or exemption granted by the Minister to an Applicant and subject to such period and conditions as may be stipulated. ***Should MQE required any licence to disturb a protected tree, it will be duly applied for.***
National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA)	The protection and management of South Africa's heritage resources are controlled by the NHRA. The national enforcing authority for the NHRA is the South African Heritage Resources Agency (SAHRA). In terms of the NHRA, historically important features, such as graves, archaeology and fossil beds, are protected. Similarly, culturally significant symbols, spaces and landscapes are also afforded protection. In terms of Section 38 of the NHRA, a permit is required for certain categories of development as follows: *"(1) (a): The Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;* *(c): Any development or other activity which will change the character of a site -* *i. exceeding 5 000 m² in extent;* *ii. involving three or more existing erven or subdivisions thereof;* *iii. involving three or more erven or divisions thereof which have been consolidated within the past 5 years; or* *iv. the costs of which will exceed a sum in terms of regulations by SAHRA or a provincial heritage resource authority."* In terms of Section 38(8) of the NHRA, Section 38(1) approval from SAHRA is not required where an EIA is undertaken under NEMA, including a HIA, and SAHRA's requirements are considered by the CA when granting the EA. Section 38(8) of the NHRA provides that: *"The provisions of this Section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the ECA, or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent."* Accordingly, provision is made for the assessment of heritage impacts as part of an environmental assessment process and, if such an assessment complies with the NHRA and SAHRA's requirements and the CA considers heritage impacts when granting the EA, a separate application for consent under the NHRA is not required. ***MQE should if any heritage finds or artefacts be discovered inform the South African Police or the Heritage Authority, as per the approved EMP for the proposed Project.***
Hazardous Substance Act, 1973 (Act No. 15 of 1973) (HSA)	The HSA aims to control the production, import, use, handling and disposal of hazardous substances. Under the HSA, hazardous substances are defined as substances that are toxic, corrosive, irritant, strongly sensitising, flammable and pressure generating under certain circumstances and may injure, cause ill-health or even death in humans. Where hazardous substances from any of the 4 groups below are to be used, (see below) care must be taken that they are sourced, transported, handled and disposed of in compliance with HSA. • Group I: industrial chemicals (IA) and pesticides (IB);

[24] GN 536 of GG 41887 on of 7 September 2018

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	• Group II: 9 classes of wastes excluding Class 1: explosives and class 7: radioactive substances; • Group III: electronic products and group; and • Group IV: radioactive substances. The HSA provides for the: • Control of certain electronic products; • Division of such substances or products into the groups above in relation to the degree of danger, with licensing requirements for certain activities undertaken in respect of Groups I and III; • Prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances and products; and • Matters connected therewith. ***Hazardous substances may be stored, handled or transported as part of the proposed projects and include diesel and other liquid fuel, oil and hydraulic fluid, cement, etc. MQE will comply with the HSA, as required.***
National Water Act, 1998 (Act 36 of 1998) (NWA)	The NWA is the primary legislation controlling and managing the use of water resources and pollution thereof. It provides for fundamental reformation of legislation relating to water resource use. The NWA's preamble recognises that the ultimate aim of water resource management is to achieve sustainable use of water for the benefit of all users and that water resources quality protection is necessary to ensure sustainability of the nation's water resources in the interests of all water users. The NWA's purpose is stated in Section 2 and enforced by the DWS. The NWA presents strategies to facilitate sound management of water resources; provides for the protection of water resources; and regulates use of water by means of Catchment Management Agencies (CMA), Water User Associations, Advisory Committees, and International Water Management. As the NWA is founded on the principle of trusteeship, the government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest. Industry (including mines) can therefore only be entitled to use water if the use is permissible under the NWA. Section 19 of the NWA provides for pollution prevention and requires that a person who owns, controls, occupies, or uses the land in question, is responsible for taking reasonable measures to prevent pollution of water resources. A CMA may take action to prevent or remedy the pollution and recover all reasonable costs from the responsible party. Under Section 21 of the NWA, certain consumptive and non-consumptive water uses are identified and can only commence once authorised. Water use is broadly defined in the NWA and includes taking and storing water; activities which reduce stream flow; waste discharges and disposals; controlled activities; altering a watercourse; removing water found underground for certain purposes; and recreation. Consumptive water uses include taking water from a water resource (Section 21(a) of NWA) and storing water (Section 21(b)). Non-consumptive water uses include impeding or diverting a watercourse's flow (Section 21(c)); altering a watercourse's bed, banks, course or characteristic or impeding the flow of a watercourse (sections 21 (c) and (i)); and disposal of waste in a matter that may detrimentally impact on a watercourse (Section 21(g)). Where a water use constitutes a Scheduled 1 Use (permissible use without an authorisation requirement); permissible water uses in terms of Section 22 of the NWA; or is authorised in terms of a General Authorisation (GA), a WUL is not required.[25] ***The proposed projects will include sections 21 (c), (i) and (g) water uses. A Water Use Licence Application (WULA) will be submitted to the DWS to authorises these water uses.***
Government Notice 704 (GN	GN 704, promulgated under Section 26(1) of the NWA is specifically aimed at the protection of water resources associated with mining related

[25] Various GAs have been published under the NWA, including for Sections 21(c),(i),(g), and (a) water uses. In respect of sections 21(c) and (i) water uses, activities can be conducted within 100m of a watercourse and 500m of a wetland without a WUL if the impacts to the watercourse / wetland are low. Water uses that will be conducted under a GA need to be registered with the DWS.

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704), published in Government Gazette 20119, dated 4 June 1999.	activities. It provides minimum requirements which need to be adhered to for water resource protection on a mine. GN 704 regulates the use of water; management of dirty and clean water infrastructure; and related activities at mines. This includes minimum requirements for infrastructure that hold dirty water. A mine can apply for exemptions from these requirements and could be granted approval, should sufficient management measures be put in place to ensure environmental protection. Regulation 4 of GN 704 places some restrictions in terms of the locality of certain infrastructure which could have an impact on water resources. ***MQE will comply with GN 704. Certain exemptions from GN 704 may however be necessary, including for Construction of certain infrastructure in proximity to watercourses. This will be included in the WULA process.***
Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA), as amended	The MPRDA governs mineral resources in South Africa, regulates mining and mining authorisations and has as one of its principal objectives the equitable access and the sustainable development of the South Africa's mineral resources. Section 5A of the MPRDA indicates that: *"No person may prospect for or remove, mine, conduct technical co-operation operations, reconnaissance operations, explore for and produce any mineral or petroleum or commence with any work incidental thereto on any area without – (a) an environmental authorisation (EA)".* Section 37 of the MPRDA requires all mining and prospecting operations and related activities to be carried out in terms of the environmental management principles set out in Section 2 of NEMA. Social and environmental sustainability is enhanced through the requirement to submit a Social and Labour Plan (SLP), which records a mining company's obligations to improve social development. This includes a commitment to training and social investment, with the goal of transferring skills that can be used after mine closure. ***Kangra holds the MQE MR over the Project Area.*** ***It complies with the MPRDA and will continue to do so in respect of the proposed projects. A current SLP has been approved by the DMRE for MQE. There will be no increases in production or extensions to the MQE MR area and Kangra would therefore not be required to update the SLP for purposes of the proposed projects.***
Mine Health and Safety Act, 1996 (Act 29 of 1996) (MHSA)	The MHSA aims to provide for protection of the Health and Safety (HS) of all employees and other personnel at South African mines. Its main objectives are: • Protection of the HS of all persons at mines; • Requiring employers and employees to identify hazards and eliminate, control and minimise the risks relating to health and safety at mines; • Giving effect to the public international law obligations of South Africa that concern HS at all mines; • To promote: o a culture of HS in the mining industry; o training in HS in the mining industry; and o co-operation and consultation on HS between the State, employers, employees and their representatives. • Providing for: o employee participation in matters of HS through HS representatives and the HS committees at mines; o effective monitoring of HS conditions at mines; o enforcement of HS measures at mines; and o investigations and inquiries to improve HS at mines. ***MQE already complies with the MHSA and will continue to do so in respect of the proposed projects.***

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	It will conduct the required hazard assessment under the MHSA regarding potential HS impacts prior to commencing with Construction of the proposed projects.
MHSA: DMRE's Guideline for the Compilation of Mandatory Code of Practice ("COP") on Mine Residue Deposits, published in accordance with the MHSA ("RS COP Guideline")	The RS COP Guideline is published pursuant to the MHSA and contains requirements as to what a mine needs to include in its COP for RS. This includes that an employer must identify hazards; assess the HS risks to which employees, and as far as reasonably practicable to persons who are not employees, may be exposed while they are at work; and record the significant hazards identified and risks assessed ("Risk Assessment"), prior to commencing operations. The Risk Assessment must: be based on a site selection process (including input from I&APs); and a site-specific investigation (including that the site is geologically and geomorphologically stable); detail pre-existing natural contaminant levels and incremental levels arising from the RS; consider all MRDs on a site in an integrated system; consider the lifestyles /living conditions of persons potentially affected; and assess future events which can give rise to increased risks. The RS COP Guideline set outs the technical information required during the site investigation process and various technical reports that must be compiled as a basis the RS design, which mirror the RS Regulations in various respects. This includes a detailed investigation by a competent person of the RS's characteristics that may directly or indirectly affect the HS of mining and non-mining personnel in the vicinity of the site, and design requirements. It also requires a safety classification of the RS in accordance South African National Standards (SANS): Code of Practice, Mine Residue, SABS 10286: 1998 ("SABS 10286"), being the principal management guidance document for RS. SANS 10286 contains fundamental objectives, the principles, and minimum requirements for best practice, all aimed at ensuring that no unavoidable risks, problems and/or legacies are left to future generations. It does not, however, address the Safety, Health and Environmental (SHE) concerns of tailings storage, but places more focus on the need for management throughout the Project's lifecycle. SANS 10286 also requires RS to be classified as either High, Medium or Low Hazard based on generic "catch-all" guidelines for determining a Zone of Influence, which is used. ***Kangra will compile a Risk Assessment on HS risks prior to commencing with operation of the proposed projects, for submission to the DMRE Mine Health Inspectorate.*** ***The risks, potential impacts and mitigation measures regarding HS that are identified in the detailed design and EIA will be included in the baseline process for the Risk Assessment.***
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) (OHSA)	The MHSA provides that OHSA is not applicable to any matter in respect of which any provision of the MHSA is applicable.
Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993) (COIDA)	Under COIDA, employers are not held liable for compensation for injuries sustained by employees or compensation to dependants due to the death of an employee which occurred during the course and scope of their employment. Compensation is paid out of a statutory fund, administered by the Compensation Commissioner ("CC") (appointed under COIDA), which is set in accordance with a tariff prescribed in COIDA. The fund is a trust fund that is controlled by the CC, which the employer contributes to. The CC is appointed to administer the fund and approve claims lodged by employees or their dependants. The CC compensates the employee or their dependants directly. ***MQE will take cognisance of the requirements of the COIDA as part of daily operations should incidents occur.***
Restitution of Land Rights Act, 1994 (Act 22 of 1994) (RLRA)	The RLRA governs land restoration claims. Initially, the RLRA only allowed land claims to be lodged until December 1998 (Initial Period). This Initial Period was amended with the promulgation of the Restitution of Land Rights Amendment Act of 2014 and the process for the lodgement of claims was extended to 2019. However, a few months thereafter, the Constitutional Court delivered a judgment, *Land Access Movement of South Africa and Others v Chairperson of the National Council of Provinces and Others* 2016 (5) SA 635 (CC) (LAMOSA).[26] In terms of the LAMOSA judgments, the

[26] which was followed by *Speaker of the National Assembly and Another v Land Access Movement of South Africa and Others (2019) ZACC 10.*

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	Department of Rural Development and Land Reform is interdicted from processing those claims lodged after December 1998 until those lodged prior to December 1998 have been finalised. Under Section 11(7), no person may sell, exchange, donate, lease, subdivide, rezone, or develop land in respect of which a land claim has been published in a government gazette without giving the Regional Land Claims Commissioner (LCC) one month's written notice of the intention to do so. ***MQE shall duly notify the LCC prior to developing the Project Area.***
Other National Legislation and Policy	Other policies, legislation and associated regulations (where applicable) considered as part of the application process include: • Disaster Management Act, 2002 (Act No. 57 of 2002). • Integrated Resource Plan 2019. • Local Government: Municipal Systems Act, 2000 (Act 32 of 2000). • National Development Plan 2030. • Protection of Personal Information Act, 2013 (Act 4 of 2013). • Regulations of Gatherings Act, No. 205 of 1993. • Traditional and Khoi-San Leadership Act, 2019 (Act 3 of 2019). • Water Services Act, 1997 (Act 108 of 1997). • Promotion of Access to Information Act, 2000 (Act 2 of 2000). • Promotion of Access to Justice Act, 2000 (Act 3 of 2000). • Basic Conditions of Employment Act, 1997 (Act 75 of 1997). • Labour Relations Act, 1995 (Act 66 of 1995).
Provincial / Municipal Legislation and Policy	Provincial / Municipal policies, legislation, and associated regulations (where applicable) considered as part of the application process include: • Mpumalanga Nature Conservation Act, 1998 (Act 10 of 1998). • Spatial Development Framework (SDF) 2019: Mpumalanga Province, as amended. • Gert Sibande District Municipality (GSDM) Spatial Development Framework 2009. • GSDM Noise Control By-Law, 2014. • GSDM Waste By-Laws, 2017. • Mkhondo Spatial Planning & Land Use Management By-Law, 2016.
Municipal Development Planning	The following municipal development planning documentation is relevant to the application process: • GSDM Integrated Development Plan (IDP) 2022/27 and supporting documents. • Mkhondo IDP 2022/2027.
OTHER STANDARDS AND GUIDELINES	
Standards and Guidelines	In addition to the abovementioned Acts and their associated Regulations, the following guidelines and reports have been taken cognisance of during the application process: • Guidelines for consultation with communities and interested and affected parties issued by the DMRE.

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	• NEMA Implementation Guidelines: Sector Guidelines for EIA Regulation.[27]
	• Department of Environmental Affairs (DEA) (2011): A user-friendly guide to the National Environmental Management: Waste Act, 2008. South Africa, Pretoria.
	• Department of Environmental Affairs and Tourism (2004): Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11.
	• DFFE Integrated Environmental Management Guideline on Need and Desirability, 2017.
	• Guideline for Implementation: Public Participation in the EIA Process.[28]
	• Publication of Public Participation Guideline (GN 807 of 10 October 2012 GG No. 35769).
	• Mining and Biodiversity Guideline: mainstreaming biodiversity into the mining sector.
	• Department of Water and Forestry ("DWAF"), 2006. Groundwater Assessment II.
	• DWS, 2011 The Groundwater Dictionary – A comprehensive reference of groundwater related terminology, 2nd ed.
	• DWS, 2016 New Water Management Areas, South Africa: Government Gazette No 40279.
	• South African Water Quality Guidelines (DWAF):
	  ○ South African Water Quality Guidelines (2nd Edition). Volume 4: Agricultural Use: Irrigation (1996a);
	  ○ Water Quality Guidelines - Volume 1: Domestic Use (1996b);
	  ○ South African Water Quality Guidelines (2nd Edition). Volume 5: Livestock Watering (1996c);
	  ○ Water Quality Guidelines Volume 7: Aquatic Ecosystems (1996d);
	  ○ Water Quality Guidelines Volume 2: Recreational Use (1996e); and
	  ○ Water Quality Guidelines Volume 3: Industrial Use (1996f).
	• Best Practice Guidelines (DWAF):
	  ○ G3: Water Monitoring Systems (2007);
	  ○ A5: Water Management for Surface Mines (2008b); and
	  ○ G4: Impact Prediction (2008).
	• SANS 10103 of 2008: The measurement and rating of environmental noise with respect to annoyance and speech communication.[29]
	• SANS 10210 of 2004: Calculating and predicting road traffic noise.
	• SANS 10357: 2004: The calculation of sound propagation by the Concave method.

[27] Published under GN 654 in GG 3333 of 29 June 2010

[28] Published in under GN 807 in GG 35769 of 10 October 2012

[29] Published under GN 718 in Government Gazette No. 18022

1.7 Aspects of the activity that are covered by the EMPr

The proposed development will comprise two main elements, namely the WWTP and related structures for the management of decant; and CDF and the related structures for the disposal of discard, filter and cake/or brine. These facilities are discussed below.

1.7.1 Wastewater Treatment Plant

The purpose of the proposed wastewater treatment plant (WWTP) is to treat decant water as well as surplus contaminated water within the mining operations. MQE is currently decanting clear groundwater from old underground workings at an average rate of 1 800m^3/d. The WWTP will employ active treatment of the wastewater as it was found that passive treatment is not feasible nor possible due to the decant point's location, the high flow rates and the discharge quality required.

The implementation of the proposed active treatment of decant will entail:

- Upgrade of the decant/contamination dam: Formalising the dam wall to increase the storage capacity and lining the dam to prevent seepage;
- Upgrade of the decant point by drilling a row of eight (8) boreholes into the new dam wall at the decant dam in order to borehole well curtain (cut off) to cut off ground seepage water potentially entering the Heyshope Dam;
- Constructing a WWTP to treat decant and other mine contaminated water; and
- Constructing a Brine Pollution Control Dam (Brine PCD) and a Brine Treatment Plant.

Treated effluent from the WWTP will be discharged to the Heyshope Dam via an underground pipeline from the WWTP. Access to the WWTP and associated pipelines will be through existing roads.

Brine produced at the WWTP will initially be pumped to the proposed new Brine PCD. The Brine PCD was initially proposed for the evaporation of brine from the WWTP. However, during the detailed design process currently being undertaken, it became evident that naturally evaporating brine at the site would not be efficient due to the projected inflow rate of brine to the proposed PCD/evaporation dam. It is therefore necessary to construct a Brine Treatment Plant to remove water from the brine, thereby converting it to a dry filter cake that can be disposed of on the proposed CDF.

1.7.2 Brine Treatment Plant

A Brine Treatment Plant, with an anticipated throughput of 15m^3/hr, or 285m^3/day if pumping 19 hrs/day, will be constructed. The modular plant will cover an area of less than 0.06ha and will be skid mounted or containerised. The modular system allows for simpler expansion or alterations in the future should it be required.

