



KHWEZELA NORTH COLLIERY

Environmental Audit Report

Submitted as contemplated in section 24N (7) (d) of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and Regulation 34 under Part 3 of Chapter 5 of the amended Environmental Impact Assessment Regulations, 2014 (Government Notice No. 982) (EIA Regulations, 2014)

DMRE Reference No.:

MP 30/5/1/2/2/306 MR

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As of 7 June 2021, following the completion of the demerger of high-quality export thermal coal operations from Anglo American, Thungela has successfully listed on the Johannesburg and London stock exchanges. As such, we will now legally change our name from Anglo Operations Proprietary Limited ("AOPL") to Thungela Operations Proprietary Limited ("TOPL"). Thungela offers investors access to a high-quality thermal coal business with low cash cost and high-margin assets, as well as a strong balance sheet, underpinned by a robust environmental, social and governance ("ESG") framework. Thungela owns interests in and produces thermal coal predominantly from six collieries located in Mpumalanga, South Africa. The business address has changed to **25 Bath Avenue; Rosebank; 2196; South Africa** however, the specific mines addresses remain unchanged. It is important to note that the legal name change from Anglo Operations (Pty) Ltd to Thungela Resources (Pty) Limited will officially be effective early 2022.

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1. INTRODUCTION

Khwezela North Colliery is a business unit of Anglo-American Coal South Africa (A Division of Anglo Operations (Pty) Limited). Khwezela North Colliery is situated in the Witbank Magisterial District, and is served by the eMalahleni Local Municipality, which falls in the Nkangala District Municipality. It consists of three sections, namely the Kromdraai Section, Navigation Section and Navigation West Section.

Khwezela North Colliery has been granted various Environmental Authorisations (“EA”) and Environmental Management Programmes (“EMPr”) for the mining activities undertaken with the Mining Right areas of Kromdraai Section and the Navigation Section:

- Landau Colliery’s Environmental Impact and Management Programme dated August 2010 and approved on 3 October 2014 with DMRE reference number: MP 30/5/1/2/3/2/1 (306) EM.
- Landau Colliery Lifex Extension Project: EMP under the MPRDA (2002)” approved on 06 October 2016 with DMRE reference number: MP 30/5/1/2/3/2/1 (306) EM.
- Navigation Section Umlalazi West South Block Extension project - EMP (in terms of NEMA, 1998) in support of the “Application for environmental authorisation: reference number: 17/2/3N-363.
- Relocation of a dragline from the Kromdraai Section to Navigation Section of Anglo Operations (Pty) Ltd.’s Landau Colliery, Mpumalanga Province” with DMRE Ref. No.: (MP) 30/1/2/3/2/1 306 (EM).
- Environmental Authorisation for the Landau Colliery Lifex Extension Project with reference number: 17/2.3N-343.
- Landau Colliery’s installation of two 61 200 litre aboveground diesel tanks, and the construction of offices and toilets facilities granted on 4 February 2009 with DALA reference number: 17/2/1 /7 MP-35.”
- Environmental Authorisation: The Landau Colliery Navigation Section, Umlalazi West-South Block With reference number: 17/2/3N-363.
- Integrated Environmental Authorisation issued in terms of the National Environmental Management Act, 1998, (NEMA) for the relocation of a dragline excavator via gravel road from Kromdraai Section to Navigation Section of Landau Colliery and listed activities) distribution lines, development of dragline road construction through wetland, decommissioning of temporary road, residue deposit with reference number: (MP) 30/5/1/2/2 (306).

In terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (“**NEMA**”), the amended NEMA Environmental Impact Assessment Regulations, 2014 and the EMPr approval letters, Anglo Operations (Pty) Limited must assess its compliance with the conditions of the above mentioned EAs and EMPrs for its mining and associated activities at Khwezela North Colliery.

Anglo Operations (Pty) Limited appointed Geovicon Environmental (Pty) Limited to assess the compliance of Khwezela North Colliery’s mining operation against conditions/commitments of the EAs and the EMPrs issued and approved in terms of the NEMA and the MPRDA. This report was compiled

after completion of the initial and virtual environmental audit and is hereby submitted for review by the client and legal auditor.

2. LEGAL FRAMEWORK

2.1. NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998), AS AMENDED (“NEMA”)

Section 24N(7)(d) of NEMA requires that the holder and any person issued with an Environmental Authorisation must monitor and audit compliance with the requirements of the EMPr. Regulation 34 of the EIA Regulations, 2014 states that the holder of an EA must, for the period during which the EA and EMPr remain valid, ensure that compliance with the conditions of the EA and the approved EMPr is audited and that an environmental audit report, prepared by an independent person, is submitted to the relevant competent authority, which in the case of Khwezela North Colliery is the Department of Mineral Resources and Energy, Mpumalanga Regional Office. The above-mentioned environmental audit report must determine the ability of the approved EAs and EMPrs to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the mining operation on an ongoing basis and the level of compliance with the provisions of approved EAs and EMPrs.

With the amendment of the EIA Regulations, 2014, on 7 April 2014, Regulation 54A was introduced. Regulation 54A (2) of the EIA Regulations, 2014 which has also been amended¹, further states that: “Where a right or permit issued in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for –

(a) prospecting or exploration of a mineral or petroleum resource; or

(b) extraction and primary processing of a mineral or petroleum resource;

and the associated Environmental Management Programme or Environmental Management Plan approved in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) is still in effect after 8 December 2014, the requirements contained in Part 3 of Chapter 5 of these Regulations apply to such Environmental Management Programmes or Environmental Management Plans and the first environmental audit report must be submitted to the competent authority by a date to be published by Notice in the Government Gazette”.

Khwezela North Colliery’s approved EAs and EMPrs, as set out above, were valid after 8 December 2014. Therefore, the requirements of Regulation 54A (2) read with Regulation 34(1) of the amended EIA Regulations, 2014 are relevant to the operations.

3. SCOPE AND PURPOSE OF THE ENVIRONMENTAL AUDIT

The purpose of this assessment is to undertake an audit in terms of Section 34 of the NEMA in respect of the mine’s compliance with the following environmental authorisations and EMPrs –

Approved EMPrs:

- Landau Colliery’s Aligned Environmental Impact and Management Programme” dated August 2010 and approved on 3 October 2014 with DMRE reference number: MP 30/5/1/2/3/2/1 (306) EM.

¹ Government Notice R599 in Government Gazette 43358 of 29 May 2020

- Landau Colliery Lifex Extension Project: EMP under the MPRDA (2002)" approved on 06 October 2016 with DMRE reference number: MP 30/5/1/2/3/2/1 (306) EM.
- Navigation Section Umlalazi West South Block Extension project - EMP (in terms of NEMA, 1998) in support of the "Application for environmental authorisation: reference number: 17/2/3N-363.
- Relocation of a dragline from the Kromdraai Section to Navigation Section of Anglo Operations (Pty) Ltd.'s Landau Colliery, Mpumalanga Province" with DMRE Ref. No.: (MP) 30/1/2/3/2/1 306 (EM).

Approved EAs:

- Environmental Authorisation for the Landau Colliery Lifex Extension Project with reference number: 17/2.3N-343.
- Landau Colliery's installation of two 61 200 litre aboveground diesel tanks, and the construction of offices and toilets facilities granted on 4 February 2009 with reference number: 17/2/1 /7 MP-35."
- Environmental Authorisation: The Landau Colliery Navigation Section, Umlalazi West-South Block With reference number: 17/2/3N-363.
- Integrated Environmental Authorisation issued in terms of the National Environmental Management Act, 1998, (NEMA) for the relocation of a dragline excavator via gravel road from Kromdraai Section to Navigation Section of Landau Colliery and listed activities) distribution lines, development of dragline road construction through wetland, decommissioning of temporary road, residue deposit with reference number: (MP) 30/5/1/2/2 (306).

Copies of any of these documents are available on request.

The environmental audit was conducted to determine the level of performance against compliance of the mining operation with the provisions of the Approved EAs and EMPs. The audit was conducted to further determine the ability of the measures contained in the Approved EAs and EMPs to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with Khwezela North Colliery's mining operations and associated surface infrastructure and activities.

In view of the above, the scope of this compliance assessment is as follows:

- To report on the compliance of the mine with the conditions, commitments and/or mitigation measures in the Approved EMPs and EAs and the extent to which the avoidance, management and mitigation measures provided for in the Approved EMPs and EAs, achieve the objectives and outcomes of the Approved EMPs and EAs.
- To identify and assess any new impacts and risks arising from the Khwezela North Colliery mining activities;
- To evaluate the effectiveness of the Approved EAs and EMPs,
- To identify any inadequacies in the Approved EAs and EMPs, and

- To identify the need for any changes to the avoidance, management and mitigation measures provided for in the Approved EAs and EMPs.

4. METHODOLOGY ADOPTED IN PREPARING THE ENVIRONMENTAL AUDIT REPORT AND DECLARATION OF INDEPENDENCE

4.1. AUDIT TEAM

Auditor 1: Mr. Ornassis Tshepo Shakwane (Pr.Sci.Nat. & Registered EAP)

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Experience of the Auditor

Mr. O.T. Shakwane obtained his BSc (Microbiology and Biochemistry) from the University of Durban Westville in 1994, and completed his honours degree in Microbiology in 1995. Mr O.T. Shakwane has also completed short courses on environmental law, environmental impact assessment, environmental risk assessment and environmental management systems with a number of tertiary institutions. He has worked within the three state departments tasked with mining and environmental management i.e. Department of Water and Sanitation (Gauteng and Mpumalanga Region), Department of Mineral Resources (Mpumalanga Region) and Department of Agriculture, Conservation and Environment (Gauteng Region). Mr. Shakwane has been in the consulting field since 2004 and has undertaken environmental audits for mining operations similar to Khwezela North Colliery. Mr. Shakwane is one of the auditors that audited Khwezela North Colliery's compliance with their EAs and EMPs. Mr. Shakwane has been involved in the field of environmental auditing for the past sixteen years.

He is registered with the Environmental Assessment Practitioners Association of South Africa and South African Council for Natural Scientific Professions as an Environmental Assessment Practitioner and a Professional Natural Scientist in terms of section 24H of the National Environmental Management Act, (Act 107 of 1998) and section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), respectively. He is also a member of the International Association for Impact Assessment, South Africa.

Mr. Ornassis Tshepo Shakwane of Geovicon Environmental (Pty) Limited, hereby declares that he is an independent auditor and that Geovicon Environmental (Pty) Limited and himself have no business, financial, personal or other interest in this project in respect of which Geovicon Environmental (Pty) Limited is appointed. Furthermore, no circumstances exists that may compromise the objectivity of Geovicon Environmental (Pty) Limited, excluding fair remuneration for work performed in connection with this environmental audit.

Auditor 2: Miss Mamphedi Bathabile Mabogoane

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Experience of the Auditor

Ms. Bathabile Mabogoane obtained her Baccalaureus Technologiae (B-Tech) in Environmental Sciences at the Tshwane University of Technology in 2020. She started working as an intern at Shangoni Management Services, year 2017 specializing in conducting Waste Management Licence Audits, waste management related reports and Health, Safety and Environmental related aspects and Environmental related reports. She joined Geovicon Environmental (Pty) Ltd as a Junior Environmental Consultant in August 2018. She is currently appointed as the Environmental Consultant. Her responsibilities include but will be limited to: compilation of all documentation for mining rights, mining permits and prospecting right applications, compilation of Environmental Impact Assessment and Environmental Management Programs, compilation of Water Use Licence applications with Integrated Water and Waste Management Plans, conducting of Environmental audits, Integrated Water Use Licence Audits, conducting of Environmental inspections, compilation of environmental reports (EMPr, Scoping Reports, BARs, EIAs, Public Participation Reports), arrangement and attendance of Public Participation meetings with Interested and Affected Parties, conducting environmental audits and inspections at mining companies, compilation of Water Quality Reports and Environmental Audit Reports (EAR). She is also a member of the International Association for Impact Assessment, South Africa. Ms. Bathabile Mabogoane has been in the consulting field for a period of three years and has undertaken environmental audits for mining operations similar to Khwezela North Colliery. Ms. Bathabile Mabogoane is one of the independent auditors that audited Khwezela North Colliery's compliance with their EAs and EMPrs.

4.1 FREQUENCY OF REPORTING

Khwezela North Colliery is operated under EMPs approved in terms of NEMA and MPRDA and four Environmental Authorisations approved in terms of NEMA.

Khwezela North Colliery EMP approval letters for Landau Colliery Lifex Extension Project EMP and Landau Colliery's Aligned EMP indicate the auditing frequency as annually. Therefore, the required frequency for the above mentioned approved EMPs is annually.

In terms of regulation 34(2)(d) of the NEMA EIA Regulations "*the environmental audit report contemplated in sub-regulation (1) must be conducted and submitted to the competent authority at intervals as indicated in the environmental authorisation*". In the NEMA environmental authorisations, no auditing frequency was indicated. In view of the above and since the authorisations did not comply with the requirements of regulation 26 (e) of the NEMA EIA Regulations which requires an environmental authorisations to specify the frequency of auditing of compliance with the conditions of the environmental authorisation and compliance with the approved EMPs, the auditing interval for the approved EMPs for the Landau Colliery Navigation Section (Umlalazi West-South Block) and the Relocation of a Dragline from Kromdraai Section to Navigation Section of Landau Colliery and the auditing interval for the environmental authorisations for Landau Colliery Lifex Extension Project, Landau Colliery Navigation Section (Umlalazi West-South Block) and the Relocation of a Dragline from Kromdraai Section to Navigation Section of Landau Colliery, is therefore annually.

4.2 PERIOD THAT APPLIES TO THIS COMPLIANCE ASSESSMENT

The audit review period for this environmental audit report is March 2020 to March 2021.

4.3 PROCEDURE USED DURING THE COMPLIANCE ASSESSMENT

The following was used as a procedure for the compliance assessment i.e.:

- Desktop assessment of the approved Khwezela North Colliery EMPs, and NEMA EAs. The desktop assessment was used to list all commitments and conditions indicated in the EMPs and NEMA EAs. Also as part of the desktop assessment, we had access to previous audit reports in order to establish the "direction of travel" where possible (i.e. has the mine progressed or regressed in its compliance status).
- The Environmental Audit was conducted by reviewing and abstracting the commitments (management and mitigation measures) from the approved EMPs and conditions from the approved EAs in cases where the commitments had not been fulfilled, such has been indicated in this report. As described further below, we also had extensive electronic interviews with the relevant Khwezela North Colliery personnel and Anglo Operations Proprietary Limited head office officials. These interviews were held over a period of three days.
- To assess the compliance with the conditions and commitments of the EA and EMPs and to reach our findings, we conducted extensive interview with Khwezela North Colliery site personnel. We also reviewed comprehensive documentation, which was provided by Khwezela North Colliery on a collaboration platform.

- A site visit was scheduled and undertaken on the 15-16 of April 2021 to confirm the state of compliance Khwezela North Colliery.
- In addition to assessing the compliance to EMPs commitments and EA conditions, the adequacy of the information was also assessed through evaluating activities and verifying such against the descriptions and risk assessments provided in the EMPs, and whether location specific risks and the necessary specialist assessments had been considered.

4.4 EVALUATION CRITERIA USED DURING THE COMPLIANCE ASSESSMENT

Evaluation criteria used during the compliance assessment include the following:

- Are the measures and structures as indicated in the environmental management programme and NEMA Environmental Authorisations in place?
- Are the measures adequate and structures maintained, and at what frequency?
- Has the monitoring as indicated in the environmental management programme and NEMA Environmental Authorisations been conducted? (Data, reports).
- Is the reported frequency of the monitoring in accordance with the environmental management programme and NEMA Environmental Authorisations? (Reports)
- Determining whether any new measures are required to prevent or mitigate the existing environmental impacts and/or other potential impacts.

