

**Sefateng Chrome Mine (Pty) Ltd:**

**Sefateng Mining Project**

**DMR Ref no: LP 30/5/1/2/2/10062 MR**

**ENVIRONMENTAL AUDIT REPORT**

**in terms of the Environmental Impact Assessment  
Regulation, 2014 (as amended) under the National  
Environmental Management Act, 1998 (Act No. 107 of  
1998)**

**March 2023**

**Submitted by:**



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**Legal Accountability:**

The Auditor herewith confirms that she will not be responsible for any actions taken by the company or individuals based on the non-conformances at the time of the audit with the evidence presented.

**Confidentiality:**

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The audit process and the results are based on a sampling process as decided by the auditor and the audit results therefore cannot identify all strength and weakness areas within the customer's environmental management system. The audit results must however, demonstrate that the audit plan and audit objectives have been achieved. Prescali Environmental Consultants (Pty) Ltd accepts no liability whatsoever, for any loss, consequential, direct and indirect, including without being limited to, any loss of profit arising from the normal execution of the audit or any information made available to the audit team during the audit and actions and transactions resulting therefrom. It is important to note that the environmental operational compliance audit is a snapshot of the level of compliance on the date of the audit. No guarantee whatsoever for any continual compliance after the audit date is given or implied.



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Declaration of independence

I, Christina Petronella Erasmus, declare that --

- I act as the independent specialist in this application;
- I do not have and will not have any vested interest (either business, financial, personal or other) in the undertaking of the proposed activity, other than remuneration for work performed in terms of the EIA Regulations, 2014;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Waste Act and NEMA, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Waste Act and NEMA, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I am aware that a person is guilty of an offence in terms of Regulation 48 (1) of the EIA Regulations, 2014, if that person provides incorrect or misleading information. A person who is convicted of an offence in terms of subregulation 48(1) (a)-(e) is liable to the penalties as contemplated in section 49B(1) of the National Environmental Management Act, 1998 (Act 107 of 1998).

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Signature of the specialist

Prescali Environmental Consultants (Pty) Ltd

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Name of company

05 April 2023

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Date



## EXECUTIVE SUMMARY

The objectives of this audit are to ascertain if the Sefateng Chrome Mine (Pty) Ltd: Sefateng Mining Project complies with their current Environmental Management Programmes (EMPs), in terms of Regulation 34 and 75A(2) of the Amendments to the Environmental Impact Assessment Regulation, 2014 under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

This report deals with the requirements of the NEMA as to conduct an Environmental Audit on all existing environmental and relevant legal documentation. As the mine is operational, this report deals with the operational phase of the project, focusing specifically on compliance and aims to identify areas which need to be amended or corrected in the update of the Environmental Management Programme of the Sefateng Mining Project. All areas of non-compliance with the EMP that could possibly pose a potential risk to the environment were identified and recorded.

The on-site activities are audited or performance assessed in terms of Regulation 34 of the EIA Regulations of 2014 as amended, and the assessment will be reported using the principles and criteria of the ISO 14001 environmental management systems.

This is the fifth EMP performance assessment conducted by Prescali Environmental Consultants (Pty) Ltd for the Sefateng Chrome Mine mining operations which have been undertaken on the Farm Zwartkoppies 413 KS and Remaining extent (Portion 0) and Portion 1 of the Farm Waterkop 113 KT approximately 85 km southeast of Polokwane in the Limpopo Province. The mine falls within the Fetakgomo Tubatse Local Municipality (part of the Greater Sekhukhune District Municipality).

The Water Use Licence (WUL) to backfill the opencast pit with tailings has been approved and received. The Environmental Authorisation and Waste Management Licence is still being processed by the DMRE.

Overall, the mining operations of Sefateng Chrome Mine (Pty) Ltd have demonstrated compliance with general environmental legal obligations. An outline of the findings is provided below:

Summary	FC	N/A	N/A*	PC	PC*	NC	NC*	Total
Objectives	49	13	16	14	17	4	6	119
Management	97	34	39	14	20	1	4	209
Surface water	12	0	0	5	5	0	1	23
Hazardous Chemicals	18	1	1	1	1	1	1	24
Waste	4	0	0	0	0	0	0	4
Social	22	1	1	2	2	0	0	28
Monitoring	15	5	5	2	2	2	4	35
<b>TOTAL</b>	<b>217</b>	<b>54</b>	<b>62</b>	<b>38</b>	<b>47</b>	<b>8</b>	<b>16</b>	<b>442</b>

Main non-compliance issues are related to the following:

- Containment facilities for contaminated runoff are under construction (PCD) or not completed. Water is also diverted to the opencast pit.
- Not all contaminated water is contained for re-use. Some storm water is contained in the opencast pit and the partially constructed PCD. However the water from the pit and PCD is not re-used.
- Canals are not concrete lined, it should be noted that this requirement is being amended as part of the Section 102 application currently awaiting approval.
- An energy management plan has not been developed.
- An environmental monitoring programming related to the sense of place has not been implemented.
- The access and main haul road have not been surfaced.
- Traffic awareness programme has not been developed.



- 
- During the audit it was noted that the first tank at the "oil sump" was overflowing and due to the wind blowing the contaminated water was not contained in the bunded area.
  - Quarterly geochemical tests have not been conducted.
  - Proof of noise monitoring was not available .

None of the issues or activities identified during this audit will result in an additional EMPr amendment at this point in time. The mitigation measures defined and approved for the operations are deemed appropriate even though some of the requirements are a bit excessive for the type of operation taking place.



## TABLE OF CONTENTS

	page
<b>1 INTRODUCTION.....</b>	<b>1</b>
<b>2 BRIEF PROJECT DESCRIPTION.....</b>	<b>1</b>
<b>3 SCOPE AND OBJECTIVE .....</b>	<b>2</b>
<b>4 METHODOLOGY (AUDIT APPROACH).....</b>	<b>3</b>
<b>5 AUDIT TEAM .....</b>	<b>4</b>
<b>6 PROCEDURES AND CRITERIA .....</b>	<b>4</b>
<b>7 MANAGEMENT AND REPORTING STRUCTURE .....</b>	<b>5</b>
<b>8 REPORTING AND AUDITING.....</b>	<b>5</b>
<b>9 LEGAL ASPECTS .....</b>	<b>5</b>
<b>10 AUDIT FINDINGS .....</b>	<b>6</b>
10.1 APPLICABILITY OF EMPr REQUIREMENTS TO THE MINE .....	6
10.2 SUMMARY OF AUTHORISATION CONDITIONS THAT CANNOT BE USED AS AUDIT CRITERIA THAT REQUIRES AMENDMENT .....	36
<b>11 APPROPRIATENESS OF EMPr .....</b>	<b>36</b>
11.1 APPROPRIATENESS OF THE SEFATENG EMPr AND PROPOSED CHANGES TO MEASURES .....	36
11.2 NEW IMPACTS AND RISKS .....	36
11.3 SHORT COMINGS OF THE EMPr .....	37
<b>12 ASSUMPTIONS .....</b>	<b>37</b>
<b>13 CONSULTATION PROCESS .....</b>	<b>37</b>
<b>14 INFORMATION REQUESTED BY COMPETENT AUHTORITY .....</b>	<b>37</b>
<b>15 CORRECTIVE ACTIONS TAKEN FOR THE PREVIOUS AUDIT'S NON-CONFORMITIES AND ACTION PLAN.....</b>	<b>38</b>
<b>16 CONCLUSION AND RECOMMENDATION .....</b>	<b>39</b>
<b>17 ACTION PLAN.....</b>	<b>39</b>
<b>18 REFERENCES.....</b>	<b>40</b>
<b>19 APPENDICES .....</b>	<b>40</b>

Appendix 1: Experience of auditors

Appendix 2: Attendance Register

Appendix 3: List of documented evidence



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## LIST OF TABLES

	Page
Table 10-1: Assessment of Specific Environmental Objectives: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr) .....	7
Table 10-2: Assessment of Specific EMP Mitigation Measures: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr) .....	16
Table 10-3: Assessment of Surface Water Management Plan: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr) .....	27
Table 10-4: Assessment of Hazardous Substances Management Plan: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr) .....	28
Table 10-5: Assessment of Waste Management Plan: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)	30
Table 10-6: Assessment of Environmental and Socio-Economic Requirements: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr) .....	30
Table 10-7: Assessment of Monitoring Programme: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr) ..	32
Table 15-1: March 2022 Action plan and implementation assessment – only aspects not completed.	38
Table 17-1: Action Plan for Implementation – March 2023 .....	40





# SEFATENG CHROME MINE ENVIRONMENTAL AUDIT REPORT

## 1 INTRODUCTION

Sefateng Chrome Mine (Pty) Ltd appointed Prescali Environmental Consultants (Pty) Ltd to conduct an environmental audit of the compliance of Sefateng Chrome Mine (Pty) Ltd with the approved Environmental Management Programme (EMPs) in terms of Regulation 34 of the Environmental Impact Assessment Regulation, 2014 under the National Environmental Management Act, 1998 (Act No. 107 of 1998).

The Sefateng Mining Project is owned by Sefateng Chrome Mine (Pty) Ltd and is located on, and the holder of a mining right in respect of chrome on the Farm Zwartkoppies 413 KS and Remaining extent (Portion 0) and Portion 1 of the Farm Waterkop 113 KT approximately 45 km north-west of the town of Steelpoort and 70 km southeast of Polokwane in the Limpopo Province. The mine falls within the Fetakgomo Tubatse Local Municipality (part of the Greater Sekhukhune District Municipality).

The 2014 Environmental Management Programme (EMPr) compiled by Jacana Environmentals cc was approved on the 19<sup>th</sup> of September 2018 under the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) by the Department of Minerals Resources (DMR). During 2019 Sefateng applied for an extension on the opencast operation on the above-mentioned properties, however approval is pending.

## 2 BRIEF PROJECT DESCRIPTION

The Sefateng Mining Project is situated in the central portion of the Eastern Limb of the Bushveld Complex. It is situated on the Zwartkoppies and Waterkop farms in the Lydenburg District of the Limpopo Province. Although a number of chromium-bearing layers are present in the rocks underlying the mining right area, two specific chromium bearing layers, the LG6, LG6A and LG7, are of primary economic value for possible extraction. The study area is located within quaternary catchment B71B, draining into the Olifants River via unnamed tributaries of the Moshashaneng stream.

Particulars of the mining right holder are provided below:

Name:	Sefateng Chrome Mine (Pty) Ltd
Registration number:	2006/035799/07
Environmental Authorisation numbers:	LP 30/5/1/2/2/10062 MR
Contact Person:	Japie Steyn
Postal Address:	25 Culross Road, Bryanston, 2191
Tel no:	011 591 0500
Facsimile number:	011 591 0622

Sefateng Chrome Mine (Pty) Ltd is currently conducting / have conducted mining operations on the Farm Zwartkoppies 413 KS and Remaining extent (Portion 0) and Portion 1 of the Farm Waterkop 113 KT, Sekhukhune Magisterial District, Limpopo Province.

The following infrastructure is currently established on site and has been approved through various application processes under the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) and the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), where applicable:



- Offices and workshops;
- Diesel Storage;
- Parking and loading areas;
- Change house and sanitation facilities;
- Septic tank;
- Potable water tanks;
- Topsoil Storage;
- Overburden stockpiles;
- ROM Stockpile;
- Conveyor belt system
- Waste rock stockpiles;
- Haul roads and drainage line crossings; and
- Power line and service road;
- Water Treatment Plant (sewage and grey water) and associated water storage facilities; and
- Storm water infrastructure (upgraded infrastructure to accommodate expansion project).

Proposed infrastructure:

- Pollution Control Dam (PCD) and related storm water infrastructure (i.e., drains / trenches / channels / berms).
- Crushing and screening plant and wash plant;
- Wet tailings drying slab;
- Dry tailings stockpiling area;
- Water pipeline; and
- Overburden stockpiles.

No active mining is currently taking place at the Waterkop section. Where feasible, sections of the opencast voids have been backfilled and shaped. A section on the Zwartkoppies operation has been top soiled and revegetated.

PCD / SWD has been partially constructed and during the site visit the beneficiation plant was in process of being constructed.

Sefateng Chrome Mine applied to extend the existing opencast operations on the Mining Right area in order to access further ore deposits. Other chrome seams found on this property include the LG1, LG2, LG3, LG4, LG5, MG1, MG2, MG3 and MG4. An amendment with regards to expansion of the existing operations has been submitted to the relevant authorities during February 2019 for which approval is awaited.

### 3 SCOPE AND OBJECTIVE

The scope of the audit was to conduct a compliance audit on the requirements of the approved EMPr as required in terms of Regulation 34 of the EIA Regulations of 2014 as amended, inclusive of:

- Review of all existing environmental and relevant legal documentation:
  - The Sefateng EIA\_EMP Report Section 2 Final 27-02-2014, dated February 2014 and approved 19 September 2018, compiled by Jacana Environmental cc.;
- An assessment of the company's commitment and adherence to the conditions set out in the EMPr;
- Discussions with the relevant employees at Sefateng Chrome Mine;
- Identification of the level of compliance to EMPr requirements / conditions;
- Undertaking of a site visit to assess and compare the current activities with those described in the EMPr;
- Assess whether the EMPr is still aligned with existing environmental legislation;
- Provision of recommendations for rectification for non-compliance and deficiencies.

In terms of Appendix 7 of the Environmental Impact Assessment Regulations, 2014 as promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) [as amended] the objectives of an audit report should include:



- (a) report on—
  - (i) the level of compliance with the conditions of the environmental authorisation and the EMPr, and the closure plan in the case of a closure activity (Refer to Section 10 of this report); and
  - (ii) the extent to which the avoidance, management and mitigation measures provided for in the EMPr and the closure plan achieve the objectives and outcomes of the EMPr, and closure plan (Refer to Section 10.2 of this report);
- (b) identify and assess any new impacts and risks as a result of undertaking the activity (Refer to Section 10.2 of this report);
- (c) evaluate the effectiveness of the EMPr the closure plan in the case of a closure activity (Refer to Section 10.2 of this report);
- (d) identify shortcomings in the EMPr, and the closure plan in the case of a closure activity (Refer to Section 10.2 of this report); and
- (e) identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr, and the closure plan in the case of a closure activity (Refer to Section 10.2 of this report).

The requirements related to the format and structure of the report is also indicated within Appendix 7 of the Environmental Impact Assessment Regulations, 2014 as promulgated in terms NEMA [as amended].

#### **Environmental Impact Assessment Regulations, 2014**

- (a) details of the –
  - (i) independent person who prepared the environmental audit report (refer to Section 5 of this report); and
  - (ii) the expertise of the independent person that compiled the environmental audit report (refer to Section 5 of this report);
- (b) a declaration that the independent auditor is independent in a form as may be specified by the competent authority (included in this report before Executive summary).
- (c) an indication of the scope of, and the purpose for which, the environmental audit report was prepared (refer to Section 3 of this report);
- (d) a description of the methodology adopted in preparing the environmental audit report (refer to Section 4 of this report);
- (e) an indication of the ability of the EMPr, and the closure plan in the case of a closure activity to (refer to Section 10.2 of this report) -
  - (i) sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on- going basis;
  - (ii) (ii) sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility in the case of a closure activity; and
  - (iii) (iii) ensure compliance with the provisions of environmental authorisation, EMPr, and the closure plan in the case of a closure activity;
- (f) a description of any assumptions made, and any uncertainties or gaps in knowledge (Refer to Section 12 of this report);
- (g) a description of any consultation process that was undertaken during the course of carrying out the environmental audit report (Refer to Section 13 of this report);
- (h) a summary and copies of any comments that were received during any consultation process (Refer to Section 13 of this report); and
- (i) any other information requested by the competent authority (Refer to Section 14 of this report).

## **4 METHODOLOGY (AUDIT APPROACH)**

The scope of work included the following aspects:

- Data gathering and review;



- Site visit and practical evaluation;
- Discussions with relevant role players;
- Performance assessment in terms of the EMPr's and legal requirements; and
- Inspection of site-specific records and documentation pertaining to the operations at Sefateng Chrome Mine.

Observations and findings were made during a one-day visit to Sefateng Chrome Mine, undertaken by Dr Petro Erasmus on 27 March 2023. This visit was conducted specifically for the purpose of auditing the compliance against the approved EMPr. Each condition contained in the EMPr was rated in terms of compliance by using the following adopted scheme and an overview provided of total compliance.

## 5 AUDIT TEAM

The audit team comprised of one lead auditor and a technical reviewer:

Dr. C.P. Erasmus (Lead Auditor)	Dr. C.P. Erasmus has qualifications in Zoology and Biochemistry and further studied in Zoology and Marine pollution. She has experience in conducting Environmental Impact Assessments, Basic Assessments, Public Participation Processes and Water, and Waste Licence Applications. She has completed a number of audits including WUL external audits, ISO14001 audits and EMP Performance Assessments. She is registered as a <i>Pr. Sci. Nat.</i> (SACNASP), Natural Professional Scientist, for Ecological and Environmental Sciences, Registration number 116207. Dr. Erasmus is also registered as an Environmental Assessment Practitioner with EAPASA.
Ms. E. van der Linde (Review)	Ms. E. van der Linde has qualifications in Geology, Engineering Geology and Environmental Management and experience in Water and Environmental Management. She has extensive experience in environmental compliance, the Environmental Impact Assessment process, waste and water management and licensing. In addition to providing consulting, training and assessment experience, she has performed ISO 14001 Environmental Management System audits. She is registered as a <i>Pr. Sci. Nat.</i> (SACNASP), Natural Professional Scientist, Registration number 400219/05 and with EAPASA as an Environmental Assessment Practitioner.

## 6 PROCEDURES AND CRITERIA

A review of documentation relating to the mining and processing operations was initially undertaken so as to become familiar with the environmental commitments and undertakings made in the EMPr as well as other legal requirements. This enabled for an EMP checklist to be compiled where commitments could be assessed as indicated in Section 10 of this report.

A one-day site visit was undertaken to the Sefateng Mining Project mining site by Dr Petro Erasmus. The site visit consisted of a site and activities evaluation in the company of Sefateng Chrome Mine (Pty) Ltd personnel.

The on-site activities are audited or performance assessed in terms of Regulations 34 of the EIA Regulations of 2014 as amended, and the assessment will be reported using the principles and criteria of the ISO 14001 environmental management systems.



## 7 MANAGEMENT AND REPORTING STRUCTURE

The general manager is responsible for all aspects of managing the operations, including the environmental issues. The SHEQ manager is responsible for all environmental issues and all information regarding the environment is reported to management on a monthly basis. The mining and processing operations are outsourced to contractors under the management of Sefateng Chrome Mine.

## 8 REPORTING AND AUDITING

Environmental incidents will be reported to DWS and DMR. No recent environmental incident has been recorded.

An ECO has been appointed on site, and monthly site inspections and reports are compiled to evaluate the general performance of the mine with the requirements of the EMPr as well as other environmental related aspects and requirements.

## 9 LEGAL ASPECTS

Although not within the scope for the EMPr audit it is suggested that the overall environmental performance of any institution or organisation should be assessed adopting a holistic approach to ensure that the all-applicable relevant environmental legislation to a specific project are applied and evaluated against.

Along with the requirements as stipulated in the EMPr for the project, the mine and associated operations should comply with other applicable environmental legislation, which includes amongst others, legislation listed in the Table below.

Name of Act	Notes / Remarks
Constitution of South Africa, 1996 (Act No.108 of 1996) (CSA)	The CSA is the supreme law of the country of South Africa. It provides the legal foundation for the existence of the Republic, sets out the rights and duties of its citizens, and defines the structure of the Government.
Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)	Regulates all aspects of mining with emphasis on sustainable development and environmental protection.
National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA)	Framework legislation embracing resource conservation and exploitation, pollution control, waste management, land use and development. Environmental Impact Assessment (EIA) regulations promulgated under this Act require that listed activities in terms of Sections 24(2) and 24D not commence without an environmental authorisation issued by a competent authority, following an EIA process. The Act requires the mining rights applicants to conduct an EIA and obtain approval for the EMPr.
Amended Environmental Impact Assessment Regulations, GN 326, April 2017	Prescribes the auditing requirements for auditing EMPr's, Environmental Authorisations and where applicable closure plans.
National Water Act, 1998 (Act No. 36 of 1998) (NWA)	This Act ensures efficient control, management and protection of water resources. Water for mining and related activities which is aimed at the protection of the water resource is regulated therein.
National Environmental Management: Waste Act, 2009 (Act No. 59 of 2009) (NEM:WA)	Protects human health, well-being and the environment by providing measures for minimising consumption of natural resources and the generation of waste and for responsible management of waste.
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM:AQA)	Regulates air quality in order to protect human health and the environment. The Act provides reasonable measures for the prevention of air pollution through the implementation of national norms and standards and air quality monitoring.
National Environmental Management: Biodiversity Act,	Regulates the management and conservation of biological diversity, including their components.



Name of Act	Notes / Remarks
2004 (Act No. 10 of 2004) (NEM:BA)	
National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA)	Regulates the country's heritage resources and provides an integrated and interactive system for the management of national heritage resources and makes provision for the potential destruction to existing heritage sites.
National Veld and Forest Fires Act, 1998 (Act No. 101 of 1998) (NVFFA)	Provides for the prevention and combating of veld, forest and mountain fires, and practices to ensure the achievement thereof.
National Forests Act, 1998 (Act No. 84 of 1998) (NFA)	Promotes the sustainable use and management of certain forests and trees by providing special measures for the protection of forests and trees
Mine Health and Safety Act, 1996 (Act No.29 of 1996) (MHSA)	Provides for measures to protect health and safety of all persons at mines.
Hazardous Substances Act, 1973 (Act No 15 of 1973)	Provides for control of hazardous substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances, and for the control of certain electronic products; to provide for the division of such substances or products into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances and products; and to provide for matters connected therewith.