The addition of the proposed Brine Treatment Plant to the development will reduce the risk of insufficient storage space for brine, reduce the risk of overflows from the Brine PCD and

allows for sludge/filter cake quantities to be disposed of to be accurately quantified each month.

The proposed technology is a system that comprises a combined evaporator and crystalliser in a single step. Brine which is pumped into the Brine Treatment Plant will first pass through a pre-heating stage to raise the temperature before entering the brine recirculation system. The process removes water from the brine through the creation of water vapour, which exits at the top. Brine is continuously recirculated in the system causing the concentration of the recirculated brine to gradually rise until it crystallises and forms solids. It is anticipated that the clean water produced will comply with the SANS 241 potable water limits before being discharged. The remaining salts/filter cake will be directly transported to the CDF for disposal.

1.7.3 CDF

The proposed CDF falls within the exact footprint of the previously authorised (MDARDLEA Ref: 17/2/3/GS-240) MQE Discard Dump (DD).

As a result of changing operational requirements, and the lapsing of the previous authorisation, there is now a need to obtain a WML in terms of the NEMWA for the proposed CDF at MQE.

The CDF will accommodate discard produce from the beneficiation plant, slurry/filter cake and potentially brine from the WWTP.

The CDF's design will be similar to the authorised DD: a three-compartment side hill-type facility with a footprint of approximately 65ha. A phased development approach, over a period of 20 years, is envisaged: Phase 1 – 7 years; Phase 2 – 7 years and Phase 3 – 6 years capacity.

1.8 Project Phases and Activities

The life cycle of the proposed activities can be divided into the Construction, Operational and Decommissioning Phases. The anticipated activities for each Phase, for which mitigation and management measures are proposed, are listed below.

The Construction Phase activities will include:

- Clearing of vegetation.
- Stripping, handling and stockpiling of topsoil.
- Excavation of material/earthworks.
- Transportation of Construction materials.
- Travel along unsurfaced roads.
- Construction of structures including development of berms and channels, pouring of concrete, installation of pipelines.
- Storage of Construction materials and hydrocarbons.
- Storage and handling of general, hazardous and Construction waste.

The Operational Phase activities will include:

- Transportation of discard material and brine filter cake via truck using a haul road and the dumping onto the CDF using an access ramp.
- Compaction of waste material on the CDF with earth-moving equipment.
- Deposition of coal slurry. There is a possibility of the addition of brine to the DD.
- Handling and disposal of waste.
- Management of runoff and supernatant water.
- Maintenance of haul roads.
- Concurrent rehabilitation of lower CDF layers with fertile soil and vegetation.
- Pumping of contaminated water from the dam to WWTP.
- Pumping of brine from WWTP to brine evaporation dam.
- Dewatering of brine at the Brine Treatment Plant to produce filter cake.
- Discharging treated water from WWTP to Heyshope Dam.

The Decommissioning Phase activities will include:

- Termination of co-disposal activities. The capping and rehabilitation of the remainder of the CDF will be undertaken, as well as the rehabilitation of the haul roads and any disturbed areas around the CDF, which may not have been properly rehabilitated. This will involve the placement of topsoil and vegetation and the removal of alien invasive plants where necessary.
- Removal of the equipment such as pipelines, electrical and mechanical equipment (including the pump station); the de-silting of the PCD, removal of concrete foundations and removal of all rubble and waste.
- Installation of long-term stormwater systems or upgrades to the operational stormwater system.
- Termination of treatment activities and brine generation (only if no decant from the old MQE workings takes place). The Geohydrological Assessment (refer to Appendix E-4 in the FEIR) indicates that the potential for decant during this Phase. This will be confirmed through regular updates of the numerical groundwater model over the LoM.
- Ripping of compacted areas including haul roads.
- Monitoring and maintenance: This will involve monitoring the environment, i.e. vegetation, surface water and groundwater monitoring to determine if the rehabilitation, as well as any management measures, have been effective. During this Phase planning will be undertaken based on all the data collected during monitoring and detailed studies, to implement any additional measures required to apply for closure of the facility.

1.9 Composite Environmental Sensitivity Map

Based on the results of the desktop assessment and specialist studies, a composite environmental sensitivity map showing the proposed development is shown in Figure 3.

Key sensitive features identified within the proposed Project footprint include the following:

- Non-perennial and perennial streams.
- Heyshope Dam.
- Wetland areas.
- CBA.

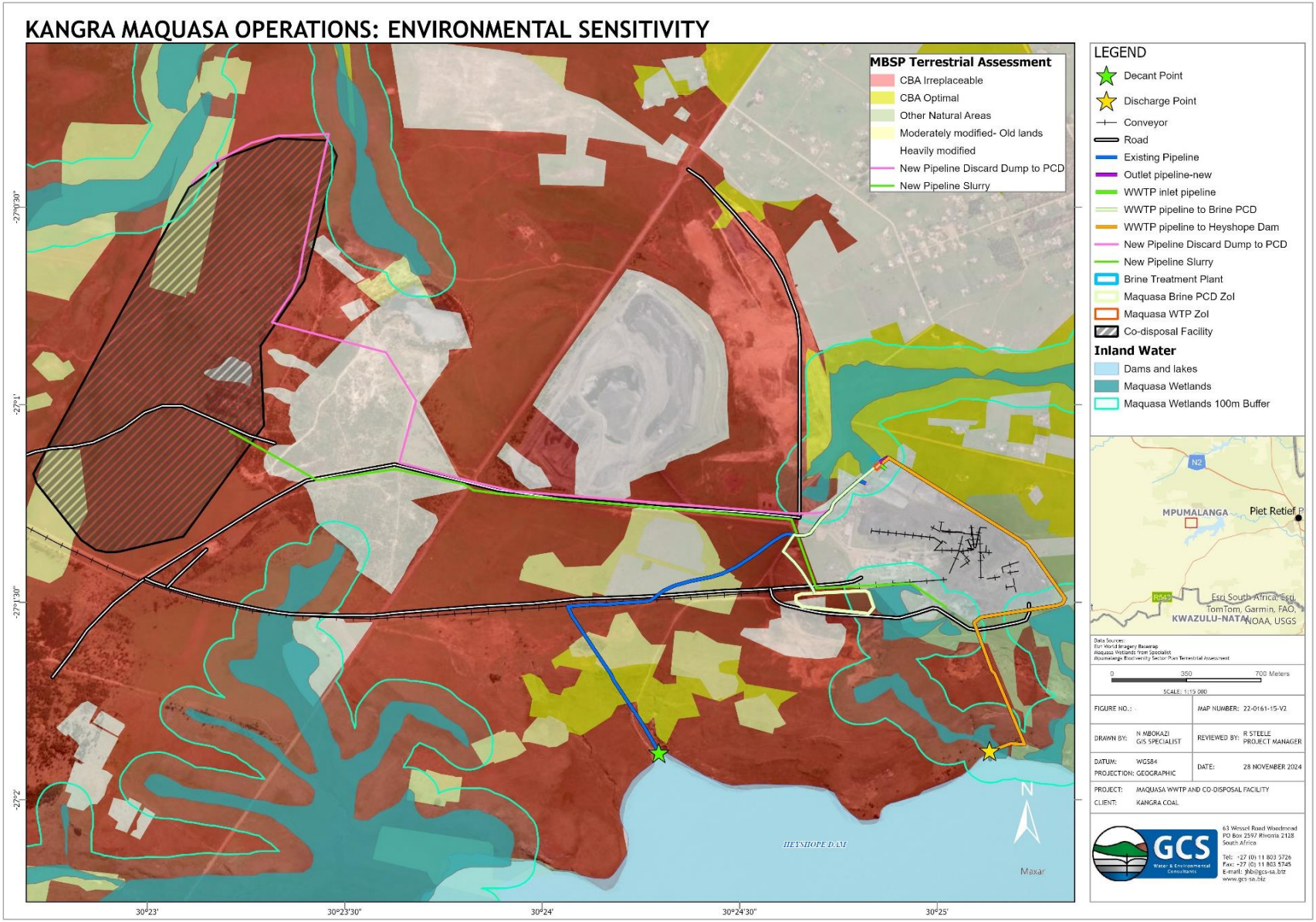

Figure 3: Composite Environmental Sensitivity Map

2 ENVIRONMENTAL IMPACT STATEMENT

Appendix 4 of the 2014 NEMA EIA Regulations, as amended, requires that the EMPr include a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the EIA process for all phases of the development.

The assessments undertaken during the EIA process have not identified any fatal flaws which would preclude the authorisation of the proposed Project. The EAP is confident that all major negative impacts associated with the proposed development has been adequately described and can be mitigated to acceptable levels.

The goal of the proposed Project is to mitigate the negative impacts of decant on the environment and continue contributing to the local economy by allowing the full LoM to be realised.

It is the opinion of the EAP that there is no reason not to grant the requested environmental authorisation in respect of the proposed WWTP and CDF and related infrastructure.

The results of the impact assessment indicated that the most significant impacts on the receiving environment would be those listed below in Table 6, Table 7 and Table 8. The correct implementation of the mitigation measures outlined within this document will ensure that all impacts are managed, mitigated or avoided as far as practicably possible.

Table 6: Key impacts during the Construction Phase

Environmental Aspect	Impact
Air Quality	• Generation of inhalable particle emissions and fugitive dust and dust fallout. • GHG emissions during the Construction activities.
Terrestrial Ecology	• Loss of vegetation within the development footprint. • Degradation and loss of surrounding natural vegetation. • Direct mortality of fauna due to earthworks, vehicle collisions, accidental hazardous chemical spills and persecution. • Disturbance due to dust and noise pollution and vibration may disrupt behaviour.
Freshwater Ecology	• Loss of riparian vegetation due to vegetation clearing and earthworks. • Potential increase in sedimentation of the wetland features. • Contamination of the water in the wetland's petrochemical spillages. • Contamination of the aquatic features due to spillages or leakages from on-site ablution facilities.
Soils, Land Capability and Land Use	• Loss of land capability due to Construction of permanent infrastructure (CDF). • Soil interflow processes: o Infilling of wetlands and watercourses inducing alternative flow paths (if infilling occurs). o Alteration to natural hydropedological flow paths. o Impacts on the macro-soil structure. o Impacts on the hydropedological processes supporting the

Environmental Aspect	Impact
	watercourses. • Soil structure & land capability: o Exposure of soils, leading to increased runoff from cleared areas and erosion of the watercourses, thus increasing the potential for sedimentation of the watercourses. o Vegetation loss. o Soil compaction and erosion. • Soil quality: o Natural nutrient content decreases due to soil exposure. o Loss of natural bio-organisms essential to soil processes. • Soil degradation. Compromised soil quality. Prolonged pollution may migrate to the nearby watercourse and/or percolate into the groundwater table. • Perched water table Dewatering.
Geohydrological Aspects	• Disturbing vadose zone during soil excavations/Construction activities. • Poor quality seepage from machinery used to excavate soils. Oil, grease and fuel leaks could lead to hydrocarbon contamination of the vadose zone which could percolate into the shallow aquifer. • Groundwater recharge may increase in some areas and decrease in others. • Perched water table dewatering.
Hydrological Aspects	• Disturbing vadose zone during soil excavations/activities. • Surface water contamination and sedimentation from the following activities: o Washing of equipment and vehicles, unattended leaks and spills. o Erosion and sedimentation of watercourses due to unforeseen circumstances (i.e. bad weather). • Alteration of natural drainage lines which may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion). • Perched water table dewatering.
Visual Impacts	• Negative visual impact on aesthetics. • Poor visibility due to dust creation. • Visual intrusion due to glare, light trespass and skyglow.
Noise Impacts	Noise disturbance to sensitive receptors.
Heritage & Paleontological Impacts	Loss of / damage to heritage/archaeological/palaeontological resources if unearthed during Construction.
Traffic Impacts	Increase in traffic volumes and road incidents due to Construction vehicles and Construction personnel travelling to the site.
Socio-Economic Impacts	• Temporary job creation and skills development. • Dust & noise could increase as a result of an increase in traffic. • General Construction activities resulting in an increase in fugitive dust emissions.

Table 7: Key impacts during the Operational Phase

Environmental Aspect	Impact
Air Quality	• Generation of inhalable particle emissions and fugitive dust.
Terrestrial Ecology	• Disturbance created during the Construction Phase will leave the Project area vulnerable to erosion and Invasive plant encroachment. • This may lead to local disturbance of fauna and flora, through noise, light, trampling, etc. Fauna may move away from the site. • Ongoing displacement and direct mortalities of faunal community due to disturbance.
Freshwater Ecology	• Contamination of the water in the wetland features, which will impact on the Present Ecological State (PES) of the features, due to leakage of untreated effluent from WWTP. • Contamination of the water in the wetland features, which will impact on the PES of the features, due to leakage of untreated effluent from pipelines. • Changes to the hydrological regime of the wetlands due to leakages from the treated discharge pipeline. • Pollution of the Heyshope Dam due to treated effluent discharge limits not being met by the WWTP.
Soils, Land Capability and Land Use	• Soil interflow processes: o Alteration to natural hydropedological flow paths. o Impacts on the macro-soil structure. o Impacts on the hydropedological processes supporting the watercourses. • Soil contamination.
Geohydrological Aspects	• Deterioration of groundwater quality due to seepage from PCDs. • Deterioration of groundwater quality due to failure of liner or drainage system. • Reduction to groundwater recharge over Project area.
Hydrological Aspects	• Contamination of vadose zone soils. • Contamination of surface water due to contaminated runoff and sedimentation. • Poor quality seepage into the subsoils from landfill may impact soil quality and eventually lead to poor quality seepage into the surroundings. • Reduction of contamination of surface water resources.
Visual Impacts	• Visual impact of the CDF due to increasing size of CDF over the life of the facility. • Poor visibility conditions. • Visual intrusion due to glare, light trespass and skyglow.
Noise Impacts	• Noise disturbance to sensitive receptors.
Heritage & Paleontological Impacts	• None.
Socio-Economic Impacts	• Continued mining facilitated by the provision of a CDF for the disposal of mine wastes. • Traffic volumes are anticipated to remain the same. • Dust and noise as a result of general operational activities.

Table 8: Key impacts during the Decommissioning Phase

Environmental Aspect	Impact
Air Quality	• Generation of inhalable particle emissions and fugitive dust and dust fallout. • GHG emissions during the Construction activities.
Terrestrial Ecology	• Potential loss of indigenous vegetation units. • Potential increase in alien vegetation. • Contamination of the area by demolition and domestic waste. • Direct mortality of fauna Disturbance due to dust and noise pollution and vibration may disrupt behaviour.
Freshwater Ecology	• Positive effect on aquatic resources due to removal of surface infrastructure and rehabilitation of the area. • Soil degradation: Compromised soil quality. Prolonged pollution may migrate to the nearby watercourse and/or percolate into the groundwater table. • Negative effect on aquatic resources due to water quality deterioration as a result of erosion and sedimentation, inadequate stormwater management; and hydrocarbon/chemical spillages and/or dumping of material outside of designated areas.
Soils, Land Capability and Land Use	• Soil interflow processes: o Infilling of wetlands and watercourses inducing alternative flow paths (if infilling occurs). o Alteration to natural hydropedological flow paths. o Impacts on the macro-soil structure. o Impacts on the hydropedological processes supporting the watercourses. • Soil structure & land capability: o Exposure of soils, leading to increased runoff from cleared areas and erosion of the watercourses, thus increasing the potential for sedimentation of the watercourses. o Vegetation loss. o Soil compaction and erosion. • Soil quality: o Natural nutrient content decreases due to soil exposure. o Loss of natural bio-organisms essential to soil processes. • Long-term implications due to presence of CDF Soil interflow processes: o Infilling of wetlands and watercourses inducing alternative flow paths (if infilling occurs). o Alteration to natural hydropedological flow paths. o Impacts on the macro-soil structure. • Impacts on the hydropedological processes supporting the watercourses. • Contamination of the area by petrochemical spillages. • Soil loss / Soil erosion.
Geohydrological Aspects	• Poor quality seepage from machinery. Oil, grease and fuel leaks could lead to hydrocarbon contamination of the vadose zone which could percolate into the shallow aquifer. • Reduced volumes infiltrating the CDF reporting to PCD.
Hydrological Aspects	• The reshaping and rehabilitation of the CDF will be beneficial to the environment. Capping and reducing infiltration into the dump will help mitigate any poor quality seepage.

Environmental Aspect	Impact
	• Poor quality seepage into the subsoils from landfills may impact soil quality and eventually lead to poor quality seepage into the surroundings. • Potential surface water contamination as a result of poor stormwater drainage on-site.\ Increased erosion due to vegetation loss. • Contaminated runoff water into nearby streams from parked vehicles or unattended leaks or spills. • Sedimentation of watercourses due to altered runoff patterns. • Surface water contamination due to overflow from PCD and Tailings Storage Facility during storm events.
Visual Impacts	• Positive visual impact on aesthetics. • Visual intrusion due to glare, light trespass and skyglow.
Noise Impacts	• Noise disturbance to sensitive receptors.
Heritage & Paleontological Impacts	• Loss of / damage to heritage/archaeological/palaeontological resources if unearthed during decommissioning.
Socio-Economic Impacts	• Nuisance factors (dust, noise and traffic). • Temporary job creation. • Influx of workers post operations.

3 ROLES AND RESPONSIBILITIES

The effective implementation of this EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This Section of the EMPr gives guidance to the various environmental roles and reporting lines, however, Project-specific requirements will ultimately determine the need for the appointment of a specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that if no specific person, for example, an Environmental Control Officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties of the ECO indicated in this document are undertaken. Refer to Table 9.

Table 9: Roles and Responsibilities for Implementation of the EMPr

Responsible Person	Roles And Responsibilities
Engineering, Procurement and Construction Manager (EPCM): Project Manager (PM)	Role The EPCM is accountable for ensuring compliance with the EMPr and any conditions of approval from the CA. An ECO will be contracted by the EPCM to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the EA. The EPCM is further responsible for providing and giving the mandate to enable the ECO to perform responsibilities and must ensure that the ECO is integrated as part of the Project team while remaining independent. The PM appointed by the EPCM will be responsible for all activities undertaken at the Construction site. Responsibilities • Be fully conversant with the conditions of the EA; • Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); • Issuing of site instructions to the Contractor for corrective actions required; • Monitor the implementation of the EMPr throughout the Project through site inspections and meetings. Overall management of the Project and EMPr implementation; and • Ensure that periodic environmental performance audits are undertaken on the Project implementation.
Developer Site Supervisor (DSS)	Role The DSS reports directly to the PM, oversees site works, and liaises with the Contractor(s) and the ECO. The DSS is responsible for the day-to-day implementation of the EMPr and for ensuring the compliance of all Contractors with the conditions and requirements stipulated in the EMPr. Responsibilities • Ensure that all Contractors identify a Contractor's Environmental Officer (cEO); • Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, PM and ECO; • Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; • Issuing of site instructions to the Contractor for corrective actions required; • Will issue all non-compliances to Contractors; and • Ratify the Monthly Environmental Report.