Evaluation of the appropriateness and adequacy of the environmental management programme and NEMA Environmental Authorisations included the following:

- Compliance with relevant laws pertaining to the environment.
- Compliance of mining and associated activities with the EMP and EA. (Is the mine conducting activities that are not indicated in the EMPs and the EAs?)

4.5 RATING OF FINDINGS

The compliance category was rated as indicated in the table below:

Compliance category	Findings
Condition/mitigation measure/commitment has been achieved with evidence provided in the form of a document.	Compliant
The failure to comply with, or satisfy the requirements of an applicable condition, commitment and/or mitigation measure. When site visits are finally conducted, non-compliances will include instances where although the current condition or mitigation measure has been achieved, there have been new impacts and risks arising from the activity; whether the current measures are effective and whether there are any shortcomings which	Non-Compliant

Compliance category	Findings
need to be address through changes in the systems or amendment of the EMPs.	
<p>This means:</p> <ul style="list-style-type: none"> The condition, commitment and/or mitigation measure is Not Applicable. A "Not Applicable" finding is also noted in events where such condition, commitment and/or mitigation measure is either obsolete, alternative effective measure is utilised or commitment and/or mitigation measure is not yet relevant but is still relevant for future activities. 	Not Applicable
The condition, commitment and/or mitigation measure that does not require any specific action.	Noted

5 ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

Reasonable attempts were made to verify comments made during interviews held with relevant Khwezela North Colliery personnel as well as the review of documentation, it is assumed that such comments and documents provided are a true and accurate reflection of the audit.

6 EMP_r RECOMMENDATION REPORT

Regulation 34(4) of the EIA regulation, 2014 state the following

Where findings of the Environmental Audit Report indicate:

- insufficient mitigation of environmental impacts associated with the undertaking of activity;
- insufficient levels of compliance with the EAs or EMP_rs and where applicable the closure plan;

the holder must when submitting the environmental audit report to the competent authority in terms of sub regulation (1), submit recommendations to amend the EA and/or EMP_r or closure plan in order to rectify shortcomings identified in the environmental audit report and such recommendations must have been subjected to a public participation process as agreed to by the competent authority.

Based on the findings of the audit, no recommendation is proposed.

7 RESULTS OF THE ENVIRONMENTAL AUDIT

The results of the Environmental Audit are given in the Tables below. The tables below outline the EMPs and the EAs of the authorised activities at Khwezela North Colliery.

7.1 LANDAU COLLIERY'S ALIGNED ENVIRONMENTAL IMPACT AND MANAGEMENT PROGRAMME" WITH DMRE REFERENCE NUMBER: MP 30/5/1/2/3/2/1 (306) EM.

NO.	ASPECTS	LOCATION AT KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Management measures for the operational phase							
Activity 1: Progressive development of opencast mining							
1.1.	Geology	All opencast mining areas	Continued drilling and blasting of the hard overburden to expose the underlying coal seams will permanently and progressively destroy the geological sequence of the overlying strata.	Minimisation.	Drilling and blasting will be conducted by a certified blasting technician where blasting techniques are localised to the footprint area of the boxcut only. However, while the footprint of the impact can be minimised, the destruction of the overlying strata is unavoidable.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.2.		Excelsior Block and Navigation West Section; North Block			Blasting techniques used will specifically take into consideration the nearby location of the adjacent residential areas to ensure that possible vibrations do not influence any buildings in terms of 1.3 cracks.		
1.3.		All opencast mining areas	The blasting of the coal seams might disrupt the underlying geology in the new opencast areas, if not appropriately mitigated.		Blasting will be conducted by a certified blasting technician in accordance with specialised and localised blasting techniques in order to prevent any possible impact on surrounding or underlying geological strata.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.4.	Topography	All opencast mining areas	The storage of topsoil, subsoil, non-carbonaceous overburden will result in topographical elevations (stockpiles) being created within the surface land use area, thereby altering the topography.	Avoidance	Where possible, subsoil and topsoil will be placed directly onto prepared rehabilitated opencast areas behind the active mining strip to minimise the volume of subsoil and topsoil that needs to be stockpiled.	Not Applicable	Mining activities are no longer undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.5.				Minimisation	Topsoil stockpiles will be limited to 3 m in height and will be vegetated to prevent erosion of the topsoil from occurring.	Compliant	<p><u>Excelsior Block:</u> One topsoil stockpile is located at Excelsior Block and it was confirmed during the site visit that the stockpile does not exceed the height of 3 meters. The stockpile is not vegetated since it will be utilised for the rehabilitation of the remaining mined out opencast pits. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.</p> <p><u>Navigation West Section: North Block:</u> According to the Land Management Plan (Umlalazi Topsoil and Overburden Stockpile Heights) provided for review during the audit period, four topsoil stockpiles are located within the North Block mining area and all stockpiles are vegetated. However, all stockpiles exceed the height of 3 meters. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.</p> <p><u>Kromdraai Opencast:</u> Topsoil stockpiles are located at the Kromdraai Opencast area and none of the stockpiles are vegetated and all stockpiles exceed the height of 3 meters. It must</p>

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
								be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.
1.6.						Subsoil and overburden stockpiles will be limited to 9 m in height.	Compliant	Navigation West Section: North Block: Four overburden stockpiles are located within the North Block mining area. None of the stockpiles exceed the height of 9 meters. Kromdraai Opencast: Overburden stockpiles are located at the Kromdraai Opencast area and it is only these stockpiles which were confirmed during the site visit that they exceed the height of 9 meters. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits. Excelsior Block: No subsoil and overburden stockpiles are located at Excelsior Block.
1.7.						Topsoil and subsoil stockpiles will be placed in pre-designated areas, with their footprint areas being minimised.	Compliant	According to the assessment of the Google Earth Imagery, layout plan and the Topsoil Balance (dated May 2020), all topsoil and subsoil stockpiles are located within the approved footprint area.
1.8.				The creation of the box-cuts will cause a change in the topography at the opencast mining area by forming depressions and altering the pre-mining surface elevations.	Minimisation	Opencast mining, and therefore the resultant topographical changes, will be confined to the approved pre-planned mining areas.	Compliant	According to the assessment of the Google Earth Imagery and the mines annual mining plan, it is evident that the opencast mining activities for Excelsior Block, Navigation West Section: North Block and Kromdraai Opencast were conducted within the approved footprint area. It must be noted that mining activities are no longer undertaken for the above-mentioned mining areas.
1.9.					Rectification	Rehabilitation of the opencast mining area will be conducted concurrently with mining. Open cuts will be minimised to between 3 and 5 cuts at any given time with successive cuts used to systematically backfill preceding cuts. This will minimise the size of the void at any point in time.	Not Applicable	Mining activities are no longer undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mining areas are under rehabilitation. Therefore, this EMP commitment is not applicable.
1.10								
1.11						Spoil areas will be levelled and profiled, while voids will be backfilled and profiled continuously and progressively as mining advances.	Compliant	It was confirmed during the site visit that all rehabilitated areas have been levelled and profiled and this was undertaken in accordance with the Landau Dozing Procedure (AATC016055) that presents the actions to be undertaken during spoil levelling and final topographical contouring in order to reduce impacts. Furthermore, it was confirmed during the site visit that water filled voids are available at the Kromdraai mining area and the Navigation West Section North Block. All voids situated at the North Block will be rehabilitated as part of the current rehabilitation activities. For Kromdraai mining section, it was confirmed that not all voids will be backfilled and profiled. This includes Ramp 5 located at the Central Block. An amendment application was submitted to the Department of Mineral Resources and Energy (DMRE) indicating that the commitments and closure objectives as stated in the EMP to backfill and re-slope Ramp 5 to achieve a free drainage topography cannot be achieved with the current shortfall of backfill material. Therefore, Ramp 5 will be sloped and remain as a depression. However, all remaining water filled voids will be backfilled as part of the planned rehabilitation activities.
						Suitable rehabilitation techniques will be employed for the backfilling of the opencast voids, so as to promote free-drainage, and the re-establishment of pre-mining drainage patterns, as far as practicable.	Compliant	According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update, rehabilitation techniques and methods are developed for the rehabilitation of voids by Khwezela North Colliery that is based on proven agricultural methodology. Kromdraai Opencast, Excelsior Mini-pit and Schoongezicht Mini-pit Truck and shovel and dragline an operation is deployed which allows con-current rehabilitation. According to the plan, It will not be possible to replace the pre-

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								<p>mining geological sequence since the stratigraphy will have been destroyed. However, the mine uses truck and shovel and dragline operations with the replacement of weathered material (subsoils and rock) up to 4 meters on top of the levelled spoils, where after the topsoil are placed to the required thickness. This allows the post mining surface to be profiled and facilitate surface water drainage as well as, limit the ingress of water into the spoils.</p> <p>Navigation West (Umlalazi) Mini-pit Rehabilitation was undertaken in sequential layers with carbonaceous material such as coal discard and carbonaceous overburden) at the bottom of the pit. The discard material was placed below the coal seam during the backfilling of the opencast voids to reduce the anticipated impacts on groundwater. Subsoil was placed at a minimum depth of 1m over (mechanically compacted) overburden where after topsoil was placed as the final substrate with a minimum thickness.</p> <p>Furthermore, since the mine is implementing a Dozing rehabilitation technique and is implementing a Dozing Procedure (dated December 2017) with the aim of rehabilitating the topography of the area by maximising the re-vegetation and free draining potential and minimising potential generation of erosion and water pollution. With regards to the Dozing Procedure, Khwezela North Colliery furthermore developed Dozing Standard (dated December 2017) for the purpose of ensuring that all dozing practices are conducted and supervised safely and efficiently so as not to cause harm and jeopardise the safety of employees and equipment involved in dozing operations.</p>
1.12						The final landscape configuration of the rehabilitated mined area will conform to the pre-planned post-topographical model, which has taken into account the depth of coal removed, the bulking ratio of the overburden replaced in the pit(s), and the Closure objectives for each mining area.	Compliant	Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit are under Rehabilitation. Khwezela North Colliery developed and is implementing a Dozing Procedure and Dozing Standard (dated December 2017) for ensuring that the rehabilitation of the areas ensures pre-planned topography. Furthermore, the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update, outlines method to be deployed during rehabilitation which takes into account the closure objectives of each mining area.
1.13.		Kromdraai opencast		The removal of the remaining coal pillars in the old underground workings through opencast mining, and the overlying geological strata will substantially reduce the risk of sinkholes in the mine boundary area and the associated biophysical and safety hazards of surface instability.	Enhancement	No mitigation is necessary. Opencast mining will alter the surface and underlying strata in the pre-designated mining areas, removing the sinkholes, thereby eliminating the associated safety and biophysical hazards. The change in topography would be further enhanced once rehabilitation of the mined out open voids has been completed.	Noted	Khwezela North Colliery takes note of this EMPr commitment. According to Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update, numerous incidents of subsidence have occurred prior and during the mining at Kromdraai Section and it is projected that more subsidence may occur in the future. After a fatality in January 2012 the mine started with a programme to reduce the amount of subsidence in advance of the mining window called "roughing up which is an opencast mining method. In managing this, Khwezela North Colliery further developed and is implementing a Stabilizing Potential Sinkhole Procedure and Manage Sinkhole Standard Procedure for the management of sinkholes.
1.14.	Soils	All opencast mining Areas		Removal of vegetation will expose soils to erosion forces such as wind and water.	Minimisation	The removal of vegetation will be restricted to the pre-designated mining areas only.	Compliant	According to the assessment of the Google Earth Imagery and the mine layout plan, removal of vegetation for Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit was conducted as per the approved footprint area. It must be noted that clearance of vegetation on the above mentioned areas is no longer undertaken and only rehabilitation activities are undertaken.
1.15.					Rectification	Unnecessarily exposed soil will be re-vegetated as soon as practicable, or where this is not	Compliant	No unnecessary exposed soils apart from the approved footprint areas were noted during the site visit. Khwezela North Colliery developed and is Implementing a Vegetation Monitoring Procedure which deals with requirements

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						possible or feasible, the soil will be stripped and stockpiled for later use during rehabilitation.		of the preparation of soil, maintenance of soil and vegetation, the establishment of vegetation, the production requirements of vegetation and monitoring and managing rehabilitated areas.
1.16.				Stripping and stockpiling of soils will cause a permanent loss of pre-mining soil distribution, structure, depth, volume and function.	Minimisation	Where possible, subsoil and topsoil will be placed directly onto prepared rehabilitated opencast areas behind the active mining strip to minimise the volume of subsoil and topsoil that needs to be stockpiled.	Not Applicable	Mining activities are no longer undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mining areas are under rehabilitation. Therefore this EMP commitment is not applicable.
1.17.						Stripping of topsoil and subsoil will be restricted to pre-designated mining areas, and will be stripped ahead of mining in such a manner that the mining window is minimised to between 3 and 5 open cuts.	Not Applicable	No stripping of topsoil and subsoil is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMP commitment is not applicable.
						Topsoil and subsoil will be stockpiled separately, according to the soil utilisation guide.	Not Applicable	It was confirmed during the site visit that the topsoil's and subsoils at Kromdraai open-cast mine are not separated. It must be noted that mining activities are no longer undertaken at Kromdraai mining area and no further stockpiling of topsoil and subsoil will be undertaken. The topsoil's and subsoils will be utilised for the rehabilitation of the mined out pits. Therefore, this EMP commitment is not applicable.
1.18.						Stockpiles will vegetated as soon as practicable to try and maintain the microbial components in the soils and minimize erosion.	Compliant	<u>Excelsior Block:</u> One topsoil stockpile is located at Excelsior Block and it was confirmed during the site visit that the stockpile is not vegetated since it will be utilised for the rehabilitation of the remaining mined out opencast pits. <u>Navigation West Section: North Block:</u> According to the Land Management Plan (Umlalazi Topsoil and Overburden Stockpile Heights) provided for review during the audit period, four topsoil stockpiles are located within the North Block mining area and all stockpiles are vegetated. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits. <u>Kromdraai Opencast:</u> Topsoil stockpiles are located at the Kromdraai Opencast area and all the stockpiles are vegetated. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.
1.19.						Soil stockpiles will not exceed 3 m in height in order to maintain optimal soil structure and function.	Compliant	<u>Excelsior Block:</u> One topsoil stockpile is located at Excelsior Block and it was confirmed during the site visit that the stockpile does not exceed the height of 3 meters. <u>Navigation West Section: North Block:</u> According to the Land Management Plan (Umlalazi Topsoil and Overburden Stockpile Heights) provided for review during the audit period, four topsoil stockpiles are located within the North Block mining area and all stockpiles exceed the height of 3 meters. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits. <u>Kromdraai Opencast:</u> Topsoil stockpiles are located at the Kromdraai Opencast area and all stockpiles exceed the height of 3 meters. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.
1.20.								
1.21.						Compaction of soils will be prevented by restricting movement of vehicles near	Compliant	It was confirmed during the site visit that all activities are undertaken within the approved footprint areas and no movement of vehicles on topsoil stockpiles was noted.