## 10 AUDIT FINDINGS

### 10.1 APPLICABILITY OF EMPr REQUIREMENTS TO THE MINE

The Environmental Management Programme (EMPr, 2014) approved by the Department of Mineral Resources, provides a series of requirements to which the applicant has to comply (if applicable). Furthermore, certain management measures have been identified by the applicant.

As the operations are within the operational phase, the requirements related to this phase of the EMPr are assessed in terms of adequacy and compliance.

All legally binding commitments documented within the EMPr have been assessed for applicability and compliance. The following symbols are applicable:

<b>Compliance (FC):</b>	The company has fulfilled all requirements relevant to the conditions in the EMPr and EMP.
<b>Partial Compliance (PC):</b>	The commitment has been given attention but does not fully comply with all specifications as set out in the EMPr and EMP.
<b>Non-compliance (NC):</b>	The company is not in compliance with the conditions in the EMPr and EMP, even though management plans are in place, capital has been set aside or designs have been completed.
<b>Not Applicable (N/A):</b>	The condition in the license is not applicable to the company and the current operational activities pertaining.
<b>?</b>	If the auditors did not acquire the information to comment on a commitment
<b>*</b>	Areas where the commitment could not be audited and where revision or amendment is recommended / has been applied for.

It is important to note that although every effort is put into conducting a thorough audit, due to the time constraints for an audit, or the nature of activities viewed on the day of the audit, only a sample of the operations can be reasonably assessed.



**Table 10-1: Assessment of Specific Environmental Objectives: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)**

Aspect	Objectives	Strategy	Compliance	2023
Water and Waste Management	Minimise mine water requirements	Management of mine water should aim to:	FC	Water is re-used within the mining property as far as possible.
		<ul style="list-style-type: none"> <li>Minimise the water demand and wastage of water; and</li> <li>Re-use process water where possible.</li> </ul>		
		Re-use and recycle the dirty water generated on the mine and in the processing plant in order to minimise the require intake from the Lebalelo Water Scheme.	FC	
		Minimise the loss of yield during the operational phase by:	PC	
		Minimising the footprint of dirty areas as far as is practical.		
		Ensuring clean water from areas upslope of dirty areas is diverted around the dirty areas.		
		Continuous rehabilitation of opencast areas, according to a defined schedule to avoid rehabilitation backlog.	FC	
	Design of rehabilitated areas to ensure that they are free-draining as far as practically possible both during operations and post closure	FC		
	Ensure that there is minimal impact on catchment yield and hydrology post closure.	N/A	To be completed/ determined closer to closure phase.	
	Ensure effective storm water management on site	Keep water of differing quality (i.e. clean and contaminated water) separate and manage these separately.	PC	Clean diversion berms have been constructed to date. The PCD has been partially constructed. It was noted that clean water is diverted through the residue stockpile to the opencast pit. It should be noted that the existing infrastructures and residue deposits make it difficult to effectively separate clean and dirty storm water across the whole of the site.
Implement a clean water management plan that will ensure the collection and drainage of clean water around infrastructure areas.		PC	Clean diversion berms have been constructed to date. The PCD has been partially constructed. It was noted that clean water is diverted through the residue stockpile to the opencast pit. It should be noted that the existing infrastructures and residue deposits make it difficult to	



Aspect	Objectives	Strategy	Compliance	2023	
				effectively separate clean and dirty storm water across the whole of the site.	
		Collect and contain contaminated runoff in appropriate facilities, designed for the 1:50 year flood-event.	NC	Containment facilities for contaminated runoff are under construction (PCD). Water is also diverted to the opencast pit.	
		Address potential water contamination at the source.	FC	Areas where possible contamination can result from is kept to a minimum and contained.	
		Avoid the discharge of contaminated water and therefore aim to ensure that surface water qualities remain largely unaffected by the activities on site.	PC	Areas where possible contamination can result from is kept to a minimum and contained as storm water is diverted to the opencast pit. Storm water from some of the developed area is not contained.	
		Re-use contaminated water where possible.	NC	Not all contaminated water is contained for re-use. Some storm water is contained in the opencast pit and the partially constructed PCD. However the water from the pit is not re-used.	
		Treat contaminated water before discharge or release into the receiving water resource to acceptable standards.	NC	Not all contaminated water (storm water run-off from the whole area) is contained for re-use.	
		Prevent erosion of land and watercourses.	FC	Gabions were installed within the unnamed tributaries to prevent and mitigate the excessive erosion taking place on site.	
		Implement and maintain water management measures that are effective during different hydrological cycles and that will be viable in the long-term.	PC	A stormwater management plan has been designed and is being implemented in a phased approach.	
		Prevent the deterioration of water quality	All water management systems (clean and dirty water) will be designed for the 1:50 year flood event to prevent dirty water spillages from the dirty water system to the clean water system and vice versa.	FC	Water management systems have been designed for the 1:50 year flood event.
			A closed system will be designed and all dirty water will be recycled for reuse in the process facility.	NC	Containment facilities for contaminated are under construction.
No dirty water will be discharged into the natural environment and excess dirty water will be treated to acceptable water quality levels before discharging.	NC		The PCD is under construction. Canals are not concrete lined. Not all dirty storm water is diverted to the PCD (partially constructed) and some is also diverted to the opencast pit.		





Aspect	Objectives	Strategy	Compliance	2023
		Stream crossings (road and conveyor) will be constructed with inert material and designed such as to prevent an impact on water quality. An inspection and maintenance schedule will be implemented to address any spillages that could potentially cause the deterioration of water quality.	FC	On-site inspections take place at stream crossings as part of the monthly ECO visits.
		Bulk facilities (hydro-carbon) to be concrete lined and bunded to a capacity of 110%.	FC	The bulk diesel storage is within a bunded area.
		Vehicles will be regularly inspected for leaks. Re-fuelling of vehicles will take place on a sealed surface area.	PC	Vehicles are maintained by on-site workshop. A portion of the re-fuelling area has been concrete lined though spills have been noted on the surrounding area.
		The necessary mitigation measures will be designed and implemented on the clean water system(s) to prevent an increase in the suspended solid content of the streams in the area, e.g.	PC*	Construction of some mitigation measures (gabions) have been implemented on site. Some storm water reports to the opencast pit, some to the PCD and some is released as sheet flow to the receiving environment. Mitigation measures to curb erosion has been implemented at problem areas and gabions has been implemented in watercourses. Side slopes of berms / canals not necessarily 1:3 and not vegetated.
		<input type="checkbox"/> Design and install appropriate outlet structures to retard flow velocity.		
		<input type="checkbox"/> Construction of energy dissipating structures along steep slopes.		
		<input type="checkbox"/> Side slopes of berms / canals to be designed to 1:3 and protected & vegetated to prevent erosion.	FC	Surface and groundwater monitoring programme have been implemented.
	An ongoing water quality monitoring programme for both surface and groundwater will be implemented to detect any unacceptable deterioration of the water quality of the water resources.			
	Refine the operational water balance	Implement the monitoring programme to facilitate refinement of the operational water-balance	FC	Surface and groundwater monitoring programme have been implemented.
		Revision of the operational surface water balance and groundwater balance within the first 2 years of operation.	FC	The water balance is updated on an annual basis to allow compliance with the Water Use Licence.
Implement appropriate waste management principles	Manage the generation of waste according to the following waste management hierarchy:	FC	Waste management is taking place on site as per the hierarchy and the procedure that has been developed.	
	<input type="checkbox"/> Prevent the generation of waste, as far as is practical.			
	<input type="checkbox"/> Minimise the amount of waste generated.			



Aspect	Objectives	Strategy	Compliance	2023
		<ul style="list-style-type: none"> <li><input type="checkbox"/> Re-use and recycle waste as much as possible.</li> <li><input type="checkbox"/> If waste cannot be re-used or recycled, dispose of waste at licensed facilities.</li> </ul>		
Land Use Management	Effective management of topsoil	The soils will be stripped ahead of construction and mining activities.	FC	Topsoil has been stripped and stored separately.
		The compaction of topsoil during stripping and/or placement operations by heavy machinery will be limited and by maintaining vehicle speed to reduce the duration of applied pressure.	FC	Compaction of topsoil has been minimised.
		Where possible, topsoil operations will be performed during the drier periods when moisture content is lower.	FC	Topsoil stripping is completed.
		Ensure the placement of sufficient topsoil to achieve the final end land use objective post-mining, in this case grazing capability class.	N/A	To be completed/ determined closer to closure phase.
	Maintain remaining natural environment	The natural vegetation will be retained as long as possible before topsoil stripping commences in order to limit dust and erosion.	FC	The impacted areas are kept to a minimum.
		In areas not impacted by the mining activities, the natural vegetation will be maintained by implementing the following: burning programmes; rotational grazing programmes; alien vegetation eradication programme; and restricting vehicle movement to existing roads.	FC	The impacted areas are kept to a minimum. Alien vegetation eradication programmes have been implemented. Vehicle movement are restricted.
		Illegal access will be limited to prevent illegal hunting and snaring of fauna in the area.	FC	Fences have been erected with security patrols.
	Rehabilitation concurrent to mining operations	Rehabilitation will be undertaken concurrent to mining operations. The mining schedule will be optimised during the Feasibility Phase to ensure optimal placement of excavated material to facilitate concurrent rehabilitation with a free-draining profile as far as practically possible.	FC	The areas that have been completed to date are sloped to ensure free-drainage.
		Revegetation will be done as soon as possible to limit dust and erosion.	PC	Revegetation was implemented and are being monitored on an ongoing basis. Re-vegetation at Waterkop on the topsoil stockpiles needs to be improved.



Aspect	Objectives	Strategy	Compliance	2023
		The mine rehabilitation plan will be implemented and updated as mining progresses and/or changes.	FC	Mine rehabilitation plan is implemented and updated annually.
		Rehabilitation monitoring (internal) and auditing (internal and external as required) will be implemented to ensure conformance to this objective and the rehabilitation plan.	N/A	Assessments were done in 2022.
	Effective, long-term sustainable revegetation practices	Grassing will be undertaken on a seasonal basis, to ensure germination of the grass species.	PC	Revegetation was implemented and are being monitored on an ongoing basis. Waterkop grassing of topsoil stockpiles needs to be improved.
		All available topsoil areas will be seeded prior to the start of the rainy season to ensure maximum drainage from these areas of clean water back into the catchment system without excessive suspended solids.	PC	Revegetation was implemented but failed at the Waterkop topsoil areas where grassing was limited to a specific area. These areas are earmarked to be revegetated again before the dry season.
		Soil analysis will be performed prior to seeding and the soil fertility rectified (if necessary) to facilitate vigorous growth.	FC	Soil analysis was completed March 2019.
		Organic fertilisers will be used as far as possible.	N/A	No vegetation/ fertilisation has taken place to date as the need has not been identified.
	Maintenance of rehabilitated areas	Annual vegetation audits (internal and external as required) will be undertaken to determine the soil fertility, vegetation coverage and self-sufficiency of the revegetated areas. The necessary actions will be implemented to correct any non-conformances of deficiencies identified during the audit. Once the desired nutritional status and vegetation coverage has been achieved, the audits will be conducted in intervals of 3-4 years.	FC	Revegetation was implemented and are being monitored on an ongoing basis. Monthly ECO inspections and annual biodiversity monitoring is being conducted.
		The revegetated areas will be monitored for declared weeds and invasive plants. This will be controlled and managed as per the normal procedure.	FC	The area is monitored on a monthly basis.
		Grazing of revegetated areas will be avoided for the first 3-5 years, after which controlled (rotational) grazing would be considered.	FC	Mining area is fenced to prevent grazing by cattle and goats.
		Veld fires will be controlled in the revegetated areas and a rotational burning programme will be developed for the area in consultation with experts in this field.	N/A	Rehabilitation not completed. No vegetation/ fertilisation has taken place to date.



Aspect	Objectives	Strategy	Compliance	2023
Limit erosion		The sides of the topsoil stockpiles and storm water berms will be re-vegetated and audited on an annual basis to detect any erosion.	PC	Revegetation was implemented but failed in at the Waterkop topsoil area where grassing was noted in limited areas only.
		Areas where earthworks have taken place will be reseeded with indigenous grasses to prevent further erosion.	N/A	No earthworks has taken place in rehabilitated areas.
		The design of any stream crossing will allow for a 1:20 year flood to minimise impact on the flow of the stream. The design must ensure that the creation of turbulent flow in the system is minimised, in order to prevent downstream erosion.	FC	Action plans are in place with regards to stream crossing and limiting erosion.
		Construction of energy dissipating structures along steep slopes.	FC	Energy dissipating structures are being constructed in areas identified as and when needed.
		Design and install appropriate outlet structures to retard flow velocity.	FC	Energy dissipating structures are being constructed at selected points as identified when needed.
		A monitoring programme would be developed to measure conformance to the above requirements and the rehabilitation plan.	FC	Monthly monitoring programme related to the limitation of erosion has been developed and is implemented since June 2019.
		Rehabilitated areas will be sloped to ensure minimum erosion as per the mine rehabilitation plan. Erosion control measures would be implemented where appropriate.	PC	Areas are rehabilitated in terms of the rehabilitation plan developed. Erosion prevention at the Waterkop topsoil stockpile should be addressed.
Prevent impact to sensitive landscapes		Maintain a buffer zone of 100 m from the sensitive drainage lines to reduce impact on aquatic systems.	FC	Buffer zones have been implemented and are being maintained where appropriate. Some activities has been licenced in terms of the National Water Act, 1998 (Act No. 36 of 1998).
		Implementation of watercourse alterations that is stable in the long term, in that they mimic the naturally stable characteristics of flow within the current catchment.	FC	Any watercourse alterations are conducted with the permission of DWS.
		Engineering of stream and wetland crossings to ensure that they comply with DWA requirements in terms of limiting channelling of flow, and increasing velocity. Any proposed design mitigation and methods will be evaluated by an appropriate wetland as well as a storm water specialist.	FC	Any watercourse alterations are conducted with the permission of DWS.



Aspect	Objectives	Strategy	Compliance	2023
		All areas affected by stream crossings will be rehabilitated upon completion of the construction phase of the development and reseeded with indigenous grasses and wetland vegetation as required.	FC	Rehabilitation is in terms of the rehabilitation plan and the conditions of the WUL.
		Ongoing bio-monitoring to determine any deterioration in the Present Ecological State (PES) of the wetland systems.	N/A*	There are no wetlands on site.
		Biodiversity offset programmes should include wetland offsets where appropriate.	N/A*	There are no wetlands on site.
	Value indigenous vegetation and endangered fauna	A flora rescue operation will be initiated prior to the commencement of the construction phase. Specific focus will be placed on the protected tree species and medicinal plants.	FC	Species requiring rescue have been identified and the relevant permits have been obtained.
		A rescue and relocation programme for fauna species will be developed and implemented with the assistance of specialists in this field.	FC	Species requiring rescue have been identified and the relevant permits have been obtained.
		Illegal access will be limited to prevent illegal hunting and snaring of fauna in the area.	FC	Fences have been erected with security patrols.
		During the detailed planning stage of the proposed mining development, a Biodiversity Action Plan (BAP) should be developed in line with the requirements of the National Environmental Management Biodiversity Act (NEMBA, 2004).	FC	A Biodiversity Action Plan has been developed and implemented, dated April 2019.
	Protection and reinstatement of a healthy ecosystem	The objective in terms of the ecosystem is to return the local ecosystem to as close to pre-mining levels as is practically possible. This will be measured through two primary mechanisms, namely:	N/A	To be completed/ determined closer to closure phase.
		<ul style="list-style-type: none"> <li>Water quality and aquatic (bio) monitoring to assess the suitability of the water to support aquatic life.</li> <li>□ Implementation of a biodiversity monitoring programme for early detection of potential impacts.</li> </ul>		
	Prevent dust pollution	A detailed dust suppression procedure will be developed and implemented prior to construction. This effectiveness of the procedure will be monitored and the procedure	FC	Dust suppression procedure has been developed and is being implemented.



Aspect	Objectives	Strategy	Compliance	2023
		will be revised as required. Best practice will be implemented.		
		The procedure will include all areas associated with the mining operations, including access and haul roads, mine residue deposits, process plant areas, product stockpile and loading areas.	FC	Dust suppression procedure has been developed and is being implemented.
		The use of tarpaulins will be enforced and included in the contract of the hauling company appointed to transport coal to off-site locations. A procedure will be developed to ensure timeous reporting and cleaning of any spillages on the road surface by the contractors. This will be audited on a regular basis to ensure compliance.	FC	The use of tarpaulins is enforced. Haul roads are investigated for spillages.
		General good housekeeping will be maintained in all areas prone to dust release. Regular inspection and maintenance routines will be implemented in these areas to address spillages on ground level and along conveyors, thereby preventing the re-suspension of settled dust.	FC	Areas are checked to ensure sufficient housekeeping and the minimisation of dust.
		An air quality monitoring programme will be established to include the areas where high dust fallout is expected and at sensitive receptors. This monitoring will commence before activities are underway at the site in order to obtain a representative baseline set of results.	FC	An air quality monitoring programme has been developed and is implemented on the mine by an external provider.
Legal Compliance	Ensure compliance with EMP commitments	Perform annual internal audit as part of the HSEC reporting schedule to ensure conformance to environmental objectives and strategies and the implementation thereof.	FC	Internal audits are done as part of the monthly ECO reports.
		Perform annual external EMP performance assessments to determine conformance with the Sefateng EMP, including effectiveness and appropriateness of the EMP.	FC	This is the fourth performance assessment of the Sefateng EMPr.
		Perform annual revision of closure cost assessment for immediate (pre-mature) closure.	FC	Financial provisioning is updated on an annual basis.
	Ensure enviro-legal compliance	Perform bi-annual (2-yearly) external enviro-legal compliance audits taking into account all relevant environmental legislation, including relevant regulations promulgated in terms of	FC	Legal compliance audits are conducted as part of the Due Diligence report.



Aspect	Objectives	Strategy	Compliance	2023
		the MPRDA, the NEMA, the NWA, the NEMWA and the MHSA.		
Operational Objectives to Facilitate Closure	Verify and manage mine water balance and post-closure decant	Dedicated monitoring programme and modelling to quantify and verify the post-closure water balance and decant water quality. The model will be revised at least every 5 years.	N/A	To be completed/ determined closer to closure phase.
		Ongoing evaluation and reassessment of alternative options for the final water use and required associated water quality, together with the technologies required to achieve the required quality.	N/A	To be completed/ determined closer to closure phase.
		The final land use will also be used to evaluate the (potential) post-closure water management.	N/A	To be completed/ determined closer to closure phase.
	Develop final land use plan	Define, in consultation with all IAPs, the final (post-closure) land use for the mining area, including mining areas, surface and water management infrastructure, mine residue facilities, etc	N/A	To be completed/ determined closer to closure phase.
		Develop a final land use plan and implementation programme as part of the closure plan, taking into account important issues such as ongoing operational and maintenance requirements and long-term responsibilities and ownership.	N/A	To be completed/ determined closer to closure phase.
		Set final closure objectives and standards to ensure conformance to the final land use plan and the requirements of the IAPs and relevant environmental legislation.	N/A	To be completed/ determined closer to closure phase.
		Develop a detailed closure plan for the Sefateng Mining Project five years prior to closure and obtain approval from the relevant authorities.	N/A	To be completed/ determined closer to closure phase.
Historical and Cultural	Limit impacts to cultural and heritage resources	Demarcate all identified heritage resources and relocate infrastructure, including pipeline and power lines, to avoid all identified sites.	FC	Heritage resources have been identified, and are located outside of the mining area.
		Ongoing monitoring during construction will be done by a qualified heritage specialist for early detection of unidentified (sub-surface) sites or graves.	FC	New areas identified for expansion was scrutinised by heritage specialist.
		National Heritage and Cultural issues will be included in the environmental awareness programme	FC	Heritage issues are addressed within the awareness programme.