ECO (duties to be performed by the Mine's Environmental Officer)	Role The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and PM regarding all environmental matters. The Contractor and cEO are answerable to the ECO for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and PM, who in turn report back to the Contractor and potential and Registered Interested and Affected Parties (I&APs), as required. Issues of non-compliance raised by the ECO must be taken up by the Employer's PM and resolved with the Contractor as per the conditions of their contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Employer's PM. The ECO must also, as specified by the EA, report to the relevant CA as and when required. Responsibilities The responsibilities of the ECO will include the following: • Be aware of the findings and conclusions of all EA related to the development; • Be familiar with the recommendations and mitigation measures of the EMPr; • Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; • Undertake regular and comprehensive site inspections/audits of the Construction site according to the generic EMPr and applicable licences to monitor compliance as required; • Educate the Construction team about the management measures contained in the EMPr and environmental licences; • Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; • Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements (to be compiled once detailed designs have been completed); • In consultation with the DSS order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licences; • Liaison between the PM, Contractors, authorities and other lead stakeholders on all environmental concerns;

	• Compile a regular Environmental Audit Report (EAR) highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; • Validating the regular site inspection reports, which are to be prepared by the cEO; • Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; • Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; • Assisting in the resolution of conflicts; • Facilitate training for all personnel on the site – this may range from carrying out the training to reviewing the training programmes of the Contractor; • In the case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; • Maintenance, update and review of the EMPr; • Communication of all modifications to the EMPr to the relevant stakeholders.
Mine's Environmental Officer (EO)	<u>Role</u> The EO will report to mine management, liaise with the PM and is responsible for the implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the PM and Contractor's Manager, liaising with Contractors and the landowners (where applicable) as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> • Be fully conversant with the EMPr; • Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; • Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees and Contractor(s); • Confine the development site to the demarcated area; • Conduct environmental internal audits with regard to EMPr and authorisation compliance; • Assist the Contractors in addressing environmental challenges on-site; • Assist in incident management: • Reporting environmental incidents to the Developer and ensuring that corrective action is taken, and lessons learnt shared; • Assist the Contractor in investigating environmental incidents and compiling investigation reports;

	• Follow-up on pre-warnings, defects, non-conformance reports; • Measure and communicate environmental performance to the Contractor; • Conduct environmental awareness training on-site together with ECO and cEO; • Ensure that the necessary legal permits and/or licences are in place and up-to-date; • Acting as mine's Environmental Representative on-site and working together with the ECO and Contractor.
Contractor	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described (to be compiled once detailed designs have been completed). External Contractors must ensure compliance with this EMPr while performing the on-site activities as per their contract with the Project Developer. The Contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented (to be compiled once detailed designs have been completed). Responsibilities • Project delivery and quality control for the development services as per appointment; • Employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the Construction period; • Ensure that safe, environmentally acceptable working methods and practices are implemented, and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; • Attend on-site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; • Ensure that Contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.
cEO	Role Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's Representative can be the site agent; site engineer; dedicated EO; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the ECO and the public. As a minimum, the cEO shall meet the following criteria:

	Responsibilities • Be on-site throughout the Project and be dedicated to the Project; • Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on-site; • Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements (to be compiled once detailed designs have been completed); • Attend the Environmental Site Meeting; • Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; • Report back formally on the completion of corrective actions; • Assist the ECO in maintaining all the site documentation; • Prepare the site inspection reports and corrective action reports for submission to the ECO; • Assist the ECO with preparing the monthly report; and • Where more than one Contractor is undertaking work on-site, each company appointed as a Contractor will appoint a cEO representing that company.

4 ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, several reporting systems, documentation controls and compliance mechanisms must be in place as a minimum requirement.

4.1 Document Control/Filing System

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. This task will be assigned to the mine's EO. As a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated, and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the Project, the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- A full copy of the signed EA from the CA in terms of NEMA;
- Any amendments to the EA;
- Copy of the generic and site-specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site-specific EMPr and amendments thereof;
- All Method Statements (to be compiled once detailed designs have been completed);
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date Environmental Incident Log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The mine's EO is required to complete a Weekly Environmental Checklist, the format of which is to be agreed upon prior to commencement of the activity. The EO is required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS weekly. The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the EAR as required in terms of the EIA Regulations.

4.4 Environmental Site Meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the monthly report that is distributed to attendees. Each set of minutes must record "Matters for Attention" that will be reviewed at the next meeting.

4.5 Required Method Statements

The Method Statements will be done in such detail that the ECOs and EOs can assess whether the Contractor's proposal is in accordance with the EMPr (to be compiled once detailed designs have been completed). The Method Statements must be reviewed and signed off by the ECO or EO prior to the commencement of activities.

The method statement must include the following:

- Development procedures;
- Materials and equipment to be used;
- Transporting the equipment to and from the site;
- How the equipment/ material will be moved within the site;
- How and where the material will be stored;
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- Timing and location of activities;
- Compliance/ non-compliance with the EMPr; and
- Any other information deemed necessary by the ECO.

Unless indicated otherwise by the PM, the Contractor shall provide the following Method Statements to the PM no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Laydown or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substances;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Traffic Management Plan;
- Waste management -transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;

- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The EO and ECO shall monitor and ensure that the Contractors perform in accordance with these Method Statements. Completed and agreed Method Statements between the holder of the EA and the Contractor must be included in the environmental file. A generic format of a method statement is supplied as Appendix B.

4.6 Environmental Incident Log (Diary)

The EO is required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notices. An environmental incident is defined as:

- Section 30 (1) (a) of NEMA defines an incident as: "*an unexpected, sudden and uncontrolled release of a hazardous substance, including from a major emission, fire or explosion, that has caused or may cause significant harm to the environment, human life or property*". The actual and potential pollution that the incident may cause includes, as per the definition of 'pollution' in NEMA, any change to the environment caused by substances, radioactive or other waves, noise, odours, dust and heat;
- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by personnel. (For example, littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a Contractor or mine personnel in contravention of the environmental stipulations and guidelines listed in the EMPr which, as a single event, would have a minor impact but which if cumulative and continuous would have a significant effect; and
- General environmental information such as road kills or injured wildlife.

The EOs must record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the EPCM. The Log is to be kept in the EMPr file and at a minimum, the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;

- The incident must be classified on a scale from minor to significant;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the Log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same Contractor or staff member.

The monthly summary of the Environmental Incident Log will be captured in the EAR.

For incidents defined under Section 30 (1) of NEMA, the incident must be immediately reported to the mine EO to follow the NEMA and NWA requirements in respect of reporting the incident to the relevant authorities.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible Contractor by the ECO via the DSS or PM. The non-compliance notices will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the Contractor responsible;
- Nature and description of the non-compliance;
- Recommended/required corrective action; and
- Date by which the corrective action is to be completed.

The Contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define how the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The Contractor is deemed not to have complied with the EMPr if, *inter alia*, there is a deviation from the environmental conditions, impact management outcomes, and impact management actions activities, as approved in generic and site-specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause an environmental impact.

4.8 Corrective Action Records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the Contractor's cEO (or other appointed responsible party) will ensure that the corrective actions required take place within the stipulated

timeframe. On completion of the corrective action, the cEO is to issue a Corrective Action Report in writing to the ECO. If satisfied that the corrective action has been completed, the ECO is to sign off on the Corrective Action Report and attach the report to the non-compliance notice in the EMPr file.

Corrective action is considered complete once the report has been signed off by the ECO.

4.9 Photographic Record

A digital photographic record will be kept. The photographic record will be used to show before, during, and post-rehabilitation evidence of the Project as well as used in cases of damages claims if they arise. Each image must be dated, and a brief description note attached. The Contractor shall:

- Allow the ECO and EOs access to take photographs of all areas, activities, and actions.
- The EOs shall keep an electronic database of photographic records which will include:
    - Photographs of all areas designated as work areas, camp areas, development sites, and storage areas taken before these areas are set up;
    - All bunding and fencing;
    - Road conditions and road verges;
    - Condition of all fences;
    - Topsoil storage areas;
    - All areas to be cordoned off during Construction;
    - Waste management sites;
    - Ablution facilities (inside and out);
    - Any non-conformances deemed to be “significant”;
    - All completed corrective actions for non-compliance;
    - All required signage;
    - Photographic recordings of incidents and corrective actions;
    - All areas before, during, and post-rehabilitation; and
    - Include relevant photographs in the Final EAR.

4.10 Complaints Register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders, and individuals. The Complaints Record shall:

- Record the name and contact details of the complainant;
- Record the time and date of the complaint;
- Contain a detailed description of the complaint;

- Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
- Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO, and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described below.

4.11 Claims for Damages

If a Claim for Damages is submitted by a community, landowner, or individual, the EOs shall:

- Record the full details of the complaint as described above;
- The PM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
- Following consideration by the PM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim is communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
- A formal record of the response by the EOs to the claimant as well as the rectification of the method of making payments, not the amount will be recorded in the EMPr file.

4.12 Interactions with I&APs

Open, transparent, and good relations with affected landowners, communities, and regional staff are an essential aspect of the successful management and mitigation of environmental impacts.

The EO shall:

- Ensure that all queries, complaints, and claims are dealt with within an agreed timeframe;
- Ensure that any or all agreements are documented, and signed by all parties and that a record of the agreement is kept in the EMPr file;
- Ensure that complaints telephone numbers are made available to all landowners and affected parties; and
- Ensure that contact with affected parties is courteous at all times.

4.13 Environmental Audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes are included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECO must prepare a monthly EAR. The report will be tabled as the key point on the agenda of

the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the PM and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum, the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Environmental Site Meetings.

4.14 Final Environmental Audits

On completion of the rehabilitation and/or requirements of the EA, a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

4.15 Environmental Awareness Plan

The Contractor, subcontractors, and all personnel involved in all Project phases require an appropriate level of environmental awareness and competence to ensure continued compliance with environmental legislation, conditions of the EA, and the provisions in the EMPr. Training needs should be identified based on the available and existing capacity of all site personnel to undertake the required management actions and monitoring activities. All personnel must be adequately trained to perform their designated tasks to an acceptable standard. Environmental awareness methods should include *inter alia*:

- Induction: All Contractor personnel should be provided with the mine's environmental and safety induction before being allowed to work at the site;
- Contractor's Pack: Each Contractor must be provided with copies of the EMPr, EA, and Water Use Licence to ensure that they are cognisant of all environmental commitments and conditions;
- Monthly talk topics: Monthly environmental talk topics should be distributed by e-mail and posted on notice boards around the site;
- Toolbox talks: Daily toolbox talks held by Contractors must include a minimum of one environmental topic per week. Signed registers must be filed as evidence and should be audited by the ECO;
- On-the-job training: This must be undertaken by each Contractor and should include the

correct use of spillkits and firefighting equipment; and

- External training: All personnel who handle hazardous material should have the requisite certification.

Training will be offered in the main languages spoken in the area.

5 PROPOSED IMPACT MANAGEMENT ACTIONS

This Section outlines aspects related to the development of the proposed WWTP, CDF, and associated infrastructure, and for each aspect, a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible for ensuring the implementation of these outcomes and actions for all projects as a minimum requirement, to mitigate the impact of such aspects.

This must be signed and dated on each page by both the Contractor and the holder of the EA prior to the commencement of the activity. The Method Statements are prepared and agreed to by the holder of the EA (to be compiled once detailed designs have been completed - a generic format is supplied as Appendix B). Each method statement must also be duly signed and dated on each page by the Contractor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

Appendix 4 of the 2014 NEMA EIA Regulations requires that the EMPr aim to achieve the following through the proposed impact management actions:

- Avoid, modify, remedy, control, or stop any action, activity, or process that causes pollution or environmental degradation;
- Comply with any prescribed environmental management standards or practices;
- Comply with any applicable provisions of the Act regarding the closure, where applicable; and
- Comply with any provisions of the Act regarding FP for rehabilitation, where applicable.

ASPECT: ENVIRONMENTAL TRAINING – PRE-CONSTRUCTION PLANNING, CONSTRUCTION AND DECOMMISSIONING PHASE						
Impact management outcome	Impacts on the environment and sensitive receptors are minimised by influencing the behaviour of personnel					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- All personnel must undergo environmental and safety induction prior to the commencement of the activities. - Voluntary refresher environmental awareness training is available as and when required. - Compulsory refresher induction training to be provided on the anniversary of the training attended by the staff member. - All personnel handling hazardous materials or using specialised materials to provide proof of external training or certification where necessary.	PM Contractor Human Resources Department (HRD)	Induction schedule induction for all Contractor personnel. Request and retain records of all external training and/or certification.	Prior to the start of Construction activities and prior to any new staff entering the site. Thereafter on the anniversary of the first induction training.	PM EO	Prior to the start of Construction activities and prior to any new staff entering the site. Thereafter on the anniversary of the first induction training.	Induction record signed off by the Training Officer and HRD Manager. Records of all external training and/or certification kept in the personnel files.
- The Contractor must erect and maintain information boards and post environmental and safety talk topics on a monthly basis. This should include snake awareness, the prohibition of littering, and fires, management of spills, etc. - On-the-job training to be provided in respect of the management of fires and spills. - Toolbox talks must be undertaken regularly, with at least one environmental toolbox talk being undertaken per week. - On-the-job training to be provided in respect of the management of fires and spills. - Toolbox talks must be undertaken regularly, with at least one environmental toolbox talk being undertaken per month.	EO cEO DSS	Provide all Contractors with a Contractor's Pack which includes copies of the EA, EMPr, and WUL. Contractors must sign a declaration of understanding. Create a schedule of talk topics and	Prior to the start of Construction activities.	EO	Once a month.	Toolbox talk and Training registers. Information posters Training materials Photographic record of notice boards.

ASPECT: ENVIRONMENTAL TRAINING – PRE-CONSTRUCTION PLANNING, CONSTRUCTION AND DECOMMISSIONING PHASE						
Impact management outcome	Impacts on the environment and sensitive receptors are minimised by influencing the behaviour of personnel					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Environmental awareness (toolbox talks and talk topics) must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities. b) Mitigation measures to be implemented when carrying out specific activities. c) Emergency preparedness and response procedures. d) Procedures to be followed when working near or within sensitive areas. e) Wastewater management procedures. f) Water usage and conservation. g) Solid waste management procedures; h) Sanitation procedures. i) Fire prevention and the prohibition of starting fires at the site. j) Disease prevention. k) Prevention and containment of spills, leaks, and other impacts to watercourses. - A record of all environmental awareness training courses undertaken as part of the EMPr must be available. - Educate workers on the dangers of open and/or unattended fires. - A staff attendance register of all staff to have received environmental awareness training must be available. - Course material must be available and		toolbox talks. Create a schedule of training sessions.				

ASPECT: ENVIRONMENTAL TRAINING – PRE-CONSTRUCTION PLANNING, CONSTRUCTION AND DECOMMISSIONING PHASE						
Impact management outcome	Impacts on the environment and sensitive receptors are minimised by influencing the behaviour of personnel					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
presented in appropriate languages that all staff can understand.						

ASPECT: SITE ESTABLISHMENT - PRE-CONSTRUCTION AND PLANNING PHASE						
Impact management outcome	Impacts on the environment are minimised during site establishment and the development footprint is kept to the demarcated development area.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Notify CA prior to the start of Construction as per the timeframe stipulated in the EA. - Establish and monitor additional required monitoring points to establish the baseline conditions before Construction commences. - Schedule the bulk of the initial Construction (vegetation clearing, topsoil removal, and earthworks) during the dry season where possible to reduce the risk of erosion and sedimentation. - EPCM to develop a detailed Construction schedule. - Contractors must provide detailed Method Statements, which must be approved and signed off by the PM, EO, and any other representative of the authorisation holder before Construction commences. - Method statements must include a layout plan showing the location of roads to be used, the location of the Contractor's laydown, storage areas, parking areas, ablution facilities, and Construction areas, to name a few. - The EPCM must provide an initial Traffic Management Plan for the Construction site, which must be updated as required. - A suitably qualified specialist must develop an Alien Plant Management Plan which must: • Identify alien species which are likely to be found at the site, including photographs.	PM EO cEO	Submit Construction notification to CA. EO to approve Method Statements (to be compiled once detailed designs have been completed). Approved Method Statements to be included in the updated EMPr (refer to generic format under Appendix B). EO to provide feedback to PM regarding Construction schedule, proposed routes and Traffic	Prior to the start of Construction activities.	EO PM	Prior to Construction.	Proof of submission of Construction notification letter. Monitoring reports. Approved Method Statements included in updated EMPr. Electronic files of date photographs taken at all sites prior to site establishment. Copies of the Waste Management Plan and Alien Invasive Management Plan in Contractor's Files. Follow-up Terrestrial Biodiversity report with recommendations.

ASPECT: SITE ESTABLISHMENT - PRE-CONSTRUCTION AND PLANNING PHASE						
Impact management outcome	Impacts on the environment are minimised during site establishment and the development footprint is kept to the demarcated development area.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
• Identify areas for action (if applicable). • Prescribe the necessary removal methods and frequencies to be applied. • Prescribe a monitoring plan and be updated as/when new data is collated. - A stormwater management plan must be developed by a qualified engineer. - Develop a waste management plan prior to the commencement of Construction. The plan must designate collection areas, define the separation of waste, prescribe removal measures and frequencies from the areas, and prescribe a monitoring plan. - Develop a Chance Finds Protocol for the protection of Archaeological and Heritage resources. - Appoint a qualified palaeontologist to undertake a site walkthrough prior to vegetation clearing. - The EO must inspect and approve the location of the Contractor's camp/laydown areas, storage areas and proposed stockpiling areas prior to establishment. - Sites must be located within the specified development footprint and on previously disturbed areas where possible. - The Contractors camp/laydown and stockpiling areas must be located away from sensitive areas. - Any new/temporary roads must be approved by the EO prior to establishment.		Management Plan. EO to take dated photographs of all sites prior to site establishment. EO to approve Alien Plant Management Plan and Waste Management Plan. Follow-up Terrestrial Biodiversity Assessment to be undertaken to identify potential conservation important species.				Stormwater Management Plan report and design drawings.