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1.22.					stockpiles and opencast areas to designated pathways. Furthermore, no vehicles will be allowed on the topsoil or subsoil stockpiles other than the equipment required for the reuse of the stockpiled topsoil for rehabilitation.		
					The conditions of the environmental Authorisation (under NEMA, 1998) granted to Landau Colliery for the storage of fuel above ground at the Navigation West Section will be adhered to.	Compliant	Khwezela North Colliery ensures implementation of the above ground storage tanks through the following: <ul style="list-style-type: none"> Conducting internal and external environmental audits to check compliance with the conditions of the environmental Authorisation. Monthly inspections to ensure that the activities associated with the above ground storage tanks are undertaken according to the environmental Authorisation. Furthermore, although non-compliances are identified from the audits conducted, action plans are compiled and implemented to ensure compliance with such specific condition in the EA.
123			Should a spill of hazardous materials (including fuel and chemicals) occur, the soil in the vicinity of the spill would become polluted, resulting in a change in the properties of the soil.	Avoidance Rectification.	Spillages of carbonaceous materials, hydrocarbons or other contaminating substances on soil will be prevented, but where such events do occur, the spilled material and affected soil will be cleaned up immediately in accordance with the Khwezela North Colliery Emergency Procedure, and the soil will be rehabilitated.	Compliant	Khwezela North Colliery developed and is implementing an Emergency Preparedness procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed: <ul style="list-style-type: none"> Oil and Silt Trap Procedure Hydrocarbon and Chemical Handling Procedure Incident Reporting Procedure From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by waste removal contractor. No spillages were noted during the site visit.
1.24.	Land capability	All opencast mining areas	The land capability will be impacted upon as the soil is progressively stripped in advance of mining. The land capability of the open pits will be limited to 'mining', until the pits have been rehabilitated, since all other land uses will temporarily cease.	Minimisation	Soil will be managed as stipulated in No.1.13 to 1.21 above, which will indirectly mitigate the impacts on land capability.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
1.25.	Land use		Due to the removal of soils and overburden, the pre-mining land use associated with each area to be disturbed by opencast mining will be altered to a mining land use, where the opencast pit is located, until the mined out voids are fully rehabilitated.	Minimisation	Soil will be managed as stipulated in No.1.13 to 1.21 above, which will indirectly mitigate the impacts on land capability.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
1.26.	Vegetation	Kromdraai opencast	Stripping of vegetation ahead of mining will result in the loss of good grassland of excellent grazing carrying capacity over a large part of	Minimisation	Vegetation stripping will be limited to areas where opencast mining will take place.	Not Applicable	According to the assessment of the Google Earth Imagery and the mine layout plan, removal of vegetation for Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit was conducted as per the approved footprint area. It must be noted that clearance of vegetation on the above mentioned areas is no longer undertaken and only rehabilitation activities are undertaken. Therefore, this EMPr commitment is not applicable.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			the Kromdraai opencast mining area.				
1.27.			Stripping of vegetation ahead of mining will result in the loss of pre-mining grassland that was already degraded or disturbed.	Minimisation	Vegetation stripping will be limited to areas where opencast mining will take place.	Not Applicable	According to the assessment of the Google Earth Imagery and the mine layout plan, removal of vegetation for Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit was conducted as per the approved footprint area. It must be noted that clearance of vegetation on the above mentioned areas is no longer undertaken and only rehabilitation activities are undertaken. Therefore, this EMP commitment is not applicable.
1.28.		Schoongezicht No.2 Seam mini pit	Opencast mining will require the prior removal of vegetation of the surface, which will contribute to the removal of the alien and invasive species that were present in the baseline environment.	Minimisation	The removal of alien and invasive species ahead of mining will contribute to the eradication of such species from the local region. During removal of the alien and invasive species, care will be taken to minimise the likelihood of seeds or vegetative parts of the alien plants being trapped in the soil layer and thereby being preserved as part of the seed bank in the stockpiled topsoil to be used for rehabilitation after mining.	Not Applicable	No mining activities are undertaken at Schoongezicht No.2 Seam mini pit. Mining of the mini-pit have ceased and the site is under rehabilitation phase and no removal of alien and invasive species is conducted, therefore this EMP commitment is not applicable.
1.29.		Navigation West Section; North Block	Most of the natural vegetation to be removed ahead of opencast mining was determined by a suitably qualified specialist to be of low sensitivity, with the exception of that in the pan and valley bottom wetland associated with the stream to the west of the Navigation West Section; North Block.	Minimisation	Vegetation stripping will be limited to areas where opencast mining will take place.	Not Applicable	According to the assessment of the Google Earth Imagery and the mine layout plan, removal of vegetation for Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit was conducted as per the approved footprint area. It must be noted that clearance of vegetation on the above mentioned areas is no longer undertaken and only rehabilitation activities are undertaken. Therefore, this EMP commitment is not applicable.
1.30.					The removal of the maize and concurrent rehabilitation of mined out voids to grazing will result in the rehabilitated opencast area becoming available for vegetation with grassland species, which will increase the species diversity and ensure that the rehabilitated area resembles the surrounding grasslands.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
1.31.			Natural vegetation identified in the baseline study as being of high sensitivity will be lost when the pan is mined out in the Navigation West Section; North Block.	Compensation	Ensure that the conservation management plan for the selected off-site sensitive landscape to be conserved is implemented efficiently, since the on-site pan will be destroyed.	Noted	According to the conservation management plan (dated 20 November 2019), implementation measures for alien vegetation management, fire management, vegetation management, game management and soil management must be undertaken for the selected off-set sensitive landscape areas. According to the action plan extracted from the Enablon system, implementation of the plan will commence on the 15 December 2021.
1.32.			Although no Threatened species were found during the Summer and late Summer Red Data surveys that were conducted at the Navigation West Section, it is possible that the identified Red Data	Avoidance Minimisation	Management of soil and surface water will contribute towards the minimisation of possible impacts on threatened species.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
					Conservation and research institutions such as the National Botanical Gardens and South African National Biodiversity	Not Applicable	According to the Biodiversity Action Plan (dated August 2012) that was conducted before commencement of the Navigation West Section (North Block), Kniphofia species were identified as species of special concern known to occur in the mining area. However, according to the Conservation Management Plan (dated


NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			species could occur (if they only flower in spring or early summer they would likely have been missed). Impacts on soil, land capability and vegetation could mean that potential habitat for Red Data specimens, or the specimens themselves (if present) would be lost or destroyed.		Institute in Pretoria will be contacted to collected plant material that may be of conservation, horticultural or research interest prior to the commencement of mining activities in any of the wetlands (e.g. a Kniphofia species, which is probably Kniphofia ensiifolia subsp ensiifolia but was not in flower at the time of the survey, was recorded in the marsh grassland vegetation unit near the unnamed tributary of the Grootspuit to the south east of the site).		November 2019), no Kniphofia species were identified for collection. Therefore no relocation was required and this EMPr commitment is not applicable.
1.33.					Conservation and research institutions such as the National Botanical Gardens and South African National Biodiversity Institute in Pretoria will be contacted to collected plant material that may be of conservation, horticultural or research interest prior to the commencement of mining activities in any of the wetlands (e.g. a Kniphofia species, which is probably Kniphofia ensiifolia subsp ensiifolia but was not in flower at the time of the	Not Applicable	Khwezela North Colliery confirmed that the mentioned species have not yet been identified, this EMPr commitment is not applicable.
1.34.		All opencast mining areas	Alien and invasive species tend to establish in disturbed surface areas, which will be abundant during opencast mining. Unless appropriately managed, it is likely that alien and invasive species will encroach into natural vegetation areas, and especially into areas that are newly disturbed or rehabilitated.	Avoidance	During removal of the alien and invasive species, care will be taken to minimise the likelihood of seeds or vegetative parts of the alien plants being trapped in the soil layer and thereby being preserved as part of the seed bank in the stockpiled topsoil to be used for rehabilitation after mining.	Not Applicable	No removal of the alien and invasive species was undertaken during the audit period, this EMPr commitment is not applicable.
1.35		All opencast mining areas	Coal dust fallout may affect the surrounding natural vegetation and may reduce the local species richness of plant communities by reducing the plants' capability to photosynthesise by coating the leaves of the plant and blocking out sunlight.		Implementation of dust control measures (refer to No.1.88) will indirectly minimise such impacts on surrounding vegetation.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

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1.36.	Animal Life	All opencast mining areas		The opencast mining activities may affect small mammals as these are often territorial and do not respond well to disturbance i.e. they move away from the zone of disturbance. It is thus unlikely that the opencast mining activities will result in a significant loss of animal life. It can be anticipated that species will migrate to adjoining areas that offer suitable habitat.	Minimisation	A walkover of the next open cut will be conducted ahead of the stripping of vegetation and topsoil to relocate any animals that have not migrated away, to suitable habitat elsewhere on site.	Not Applicable	No mining activities are to be undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit, hence no walkover of open cuts is required. Therefore, this EMPr commitment is not applicable.
1.37.				The removal of vegetation and soil will lead to the loss of habitat for faunal species, and the resultant temporary disturbance of animal life in the vicinity of the mine.	Minimisation	Activities will be limited to the pre-designated mining path and haul roads, and rehabilitation of mined out open pits will be conducted so that the mining window will be kept between 3 and 5 cuts.	Compliant	It was confirmed during the site visit and the approved mining and infrastructural layout plan that mining path and the haul roads are within the approved mining footprint area. Currently, Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit are under rehabilitation and no mining activities will be undertaken.
1.38.				Poaching is associated with an increase in human presence, And may contribute to the decrease in faunal presence near the mine.	Avoidance	The mine's environmental awareness programme will continue to educate employees and contractors of the ecological value of animal life and the necessity for a balance between development and conservation, and to inform them of the mine's no-poaching policy.	Compliant	Through the Training, Competency and Awareness Procedure, Khwezela North Colliery undertakes induction for all employees, contractors and visitors. During induction, the attendees are made aware of the ecological value of animal life and the necessity for a balance between development and conservation. Induction presentation was provided for review during the audit period.
						A warning and punishment system will be implemented where workers discovered poaching or moving heavy vehicles and equipment outside of predetermined pathways and designated areas will be implemented to discourage such behaviour.	Compliant	A Disciplinary Code and Grievance Procedure is implemented as a warning and punishment system for punishing of employees if found poaching within the mining right area.
1.39.				Animals may become trapped within the opencast mining areas, and if they are not removed and treated for injuries timeously, may suffer loss of life.	Avoidance Rectification	Safety measures designed to keep humans away from the mining area will also discourage animals from approaching the open pits. Also, noise and vibration associated with the opencast mining will contribute to keeping animals away from the pits. However, should an animal become trapped in the pits (with the exception of pest species), the animal will be rescued with as little damage or injury as possible, and treated to recovery, before being released into adjoining suitable habitat.	Compliant	It was confirmed during the site visit that berms and fencing around the pits are constructed to prevent humans from entering the mining areas. According to Khwezela North Colliery, no animals have yet been found trapped in the mining areas. Should animals be found trapped, the relevant personnel responsible for handling of such animals are called in to remove the identified animals on site and this will be reported as an incident as part of the Incident Reporting procedure developed for Khwezela North Colliery.

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1.40.		Navigation West Section	Grass owls (<i>Tyto capensis</i>), with a Red Data status of 'Vulnerable', occur within the riparian wetland associated with the drainage line that occurs in the south-east of the Navigation West Section mining area. The impacts of mining, in terms of noise, ground vibrations, surface water and groundwater impacts will severely affect the habitat of the Grass owls, and may lead to the loss of life of the owls. Furthermore, the increase in human presence on site will contribute to the migration of this species but the lack of suitable habitat in the surrounding areas may further contribute to loss of animal life.	Minimisation Avoidance	A study will be conducted by a suitably qualified person to determine whether or not the Grass Owls (<i>Tyto capensis</i>) that were identified during the wetland study (refer to Appendix F5.1), form part of a viable breeding colony of the mentioned species. If the population of Grass Owls is proven not to be a viable breeding population, a plan will be developed by a suitably qualified person for the relocation of the owls, in conjunction with the relevant Authority, and the owls will be relocated to suitable habitat elsewhere, during the Operational Phase of the North Block, prior to the commencement of the Construction Phase of the South Block. However, if it is found that the mentioned Grass Owls form part of a viable breeding population, consideration should be given to the implementation of the 'No Project' option for the South Block.	Compliant	A feasibility study was undertaken in September 2012 by the Endangered Wildlife Trust. The report, Potential African Grass-Owl Conservation Project at Anglo Americans Umlalazi Game Park, presents the findings of the study and describes that five (5) Marsh Owls were identified during the survey but no African Grass Owls were observed. The conclusion of the study indicates that there is sufficient prey and very high potential habitats for the African Grass-Owl when they move to site. Further, the existence of aggressive alien species such as <i>Eucalyptus</i> sp. and <i>Arundo donax</i> threaten the long-term viability of potential Grass-Owl habitat should they be left unmanaged. There is also a potential high density of mammalian predators that may threaten future Grass-Owl breeding attempts on the site.
1.41.		Schoongezicht No.2 Seam mini pit, and Navigation West Section; North Block.	Suitable habitat for threatened species will be lost when vegetation is stripped ahead of mining. Noise and vibration during the Operational Phase will render any remaining suitable habitat uninhabitable for any such species, should they occur in the area.	Minimisation	Activities will be limited to the pre-designated mining path and haul roads, and rehabilitation of mined out open pits will be conducted so that the mining window will be kept between 3 and 5 cuts.	Compliant	It was confirmed during the site visit and the approved mining and infrastructural layout plan that mining path and the haul roads are within the approved mining footprint area. Currently, Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit are under rehabilitation and no mining activities will be undertaken.
1.42.		All opencast mining areas	Increased turbidity of water as result of erosion may have negative impact on different life stages (spawning, feeding, etc.) of aquatic biota (fish and macro invertebrates) in the streams draining the mine boundary areas. Bottom substrate habitat may deteriorate as a result of sedimentation.	Minimisation	Implementation of soil and surface water management measures will indirectly minimise such impacts on aquatic habitat and biota in the receiving watercourses.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

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1.43.				Water quality deterioration related to accidental spills, acid mine water seepage, authorised discharge of poor quality water (applicable to Kromdraai Section in particular), and during general mining activities. This will especially affect aquatic fauna intolerant to moderately intolerant to water quality alteration, if present in the receiving environments.	Minimisation Rectification	Implementation of soil, surface water and groundwater management measures will indirectly minimise such impacts on aquatic habitat and biota in the receiving watercourses.		
1.44.		Navigation West Section; North Block		The habitat provided by the natural vegetation in the pan located in the Navigation West Section; North Block will be lost.	Compensation	Ensure that the conservation management plan for the selected off-site sensitive landscape to be conserved is implemented efficiently, since the on-site pan will be destroyed.	Noted	According to the conservation management plan (dated 20 November 2019), implementation measures for alien vegetation management, fire management, vegetation management, game management and soil management must be undertaken for the selected off-set sensitive landscape areas. According to the action plan extracted from the Enablon system, implementation of the plan will commence on the 15 December 2021.
1.45.	Surface water: general	All opencast mining areas		Opencast coal mining will have negative impacts on surface water flow and catchment yield, on the quality of surface water runoff from the affected areas, and in some cases on the receiving watercourses themselves. These are discussed individually in more detail below.	Avoidance Minimisation Rectification Reduction	Management of surface water at Landau Colliery will be undertaken in accordance with the DWA's hierarchy of decision taking, and the most recent best practice guidelines provided by the DWA.	Compliant	Integrated Water and Waste Management Plans ("IWWMPs") are developed and are updated annually. As per the IWWMPs, the water and waste management strategy implemented at Khwezela North Colliery is based on the water resource protection and waste management hierarchy of decision-taking of the DWS. Storm water management plan is utilized at the mine for ensuring proper management of surface water. Although incidents or issues are reported with regards to water management, action plans are compiled and implemented to evade the incidents or issues from re-occurring. Furthermore, surface water monitoring is conducted on a monthly basis to detect any contamination from the water resources.
1.46.						The commitments contained in the Integrated Water and Waste Management Plan will be adhered to.	Compliant	A review of the IWWMPs did reflect that the most significant risks were identified, and as general conclusion, Khwezela North Colliery is implementing strategies in line with the commitments provided in the IWWMP's.
1.47.						If a Water Use Licence is granted to Landau Colliery under Chapter 4 of the NWA, 1998, the conditions of the Licence will be implemented.	Compliant	Khwezela North Colliery has been issued with several water use licenses. Annual water use license audits are undertaken to check compliance with the conditions contained in the water use licenses. If non-compliances are identified, action plans are drafted and the actions are implemented in order to comply with the water use license.
1.48.						Auditing of compliance with the IWWMP commitments (and if a WUL is granted, to the conditions of the Licence) will be conducted regularly in accordance with the timeframes set by the DWA or committed to the IWWMP.	Compliant	Annual internal and external audits are undertaken on the approved WULs for Khwezela North Colliery. A WUL audit was undertaken by Geovicon Environmental (Pty) Ltd in conjunction with this audit, and audited the compliance of Khwezela North Colliery to the conditions of the WULs.
1.49.						All new infrastructure will be designed to comply with GN 704, 1999, under the NWA, and	Not Applicable	Khwezela North Colliery indicated that no infrastructures have been proposed except those authorized in the water use licenses. No exemptions with regards to