**Table 10-2: Assessment of Specific EMP Mitigation Measures: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)**

Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
All Activities	Biodiversity / Land Use & Capability	Surface disturbance of approximately 962 hectares for the purpose of mining and infrastructure development over the LOM will lead to impacts on the soil, land use and land capability, natural vegetation and fauna	Develop and implement a detailed Mine Rehabilitation and Reclamation Plan during the Feasibility Phase	FC	A rehabilitation schedule/plan has been developed for the opencast.
			Concurrent rehabilitation and levelling of opencast pits in line with the Mine Rehabilitation and Reclamation Plan.	FC	A rehabilitation schedule/plan has been developed for the opencast.
			Monitoring, auditing and regular review (if required) of the Mine Rehabilitation and Reclamation Plan.	FC	A rehabilitation schedule/plan has been developed and is being updated on an annual basis.
			Rehabilitation of infrastructure and other disturbed areas post-mining.	N/A	
			Develop and implement Biodiversity Action Plan, including avifaunal plan.	FC	A Biodiversity Action Plan has been developed and implemented, dated April 2019.
			Fencing of designated mining and infrastructure areas.	FC	Fences have been erected with security patrols.
			Implementation of biodiversity monitoring.	FC	Assessments was done and reports was available.
	Protected species / medicinal plants	Vegetation clearance will impact on protected tree species and medicinal plants	Demarcate and avoid as far as possible all protected tree species.	FC	Permits were obtained to remove species.
			Develop and implement a Rescue and Relocation Plan prior to any surface disturbances.	FC	The plan is included within the Biodiversity Action Plan.
			In the case of <i>Sclerocarya birrea</i> subsp. <i>caffra</i> and <i>Boscia albitrunca</i> , two new Marula and Shepherds trees are to be planted in suitable habitat for each tree destroyed, should relocation be unsuccessful.	FC	Permits were obtained to remove species.
	Waste management	Poor waste management could lead to environmental impacts	Implementation and regular review of Waste Management Procedure.	FC	Waste management is taking place on site as per the hierarchy and the procedure that has been developed.
			Appoint an approved, registered waste contractor to manage the waste generation and safe disposal thereof.	FC	A registered waste contractor has been appointed to remove the hazardous and general waste from site when needed.
			No waste will be disposed of or buried on site, or in any other location that is not a licensed waste disposal site.	FC	No waste is disposed of or buried on site.
		Poor sewage management could impact on water resources	Sewage effluent will be treated to General Standards and pumped to the dirty water dams for re-use in the process and/or dust suppression. No effluent will be discharged to the environment.	FC	A Waste Water Treatment Plant (WWTP) has been constructed for treatment of sewage and process water from the underground operations. Effluent from the





Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
					WWTP is reused as process water in the underground operation and wash plant.
	Bulk water	Impact on water stressed catchment - fully allocated	Design closed system to ensure optimal recycling of water and minimise water requirements for the mine.	PC	Containment facilities for contaminated runoff and optimisation of water recycling is under construction / construction was halted.
	Bulk electricity	Further impact on over-allocated electricity	Energy efficient designs such as:	FC	Energy efficient designs are being implemented on site when and where practical.
			o High efficiency motors in plant and workshops		
			o Use VSDs		
			o Use solar power where possible		
			o Install solar geysers at change houses\Optimal building design to make use of ambient light		
			Monitor and record energy usage on site. Ongoing improvement in energy consumption should form part of the mine's KPIs.	FC	Eskom and generator usage is monitored.
	Heritage resources	Potential impact on heritage resources due to surface disturbances	Demarcate all identified heritage resources and relocate infrastructure, including pipeline and power lines, to avoid all identified sites.	FC	Heritage resources have been identified, and are located outside of the mining area.
			Ongoing monitoring during construction will be done by a qualified heritage specialist for early detection of unidentified (sub-surface) sites or graves.	FC	New areas identified for expansion was scrutinised by heritage specialist.
National Heritage and Cultural issues will be included in the environmental awareness programme.			FC	Heritage issues are addressed within the awareness programme.	
Sense of place	Impact on conservation value of the region	Implementation of environmental monitoring programme.	FC	An environmental monitoring programming is implemented.	
		Develop environmental awareness & educational programmes.	FC	Environmental awareness campaigns have been launched internally.	
		Environmental auditing and reporting.	PC	Surface and groundwater monitoring as well as dust monitoring has been implemented. An ECO has been appointed on site to assist with the monitoring and auditing of the environmental conditions of the site.	
Opencast mining	Soils / Land Use & Capability	Potential hard setting and / or subsidence of soils post-reclamation	Soil analyses and amelioration during reclamation.	FC	Soil analyses was done
			Free-draining profile (as far as practically possible) for rehabilitated areas and ongoing monitoring.	FC	The areas that have been completed to date are sloped to ensure free-drainage.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
	Surface water	Impact on non-perennial streams cutting through mining areas leading to decrease in runoff	Diversion of non-perennial streams around opencast areas to minimise decrease in surface runoff.	FC	All necessary stream diversions are licenced in terms of a Water Use Licence.
			Rehabilitation concurrent to mining – limit dirty footprint.	FC	Rehabilitation has been taking place concurrent to mining.
		Impact on sensitive wetland areas and aquatic ecosystems	Maintain a buffer zone of 100 m from the 1:100 year flood-line of sensitive drainage lines to reduce impact on aquatic systems	FC	Buffer zones have been implemented and are being maintained where appropriate.
			Implement aquatic (bio) monitoring.	N/A*	The streams are non-perennial and there are no wetlands on site.
		Increased sedimentation into the river systems due to uncontrolled surface run-off	Design and install appropriate outlet structures to retard flow velocity.	FC	Energy dissipating structures have been constructed.
			Construction of energy dissipating structures along steep slopes.	FC	Energy dissipating structures have been constructed.
			Side slopes of earth berms / canals to be designed to 1:3 and protected & vegetated to prevent erosion.	FC	Construction of some mitigation measures (gabions) have been implemented on site and where possible berms have been vegetated.
		Potential impact on in-stream habitat and riverine vegetation as a result of decrease in runoff	Implementation of monitoring programme for early detection of impacts (riverine condition assessment).	FC	The streams are non-perennial and there are no wetlands on site.
			Diversion of clean storm water runoff around opencast areas to minimise impact on flow.	FC	Clean diversion berms have been constructed to date.
		Impact of long-term decant on water quality	Investigate appropriate management measures over the LOM, if required.	N/A	To be completed/ determined closer to closure phase.
	Groundwater	Dewatering of aquifer as a result of mining, resulting in drying up of boreholes and springs	Implementation of baseline monitoring programme within communities that are potentially impacted.	FC	Surface and groundwater monitoring programme have been implemented.
			Provide alternative water sources where appropriate.	N/A	Other water users have not been impacted upon by the mine to date.
			Compensation mechanisms need to be developed and agreed with impacted communities	N/A	Other water users have not been impacted upon by the mine to date.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment	
		Migration of pollution plume after full recovery of groundwater levels (prior to decant)	Investigate appropriate management measures over the LOM.	N/A	To be completed/ determined closer to closure phase.	
			Groundwater and geochemical models must be updated on a regular basis (every 5 years) to verify potential for decant.	N/A	To be completed/ determined closer to closure phase.	
	Air Quality	Dust impact caused by vehicle movement		Application of dust suppression measures (surface surfactants) such as Dustex.	PC*	Dust is maintained through the use of two water trucks.
				Reduce vehicle speed on unpaved roads to limit dust creation.	FC	Speed limits are in place
		Dust impact caused by blasting activities	Develop Blasting Procedure to minimise impacts.	FC	Blasting procedure has been developed and is implemented in accordance with the Blasting Operator.	
		Dust impact caused by materials handling		Reduction of drop height to reduce the dispersion of materials being transferred, and increase in moisture content (water sprays).	N/A	The plant was being constructed during the audit.
	Creation of wind breaks in close proximity to storage piles to reduce the potential erosive forces of the wind.			PC	Wind breaks are not in place, but berms are used.	
	Noise	Elevated noise levels caused by mining operation, dewatering (pumping) and blasting activities		Noise attenuation berms (topsoil) on footprint of opencast areas.	FC	Topsoil berms have been placed in strategic places to prevent the excessive nuisance of noise leaving the site.
				Noise suppression devices on heavy vehicles and all noisy plant.	FC	Vehicles are maintained by on on-site workshop. Noise suppression has been installed on all vehicles.
				Low noise generator sets will be used in pit.	N/A	No opencast mining is currently taking place
				Develop air blast control measures.	FC	Blasting procedure has been developed and is implemented in accordance with the Blasting Operator.
				Blasting limited on regular times, restricted to 08:00-18:00.	FC	Blasting procedure has been developed and is implemented in accordance with the Blasting Operator.
				All plant, equipment and vehicles to be kept in good repair.	FC	Vehicles are maintained by on on-site workshop.
				Employees / contractors working in areas where the 8-hour ambient noise levels exceed 85 dBA shall wear ear protection equipment.	FC	The necessary PPE is worn on site which includes ear protections.
	Visual / Aesthetics	The mining will have a negative on the aesthetics / sense of place		Berms on footprint of opencast areas to be protected and vegetated to reduce the visual impact.	FC	Revegetation was implemented and are being monitored on an ongoing basis.
				Avoid the unnecessary removal of vegetation during the operational phase.	FC	The footprint area has been kept to a minimum.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
			Rehabilitation and revegetation will be performed concurrent to mining.	PC	Revegetation at Waterkop can be improved.
			Introduce trees to the landscape at strategic locations (sensitive receptors) to break full exposure of the mine. Further analyses and stakeholder engagement will be required for this commitment.	PC*	Due to the steep slopes and the desert climate, planting trees along slopes are not feasible and the mitigation measure needs to be re-evaluated.
Underground Mining	Soils / Land Use & Capability	Surface disturbance caused by infrastructure	Dismantling of infrastructure.	N/A	To be completed/ determined closer to closure phase.
			Final rehabilitation of disturbed areas.	N/A	To be completed/ determined closer to closure phase.
			Rehabilitation of dams and storm water drainage	N/A	To be completed/ determined closer to closure phase.
	Surface water	Impact on non-perennial streams cutting through proposed underground adits, leading to decrease in runoff	Optimisation of the storm water management plan and positioning of the adits to minimise the impact.	FC	The storm water management plan was updated with the application to extend the opencast.
			Diversion of non-perennial streams around adits to minimise decrease in surface runoff.	FC	Diversion of certain streams around the adits are licenced in terms of a Water Use Licence.
		Increased sedimentation into the river systems due to uncontrolled surface run-off	Design and install appropriate outlet structures to retard flow velocity.	FC	Energy dissipating structures have been constructed in the watercourses.
			Construction of energy dissipating structures along steep slopes.	FC	Energy dissipating structures have been constructed in the watercourses.
			Side slopes of earth berms / canals to be designed to 1:3 and protected & vegetated to prevent erosion.	PC	Revegetation has not always been successful on the berms
	Groundwater	Dewatering of aquifer as a result of mining, resulting in drying up of boreholes and springs	Implementation of baseline monitoring programme.	FC	Surface and groundwater monitoring programme have been implemented.
			Provide alternative water sources (humans and animals) where appropriate.	N/A	Other water users have not been impacted upon by the mine to date.
			Compensation mechanisms need to be developed and agreed with impacted landowners and communities.	N/A	Other water users have not been impacted upon by the mine to date.
	Air quality	Air quality impacts associated with ventilation return air	Dust collection systems in ventilation shafts	N/A*	Dust collection systems are not a requirement within chrome mines.
	Noise	Noise impact (especially during the night) as a result of the ventilation system / extractor fans	Cladding of ventilation system / extractor fans – encapsulation in buildings, acoustic covers.	PC	Cladding of the main extractor fan still needs to be installed.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
	Visual / aesthetics	The underground adits will have a negative on the aesthetics / sense of place	Landscape and vegetate access to underground adits.	N/A	This forms part of rehabilitation phase
			Introduce trees to the landscape at strategic locations (sensitive receptors) to break full exposure of the adits. Further analyses and stakeholder engagement will be required for this commitment.	N/A	This forms part of rehabilitation phase
Processing plant / infrastructure areas	Soils / Land Use & Capability	Soil impacts as a result of poor hydrocarbon management and spillages	Develop and implement hydrocarbon management procedure.	FC	Refer to Section 2.5.1 of Part 2 of EMPr.
			Reclamation of soils in the event of accidental spillages.	FC	Spill kits is available on site and is being used during spillages.
		Surface disturbance caused by infrastructure	Dismantling of infrastructure.	N/A	To be completed/ determined closer to closure phase.
			Final rehabilitation of disturbed areas.	N/A	To be completed/ determined closer to closure phase.
			Rehabilitation of dams and storm water drainage.	N/A	To be completed/ determined closer to closure phase.
	Surface water	Water quantity impact due to decreased surface runoff	Optimisation of the storm water management plan.	FC	The Storm water plan was updated; however it should be noted that construction of the storm water management plan is not completed.
			Separation of clean and dirty water systems (stream diversions) to minimise impact on runoff.	PC	Construction of the storm water management plan is not completed.
		Water quality impact on drainage lines	Directing and containment of dirty water runoff in dirty water dams and providing silt traps.	PC	Construction of the storm water management plan is not completed.
			Recycling (reuse) of dirty water in process.	PC	Construction of the storm water management plan is not completed.
			The dirty water dams (PCDs) will be designed for the 1:50 year flood-event and HDPE lined to prevent discharges / seepage into the surface water resources.	PC	Construction of the storm water management plan is not completed.
			Develop and implement hydrocarbon management procedure.	FC	Refer to Section 2.5.1 of Part 2 of EMPr.
		Water quality impacts as a result of poor hydrocarbon management and spillages	Bulk facilities to be concrete lined and bunded to capacity of 110%.	FC	The bulk diesel storage is within a bunded area.
			Impact on wetland areas and aquatic ecosystems	Maintain a buffer zone of 100 m from the 1:100 year flood-line of sensitive drainage lines to reduce impact on aquatic systems.	FC
		Reposition surface infrastructure on Zwartkoppies to avoid sensitive drainage lines and wetlands systems.		FC	All stockpiles and infrastructure have been located outside of sensitive areas.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
	Groundwater	Water quality impacts due to infiltration of dirty water from the plant and infrastructure areas	Implement aquatic (bio) monitoring.	N/A	The streams are non-perennial and there are no wetlands on site.
			Dirty water dams (PCDs) to be plastic (HDPE) lined to prevent groundwater contamination.	PC	Construction of storm water management plan is not completed
	Air quality	Air quality impacts associated with processing activities and movement of vehicles	Plant stockpile areas to be appropriately lined with dedicated dirty water drainage from the stockpile to prevent groundwater contamination.	N/A	Plant was under construction during the audit
			Reduction of drop height to reduce the dispersion of materials being transferred, and increase in moisture content (water sprays).	N/A	Plant was under construction during the audit
		Dust impact caused by crushing and screening operations	Plant and access roads to be surfaced or treated with dust palliatives such as Dustex.	PC*	Dust is maintained through the use of water trucks.
			Introduce dust suppression systems, either in the form of water sprays or cladding in order to reduce the potential emissions.	N/A	Plant was under construction during the audit
	Noise	Elevated noise levels caused by crushing and processing activities	Reduce vehicle speed on unpaved roads to limit dust creation.	FC	Speed limits have been set on site.
			Rubber vulcanised belt – less noisy / vibration.	N/A	Plant was under construction during the audit
			Cladding of crushing and screening plants and noisy equipment – encapsulation in buildings, acoustic covers, screens or sheds.	N/A	Plant was under construction during the audit
			Noise suppression devices on heavy vehicles / crushing equipment.	FC	Vehicles are maintained by on on-site workshop. Noise suppression has been installed on all vehicles.
			Low noise generator sets will be used in plant.	N/A	Plant was under construction during the audit
	Visual / aesthetics	Processing plant will have a visual impact as a result of high buildings	Employees / contractors working in areas where the 8-hour ambient noise levels exceed 85 dBA shall wear ear protection equipment	FC	PPE was worn on site
			Avoid the use of highly reflective material in construction.	FC	All buildings and vehicles have non-reflective colours.
	Lighting	Sky glow effect will have an impact on the sense of place at night	Metal surfaces should be painted in natural soft colours (Aloe Green) that would blend in with the environment.	FC	Metal surfaces under the control of the mine have been painted in natural colours.
			Use specifically designed lighting equipment that minimises the upward spread of light near to and above the horizontal. Care should be taken when selecting luminaries to ensure that	FC	Lights have been placed in specific areas for the use of security with the glow being downward.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
			appropriate units are chosen and that their location will reduce spill light and glare to a minimum.		
			Keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is not more than 70°. Higher mounting heights allow lower main beam angles, which can assist in reducing glare. In areas with low ambient lighting levels, glare can be very obtrusive and extra care should be taken when positioning and aiming lighting equipment.	<b>FC</b>	Lights have been placed in specific areas for the use of security with the glow being downward.
			Covering of high lighting masts to reduce the glow.	<b>FC</b>	Lights have been placed in specific areas for the use of security with the glow being downward.
			Suppress dust forming to minimise the effect of sky glow during night.	<b>FC</b>	Lights have been placed in specific areas for the use of security with the glow being downward.
		Impact on invertebrates	Long-wavelength light sources should be used, e.g. low-pressure sodium vapour lights.	<b>FC</b>	Lights have been placed in specific areas for the use of security with the glow being downward.
On-site conveyance of ROM and product	Air Quality	On-site conveyance will increase the ambient air quality	Application of dust suppression (Dustex) on internal haul roads.	<b>PC</b>	Dust suppression is taking place on site using water tankers
			Water sprays at stockpiles and transfer points.	<b>N/A</b>	Plant was under construction during the audit
			Water misters will be installed at strategic points at the transfer points along the conveyors in order to abate dust emission.	<b>N/A</b>	Plant was under construction during the audit
			Limit and control vehicle speed on unpaved roads to prevent dust creation. Include speed-bumps to control the speed limits.	<b>FC</b>	Speed limits have been set on site.
			Conveyor design to include 'dogsheeting' on top and along the prevailing wind direction sides to minimise dust generation.	<b>FC</b>	Conveyors have been designed to prevent dust generation.
			Limit the load size of the vehicles to ensure the wind in transit does not pick up more dust that need be.	<b>FC</b>	Load sizes are limited to the specific requirements of the transport department and the trucks are covered with tarpaulin.
	Surface water	Stream crossings (road and conveyor) could potentially impact on the stream flow and lead to stream	Design crossings for 1:20 year flood to minimise effect of damming of water upstream. No permanent retention of water in river at crossings.	<b>FC</b>	Action plans are in place with regards to stream crossing and limiting erosion.
			Avoid sensitive wetland systems as far as possible.	<b>N/A</b>	There are no wetlands on site.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
		flow reductions downstream			
		Spillages along conveyors/roads could impact on water quality	Regular inspections will be implemented for early detection of spillages. Cleaning up of any spillages that may have occurred.	FC	On-site inspections take place at stream crossings during monthly ECO visits.
			All conveyors to be fully enclosed for zero spillage over all stream crossings.	N/A	There are no conveyors across watercourses
			Conveyors covered to deflect rain water away from conveyor belt.	FC	Conveyors are covered to deflect rain away from the conveyor belt.
			Installation of primary and secondary scrapers ensures that there is continuous contact between the scrapers and the belt which will prevent spillages on the return belt.	FC	Scrapers have been installed along the conveyor belt.
	Noise	Elevated noise levels caused by trucking and conveying activities	Rubber vulcanised belt – less noisy / vibration.	FC	During the site visit the conveyor seemed be made of rubber.
			Maintenance of vehicles.	FC	Vehicles are maintained by on on-site workshop.
			All equipment selection to fall in line with permissible noise dBA.	FC	Trucks are fitted with OEM devices and services and maintained according to a maintenance schedule.
			During the selection of the main components and equipment of the proposed undertaking as a whole, installation of alternative low-noise generating makes and models will be considered.	FC	Trucks are fitted with OEM devices and services and maintained according to a maintenance schedule.
			Noise suppression devices on heavy vehicles / conveying equipment.	FC	Trucks are fitted with OEM devices and services and maintained according to a maintenance schedule.
	Soils / Land Use & Capability	Surface disturbance caused by infrastructure	Dismantling of infrastructure	N/A	To be completed/ determined closer to closure phase.
			Final rehabilitation of disturbed areas and storm water drainage.	v	To be completed/ determined closer to closure phase.
	Safety	Road transport of ROM from Waterkop to Zwartkoppies has a potential safety risk to the communities and livestock	The haul road will be fenced off to prevent people and animals from going onto or across the road.	FC	Fences have been erected with security patrols.
			Appropriate crossings (under or over-passes) will be designed to illuminate the safety risks.	N/A*	The R37 is a main road and any under or over-passes will have to be approved by SANRAL.
			Implementation of Community Safety and Traffic Management Procedure, including:	FC	Traffic management and community safety procedure communicated to all drivers.
			o Traffic calming measures identified during the LOM. o Maintaining vehicle speeds.		





Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
			o Covering of vehicles when in motion, both for loaded and unloaded vehicles.		
			o Switching on head lights of trucks.		
	Biodiversity	Potential impact on protected tree species and medicinal plants	Re-align road to avoid protected species.	FC	Permits were obtained to remove species.
			Where avoidance is not possible, develop and implement a Rescue and Relocation Plan prior to any surface disturbances.	FC	Permits were obtained to remove species.
			In the case of <i>Sclerocarya birrea</i> subsp. <i>caffra</i> and <i>Boscia albitrunca</i> , two new Marula and Shepherds trees are to be planted in suitable habitat for each tree destroyed, should relocation be unsuccessful.	FC	Permits were obtained to remove species.
		Killing of animals and avifauna along the road, especially nocturnal animals/birds	Maintaining vehicle speeds.	FC	Speed limits have been set on site.
			Trucking during daylight hours only.	FC	Product is removed from site only during daylight hours.
Implement an Environmental Awareness Programme for trucking contractor.	FC	All contractors attend HSE induction.			
Mine Residue	Groundwater	Impact of waste rock dumps and slimes facilities on groundwater resources	Waste rock dump to be appropriately lined with a sub-surface drainage system.	PC*	Stockpile areas have not been lined as per approval of the DWS & latest NEMA requirements.
			Appropriate lining and management of slimes facilities to prevent groundwater contamination.	N/A	Backfilling with tailings has not commenced as yet.
			Dirty water runoff / leachate to be collected in lined facility and recycled to dirty water dams for use in process.	NC	Storm water management to be updated with the construction of the SWD that are not in place as yet.
	Surface water	Water quality impacts as a result of dirty water runoff / seepage from waste rock dumps and slimes facilities	Dirty water / seepage to be collected in lined facility and recycled to dirty water dams for use in process.	PC*	Stockpile areas have not been lined as per approval of the DWS & latest NEMA requirements.
	Visual / Aesthetics	Large waste rock dumps will impact on the landscape	In-pit disposal as far as possible.	N/A	Opencast mining has been concluded.
			Landscaping of remaining dumps to minimise impact – avoid straight lines and design contoured stockpiles that represent the natural lines of the existing topography.	N/A	To be completed/ determined closer to closure phase.
	Air quality	Increase dust emissions as a result of stockpiles	Windshields (barriers) can be implemented on the slopes and surface of the dumps, these barriers are typically large trees with a good foliage coverage (the area of the mine and the	PC	Wind breaks have not been developed to date, however berms have been placed to act as windshields.