ASPECT: SITE ESTABLISHMENT - PRE-CONSTRUCTION AND PLANNING PHASE						
Impact management outcome	Impacts on the environment are minimised during site establishment and the development footprint is kept to the demarcated development area.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Identification of access restricted areas is to be informed by the environmental assessment, site walkthrough, and any additional areas identified during development.						

ASPECT: SITE DISTURBANCE: VEGETATION CLEARING, EARTHWORKS AND DEMOLITION- CONSTRUCTION AND DECOMMISSIONING PHASES						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Retain as much indigenous vegetation as possible. - Limit the area disturbed by clearly demarcating all footprint areas prior to vegetation clearing and prohibiting any clearing outside of designated/approved areas. - A 100m buffer zone must be established around the wetlands and a 40m buffer around any other aquatic system and demarcated as 'no-go' zones. - The EO must ensure that all activities take place within the approved boundaries and must issue non-conformance notices to any Contractors that do not comply. - The site must be inspected for plant species of conservation importance prior to commencement. Identified species must be relocated where possible, and permits must be applied for from the relevant authorities where required. - Where plant species of conservation concern are required to be relocated, the relocation must be to an area of similar	PM EO Contractor	Implement quality control system for Contractors. All Contractors must obtain and file document such as excavation permits. Implement detailed Construction schedule. Construction layout drawings to include “no-go” areas. Regular (Weekly or bi-monthly) Project meetings for PM, Contractors and EO. Regular inspections by the EO and feedback in the form of Non-compliance notices and monthly reports.	Ongoing during Construction and decommissioning phases.	Ongoing during Construction and decommissioning phases.	EO	Contractor’s Files include all required signed document. Up-to-date Construction schedule. Construction Project meeting minutes. EO records of non-compliances and monthly reports including Environmental Incident Log and photographic evidence.

ASPECT: SITE DISTURBANCE: VEGETATION CLEARING, EARTHWORKS AND DEMOLITION- CONSTRUCTION AND DECOMMISSIONING PHASES						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
habitat that will note disturbed in the future, under the guidance and supervision of the EO. - The EO must undertake an inspection and sign a clearing/excavation permit before any clearing may take place. - Contractors that begin clearing without a permit will be issued a non-compliance notice. - Prior to vegetation clearing activities, the area to be cleared should be walked on foot by 1-2 individuals to create a disturbance in order for fauna to move off. - Fauna that require assistance must be relocation under the guidance and supervision of the EO. - Any holes/deep excavations must be done in a progressive manner on a needs basis only. No holes/excavations may be left open overnight. In the event holes/excavations are required to remain open overnight, these areas must be covered to prevent fauna falling into these areas. - The timing between clearing of an area and subsequent development must be minimised to avoid fauna		Avail personnel to implement Alien Plant Management Plan.				

ASPECT: SITE DISTURBANCE: VEGETATION CLEARING, EARTHWORKS AND DEMOLITION- CONSTRUCTION AND DECOMMISSIONING PHASES						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
from re-entering the site to be disturbed and to reduce the amount of time over which surfaces are exposed. Sites should be disturbed only prior to the area having to be cleared, not more than 1 day in advance. - Any new roads must be identified and approved by the EO prior to establishment. These must be kept to the minimum width. - Road crossings over watercourses in areas where no existing crossing is apparent should be unnecessary, but if it is essential crossings should be made at right angles and must be authorised by a Water Use Licence. - Erosion control measures must be implemented prior to the commencement of vegetation clearing. - Sediment controls such as sandbags and temporary berms must be implemented prior to vegetation clearing to manage stormwater runoff (if storms do occur). - Implement the Alien Plant Management Plan from the onset of Construction. The plan must be						

ASPECT: SITE DISTURBANCE: VEGETATION CLEARING, EARTHWORKS AND DEMOLITION- CONSTRUCTION AND DECOMMISSIONING PHASES						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
updated as/when new data is collated.						

ASPECT: POST-CONSTRUCTION AND ONGOING REHABILITATION: CONSTRUCTION AND OPERATIONAL PHASEs						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- It should be made an offence for any staff to /take bring any plant species into/out of any portion of the Project area. No plant species whether indigenous or exotic should be brought into/taken from the Project area, to prevent the spread of exotic or invasive species or the illegal collection of plants. - A Rehabilitation Strategy and Implementation Plan (RSIP) must be compiled and implemented. This must include timing for the rehabilitation activities to improve the chances of successful vegetation establishment. - Rehabilitation of the area must be initiated from the onset of the Project. - All disturbed areas must be rehabilitated as soon as possible. - Exposed and compacted areas must be ripped and vegetated with indigenous species to increase surface roughness. - Compacted areas must be ripped (perpendicularly) to a depth of 300 mm. - Stockpiled topsoil should be used for rehabilitation efforts. - Where hydroseeding is required,	PM Contractor EO	Induction and ongoing environmental awareness. Specialist to compile RSIP. A site close-out inspection must be undertaken by the PM and EO once Construction at an area has been finalised. Avail personnel to undertake alien plant removal. Inspections by EO.	Ongoing (Construction and operational phases).	EO	Ongoing (Construction and operational phases).	Induction records and signed toolbox talk registers. RSIP (approved by the DWS). Close-out form signed by EO and PM. Monthly EO EAR. Final EAR. Monthly EO inspection reports.

ASPECT: POST-CONSTRUCTION AND ONGOING REHABILITATION: CONSTRUCTION AND OPERATIONAL PHASEs						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
the Contractor must provide the detailed seed mix list for approval by the EO. Only plants indigenous to the site may be used. - All rehabilitated areas must be regularly monitored to determine the success of vegetation establishment and the presence of invasive plants. This can be recorded through monthly dated photographs. - Implement Alien Plant Management Plan. - Progressive rehabilitation will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank. Surplus rehabilitation material can be applied to other areas in need of stabilisation and vegetation cover. - Any gullies or dongas must also be backfilled, shaped, and rehabilitated.						

ASPECT: TOPSOIL STRIPPING, HANDLING, AND STOCKPILING: CONSTRUCTION, OPERATIONAL, AND DECOMMISSIONING PHASES						
Impact management outcome	Soil quality, quantity, and integrity is preserved.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Soil stripping should be suspended during and following periods of significant rainfall. - The topsoil (first 200mm to 500mm layer) should be stripped first with overlying vegetation and stockpiled separate to the subsoils. - Disturbed soil must be stored in the same sequence it was excavated to maintain the natural soil profile. Once Construction activities have been completed, the soil must be returned to the excavation, where necessary. - Soil stockpiles should be properly demarcated and indicated on maps and layouts. - Exposed and stockpiled soils are to be stabilised using a suitable covering (rock cladding or vegetative) to protect against erosion and contamination. - Stockpiles must not exceed 5m in height and should not be established within100m of a delineated wetland or 32m from any other aquatic system. - Berms should be placed around soil stockpiles to secure them. - Cover excavated soils with a temporary	PM Contractor EO Survey Department	Soil management measures must be incorporated into the approved Method Statements. Soil stockpile locations to be approved by EO prior to Construction. Surveyor for Kangra to include long-term soil stockpile on the mine plan. EO to undertake audits of soil management and conservation practices. EO to continue soil audits of	Ongoing (all phases)	EO	Ongoing (all phases).	Approved Method Statements. Approved layouts and excavation permits. Updated mine layout plan. Monthly EO EAR. Final EAR. Monthly EO inspection reports.

ASPECT: TOPSOIL STRIPPING, HANDLING, AND STOCKPILING: CONSTRUCTION, OPERATIONAL, AND DECOMMISSIONING PHASES						
Impact management outcome	Soil quality, quantity, and integrity is preserved.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
liner to prevent contamination. - Backfill the material in the same order it was excavated to reduce contamination of deeper soils with shallow oxidised soils. - Have emergency fuel and oil spill kits on-site. - Soil quality visual assessments must be undertaken monthly. If obvious pollution is noted (visually) then it is advised that soil screening be undertaken. - Placing a suitable geotextile in areas near or on-top of watercourses/wetlands, before placement of the soils, may help maintain some sub-surface soil processes. - Compact and revegetate infilled areas to prevent erosion. - Soil management plans should be in place which will include the use of correct stockpiling methods.		stockpiles and soil conditions after Construction.				

ASPECT: USE OF PLANT, EQUIPMENT AND VEHICLES AND MOVEMENT OF PERSONNEL: CONSTRUCTION AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the surrounding environment are reduced.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Fire management plan must be in place for the Project area and surrounding areas. - Minimise Construction duration by implementing the Construction schedule. - Limit all activities to standard hours/daytime as far as possible. - Erect signs to warn all personnel to avoid sensitive/"no-go areas. - Specifically demarcate working areas to discourage movement of personnel into the surrounding environments. - Erect speed limit signs on all roads in accordance with the MQE speed limits. - Restrict vehicle movement to designated Construction areas. - Wet suppression on exposed surfaces, unpaved roads, and materials handling areas where feasible. - Continue dust fallout monitoring. - Prohibit fires, the burning of waste materials or any debris. - Service and maintain of vehicles, plant and machinery in accordance with a maintenance schedule. - Use high efficiency generators.	PM EO Contractor	Implement quality control system for Contractors. All Contractors must obtain and file document such as excavation permits. Implement detailed Construction schedule. Construction layout drawings to include "no-go" areas. Regular (Weekly or bi-monthly) Project meetings for PM, Contractors and EO.	Ongoing during Construction and decommissioning phases.	Ongoing during Construction and decommissioning phases.	EO	Contractor's Files. Up-to-date Construction schedule. Construction Project meeting minutes. EO records of non-compliances and monthly reports including Environmental Incident Log and photographic evidence.

ASPECT: USE OF PLANT, EQUIPMENT AND VEHICLES AND MOVEMENT OF PERSONNEL: CONSTRUCTION AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the surrounding environment are reduced.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Use of low carbon and sulphur fuels. - Equipment that is used intermittently must be switched off when not in use. - Poaching must be prohibited, and offenders must be fined. - This prohibition of poaching must be communicated via erecting of signs, an anti-poaching policy, and environmental awareness as described in this EMPr. - Ensure that unwanted Construction material is stored in the correct manner and out of sight of surrounding receptors.		Regular inspections by the EO and feedback in the form of Non-compliance notices and monthly reports. Avail personnel to implement Alien Plant Management Plan.				
- Provide designated areas for parking of vehicles and storage of equipment and erect signs to indicate these areas. - Park heavy machinery on lined areas and place drip trays under vehicles at the site. - Routine visual inspections of infrastructure and parking areas for signs of soil contamination. - Provide spillkits and implement Spill Management Procedure. - Spills must be reported to the EO.	PM Contractor EO	Ensure that are sufficient spillkits at the site at all times. EO to undertake daily/weekly inspections and issue non-compliance notices.	Ongoing during Construction and Decommissioning Phases.	EO	Ongoing during Construction and Decommissioning Phases.	EO records of non-compliances, monthly EAR and photographic evidence. Toolbox talk registers.

ASPECT: USE OF PLANT, EQUIPMENT AND VEHICLES AND MOVEMENT OF PERSONNEL: CONSTRUCTION AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the surrounding environment are reduced.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Hydrocarbon contaminated soil must be removed and disposed of as hazardous waste. - Undertake regular visual inspections for soil contamination. - Cleaning of vehicles, machines and equipment must only take place at designated areas (e.g. washbay) and must be strictly prohibited at the Construction site. - No servicing of machines, vehicles and equipment at the Construction areas. All servicing must take place at designated workshop areas. - Continued groundwater monitoring to detect potential impacts. - All plant and equipment that make use of petrochemical substances must be checked leakages on a daily basis before activities commence. - All plant and equipment that are found to be leaking must be removed to a designated workshop and only returned once the leakages have been addressed.		Provide refresher toolbox talks.				

ASPECT: PROTECTION OF ANIMALS: CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASE						
Impact management outcome	Impacts on wetland fauna re reduced.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- A buffer of 100m around the delineated wetlands must be demarcated on the final site layout and must be avoided during all activities. - Lighting should face away from the wetlands. - Workers should be discouraged from walking on the bed and banks of the wetlands. - Lighting should be kept to a minimum to avoid disturbing crepuscular and nocturnal species. Lighting fixtures should be fitted with baffles, hoods or louvres and directed downward, to minimise light pollution which could attract night migrating species. - Lighting should be directed towards to footprint area and avoid unnecessary illumination of the adjacent undeveloped areas. - Where feasible, motion detection lighting must be used to minimise the unnecessary illumination of areas. - Avoid using any road during the night. - As far as reasonably practicable avoid using full beam headlights to	PM Contractor EO	Lighting and fences to be installed after approval by EO. Signage for sensitive areas to be erected. EO to undertaken regular inspections.	Prior to Construction, then ongoing (all phases).	EO	Ongoing (all phases).	EO monthly EAR with photographic evidence.

ASPECT: PROTECTION OF ANIMALS: CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASE						
Impact management outcome	Impacts on wetland fauna re reduced.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
minimise light pollution to as it may distract animals and increase the chances of road kill." - Fences must have 30 x 30 cm holes in at the bottom at every 250m to allow for free movement of fauna.						

ASPECT: HANDLING AND STORAGE OF HAZARDOUS SUBSTANCES- CONSTRUCTION PHASE						
Impact management outcome	Contamination of soils and water resources, and the generation of hazardous waste is minimised.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- All hazardous substances to be stored separately in appropriately bunded and demarcated facilities well outside of the 100m buffer of any wetland features. - Bunded areas to be suitably lined with a South African Bureau of Standards (SABS) approved liner. - The bund capacity must be 110% of the storage volume. For diesel storage, a capacity of 130% of the total capacity of all the storage tanks/bowsers (110% statutory requirement plus an allowance for rainfall) is recommended. - Bunds must be built with a camber towards a sump or outlet to drain liquids. - Bund capacities must be displayed at the storage areas. - No smoking signs must be displayed at the hazardous storage areas. - The SDS for each substance stored must be kept at the storage areas. - All hazardous substances must be stored in the appropriate containers, tanks, bowsers, etc. in accordance with the SDS. - No SDS may be older than 5 years as per the 2021 Regulations for Hazardous Chemical Agents published the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) (OHSA). - An Alphabetical Hazardous Chemical	PM Contractor EO	EO to approve layout of Contractor's laydown areas prior to Construction. Compile ERAP prior to the commencement of Construction. Compile HCS control sheet. Audit the availability and applicability of SDS. Demarcation of sensitive habitats prior to Construction. Safe disposal certificates. Record spills/	All phases (ongoing).	EO cEO	All phases (ongoing).	Complaints register. Training register. ERAP. HCS control sheet and updates. SDS. Spill kits available on-site. Environmental incident register. Monthly EAR/EO monthly reports with photographic evidence.

ASPECT: HANDLING AND STORAGE OF HAZARDOUS SUBSTANCES- CONSTRUCTION PHASE						
Impact management outcome	Contamination of soils and water resources, and the generation of hazardous waste is minimised.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
Substance (HCS) control sheet must be drawn up and kept up-to-date continuously. - A serviced fire extinguisher must be kept at the storage area. - Refuelling must take place at designated areas within the catchment on hard standing or lined area. Where refuelling is required aways from the designated areas, a drip tray must be used. - Provide emergency spill kits on-site and implement Spill Management Procedure. The spillkits must have sufficient absorbent material based on the volume of substances stored. - Remove hydrocarbon contaminated soil and disposed of as contaminated waste. - All used oils must be stored in a designated surfaced and bunded area for removal. The used oil Contractor must supply a safe disposal certificate. - Continued surface water and groundwater quality monitoring. - Undertake routine visual assessment for soil contamination. - All employees handling hazardous substances must be appropriately trained to do so, i.e. the employees must be aware of the risks involved and must be trained to use firefighting equipment and a spillkit.		discharges and environmental incidents Report spills to the EO immediately. Provide sufficient spill kits, dip trays and liners. Provide required signage. Regular inspections by EO.				

ASPECT: HANDLING AND STORAGE OF HAZARDOUS SUBSTANCES- CONSTRUCTION PHASE						
Impact management outcome	Contamination of soils and water resources, and the generation of hazardous waste is minimised.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- All personnel must be provided with the appropriate Personal Protective Equipment (PPE).						

ASPECT: STORMWATER, GROUNDWATER AND WASTEWATER MANAGEMENT - PRE-CONSTRUCTION, CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the environment caused by stormwater and wastewater discharges.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Discharge dewatered / rainwater collected into the nearby stream over vegetated areas and not directly into the watercourse. If water is contaminated, discharge to the closest greywater system (depending on the extent of contamination). - No stormwater discharge will be allowed to be made directly in any wetland feature from the Construction footprint. - Sediment control structures such as sandbags and temporary berms should be implemented during Construction, to manage stormwater runoff (if storms do occur). - Clean and dirty water separation structures must be constructed in accordance with the approved stormwater management plan designed by a qualified engineer. - Ensure that clean stormwater is attenuated back to the natural environment, directly downstream of the development. The release of stormwater will offset the rainfall infiltration reduction impacts on soil interflow and may benefit downstream	PM Contractor EO	Regular inspections by EO. Maintenance/cleaning schedule for stormwater structures. Undertaken surface and groundwater monitoring in accordance with the approved monitoring programme. Testing of WWTP produce water in accordance with WUL parameters, limits and frequencies. Ongoing monitoring of freeboard in PCDs. Existing roads to be assessed for stormwater management	Ongoing (all phases).	EO	Ongoing (all phases).	Updated Construction schedule. EO monthly EAR. EO monthly inspection reports. Surface water and groundwater monitoring reports. Lab test results for WWT product water. Competency certificates of WWTP and Brine Treatment Plant

ASPECT: STORMWATER, GROUNDWATER AND WASTEWATER MANAGEMENT - PRE-CONSTRUCTION, CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the environment caused by stormwater and wastewater discharges.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
watercourses and wetland units. - Inspect stormwater management structures monthly for erosion, sedimentation and blockages. Address erosion observed without delay. - Regularly maintain stormwater management structures to ensure the system functions effectively. - Install a temporary cut off trench (if required) to contain poor quality runoff. - Continued surface water and groundwater quality monitoring and routine visual assessment for contamination. - Routine hydraulic monitoring of the stormwater system (monthly). - Cover soil stockpiles with a temporary liner to prevent contamination (where required and visually determined). - Access roads should have runoff control features to redirect water flow and dissipate any energy in the water, which may pose an erosion risk. - Washing of vehicles or machinery must be limited to designated areas within the dirty water catchment. - Maintain sufficient freeboard in PCDs		requirements by EO and Contractor. Undertake concurrent rehabilitation in accordance with the RSIP. Installation of liners in accordance with WUL conditions. EO to assess compliance with the WUL and WML conditions in respect of the liner requirements and monitoring requirements. Ensure enough spillkits are available. Appoint qualified, competent operators to operate and manage the WWTP				operators.