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					where existing infrastructure does not comply, Exemption will be sought or the infrastructure will be upgraded accordingly, where applicable.		the mining infrastructures have been proposed. Therefore, this EMP commitment is not applicable.
1.50.	Surface water	All opencast mining areas	The change in topography (formation of depressions in the surface) while the mining window is open means that direct rainfall to the mining area will be captured in the pits instead of flowing into the surrounding catchment area, resulting in a reduction in catchment yield, which would mean that less water would be available in the streams for downstream users and aquatic habitats. The catchment yield would progressively reduce proportionately to the increase in area of disturbance, unless appropriately mitigated.	Minimisation	Activities will be limited to the pre-designated mining path, and rehabilitation of mined out open pits will be conducted so that the mining window will be kept between 3 and 5 cuts.	Compliant	It was confirmed during the site visit and the approved mining and infrastructural layout plan that mining path and the haul roads are within the approved mining footprint area. Currently, Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit are under rehabilitation and no mining activities will be undertaken.
1.51.	Surface water quantity and flow		Upslope runoff would flow into the pits, instead of the surrounding catchment, if not appropriately managed. This would result in an overall reduction in catchment yield, which would mean that less water would be available in the streams.	Minimisation	Direct rainfall captured in the open pits will be re-used at the mine, and will reduce the need to import raw water, thereby reducing the overall impact on catchment yield.	Compliant	According to the IWWMP's developed for Kromdraai and Navigation Sections, the following water management system is used to contain rainfall water captured from the mined out opencast pits: <u>Navigation West Section (North Block)</u> Rainfall water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the Raw water dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. <u>Schoongezicht No.2 Seam mini pit</u> Acid mine water decanting from the old Schoongezicht underground workings (Schoongezicht No.2 Seam mini pit) is contained in the Schoongezicht PCD. Contaminated water is pumped from the Schoongezicht PCD to the Acid Water Dam, where after the contaminated water is sent through the neutralisation process at the Navigation Neutralisation Plants and returned to the Navigation Dense Medium Separation Plant for re-use. <u>Kromdraai open-cast mine and Excelsior mini-pit</u> All direct rainfall within the operational area is considered "dirty" and is channelled to the Kromdraai PCD from where it is pumped back to Lopies Dam, followed to the Kromdraai Liming Plant for neutralisation, then back to the Kromdraai Plant for re-use.

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1.52.						Clean water will be diverted around the opencast mining area by infrastructure designed to comply with the requirements of the applicable legislation (e.g. GN 704, dated 1999, under the NWA, 1998).	Not Applicable	It must be noted that no mining activities are to be undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit, therefore this commitment is applicable to the dirty water from the mined out pits. No mining activities are to be undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit, hence no walkover of open cuts is required. Therefore, this EMP commitment is not applicable.
1.53.		Navigation Section; Block	West North		Reduction	The surface diversion berms and drains will be kept free from any obstructions (debris) to ensure that the efficiency is not affected. Changes to the layout of the storm water control measures will be implemented, if required, to accommodate actual conditions and to enhance the efficiency of the management system.	Compliant	No obstruction from the berms and drains was noted during the site visit.
1.54.					Reduction	Repair of damages due to erosion and scouring of areas should be performed following storm events. Normal continuous maintenance throughout life of mine will also be performed for all slopes, berms and points of discharge (i.e. clearing of silts and sediments washed into drains, erosion marks will be filled up again, berms will be kept intact, etc.).	Non-Compliant	It was confirmed during the site visit that erosion from disturbed operational areas were identified at the Klipspruit crossing. In order to manage the identified erosion, Khwezela North Colliery developed a Detailed Engineering Design and Cost Estimation for Khwezela North Colliery Wetland Rehabilitation strategy of the affected Cluster systems within the Khwezela North Colliery. According to the strategy, the rehabilitation of the affected wetland system (erosion) will be considered and implementation of the strategy thereof will be initiated and scheduled. However, management action will not be undertaken separately, but rather in consideration with the other mining sections. Khwezela North Colliery must ensure that the area is repaired to avoid further deterioration of the Klipspruit crossing. 
1.55.				Where the opencast mining interrupts groundwater flow to the streams draining the surface or wetland areas, the volume of water flowing into the streams or wetlands from groundwater will be reduced until the groundwater equilibrium situation is restored, after mining.	Minimisation Minimisation	Activities will be limited to the pre-designated mining path, and rehabilitation of mined out open pits will be conducted so that the mining window will be kept between 3 and 5 cuts.	Compliant	Erosion identified next to Klipspruit crossing It was confirmed during the site visit and the approved mining and infrastructural layout plan that mining path and the haul roads are within the approved mining footprint area. Currently, Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit are under rehabilitation and no mining activities will be undertaken.

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			However, it should be borne in mind that the groundwater that will decant from mined out workings at Landau Colliery will likely be poor quality AMD, and will be retained for treatment at the EWRP, and thus removed from the receiving catchment area permanently.				
1.56.			Given the extent of the total isolated mine area of the opencast mine at the Navigation West Section (312 ha), a reduction in catchment yield will not exceed ± 187 Ml/annum during the Operational Phase. This implies a reduction of less than ± 4.7 % in MAR of the Grootspuit catchment and 23 % in MAR of the tributary of the Brugspruit.		Rehabilitation of mined out open pits will be conducted so that the mining window will be kept between 3 and 5 cuts.	Not Applicable	No mining activities are undertaken at Schoongezicht No.2 Seam mini pit, Navigation West Section (North Block) Kromdraai open-cast mine, Excelsior mini-pit and Umlalazi mini-pit and the sites are under rehabilitation phase and no stripping is conducted, therefore this EMP commitment is not applicable.
1.57.	Surface water quality	All opencast mining areas	Areas that are stripped ahead of mining will be vulnerable to erosion, leading to an increase in suspended solids in storm water runoff and consequent sedimentation of the receiving environment. This would have indirect effects on capacities of natural watercourses and on aquatic habitats and species (as described in No.1.42).	Minimisation	Stripping ahead of mining will be sequenced with the subsequent mining activity in such a manner as to minimise the period during which the stripped soil would be exposed before being placed live on rehabilitated areas or stockpiled.	Not Applicable	No stripping of topsoil and subsoil is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation.
1.58.					Stripped areas will be isolated with berms or other appropriate infrastructure.	Not Applicable	No stripping of topsoil and subsoil is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation.
1.59.					Silt laden runoff from stripped areas will be intercepted and settled before being allowed to drain into the receiving environment.	Not Applicable	No mining activities are undertaken at Schoongezicht No.2 Seam mini pit, Navigation West Section (North Block) Kromdraai open-cast mine, Excelsior mini-pit and Umlalazi mini-pit and the sites are under rehabilitation phase and no stripping is conducted, therefore this EMP commitment is not applicable.
1.60.			Surface water run-off coming into contact with carbonaceous material in and around the progressing opencast voids will become contaminated.	Minimisation	Contaminated surface water, such as direct rainfall entrapped in the open pits, will be contained and re-used in the dirty water management system.	Compliant	According to the IWWMP's developed for Kromdraai and Navigation Sections, the following water management system is used to contain rainfall water captured from the opencast pits: <u>Navigation West Section (North Block)</u> Rainfall water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the Raw water dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. <u>Schoongezicht No.2 Seam mini pit</u> Acid mine water decanting from the old Schoongezicht underground workings (Schoongezicht No.2 Seam mini pit) is contained in the Schoongezicht PCD. Contaminated water is pumped from the Schoongezicht PCD to the Acid Water

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								Dam, where after the contaminated water is sent through the neutralisation process at the Navigation Neutralisation Plants and returned to the Navigation Dense Medium Separation Plant for re-use. <u>Kromdraai open-cast mine and Excelsior mini-pit</u> All direct rainfall within the operational area is considered "dirty" and is channelled to the Kromdraai PCD from where it is pumped back to Lopies Dam, followed to the Kromdraai Liming Plant for re-use.
1.61.						The areas containing carbonaceous materials associated with the progressing opencast voids will be separated and isolated by means of berms and cut-off trenches to contain affected water and to maximise the diversion of clean surface water runoff past these areas.	Not Applicable	No mining activities are undertaken at Schoongezicht No.2 Seam mini pit, Navigation West Section (North Block) Kromdraai open-cast mine, Excelsior mini-pit and Umlalazi mini-pit and the sites are under rehabilitation phase and no stripping is conducted, therefore this EMP commitment is not applicable.
1.62.					Minimisation	Contact time between entrapped surface water and carbonaceous material in the pits will be minimised by removing such water collected in the pits as soon as possible after rainfall events. This will minimise the extent of contamination of the water in the pits.	Compliant	According to the IWWMP's developed for Kromdraai and Navigation Sections, the following water management system is used to contain rainfall water captured from the opencast pits: <u>Navigation West Section (North Block)</u> Rainfall water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the Raw water dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. <u>Schoongezicht No.2 Seam mini pit</u> Acid mine water decanting from the old Schoongezicht underground workings (Schoongezicht No.2 Seam mini pit) is contained in the Schoongezicht PCD. Contaminated water is pumped from the Schoongezicht PCD to the Acid Water Dam, where after the contaminated water is sent through the neutralisation process at the Navigation Neutralisation Plants and returned to the Navigation Dense Medium Separation Plant for re-use. <u>Kromdraai open-cast mine and Excelsior mini-pit</u> All direct rainfall within the operational area is considered "dirty" and is channelled to the Kromdraai PCD from where it is pumped back to Lopies Dam, followed to the Kromdraai Liming Plant for neutralisation, then back to the Kromdraai Plant for re-use.
1.63.					Avoidance	Continuous managing, improvement and monitoring of the water balances will be undertaken to identify risk areas and excess water volumes, and for reporting on conditions on a monthly base.	Compliant	<u>Kromdraai Section:</u> Manual flow meters are used to monitor water quality and an excel spread sheet is utilised to record the volumes. <u>Navigation West Section</u> Daily abstraction and distribution volumes are captured in an electronic database with the aid of the SCADA system. Data from the SCADA system are used to update the water balance model on an annual basis. The above results are used in determination of the water balance results. Any shortcomings identified are addressed and improvement management measures are identified.
1.64.					Avoidance Rectification	Contaminated surface water will not be allowed to flow or be intentionally discharged to the receiving environment without	Compliant	No intentional discharge/flow of dirty water to the natural environment was noted during the site visit. However, during the audit period, peters stone wall dam, located at the Kromdraai Section overflowed, discharging dirty water into the receiving environment of the

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						being treated first, and without the applicable authorisations.		<p>Kromdraaispruit. This was a result of an electrical cable joint that short circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow:</p> <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. <p>The following actions were undertaken:</p> <ul style="list-style-type: none"> • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed. <p>No overflow of the above-mentioned dam was noted during the site visit.</p>
1.65.				Surface water run-off coming into contact with soil or other surfaces where hydrocarbons such as fuel or oil may have been spilled will become contaminated. Unless mitigated appropriately, the water containing hydrocarbons will enter the receiving environment and negatively affect the water quality in the surrounding streams.		Implementation of soil mitigation measures will reduce the potential for secondary contamination of surface water runoff.	Compliant	<p>Khwezela North Colliery developed and is implementing an Emergency Preparedness Procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed:</p> <ul style="list-style-type: none"> • Oil and Silt Trap Procedure • Hydrocarbon and Chemical Handling Procedure • Incident Reporting Procedure. <p>From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by Interwaste. No spillages or soil contamination were reported during the audit period.</p>
1.66.					Avoidance Minimisation	Runoff in the pits will be kept within the isolated dirty water management area, which will significantly reduce the potential for such contaminated water to reach the receiving environment.	Compliant	<p>No mining activities are undertaken at Schoongezicht No.2 Seam mini pit, Navigation West Section (North Block) Kromdraai open-cast mine, Excelsior mini-pit and Umlalazi mini-pit and the sites are under rehabilitation phase and no stripping is conducted, therefore this EMP commitment is not applicable.</p> <p>However, all dirty water from the mined-out pits and decant areas as a result of the mining activities is diverted to the Dickson dam, Lopies dam, Peter's dam, Umlalazi Navigation dam.</p>
1.67.					Rectification	Hydrocarbons will be removed from the water in the dirty water management system before the water is re-used, or treated before being released to the receiving environment under the applicable authorisation(s).	Compliant	<p>According to the Water Balance Excel Sheet, runoff water captured from the re-fueling bays is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the raw water dam. It is then diverted to the process water tanks, then used for dust suppression. Hydrocarbons are regarded as hazardous waste and are disposed off-site by TL Ideas to Hallfointein landfill site. Safe disposal certificates were provided for review during the audit period.</p>
1.68.	Surface water: flooding	Kromdraai opencast areas		In the event of flood conditions (exceeding the designed flood) the direct rainfall and groundwater influx into the active opencast pit areas at the	Rectification	To enable opencast mining of the remaining coal reserves to continue efficiently and safely, the stored flood water will be removed, although kept within the dirty water management	Compliant	<p>According to the IWWMP's developed for Kromdraai and Navigation Sections, the following water management system is used to contain rainfall water captured from the opencast pits:</p> <p><u>Schoongezicht No.2 Seam mini pit</u></p> <p>Acid mine water decanting from the old Schoongezicht underground workings (Schoongezicht No.2 Seam mini pit) is contained in the Schoongezicht PCD.</p>

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			Kromdraai Section will be collected in low-lying sump areas. When the opencast pits become flooded, the water will push back into the old underground workings, which will in effect become a reservoir to contain the excess water. Such water will be incorporated into the dirty water management system and will no longer be available to the receiving catchment.		system until it is treated before reuse or authorised discharge.		Contaminated water is pumped from the Schoongezicht PCD to the Acid Water Dam, where after the contaminated water is sent through the neutralisation process at the Navigation Neutralisation Plants and returned to the Navigation Dense Medium Separation Plant for re-use. <u>Kromdraai open-cast mine and Excelsior mini-pit</u> All direct rainfall within the operational area is considered "dirty" and is channelled to the Kromdraai PCD from where it is pumped back to Lopies Dam, followed to the Kromdraai Liming Plant for neutralisation, then back to the Kromdraai Plant for re-use.
1.69.		Schoongezicht No.2 Seam mini pit and Navigation West Section; North Block	The box-cut will be temporarily flooded due to direct rain in the opencast voids and runoff from the inside spoils and bench slopes. This will cause a temporary delay in activities until the works are sufficiently dry.	Rectification	The flood water will be pumped out of the mine, and incorporated into the dirty water management system.	Compliant	<u>Navigation West Section (North Block)</u> Rainfall water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the Raw water dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. <u>Schoongezicht No.2 Seam mini pit</u> Dirty water from the old Schoongezicht underground workings (Schoongezicht No.2 Seam mini pit) is contained in the Schoongezicht PCD. Contaminated water is pumped from the Schoongezicht PCD to the Acid Water Dam, where after the contaminated water is sent through the neutralisation process at the Navigation Neutralisation Plants and returned to the Navigation Dense Medium Separation Plant for re-use.
1.70.					The upslope cut-off berms and/or trenches will be properly maintained to ensure that they are always in good working order.	Not Applicable	The Navigation West Section: North Block is currently being rehabilitated and all cut-off berms have been removed, therefore this EMP commitment is not applicable.
1.71			Unless appropriately managed, the mine workings will become flooded with surface water runoff from upslope.	Rectification	Should an event greater than a 1:50 year flood event occur, and it is necessary for the mine to discharge contaminated water, emergency authorisation from the DWA will be applied for prior to the commencement of such discharge. Monitoring of the surface water quality within the receiving water bodies will take place following such discharge, and the integrity of the surface water management infrastructure will be inspected and repaired immediately, where necessary. If the data from the monitoring of affected water bodies following an extreme event greater than a 1:50 year storm event indicates that the impacts of the discharge of contaminated water are	Not Applicable	No flood event as a result of overflow occurred during the audit period and no discharge of dirty water to the environment was proposed.