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
			soil characteristics cause the possibility of this option to be low). The substitute of the wind barriers is a wind shield made from a prose material (shade cover). It should be noted that the height of the wind shield will reduce the wind effect by 10x in distance.		
			Permanent dumps to be vegetated to reduce dust emissions.	N/A	No permanent dumps have been identified yet.
	Noise	Noise from stockpile construction leading to the main contributing factors to the noise at the sensitive receptors, especially at night-time	Noise suppression devices on heavy vehicles and other noisy equipment.	FC	Trucks are fitted with OEM devices and services and maintained according to a maintenance schedule.
			Alternative reverse hooting systems could be implemented to reduce the noise levels.	FC	Trucks are fitted with OEM devices and services and maintained according to a maintenance schedule.
Off-site conveyance of product by truck	Safety	Road transport of product will impact on the traffic along the route, safety risk to road users	Implementation of Community Safety and Traffic Management Procedure, including:	FC	Traffic management and community safety procedure communicated to all drivers.
			o Upgrading of road intersections.		
			o Other traffic calming measures identified during the LOM.		
			o Maintaining vehicle speeds.		
			o Covering of vehicles when in motion, both for loaded and unloaded vehicles.		
	Biodiversity	Killing of animals and avifauna on the roads, especially nocturnal animals/birds	Maintaining vehicle speeds.	FC	Speed limits have been set on site.
			Trucking during daylight hours only.	FC	Product is removed from site only during daylight hours.
			Implement an Environmental Awareness Programme for trucking contractor.	FC	All contractors attend HSE induction.
	Surface water	Potential for water quality impacts due to spillages and dirty runoff into the streams	Regular inspections will be done along the route to detect and clean any spillages from the trucks.	FC	On-site inspections take place at stream crossings.
			Emergency procedure to be developed and implemented in the event of any spillage / accident along the route.	FC	An incident /accident emergency procedure is available at Sefateng.
Covering of vehicles when in motion, both for loaded and unloaded vehicles.			FC	Vehicles are weighed prior leaving the sites and covered.	
Air quality		Gravel roads to be surfaced or treated with dust palliatives such as Dustex	PC*	Dust is maintained through the use of two water trucks.	



Activity	Aspect	Potential Impact	Mitigation Measure	Compliance	Comment
		Material and product loss from trucks	Covering of vehicles when in motion, both for loaded and unloaded vehicles.	FC	Vehicles are weighed prior leaving the sites and covered.
			Regular inspections will be done along the route to detect and clean any spillages from the trucks.	FC	On-site inspections take place at stream crossings.
	Noise	Increase of ambient noise levels along the route	Noise suppression devices on transport trucks.	FC	Trucks are fitted with OEM devices and services and maintained according to a maintenance schedule.
			Trucking during daylight hours only.	FC	Product is removed from site only during daylight hours.

**Table 10-3: Assessment of Surface Water Management Plan: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)**

Requirements/Mitigation measures	Compliance	Comment
The fuelling areas, workshops and fuel or lubricant storage areas should be concrete lined and bunded to collect any hydrocarbon spillage to re-cycle containers.	FC	The bulk diesel storage is within a bunded area.
The conceptual storm water drainage layout as described in this management plan indicates that numerous streams/drainage lines are disturbed by the proposed mining activities. The runoff volumes and water quality of re-routed streams would not be materially affected, provided that scour of bed material is prevented so as to minimise turbidity during flood conditions. Lining of the canals and/or energy dissipating structures may be required at steep slopes.	FC	Gabions have been developed within the unnamed tributaries to prevent and mitigate the excessive erosion taking place on site.
Diversion of streams and drainage lines: The water quality of re-routed streams should be maintained by preventing scour of bed material, thereby minimising turbidity during flood conditions. Lining of the canals and/or energy dissipating structures may be required at steep slopes.	PC	Construction of some mitigation measures (gabions) have started on site.
Impact of the proposed mining development on surface water runoff quantity: The area of the open pits should be kept as small as possible to minimize the reduction in runoff.	FC	The footprint area has been kept to a minimum. The diversion trenches have been developed.
Impact of the proposed mining development on surface water runoff quality: By adhering to the requirements of GN 704 and implementing a design along the guidelines provided in the Best Practice Guidelines, the water quality will not be polluted by mining activities. However, care should be taken in the mining development phase to restrict the clearing of land to the minimum required. In this phase, while erosion control measures are being implemented, the highest risk of erosion damage occurs. This will lead to high turbidity levels and increased	FC	The footprint area has been kept to a minimum. The diversion trenches have been developed.



Requirements/Mitigation measures	Compliance	Comment
sediment in the drainage lines and streams. In the event of major floods causing failure of the system, the dilution effect may minimise the impact.		
Other types of failures should be prevented by proper management and maintenance of the system.	FC	A system malfunction record has been put into place.
Impact of the dirty water areas on water quality: By adhering to the requirements of GN 704 and following the best practice guidelines, as would be required in the licensing application, dirty water is contained and water available after evaporation losses will be re-used.	PC	Storm water management plan has not been implemented to full extend as yet.
In case of accidental spillages, specialized equipment should be available on site to mop up the pollutants before irreversible damage is caused. Else, specialized contractors may be used to fulfil this function.	FC	Spill kits are available on site at all areas where spillage can possibly take place.
Limiting erosion at drainage structures, e.g. design and install appropriate outlet structures to retard the flow velocity.	FC	Energy dissipating structures have been constructed.
As a general mitigation measure, it is proposed that all access and haul roads be constructed so as to also act as diversion berms and canals, where required.	FC	The roads have side berms in order to channel the water into specific directions.
It is also proposed that runoff at all dirty areas be contained by dirty water berms and excess water be drained by canals (if no access road or haul road can fulfil this function) to discharge dirty storm water to the proposed dirty water ponds.	PC	Storm water management plan has not been implemented to full extend as yet.
Revise mining and/or stockpile footprints to avoid the 1:100 year flood-line or the 100m buffer zone, whichever is applicable. The 100m buffer zone normally only applies where the 1:100 year flood-line is not shown.	FC	Buffer zones have been implemented and are being maintained where appropriate.
Design bridge/culvert over drainage lines and determine the change in normal flood levels. If an adverse impact occurs, the structure(s) should be enlarged.	FC	Culverts over drainage lines have been designed to handle flooding. No signs of impact.
Construct clean water cut-off berms, canals or flood attenuation dams. This could potentially become artificial wetlands over time if no rehabilitation of the stream is carried out at decommissioning phase.	FC	Clean diversion berms have been constructed to date.
Construct dirty water berms or flood attenuation/storage ponds to collect run-off from the proposed dirty area.	PC	Storm water management plan has not been implemented to full extend as yet.
Relocate and/or hydraulically reshape mining infrastructure to aid in the collection and/or conveyance of surface water runoff.	FC	Culverts over drainage lines have been designed to handle flooding. No signs of impact.

**Table 10-4: Assessment of Hazardous Substances Management Plan: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)**

Requirements/Mitigation measures	Compliance	Comment
Hazardous chemical substances used will be stored in secured secondary containers.	FC	Hazardous chemicals are stored within the hazardous chemical storage area, which is banded with the relevant MSDS information at hand.
The relevant Material Safety Data Sheets (MSDS) will be available on site.	FC	MSDS is available on site for all chemicals.
Procedures detailed in the MSDS will be followed in the event of an emergency situation.	FC	An incident /accident emergency procedure is available at Sefateng. MSDS is available on site for all chemicals.
For potentially hazardous substances that are to be stored on site, the responsible person will provide a Method Statement detailing the substances/materials to be used, together with the storage, handling and disposal procedures of the materials.	FC	Responsible persons have been trained on the relevant MSDS information.



Requirements/Mitigation measures	Compliance	Comment
Fuel and lubricants will be delivered and stored in the bulk storage facility situated in the infrastructure areas.	FC	The bulk diesel storage is within a bunded area.
The storage area will be designed and constructed in accordance with the SANS requirements, and will be concrete lined and sufficiently bunded to prevent spillages.	FC	The bulk diesel storage is within a bunded area.
As a result of the hydrocarbon activities, the dirty water in the infrastructure areas will be captured by means of collection sumps and oil traps before releasing the water to lined channels to drain down to the PCDs.	PC	Storm water infrastructure has not been completed as yet.
All oil and other petroleum products (bulk storage area and other storage areas) must be stored in a bunded area with a containment capacity of the product being stored plus 10%.	FC	Chemical storage areas on site within bunded area of 110%.
Used lubricants will be containerised in drums and will be collected from the various workshops and lubrication vehicles. This will then be pumped into collection tanks situated on the bulk lubricant terrace for collection by a specialist waste management contractor (such as OILKOL).	FC	Used lubricants are contained on site within a bunded container and is removed from site by a respectable oil waste contractor.
Decanting facilities must be available for decanting purposes at all times. Decanting facilities must be bunded appropriately to prevent spillages. Decanting must be done in such a way that no spillages occur whilst filling or emptying any containers.	FC	Responsible persons have been trained on the relevant MSDS and decanting takes place within the bunded hazardous store.
All portable diesel bowsers shall be used, filled, pumped, emptied, decanted and transported in such a way to prevent spillages of any kind.	N/A	There are no portable diesel bowsers on site.
The maintenance of any petroleum liquid (e.g. oil, petrol and diesel) and grease supply pipes must be done in such a manner as to prevent any spillages to the environment.	NC	During the audit it was noted that the first tank at the "oil sump" was overflowing and due to the wind blowing the contaminated water was not contained in the bunded area.
All machines, equipment and tanks (including mobile compressors and diesel bowsers) that have got the potential to leak oil shall be inspected and kept in good condition at all times. Leaking equipment will be repaired immediately or removed from the site.	FC	All equipment are inspected and stored within bunded areas at the new workshop.
The handling of drip trays and management of volume of oil levels in drip trays will be such that they will not overflow into the environment. If any spillages of oil did occur, it shall be cleaned immediately after the spillage occurred	FC	Drip trays if needed are used responsibly,
The relevant Material Safety Data Sheets (MSDS) will be available on site. Procedures detailed in the MSDS will be followed in the event of an emergency situation.	FC	An incident /accident emergency procedure is available at Sefateng. MSDS is available on site for all chemicals.
Appropriate spillage kits will be implemented and maintained for cleaning of any spills. Any leaks or spillages will be cleaned up as soon as possible and reported to the Site Manager immediately. Also refer to Section 3.2 for the Spill Management Procedure.	FC	Spill kits are available on site at all areas where spillage can possibly take place.
Oil contaminated rags and other cleaning material used for cleaning of spillages shall be disposed into allocated hazardous waste bin and removed by a certified waste removal company	FC	Oily rags and other contaminated material are stored within demarcated hazardous waste containers before removed by a certified waste removal company.
Under no circumstances will the selling of empty drums for other uses be allowed.	FC	Empty drums are removed by the suppliers.
Emulsion will be delivered to site by road tanker and stored in appropriately sized silos situated within the infrastructure areas	FC	Blasting procedure has been developed and is implemented in accordance with the Blasting Operator.
Detonators and cartridge explosives will be stored in the Explosives Magazine	FC	There is an explosives magazine that is used exclusively by the contractor when needed.



Requirements/Mitigation measures	Compliance	Comment
The Explosives Magazine, as well as the destruction area will comply with all legislative requirements. The final position will be determined during the Feasibility Phase	FC	There is an explosives magazine that is used exclusively by the contractor when needed.

**Table 10-5: Assessment of Waste Management Plan: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)**

Requirements/Mitigation measures	Compliance	Comment
The different waste streams will be segregated and disposed of in appropriate designated receptacles.	FC	Waste management is taking place on site as per the hierarchy and the procedure that has been developed.
An approved, registered waste contractor will be appointed by the mine to manage the waste generation and safe disposal thereof.	FC	A waste contractor has been appointed to remove the hazardous and general waste from site when needed.
No landfill site will be established on the Sefateng Mining Project site.	FC	No waste is disposed of or buried on site.
No waste will be disposed of or buried on site, or in any other location that is not a licensed waste disposal site.	FC	No waste is disposed of or buried on site.

**Table 10-6: Assessment of Environmental and Socio-Economic Requirements: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)**

Activity	Implementation Phase	Review/Repeat Frequency	Responsibility	Compliance	Comment
Implement Rescue and Relocation Plan (fauna & flora)	Prior to mining	Once-off	Specialist to be appointed	FC	Species were removed after permits were received.
Develop and implement Biodiversity Action Plan, including avifaunal plan	Within one year of mining	Annual review	Specialist to be appointed	FC	A Biodiversity Action Plan has been developed and implemented.
Develop Rehabilitation Plan and Materials Placement Plan	Feasibility Phase	Annual review or if major change in scheduling	Mining Dept	FC	Mine rehabilitation plan is implemented and updated annually.
Initiate alien vegetation programme	Construction Phase	Annual review	Environmental Dept	FC	An alien invasive management plan has been developed and are being implemented.
Heritage monitoring	Construction phase	Prior to new areas being disturbed	Archaeologist to be appointed	FC	Heritage assessment has been conducted prior to mining and for the new expansion project.
Revision of groundwater flow & geochemical model	Operational Phase	Revise every 5 years	Specialist to be appointed	FC	Groundwater model was updated in September 2018.
Develop detail blasting procedure in line with specialist advise	Prior to opencast mining	Ongoing review based on monitoring data	Blasting contractor	FC	Blasting procedure has been developed and is implemented in accordance with the Blasting Operator.
Stipulate best practice requirements in tender documentation ito emissions, noise, equipment, transport, etc.	Prior to appointment of contractors	Ongoing review as new technology becomes available	Procurement Dept	FC	A copy of the EMP is made available to all contractors on site.
Implement environmental awareness programme	Construction Phase	Include in annual induction programme	Environmental Dept Human Resources	FC	Environmental awareness campaigns have been launched internally.
Inspection and maintenance of clean and dirty water systems	Operational Phase	Quarterly or after a big rain event	Engineering Dept	FC	On-site inspections take place at stream crossings during monthly ECO inspections.



Activity	Implementation Phase	Review/Repeat Frequency	Responsibility	Compliance	Comment
Identify and clean-up of any spillages along transport routes	Operational Phase	Weekly	Engineering Dept	FC	On-site inspections take place.
Identify and report any road maintenance issues	Operational Phase	Ongoing	Engineering Dept RAL	FC	On-site inspections take place.
Implement aftercare and maintenance programme for rehabilitated areas	Within 2 years of mining	Ongoing implementation as per specialist recommendations	Environmental Dept	N/A	To be completed/ determined closer to closure phase.
Implement monitoring programme	Prior to mining	Annual review of monitoring programme or if major change in scheduling	Environmental Dept	FC	Surface and groundwater monitoring as well as dust monitoring has been implemented. An ECO has been appointed on site to assist with the monitoring and auditing of the environmental conditions of the site.
Review and analyses of environmental monitoring data	Commencement of mining	Monthly	Environmental Dept HSEC	PC	Environmental monitoring is done.
Internal review of EMP compliance, conformance to environmental objectives and strategies and their implementation	Commencement of mining	Annually	Environmental Dept HSEC Committee	FC	Internal audits are conducted monthly by the ECO to determine compliance.
External EMP performance assessment to determine conformance with the EMP, including effectiveness and appropriateness of EMP	Commencement of mining	Annually	External appointment	FC	This is the fifth compliance audit; an audit was done in 2022.
Environmental legal compliance audit	Commencement of mining	Bi-annually (2-yearly)	External appointment	FC	Legal compliance is assessed annually during the Due Diligence Assessment.
Revision of closure cost assessment	Commencement of mining	Annually as part of EMP performance assessment	Engineering Dept	FC	Financial provisioning is updated on an annual basis.
Community Engagement Forum (CEF)	Commencement of mining	Quarterly or as required	Community Engagement Manager	FC	A community engagement forum has been started
Establish and update recruitment database	Commencement of construction	Upfront and then annually updated	Human Resource Manager	FC	A community engagement forum has been started; all recruitment is scrutinised by this forum.
Compile and workshop of recruitment procedure	Commencement of construction	Prior to construction Prior to operations	Human Resource Manager	FC	A community engagement forum has been started; all recruitment is scrutinised by this forum.
Define and communicate the Community Safety and Traffic Management Plan	Prior to construction	Prior construction	Community Engagement Manager	FC	Traffic management and community safety procedure communicated to all drivers.



Activity	Implementation Phase	Review/Repeat Frequency	Responsibility	Compliance	Comment
Establish a Grievance and Issue Management Procedure to manage any issues raised by existing land occupants and newcomers	Construction and Operational Phase	Continuously	Community Engagement Manager	FC	A community engagement forum has been started; all complaints are dealt with by the forum.

**Table 10-7: Assessment of Monitoring Programme: Sefateng Chrome Mine (Pty) Ltd (2014 EMPr)**

Aspect	Issue	Purpose	Monitoring Points	Frequency	Sampling Method	Variables	Compliance	Comments
Surface Water	Surface water quality	Determine any deterioration in water quality as a result of the mining related activities	Figure 5 (EMPr)	Monthly (if flow)	Grab sampling	Selected variables monthly Full spectrum six-monthly	N/A	Water courses are ephemeral and quality can thus not be determined.
	Water management infrastructure	Monitoring of condition, identifying areas that require maintenance	Along clean & dirty water canals, clean & dirty water dams	Quarterly After a big rain event	Visual	Evidence of erosion, cracks, subsidence, overgrowth, etc.	FC	Monthly onsite inspections done as part of work by ECO
	Dirty water systems	Determine the water quality and long-term chemical changes in the dirty water systems	Dirty water dams	Monthly	Grab sampling	Selected variables monthly Full spectrum six-monthly	FC	When water is available in the PCD (partially constructed) it is sampled for quality.
	Haul road / access road crossings	To identify and mitigate any spillages into the clean water system	All road crossings over clean water canals and streams	Weekly	Visual inspection	Evidence of spillages	FC	Monthly onsite inspections done as part of work by ECO
	Aquatic monitoring	To determine the impact on the aquatic ecosystems and wetlands	6 monthly	6 monthly	Riparian vegetation - Habitat integrity Aquatic macro-invertebrates and fish counts Wetland PES/EIS	TBD	N/A	The streams are non-perennial and there are no wetlands on site. Eco takes monthly photographs.
Groundwater	Groundwater quality	To determine any impact on the groundwater quality as a result of mining	Table 5 and Figure 6 (EMPr)	Quarterly Six-monthly - hydro-	High integrity grab sampler (double valve), preferably	Selected variables monthly Full	FC	Groundwater monitoring is conducted.





Aspect	Issue	Purpose	Monitoring Points	Frequency	Sampling Method	Variables	Compliance	Comments
				census boreholes	made from PVC/Teflon	spectrum six-monthly		
	Groundwater levels	To determine any impact on the groundwater levels as a result of mining	As above	Monthly	Pump samples	Water level	<b>FC</b>	Groundwater monitoring is conducted.
Mine water balance	Water levels in dams	To verify water balance and volume of water stored	Clean & dirty water dams	Monthly	Survey	Height (m)	<b>FC</b>	Storm water management infrastructure has not been completed as yet. The water levels in clean water dams are monitored monthly.
	Dirty water recycled	To determine volume of dirty water abstracted & recycled for processing and dust suppression	Dewatering points in the open pits / underground workings	Monthly reading	Water meters	Volume (m3)	<b>FC</b>	Flow meter data is available for dewatering.
	Bulk water supply	To determine volume of make-up water imported	In-take point from Lebalelo Water Scheme pipeline	Monthly reading	Water meters	Volume (m3)	<b>FC</b>	Flow meter data is available for imported water.
	Process flow	To determine accurate process water balance	Inflows & outflows Moisture content of the product & residue	Monthly	Water meters	Volume (m3)	<b>N/A</b>	The plant was under construction during the site visit.



Aspect	Issue	Purpose	Monitoring Points	Frequency	Sampling Method	Variables	Compliance	Comments
Land use management	Concurrent rehabilitation	To determine conformance with environmental objectives for concurrent rehabilitation	Mining area	Annually	Survey	Hectares disturbed, levelled, top soiled & revegetated	FC	Rehabilitation has been taking place concurrent to mining and annually updated as part of the financial plan.
	Soil analysis	To determine any deficiencies in soil fertility prior to seeding	Top soiled areas	Ongoing (prior to seeding)	Soil samples	As per specialist advise	N/A	To be determined closer to closure phase.
	Soil erosion	To pro-actively identify soil erosion in order to rectify prior to serious degradation	Rehabilitated areas	Routinely (monthly)	Field survey	-	N/A	To be determined closer to closure phase.
Biodiversity	Land use coverage / Vegetation health	To determine effectiveness of reclamation plan and long-term sustainability of vegetated areas	Total mining area, including rehabilitated areas	Annually	Field survey Satellite imagery	As per specialist advise	FC	Biodiversity assessments was done.
	Species diversity	To determine species diversity (fauna & flora)	Total mining area, including rehabilitated areas	Annually	Field survey	As per specialist advise	FC	Biodiversity assessments was done.
	Riparian condition assessment	To determine the impact on the riverine forest as a result of mining	Along sensitive streams	Annually	TBD	As per specialist advise	FC	The streams are non-perennial and there are no wetlands on site.
	Alien vegetation	To monitor conformance with alien vegetation programme	Total mining area, including rehabilitated areas	Annually	Survey	Area (hectares)	FC	Alien invasive removal and monitoring took place.
Air quality	Dust outfall	To determine the levels of dust outfall as a result of the mining activities	As per specialist advise	Continuous	Directional dust outfall buckets	Settleable particles (mg/m <sup>2</sup> /day)	FC	Dust monitoring was conducted.
	Particulate Matter	To determine the particular matter levels for PM10 and PM2.5	As per specialist advise	Continuous	Air Quality monitor	µg/m <sup>3</sup>	FC	Dust monitoring was conducted.