ASPECT: STORMWATER, GROUNDWATER AND WASTEWATER MANAGEMENT - PRE-CONSTRUCTION, CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the environment caused by stormwater and wastewater discharges.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
in accordance with the WUL requirements. - Concurrent rehabilitation of the CDF(capping, application of topsoil and planting of grass cover) to reduce the infiltration of rainwater. - Soil covers in areas where erosion is noted, and dust suppression of the landfill to prevent dust migration onto soils. - Ensure CDF slopes are shaped to prevent erosion. - Ensure the CDF is lined in accordance with the WML and the WUL. - Continued groundwater monitoring to detect potential seepage from the CDF and PCDs. - Provide spillkits and implement Spill Management Procedures. Remove hydrocarbon contaminated soil and dispose of as contaminated waste. - Commission the Brine Treatment Plant to reduce the volume of brine in the Brine PCD. - Brine filter cake loading area to be constructed in accordance with the requirements stipulated in the WUL and WML.		and the Brine Treatment Plant. CDF to be overseen by qualified engineer. Use of signage and environmental awareness to keep all personnel within designated footprint.				

ASPECT: STORMWATER, GROUNDWATER AND WASTEWATER MANAGEMENT - PRE-CONSTRUCTION, CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the environment caused by stormwater and wastewater discharges.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**

- Operate WWTP & BTP in accordance with Standard Operating Procedures.
- The Standard Operating Procedure (SOP) of the WWTP & BTP must make provision for regular monitoring of the facilities and pipelines to ensure that there are no leakages, or to repair any leaks timeously.
- The design of the WWTW must make provision for the discharge of any overflow effluent into the associated PCDs to ensure that the no untreated effluent is released from the works area.
- No untreated effluent will be allowed to be discharge from the WWTW.
- The SOP should also make provision for the actions that must be taken in the event of an accidental spill form the works area. These should make provision for:
  - Containment of the leakage;
  - Collection of the effluent and possible contaminated soils;
  - Storage of the contained material; and
  - Removal and disposal from the site by registered service						

ASPECT: STORMWATER, GROUNDWATER AND WASTEWATER MANAGEMENT - PRE-CONSTRUCTION, CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Impact management outcome	Impacts on the environment caused by stormwater and wastewater discharges.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
provider. - Test WWTW & BTP produce water in accordance with WUL parameters, limits and frequencies. If the discharge limits cannot be met, the discharge should be ceased up until such time as the limits associated with the licence can be produced. - Prohibit movement or parking of vehicles outside of dirty water catchment. - Inspect and maintain the liners and drainage system.						

ASPECT: FINAL REHABILITATION: DECOMMISSIONING PHASE						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Implement RSIP and decommissioning EMPr. - All disturbed areas must be rehabilitated after demolition, reclamation and waste removal. - Any gullies or dongas must also be backfilled, shaped and rehabilitated. - Exposed and compacted areas must be ripped and vegetated with indigenous species to increase surface roughness. - Compacted areas must be ripped (perpendicularly) to a depth of 300 mm. - Rehabilitate disturbed areas as soon as possible and monitor progress until vegetation establishment is successful. - Implement silt interception such as the placement of silt nets where necessary. - Stockpiled topsoil should be used for rehabilitation efforts. - Where hydroseeding is required, the Contractor must provide the detailed seed mix list for approval by the EO. Only plants indigenous to the site may be used. - Implement Alien Plant	PM Contractor EO	Specialist to compile RSIP. Compile Decommissioning EMPr. Regular inspections by EO.	Decommissioning Phase.	EO	Decommissioning Phase.	RSIP. Decommissioning EMP. Monthly inspection reports.

ASPECT: FINAL REHABILITATION: DECOMMISSIONING PHASE						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
Management Plan. - Maintain stormwater management structures until runoff water is no longer contributing to surface water contamination. - The PCD can be rehabilitated during closure if area is considered non-polluting. - Continue drainage and collection of polluted seepage water. - Edge effects of decommissioning activities need to be actively managed. - Vegetation outside of the designated footprint area must be left undisturbed. - Restrict the movement of personnel and vehicles to the footprint. - Upon completion of decommissioning activities, it must be ensured that no bare areas remain. - Prohibit fires, the burning of waste materials or any debris. - Constant monitoring through the appointed EO. - Surface water and groundwater monitoring must continue. - Ensure that no material is						

ASPECT: FINAL REHABILITATION: DECOMMISSIONING PHASE						
Impact management outcome	Footprint and extent of disturbance is minimised, impacts on flora, fauna and the nearby water resources is minimised					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
dumped outside of the designated areas. - Ripping and reinstatement of soil should not be done earlier than required. - Plan drainage paths and soil conservation measure to prevent soil erosion. - Where possible, sandbags (or similar) must be placed at the bases of any stockpiled material to prevent erosion of the material. - Final capping and vegetation of the CDF to reduce recharge into the landfill. - Routine inspections and water quality monitoring of the boreholes and surface water streams downstream of the site (quarterly) should be sufficient to determine closure objectives.						

ASPECT: SANITATION AND SOLID WASTE MANAGEMENT- CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Waste streams are appropriately stored, handled and safely disposed of at a recognised waste facility.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Audit the implementation of the Waste Management Plan and ensure it is updated where required. - Suitable waste receptacles must be positioned throughout the site and should be wind and scavenger proof. - A designated eating area must be established within the Contractor site, equipped with a scavenger proof bin. - Designated smoking areas must be provided with receptacles for cigarette butts. - Provide sufficient bins and waste skips for the separation of waste streams (e.g. general, hazardous, scrap metal, rubble and demolition waste). - Waste bins and skips should be labelled, or colour coded to facilitate waste separation. - Monitor littering and housekeeping around the site and the waste bins and skips. - Contractors must monitor the capacity of bins and skips daily. Bins must be emptied into skips as required to prevent overflows. - Skips must be emptied according to a weekly schedule, or more often if required to prevent overflows. - Organic waste should be removed from site weekly to prevent pest species from becoming a problem. - All waste must be disposed of at suitably	PM Contractor EO	Contractors to provide bins and skips. Waste disposal Contractor to be appointed. EO to undertaken inspections and communicate non-compliances. EO to audit compliance with Waste Management Plan. EO to monitor Contractor files and waste manifests.	Ongoing	PM EO	Ongoing.	EO records of non-compliance, monthly EAR, and photographic evidence. Waste disposal certificates.

ASPECT: SANITATION AND SOLID WASTE MANAGEMENT- CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Waste streams are appropriately stored, handled and safely disposed of at a recognised waste facility.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
licensed facilities and safe disposal certificates must be provided and filed. - All hazardous substances are to be stored separately in appropriately bunded and demarcated facilities. - Storage of potential contaminants in bunded areas. - Prevent dumping and/or burial of waste within the Project site or in the surrounding areas through regular inspections, environmental awareness, and non-conformance notices. - Strict adherence to the Construction/decommissioning EMP.						
- Ablution facilities may not be placed within 100m of any wetland features, or 50m of a watercourse or the 1:50 year floodline. Whichever is furthest will apply. - Appropriate sanitary facilities must be provided at a minimum of 1 toilet per 15 users. - Ablution facilities with sanitary/SHE bins to be provided in areas where there are female employees. - Hand washing facilities to be provided. - Only portable chemical toilets with a sealed reservoir will be allowed on-site. - A Contractor must be appointed to provide and service the chemical toilets regularly	PM Contractor EO	Approval from EO is required prior to site establishment. Certificates of safe disposal are to be provided to PM and EO. Record spills/ discharges and environmental incidents.	All phases (ongoing).	cEO EO	All phases (ongoing).	Approval from EO for site establishment. Safe disposal certificates. EO reports, non-compliance notices and Environmental Incident Log. Toolbox talk

ASPECT: SANITATION AND SOLID WASTE MANAGEMENT- CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Waste streams are appropriately stored, handled and safely disposed of at a recognised waste facility.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
(weekly or more frequently if required). - The Contractor must be supervised/observed where necessary to prevent spillages when servicing chemical toilets. - The Contractor must provide safe disposal certificates for the disposal of sewage at a suitably licensed facility. - Toilets must be emptied and locked before site closure over weekends or holidays. - Chemical toilets must be secured to the ground to prevent being toppled during heavy wind/storms. - Enforce the use of provided ablution facilities and prevent the use of the veld for ablutions.		EO to undertake weekly inspections of ablution facilities. Toolbox talk to be given on the appropriate use of ablution facilities.				register.

ASPECT: PROTECTION OF HERITAGE RESOURCES - PRE-CONSTRUCTION PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Impact on heritage resources is minimised.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Implement a Chance Finds Protocol during Construction. - Demarcate footprint areas clearly and ensure site clearance remains within the footprint area only. - Provide toolbox talk on the restriction movement of Construction employees outside of Construction areas and the procedure to be followed if archaeological or heritage resources are unearthed during Construction. - Impose penalties for movement outside of designated areas, e.g. driving outside of designated roadways. - Regular monitoring by the EO. - In the event that any sub-surface paleontologically or cultural heritage resources or graves are unearthed during the Construction process all work has to be stopped and the finding reported to the EO. - The EO must engage the services of an appropriately qualified practitioner with the necessary archaeological/paleontological background to inspect the site before any work in that area may resume. - The mine and heritage specialist must report heritage findings to the SAHRA and/or the South African Police Services [SAPS] in accordance with the Chance Finds Protocol.	EO PM Contractor	Appointment of a specialist to undertake an investigation. Reporting of heritage findings to SAHRA. Reporting of graves/ human remains to SAPS.	All phases (ongoing).	EO cEO EO	All phases (ongoing).	Environmental incident register. Training register. Training materials. Permits for damage or repairs to heritage sites. Records of reports to heritage agencies/ SAPS.

ASPECT: EMERGENCY PROCEDURES - PRE-CONSTRUCTION PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Update the mine's Emergency Response Action Plan (ERAP) prior to the commencement of the proposed Project. - The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation. - All staff must be made aware of emergency procedures as part of induction. - Fire extinguishers must be used for small fires at the site. - The mine proto team must be informed of any fires. - In the event of an emergency, necessary mitigation measures to contain the spill or leak must be implemented. - All spills must be reported to the EO and must be investigated and recorded. The clean-up undertaken and the measures to avoid a similar incident must be recorded.	PM Contractor EO	Update ERAP prior to the commencement of Construction. Certificates of safe disposal for general, hazardous and recycled waste. Record spills/ discharges and environmental incidents.	All phases (ongoing).	cEO EO	All phases (ongoing).	Complaints register. Training register. ERAP. Environmental incident registers with photographic evidence.

ASPECT: TEMPORARY CLOSURE OF SITE - CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Impact management outcome	Minimise the risk of environmental impact during periods of site closure greater than five days.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in Hazardous substances and Workshop, equipment maintenance and storage. - Waste bins and skips are to be emptied and the waste removed from the site. - Hazardous storage areas must be well ventilated. - Fire extinguishers must be serviced and accessible. Service records are to be filed and audited at the last service. - Emergency and contact details displayed must be displayed. - Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel. - Night hazards such as reflectors, lighting, traffic signage, etc. must have been checked. - Fire hazards identified, and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels, etc. - Structures vulnerable to high winds must be secured.	PM Contractor EO	Implementation of SWMP. Certificates of safe disposal for general, hazardous, and recycled waste Record spills/ discharges and environmental incidents. Site close-out checklist must be completed and signed by the EO before the Contractor may leave. Update HCS Sheet. Ensure all required SDS are available.	All phases (ongoing).	EO cEO	All phases (ongoing).	Complaints register. Training register. Environmental incident register. ERAP. HCS control sheet. SDS.

ASPECT: TEMPORARY CLOSURE OF SITE - CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Impact management outcome	Minimise the risk of environmental impact during periods of site closure greater than five days.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Wind and dust mitigation must be implemented. - Cement and materials stores must be secured. - Toilets must have been emptied and secured. - Drip trays must be emptied and secured.						

ASPECT: SOCIO-ECONOMIC- PRE-CONSTRUCTION PLANNING AND DESIGN, CONSTRUCTION, AND DECOMMISSIONING PHASES						
Impact management outcome	Negative socio-economic impacts are reduced, and positive impacts are enhanced.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Contractor must be required to employ local labour by using any existing skills/employment database provided by Kangra in accordance with Kangra's applicable policies and commitments. - Apply the existing Kangra HRD and Procurement Policies. - Maintain clear and decisive labour and recruitment policies that promote the interests of residents and discourage opportunity seekers from settling in the area. - Maintain the open and transparent recruitment procedures that are disclosed to community members. - Use mechanisms approved by Kangra to advertise employment opportunities before the commencement of Construction. - Provide or facilitate training of local people, through internships, scholarships, and/or vocational and skills training programmes. - Grant skills development opportunities to community members and local job seekers, where needed. - Capture all Project relevant skills in the Project area to ensure maximum local employment. - Communicate the limitations of	PM Contractor Human Resource Manager.	Obtain labour requests from Contractors prior to the start of Construction/decommissioning activities. Update skills/labour database. All appointments must be approved by the Kangra Human Resources Department. Develop and implement Skills Development/Training.	Prior to the Construction and decommissioning phases.	HR Manager Social and Labour Plan Manager External auditor.	Prior to the Construction and decommissioning phases.	Contractor's personnel files. Training certificates for completion of training/skills development programme.

ASPECT: SOCIO-ECONOMIC- PRE-CONSTRUCTION PLANNING AND DESIGN, CONSTRUCTION, AND DECOMMISSIONING PHASES						
Impact management outcome	Negative socio-economic impacts are reduced, and positive impacts are enhanced.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
opportunities created by the Project through established communication channels. - Integrate aspects of an influx management strategy into existing social management plans (i.e. SLP and Stakeholder Engagement Plan).						

ASPECT: SENSITIVE RECEPTORS- PRE-CONSTRUCTION PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Minimise the impacts on sensitive receptors.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Adhere to the work schedule which limits activities during all phases of the Project to standard working hours/daytime as far as possible. - Maintain complaints register. Investigate complaints and keep a record of the investigation undertaken and results thereof and provide feedback to the complainant. - Construction and delivery vehicles will be required to adhere to all traffic rules with penalties imposed for non-compliance. - Construction and delivery vehicles are to use approved routes. - All drivers must undergo induction and be required to have a valid driver's licence before being allowed to drive Construction or mine vehicles. - Wet suppress haul roads and stockpiles. - Rehabilitate all disturbed areas and monitor until vegetation establishment is successful. - Undertake concurrent rehabilitation of the CDF.	PM Contractor EO	Implement policy relating to the use of vehicles and driving. Investigate complaints and record results thereof. Ensure the dust suppression truck is available and in good working order. EO to undertake regular inspections. Undertake concurrent rehabilitation during the Construction Phase. Install lights with the approval of the EO.	Ongoing (all phases).	EO	Ongoing (all phases).	Toolbox talk registers and signed acknowledgement of vehicle policy by licenced drivers. EO monthly EAR, non-compliance reports and photographic evidence. Dust and Noise monitoring reports. Service Records for vehicles and equipment.

ASPECT: SENSITIVE RECEPTORS- PRE-CONSTRUCTION PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Minimise the impacts on sensitive receptors.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Continued monitoring of air quality and noise levels according to the monitoring programme. - Ensure all equipment and vehicles are serviced in accordance with the maintenance schedule. - Equipment and machinery used must comply with manufacturer's specifications and should not exceed regulated limits. - Constant monitoring and appointment of an ECO. - Choose suitable types of lighting that minimise glare and sky glow. - Only focus light sources on where it is needed and utilise motion sensor lights where possible. - Consult a qualified lighting engineer or lighting specialist, should it be required. - No spotlights should be used, if possible. - Monitor rehabilitated areas to ensure that rehabilitation has been effective. - Implement further rehabilitation measures where rehabilitation has not been effective.		Undertake monitoring in accordance with the monitoring programme. Implement a service and maintenance schedule for vehicles and equipment.				

ASPECT: SENSITIVE RECEPTORS- PRE-CONSTRUCTION PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL AND CLOSURE/ DECOMMISSIONING PHASES						
Impact management outcome	Minimise the impacts on sensitive receptors.					
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible Person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible Person**	**Frequency**	**Evidence of Compliance**
- Constant monitoring and appointment of an ECO. - CDF rise to be undertaken in accordance with the design and to be overseen by an engineer. - Undertaken concurrent rehabilitation in accordance with the RSIP. - Use suitable building finishes/colours that blend in with the surrounding landscape. - Rehabilitate exposed areas and monitor until vegetation establishment is successful.						

6 PROPOSED ENVIRONMENTAL MONITORING PROGRAMME

A comprehensive monitoring programme assists in determining whether mitigation and management measures are being implemented and/or if they are effective. Monitoring of the environment prior to the start of activities (establishment of baseline conditions) and continued monitoring throughout the life of the operation will help identify environmental impacts by identifying and tracking potential pollution trends. The monitoring data collected will also provide input into the planning for closure at the end of the life of the facility.

6.1 Surface Water Monitoring

Kangra Coal has an existing surface water monitoring system in place. The monitoring network is considered sufficient for the large scale, but may not be sensitive enough to verify local impacts associated with the proposed CDF. The WWTP is considered a lower-risk infrastructure when compared to the CDF and hence will not require dedicated surface water monitoring.