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					significant, suitable rehabilitation and remediation action will be taken as soon as possible after the flood to mitigate any damage that may have been caused as a result of the discharging of contaminated water.		
1.72.	Surface water: watercourse alterations	Navigation West Section; South Block	A small portion of the proposed South Block opencast mining area will be located within 100 m of the adjacent watercourse (an unnamed tributary of the Grootspuit).	Reduction	Ensure that the surface water management measures for the Navigation West Section; South Block are designed by a suitably qualified person, and in accordance with the applicable legislative requirements and best practice guidelines.	Compliant	Surface water management structures at Navigation West Section: South Block was designed by WBHO as the qualified suitable engineers. These water management structures are designed in accordance with the applicable legislative requirements and the design plans.
1.73.	Groundwater: general	All opencast mining areas	Opencast coal mining will have negative impacts on groundwater levels and quantities as well as quality, and could consequently impact surface water, due to the interconnectedness of surface water and groundwater. The impacts on groundwater are discussed individually in more detail below.	Avoidance Minimisation Rectification Reduction	Management of groundwater at Landau Colliery will be undertaken in accordance with the DWA's hierarchy of decision taking, and the most recent best practice guidelines provided by the DWA.	Compliant	Integrated Water and Waste Management Plans ("IWWMPs") are developed and are updated annually. As per the IWWMPs, the water and waste management strategy implemented at Khwezela North Colliery is based on the water resource protection and waste management hierarchy of decision-taking of the DWS. Storm water management plan is utilized at the mine for ensuring proper management of surface water. Although incidents or issues are reported with regards to water management, action plans are compiled and implemented to evade the incidents or issues from re-occurring. Furthermore, ground water monitoring is conducted on a monthly basis to detect any contamination from the water resources.
1.74.					The commitments contained in the Integrated Water and Waste Management Plan will be adhered to.	Compliant	A review of the IWWMPs did reflect that the most significant risks were identified, and as general conclusion, Khwezela North Colliery is implementing strategies in line with the commitments provided in the IWWMP's.
1.75.					If a Water Use Licence is granted to Landau Colliery under Chapter 4 of the NWA, 1998, the conditions of the Licence will be implemented.	Compliant	Khwezela North Colliery has been issued with several water use licenses. Annual water use license audits are undertaken to check compliance with the conditions contained in the water use licenses. If non-compliances are identified, action plans are drafted, and the actions are implemented in order to comply with the water use license.
1.76.					Auditing of compliance with the IWWMP commitments (and if a WUL is granted, to the conditions of the Licence) will be conducted regularly in accordance with the timeframes set by the DWA or committed to the IWWMP.	Compliant	Annual internal and external audits are undertaken on the approved WULs for Khwezela North Colliery. A WUL audit was undertaken by Geovicon Environmental (Pty) Ltd in conjunction with this audit, and audited the compliance of Khwezela North Colliery to the conditions of the WULs.
1.77.					All new infrastructure will be designed to comply with GN 704, 1999, under the NWA, and where existing infrastructure does not comply, Exemption will be sought or the infrastructure will be upgraded accordingly, where applicable.	Not Applicable	Khwezela North Colliery indicated that no infrastructures have been proposed except those authorized in the water use licenses. No exemptions with regards to the mining infrastructures have been proposed.
1.78.	Groundwater levels and quantity	Kromdraai opencast areas	The growing opencast mine void will cause the dewatering of the	Minimisation	Activities will be limited to the pre-designated mining path, and rehabilitation of mined out	Compliant	It was confirmed during the site visit and the approved mining and infrastructural layout plan that mining path and the haul roads are within the approved mining footprint area. Currently, Kromdraai open-cast mine, Excelsior mini-pit,

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			surrounding aquifer(s). The cone of depression should not exceed a distance of ± 1 km (generalised conditions typical to Karoo aquifers where opencast coal operations occur and also confirmed by the numerical groundwater model) from the mining area, thus the impact will be limited.		open pits will be conducted so that the mining window will be kept between 3 and 5 cuts.		Schoongezicht mini-pit and Umlalazi mini-pit are under rehabilitation and no mining activities will be undertaken.
1.79.		Schoongezicht No.2 Seam mini pit and Navigation West Section	The pre-mining numerical models indicated that dewatering at the Schoongezicht No.2 Seam Mini-pit and the Navigation West Section should not exceed more than 500 m from the opencast pit(s) due to the relatively low gradients (pits not very deep) and the low transmissivities.				
1.80.		All opencast mining areas	Groundwater will ingress into the open pits, and will hinder and even halt mining operations, unless appropriately mitigated.	Minimisation Rectification	Groundwater ingress into the pits will be removed as soon as possible to keep the pits as dry as practicable. Where possible, groundwater levels in the old mined out workings will be lowered through borehole abstraction to below the level of the adjacent open pit floor. The groundwater thus removed will be incorporated into the dirty water management system for treatment followed by re-use or authorised discharge, where applicable.	Compliant	According to the Integrated Water Use Licences for Kromdraai and Navigation Sections, the following opencast pits and old groundwater workings areas are dewatered to enable safe and efficient mining: <u>Kromdraai Section:</u> <ul style="list-style-type: none"> North, Central and South opencast Pits Excelsior Open pit <u>Navigation South Section:</u> Navigation West Section: South Block opencast pit. Dewatering results were provided for review during the audit period. Furthermore, groundwater removed from the Kromdraai Section is channeled to the to Lopies Dam, followed to the Kromdraai Liming Plant for neutralization, then back to the Kromdraai Plant for re-use and groundwater removed from the Navigation West Section: North Block opencast pit is channeled to the Navigation West (Umlalazi) pollution control dam and then to the Navigation Liming Plant for re-use at the Navigation Dense Medium Separation Plant or for dust suppression in dirty water management areas.
1.81.		Kromdraai opencast areas	Any groundwater ingress that is stored in the open pits will increase in salinity as the contact time with carbonaceous material in the pit increases. Refer also to No. 1.55.				
1.82.							
1.83.		Kromdraai opencast areas and Navigation West Section.	Groundwater users whose boreholes are located are located within the cone of depression would experience a lowering of water level or drying up of the borehole for the duration that the borehole is located within the cone of depression. This could affect a number of groundwater users who reside in the direct vicinity of the mining area who are dependent on groundwater	Rectification	If groundwater monitoring indicates that the surrounding groundwater users have been affected by the effect of opencast mining on the groundwater levels, an alternative source of water will be provided by the mine.	Not Applicable	No incidents were reported of surrounding groundwater users affected by the effect of opencast mining, therefore this EMP commitment is not applicable.

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			as the sole source of domestic water supply as well as water for livestock.				
1.84.		All opencast mining areas	Contamination of surrounding groundwater cannot take place due to opencast mining as long as dewatering of the mining areas continues, since groundwater flow will be towards the pits or abstraction boreholes, as applicable.		Dewatering of old underground workings and open pits will be undertaken to enable safe and efficient mining. This will ensure that groundwater movement is towards the pit(s) or abstraction boreholes and will eliminate the potential for infiltration of contaminated pit water to the groundwater regime, and the resultant formation of a pollution plume.	Compliant	According to the Integrated Water Use Licence for Kromdraai and Navigation Sections and the following opencast pits and old groundwater workings areas are dewatered to enable safe and efficient mining: <u>Kromdraai Section:</u> <ul style="list-style-type: none">North, Central and South opencast PitsExcelsior Open pit <u>Navigation Section:</u> Navigation West Section: South Block opencast pit. Dewatering results were provided for review during the audit period.
1.85.	Groundwater quality				Failure of dewatering pumps or other related infrastructure, or inadequacy of surface impoundments to accommodate dewatered groundwater will be treated as an emergency, as described in Part 8 of this EMP.	Not Applicable	No failure of dewatering pumps was reported during the audit period. Therefore, this EMPr commitment is not applicable.
1.86.	Air Quality	All opencast mining areas	Blasting of overburden and coal seams will cause a temporary dust cloud to form over the opencast mining area which will move to the surrounding area as the wind moves the dust.	Minimisation Reduction	Blasting will not be conducted during adverse weather conditions such as high velocity windy conditions.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.87.					Blasting holes will be stemmed prior to blasting.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.88.					Dust suppression will be undertaken within the opencast pits to reduce impacts on the air quality as a result of opencast mining.	Not Applicable	No opencast mining is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.89.					Activities will be limited to the pre-designated mining path, and rehabilitation of mined out open pits will be conducted so that the mining window will be kept between 3 and 5 cuts.	Compliant	It was confirmed during the site visit and the approved mining and infrastructural layout plan that mining path and the haul roads are within the approved mining footprint area. Currently, Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit are under rehabilitation and no mining activities will be undertaken.
1.90.			Trucks and other equipment or vehicles requiring the use of fuel will emit carbon dioxide into the atmosphere.		All machinery employed on site will be in good repair, and well maintained.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
1.91.					All machinery will be fitted with the correct exhaust systems, which will be maintained and in good repair.	Compliant	All machinery and vehicles employed are fitted with exhaust systems and are maintained in a good state of repair. No concerns in this regard were evident. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission-reduction technology.
					Procurement of replacement parts such as exhausts will require lower carbon emissions, to meet international standards and Anglo policy.	Compliant	The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission-reduction technology.

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1.92.						The procurement policy for the purchase of new fuel-driven vehicles or equipment will require that emissions be substantially reduced, and will require the consideration of alternative, low carbon fuels, where practicable.	Compliant	The procurement policy, takes into account that emissions from the vehicles purchased be substantially reduced with low carbon fuels, where practicable.
1.93.						Combusting spoils or coal will be smothered using noncarbonaceous overburden or subsoil. Material handling will be undertaken in such a manner as to reduce the potential for spontaneous combustion, especially in coal stockpiling areas. Alternatively, should more effective and feasible techniques or technology for the management of spontaneous combustion become available in future, such will be undertaken at Landau Colliery, where practicable.	Compliant	Spontaneous combustion is managed through applying a strip cut and key mining method, cladding and implementation of rehabilitation. Such is also reflected in a Hazard Risk plan, with weekly Sponcom KPIs.
1.94.	Noise	All opencast mining areas		Drilling and blasting at the opencast mining areas will result in an increase of between 15 and 35dB when compared to premining noise levels. This will be of most significance near residential areas (i.e. Schoongezicht No.2 Seam Mini-pit and Navigation West Section). Impacts on interested and affected parties are described in No.1.20, below. Indirect impacts of noise on animal life were described in No.1.36 and 1.41.	Reduction	If blasting or vibrations are perceived to be excessive, a seismic monitor with a continuous recorder will be placed about one kilometre from the mine during blasting activities. Such recordings will be kept and made available to any interested or affected party on request.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.95.					Minimisation	The Blaster employed, who will be certified in terms of the Mine Safety Act, will utilise the minimum possible explosives to achieve maximum effect. Controlled blasting techniques specifically designed to reduce blasting noise and vibration will be employed near residential areas, where available.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.96.		Excelsior, Schoongezicht No.2 Seam, Navigation West Section			Avoidance Minimisation	No blasting will take place on Saturdays or Sundays, except in exceptional circumstances.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.97.					Avoidance Minimisation	Blasting will be conducted between the hours of 08H00 and 16H00 to minimise the impact on persons dwelling within close proximity of the mine.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.98.					Reduction	All lawful land occupiers within a 500 m radius of the pit will be	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining

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NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		Navigation Section; West North Block				notified within 1 hour prior to Blasting.		activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.99.					Minimisation	Noise will be controlled along its transmission path using acoustical barriers. The barriers will provide enough sound insulation so that energy passing through the barrier does not exceed the energy diffracted by the barrier, will be structurally robust enough to meet the demands of the application, and will be capable of being constructed and erected at an economic cost.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.100.		All opencast mining areas		The operation and movement of the dragline, haul trucks and other heavy machinery, as well as noisy equipment such as pumps and drills, will increase the ambient noise levels during mining.	Minimisation Reduction	All noise emitting machinery and vehicles will be well-maintained to reduce noise at source.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance with the maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned. Maintenance schedules were provided for review during the audit period.
1.101.					Avoidance Minimisation	Equipment that is to be used on site will be selected taking into consideration the potential for reduction in environmental noise production.	Compliant	The procurement policy, take into account that emissions from the vehicles purchased be substantially reduced with low carbon fuels, where practicable.
1.102.						A procurement policy will be implemented for all equipment at Landau Colliery which takes environmental noise production into account.	Compliant	The procurement policy, take into account that emissions from the vehicles purchased be substantially reduced with low carbon fuels, where practicable.
1.103						If the noise is directional, the source will be pointed away from noise-sensitive locations (e.g. Nearby residential areas at Schoongezicht No.2 Seam mini pit and Navigation West Section).	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMPr commitment is not applicable.
1.104.						Haul routes leading into and out of the pits will be well-maintained and steep gradients will be avoided.	Compliant	It was confirmed during the site visit that haul roads leading into and out of the pits are well-maintained and no steep gradients were noted.
1.105.						Noisy equipment such as pumps or generators will be enclosed to reduce noise production.	Compliant	Generators used at the Kromdraai Section are enclosed.  Generators located at Kromdraai Section Liming Plant