Aspect	Issue	Purpose	Monitoring Points	Frequency	Sampling Method	Variables	Compliance	Comments
Environmental noise	Noise levels	To determine the noise levels within the communities and sensitive areas	Nearby communities and other sensitive receptors	Monthly	To be determined	dBA	FC	Proof of noise monitoring was available.
Blasting	Air blast and ground vibration	To determine the effectiveness of the blasting procedure	As per specialist report / blasting procedure	Continuous	Vibration stations (seismograph)	Air blast Ground vibration	FC	Blasting procedure has been developed and is implemented in accordance with the Blasting Operator.
Waste	Waste generation & management	To determine volume of waste generated & disposed	Site	Monthly	Contractor report	Waste types	PC	A waste contractor has been appointed to remove the hazardous and general waste from site when needed. Monthly reports have not been collated to date.
Heritage	Heritage/cultural resources	To capture all heritage/cultural resources exposed by mining	Site	As required	Archaeologist site visit	-	FC	New areas identified for expansion was scrutinised by heritage specialist.



## 10.2 SUMMARY OF AUTHORISATION CONDITIONS THAT CANNOT BE USED AS AUDIT CRITERIA THAT REQUIRES AMENDMENT

There were no obvious commitments in the Sefateng EMPr that were seen to be inadequacies of the EMPr.

## 11 APPROPRIATENESS OF EMPr

### 11.1 APPROPRIATENESS OF THE SEFATENG EMPr AND PROPOSED CHANGES TO MEASURES

An Environmental Management Program (EMPr) was compiled to support an application for the granting of the mining rights in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002). The Department of Mineral Resources approved the EMPr on 19 September 2014. The activities and impacts as listed within the EMPr are relevant to the current operations on site. The mitigation measures defined and approved for the operations are deemed appropriate even though some of the requirements are a bit excessive for the type of operation taking place.

Based on the evidence accumulated during the audit and specifically the site visits of 4 March 2022 and 27 March 2023, the following commitments made in the approved EMPr are not deemed appropriate: -

- Wetlands: There is no wetlands on site.
- Aquatic and bio monitoring: Due to the fact that the streams are non-perennial, it will be very difficult to conduct aquatic monitoring of the streams.
- Quarterly geochemical testing: The requirement to have quarterly ABA and leach tests conducted on waste rock needs to be revised to be more practical with regards to the application of the information that will be obtained and the possible changes in geology (if any).
- Lining requirements: The conditions to have all canals concrete lined is excessive and can be re-evaluated in terms of the requirements as set out by the DWS and the WUL specifications to ensure that dirty water runoff is contained and not discharged into the environment. (e.g., clay lining etc.) In addition, the requirement to have stockpile areas lined needs to be in accordance with the approval of DWS and the latest NEMA requirements.
- Surfacing of haul road: The application of surface surfactants without probable cause and proof of nuisance dust is excessive and should be catered for in the instance when the need arises.
- Traffic management and awareness: The R37 is a main road and any under or over-passes will have to be approved by SANRAL and the community. In addition, proof of implementation of a Traffic Awareness Programme within the surrounding communities by the mine is unwarranted.

### 11.2 NEW IMPACTS AND RISKS

Sefateng is currently mining the LG6 chromitite package via underground mining on the farm Zwartkoppies 413KS. Opencast mining has been concluded on the farms Waterkop 113KT and Zwartkoppies 413KS. Additional chromitite layers are present on the same farm, near the surface. Thus, Sefateng Chrome Mine proposes to extend the existing opencast operations on the Mining Right area in order to access further ore deposits. The mine also proposes to construct a new pipeline to the mine feeding potable water from the Lebalelo supply pipeline



along road R37. A powerline and service road will also be constructed along the same route as the water pipeline, which will be between 11.3 km and 15.4 km in length, depending on the route alternative chosen.

These activities have been identified and evaluated within the EIA/EMPr amendment of 2019 and therefore an additional amendment to the EMPr is not required at this point in time. The amendment submitted also includes backfilling of the opencast pit and a Water Use Licence has been received (08/2022). The Environmental Authorisation and Waste Management Licence is still outstanding.

The construction of the beneficiation plant was taking place during the 2023 site visit and this will result in the commencement of additional impacts from the current mining operations.

### **11.3 SHORT COMINGS OF THE EMPr**

None were identified. The EMPr is however in the old format and this will be corrected if and when the application submitted in 2019 is approved.

## **12 ASSUMPTIONS**

It is assumed that the information provided during the site visit and during the document review was provided in good faith.

The audit was conducted during a 1-day site visit though documented evidence asked for covered a 12-month period. (March 2022 – March 2023)

The audit process and the results are based on a sampling process as decided by the auditor and the audit results therefore cannot identify all strength and weakness areas within the customer's environmental management system. The audit results however, demonstrate that the audit plan and audit objectives have been achieved. Prescali Environmental Consultants (Pty) Ltd accepts no liability whatsoever, for any loss, consequential, direct and indirect, including without being limited to, any loss of profit arising from the normal execution of the audit or any information made available to the audit team during the audit and actions and transactions resulting therefrom. It is important to note that the environmental operational compliance audit is a snapshot of the level of compliance on the date of the audit. No guarantee whatsoever for any continual compliance after the audit date is given or implied.

## **13 CONSULTATION PROCESS**

No consultation process (other than with the auditee) was followed and no comments were received from the public regarding this audit as conducted by Prescali.

## **14 INFORMATION REQUESTED BY COMPETENT AUHTORITY**

No request for information was applicable.



## 15 CORRECTIVE ACTIONS TAKEN FOR THE PREVIOUS AUDIT'S NON-CONFORMITIES AND ACTION PLAN

The previous environmental audit in March 2022 indicated some non-compliances, and the recommendations and related corrective actions were identified to be completed and implemented as indicated in the table below. In terms of the actions, the table also indicates which actions were implemented and which are still outstanding.

**Table 15-1: March 2022 Action plan and implementation assessment – only aspects not completed**

Aspect	Management Measure	Responsible person	Time frame	Status
Water and Waste Management	Finalise the stormwater management measures that are to be implemented in accordance with the stormwater management plan. (Dirty Water)	Operations Engineer	1 Year: March 2023	Storm water management infrastructure construction has not been finalised
	Finalise construction of the containment facilities (PCD) for contaminated runoff designed for the 1:50 year flood-event as per requirements.	Operations Engineer	1 Year: March 2023	Storm water management infrastructure construction has not been finalised
Rehabilitation	Revegetation will be done as soon as possible to limit dust and erosion.	Operations Engineer	3 Months: June 2023	Rehabilitation is ongoing and areas at Waterkop were also identified where vegetation is needed.
Water Balance	Ensure that all pipelines have flow meters, especially the pipelines conveying contaminated water.	SHEQ Manager	1 Year: March 2023	Flow meters have been installed. The need for additional ones will be interpreted during the annual water balance assessment.
Audits	Ensure that internal EMP review and environmental legal compliance audits be conducted.	SHEQ Manager	6 months: August 2023	Audits have been conducted.



## 16 CONCLUSION AND RECOMMENDATION

This is the fifth compliance audit on the implementation of the management measures and commitments made in the 2014 EMPr by the Sefateng Chrome Mine mining operations which have been undertaken on the Farm Zwartkoppies 413 KS and Remaining extent (Portion 0) and Portion 1 of the Farm Waterkop 113 KT.

The EMPr of 2014 was approved and an EMPr amendment and related waste and water use licence applications have been submitted to the relevant authorities for approval related to the proposed expansion of the opencast section during 2019. A Water Use Licence has been received though the Environmental Authorisation and Waste Management Licence is still outstanding.

Overall, the mining operations of Sefateng Chrome Mine (Pty) Ltd have demonstrated compliance with general environmental legal obligations. An outline of the findings is provided below:

Summary	FC	N/A	N/A*	PC	PC*	NC	NC*	Total
Objectives	49	13	16	14	17	4	6	119
Management	97	34	39	14	20	1	4	209
Surface water	12	0	0	5	5	0	1	23
Hazardous Chemicals	18	1	1	1	1	1	1	24
Waste	4	0	0	0	0	0	0	4
Social	22	1	1	2	2	0	0	28
Monitoring	15	5	5	2	2	2	4	35
<b>TOTAL</b>	<b>217</b>	<b>54</b>	<b>62</b>	<b>38</b>	<b>47</b>	<b>8</b>	<b>16</b>	<b>442</b>

Main non-compliance issues are related to the following:

- Containment facilities for contaminated runoff are under construction (PCD) or not completed. Water is also diverted to the opencast pit.
- Water from the pit is not re-used.
- Canals are not concrete lined, it should be noted that this requirement is being amended as part of the Section 102 application currently awaiting approval.
- An energy management plan has not been developed.
- The access and main haul road have not been surfaced.
- Traffic awareness programme has not been developed.
- During the audit it was noted that the first tank at the "oil sump" was overflowing and due to the wind blowing the contaminated water was not contained in the bunded area.
- Quarterly geochemical tests have not been conducted.

None of the issues or activities identified during this audit will result in an additional EMPr amendment at this point in time. The mitigation measures defined and approved for the operations are deemed appropriate even though some of the requirements are a bit excessive for the type of operation taking place.



## 17 ACTION PLAN

The action plan set out below provides the proposed actions to assist Sefateng in improving the overall compliance.

**Table 17-1: Action Plan for Implementation – March 2023**

<b>Finding</b>	<b>Responsible person</b>	<b>Time frame</b>
Containment facilities for contaminated runoff are under construction (PCD) or not completed. Water is also diverted to the opencast pit.	Engineer	1 Year
Re-use water from the pit.	Engineer	1 Year
During the audit it was noted that the first tank at the "oil sump" was overflowing and due to the wind blowing the contaminated water was not contained in the bunded area.	Engineer	1 Year

### UNDERTAKING

Herby I \_\_\_\_\_ currently acting as the \_\_\_\_\_ for Sefateng Chrome Mine (Pty) Ltd: Sefateng Mining Project undertake to ensure that the actions as set out in this action plan will be implemented in the prescribed timeframes to improve overall compliance of the mine.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

## 18 REFERENCES

The Sefateng EIA\_EMP Report Section 2 Final 27-02-2014, dated February 2014 and approved 19 September 2014, Jacana Environmentals cc.

## 19 APPENDICES

**Appendix 1: Experience of auditors**

**Appendix 2: Attendance Register**

**Appendix 3: List of documented evidence**





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**Appendix 1: Experience of auditors**

# Short Resumé

## Christina Petronella Erasmus

### Personal Data

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Identity Number	7405020050088
Sex	Female
Nationality	South African
Language Skills	Afrikaans & English (speak, read and write)

### Educational Qualifications (higher)

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Name of Institution	Degree Obtained	Dates Attended
Potchefstroom University for Christian Higher Education <sup>1</sup>	Baccalareus scientiae	1993 – 1995
Potchefstroom University for Christian Higher Education	Baccalareus scientiae (honours)	1996
University of Port Elizabeth <sup>2</sup>	Magister Scientiae	1998 – 1999
University of Port Elizabeth	Philosophiae Doctorae	2000 - 2003

### Professional Registrations

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Registration/Licensing Body	Type of Registration	Dates Obtained
Professional Evaluation and Certification Board (PECB)	Environmental Lead Auditor Certificate: EMLA1022016-2021-02	February 2018
Professional Evaluation and Certification Board (PECB)	Certified Trainer Certificate: CT02054-033-2021	March 2018
Environmental Assessment Practitioner Association of South Africa (EAPASA)	Environmental Assessment Practitioner Number: 2019-1473	November 2019
The South African Council for Natural Scientific Professions	Professional Natural Scientist Number: 116207	September 2017
Water Institute of South Africa	Member Membership: 38409	May 2018

### Professional Experience

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<sup>1</sup> University of the North West

<sup>2</sup> Nelson Mandela Metropolitan University

Period: March 2006 – December 2006  
 Company Name: Department of Water Affairs and Forestry – Regional Office  
 Post: Water Pollution Control Officer (Water Quality)  
 Job Description: Site inspections of waste water treatment plant, potable water treatment plants and other businesses and mines that could have negative impact on water quality for compliance with the National Water Act, 1998 (Act 36 of 1998). Registration and licensing of water uses, taking of water samples and interpretation of analyses results, investigation of pollution incidents. I also assisted with SASS monitoring for the regional River Health Programme. Other duties included correspondence with clients, following up on complaints, attending committees and awareness creation among stakeholders.

Period: January 2007 – April 2008  
 Company Name: Department of Water Affairs and Forestry – Regional Office  
 Post: Senior Water Pollution Control Officer  
 Job Description: Knowledge of water policies and strategies relating to Integrated Water Resource Management was a requirement and I had to ensure that all water users complied with legal and technical principles. Other duties included Integrated Water Use Licences and in providing specialist input into waste disposal facilities applications. In addition, I was involved in facilitating integrated monitoring programmes in terms of water quality, microbial, biology and other aspects of river health as well as general administrative duties. I was also the Health and Safety officer for our office.

Period: May 2008 – February 2018  
 Company Name: M2 Environmental Connections (Pty) Ltd and Prescali Environmental Consultants (Pty) Ltd  
 Post: Environmental Assessment Practitioner  
 Job Description: Duties include compiling technical documentation (EMPR / EMP, Water Balance, Surface Impact Report, WULA, IWRMP/IWWMP), Sampling (Harties Metsi A Me project), Public Participation, Administrative duties (Invoicing: Quotations), Auditing licences & mentoring new employees.

*Short client list includes:*

*Vesuvius South Africa (Pty) Ltd                      Richmond Mining and Exploration  
 Samancor (Eastern and Western Chrome Mines)      Virtual Consulting Engineers  
 Andalusite Resources (Pty) Ltd                      Samancor Ferrometals*

Period: March 2018 – Current  
 Company Name: Prescali Environmental Consultants (Pty) Ltd  
 Post: Environmental Assessment Practitioner  
 Job Description: Duties include compiling technical documentation (EMPR / EMP, Water Balance, Surface Impact Report, WULA, IWRMP/IWWMP), Public Participation, Administrative duties (Invoicing: Quotations) & mentoring new employees, ISO14001 training, Legislative training, Auditing compliance with legislation, licences and management reports.

*Client list include (not comprehensive):*

*University of Mpumalanga                      Sylvania Metals (Pty) Ltd  
 Gudani Consulting (Pty) Ltd                      Red Kite Environmental Solutions (Pty) Ltd  
 Corobrik (Pty) Ltd                                  Glenover Phosphate  
 Sail Group    Inlexo Innovative Solutions  
 Salene Manganese (Pty) Ltd                      Reinhard Transportation Group (Pty) Ltd  
 Venetia Diamond Mine                              Afarak South Africa (Pty) Ltd  
 Samancor Chrome Ltd                                Mtluva Mining (Pty) Ltd  
 Mera Advisors*

## Short Resumé

I am a dedicated employee and will always give my best to my employer, clients and student(s) / mentee(s). That being said I have been employed in the educational, government and consulting services as discussed below.

During my post graduate studies (1996 – 2003) I have worked as a laboratory assistant and in 2004 I lectured at the University of Port Elizabeth (now Nelson Mandela Metropolitan University). I have found the lecturing truly rewarding and enjoyed disseminating my knowledge to the young minds of our future work force. Subjects in which training was

provided included the Bridging course for first year exchange students or students that did not have biology in high school and the physiology of the brain for nursing students.

My environmental background includes being involved in an Environmental field either as a student or in a working environment. From March 2006 – April 2008 I was involved in Water Management with the Department of Water Affairs and Forestry (DWAF, pre-2009). My duties included evaluation (evaluation, commenting and recommendation) of various regulatory required documents (such as Environmental Management Programs (EMPR's), Water Licence Applications and Environmental Impact Assessments), as well as the compilation of these documents. This work has been done for waste water management, mining and industrial sectors, as well as for private developers (e.g., residential) and business. In addition, as I have graduated in an Environmental Field (Zoology, specifically marine pollution) I have a great understanding of the water related environmental systems.

From May 2008 till January 2018, I have worked as an Environmental Consultant at the firm M2 Environmental Connections (MENCO). During this time, I was assisting Prescali Environmental Consultants with various projects focusing on auditing, environmental impact assessments, environmental management plans, water use licence applications and related aspects. As of February 2018, I am full time employed by Prescali and have increased the number of training sessions that I have presented relating to Environmental Legal Awareness and ISO14001. During my time at Menco and Prescali I have gained experience in the mining, industrial, health and development sectors.

In addition to the above, I have experience in an agricultural (game) field, for work that I did for the Terrestrial Ecological Research Unit at the then University of Port Elizabeth. Another speciality area is waste management and I have drafted waste management reports, classification reports as well sewage management reports.

Since I passed the ISO14001: 2015 Lead Auditor Exam through PECB in 2018, I have started to accumulate hours auditing this Management System and found it a very rewarding field as I can implement all the experience that I have gained throughout the years in determining conformance to the system. As a certified PECB Trainer for ISO14001: 2015 I have also been approached to conduct training on the ISO14001: 2015 standard and on Environmental Law (South Africa) providing me the way to share the experience that I have with other parties and thus fulfilling one of my goals.

I also take pride in the fact that I am registered with the South African Council for Natural Scientific Professions (SACNASP) in the Ecological and Environmental Scientific fields and that I am a Member of the Water Institute of South Africa (WISA). I have also been registered as an Environmental Assessment Practitioner with the Environmental Assessment Practitioners Association of South Africa (EAPASA).

## Project Details

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### Scoping and EIA/EMP Reports

During the compilation of Environmental Impact Assessment and related Management Programmes for mines as part of the requirements of the Mineral and Petroleum Resources Development Act of 2002, the National Environmental Management Waste Act of 2008 as well as the National Environmental Management Act of 1997, the specialist investigations being conducted by various specialists needs to be interpreted in order to provide the correct relevant information through to the relevant authorities in order to make an informed decision. The following Environmental Impact Assessment and related Management Plans have been developed:

- 2009: Compiled the EIA and EMP for the mine as part of the Mining right conversion for the Buffelsfontein Sections: Samancor Western Chrome Mines
- 2009: Compiled the EIA and EMP for the mine as part of the Mining right conversion for the Mooinooi Sections: Samancor Western Chrome Mines
- 2009: Compiled the EIA and EMP for the mine as part of the Mining right conversion, also compiled the EIA and EMP for new mining right on additional properties. Portion 7 and 10 of Elandsfontein: Apollo Brick (Pty) Ltd
- 2009: Compiled the EIA and EMP for the mine as part of the Mining right conversion for the Elandsdrift Section: Samancor Western Chrome Mines

- 2011: Compiled an EIA/EMP for the operations: Hoyohoyo Mining (Pty) Ltd
- 2011: Compiled the Scoping and EIA/EMP Documents for the waste act application to re-use slag: IFMSA
- 2011: Compilation of an EIA/EMP for proposed coal mining activities: William Patrick Bower
- 2011: Compiled the EIA / EMP report for the NEMA applications: Virtual Consulting Engineers
- 2012: Drafted the EIA and EMP for the EMPR amendment as part of the Mining right conversion process: Coastal Fuels (Pty) Ltd
- 2013: Compiled the EIA/EMP documentation for the upgrade of the Waste Water Treatment works: Virtual Consulting Engineers
- 2013: Lannex Section: Drafted the scoping and EIA/EMP documents for the amendment of the existing mining rights: Samancor Eastern Chrome Mines
- 2021: Compiled the Tweefontein EIA/EMPr amendment and consultation report: Samancor Eastern Chrome Mines
- 2009: Drafted the Scoping Report for the EIA/EMP for Jagdlust Section: Samancor Eastern Chrome Mines
- 2011: Compiled the Scoping and EIA/EMP Documents for the waste act application to re-use slag: IFMSA
- 2013: Drafted the Scoping Report for the EIA/EMP for Tweefontein Section: Samancor Eastern Chrome Mines
- 2020: Compiled the Scoping report for the Eastern Chrome Mines TSF and WRD expansion project at Tweefontein: Samancor Chrome Ltd
- 2021: EIA/EMPr for the Tweefontein section amendment: Samancor
- 2022: EIA/EMPr for the West Block and Bunkers Project for the Vlakfontein Coal Mine: AEMFC (Gudani Consulting)

#### **Basic Assessments & Prospecting Right Applications**

Some of the smaller projects that only requires a Basic Assessment in terms of EIA Regulations as promulgated in terms of the National Environmental Management Act and Prospecting Right Applications that I have been part of includes:

- 2009: Conducted and compiled the Basic Assessment for the upgrade of the Waste water treatment works at the Nerston Port of Entry: Virtual Consulting Engineers
- 2018: Management of the BA Process for the proposed new kilns: Corobrik
- 2020: Compiled the Application form and the Basic Assessment Report (inclusive of EMPr) for the proposed pipeline between Lesedi and Mooinooi Sections: Samancor Chrome Ltd
- 2021: Compiled the Basic Assessment Report and Environmental Management Programme for the proposed pipeline between Lesedi and Mooinooi Sections: Samancor Chrome Ltd
- 2022: BAR for prospecting activities on various farms in the Limpopo Province: Sylvania Northern Mining
- 2022: BAR for prospecting activities on portion 2 of the farm Schaffhausen, Limpopo: Sylvania Northern Mining
- 2022: BAR for prospecting activities on various farms in the Northern Cape (Gloria project): Salene Manganese (Mera)