It is proposed that at least 3 additional surface water monitoring points be added to the existing water monitoring network. The proposed additional surface monitoring points are listed in Table 10 and the positions are shown in Figure 4.

Table 10: Proposed additional surface water monitoring points.

Site	Type	Latitude	Longitude
GCS-SW1	**Surface Water**	**-27.014373**	**30.380725**
GCS-SW2	**Surface Water**	**-27.007210**	**30.383816**
GCS-SW3	**Surface Water**	**-26.997385**	**30.394284**

6.2 Groundwater Monitoring

According to the 2022 Geohydrological Investigation undertaken by GCS, based on a review of the existing monitoring network and data generated, for the Maquasa and Kusipongo Operations, no further improvements are proposed.

This geohydrological assessment finds the existing monitoring network sufficient. It is important to re-evaluate the monitoring network on an annual basis, to ensure that there are no monitoring gaps. This is done annually during the annual groundwater and surface water monitoring reporting.

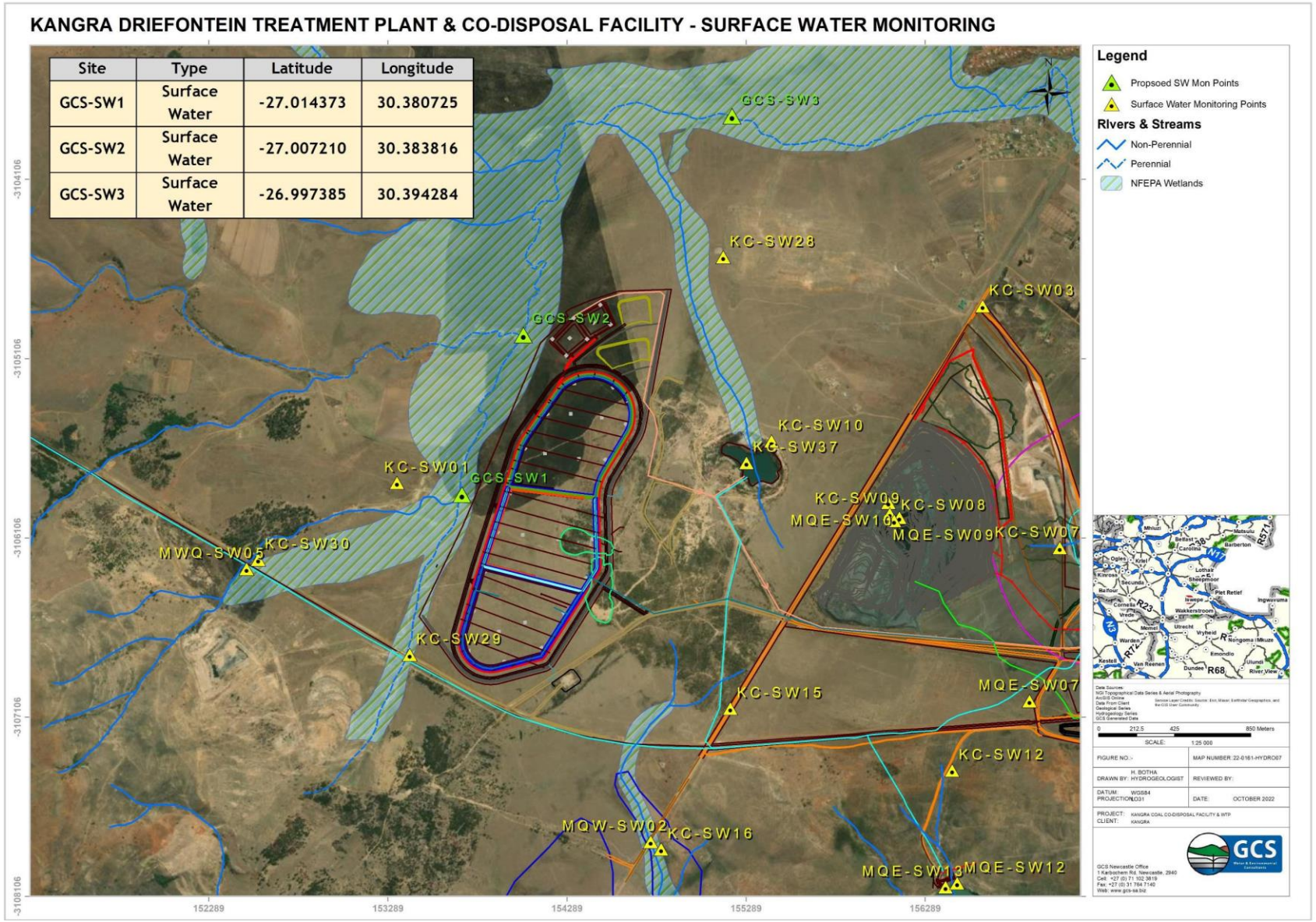

Figure 4: Proposed Surface Water Monitoring Points

6.3 Dust Fallout Monitoring

There are currently 21 dust monitoring points around the MQE and Maquasa West infrastructure areas, around the Heyshope Dam and within the nearby community. These are considered sufficient and no additional dust monitoring points are recommended.

6.4 Aquatic Biomonitoring

It is recommended that biannual biomonitoring be continued at the monitoring points upstream and downstream of MQE, as indicated on the biomonitoring map on Figure 5.

Furthermore, it is recommended that monthly water quality monitoring be undertaken on the discharge point from the mine into the Heyshope Dam.

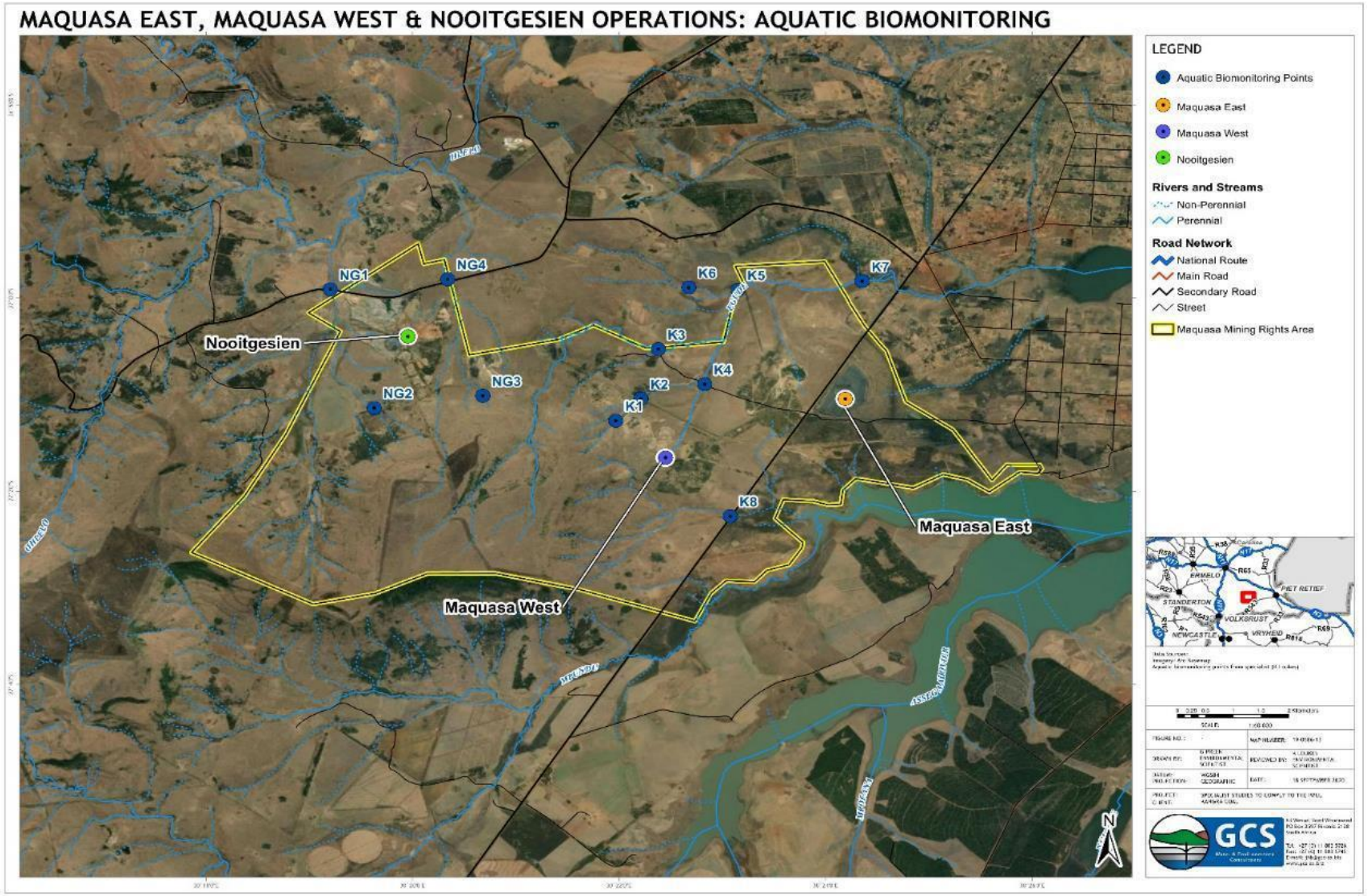

Figure 5: Current MQE Aquatic Biomonitoring Points

APPENDIX A: CURRICULUM VITAE OF EAP

Gerda Bothma

GCS Group Environmental Manager

CORE SKILLS

- Project Management
- Technical & Impact Assessment Guidance
- Environmental Assessment
- Water Use Licencing
- Waste Management Licencing
- Environmental & Waste Auditing and Compliance Monitoring

DETAILS

Qualifications

- B.Sc. Microbiology (Honours) University of Pretoria 1996
- B.Sc. Biological Sciences University of Pretoria 1994

Memberships/ Professional Affiliations

- International Association for Impact Assessors of South Africa (IAIA)
- Institute of Waste Management of South Africa (IWMSA)
- SACNASP (No.117348) (South African Council for Natural Scientific Professionals)

Languages

- Afrikaans
- English

Countries worked in:

South Africa, Zambia, Namibia

PROFILE

Gerda has over 25 years' experience within the environmental and waste management field and strives to deliver custom environmental services to clients.

Gerda began her career in the environmental field within the government sector, managing environmental aspects and impacts as well as reviewing environmental assessments with the view of authorizing or declining authorization of the developments.

After six years within the government sector she joined a consulting engineering firm where she was ultimately responsible for the Management of the Environmental Sub-Division. Gerda has experience in project and client management, financial management and the compilation and costing of project proposals and tenders. She has been involved in several engineering projects as the Environmental Assessment Practitioner as well as the Environmental Control Officer during construction working closely with the Occupational Health and Safety Officer. Gerda has also been involved in projects where waste licensing as well as water use licensing processes formed an integral part of the services offered. Environmental auditing and compliance monitoring of waste disposal sites also forms part of her experience gained. She also has experience in dealing with projects which involve NEC3 Contracts, the Equator Principles and World Bank IFC Principles.

Gerda has specialist skills in the following areas:

- Project proposals, planning, costing and timing
- Project and Client Management
- Authority Liaison
- Basic Assessments & Scoping/EIA Processes
- Amendment of EA's & EMP's
- S24G Applications
- Facilitation of Public Participation Processes & Stakeholder Engagement
- IWULA & IWWMP Applications
- Environmental Control Officer (ECO) duties
- Environmental Compliance Auditing (IFC Performance Standards & Equator Principles)
- Mentorship & Guidance

Period	Employer	Position	Role/ Responsibility
2019 to Current	GCS Water and Environment (Pty) Ltd	Environmental Manager	Management of the environmental unit since 2019 up to January 2024 and then the GCS Group Environmental Division since February 2024. Management of applications for rectification in terms of Section 24G of the EIA Regulations, undertaking basic environmental assessment and full Scoping & EIR applications in terms of the Regulations. Management of Integrated Water Use License Applications in terms of the NWA. Undertaking of environmental compliance audits for various construction projects as well as environmental legal audit reviews and environmental due diligence investigations.
2018 to 2019	Terramanzi Group (Pty) Ltd	Senior Environmental Consultant	Management of the environmental unit within the Terramanzi Group. Management of applications for rectification in terms of Section 24G of the EIA Regulations, undertaking basic environmental assessment and full Scoping & EIR applications in terms of the Regulations. Undertaking of environmental compliance audits for various construction projects as well as environmental legal audit reviews and environmental due diligence investigations.
2014 to 2017	GIBB (Pty) Ltd	Senior Environmental Scientist	Management of applications for rectification in terms of Section 24G of the EIA Regulations, undertaking of basic environmental assessment and full Scoping & EIR applications in terms of the Regulations. Management of Integrated Water Use License Applications in terms of the NWA. Undertaking of environmental compliance audits for various construction projects as well as environmental legal audit reviews and environmental due diligence investigations.
2011 to 2013	WorleyParsons RSA	Senior Environmental Scientist & Durban Department Head Environment	Management of the environmental unit in the Durban Office. Management of applications for rectification in terms of Section 24G of the EIA Regulations, undertaking of basic environmental assessment and full Scoping & EIR applications in terms of the Regulations. Management of Integrated Water Use License Applications in terms of the NWA. Undertaking of environmental compliance audits for various construction projects as well as environmental legal audit reviews and environmental due diligence investigations.
2003 to 2011	KV3 Engineers	Senior Environmental Scientist	Management of applications for exemption from compliance with the EIA Regulations, undertaking of basic environmental assessment applications, as well as full environmental impact assessment applications.
2000 to 2003	Gauteng Department of Agriculture, Conservation & Environment	Assistant Director: Waste Management Division	Project management and environmental management pertaining to all developments within a designated area in Gauteng Province. Review of EIAs, formulation of comments and or authorisations within designated area in Gauteng Province. Liaison with waste contractors, industries and others. Management of legal interventions required in terms of environmental legislation within a designated area. Supporting environmental officers at all levels in terms of technical and environmental guidance, input into strategic decisions, resolving complex and potentially challenging issues.
1999 to 2000	Gauteng Department of Agriculture, Conservation & Environment	Senior Environmental Officer: Waste Management Division	
1997 to 1999	Gauteng Department of Agriculture, Conservation & Environment	Environmental Officer: Waste Management Division	
1996	Spartan Private School	Teacher: Natural Science & Biology	Teacher in Biology and Natural Science for Grades 7 to 12.

Year	Client	Project Description	Role/ Responsibility
Strategic and Environmental Guidance Projects			
1999 to 2003	Gauteng Department of Agriculture, Conservation & Environment	Development of a Health Care Risk Waste Management Strategy for Gauteng.	Part of Development Team
2001 to 2003	Gauteng Department of Agriculture, Conservation & Environment	Development of Minimum Domestic Waste Collection Standards for Gauteng Province.	Part of Development Team
2002	Gauteng Department of Agriculture, Conservation & Environment	Development of new EIA guidelines and regulations for the Gauteng Province.	Part of Development Team
2005	Gauteng Department of Agriculture, Conservation & Environment	GDACE Green Procurement Project: Development of the GDACE Green Procurement Policy, Gauteng	Project Manager & Reviewer
2008	GAUTRAIN Project Engineers (i.e. KV3 Engineers)	Environmental Assistance for the Gautrain Project: Environmental Evaluation of various documentation and engineering designs in terms of their environmental compliance.	Project Manager & Reviewer
2009	Department of Environmental Affairs	Alignment of MIG Project Process with EIA Process: Evaluation of the EIA process as well as the MIG process in order to produce a process alignment guideline to the municipalities to streamline the two processes.	Part of Development Team
2021	CoalTech	Development of "A Manual for the Authorisation of Pitlakes as a Closure Option for South African Coal Mines"	Part of Development Team
Environmental Feasibility and Screening			
2008	Nu Way-property Developments	Management of Environmental Screening and Due Diligence Assessment for several proposed Nu Way-property Developments, Gauteng.	Project Manager
2008	Department of Water Affairs	Mokolo Croc WAP Environmental Feasibility and Screening, Limpopo.	Project Manager & Senior Environmental Assessment Practitioner (EAP)
2016	Kwadukuza Municipality	Environmental Feasibility for Civil Engineering Project Foxhill Road Alignment and Construction, Tongaat, Kwa-Zulu-Natal.	Environmental Project Leader
2016	King Sabata Dalindyebo Local Municipality (C/O OR Tambo District Municipality)	Environmental Screening Investigation of six proposed development corridors for the Mthatha Bulk Water Infrastructure Presidential Intervention – Phase 2: Secondary Bulk Infrastructure project.	Environmental Project Leader
2019 to 2020	Phumaf Holdings (Pty) Ltd	Environmental Screening for various sites within Ekhurhuleni Municipality as part of the Gauteng Rapid Land Release Programme (GRLRP) project for the Provincial Department of Human Settlements	Project Manager & Senior EAP