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1.106.						Rubber linings will be used in equipment such as chutes and dumpers.	Compliant	Steel and tile linings are used instead of rubber linings.
1.107.						Tailgates of transport vehicles will be kept closed if possible.	Not Applicable	No opencast mining is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit and no transportation of coal is undertaken. The mining areas are under rehabilitation. Therefore, this EMP commitment is not applicable.
1.108.	Sensitive landscapes	Navigation Section; North Block	West North	The pan in the Navigation West Section; North Block will be destroyed by opencast mining.	Compensation	A conservation management plan will be developed for the Clewer Nature Reserve, adjacent to the west of the Navigation West Section, and implemented as compensation for the loss of the pan in the Navigation West Section; North Block opencast area.	Compliant	Khwezela North Colliery developed a Conservation Management Plan (dated 20 November 2019) for Umlalazi Game Reserve. No implementation of the Conservation Management Plan for the above-mentioned management areas have been undertaken as yet. According to the action plan extracted from the Enablon system, implementation of the plan will commence on the 15 December 2021.
						The effectiveness of the conservation management plan will be audited annually.	Noted	No auditing of the Conservation Management Plan has been conducted as yet. The Conservation Management Plan (dated 20 th November 2019) was finalised in November 2019. According to the action plan extracted from the Enablon, the commencement date for auditing of the conservation management plan will be on the 15 December 2021. Khwezela North Colliery must ensure that the conservation management plan is audited as per the above-mentioned timeframe.
1.109.		Navigation Section; West Block	West South	Part of the mine plan for the planned Navigation West Section; South Block occurs closer than 100m to the unnamed tributary of the Grootspuit, and could impact directly on the wetland associated with the tributary through loss of soil and stripping of vegetation, etc.	Avoidance	Mining activities will be restricted in the vicinity of the unnamed tributary of the Grootspuit, situated partially over the south-east of the proposed Navigation West Section; South Block.	Compliant	Assessment of the Google Earth Imagery, approved layout plan and the site visit conducted, the Navigation West Section (South Block) is undertaken within the approved footprint area and not within the Grootspuit.
1.110.				Unless appropriately managed, the integrity of the wetland associated with the tributary would be compromised due to indirect impacts such as deteriorated quality of surface water runoff, disturbance and resultant loss of soil, deterioration of potential habitat for threatened species, etc.	Avoidance Minimisation	Implementation of mitigation measures to manage impacts on soil, surface water, vegetation and animal life will ensure that indirect impacts on wetlands not destroyed or directly disturbed will be minimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
1.111.	Historical and cultural aspects	All opencast mining areas		As described in Part 4, no sites of historical or cultural interest are present within the opencast mining areas at Landau Colliery. No impacts on historical and cultural aspects are therefore expected.	Avoidance	Although no sites of archaeological or cultural interest were found within the study area during the baseline investigation, it is possible that some items or sites of historical significance are buried below the surface, and would only become detectable once surface	Not Applicable	No sites of archaeological or cultural interest have been discovered during the construction and operational phase, therefore this EMP commitment is not applicable. According to the Incident Report, no sites of archaeological or cultural interest have been discovered and reported. Therefore, this EMP commitment is not applicable.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					stripping is undertaken. In such circumstances, further disturbance of the site will be halted until a suitably qualified specialist has been called to the site to investigate the find, and recommendations thereafter have been made. Action to be taken thereafter will need to be undertaken in consultation with the SAHRA.		
1.112.	Visual aspects	All opencast mining areas	Visual impacts of the opencast mining at Landau Colliery would result from the removal of vegetation and the underlying geological layers to expose carbonaceous material and coal, stockpiling of soil and spoils, changes in topography and the general sense of place associated with the pre-mining landscape, and the generation of dust clouds.	Minimisation	Management of impacts on soil, air quality and topography will ensure that the visual impacts of opencast mining are minimised as far as practicable. It should, however, be borne in mind that Landau Colliery is located in a region where opencast coal mining is common place. The large number of opencast coal mines in the region, together with the historical nature of the mining in the Witbank region (over 100 years of mining history) will most likely have desensitised local residents and frequent travellers through the area	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
1.113.		Schoongezicht No.2 Seam mini pit			On the contrary, the visibility of the mining areas from the surrounding areas could be of interest to passers-by, especially since coal mining is an important part of Mpumalanga's history, and visits to coal mines are even cited as being of interest to tourists. It is therefore not considered necessary to implement specific measures to reduce visual impacts, although in the past, trees were planted at the Kromdraai Section to provide a screen between the mining operations and the surrounding areas. If deemed necessary, this could be implemented elsewhere at the mine, although careful consideration must be given to the species used for this, and the closure objectives of the mine.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
1.114.	Socioeconomic impacts	All opencast mining areas	A positive impact is expected on the regional	Enhancement	None required.	Noted	No mitigation measures were proposed.

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
				socio-economy due to the increased revenue generated per hectare of land in changing the land capability from grazing and arable to mining and due to the consequent contribution to the provincial and national GDP.				
1.115.				At present, Landau Colliery employs 502 people. Using a multiplier effect of 6, this means that the mining at Landau Colliery impacts positively through job provision and spin off business development on 3012 people. Using a multiplier effect of 10 (as is common in poorer communities), the mine could impact positively on 5020 people.		Any new jobs will be allocated to existing Landau Colliery employees, or if additional employees are required, local residents will be given preference where possible. Training and skills development will be provided to employees.	Compliant	According to the Social and Labour Plans provided for review during the audit period, new jobs are allocated to existing Landau Colliery employees and if local residents are given preference where possible. Training and skills developments are provided to employees and to the communities. Social and Labour Plan Progress (dated May 2020) was provided for review during the audit period.
1.116.						The Social and Labour Plan will continue to be implemented, and will be updated periodically to remain in line with applicable legislative and regulatory requirements.	Compliant	The Social and Labor Plan developed for Khwezela North Colliery is implemented and is updated after every four years. An excel spreadsheet (dated 2019-2023) of the Social and Labor Plan reporting was provided during the audit period.
1.117.						Procurement rules and contract conditions will ensure that local suppliers and service providers are used wherever possible, to ensure that the economic influence of the mine reaches the local community as well as contributing to the regional and national GDP.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management. As per the Inclusive Procurement Policy, it was noted that local suppliers and service providers are used wherever possible.
1.118.		Navigation Section; West Block	West North			None required.	Noted	No mitigation measures were proposed.
1.119.		Navigation Section; West Block	West North			The cessation of maize production (and the downstream economic and food resource effects thereof) will be countered by the economic benefits of the mining at Landau Colliery. Maize cultivation will still be practised on land ahead of mining, though, and so this impact will increase in extent as mining progresses.	Not Applicable	Khwezela North Colliery confirmed that there is currently no maize cultivation at the Navigation West, and such was ceased during the last harvesting season of the year 2015, therefore this EMPr commitment is not applicable.
1.120.	Interested and affected parties	All opencast mining areas			Avoidance	Implementation of mitigation measures to manage impacts on air quality, noise, vibrations, surface water, groundwater and visual impacts would indirectly mitigate impacts on surrounding land users.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
1.121.						The Mine will utilise people from the surrounding areas as far as	Compliant	According to the Inclusive Procurement Policy, it was noted that local suppliers and service providers are used wherever possible.

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						possible, and no illegal labourers will be employed.		
1.122.						Access to the surface infrastructure and mining areas will be controlled under all conditions, and no informal housing will be allowed to take place within the mine boundary areas.	Compliant	It was confirmed during site visit that access to the surface infrastructure and mining areas is controlled and that no informal housing is allowed within the mine boundary areas.
1.23.						Mine management will maintain an open-door policy. The General Manager will maintain cordial relationships with all Interested and Affected Parties. Minutes of all meetings will be kept, and made available on request.	Compliant	Khwezela North Colliery has implemented a complaint register whereby all complaints received are recorded, actioned and closed out. Should a complaint be received with regards to a decrease in water availability, such will be investigated to determine if it is as a result of mine dewatering. Khwezela North Colliery will then enter into consultations with the affected party with regards to the provision of alternative water supply. Minutes of the meetings with the Interested and Affected Parties were provided for review during the audit period.
1.24.						An Interested and Affected Parties Forum has been established. Minutes of all meetings will be taken. These Minutes will include a record of all parties in attendance.	Compliant	Forum meetings are undertaken on a quarterly basis with the communities, which are arranged by the Community Department of Khwezela North Colliery. Minutes of the last meeting (dated 19 February 2021) were provided for review during the audit period.
1.25.						The mine's complaints register will continue to be made available to I&APs, who will be encouraged to record their complaints within the register.	Compliant	A complaints register has been set up and is available to I&APs at the entrance and reception of the mine.
1.26.						Any complaints that are recorded in the complaints register will be attended to timeously, and the action taken will be recorded and reported back to the I&AP concerned.	Compliant	According to the Incident Report (dated July 2019-July 2020), no complaints with regards to the opencast mining areas were received during the audit period. However, when a complaint is received, the following is undertaken to ensure that the complaints is actioned and communicated back to the complainant: The Environmental Superintendent is informed as soon as a complaint has been lodged on the Enablon system so that the mine can respond to the complainant within 48 hours. The complaints are recorded on the Enablon system and corrective and preventative actions are taken and all incidents are closed-out within 14 days of the complaint received. This done in accordance with the incident Reporting Procedure.
1.27.						A report of the complaints and manner in which the complaints have been addressed will be submitted to the DMRE on an annual basis.	Not Applicable	According to the Incident Report, no complaints with regards to the opencast mining activities were received during the audit period, therefore this EMPr commitment is not applicable.
1.28.				Groundwater users whose boreholes are located are located within the cone of depression would experience a lowering of water level or drying up of the borehole for the duration that the borehole is located within the cone of depression. This could affect a number of groundwater users who	Rectification	If groundwater monitoring indicates that the surrounding groundwater users have been affected by the effect of opencast mining on the groundwater levels, an alternative source of water will be provided by the mine.	Not Applicable	No incidents were reported of surrounding groundwater users affected by the effect of opencast mining, therefore this EMPr commitment is not applicable.
1.29.					Avoidance	No unauthorised persons will be allowed on the property, and the establishment of informal settlements will be discouraged.	Compliant	It was confirmed during the site visit that signage's are erected at the entrance of the mines property and no informal settlements was noted.

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1.30.				reside in the direct vicinity of the mining area who are dependant on groundwater as the sole source of domestic water supply as well as water for livestock. Refer also to No.1.76.		Signs will be erected and maintained warning of dangerous areas such as highwalls and areas where blasting will take place. In addition, access to the mining areas will be restricted to authorised persons only.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Furthermore, this EMPr commitment is not applicable.
1.31.						Visitors to the mine will be required to undergo induction before being allowed onto the site, and must be accompanied by a trained employee of the mine at all times while outside of the office area, unless a specific situation requires it otherwise.	Compliant	All visitors undergo an induction before entering the mine premises. Furthermore, the visitors are accompanied by a trained employee of the mine at all times while outside of the office area. An attendance register was provided for evidence during the audit period.
1.32.						Signs will be erected and maintained within and downstream of the mine boundary area where water quality in receiving streams is poor and potentially hazardous.	Compliant	According to the IWWMP, the Brugspruit and treatment plant water quality is of poor and potentially hazardous. Signs are erected at the above-mentioned areas. However, it was indicated by Khwezela Colliery that signs are stolen on regular basis as a result of criminal activities.
1.33.					Reduction Rectification Reduction Rectification	All structures and residences within 1km of opencast area will be inspected on a 6 monthly basis.	Not Applicable	No opencast mining is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit and no transportation of coal is undertaken. The mining areas are under rehabilitation. Therefore, no inspections of the structures and residential areas within 1km of the mined out opencast areas is required. Furthermore, this EMPr commitment is not applicable.
						Results of the inspections will be compared with the photographic survey that was taken prior to the commencement of blasting.	Not Applicable	No opencast mining is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit and no transportation of coal is undertaken. The mining areas are under rehabilitation. Therefore, no inspections of the structures and residential areas within 1km of the mined out opencast areas is required.
1.34.						Mine Management will be responsible for the repair of any damage, which arises as a result of blasting or activities at the mine, at the mine's expense.	Not Applicable	No Blasting activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Furthermore, this EMPr commitment is not applicable.
1.35.						No buildings or other infrastructure will be constructed within the relevant servitudes of the Sasol gas pipeline, without written permission from Sasol.	Compliant	It was confirmed during the site visit that no buildings or other infrastructure are constructed within the relevant servitudes of the Sasol gas pipeline.
1.36.		Navigation West Section	West	Any disturbance of the surface near the servitude along the western and southern boundaries of the Navigation West Section mining area could damage the subterranean Sasol gas pipeline. This would have safety and supply implications, and could also have a significant effect on		No covers will be removed from the Sasol gas pipeline servitude area.	Compliant	No covers are removed from the Sasol gas pipeline servitude area. This was confirmed during the site visit.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
				the surrounding environment.				 <p>Sasol gas underground pipeline markers</p>
1.37.						No heavy vehicles or power equipment for ground levelling etc. will be permitted over the Sasol gas pipeline servitude area unless authorised in writing by the relevant Sasol department.	Compliant	No heavy vehicles or power were observed over the Sasol gas pipeline servitude area. This was confirmed during the site visit.
1.38.						No roads, water mains, sewers, drains or other services will be constructed across the Sasol gas pipeline servitude unless otherwise agreed to by the relevant Sasol and Government departments, in writing. In this regard a formal written application will be submitted to the relevant Sasol department, together with plans and sectional drawings of the proposed services to cross the servitude(s) in order to establish whether additional protection of the pipeline(s) will be necessary.	Compliant	No buildings or other infrastructure are constructed within the relevant servitudes of the Sasol gas pipeline. This was confirmed during the site visit.
1.39.						No works, such as fencing or posts with deep foundations may be erected, nor will deep-rooted trees or shrubs be planted in the servitude areas which are likely to damage or endanger the pipeline(s) or the protective wrapping.	Compliant	No buildings or infrastructure are constructed within the relevant servitudes of the Sasol gas pipeline. This was confirmed during the site visit.
1.40.						No blasting will occur within the pipeline servitude. Application to carry out blasting within 500 m of a pipeline will be made to the relevant Sasol office in writing in terms of Paragraph 17.1, Chapter 10 of the Regulations embodied in the Explosives Act and Regulations (Act 26 of 1956), as amended.	Not Applicable	No Blasting activities are undertaken at Navigation West Section. The mining area is under rehabilitation, therefore this EMP commitment is not applicable.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
ACTIVITY 2: UTILISATION AND MAINTENANCE OF SURFACE INFRASTRUCTURE							
2.1.	Geology	No impacts are expected to occur on the geology during this phase due to the utilisation and maintenance of infrastructure.				Noted	No mitigation measures were proposed.
2.2.	Topography	All infrastructure areas	The presence of infrastructure will change the pre-mining topography, which will have indirect impacts on land use, surface water flow and infiltration to groundwater, as well as on visual aspects. These indirect impacts are discussed in more detail below.	Avoidance	All infrastructure will be limited to the pre-designed footprint areas. Where new infrastructure or expansion of existing infrastructure is required, the impacts on topography and the resultant indirect impacts on other environmental aspects will be assessed, and such information used to influence the design of the infrastructure, before the commencement of construction / expansion. Where applicable, authorisation for changes to infrastructure at the mine will be applied for.	Compliant	Assessment of the Google Earth Imagery and the approved layout plan, the Kromdraai open-cast mine, and Excelsior mini-pit are undertaken within the approved footprint area. Khwezela North Colliery indicated that no infrastructures have been proposed except those authorized by the water use licenses and the EA's.
2.3.	Soils	Topsoil and Subsoil stockpiles	Storage of soils will cause a permanent loss of pre-mining soil distribution, structure, depth, volume and function.	Minimisation	Where possible, subsoil and topsoil will be placed directly onto prepared rehabilitated opencast areas behind the active mining strip to minimise the volume of subsoil and topsoil that needs to be stockpiled.	Not Applicable	Mining activities are no longer undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mining areas are under rehabilitation. Therefore, this EMP commitment is not applicable.
2.4.					Stripping of topsoil and subsoil will be restricted to pre-designated mining areas, and will be stripped ahead of mining in such a manner that the mining window is minimized to between 3 and 5 open cuts.	Not Applicable	No stripping of topsoil and subsoil is undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. All opencast mining activities are completed and the mining areas are under rehabilitation. Therefore, this EMP commitment is not applicable.
2.5.					Topsoil and subsoil will be stockpiled separately, and will be located in pre-designated areas only.	Not Applicable	It was confirmed during the site visit that the topsoil's and subsoils at Kromdraai open-cast mine are not separated. It must be noted that mining activities are no longer undertaken at Kromdraai mining area and no further stockpiling of topsoil and subsoil will be undertaken. The topsoils and subsoils will be used for the rehabilitation of the mined-out pits. Therefore, this EMP commitment is not applicable.
2.6.					Stockpiles will be vegetated as soon as practicable to try and maintain the microbial components in the soils and minimise erosion.	Noted	According to the assessment of the Google Earth Image, soil stockpiles are available at Kromdraai open-cast mine and it is evident that the topsoil stockpiles are not vegetated. However, it must be noted that the topsoil stockpiles are currently used for the rehabilitation of the mining pits.
2.7.					Soil stockpiles will not exceed 3 m in height in order to maintain optimal soil structure and function.	Compliant	<u>Excelsior Block:</u> One topsoil stockpile is located at Excelsior Block and it was confirmed during the site visit that the stockpile does not exceed the height of 3 meters. <u>Navigation West Section: North Block:</u> According to the Land Management Plan (Umlalazi Topsoil and Overburden Stockpile Heights) provided for review during the audit period, four topsoil stockpiles are located within the North Block mining area and all stockpiles exceed the height of 3 meters. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.