#### **WUL & IWWMPs**

As part of being in the consultancy industry, water assessments as part of applications for water use licences for a number of companies were conducted, which includes:

- 2009:IWWMP:Compiled the Integrated Water and Resource Management plan for the mine that was used as supporting information in the Water use licence application. Elandsfontein: Apollo Brick (Pty) Ltd
- 2009:IWWMP:Compiled the Integrated Water and Resource Management plan for the mine that was used as supporting information in the Water use licence application for the Nerston Port of Entry: Virtual Consulting Engineers
- 2009:IWWMP:Compiled the Integrated Water and Resource Management plan for the Twyfelaar Chrome mine: MTC Minerals / CMR
- 2009:WULA:Assisted with the finalisation of the application for a water use licence for the Rustenburg Waste Water Treatment works: SRK
- 2009:WULA:Water use licence application process for the Twyfelaar Chrome Mine: MTC Minerals / CMR
- 2010:IWWMP:Compilation of an IWWMP for the Water use licence process: Corridor Mining Resources
- 2010:IWWMP:Compiled a IWWMP for the operations: Hoyohoyo Mining (Pty) Ltd

- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for the Lannex Section's New Tailings dam: Samancor Eastern Chrome Mines
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for the Middelpunt mine (Mpumalanga) that was used as supporting information in the Water use licence application.: Ibhubesi Ore and Exploration (Pty) Ltd (Richmond Mining & Exploration)
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan small scale mining activities at Sefateng Chrome Mine: MTC Minerals / CMR
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for Andalusite Resource Maroeloesfontein Mine: Andalusite Resources (Pty) Ltd
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for the mine that was used as supporting information in the Water use licence application: Sky Chrome Mining (Pty)Ltd
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for the Buffelsfontein Sections: Samancor Western Chrome Mines
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for the Mooinooi Sections: Samancor Western Chrome Mines
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for the Sefateng Chrome mine: MTC Minerals / CMR
- 2010:IWWMP:Compiled the Integrated Water and Resource Management plan for the Imbabala Colliery: Altius 345 (Pty) Ltd
- 2010:IWWMP:Compiled the Integrated Water and Waste Management plan for the Buffelsfontein Section: Samancor Western Chrome Mines
- 2010:IWWMP:Compiled the Integrated Water and Waste Management plan for the Mooinooi Section: Samancor Western Chrome Mines
- 2010:WULA:Facilitated the Water use licence application process for the Maroeloesfontein operation: Andalusite Resources (Pty) Ltd
- 2010:WULA:Water use licence application process for the Buffelsfontein Sections: Samancor Western Chrome Mines
- 2010:WULA:Water use licence application process for the Middelpunt activities: Ibhubesi Ore and Exploration (Pty) Ltd (Richmond Mining & Exploration)
- 2010:WULA:Water use licence application process for the Mooinooi Section:Samancor: Western Chrome Mines
- 2010:WULA:Water use licence application process for the Sefateng Chrome Mine: MTC Minerals / CMR
- 2010:WULAR:Compilation of a WULAR for theWater use licence process: Corridor Mining Resources
- 2010:WULAR:Compiled the Integrated Water and Resource Management plan for Andalusite Resource Maroeloesfontein Mine: Andalusite Resources (Pty) Ltd
- 2011:IWWMP:Compiled the Integrated Water and Waste Management plan for the Millsell and Waterkloof Sections: Samancor Western Chrome Mines
- 2011:WQMR:Compiled the Water Quality Management Report as per the DWS guideline as part of the Water use licence: Virtual Consulting Engineers
- 2011:WQMR:Compiled the Water Quality Management Report as per the DWS guideline as part of the Water use licence: Virtual Consulting Engineers
- 2011:WULA:Water use licence application process for Millsell and Waterkloof Sections: Samancor Western Chrome Mines
- 2011:WULAR:Compilation of a WULAR for Section 21(c) and (i) activities for township development: Nungu Trading 691 (Pty) Ltd
- 2012:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Vesuvius SA
- 2012:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Samancor Eastern Chrome Mines
- 2012:IWWMP:Compiled the Integrated water and waste management plan for the Water use licence application: Samancor Eastern Chrome Mines
- 2012:WULA:Facilitated the Water use licence amendment process for the Maroeloesfontein operation: Andalusite Resources (Pty) Ltd

- 2013:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Samancor Eastern Chrome Mines
- 2013:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Phoenix Platinum
- 2013:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Chromex mining / Afarak / Ruuki
- 2013:WQMR:Compiled the Section 24(g) application documentation for the upgrade of the Waste Water Treatment works: Virtual Consulting Engineers
- 2013:WQMR:Compiled the Water quality management report for the upgrade of the Waste Water Treatment works: Virtual Consulting Engineers
- 2013:WQMR:Compiled the Water quality management report for the upgrade of the Waste Water Treatment works: Virtual Consulting Engineers
- 2013:WULA:Managed the Water Use Licence Application Process: Samancor Eastern Chrome Mines
- 2014:IWRMP:Updated the existing IWWMP and water use licence application, this included drafting water balances: Samancor Western Chrome Mines
- 2014:IWWMP:Compiled the IWWMP for the Water use licence amendment: Andalusite Resources (Pty) Ltd
- 2014:IWWMP:Drafted the IWWMP for the new Saldanha operations: AfriSam
- 2014:IWWMP:Updated the 2013 IWWMP report and drafted a Water balance for the licensee: IFMSA
- 2014:IWWMP:Updated the existing IWWMP and water use licence application, this included drafting water balances: Samancor Western Chrome Mines
- 2014:WULA:Facilitated and compiled additional documentation for the WUL submitted in 2008: Coastal Fuels (Pty) Ltd
- 2014:WULA:Facilitated the Water use licence amendment process for the Maroeloesfontein operation: Andalusite Resources (Pty) Ltd
- 2014:WULA:Managed the WULA process: AfriSam
- 2014:WULAR:Compilation of the Water Use Licence Application Report: AfriSam
- 2015:IWWMP:Compiled the Integrated Water and Waste Management plan for the Altona Smelter: Pan Palladium South Africa (Pty) Ltd
- 2015:IWWMP:Updated the IWRMP into the IWWMP format and applied for an amendment to the existing Water use licence: Elandsfontein Apollo Brick (Pty) Ltd
- 2016:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Pan Palladium South Africa (Pty) Ltd
- 2016:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Pan Palladium South Africa (Pty) Ltd
- 2016:IWWMP:Compiled the IWWMP for the Hacra PGE mining project: Hacra Mining and Exploration Company (Pty) Ltd
- 2016:IWWMP:Compiled the IWWMP for the Magnetite mining project: Hacra Mining and Exploration Company (Pty) Ltd
- 2016:IWWMP:Update of the IWWMP's for various sections into one document: AEMFC (Gudani)
- 2016:IWWMP:Updated the IWWMP: Phoenix Platinum
- 2017:IWWMP:Compiled the Integrated Water and Waste Management plan for the mine that was used as supporting information in the Water use licence application: Sky Chrome Mining
- 2017:IWWMP:Compiled the IWWMP report for the Jagdlust section: Samancor Eastern Chrome Mines
- 2017:IWWMP:Updated the IWWMP: Phoenix Platinum
- 2017:WQMR:Compiled the WQMR for the ERWAT Vlakplaats Water use licence amendment: Virtual Consulting Engineers
- 2017:WULA:Management of the Water use licence application process: Kingdom Development Company
- 2017:WULAR:Compiled the Water use licence application report for the Jagdlust section: Samancor Eastern Chrome Mines
- 2018:IWWMP:Annual update of the IWWMP for Phoenix Platinum: Phoenix Platinum
- 2018:IWWMP:Compiled the IWWMP for the Mooihoek Chrome Mine (BCM): Umnotho we-Sizwe Resources (Sail group)

- 2018:IWWMP:Compiled the IWWMP for the water use licence application: Glenover Phosphate
- 2018:IWWMP:General Authorisation report for the Hacra (HW Iron) Magnetite project: Hacra Mining and Exploration Company (Pty) Ltd
- 2018:WULA:Compiled and submitted the WULAR documentation that was submitted for the Mooihoek Chrome Mine Water integrated water use licence: Umnotho we-Sizwe Resources (Sail group)
- 2018:WULA:Compiled documentation for the WUL amendment of Phoenix (Borehole location change): Sylvania
- 2018:WULA:Drafted the WULAR documentation for the Mooihoek Chrome Mine Water use licence application for water from the Lebalelo water scheme: Umnotho we-Sizwe Resources (Sail group)
- 2018:WULA:Motivation and request for administrative changes to the Grasvally Chrome Mine WUL: Sylvania
- 2018:WULAR:Compiled the WULAR for the water use licence application: Glenover Phosphate
- 2019:WULA:Managed the eWULA process for the proposed smelter: Altona Smelting
- 2019: WULAR and WULA process for Sylvania Syl BH03 water use licence application
- 2021: IWWMP and WULA process for Salane Manganese's Macarthy mine, Northern Cape
- 2021: IWWMP: Annual update of the Lannex Section IWWMP: Samancor
- 2021: IWWMP: Annual update of the Lesedi Section (Phoenix) IWWMP: Sylvania
- 2021: IWWMP: update of the Mooinooi Section IWWMP for inclusion of the TSF expansion: Samancor
- 2021: WULAR: Mooinooi to Lesedi pipelines: Samancor

### **Closure Certificates, Rehabilitation Plans and Financial Provisioning**

Applications for Closure Certificates have been completed on a number of projects as well as the determination of the financial provisioning as defined within the Mineral and Petroleum Resources Development Act:

- 2020: Compiled a closure and rehabilitation plan for proposed prospecting activities: Salane Manganese
- 2012: Compilation of closure documentation for Paardeplaats: Coastal Fuels (Pty) Ltd
- 2012: Compilation of a closure plan for the Paardeplaats Section: Coastal Fuels (Pty) Ltd
- 2011: Calculated the closure quantum for the Elandsdrift Section as per the DMR guideline: Samancor Western Chrome Mines
- 2011: Calculated the closure quantum for the Millsell/Waterkloof Sections as per the DMR guideline: Samancor Western Chrome Mines
- 2011: Calculated the closure quantum for the Mooinooi Sections as per the DMR guideline: Samancor Western Chrome Mines
- 2011: Calculated the closure quantum for the Mooinooi, Millsell/Waterkloof, Elandsdrift and Buffelsfontein Sections as per the DMR guideline: Samancor Western Chrome Mines
- 2012: Calculated the closure quantum as per the DMR guideline: Porta Plant
- 2018: Annual update of the financial liabilities for all the Sylvania sites: Sylvania
- 2018: Annual update of the financial liabilities for Phoenix Platinum: Phoenix Platinum.
- 2009: Compiled the Emergency Rehabilitation Plan for the activities that occurred on the farm Middelpunt, Mpumalanga: Richmond Mining & Exploration
- 2015: Compiled a rehabilitation plan for the Witkranz colliery area: Coastal Fuels (Pty) Ltd
- 2018: Drafted the supporting documentation for the Mooihoek Chrome Mine Water use licence application: Rehabilitation strategy and Landscape Maintenance Plan: Umnotho we-Sizwe Resources (Sail group)
- 2018: Drafted the rehabilitation plan for the impacts on watercourses as a result of mining activities: Umnotho we-Sizwe Resources (Sail group)
- 2018: Annual update of the Rehabilitation Strategy and Landscape Maintenance Plan for Phoenix Platinum: Phoenix Platinum
- 2019: Amended the rehabilitation strategy: Phoenix Platinum
- 2018: Drafted the RSIP for Samancor Buffelsfontein East Section: Samancor Western Chrome Mines
- 2020: Compiled the Rehabilitation strategy and implementation for a new water use licence application: Samancor Chrome Ltd
- 2017: Compiled a rehabilitation plan for Meadowhurst: Nouvall Investments
- 2021: Compiled the Rehabilitation strategy and implementation for a new water use licence application: Samancor Chrome Ltd



- 2021: Compiled the Rehabilitation strategy and implementation for a new water use licence application: Samancor Chrome Ltd - Tweefontein
- 2021: Compiled the Rehabilitation strategy and implementation for a new water use licence application: Samancor Chrome Ltd - Lannex
- 2022: Decommissioning, Closure and rehabilitation plan (s) for Sylvania northern mining for the Big area application and for the Schaffhausen application in the Limpopo Province
- 2022: Decommissioning, Closure and rehabilitation plan for the Gloria Project: Salene Manganese
- 2022: Annual update of the Sylvania Lesedi (Phoenix) RSIP

### Performance Assessments/Audits

As part of the requirements of the Mineral and Petroleum Resources Development Act of 2002, the National Environmental Management Act, 1998 and the National Environmental Management: Waste Act, 2008, it is required by every mine / development to conduct an environmental performance assessment in order to ensure that the mine is complying with the relevant legislation as well as conforming to its approved Environmental Management Programme Report and licences. The following assessments have been conducted:

- 2010: Conducted the audit on the Environmental Authorisation for the Samancor Lannex New Tailings storage facility: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2011: Audit on the Environmental Authorisation for the Samancor Lannex New Tailings storage facility: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2011: Audit on the Environmental Authorisation for the Samancor Lannex New Tailings storage facility: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2011: Conducted an audit on the compliance with the requirements of the EMPR: IFMSA
- 2011: Conducted the External Water Use Licence audit for Apollo brick: ApolloBrick
- 2012: Tweefontein Section: Conducted an audit on legislative compliance of the mine (NEMA, NWA, NEMWA): Samancor Chrome Ltd: Eastern Chrome Mines:
- 2012: Conducted a legal audit in terms on NEMA and NEMWA on the section's activities for Lannex Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2012: Conducted an internal legal audit (NEMA/NEMWA) on the Doornbosch/Steelpoort sections activities: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2014: Conducted an external audit on the Mining right holder's compliance with the EMPR: Sky Chrome Mining
- 2015: Conducted an external audit on the Mining right holder's compliance with the EMPR: Sky Chrome Mining
- 2017: Conducted on audit on the compliance with the Environmental authorisation for the new tailings dam at Lannex: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2017: Conducted an audit to determine if Diesel tanks installation required an Environmental Authorisation: Sylvania Lannex Section
- 2017: Conducted a performance assessment on compliance with the Waste management licence for the new slimes dam: Samancor Chrome Ltd: Ferrometals
- 2017: Conducted a performance assessment on compliance with the Waste management licence for the new slimes dam: Samancor Chrome Ltd: Ferrometals
- 2017: Conducted a performance assessment on compliance with the Waste management licence for the Decommissioning of the Northern Slimes dam: Samancor Chrome Ltd: Ferrometals
- 2017: Conducted a performance assessment on compliance with the Waste management licence for the Decommissioning of the Various Slimes dams: Samancor Chrome Ltd: Ferrometals
- 2017: Conducted a performance assessment on compliance with the Waste management licence for the Slag dump: Samancor Chrome Ltd: Ferrometals
- 2017: Conducted a performance assessment on the EMPR for the tailings dam: Phoenix Platinum
- 2018: Conducted an audit and a performance assessment on the approved EIA/EMP: Matutu Clay mine (Pty) Ltd
- 2019: Conducted an audit and a performance assessment on the approved EIA/EMP: Bauba - Moeijelijk Chrome Mine: Bauba (sub-contracted by Red Kite)
- 2020: Assisted in the Performance assessment for Moeijelijk Chrome Mine: Bauba (sub-contracted by RedKite)
- 2020: Conducted an audit and a performance assessment on the approved EIA/EMP: Bauba - Moeijelijk Chrome Mine: Bauba (sub-contracted by Red Kite)

- 2020: Conducted the performance assessment on the approved EIA/EMP for the Vlakpoort Chrome mine: Destiny Springs Investments 11 (Pty) Ltd (subsidiary of Illitha Mining)
- 2020: Conducted the performance assessment on the approved EIA/EMP for the Macarthy Manganese Mine: Salene Manganese
- 2021: Thutsi Chrome Mine Performance assessment on approved EIA/EMPr
- 2022: Lannex Section TSF ROD audit for Samancor
- 2022: Moejelijk Chrome Mine Performance assessment on approved EIA/EMPr

A number of Water Use Licence (WUL) audits have been conducted at the following clients as per the requirements of their WUL. These audits are conducted in terms of the approved WUL issued by the Department of Water Affairs in order to ensure that the requirements within the WUL as well as the National Water Act of 1998 are met.

- 2011: Conducted a GN704 audit on the existing activities at the mine: Andalusite Resources (Pty) Ltd
- 2011: Conducted a GN704 audit on the existing activities at the mine: Andalusite Resources (Pty) Ltd
- 2011: Conducted the External Water Use Licence audit for Apollo Brick: Apollo Brick
- 2012: Conducted a legal audit on the compliance with the WUL for Lannex Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2012: Conducted an external audit on the licensee's compliance with the water use licence conditions for Lannex Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2012: Conducted an external audit on the licensee's compliance with the water use licence conditions for Doornbosch/Steelpoort: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2012: Conducted an external audit on the licensee's compliance with the water use licence conditions: IFMSA
- 2012: Conducted the External Water Use Licence audit for Apollo brick: Apollo Brick
- 2013: Conducted an external audit on the licensee's compliance with the water use licence conditions for Doornbosch/Steelpoort: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2013: Conducted an external audit on the licensee's compliance with the water use licence conditions for Lannex Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2013: Conducted an external audit on the licensee's compliance with the water use licence conditions: IFMSA
- 2013: Conducted an external audit on the Mining right holder's compliance with the EMPr: Sky Chrome Mining
- 2014: Conducted an external audit on the licensee's compliance with the water use licence conditions: IFMSA
- 2015: Conducted an external audit on the licensee's compliance with the water use licence conditions for Doornbosch/Steelpoort: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2015: Conducted an external audit on the licensee's compliance with the water use licence conditions for Lannex Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2015: Conducted an external audit on the licensee's compliance with the water use licence conditions: Phoenix Platinum
- 2015: Conducted an external audit on the licensee's compliance with the water use licence conditions: Apollo Brick (Pty) Ltd
- 2015: Conducted an external audit on the licensee's compliance with the water use licence conditions: Illitha Mining
- 2016: Conducted an external audit on the licensee's compliance with the water use licence conditions: Apollo Brick (Pty) Ltd
- 2016: Conducted an external audit on the licensee's compliance with the water use licence conditions: Phoenix Platinum
- 2016: Conducted the External Water Use Licence audit for Doornbosch/Steelpoort Section: Samancor Chrome Ltd: Eastern Chrome Mines
- 2016: Conducted the External Water Use Licence audit for Lannex Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2016: Conducted the External Water Use Licence audit for Mecklenburg: Afarak
- 2016: Conducted the External Water Use Licence audit for Spitskop Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2016: Conducted the External Water Use Licence audit for Tweefontein Section: Samancor Chrome Ltd: Eastern Chrome Mines:

- 2017: Conducted a Water use licence audit: Samancor Chrome Ltd: Ferrometals
- 2017: Conducted the External Water Use Licence audit for Doornbosch/Steelpoort Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2017: Conducted the External Water Use Licence audit for Lannex Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2017: Conducted the External Water Use Licence audit for Lwala Section: Samancor Chrome Ltd: Eastern Chrome Mines
- 2017: Conducted the External Water Use Licence audit for Spitskop Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2017: Conducted the External Water Use Licence audit for Tweefontein Section: Samancor Chrome Ltd: Eastern Chrome Mines:
- 2017: Conducted a performance assessment on the EMPR for the tailings dam: Phoenix Platinum
- 2018: Conducted an external audit on the licensee's compliance with the water use licence conditions: Brakkefontein Clay Products (PTY Ltd trading as Apollo Brick (Pty) Ltd
- 2018: Conducted an external audit on the licensee's compliance with the water use licence conditions: Sefateng Chrome Mine (Pty) Ltd: Red Kite Environmental Solutions (Pty) Ltd
- 2018: Conducted an external audit on the licensee's compliance with the water use licence conditions: Chevron SA – Millies
- 2018: Conducted an external audit on the licensee's compliance with the water use licence conditions: Omnia Fertilisers – Rustenburg: EOH
- 2018: Conducted an external audit on the licensee's compliance with the water use licence conditions: Omnia Fertilisers – Sasolburg: EOH
- 2018: Conducted an external audit on the licensee's compliance with the water use licence conditions: Grasvally Chrome Mine: Sylvania
- 2018: External Water Use Licence audit for the Kingdom Development Company
- 2018: Internal audit on the WUL for Phoenix Platinum: Phoenix Platinum
- 2018: Water use licence audit for Moeijelijk Mine: Bauba
- 2019 / 2020 / 2021: Assisted in conducted an external audit on the licensee's compliance with the water use licence conditions: Omnia Fertilisers – Sasolburg
- 2019: Assisted in conducting the WUL audit for Apollo Brick: Apollo Brick
- 2019: Assisted in conducting the WUL audit for Phoenix Platinum: Phoenix Platinum
- 2019 / 2020 / 2021 / 2022: Conducted an external audit on the licensee's compliance with the water use licence conditions: Bauba - Moeijelijk Chrome Mine: Bauba
- 2020 / 2022: Conducted an external audit on the licensee's compliance with the water use licence conditions: Grasvally Chrome Mine
- 2022: Conducted Water use licence compliance audits for the following licences as issued to Umgeni Water: Howick, Darvill, Mtwalume, Amanzimtoti, Hazelmere, Maphumulo, Ixopo, Umgeni Systems, Umzinto
- 2022: Conducted a water use compliance audit for Nouvelle investments Meadowhurst WUL
- 2022: Annual Water use licence audit for Andalusite Resources i.e ARM Andalusite on the Maroeloesfontein WUL

Environmental management frameworks:

- 2022: Assisted in compiling the EMZ and SEMP for the Capricorn District Municipality, Compiled the final EMF (Gudani)
- 2022: Compiled the EMZ and SEMP for the Vhembe District Municipality, compiled the final EMF (Gudani)