Year	Client	Project Description	Role/ Responsibility
Environmental Opinions & Appeals			
2019 to 2020	Tendele Coal	Environmental Review Report for the Somkhele Anthracite Mine (MR 10041) High Court Case Number 82865.	Project Manager & Senior EAP
2022	CNG Holdings	Environmental Opinion regarding the Environmental Legislative Requirements for the proposed Compressed Natural Gas Motherstation in Avoca, KwaZulu-Natal.	Project Manager & Senior EAP
2021 to 2022	Tendele Coal	Environmental support to the Somkhele Anthracite Mine for the IWULA Appeals Process.	Project Manager & Senior EAP
Development Environmental Assessments			
2003 to 2005	ABSA DevCO	Environmental Impact Assessment for a change of land-use from agricultural to Residential and Town Development of the farm Brakfontein 399 JR, Centurion, Gauteng.	Project Manager & Senior EAP
2005 to 2010	Air Traffic Navigation Services (ATNS)	The project entails the upgrading of existing, and the provision of new air navigation sites (27 in total) throughout South Africa. Civil and electrical infrastructure to the sites needed to be upgraded to accommodate the equipment. Various Environmental Impact Assessments for various individual projects in various provinces within South Africa.	Project Manager & Senior EAP
2006 to 2009	Amathole District Municipality	Elliotdale Rural Sustainable Human Settlement Pilot Project Environmental Impact Assessment. Responsible for the environmental assessment process which was based on a strategic approach for the Elliotdale Rural Housing Project, Elliotdale, Eastern Cape.	Project Manager & Senior EAP
2007	Elkem Ferroveld	Environmental Basic Assessment for the upgrading and expansion of the Ferroveld Plant in Ferrometals, Emahlaheni, Mpumalanga.	Project Manager & Senior EAP
2008	ABSA DevCO	Environmental Impact Assessment for a change in land use from agricultural to Residential and Town development of Montana X40, Pretoria, Gauteng.	Project Manager & Senior EAP
2012	Transnet Capital Projects	Environmental Basic Assessment and technical environmental investigations for the proposed expansion of the existing tug jetty and construction of a new tug jetty for Transnet Capital Projects in the Port of Durban, KwaZulu-Natal.	Project Manager & Senior EAP
2014 to 2016	Dube TradePort	Environmental Impact Assessment for the proposed construction of the Dube TradePort TradeZone 2 in La Mercy, KwaZulu-Natal.	Project Manager & Senior EAP
2014 to 2017	Dube TradePort	Environmental Impact Assessment for the proposed Support Precinct 2 Development in La Mercy, KwaZulu-Natal.	Project Manager & Senior EAP
2016 to 2017	Areena Resort	Application for rectification in terms of S24G and associated Environmental Basic Assessment for the alleged unlawful construction activities at the Areena Resort, Great Kei Municipality, Eastern Cape.	Project Manager & Senior EAP
2016 to 2017	Areena Resort	Application for rectification in terms of S24G and associated Environmental Basic Assessment for the alleged unlawful construction activities on Hillsdrift Farm, Great Kei Municipality, Eastern Cape.	Project Manager & Senior EAP
2018 to 2019	Watchman Properties (Pty) Ltd	Environmental Basic Assessment for the proposed Vendome Residential Development on Portion 1 of Farm 1766 and Portion 2 of Farm 1766, Paarl, Western Cape, South Africa.	Project Manager & Senior EAP

Year	Client	Project Description	Role/ Responsibility
2018 to 2019	Keysha Investments 213 (Pty) Ltd	Environmental Basic Assessment for the proposed River Farm Estate Development and associated infrastructure on remainder of farm Rivierplaas No. 1486, Erf 111 and Erf 197, Paarl, Western Cape, South Africa.	Project Manager & Senior EAP
2018 to 2019	Paarl Vallei Developments (Pty) Ltd	Environmental Basic Assessment for the proposed Paarl Valleij Retirement Village Development, Paarl, Western Cape, South Africa.	Project Manager & Senior EAP
2018 to 2019	Val de Vie Investments (Pty) Ltd	Parallel Substantive Amendment Application process for the authorised Pearl Valley II & Levendal Residential Developments, Paarl, Western Cape, South Africa.	Project Manager & Senior EAP
2019 to 2021	Phumaf Holdings (Pty) Ltd	Environmental Services for: • Full Environmental Impact Assessment for the proposed Unitas Park Ext 16 Mixed Use Development; • Basic Environmental Impact Assessment for the proposed Evaton West F Mixed Use Development; and • Basic Environmental Impact Assessment for the proposed Evaton West I Mixed Use Development.	Project Manager & Senior EAP
Renewable Energy Environmental Assessments			
2011	Farmsecure Carbon	Environmental Basic Assessment and Water Use License Application process for a proposed Biogas Waste to Energy project for a pig farm, Mooiriver, KwaZulu-Natal.	Project Manager & Senior EAP
2018 to 2019	GPIPD – Doornfontein Solar Farm (Pty) Ltd	Environmental Impact Assessment for the proposed 230 MW Doornfontein Photovoltaic Solar Energy Facility (PVSEF) located on Remainder of Farm 118, Doornfontein, Piketberg, Bergrivier Local Municipality, Western Cape.	Project Manager & Senior EAP
2018 to 2019	GPIPD – Kruispad Solar Farm (Pty) Ltd	Environmental Impact Assessment for the proposed 150 MW Kruispad Photovoltaic Solar Energy Facility (PVSEF) located on Remainder of Farm 120, Kruispad, Piketberg, Bergrivier Local Municipality, Western Cape.	Project Manager & Senior EAP
2018 to 2019	Brandvalley Wind Farm (Pty) Ltd	Part 2 Amendment Application for the authorised 140 MW Brandvalley Wind Energy Facility (WEF) located within the Karoo Hoogland, Witzenberg and Laingsburg Local Municipalities in the Northern and Western Cape Provinces.	Project Manager & Senior EAP
2018 to 2019	Copperton Wind Farm (Pty) Ltd	Non-Substantive Amendment Application to update the information of the Holder of the Environmental Authorisation & an EMPr Amendment Process to update the Airstrip Alignment and to provide an updated “outcomes based” EMPr for the Copperton Wind Energy Facility near Copperton in the Northern Cape.	Project Manager & Senior EAP
2018 to 2019	WKN Windcurrent SA (Pty) Ltd	Environmental Impact Assessment for the proposed 150 MW Haga Haga Wind Energy Facility (WEF) & Environmental Basic Assessment for the associated Haga Haga Overhead Powerline (OHPL) in Haga Haga, Great Kei Local Municipality, Eastern Cape.	Project Manager & Senior EAP
2021 to 2022	Cennergi Holdings	Environmental Impact Assessment and Water Use License Application (GA) process for the proposed 100MW Lephalale Solar Plant located mainly on the Farm Appelvlakte 448 within the Lephalale Local Municipality, Limpopo.	Project Manager & Senior EAP

Year	Client	Project Description	Role/ Responsibility
Mining Environmental Assessments			
2007	Chris Hani Municipality	Environmental Assessment and DME Licence Application on behalf of Chris Hani Municipality. Responsible for exemption application from Mining Permit and Environmental Management Programmes for 17 borrow pits in Middelburg, Eastern Cape.	Project Manager & Senior EAP
2010	Samancor Chrome Limited	The Lwala Greenfields Mine and Smelter EIA and EMP. Responsible for the Environmental impact assessment and technical investigations for the waste management issues for the proposed development of a new chrome smelter project in the Steelpoort area, Limpopo.	Project Manager & Senior EAP
2011	Xtrata Alloys	Xtrata Alloys Western Mines PSV application for authorization in terms of the MPRDA. Responsible for the undertaking of the EIA and compilation of the amended EMPr and technical environmental investigations for the proposed development of an open cast mine in Rustenburg, North West.	Project Manager & Senior EAP
2019 to 2021	Harmony Gold	Environmental Assessment process to obtain environmental authorisation for the proposed expansion of the existing Kareerand Tailings Storage Facility, Dr Kenneth Kaunda District Municipality, North-West Province.	Project Manager & Senior EAP
2019 to 2021	Zululand Anthracite Colliery	Environmental Basic Assessment for the proposed New Mngeni Adit & Associated Infrastructure, Mandlakazi Traditional Authority, KwaZulu-Natal.	Project Manager & Senior EAP
2021 to 2022	Sibanye-Stillwater	Part 2 Amendment Application for the approved Burnstone Gold Mine EA/EMPr located near Balfour within the Dipalaseng Local Municipality, Mpumalanga.	Project Manager & Senior EAP
2021 to 2022	Exxaro Resources	Section 34 EMPr Amendment Application for the approved Grootegeluk Mine EMPr located near Lephalale within the Lephalale Local Municipality, Limpopo.	Project Manager & Senior EAP
2021 to 2022	Booysendal Northam Platinum	Part 2 Amendment Applications for the Booysendal Mine located near Lydenburg, across both Mpumalanga and Limpopo provices: • Booysendal North Mine: New Emergency Escape Portal and two new Ventilation Shafts and associated Infrastructure; and • Booysendal South Mine: New Ventilation Shafts and associated infrastructure.	Project Manager & Senior EAP
2022 to 2023	Booysendal Northam Platinum	Integrated Environmental Authorisation Application for the Booysendal South Phase III Expansion, Lydenburg, Mpumalanga: • Booysendal South Tailings Storage Facility Expansion; • Booysendal South Run of Mine Stockyard Stockpile Expansion; and • Booysendal South New Merensky Plant.	Project Manager & Senior EAP
2022 to 2023	Kangra Coal	Integrated Environmental Authorisation Application for the establishment of a Co-Disposal Discard Facility and Wastewater Treatment Plant at the Maquasa East Operations, Piet Retief, Mpumalanga.	Project Manager & Senior EAP
2023	Kangra Coal	Integrated Environmental Authorisation Application for the Umgala/Knights Hill Mining Application, Utrecht, KwaZulu-Natal.	Project Manager & Senior EAP

Year	Client	Project Description	Role/ Responsibility
Waste Management Environmental Assessments			
2003	Assmang Chrome Machadodorp	Environmental Impact Assessment for the permitting of the H:H Hazardous Waste Disposal Facility at Assmang Chrome, Machadodorp.	Senior EAP
2004	Emfuleni Local Municipality	Environmental Impact Assessment for the closure of the Zuurfontein Landfill site for the Emfuleni Local Municipality, Sedibeng, Gauteng	Senior EAP
2004	Ekurhuleni Municipality	Environmental Impact Assessment for the closure of the Sebenza Landfill Site for the Ekurhuleni Municipality, Gauteng.	Senior EAP
2004	Tzaneen Local Municipality	Application for authorisation and EIA for the permitting of an existing solid waste disposal site for the Tzaneen Local Municipality, Mpumalanga.	Senior EAP
2006	Samancor Chrome Middelburg	Environmental Basic Assessment for the permitting of the existing Slag Waste Disposal facility for Samancor Chrome Middelburg, Mpumalanga.	Senior EAP
2006	Samancor Chrome Ferrometals	Environmental Basic Assessment for the permitting of the existing Slag Waste Disposal facility for Samancor Chrome Ferrometals Witbank, Mpumalanga.	Senior EAP
2007	Steve Tshwete Municipality	Environmental Impact Assessments for four Solid waste Transfer Stations for the Steve Tshwete Municipality, Mpumalanga.	Senior EAP
2008	Assmang Chrome Machadodorp	Environmental Impact Assessment for the expansion of the existing Slag Waste Disposal Facility at Assmang Chrome. Responsible for the EIA application for authorization for the proposed expansion project in Machadodorp, Mpumalanga.	Project Manager & Senior EAP:
2010	ArcelorMittal	ArcelorMittal BOF Slag Disposal site licensing of new site and closure of old site, Newcastle, KwaZulu-Natal.	Project Manager & Senior EAP:
2010	Lekwa Municipality	Waste Management License Application for authorization and the conducting of an EIA and technical environmental investigation for the proposed development of two landfill sites for the Lekwa Municipality, Mpumalanga.	Project Manager & Senior EAP:
2015 to 2017	Umgungundlovu Municipality	Advanced Solid Waste Management Project for Umgundgundlovu Municipality for proposed Materials Recovery Facilities located in various Local Municipalities, Umgungundlovu Municipality, KwaZulu-Natal.	Project Manager & Senior EAP:
2019 to 2022	Buffalo Coal	Magdalena Colliery Waste Management License Application, Dundee, KwaZulu-Natal.	Project Manager & Senior EAP:
Water and Wastewater Environmental Assessments			
2004	Msukaligwa Municipality	Environmental Impact Assessment for the installation of a water reticulation system at Nganga for the Msukaligwa Municipality, Mpumalanga.	Senior EAP
2006 to 2010	eThekwini Municipality: Water and Sanitation	Proposed upgrading of the WWTW capacity in the Northern Areas of the eThekwini Municipality. Responsible for EIA application for authorization, technical environmental investigations, and waste management license application for the proposed expansion of the WWT capacity in Northern eThekwini, KwaZulu-Natal.	Project Manager & Senior EAP

Year	Client	Project Description	Role/ Responsibility
2008	Johannesburg Water	Environmental Management Services for Johannesburg Water: Environmental Impact Assessment (Exemption) for various individual projects related to the upgrading of the Bryanston Water Mains, Gauteng.	Project Manager & Senior EAP
2014 to 2017	eThekwini Municipality: Water and Sanitation	Environmental Basic Assessment and Water Use License Application for the Northern Aqueduct Water Augmentation Project (Phase 5), Durban, KwaZulu-Natal.	Project Manager & Senior EAP
Electrical and Linear Environmental Assessments			
2005	Magallies Water	Application for (exemption) authorisation on behalf of Magallies Water for the installation of the Rising Main from the Roodeplaat Waterworks to the Wallmannsthal Reservoir, in Wallmannsthall, Gauteng.	Senior EAP
2010	Moloto Rail Corridor Development	EIA for the Moloto Rail Corridor Development. Responsible for the EIA application for authorization and technical environmental investigations for the proposed Moloto Rail Corridor Development, Moloto, Gauteng.	Project Manager & Senior EAP
2010	ESKOM	Environmental Basic Assessment of for the ESKOM Honingklip 88kV & ESKOM Randjiesfontein 88kV overhead line and Sub-Stations, Johannesburg, Gauteng.	Project Manager & Senior EAP
2010	ESKOM	Environmental Basic Assessment of for the ESKOM Ubertas Strategic Servitude Sub-Station, Johannesburg, Gauteng	Project Manager & Senior EAP
2014 to 2017	Msunduzi Municipality	Environmental Impact Assessment for the proposed Msunduzi IRPTN project, Pietermaritzburg, KwaZulu-Natal	Project Manager & Senior EAP
Environmental and Waste Management Compliance Monitoring and Auditing			
2005 to 2009	Sedibeng District Municipality	Auditing of Zuurfontein and Boitshepi Landfill sites for the Sedibeng District Municipality, Gauteng.	Part of Audit Team
2006 to 2009	ABSA DevCO	Environmental Compliance monitoring in accordance with relevant authorisation conditions and environmental management plans for the Amberfield Development on the farm Brakfontein 399 JR, Centurion, Gauteng.	Project Manager & Environmental Control Officer (ECO)
2007 to 2009	ABSA DevCO	Environmental Compliance monitoring in accordance with relevant authorisation conditions and environmental management plans for the Zambezi Estate Development, Montana, Gauteng.	Project Manager & ECO
2008 to 2009	Steve Tshwete Municipality	Auditing of Middelburg Landfill Site for the Steve Tshwete Municipality, Mpumalanga.	Part of Audit Team
2008 to 2009	ABSA DevCO	Environmental Compliance monitoring in accordance with relevant authorisation conditions and environmental management plans for the Cedar Creek Development, Fourways, Gauteng.	Project Manager & ECO
2017 to 2018	Dube TradePort	Environmental Compliance monitoring in accordance with relevant authorisation conditions and environmental management plans for the construction of TradeZone 2, Dube TradePort, La Mercy, KwaZulu-Natal.	Project Manager & ECO
2017	Richards Bay Minerals	Environmental Legal Compliance Audit to determine the level of compliance of Richards Bay	Project Manager &

Year	Client	Project Description	Role/ Responsibility
		Minerals' to their various mining, water and waste licenses and environmental authorisations and permits, Richards Bay, KwaZulu-Natal.	Environmental Auditor
2017 to 2018	eThekwini Municipality	Environmental Compliance monitoring in accordance with relevant authorisation conditions and environmental management plans for the construction of the Northern Aqueduct Phase 5, Durban, KwaZulu-Natal.	Project Manager & ECO
2019	Buffalo Coal	Annual EMPr and WUL audits for Coalfields, Aviemore and Magdalena Operations, Dundee, KwaZulu-Natal.	Project Manager & Lead Auditor
2020	Buffalo Coal	Annual EMPr and WUL audits for Coalfields, Aviemore and Magdalena Operations, Dundee, KwaZulu-Natal.	Project Manager & Lead Auditor
2020	Samancor Eastern Chrome Mines	Annual Performance Assessment Audits for the following mines in Limpopo: • Doornbosch, Steelpoort and Montrose Mines; • Quartz Mine; • Lwala Mine; • Lannex Mine; • Spitskop Mine; and • Tweefontein Mine.	Project Manager & Technical Review
2020	ESKOM	ESKOM Biennial PCB Phase-out Compliance Audit, various sites within South Africa.	Project Manager & Lead Auditor
2020	ESKOM	Majuba Power Station Legal Compliance Audit, Volksrust, Mpumalanga.	Project Manager & Lead Auditor
2021	Zululand Anthracite Colliery	Annual IWUL Audit for 2020, Mandlakazi Traditional Authority, KwaZulu-Natal	Project Manager & Technical Review
2021	ESKOM	Kendal Power Station Legal Compliance Audit, eMalahleni Local Municipality, Mpumalanga.	Project Manager & Lead Auditor
2021	Coalition Trading	External Compliance Audit for the Humberdale Landfill Site, in terms of the Waste Management Permit, KwaZulu-Natal	Project Manager & Auditor
2021	Tronox KZN Sands (Pty) Ltd	NEM: WA Norms and Standards External Waste Compliance Audit for the Tronox Central Processing Complex located in Empangeni, KwaZulu-Natal	Project Manager & Lead Auditor
Integrated Water Use License Applications			
2010	FOSKOR	Integrated Water Use License Application for a new storage dam for FOSKOR, Richards Bay, KwaZulu-Natal.	Part of Project Team
2014 to 2015	SANRAL	Integrated Water Use License Applications as required for the proposed SANRAL N2 Road upgrade from Mthunzini to Empangeni, KwaZulu-Natal.	Project Manager & Senior EAP
2014	eThekwini Municipality: Roads	Integrated Water Use License Application for the proposed Realignment of Inanda Arterial Road, Durban, KwaZulu-Natal.	Project Manager & Senior EAP

Year	Client	Project Description	Role/ Responsibility
2015 to 2017	SMEC (Umzimkulu Municipality)	Integrated Water Use License Application for the proposed Licensing of the existing Umzimkhulu Waste Water Treatment Works, Umzimkhulu, KwaZulu-Natal.	Project Manager & Senior EAP
2014 to 2016	eThekwini Municipality: Roads	Water Use License Application for the proposed eThekwini BRT Route C1A, Durban, KwaZulu-Natal.	Project Manager & Senior EAP
2019 to 2020	Zululand Anthracite Colliery	Integrated Water Use License Application for the new Mngeni Adit and associated infrastructure, Mandlakazi Traditional Authority, KwaZulu-Natal.	Project Manager & Senior EAP
2019 to 2021	South32 SA Coal Holdings	Integrated Water Use License Application for the Roy Point Mine, Newcastle, KwaZulu-Natal.	Project Manager & Senior EAP
2020 to 2022	Buffalo Coal	Integrated Water Use License Amendment Application for the Magdalena Colliery, Dundee, KwaZulu-Natal.	Project Manager & Senior EAP
2020 to 2022	Buffalo Coal	Integrated Water Use License Application for the Coalfields Processing Plant, Dundee, KwaZulu-Natal.	Project Manager & Senior EAP
Management and Master Plans			
2005	Livingstone Municipality	Development of the Livingstone Integrated Development Plan, Zambia.	Part of the Project Team
2008	Steve Tshwete Municipality	Development of an Integrated Waste Management Plan for the Steve Tshwete Municipality, Mpumalanga.	Part of the Project Team
2008	Kungwini Local Municipality	Development of an EMP (Framework) for Kungwini Local Municipality, Mpumalanga.	Part of the Project Team
2010	KZN Department of Public Works – Southern Region	Compilation of an Environmental Management Plan for the Fort Napier sewage upgrading project, Pietermaritzburg, Kwa-Zulu Natal.	Project Manager & Senior EAP

DECLARATION

I, ___Gerda Bothma_____ hereby declare that the details furnished above are true and correct to the best of my knowledge and belief and I undertake to inform you of any changes therein, immediately. In case any of the above information is found to be false or untrue or misleading or misrepresenting, I am aware that I may be held liable for it.