NO.	ASPECTS	LOCATION AT KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
							Kromdraai Opencast: Topsoil stockpiles are located at the Kromdraai Opencast area and all stockpiles exceed the height of 3 meters. It must be noted that stockpiling is no longer undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.
2.8.		Gravel roads, or anywhere else vehicles travel	Physical degradation such as compaction, surface crusting, erosion and hard setting of soils may occur.	Avoidance Minimisation	Compaction of soils will be prevented by restricting movement of vehicles to designated pathways.	Compliant	It was confirmed during the site visit that all activities are undertaken within the approved footprint areas and no movement of vehicles on topsoil stockpiles.
2.9.		Topsoil and Subsoil stockpiles			No vehicles will be allowed on the topsoil or subsoil stockpiles other than the equipment required for the re-use of the stockpiled topsoil for rehabilitation.	Compliant	
		Water management system			Subsoil used for surface water management will be vegetated to minimise loss of soil through erosion.	Compliant	No vehicles were observed on the topsoil or subsoil stockpiles during the site visit.
2.10.							According to the Annual Rehabilitation Plan provided for review during the audit period and the site visit conducted, all stockpiles are vegetated through natural vegetation.
2.11.		Topsoil and Subsoil stockpiles	Topsoil stockpiles will be disturbed and exposed during the retrieval of topsoil for concurrent rehabilitation, which could lead to soil loss through erosion.	Minimisation	The minimum area of the stockpile will be disturbed for the use for rehabilitation purposes at any point in time, to prevent unnecessary exposure of the vegetated topsoil to erosion forces. Topsoil stockpiles will be reclaimed systematically to ensure that possible sites of soil exposure are minimised.	Compliant	Assessment of the Google Earth Imagery and the approved layout plan, topsoil stockpiles are within the approved footprint area.
2.12.		All infrastructure areas	Should a spill of hazardous materials (including fuel and chemicals) occur, the soil in the vicinity of the spill would become polluted, resulting in a change in the properties of the soil.		Spillages of carbonaceous materials, hydrocarbons or other contaminating substances on soil will be prevented, but where such events do occur, the spilled material and affected soil will be cleaned up immediately in accordance with the Landau Colliery Emergency Procedure, and the soil will be rehabilitated.	Compliant	Khwezela North Colliery developed and is implementing an Emergency Preparedness Procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed: <ul style="list-style-type: none"> Oil and Silt Trap Procedure Hydrocarbon and Chemical Handling Procedure Incident Reporting Procedure. From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by Interwaste. No spillages were reported during the site visit.
2.13.		Water management system, conveyors and haul roads	Contamination of the soil may occur as a result of contact with carbonaceous material or contaminated water in dirty water roads. Management areas, under the conveyors and along the haul.	Avoidance Rectification	Spillages of carbonaceous materials, hydrocarbons or other contaminating substances on soil will be prevented, but where such events do occur, the spilled material and affected soil will be cleaned up immediately in accordance with the Landau Colliery Emergency Procedure, and the soil will be rehabilitated.	Compliant	Khwezela North Colliery developed and is implementing an Emergency Preparedness Procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed: <ul style="list-style-type: none"> Oil and Silt Trap Procedure Hydrocarbon and Chemical Handling Procedure Incident Reporting Procedure. From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by Interwaste. No spillages were reported during the site visit.

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2.14.		Topsoil and Subsoil stockpiles				Only subsoil will be utilised for storm water diversion berm construction, and will be vegetated to reduce erosion. No topsoil will be used for berm construction.	Not Applicable	All construction activities are completed, therefore this EMPr commitment is not applicable.
2.15.					Avoidance	Topsoil stockpiles will be protected from contamination through vegetation.	Noted	<p><u>Excelsior Block:</u> One topsoil stockpile is located at Excelsior Block. The stockpile is not vegetated since it will be used for the rehabilitation of the remaining mined out opencast pits.</p> <p><u>Navigation West Section: North Block:</u> According to the Land Management Plan (Umlalazi Topsoil and Overburden Stockpile Heights) provided for review during the audit period, four topsoil stockpiles are located within the North Block mining area and all stockpiles are vegetated.</p> <p><u>Kromdraai Opencast</u> Topsoil stockpiles are located at the Kromdraai Opencast area and none of the stockpiles are vegetated. It must be noted that no stockpiling is undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.</p>
						Training of employees and contractors to avoid bringing the topsoil into contact with carbonaceous overburden, coal or other contaminating substance.	Compliant	Training of employees with regards to topsoil management is undertaken during the induction. Induction presentation was provided for review during the audit period.
						And ensuring that dirty water is kept away from the stockpiles.	Compliant	Dirty water from the stockpiles is diverted via trenches to the respective pollution control dams for containment and re-use.
2.16.		All infrastructure areas			Minimisation	Dust suppression with dirty water will only be undertaken within the dirty water management area, thus reducing the possible contamination of soils with contaminated water.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the dirty water areas.
2.17.		Workshop areas			Avoidance	Employees and contractors will be trained to prevent spillages of diesel or other hydrocarbons.	Compliant	Employees and contractors are made aware on how to prevent spillages of diesel or other hydrocarbons through induction presentation, monthly environmental topics and toolbox talks. Induction presentation, monthly environmental topics were provided for review during the audit period.
2.18.					Reduction	Regular inspection of hydrocarbon storage tank(s) (e.g. diesel tanks) for leakages will be undertaken. While the inspection itself will not mitigate any hydrocarbon spill impacts on soil, it will provide early warning if such an event occurs and will enable other mitigation measures to be implemented timeously to enable the impacts to be minimised.	Compliant	Inspection of the hydrocarbon storage tanks is conducted on monthly basis as part of the monthly inspection by Khwezela North Colliery Environmental Coordinator. No hydrocarbon leaks were during the site visit. Where concerns regarding hydrocarbon management are identified, such are reported as incidents and captured as incidents on the Enablon System for corrective and preventive actions.
2.19.				Diesel spills could occur in the workshop areas at refueling stations where diesel is stored and	Minimisation	Drains surrounding refuelling areas will be kept clear of debris.	Compliant	It was confirmed during the site visit that drains surrounding refueling areas are kept clear of debris. It must be noted that the refueling areas are no longer in use.
						And storm water runoff from the surface of the refueling area will	Compliant	The refueling facility is no longer in use, therefore this EMPr commitment is not applicable.


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				transferred to vehicles and other fuel-driven machinery. Where this occurs on soil, or if such spills wash, leak or seep into surrounding soil, the soil will be severely polluted.		be treated to separate the hydrocarbon from the water. The containment of the hydrocarbon in this way will reduce the potential pollution of soils that would occur if the storm water were allowed to enter the surrounding environment instead.		
2.20.					Rectification	Where hydrocarbons have spilled onto, or come into contact with, soil, the contaminated soil will be collected and removed to a soil rehabilitation facility at Landau Colliery. Once treated, the soil will be re-used for rehabilitation or maintenance of rehabilitation, where necessary.	Not Applicable	Soil rehabilitation facility is no longer operational. Soil contaminated by hydrocarbons is regarded as hazardous waste. The contaminated soil is removed on site by Interwaste. No hydrocarbon spillages were noted during the site visit.
2.21.					Avoidance	Hazardous and potentially highly contaminating substances such as lubricants, brake fluids, paints, solvents, explosives, etc., will be stored in suitably isolated or bunded areas.	Compliant	All diesel, oils and explosives are stored in bunded areas within the workshop areas.
2.22.	Land capability and Land use	All infrastructure areas		The land capability and land use will have been altered during the construction of the infrastructure, and will remain altered until the Decommissioning Phase activities restore the surface to the end land capability and land use objectives. No further changes to the land capability or land use will occur during the Operational Phase unless new infrastructure is constructed, or the existing infrastructure is expanded.	Avoidance Minimisation	All infrastructure will be limited to the pre-designated footprint areas - this particularly applies to moveable infrastructure such as coal stockpiles. Where new infrastructure or expansion of existing infrastructure is required, the impacts on land capability and land use will be assessed, and such information used to influence the design of the infrastructure, and inform decision-making, before the commencement of construction / expansion. Where applicable, authorisation for changes to infrastructure at the mine will be applied for.	Compliant	According to the assessment of the Google Earth Imagery, site visit conducted and the approved layout plan, all infrastructures within the mining area are undertaken within the approved footprint area.
2.23.						All activities will be restricted to the pre-designated areas and pathways such as haul roads. This will minimise surface disturbance and reduce impacts on land capability and land use.	Compliant	According to the assessment of the Google Earth Imagery, site visit conducted and the approved layout plan, all infrastructures within the mining area are undertaken within the approved footprint area.
2.24.	Vegetation	All infrastructure areas			Avoidance Minimisation	All infrastructure will be limited to the pre-designated footprint areas - this particularly applies to moveable infrastructure such as coal stockpiles. Where new infrastructure or expansion of	Compliant	According to the assessment of the Google Earth Imagery, site visit conducted and the approved layout plan, all infrastructures within the mining area are undertaken within the approved footprint area.

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						existing infrastructure is required, the impacts on natural vegetation will be assessed, and such information used to influence the design of the infrastructure, and inform decision making, before the commencement of construction / expansion. Where applicable, authorisation for changes to infrastructure at the mine will be applied for.		
2.25.						All activities will be restricted to the pre-designated areas and pathways such as haul roads. This will minimise surface disturbance and reduce impacts on land capability and land use.	Compliant	According to the assessment of the Google Earth Imagery and the approved layout plan, all infrastructures within the mining area are undertaken within the approved footprint area.
2.26.					Avoidance	All declared alien weeds will be effectively controlled.	Compliant	Alien Vegetation Plans (dated May 2020) were provided during the audit period. The plan aims at monitoring of the identified weeds.
2.27.					Avoidance	Implementation of dust control measures will indirectly minimise such impacts on surrounding vegetation.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the dirty water areas.
2.29.					Avoidance Minimisation	Management of the impacts on soil, surface water and groundwater would indirectly manage the impacts on wetland vegetation.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
2.30.	Animal Life	All infrastructure areas			Avoidance	The mine's environmental awareness programme will continue to educate employees and contractors of the ecological value of animal life and the necessity for a balance between development and conservation, and to inform them of the mine's no-poaching policy.	Compliant	Through the Training, Competency and Awareness Procedure, Khwezela North Colliery undertakes induction for all employees, contractors and visitors. During induction, the attendees are made aware of the ecological value of animal life and the necessity for a balance between development and conservation.
						A warning and punishment system will be implemented where workers discovered poaching or moving heavy vehicles and equipment outside of predetermined pathways and designated areas will be implemented to discourage such behaviour.	Compliant	A Disciplinary Code and Grievance Procedure is implemented as a warning and punishment system for punishing of employees if found poaching within the mining right area.
2.31.					Avoidance Rectification	Safety measures designed to keep humans away from the mining area will also discourage animals from approaching the open pits. Also, noise and vibration associated with the opencast mining will contribute to keeping animals away from	Compliant	It was confirmed during the site visit that berms and fencing around the pits were constructed to prevent humans from entering mining areas. According to Khwezela North Colliery, no animals have yet been found trapped in the mining areas. Should animals be found trapped, the relevant personnel responsible for handling of such animals are called in to remove the identified animals on site and this will be reported as an incident as part of the Incident Reporting procedure developed for Khwezela North Colliery.

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					the pits. However, should an animal become trapped in dams or other surface infrastructure (with the exception of pest species), the animal will be rescued with as little damage or injury as possible, and treated to recovery, before being released into adjoining suitable habitat.		
2.32.		Access and haul roads		Avoidance	Vehicle movement will be restricted to designated areas and to low speeds (40 km/h). The mine's environmental awareness programme will continue to educate employees and contractors of the ecological value of animal life and the necessity for a balance between development and conservation.	Compliant	Through the Training, Competency and Awareness Procedure, Khwezela North Colliery undertakes induction for all employees, contractors and visitors. During induction, the attendees are made aware of the ecological value of animal life and the necessity for a balance between development and conservation. Speed limit is restricted to 40 km/h. This was confirmed during the site visit.
2.33.		Access and haul roads at Navigation West Section					
2.34.		All infrastructure areas		Minimisation	Implementation of soil and surface water management measures will indirectly minimise such impacts on aquatic habitat and biota in the receiving watercourses.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
2.35.				Minimisation Rectification	Implementation of soil, surface water and groundwater management measures will indirectly minimise such impacts on aquatic habitat and biota in the receiving watercourses.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
2.36.	Surface water: general	All infrastructure areas		Avoidance Minimisation Rectification Reduction	Management of surface water at Landau Colliery will be undertaken in accordance with the DWA's hierarchy of decision taking, and the most recent best practice guidelines provided by the DWA.	Compliant	Integrated Water and Waste Management Plans ("IWWMPs") are developed and are updated annually. As per the IWWMPs, the water and waste management strategy implemented at Khwezela North Colliery is based on the water resource protection and waste management hierarchy of decision-taking of the DWS. Storm water management plan is utilized at the mine for ensuring proper management of surface water. Although incidents or issues are reported with regards to water management, action plans are compiled and implemented to evade the incidents or issues from re-occurring. Furthermore, surface water monitoring is conducted on a monthly basis to detect any contamination from the water resources.
2.37.					The commitments contained in the Integrated Water and Waste Management Plan will be adhered to.	Compliant	A review of the IWWMPs did reflect that the most significant risks were identified, and as general conclusion, Khwezela North Colliery is implementing strategies in line with the commitments provided in the IWWMP's.
2.38.					If a Water Use Licence is granted to Landau Colliery under Chapter 4 of the NWA, 1998, the conditions of the Licence will be implemented.	Compliant	Khwezela North Colliery has been issued with several water use licenses. Annual water use licence audits are undertaken to check compliance with the conditions contained in the water use licences. If non-compliances are identified, action plans are drafted and the actions are implemented in order to comply with the water use licence.
2.39.					Auditing of compliance with the IWWMP commitments (and if a WUL is granted, to the	Compliant	Annual internal and external audits are undertaken on the approved WULs for Khwezela North Colliery. A WUL audit was undertaken by Geovicon