Other specialist reports:

- 2008: Water Balance: Determine the water requirements for the mine and detail the water balance as per the Department of Water Affairs requirements.: Ruighoek chrome mine
- 2009: Conducted the surface water assessment for the Twyfelaar Chrome Mine: MTC Minerals / CMR
- 2009: Water Balance: Drafted the water Balance for the Sefateng Chrome Mine.: MTC Minerals / CMR
- 2009: Water Balance: Drafted the water Balance for the Twyfelaar Chrome Mine.: MTC Minerals / CMR

- 2010: Conducted a surface water assessment at Imbabala Colliery: Altius 345 (Pty) Ltd
- 2010: Conducted a surface water assessment for the Klipfontein Colliery: Hoyohoyo Mining (Pty) Ltd
- 2010: Conducted the surface water assessment for the Fumani Mine: Corridor Mining Resources
- 2010: Conducted the surface water assessment for the Sefateng Chrome Mine: MTC Minerals / CMR
- 2010: Water and Salt Balance: Conducted a surface water assessment at Imbabala Colliery: Altius 345 (Pty) Ltd
- 2010: Water and Salt Balance: Drafted the Salt Balance for the Fumani Mine.: Corridor Mining Resources
- 2011: Surface water assessment: Conducted the surface water assessment for the proposed solar energy facility: ACED Renewables de Aar (Pty) Ltd
- 2011: Water and Salt Balance: Compiled the water and Salt Balance: Coastal Fuels (Pty) Ltd
- 2012: Surface water assessment: Compiled the surface water assessment and related impact prediction for the new mining activities: Samancor Eastern Chrome Mines
- 2012: Surface water assessment: Conducted a surface water assessment to determine impacts and current status: Polmaise Colliery Middelburg
- 2012: Surface water assessment: Conducted a surface water assessment and impact assessment for the proposed mine.: Samancor Eastern Chrome Mines
- 2012: Waste Management Plan: Compiled the waste management plan with classification for the new mining activities.: Samancor Eastern Chrome Mines
- 2012: Water and Salt Balance: Compiled the static water and salt balance for the proposed new mining activities: Samancor Eastern Chrome Mines
- 2012: Water and Salt Balance: Compiled the static water and salt balance for the existing operations.: Samancor Eastern Chrome Mines
- 2012: Water Balance: Compiled a water and salt balance as per the DWS requirements for the Colliery.: Polmaise Colliery Middelburg
- 2013: Surface water assessment: Conducted a surface water assessment and impact assessment for the proposed mine.: Samancor Eastern Chrome Mines
- 2013: Surface water assessment: Conducted the surface water impact and resource assessment for the proposed activities.: Chromex mining / Afarak / Ruuki
- 2013: Water Balance: Compiled a static water and salt balance as per the DWS requirements for the new mining activities.: Samancor Eastern Chrome Mines
- 2014: Surface water assessment: Compiled a surface water assessment of the rivers that could be impacted by the proposed expansion activities.: Vunene Mining
- 2014: Surface water assessment: Compiled a surface water assessment of the rivers that could be impacted by the proposed Iron Smelting Activities: Pan Palladium South Africa (Pty) Ltd
- 2014: Surface water assessment: Compiled a surface water assessment of the rivers that could be impacted by the proposed activities.: Pan Palladium South Africa (Pty) Ltd
- 2014: Surface water assessment: Conducted the surface water assessment for the Fumani Mine.: Corridor Mining Resources
- 2014: Surface water assessment: Short report on drainage channels at Mecklenburg: Chromex mining / Afarak / Ruuki
- 2014: Waste Delisting: Compiled documentation for the application to delist residue stockpiles: Andalusite Resources (Pty) Ltd
- 2014: Water Availability Opinion: Opinion on impacts of re-use of treated sewage effluent from Waterval WWTW if not released to surface water resource: Gudani Consulting
- 2014: Water Balance: Compilation of a static water balance report: Corridor Mining Resources
- 2014: Water Balance: Updated the 2013 IWWMP report and drafted a Water balance for the licensee.: IFMSA
- 2014: Water Balance: Updated the existing IWWMP and water use licence application, this included drafting water balances.: Samancor Western Chrome Mines
- 2014: Water Balance: Updated the existing IWWMP and water use licence application, this included drafting water balances.: Samancor Western Chrome Mines
- 2015: Surface water assessment: Assisted with the compilation of a surface water assessment of the rivers that could be impacted by the existing activities of Doornbosch/Steelpoort Section: Samancor Eastern Chrome Mines

- 2015: Surface water assessment: Compiled a surface water assessment of the rivers that could be impacted by the existing activities of Lannex Section: Samancor Eastern Chrome Mines
- 2015: Water Balance: Compiled the water balance report for the mine that was used as supporting information in the Water use licence application.: Pan Palladium South Africa (Pty) Ltd: PGE Project
- 2016: Waste Classification: Conducted a waste classification on waste generated by Joc Abrasives (sanding paper): Joc Abrasives
- 2016: Water Balance: Compiled the water balance report for the mine that was used as supporting information in the Water use licence application.: Pan Palladium South Africa (Pty) Ltd
- 2016: WCDMP: Compiled the WCDMP.
- 2017: Surface water assessment: Conducted a surface water impact assessment for the proposed Bauba operations (central, northern, southern and Waterkop clusters): Bauba (sub-contracted by Red Kite)
- 2017: Surface water assessment: Drafted the Surface water component for the Environmental Management Frameworks for the Vhembe District Municipality: Gudani Consulting
- 2017: Surface water assessment: Drafted the Surface water component for the Environmental Management Frameworks for the Capricorn District Municipality: Gudani Consulting
- 2017: Water Availability Opinion: Opinion on impacts of re-use of treated sewage effluent from Olifantsfontein WWTW if not released to surface water resource: Gudani Consulting
- 2017: Water Availability Opinion: Water Availability and impact of re-use of Treated Waste When not released into the water resource: Olifantsfontein and Waterval: Gudani Consulting
- 2017: Water Balance: Drafted the annual water balance for Moeijelijk Mine.: Bauba (sub-contracted by Red Kite)
- 2017: WCDMP: Annual update of the WCDMP for Phoenix Platinum
- 2017: WCDMP: Drafted the WCDMP for Samancor Buffelsfontein East Section
- 2018: Conducted the surface water and wetland assessment for the Zwartkopjies and Rietspruit Development (Edenpark) (Ekurhuleni Municipality): Gudani Consulting
- 2018: Surface water assessment: Compiled an aquatic assessment for the Northdene plot 3 development: Vaalplan Regional and Town planners (Wilgeblare Beleggings)
- 2018: Surface water assessment: Conducted a Surface water assessment for the proposed sand dredging in the Crocodile River: Gudani Consulting
- 2018: Surface water assessment: Conducted an Aquatic Assessment for the proposed sand winning activities in the Mokolo River: Gudani Consulting
- 2018: Surface water assessment: Conducted the Aquatic Assessment for the Small-Scale mining activities in the Klein Letaba River: Gudani Consulting
- 2018: Surface water assessment: Conducted the Desktop surface water assessment for the Tedstoneville development: Erf 853, Extension 1 (Ekurhuleni Municipality): Gudani Consulting
- 2018: Surface water assessment: Conducted the desktop surface water assessment for the Thaba Chueu mining right application: Gudani Consulting
- 2018: Surface water assessment: Conducted the desktop Surface water assessment for 7 Seas Capital Ventures (Granite mining) in the Western Cape: Gudani Consulting
- 2018: Surface water assessment: Conducted the desktop Surface water assessment for Highly Blue (Granite mining) in the North West: Gudani Consulting
- 2018: Surface water assessment: Desktop Surface water assessment for Palm Chrome on the farm Palmietfontein: Palm Chrome
- 2018: Waste Classification: Compiled the waste classification report: Glenover Phosphate
- 2018: Waste Classification: Conducted a waste classification on waste generated by Langpan Chrome mine: Langpan Chrome Mine
- 2018: Waste Classification: Conducted baseline waste classification for Mr Piet Greyling: Piet Greyling
- 2018: Waste Management ROD: Compiled the ROD application submitted to the DWS for the Waste management activities: Glenover Phosphate
- 2018: Water and Salt Balance: Conducted the water and Salt Balance report for Phoenix Platinum: Phoenix Platinum
- 2018: Water and Salt Balance: Drafted the wet season water and Salt balance for Moeijelijk Mine.: Bauba (sub-contracted by Red Kite)

- 2018: Water Balance: Compiled a static water balance for existing and proposed new activities: Umnotho we-Sizwe Resources (Sail group)
- 2018: Water Balance: Compiled the 2017 Water balance report for the Buffelsfontein East Section: Samancor Western Chrome Mines
- 2018: Water Balance: Compiled the static water balance for Venetia mine (2016/2017): Gudani Consulting
- 2018: Water Balance: Drafted the 2016/2017 water balance for Samancor Buffelsfontein East Section: Samancor Western Chrome Mines
- 2018: WCDMP: Annual update of the WCDMP for Phoenix Platinum
- 2018: WCDMP: Compiled the WCDMP for Buffelsfontein East
- 2018: WCDMP: Compiled the WCDMP for Venetia Mine
- 2019: Surface water assessment: Conducted a Surface water assessment for the proposed weir and pond: Gudani Consulting
- 2019: Surface water assessment: Conducted a Surface water assessment for the proposed cemetery: Gudani Consulting
- 2019: Surface water assessment: Conducted a Surface water assessment for the granite quarry: Gudani Consulting
- 2019: Surface water assessment: Conducted a Surface water assessment for the clay mine: Gudani Consulting
- 2019: Surface water assessment: Conducted a Surface water assessment for the proposed Lodge: Gudani Consulting
- 2019: Training: Compiled the presentation used for the Environmental training for Omnia Fertilisers Liquid and Blenders: Inlexo
- 2019: Waste Classification: Conducted a waste classification and risk assessment: Corobrik – various sites
- 2019: Waste Classification: Conducted a waste classification on waste generated by the Vlakpoort Chrome Mine: Afarak
- 2019: Waste Classification: Conducted a waste classification on waste generated by the Odendaalsrust operations: Corobrik
- 2019: Waste Classification: Conducted a waste classification on waste generated by the Driefontein operations: Corobrik
- 2019: Water and Salt Balance: Compiled the 2018-2019 water and salt balance report: Phoenix Platinum
- 2019: Water and Salt Balance: Compiled the 2018-2019 water and salt balance report: RedKite
- 2019: Water Balance: Compiled the Annual Water balance for Moeijelijk Chrome Mine: Bauba (sub-contracted by Red Kite)
- 2019: Water Balance: Compiled the dry season and annual water balance for the mine: RedKite
- 2019: Water Balance: Compiled the static water balance for Venetia mine (2017\_2018): Gudani Consulting
- 2019: Water Balance: Determined the static water balance for the proposed Lefa Colliery: ElementumS
- 2019: WCDMP: Compiled the 20180-2019 WCDMP report
- 2020: Surface water assessment: Compiled a Surface water description report for the Jannie mine near Polokwane: Gudani Consulting
- 2020: Surface water assessment: Conducted a desktop surface water assessment for a proposed Limestone, Clay, Shale and Quartsite mine: Gudani Consulting
- 2020: Surface water assessment: Conducted a surface water assessment for the proposed new Sabie Landfill site: Sabie: Gudani Consulting
- 2020: Surface water assessment: Conducted a surface water assessment for the proposed filling and Depo station near Musina: Gudani Consulting
- 2020: Surface water assessment: Conducted a Surface water assessment for the proposed TSF and WRD expansion for Eastern Chrome Mines: Samancor Chrome Ltd
- 2020: Surface water assessment: Conducted a Surface water assessment for Mofenyi Mining (Pty) Ltd Vermiculite mine: Gudani Consulting
- 2020: Surface water assessment: Conducted a surface water assessment report for the Lannex Section expansion: Samancor Chrome Ltd
- 2020: Surface water assessment: Conducted a surface water assessment for the proposed TSF expansion at Mooinooi section: Samancor Chrome Ltd

- 2020: Surface water assessment: Conducted a surface water assessment for the proposed Macarthy Mine EMP amendment project: Salene Manganese
- 2020: Waste Classification: Conducted a basic Waste classification for the Mooinooi Tailings: Sylvania
- 2020: Waste Management Plan: Compiled a Waste Management for the University of Mpumalanga, Mbombela campus.: Afroteq
- 2020: Water Balance: Compiled the wet and dry water balance for AEMFC - Vlakfontein Mine: AEMFC
- 2021: TC Smelters Water balance / Macarthy Mine Water balance
- 2021: Various Desktop surface water assessments compiled:
  - Vaalwater cemetery (Gudani Consulting)
  - Salene Manganese Zeerust / Groot Marico and Mankwe Prospecting application
  - Sable Granite (Gadani Consulting)
- 2021: Various Method Statements in support of a WUL:
  - Lannex / Tweefontein / Mooinooi: Samancor
- 2021: Various monitoring and audit plans:
  - Lannex / Tweefontein / Mooinooi: Samancor
  - Sylvania Lesedi
- 2021: Section 27 motivation reports for a WUL:
  - Salene Manganese Macarthy mine
  - Tweefontein: Samancor
  - Sylvania Lesedi
- 2022: Desktop surface water assessments: Madites coal / Regison Mining: Gudani
- 2022: Water balance updates and new reports:
  - Moejelijk Chrome Mine / Sefateng Chrome Mine / Sylvania Lesedi (phoenix)
- 2022: WCDMP: Update for Sylvania Lesedi (Phoenix) section

**ISO14001: 2015 Audits**

<b>Audit Outline</b>	<b>Organisation</b>	<b>Address</b>	<b>Contact person</b>	<b>Contact details</b>	<b>Type</b>	<b>Date</b>	<b>On site (day)</b>	<b>Off Site (day)</b>	<b>Role (L / A)</b>
ISO14001: 2015 2nd Party Audit log for Canon Sa	Arengo Plastics (Pty) Ltd	72 Regency Drive, Route 21 Corporate Park, Irene, 0157, South Africa	Riekie van den Bergh	+27 87 405 1818	Audit	07-Aug-18	2	1	Auditor
ISO14001: 2015 2nd Party Audit log for Canon Sa	Clearline Protection Systems	72 Regency Drive, Route 21 Corporate Park, Irene, 0157, South Africa	Riekie van den Bergh	+27 87 405 1818	Audit	13-Aug-18	2	0,5	Auditor
ISO14001: 2015 2nd Party Audit log for Canon Sa	Microtonix	72 Regency Drive, Route 21 Corporate Park, Irene, 0157, South Africa	Riekie van den Bergh	+27 87 405 1818	Audit	04-Oct-18	2	0,5	Auditor
Conducted a second party audit at Netcare Occupational Health and Travel Clinic in Boksburg.	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	25-Sep-19	1	0,5	Auditor
Conducted a second party audit at the Medicross Medical clinic in Benoni	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	30-Sep-19	1	0,5	Auditor
Conducted a second party audit at the Medicross Medical clinic in Silverton (Pretoria)	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	02-Oct-19	1	0,5	Auditor
Conducted a gap audit at Reinhardt transport an ISO14001: 2015 certified company	Reinhardt Transport Group	29 Station Avenue, Pretoriusstad, Nigel, Gauteng	Johan Theron	+27 82 884 9402	Audit	11-Oct-19	1	0,5	Auditor
Conducted a second party audit at the Medicross Medical clinic in Randburg	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	22-Oct-19	1	0,5	Auditor
Conducted a second party audit at the Medicross Medical	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	13-Nov-19	1	0,5	Auditor



Audit Outline	Organisation	Address	Contact person	Contact details	Type	Date	On site (day)	Off Site (day)	Role (L / A)
clinic in Kembirch (Ekurhuleni)									
Conducted a second party audit at the Medicross Medical clinic in Rustenburg	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	28-Nov-19	1	0,5	Auditor
Conducted a second party audit at Netcare Occupational Health and Travel Clinic in Boksburg.	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	06-Dec-19	1	0,5	Auditor
Conducted a second party audit at Omnia Fertilisers - Sasolburg - Railway	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	20-Feb-20	1	0,5	Auditor
Conducted a second party audit at Omnia Fertilisers - Dryden	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	23-Feb-20	2	0,5	Auditor
Conducted a second party audit at Omnia Fertilisers - Sasolburg - Mechanical North	Inlexo Innovative solutions	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	03-Mar-20	1	0,5	Auditor
Conducted a Stage 1 Audit at Masmagnet	PECB	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	19-Apr-21	1	1	Auditor
Conducted a Stage 2 Audit at Masmagnet	PECB	PO Box 76391, Lynnwoodridge, 0040	Riekie van den Bergh	+27 82 552 3659	Audit	21-Apr-21	2	1	Auditor
Conducted a Stage 1 Audit for FullServe	Prescali	N/A	Elaine van der Linde	+27 12 543 3808	Audit	12-Oct-21	0	1	Auditor

# Short Resumé

Elaine van der Linde

## Personal Data

Identity Number      771224 0049 083  
Sex                      Female  
Nationality            South African  
Language Skills      Afrikaans & English (speak, read and write)

## Educational Qualifications (higher)

Name of Institution	Degree Obtained	Dates Attended
University of the Free State, RSA	Masters in Environmental Management	2004 – 2005
University of Pretoria, RSA	B.Sc (Hons) Engineering Geology	1999
University of Pretoria, RSA	B.Sc Geology	1996 – 1998
University of South Africa	B. Com Business Management	2003 – 2009

## Professional Registrations

Registration/Licensing Body	Type of Registration	Dates Obtained
International Register of Certified Auditors (IRCA)	Environmental Lead Auditor 2004/2015 Certificate number 01200720	April 2012
Exemplar Global (previously RABQSA International, Inc)	Environmental Lead Auditor EMS Certificate number 115197	June 2012
Professional Evaluation and Certification Board (PECB)	Environmental Lead Auditor Certificate number EMLA1010466-2019-03	March 2016
Environmental Assessment Practitioner Association of South Africa (EAPASA)	Environmental Assessment Practitioner Number 2020/2414	January 2021
The South African Council for Natural Scientific Professions	Professional Natural Scientist (Pr.Sci.Nat. number 400219)	August 2005
Geological Society of South Africa (GSSA)	Member Membership number 965302	September 2004
South African Institute for Engineering & Environmental Geologists	Member Membership number 07/236	February 2009
Ground Water Division of the GSSA	Professional Member Membership number 105	October 2009
Water Institute of South Africa	Member Membership number 39303	July 2019

## Professional Experience

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Period: January 2000 – August 2002  
Company Name: Department of Water Affairs and Forestry – Regional Office  
Post: Water Pollution Control Officer (Water Quality)  
Job Description : Implementation of Catchment Management Strategies through the establishment of Catchment Management Agencies. The processing of applications for water use licensing in terms of the Water Use Authorisation Registration and Management System. Handling inquiries / complaints from the public pertaining to water quality issues. Evaluation of Environmental Management Programmes (EMP's) and Environmental Impact Assessments (EIA's) for mines and industries. Co-ordination of sampling programmes in the catchment and setting of water quality objectives for water resource in the catchment. Assisted with the testing, deployment and implementation of the Employee and Forum Structures as well as the Address Module of the WMS system. Formulate, implement and guide groundwater assessment, exploration, development and management programmes. Plan and oversee the implementation of groundwater monitoring and information systems.

Period: September 2002 – February 2004  
Company Name: Department of Water Affairs and Forestry – National Office  
Post: Senior Geohydrologist (Groundwater Resource Management)  
Job Description: Development of policies, strategies & tools for groundwater as part of Integrated Water Resource Management in terms of the National Water Act, 1998 (Act 36 of 1998). Establishment and support of Water Management Institutions in Water Management Areas. Ensure protection of groundwater resources and minimization of impacts of waste and land based activities on water resources. Support policy development for protection of water based ecosystem. Engage in development of classification system for groundwater resources. Develop strategies and tools to conserve & enhance available water resources in a catchment, including the use of artificial recharge of groundwater resources and for exceptional water use. Development of guidelines and tools to implement the Groundwater Quality Management Strategy. Ensuring that groundwater is adequately addressed in the Catchment Management Strategies of CMA's. Development of capacity for groundwater resource management within the management hierarchy of national, catchment and water user association levels.

Period: February 2004 – February 2006  
Company Name: Groundwater Consulting Services (Pty) Ltd  
Post: Unit Manager: Water Use Management  
Job Description: Ensure that Water Use Licenses are done to standard for clients and that approval is obtained from Department of Water Affairs and Forestry in an efficient time span. Compilation of Integrated Water and Waste Management Plans for clients to assist in their Water Use License Applications. Assist in the establishment of Water User Associations in terms of the National Water Act of 1998 (Act 36 of 1998). Assist the Department of Water Affairs and Forestry in various evaluations of documentation presented to the Department in a professional manner. Assist the Department of Water Affairs and Forestry in achieving the validation and verification process in terms of the National Water Act of 1998 (Act 36 of 1998). Standard Environmental Management Programme Auditing and Due Diligence Reporting in terms of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

Period: March 2006 – February 2008  
Company Name: M<sup>2</sup> Environmental Consultants (Pty) Ltd  
Post: Senior Environmental Consultant  
Job Description : Compilation of and peer review of Environmental Management Programme Reports according to the requirements of the Department: Minerals Resources. Compilation of and peer review of Scoping and Environmental Impact Assessment Reports according to the requirements of the Department: Environmental Affairs and Tourism. Ensure that Water Use Licenses are done to standard for clients and that approval is obtained from Department of Water and Sanitation in an efficient time span. Compilation of and peer review of Integrated Water and Waste Management Plans for clients to assist in their Water Use License Applications. Assist the Department of Water and Sanitation in the compilation of Water Use Licenses in relation to the requirements of the relevant legislation. Development of Rehabilitation Plans in order to ensure that the financial provisioning as well as future rehabilitation of various projects is conducted in relation to the requirements as set out Nationally as well as Internationally. Environmental Management Programme Auditing in terms of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and ISO 14001 principles. Environmental audits in terms of the National Environmental Management Act 1998 (Act 107 of 1998). Ensure that all projects are executed in accordance with contract specifications within the specified time frame, and in compliance with all legal requirements, thus providing quality service and documentation which is of exceptionally good value and satisfaction to our clients. .