Signature:  _____ Date: 21/02/2024

9222065

University of Pretoria

The Council and Senate hereby declare that
at a congregation of the University the degree

Baccalaureus Scientiae

with specialization in
Biological Sciences

with all the associated rights and privileges
was conferred on

GERDA DE LANGE

in terms of the Act and Statute of the University

On behalf of the Council and Senate
(Sgd) P Smit
Vice-Chancellor and Principal

On behalf of the Faculty of
Science
(Sgd) N Sauer
Dean

(Sgd) CR de Beer
Registrar

Date of Conferment
8 December 1994

Certified a true translation of the original Certificate

Registrar
Signed at Pretoria on the third day of September, 2008

9222065

University of Pretoria

The Council and Senate hereby declare that
at a congregation of the University the degree

Baccalaureus Scientiae Honores

with specialization in
Microbiology

with all the associated rights and privileges
was conferred on

GERDA DE LANGE

in terms of the Act and Statute of the University

On behalf of the Council and Senate
(Sgd) P Smit
Vice-Chancellor and Principal

On behalf of the Faculty of Biological
and Agriculrural Sciences
(Sgd) J van Zyl
Dean

(Sgd) JA Boon
Registrar

Date of Conferment
27 March 1996

Certified a true translation of the original Certificate

Registrar
Signed at Pretoria on the third day of September, 2008

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Gerda Bothma

Registration Number: 117348

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Environmental Science (Professional Natural Scientist)

Effective **15 November 2017** Expires **31 March 2024**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

Reneé Steele

Environmental Consultant

CORE SKILLS

- Project Management
- Environmental Impact Assessment
- Environmental Impact Management
- Water Use Licencing
- Waste Management Licencing
- Integrated Water and Waste management Plans
- Environmental & Waste Auditing and Compliance Monitoring

DETAILS

Qualifications

- BSc (Honours) Environmental Monitoring and Modelling University of South Africa, 2020
- BSc Zoology University of KwaZulu-Natal, 2006

Memberships/ Professional Affiliations

- International Association for Impact Assessors of South Africa (IAIA)
- SACNASP (No.008920) (South African Council for Natural Scientific Professionals)
- Environmental Assessment Practitioners Association of South Africa: Registered Environmental Assessment Practitioner (Reg. No. 2022/4847)

Languages

- Afrikaans
- English

Countries worked in:

South Africa

PROFILE

Ms Reneé Steele has 15 years' experience in the environmental field and strives to provide quality consulting services to client to meet their environmental legislative obligations.

Renee has been involved in a wide range of projects for clients across the industrial, residential, agricultural and mining sectors. These projects have included environmental impact assessments; mining right, mining permit, prospecting permit applications; environmental due diligence; water use licence applications; environmental performance auditing and Environmental Control Officer (ECO) work.

In addition to two formal degrees, Reneé has completed accredited training in respect of the implement of the ISO9001:2015, ISO 14001:2015 and ISO 45001:2018 standards.

Renee has specialist skills in the following areas:

- Project proposals, planning, costing and timing
- Project and client management
- Authority Liaison
- Basic Assessments & Scoping/EIA Processes
- Amendment of Environmental Management Programmes
- Facilitation of Public Participation Processes & Stakeholder Engagement
- Water Use Licence Applications
- Integrated Water and Waste Management Plan compilation
- Environmental Control Officer (ECO) duties
- Environmental Compliance Auditing

Period	Employer	Position	Role/ Responsibility
2017 to present	Steele Environmental Consulting	Director and Principal Environmental Consultant	• Management of projects to ensure projects are completed within the agreed upon or legislated timeframe. • Managing project budgets. • Management of interdisciplinary specialist teams. • Environmental Control Officer duties. • Marketing to new clients and compiling proposals. • Environmental auditing and consulting. • Environmental Impact Assessments.
2007- 2016	GCS Water and Environmental Consultants	Senior Environmental Consultant	• Management of project timeframes to ensure projects were completed within the agreed upon or legislated timeframe. • Liaison with clients, provincial and national authorities, and the public. • Management of interdisciplinary specialist teams. • Managing project budgets. • Undertaking Environmental Impact Assessments, Water Use Licence Applications, Environmental Performance Audits, Water Use Licence audits, Environmental Management Programme amendments and permit applications. • Marketing and compilation of proposals.

Year	Client	Project Description	Role/ Responsibility
Water Use Licensing & IWWMPs			
2015	Kangra Coal	Ballengeich and Shanduka Siding Remediation IWULA/IWWMP, Newcastle, KwaZulu-Natal	IWWMP Compilation, liaison with authorities.
2014	Exxaro	Glisa Coal Mine Water Treatment Plant: Belfast, Mpumalanga	IWULA/IWWMP compilation.
2012	Exxaro	Matla Colliery Water Treatment Plant: Kriel, Mpumalanga	Review of IWULA submitted, follow up and submission of outstanding information.
2012	Assmang Chrome	Assmang Dwarsrivier GN704 Exemption application: Steelpoort, Limpopo	GN704 inspection, compilation of exemption application.
2012	Transvaal Gold Mining Estates (Pty) Limited	TGME Glynn's Lydenburg and Rietfontein IWULA follow up: Lydenburg and White River	Follow up with the DWS and submission of additional information.
2012	Magaliesberg Water	Magaliesberg Water, Brits, North West Province	WULA compilation.
2012	Mpumalanga Provincial Government: Department of Roads and Transport	P166/R40 Link Road WULA: Nelspruit, Mpumalanga Province	IWULA compilation
2011	Exxaro	Glisa Colliery North Block Complex IWULA amendment: Belfast, Mpumalanga Province	IWULA and IWWMP compilation.
2010	Gold Fields	Gold Fields Centralised Tailings Storage Facility- Integrated Water Use Licence Application (IWULA), Carletonville, Gauteng Province	IWULA and IWWMP compilation.
2010	Total Coal	Forzando North IWULA separation and update: Bethal, Mpumalanga Province	IWULA amendment report compilation.
2010	Assmang Chrome	Dwarsrivier Chrome Mine: Tailings Storage Facility: Steelpoort, Limpopo Province	Public consultation and IWUL compilation.
2009	Namakwa Diamonds	Namakwa Diamonds Water Use Licence Applications, Northern Cape: Various locations within the Northern Cape Province	IWULA compilation.
2009	Rainbow Farms (Pty) Ltd	Rainbow Farms (Pty) Ltd: Water Use Registrations and Licensing: Gauteng, Mpumalanga, KwaZulu-Natal, Eastern Cape, Western Cape	Registration and IWULA Report compilation and follow up.
2008	Mpumalanga Provincial Government: Department of Roads and Transport	P166 Bypass Road: Water Use Licence Application: Nelspruit, Mpumalanga Province	IWULA compilation.
2008	Mpumalanga Provincial Government: Department of Roads and Transport	R40 Road upgrade Water Use Authorisation Application: Nelspruit, Mpumalanga Province	GA application report compilation.
2008	Anglo Platinum	Richmond Mine IWULA, Limpopo Province	IWULA compilation.

Year	Client	Project Description	Role/ Responsibility
2008	Schamach Wildlife Estate cc	Schamach Wildlife Estates: Water Use Authorisation Application: Modimolle, Limpopo Province	General authorisation application report compilation.
EIA and EMP			
2014	South 32	Roypoint Mine Remediation Project Newcastle, KwaZulu-Natal	Project management, compilation of EIA, EMP and IWULA (handed over before completion due to retrenchment in August 2016).
2013	Kangra Coal	Kangra Coal Maquasa East Discard Dump: Piet Retief, Mpumalanga	Project Manager, public consultation, and compilation of EIA, EMP and IWULA.
2014	Namaqua Nickel Mining (Pty) Ltd	Jacomynspan Mining Right Application: Putsonderwater, Northern Cape Province	Environmental Scoping Report and EIA Report compilation.
2013	Two Rivers Platinum	Two Rivers Platinum New Tailings Storage Facility: Steelpoort, Limpopo	NEMA EIA/EMP Report compilation.
2013	Northam Zondereinde	Northam Zondereinde Mine MPRDA EMP consolidation: Northam, Limpopo	Project management, MPRDA EMP compilation
2013	Northam Zondereinde	Northam Zondereinde Mine NEM: WA Basic Assessment: Northam, Limpopo	Project management, NEM:WA Basic Assessment process (including public consultation).
2012	Total Coal	Coal Briquetting Plant EMP Addendum for Total Coal Forzando North Coal Mine: Bethal, Mpumalanga Province	Compilation of EMP addendum.
2012	Kgosana Mineral and Construction	Mining Permit Environmental Management Plans for Coal Mining Permit Applications: Witbank, Mpumalanga Province	Project management, mining permit application, public consultation and EMP compilation.
2012	Main Street 778 (Pty) Ltd	Mukulu Project EMP & NEMA Process: Hotazel, Northern Cape Province	Project management, NEMA and MPRDA process, including report compilation and public consultation.
2012	Transworld Energy and Mineral Resources South Africa	Kwanyana Block Prospecting Right Application: Bizana, Eastern Cape Province	Report compilation and public consultation.
2012	Transworld Energy and Mineral Resources South Africa	Tormin Mineral Sands Resources Prospecting Right Application: Lutzville Western Cape Province	Report compilation and public consultation.
2011	Witkop Exploration and Mining	Witkop Exploration and Mining- Mining Permit Application: Viljoenskroon, Free State Province	Public notification and ESR compilation.
2010	Assmang Iron Ore	Assmang Iron Ore, Beeshoek Mine: Road Diversion: Beeshoek, Northern Cape Province	Public consultation and EIA/EMP report compilation.

Year	Client	Project Description	Role/ Responsibility
2010	African Exploration Mining and Finance Corporation	African Exploration Mining and Finance Corporation Prospecting Permit, Cape Town, and Stellenbosch: Cape Town and Stellenbosch, Western Cape Province	Public consultation, compilation of EMP and Stakeholder Engagement Report.
2010	ArcelorMittal South Africa	ArcelorMittal South Africa Vanderbijlpark Works Temporary Storage Area: Vanderbijlpark, Gauteng Province	Compilation of Basic Assessment Report.
2009	Rand Refinery	Rand Refinery Cadmium Furnace Project, Exemption Application: Germiston, Gauteng Province	Public consultation, compilation of exemption application and EMP.
2009	Booysendal Platinum Limited	Northam Booysendal Mine: Environmental Authorisation: Roosenekal, Limpopo Province	Environmental Scoping Report compilation.
2009	Moshutwa Trading	Moshutwa Trading Prospecting Permit Application, Lephalale: Lephalale, Limpopo Province	Prospecting right application, public notification, and compilation of EMP and stakeholder engagement report.
2009	NFT Quarries	NFT Quarries Mining Permit Application, East London (Council for Geoscience): East London, Eastern Cape Province	Prospecting right application, public notification, and compilation of EMP and stakeholder engagement report.
Environmental Control Officer			
2017-2023	Booysendal Platinum Limited	Booysendal Platinum Mine South Expansion Project	Environmental Control Officer duties
Environmental Performance Audits			
2023	Sitatunga Manganese	East Manganese Mine, Hotazel, Northern Cape	PAR and WUL Audit
2023	Canyon Coal	Rietkuil Siding, IWUL audit, Mpumalanga (2023)	IWUL performance audit
2023	Canyon Coal	Pan Siding, IWUL audit, Mpumalanga (2023)	IWUL performance audit
2023	Menar (Pty) Ltd	Menar Riverside Anthracite Colliery, PAR, Vryheid, KwaZulu-Natal	NEMA Regulation 34 Performance Assessment
2022	Steynol (Pty) Ltd	Steynol Welgedacht siding IWUL Audit	IWUL performance audit
2021	Canyon Coal	Canyon Coal Hakhano Colliery, Middleburg Mpumalanga	IWUL performance audit and NEMA PAR.
2020	Canyon Coal	Rietkuil Siding, IWUL audit, Mpumalanga (2019 and 2021)	IWUL performance audit
2020	Canyon Coal	Pan Siding, IWUL audit, Mpumalanga (2019 and 2021)	IWUL performance audit
2019	Canyon Coal	Canyon Coal Hakhano Colliery, Middleburg Mpumalanga (2019)	IWUL performance audit and NEMA PAR.

Year	Client	Project Description	Role/ Responsibility
2019	Canyon Coal	Canyon Coal Argent Siding, Mpumalanga	IWUL performance audit
2017	Assmang Chrome	Assmang Chrome Machadadorp Works, Machadorp, Mpumalanga	IWUL, Waste Licence, EMP and environmental authorisation performance audits
2017	Kathu Solar Park	Kathu Solar Park, Kathu, Northern Cape	EMP and IWUL performance audits.
2013	Anglo Coal	Anglo Lephalale Coal Bed Methane GA: Lephalale, Limpopo	Reporting on General Authorisation compliance.
2013	Anglo Platinum Limited	Anglo Platinum Limited: Polokwane Metallurgical Complex (PMC), Polokwane, Limpopo	IWUL compliance audit and reporting.
2012	Northam Zondereinde	Northam Zondereinde Mine Environmental Performance Assessment; Northam, Limpopo	Environmental Performance Assessment (EMP)
2009	SNS Bricks	SNS Bricks, Vereeniging, Environmental Performance Audit: Vereeniging, Gauteng Province (2009).	Environmental Performance Assessment (Environmental Authorisation)
2009	Xstrata	Xstrata Horizon Mine Waste Licence Audit: Rustenburg, North West Province	Environmental Performance Assessment (Waste Licence)
2008	SNS Bricks	SNS Bricks, Vereeniging, Environmental Performance Audit: Vereeniging, Gauteng Province (2008).	Environmental Performance Assessment (Environmental Authorisation)
Due Diligence			
2012	Assmang Iron Ore	Assmang Beeshoek Mine Environmental Legal Gap Analysis: Beeshoek, Northern Cape Province	Environmental Due Diligence Assessment process and report compilation.
2011	Lonmin Platinum	Lonmin Platinum Limpopo: Gap Analysis and Due Diligence Assessment: Lebowakgomo, Limpopo Province	Due diligence assessment and report compilation.
Other			
2009	ArcelorMittal South Africa	ArcelorMittal South Africa Vanderbijlpark Works Dam 10 and CETP Dams Remediation: Vanderbijlpark, Gauteng Province	Compilation of Remediation Alternatives Report.
2009	ArcelorMittal South Africa	ArcelorMittal South Africa- Dunswart Waste Site Remediation: Benoni, Gauteng Province	Site Remediation Alternatives Repot compilation.
2010	Department of Water Affairs	Groundwater Information Project: KwaZulu-Natal	Review and capture borehole data and attend monthly feedback meetings with the DWS.

DECLARATION

I, ___Reneé Steele_____ hereby declare that the details furnished above are true and correct to the best of my knowledge and belief and I undertake to inform you of any changes therein, immediately. In case any of the above information is found to be false or untrue or misleading or misrepresenting, I am aware that I may be held liable for it.

Signature: 

Date: 20/02/2024

Environmental Assessment Practitioners Association of South Africa

Registration No. 2022/4847

Herewith certifies that

Renee Lynneil Steele

is registered as an

Environmental Assessment Practitioner

Registered in accordance with the prescribed criteria of Regulation 15. (1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Effective: 01 March 2023

Expires: 29 February 2024

Chairperson

Registrar

SAQA
SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Renee Lynneil Steele

Registration Number: 008920

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following fields(s) of practice (Schedule 1 of the Act)

Environmental Science (Professional Natural Scientist)

Effective **23 October 2013** Expires **31 March 2024**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

UNISA

UNIVERSITY OF SOUTH AFRICA

We certify that

RENEE LYNNEIL FRANCIS

having complied with the requirements of the Higher Education Act and the Institutional Statute, was admitted to the degree of

BACHELOR OF SCIENCE HONOURS

in Environmental Monitoring and Modelling

at a congregation of the University on 5 October 2020

Vice Chancellor

University Registrar

Executive Dean

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UNIVERSITY OF KWAZULU-NATAL

The Universities of Durban-Westville and Natal merged
to become the University of KwaZulu-Natal on 1 January 2004

This is to certify that

Renee Lynneil Francis

was admitted this day
at a congregation of the University
to the degree of

Bachelor of Science
(Zoology)

having satisfied the conditions prescribed for the degree.

M W Makgoba
Vice-Chancellor

E Mneney
Registrar

J A Cooke
Dean

21 April 2007

APPENDIX B: GENERIC METHOD STATEMENT

Generic Method Statement

Information pertaining to the activity which will be undertaken:

What activity will take place?
How will the activity be undertaken (methods)?
Machinery/plant/equipment or vehicles which will be needed?
Materials required and relevant hazard status?
Where on-site will the activity take place and what will the extent of the activity be?
Timeframes of activity (start and end dates)?

Impact and Risk Assessment of the Activity:

Impact sources	
Receptors	
Objective	
Risks	
Notes	

The following signatures represent a binding agreement to the Method Statement and EMPr by all Contractors and Subcontractors involved in the above activity.

Role	Name	Company	Date	Signature
Client				
Engineer/Applicant's representative				
Contractor				
ECO				