Period: March 2008 – Present  
Company Name: Prescali Environmental Consultants (Pty) Ltd  
Post: Managing Director  
Job Description : Managing cash flows of company in accordance with the Companies Act. Compilation of and peer review of Environmental Management Programme Reports according to the requirements of the Department: Minerals Resources. Compilation of and peer review of Scoping and Environmental Impact Assessment Reports according to the requirements of the Department: Environmental Affairs and Tourism. Ensure that Water Use Licenses are done to standard for clients and that approval is obtained from Department of Water and Sanitation in an efficient time span. Compilation of and peer review of Integrated Water and Waste Management Plans for clients to assist in their Water Use License Applications. Assist the Department of Water and Sanitation in the compilation of Water Use Licenses in relation to the requirements of the relevant legislation. Development of Rehabilitation Plans in order to ensure that the financial provisioning as well as future rehabilitation of various projects is conducted in relation to the requirements as set out Nationally as well as Internationally. Environmental Management Programme Auditing in terms of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and ISO 14001 principles. Environmental audits in terms of the National Environmental Management Act 1998 (Act 107 of 1998) and ISO 14001 principles. Water Use Licence Audits in terms of the National Water Act of 1998 (Act 36 of 1998) and the relevant issued Water Use Licence. Waste Licence Audits in terms of the National Environmental Management Waste Act of 2008 (Act 59 of 2008) and the relevant issued Waste Management Licence. ISO14001:2004 as well as ISO14001:2015 Audits in relation to the requirements of ISO19011 as external, 3rd Party auditor within a number of scopes/industries for a number of International Certification Bodies. Provide environmental specific training to various sectors with regards to the legal requirements as specified within the South African legal context Provide training in terms of ISO14001:2004, ISO14001:2015, and Introduction to Environmental Management. Ensure that all projects are executed in accordance with contract specifications within the specified time frame, and in compliance with all legal requirements, thus providing quality service and documentation which is of exceptionally good value and satisfaction to our clients. Managing all aspects of quality, health and safety within the company through the development of a quality and health and safety policy, procedures, and risk assessments. Ensure workers' health and safety by providing information, instructions, training, and supervision.

## ShortResumé

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I, Elaine van der Linde, the duly appointed Managing Director of Prescali Environmental Consultants (Pty) Ltd, have been involved in a range of environmental related studies for the past 20 years with specialisation in environmental project management and environmental auditing. I have obtained relevant experience in environmental management and also have extensive experience in surface and groundwater quality, especially water quality management, water quality monitoring and water quality assessment as obtained at the Department of Water Affairs and Forestry. I was also responsible for the groundwater section of the implementation of the DANIDA funded project related to Integrated Water Resource Management Strategies and Guidelines to promote Sustainable Integrated Catchment Management within various parts of the country. The main aim of the project was to consider key concepts, namely equity, economic efficiency and sustainability as well as basic guiding principles within the implementation of the said guideline document in the catchments. Some of my activities included the assessment and review of the guideline documents, mechanisms for integration that has been introduced by the project, stakeholder participation and integration with other related projects within the specified areas

Since 2004 I have been in private consulting where my main fields of professional activity are in environmental management related projects and auditing (ISO 14001). These types of projects include water management plans, water use license applications, due diligence assessments, basic assessments, environmental impact assessments, environmental management plans, performance assessment, financial provisioning and auditing. These projects usually require detailed project management and especially time and financial management. I have managed large multi-disciplinary teams and delivered the required documentation to national standards. I also have knowledge of legal terminology, legal documents, legal processes and legal strategy relating to the various types of environmental applications that are made to the various Government Departments.

For a period of approximately 8 years (2008 – 2015) I have assisted the Department of Water and Sanitation (DWS) through the Implementing Agent, Rand Water with the implementation and management of the Harties *Metsi a Me* Project of the Hartbeespoort Dam. I was responsible to co-ordinate and oversee the development of the business plan, addenda to the business plan, preparation of Project Execution Plans, Project Strategy & Management Plans, Project Reports (including Planning, Pre-Feasibility, Feasibility and Implementation where appropriate) and related

documentation. Some of my main tasks within this project included the Business Plan and addendums in terms of the requirements of the DWS. Stakeholder involvement and buy-in support, i.e. other government authorities and Interested and Affected Parties and review processes will be ensured. Progress reporting and Project Co-ordination in terms of progress deliverables, project scheduling and financial progress (including invoicing) as well as annual reporting. This includes regular reporting in terms of progress deliverables, project scheduling and financial progress (including invoicing) as well as annual reporting

Having completed and obtained the required SETA courses (US 115753 & US117871) in order to be able to conduct and assess training, assistance has been provided to a number of third party companies in providing training related to ISO14001:2004 and ISO14001:2015 as well as training with regards to Introduction to Environmental Management as well as more specific detailed environmental management training, i.e. Environmental Management Legislation of South Africa.

I am self-disciplined and have a desire to make a difference, be it working in a team or as an individual. I thrive on hard work being my motivator to meet my own high standards. I believe that confidence can be acquired through skill, experience and positive affirmation. I believe my integrity helps to build trust, allows me to influence others, sets and to maintain high standards and also builds my reputation as one who can be relied on. I believe that to make true progress towards a more sustainable future, society needs to be as open, honest and transparent as possible.

Having been appointed as Managing Director of Prescali Environmental Consultants (Pty) Ltd since 2008 has provided me with the necessary leadership skills, the ability to cope with long hours and hard work, and the inner resources to deal with stress and risk-taking. They also include the ability to build and manage our team of consultants in order to provide a cost-effective service to our clients and promote a realistic strategy with measurable targets.

## ProjectDetails

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### EIA/EMP Reports

During the compilation of Environmental Impact Assessment and related Management Programmes for mines as part of the requirements of the Mineral and Petroleum Resources Development Act of 2002, the specialist investigations being conducted by various specialists needs to be interpreted in order to provide the correct relevant information through to the relevant authorities in order to make an informed decision. The following Environmental Impact Assessment and related Management Programmes have been developed:

- Sylvania Minerals: Mooiooi Operations (February 2009),
- Sylvania Minerals: Steelpoort Operations (March 2009),
- International Ferro Metals (SA) (Pty) Ltd (November 2009),
- Sylvania Minerals: Lannex Operations (May 2010),
- Sky Chrome Mining (November 2010),
- Pan Palladium: Volspruit Project (April 2012),
- Sylvania Minerals: Tweefontein Operations (September 2012),
- Chromex Mining: Mecklenburg Operations (May 2013),
- Ironveld: Hacra Platinum Mine (November 2013),
- Memor Mining: Langpan (July 2014),
- Ironveld: Hacra Iron Mine (July 2014),
- Tjate Platinum Mining (July 2014),
- Ironveld: Iron Mine (October 2014),
- Afarak SA Mining: Vlakpoort (January 2015),
- Pan Palladium: Platinum Mine (May 2016),
- Grasvalley Chrome Mine (December 2016),
- Illitha Mining: Stellite Chrome Mine (June 2017),
- Corobrik: Driefontein expansion (June 2018) (Review),
- Galileo Resources: Glenover Phosphate Mine (April 2018) (Review),
- Sail Group: Black Chrome Mine (May 2018) (Review),
- Phokothaba Platinum: Smokey Hill (November 2019) (Review),

The following Environmental Impact Assessment and related Management Plans have been developed in terms of the National Environmental Management Waste Act of 2008 as well as the National Environmental Management Act of 1997:

- North West Recycling (June 2009);
- Sylvania: Lannex Tailings Dam (July 2010);
- Phoenix Platinum: Buffelsfontein Tailings Dam (May 2013);
- Ironveld: Altona Smelter (March 2015);
- International Ferro Metals (SA) (January 2016).

### **Basic Assessments & Prospecting Right Applications**

Some of the smaller projects that only requires a Basic Assessment in terms of EIA Regulations as promulgated in terms of the National Environmental Management Act and Prospecting Right Applications that I have been part of includes:

- Apollo Brick: Springs (August 2008);
- Sylvania Minerals: Lannex Hazardous Chemical Installation (March 2009),
- Sylvania Minerals: Mooinooi Hazardous Chemical Installation (June 2009),
- Memor Marketing: Zilkaats Schietfontein Prospecting (February 2010);
- Sky Chrome Mining: Hazardous Chemical Installation (February 2011),
- Memor Marketing: Industrial Site on Haakdoordrift (August 2011);
- International Ferro Metals (SA) (Pty) Ltd: Hazardous Chemical Installation (November 2011);
- International Ferro Metals (SA) (Pty) Ltd: Co-Generation Plant (January 2012);
- Pan Palladium: Volspruit Prospecting (April 2012);
- Stonibut: Zilkaatsnek Prospecting (May 2012)
- Sky Chrome Mining: Road (October 2013),
- Ironveld: Non Plus Ultra Prospecting (October 2013);
- Afarak SA Mining: Vlakpoort (March 2014);
- African Spirit Trading: Firolaz prospecting (August 2014);
- African Spirit Trading: Papkuilfontein prospecting (October 2014);
- African Spirit Trading: VanDykSpruit prospecting (January 2015);
- Gransolar: IFMSA Solar panels (April 2015) (Review);
- Ironveld: EPIBEX Prospecting (November 2015);
- Ironveld: Luge Prospecting (December 2015);
- KMC Holdings: Vlakpoort Prospecting (November 2016);
- KMC Holdings: Haakdoordrift Prospecting (January 2017);
- Corobrik: Driefontein Expansion (June 2018) (Review);
- Estate d'Afrique: Road Extention (February 2020).

### **WUL & IWWMPs**

As part of being in the consultancy industry, water assessments as part of applications for water use licences for a number of companies were conducted, which includes:

- Aquarius Platinum: Marikana Platinum Mine (June 2004),
- Richard Bay Minerals: Zulti South (February 2005),
- Samancor Western Chrome Mines: Mooinooi Section (February 2005),
- Wakefield Investments: Middelburg Townlands Colliery (March 2005),
- Samancor Western Chrome Mines: Millsell Section (March 2005),
- Leeuwfontein Myne: Bankfontein Section (May 2005),
- Simmer and Jack Mines Limited: Transvaal Gold Mining Estates Limited (July 2005),
- Anglo Operation Limited: CBM Project (August 2005),
- Two Rivers Platinum (August 2005),
- Leeuwfontein Myne: Lakeside and Leeufontein Collieries (September 2005),
- Silicon Smelters (Pty) Ltd (November 2005),
- Afilease Gold and Uranium Resources: Afilease Uranium Mine (January 2006),
- Zincor a Division of Kumba Base Metals Limited (January 2006),
- Wonderstone Limited (January 2006),
- Assmang: BKM Mine (February 2006),
- Apollo Bricks: Olifantsfontein (February 2009),
- Sylvania Minerals: Lannex Operations (July 2010)

- SkyChrome Mining (August 2012),
- International Ferro Metals (SA) (Pty) Ltd (December 2011),
- Sylvania: Lannex Tailings Dam (July 2011),
- Sky Chrome Mining (July 2012),
- Chromex Mining: Mecklenburg (May 2013),
- International Ferro Metals (SA) (Pty) Ltd – Amendment (July 2013),
- Phoenix Platinum: Buffelsfontein Tailings Dam (July 2014) (Review);
- Ironveld: Hacra Iron Mine (July 2014) (Review),
- Afarak SA Mining: Vlakpoort (February 2015) (Review),
- Pan Palladium: Volspruit (February 2015) (Review);
- Ilitha Mining: Stellite Chrome Mine (March 2015) (Review),
- Apollo Bricks: Olifantsfontein (Update) (April 2015) (Review),
- Grasvally Chrome Mine (November 2015) (Review),
- Hacra Mining (December 2015) (Review),
- Pan Palladium: Platinum Mine (May 2016) (Review),
- Chromex Mining: Mecklenburg Operations (June 2016) (Review),
- Phoenix Platinum (Update) (September 2016 - 2018) (Review),
- De Beers Consolidated Mines: Venetia Mine (May 2018) (Review),
- Galileo Resources: Glenover Phosphate Mine (Current) (Review),
- Ironveld: Altona Smelter (Current) (Review),
- Sail Group: Black Chrome Mine (Current) (Review),
- Rooderand Chrome Mine (Current) (Review).

#### **Closure Certificates , Rehabilitation Plans and Financial Provisioning**

Applications for Closure Certificates have been completed on a number of projects as well as the determination of the financial provisioning as defined within the Mineral and Petroleum Resources Development Act:

- Sylvania: Samancor Operations Financial Provisioning (June 2008-2010);
- National Manganese Mines: Wolverand (November 2009);
- Memor Marketing: Langpan Prospecting Closure (September 2010);
- Apollo Brick: Delmas Closure (August 2011);
- Ilitha Mining: Stellite Chrome Mine Financial Provisioning (December 2011, March 2013, July 2014);
- Pan Palladium: Grasvally Rehabilitation Plan (June 2012);
- International Ferro Metals (SA) (Pty) Ltd: Rehabilitation Plan (May 2013);
- Sylvania: Samancor Operations Rehabilitation Plans (July 2013);
- Sylvania: Samancor Operations Financial Provisioning (June 2014-2019);
- Phoenix Platinum: Financial provisioning (June 2012, June 2016 - 2018);
- CMR Mining: Sefateng Prospecting Closure (October 2016);
- Chromex Mining: Mecklenburg Prospecting Closure (June 2017);
- National Manganese Mines: York (November 2016);
- Sail Group: Black Chrome Mine Financial Provisioning (April 2018);
- Matutu Clay Mine Financial Provisioning (December 2018).

#### **Performance Assessments/Audits**

As part of the requirements of the Mineral and Petroleum Resources Development Act of 2002, it is required by every mine to conduct an environmental performance assessment in order to ensure that the mine is complying with the relevant legislation as well as conforming to its approved Environmental Management Programme Report. The following assessments have been conducted at the following mines as per the requirements of the Mineral and Petroleum Resources Development Act of 2002:

- Anglo Operation Limited: CBM Project (November 2004, October 2005),
- International Ferro Metals (SA) (Pty) Ltd (December 2008 - 2012),
- Memor Mining: Langpan Section (March 2011 - 2013),
- Siphete Coal: Coastal Fuels Droogvalei and Paardeplaats Collieries (April 2011, February 2012)
- Sylvania Operations: Mooinooi, Millsell, Steelpoort, Doornbosch, Lannex (April 2011)
- Sky Chrome Mining (April 2012-2015),
- Purity Manganese Mines (July 2012)
- Destiny Spring Investments: Vlakpoort Section (September 2012),
- Ilitha Mining: Stellite Chrome Mine (March 2014),

- Pan Palladium: Zoetveld & Grasvally (April 2014),
- Chromex Mining: Mecklenburg Operations (June 2015),
- Platcro Minerals: Chemstof (May 2017),
- Grasvally Chrome Mine (July 2018),
- Mountain View Resources: Palmietfontein (October 2018) (Review),
- Matutu Clay Mine (December 2018),
- Sefateng Chrome Mine (December 2018),
- Phokathaba Platinum (Pty) Ltd (August 2019).

A number of Environmental Performance Audit Reports have been conducted at the following industries as per the requirements of their Environmental Authorisations:

- Sylvania Minerals: Lannex Operations (October 2010, May 2011, September 2011);
- Vus'ithemba Project Solutions cc: Piggery (November 2012, September 2013 and November 2015)

A number of Water Use Licence (WUL) audits have been conducted at the following mines as per the requirements of their WUL. These audits are conducted in terms of the approved WUL issued by the Department of Water Affairs in order to ensure that the requirements within the WUL as well as the National Water Act of 1998 are met.

- Apollo Bricks: Olifantsfontein (September 2011, August 2012, August 2013, October 2014, October 2015, October 2016, October 2017, October 2018, October 2019),
- Andalusite Resources: Thabazimbi (June 2011, September 2011, December 2011, January 2013, November 2014, December 2015, December 2016, December 2017, December 2018),
- Sedibeng Brewery (September 2011, November 2019),
- International Ferro Metals (SA): Mooinooi (June 2012, August 2013, August 2014),
- Omnia: Sasolburg (September 2013, November 2014),
- Omnia: Rustenburg (September 2013, November 2014),
- Stellite Chrome Mine: Rustenburg (May 2014),
- Ilitha Mining: Stellite Chrome Mine (October 2014, December 2015),
- Coastal Fuels (April 2015, November 2017),
- Vus'ithemba Project Solutions cc: Piggery (September 2013, November 2015)
- Phoenix Platinum (November 2017 - 2019) (Review),
- Grasvally Chrome Mine (March 2018, July 2019);
- Kingdom Development Company (August 2018) (Review);
- Phokathaba Platinum (Pty) Ltd (July 2018) (Review);
- The Kingdom Development Company (Pty) Ltd (August 2018) (Review);
- Bauba A Hlabirwa Mining Investments (August 2018 - 2019)
- Bauba A Hlabirwa Mining Investments (October 2018);
- Sefateng Chrome Mine (November 2018);
- Chevron South Africa (Pty) Ltd: Milly's Star Stop (December 2018) (Review);
- Sefateng Chrome Mine (December 2018) (Review);
- Eloff Sandwerke (April 2019);

In addition, a number of Waste Licence audits have been conducted at the following sewage treatment facilities as per the requirements of their Waste Licence in terms of the National Environmental Management Waste Act. These audits are conducted in terms of the approved Waste Licences issued by the Department of Environmental Affairs in order to ensure that the requirements within the Waste Licence as well as the National Environmental Management Waste Act of 2008 are met.

- Department of Public Works: Ncome Prison (March 2013),
- Department of Public Works: Ekuseni Prison (March 2013).





**Appendix 2: Attendance Register**

ATTENDANCE REGISTER  
Project: Sefateng Chrome Mine (EMPr + WUC)  
Date: 23/03/2023 Time: 08:00  
Location: Sefateng

P.O. Box 2544  
Montana Park  
0159  
Tel: +27 (0)12 543 3808  
Fax: +27 (0)86 621 0294  
E-mail: info@prescali.co.za



Name	Affiliation / organisation	Telephone	Email	Signature
Petra Erasmus	Prescali	012543 3808	petra@prescali.co.za	
Japie Steyn	MTC	082 060 996 5951	jaapie@mtcmining.com	
Nicole Upton	Red Kite	079 555 2433	nicole@redkiteconsulting.co.za	

PLEASE WRITE LEGIBLY TO ENSURE THAT WE WILL BE ABLE TO SEND MINUTES



### Appendix 3: List of documented evidence

- Dust monitoring:
  - SCM-Zwartkoppies AD December 2022
  - SCM-Zwartkoppies AD March 2023
  - SCM-Zwartkoppies Section AD Feb 2023
  - SCM-Zwartkoppies Section AD Jan 2023
- Surface and Groundwater monitoring:
  - 2610-2022 – DMRE submission
  - DWS POD Jan 23
  - DWS POD June 2022
  - POD DWS 14-10-2022
  - Sefateng (Zwartkoppies) – Groundwater monitoring report – 22 September 2022
  - Sefateng (Zwartkoppies) – Groundwater monitoring report – 28 December 2022
  - Sefateng (Zwartkoppies) – Groundwater monitoring report – 30 June 2022
  - Sefateng (Zwartkoppies) – Surface water monitoring report – 22 September 2022
  - Sefateng (Zwartkoppies) – Surface water monitoring report – 28 December 2022
  - Sefateng (Zwartkoppies) – Surface water monitoring report – 30 June 2022
  - V0014-02-2023
- Waste:
  - Ahoy Waste transporter certificate Ahoy enterprises (16768)
  - Sefateng august 2022 SDC
  - Sefateng February 2023 Safe disposal documents
  - Sefateng January 2023 SDC
  - Vlakfontein Landfill Licence (1)
  - Vlakfontein Landfill operating licence
- 20181213 – Sefateng surface and groundwater monitoring plan.pdf
- 20230117 – Sefateng Chrome Mine Jan23 Internal WUL Audit V.
- 20230227 – IAP Management Plan – Sefateng
- 20230228 – Sefateng BAP
- Absa
- Biodiversity monitoring – ECO 23-001
- Closure and rehabilitation plan – CP – SEFA-015/23.0.0
- December 2022 – ECO report Sefateng
- DWS POD Jan 23
- DWS Proof of submission – Watercourse audit
- February 2023 – ECO Report Sefateng
- Issues and complaints register
- IWWMP POD DWS (Nov2022)
- January 2023 – ECO report Sefateng
- PoD WULA IWWMP
- Proof of submission WUL docs
- RSIP – Sefateng Chrome Mine (March 2022)
- SANAS Certificate
- SAWIC registration 0 D16786-01
- SCM-SOP-011/ ENV\_Oil spill assessment



- SCM-SOP-017-Env Dust-silica management strategy\_R00
- Sefateng Chrome Mine Watercourse audit and rehabilitation plan
- Sefateng Erosion monitoring plan
- Sefateng IWWMP (Nov. 2022)
- Sefateng Mine April 2022 Environmental liability assessment
- SWMP (2020) update – combined report
- System malfunction register 0 Sefateng Chrome Mine
- Environmental Noise Monitoring Report Sefateng 2023