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						conditions of the Licence) will be conducted regularly in accordance with the timeframes set by the DWA or committed to the IWWMP.		Environmental (Pty) Ltd in conjunction with this audit, and audited the compliance of Khwezela North Colliery to the conditions of the WULs.
2.40.						All new infrastructure will be designed to comply with GN 704, 1999, under the NWA, and where existing infrastructure does not comply, Exemption will be sought or the infrastructure will be upgraded accordingly, where applicable.	Not Applicable	Khwezela North Colliery indicated that no infrastructures have been proposed except those authorized in the water use licenses. No exemptions with regards to the mining infrastructures have been proposed. Therefore, this EMPr commitment is not applicable.
2.41.				Utilisation and maintenance of surface infrastructure will have negative impacts on surface water flow and catchment yield, on the quality of surface water runoff from the affected areas, and in some cases on the receiving watercourses and wetlands themselves. These are discussed individually in more detail below.		Compliance with Regulations GN 704, titled "Regulations on use of water for mining and related activities aimed at the protection of water resources", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be audited annually, and reported to the DWA.	Non-Compliant	GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020 due to covid restrictions. Khwezela Colliery has however, submitted a proposal to conduct GN 704 audit for the year 2021. The audit will be conducted during the month of November 2021. The proposal was provided during the audit period.
2.42.						Employees and contractors will be trained to identify activities that would impact on the surface water aspect of the mine, such as overflow of pollution control dams, spillages of contaminating substances such as diesel, carbonaceous material, etc. Furthermore, they will be informed on the environmental emergency procedure, and will be trained to contact the appropriate person to report such incidents.	Compliant	Employees and contractors are made aware of activities that would impact on the surface water aspect of the mine, such as overflow of pollution control dams, spillages of contaminating substances such as diesel, carbonaceous material through induction presentations, monthly environmental topics and toolbox talks. Induction presentations, monthly environmental topics were provided for review during the audit period. The induction presentation includes the emergency response procedure and the appropriate person to report any emergency or incident that may occur.
2.43.	Surface water: quantity and flow	Access and haul roads, Workshops and stores			Avoidance	All activities will be restricted to the pre-designated areas and pathways. This will ensure that the extents of the areas that need to be incorporated into the dirty water management system are minimised.	Compliant	Assessment of the Google Earth Imagery and the approved layout plan, all infrastructures within the mining area are undertaken within the approved footprint area.
2.44.						Clean water will be diverted around the infrastructure areas by infrastructure designed to comply with the requirements of the applicable legislation (e.g. GN704, dated 1999, under the NWA, 1998). Dirty water management areas will be minimised as far as practicable. Contaminated water will be captured and re-used, or treated before re-use or discharge.	Compliant	It was confirmed during the site visit that berms are constructed around the mined out opencast pits and the stockpiling areas for the diversion of clean water. <u>Kromdraai Section:</u> All dirty water from dirty water areas is channeled to the Kromdraai PCD from where it is pumped back to Lopies Dam, followed to the Kromdraai Liming Plant for neutralisation, then released into the environment or back to the Kromdraai Plant for re-use. <u>Blaauwkrans Co-disposal facility.</u> Dirty water from the Blaauwkrans Co-disposal facility, contained in the Kopseer- and Toe dams, is transported to the Toe Seep Plant Acid water dam, from where the water is treated at the Toe Seep Plant, and ultimately stored in the Raw water dam for re-use in the Navigation Beneficiation Plant Section. <u>Umlalazi (North Block)</u>


NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
								Rainfall water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the Raw water dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use.
2.45.						Retained contaminated water will either be used for dust suppression, allowed to evaporate, or be transferred to the dirty water management system of Landau Colliery for re-use or for treatment (at the EWRP). The volume of contaminated water used for dust suppression will be controlled to ensure that excessive ponding or runoff is not generated.	Compliant	According to the Water, mine affected water is utilised for dust suppression, reuse within the dirty water system or is transferred to the EWRP for treatment. The volumes of the contaminated water used for dust suppression are recorded on monthly basis. Water Enablon Results (dated 2020) were provided for review during the audit period.
2.46.						The dirty water impoundments will be managed and maintained in such a manner as to ensure that the available capacity and freeboard required by the applicable regulations are adhered to at all times.	Compliant	The water levels of Pollution Control Dams ("PCDs") are monitored on a regular basis with water level sensors in place at few of the dams. Monthly inspections are undertaken by Khwezela Colliery Environmental Department to ensure that the dirty water infrastructures are operated accordingly and according to the DWS best practice guidelines. Although Khwezela North Colliery ensures proper continually management of the facilities or structures to maintain the capacities and freeboards as recommended, during the audit period conducted by Khwezela North Colliery Environmental Team (15 February 2021), peters stone wall dam, located at the Kromdraai Section overflowed discharging dirty water into the receiving environment of the Kromdraaispruit. This was a result of an electrical cable joint that short circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow: <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. Therefore, the above causes are of a result of inadequacy of the dam to contain the approved capacities and the 0.8 freeboard. The following actions were undertaken: <ul style="list-style-type: none"> • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed. • Daily inspections of Pollution Control Dams-action plan is ongoing. No overflow from the above-mentioned dam was noted during the site visit.

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2.47.		Water management infrastructure and areas			The extent of the dirty water management areas at the mine will be minimised.	Compliant	According to the assessment of the Google Earth Imagery, site visit conducted, design plans and the approved layout plans, all the dirty water management systems are within the approved footprint area.
					All clean water will be diverted around the infrastructure areas. The mine will maintain these diversion berms / trenches to ensure that no blockages occur.	Compliant	Berms and trenches are utilized for the diversion of clean and dirty water. Monthly inspections are undertaken by Khwezela Colliery Environmental Department to ensure that the dirty water infrastructures are operated accordantly and according to the DWS best practice guidelines and blockage observed is reported and the infrastructures cleaned. No blockage of the trenches was noted during the site visit.
2.49.				Reduction	The surface diversion berms and drains will be kept free from any obstructions (debris) to ensure that the efficiency is not affected. Changes to the layout of the storm water control measures will be implemented, if required, to accommodate actual conditions and to enhance the efficiency of the management system.	Compliant	No obstructions on the berms and drains were noted during the site visit. No change to the layout of the storm water control measures was proposed during the site visit.
2.50.				Reduction	Repair of damages to the clean and dirty water separation infrastructure due to erosion and scouring of areas will be performed following storm events.	Compliant	According to the Incident Report, no infrastructures from damage of erosion was not reported, therefore this EMPr commitment is not applicable.
					Normal continuous maintenance throughout Life of Mine will also be performed for all slopes, berms and points of discharge (i.e. clearing of silts and sediments washed into drains, erosion marks will be filled up again, berms will be kept intact, etc.).	Non-Compliant	<p>It was confirmed during the site visit that erosion from disturbed operational areas were identified at the Klipspruit crossing. In order to manage the identified erosion, Khwezela North Colliery developed a Detailed Engineering Design and Cost Estimation for Khwezela North Colliery Wetland Rehabilitation strategy of the affected Cluster systems within the Khwezela North Colliery. According to the strategy, the rehabilitation of the affected wetland system (erosion) will be considered and implementation of the strategy thereof will be initiated and scheduled. However, management action will not be undertaken separately, but rather in consideration with the other mining sections. Khwezela North Colliery must ensure that the area is repaired to avoid further deterioration of the Klipspruit crossing.</p>  <p>Erosion identified next to Klipspruit crossing</p>
2.51.		All infrastructure areas		Minimisation	The period during which the stripped soil would be exposed before being placed live on rehabilitated areas or stockpiled will be minimised as far as practicable.	Not Applicable	No mining activities are undertaken at Schoongezicht No.2 Seam mini pit, Navigation West Section (North Block) Kromdraai open-cast mine, Excelsior mini-pit and Umlalazi mini-pit and the sites are under rehabilitation phase and no stripping is conducted, therefore this EMPr commitment is not applicable.

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2.52.					Exposed topsoil will be vegetated to minimise erosion and consequent impacts thereof on storm water quality, and the quality of water in the receiving environment.	Compliant	<p><u>Excelsior Block:</u> One topsoil stockpile is located at Excelsior Block. The stockpile is not vegetated since it will be used for the rehabilitation of the remaining mined out opencast pits.</p> <p><u>Navigation West Section: North Block:</u> According to the Land Management Plan (Umlalazi Topsoil and Overburden Stockpile Heights) provided for review during the audit period, four topsoil stockpiles are located within the North Block mining area and all stockpiles are vegetated.</p> <p><u>Kromdraai Opencast</u> Topsoil stockpiles are located at the Kromdraai Opencast area and none of the stockpiles are vegetated. It must be noted that no stockpiling is undertaken and all stockpiles will be utilized for rehabilitation of the mined out opencast pits.</p>
2.53.					Where soil will be exposed for longer periods of time, silt laden runoff from exposed soil will be intercepted and settled before being allowed to drain into the receiving environment.	Compliant	No concerns were reported regarding silt laden runoff from opencast areas draining to the receiving environment.
2.54.			Surface water run-off coming into contact with carbonaceous material will become contaminated	Minimisation	Contaminated surface water, such as direct rainfall entrapped in the dirty water management system, or runoff from the old discard dumps and Blaauwkrans Co-disposal facility, will be contained, treated and re-used in the dirty water management system.	Compliant	Dirty water from the Blaauwkrans Co-disposal facility is contained in the Kopseer- and Toe dams, is transported to the Toe Seep Plant Acid water dam, from where the water is treated at the Toe Seep Plant, and ultimately stored in the Raw water dam for re-use in the Navigation Beneficiation Plant Section.
2.55.	Surface water quality	All infrastructure areas, except for topsoil stockpiles and clean water management areas and facilities		Avoidance Minimisation	The areas containing carbonaceous materials will be separated and isolated by means of berms and cut-off trenches to contain affected water and to maximise the diversion of clean surface water runoff past these areas.	Compliant	A network of trenches and berms were constructed to divert all clean and dirty water runoff away from the overburden stockpiles and contain all mine affected water within the affected water management system.
2.56.				Minimisation	Contact time between entrapped surface water and carbonaceous material in the dirty water management areas will be minimised by removing such water as soon as possible after rainfall events. This will minimise the extent of contamination of the surface water in surface infrastructure areas.	Compliant	A network of trenches and berms were constructed to divert all clean and dirty water runoff away from the overburden stockpiles and contain all mine affected water within the affected water management system (PCD's).
2.57.				Avoidance	No construction, repair or maintenance of any water management facilities or roads will be undertaken with any material (such as coal residue) that may cause pollution of water resources.	Compliant	No construction, repair or maintenance of any water management facilities or roads with coal material was noted during the site visit.

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
2.58.					Rectification	Spillages of any material that may cause pollution of surface water resources, such as carbonaceous material, outside of the isolated dirty water management areas, will be regularly removed and mitigation measures implemented when necessary.	Compliant	Khwezela North Colliery developed and is implementing an Emergency Preparedness Procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed: <ul style="list-style-type: none"> Oil and Silt Trap Procedure Hydrocarbon and Chemical Handling Procedure Incident Reporting Procedure. From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by Interwaste. No spillages were reported/noted during the site visit.
2.59.					Avoidance	To avoid excessive coal spillages on the haul roads, trucks will be restricted to within applicable weight limitations and suitable management measures enforced, such as reduced speed limits and covering of the coal trucks.	Not Applicable	No mining activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit and no coal stockpiles exist. The mining areas are under rehabilitation, therefore this EMPr commitment is not applicable.
2.60.		Navigation West Section; South Block			Avoidance Minimisation	Detailed specific surface water management measures for the Navigation West Section; South Block will be designed by a suitably qualified person once the mine plan for the South Block has progressed sufficiently, but prior to the onset of any construction or related activities in the South Block area.	Compliant	Surface water management structures of the Navigation West Section; South Block were designed and compiled by Semane Consulting Engineers (Pty) Ltd who are the suitable engineers for the construction of storm water structures. The design reports were provided for review during the audit period.
2.61.					Avoidance	Once the appropriate surface water management measures to enable compliance with all applicable legislative requirements have been completed for the Navigation West Section; South Block, the mine will update its EMP document accordingly.	Compliant	Trenches, berms and expansion of the Umlalazi pollution control dam were constructed for the management of clean and dirty water for the Navigation West: South Block. A separate EMPr that contains the impacts, risks and mitigation measures pertaining to the Navigation West: South Block water management is developed and approved by the DMRE and it is further implemented.
2.62.				If contaminated surface water (including decanting acid mine water) is discharged, or allowed to flow, to the receiving environment, the water quality in the receiving environment would further deteriorate. Downstream users and aquatic habitats would be negatively affected by such discharge, and the wetlands associated with the streams		Continuous managing, improvement and monitoring of the water balances will be undertaken to identify risk areas and excess water volumes, and for reporting on conditions on a monthly base.	Compliant	Navigation West Section and Umlalazi Daily abstraction and distribution volumes are captured in an electronic database with the aid of the SCADA system. Data from the SCADA system are used to update the water balance model on an annual basis. The above results are used in determination of the water balance results. Any shortcomings identified are addressed and improvement management measures are identified.
2.63.						Contaminated surface water will not be allowed to flow or be intentionally discharged to the receiving environment without being treated first, and without the applicable authorisations.	Compliant	No intentional discharge/flow of dirty water to the natural environment, at Umlalazi South Section was noted during the site visit and reported during the audit period.

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2.64.				in the Kromdraai and Navigation West Sections would also be negatively impacted.	Avoidance Minimisation Rectification	Decanting acid mine water will be collected, stored in dirty water management facilities until is treated and re-used or discharged (authorised discharge - see Appendix C12).	Not Applicable	No decanting occurs at the Navigation West Section; South Block, therefore this EMP commitment is not applicable.
2.65.					Avoidance Minimisation	The domestic waste water (sewage) generated at the mine will be directed to the on-site sewage treatment plants for treatment and re-use.	Compliant	According to the Water Balance Excel Sheet, domestic wastewater generated at the Navigation West Section (Umlalazi) is treated at an on-site, stand-alone sewage treatment plant located at Navigation Plant. The sewage wastewater results were provided during the audit.
2.66.				Surface water run-off coming into contact with soil or other surfaces where hydrocarbons such as fuel or oil may have been spilled will become contaminated. Unless mitigated appropriately, the water containing hydrocarbons will enter the receiving environment and negatively affect the water quality in the surrounding streams.		Implementation of soil mitigation measures (refer to No.1.22) will reduce the potential for secondary contamination of surface water runoff.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
2.67.						Runoff in the infrastructure areas will be kept within the isolated dirty water management area, which will significantly reduce the potential for such contaminated water to reach the receiving environment.	Compliant	According to the Water Balance Excel Sheet (dated July 2020), runoff water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the Raw water dam It is then diverted to the process water tanks which is then used for dust suppression.
2.68.					Rectification	Hydrocarbons will be removed from the water in the dirty water management system before the water is re-used, or treated before being released to the receiving environment under the applicable authorisation(s).	Compliant	According to the Water Balance Excel Sheet (dated July 2020), runoff water captured from the re-fueling bay is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the raw water dam. It is then diverted to the process water tanks, then used for dust suppression. Hydrocarbons are regarded as hazardous waste and are disposed off site by Interwaste to Halfpointein landfill site. Safe disposal certificate were provided for review during the audit period.
2.69.					Avoidance	No contaminated water from workshop areas or refueling stations will be discharged or allowed to flow into the surrounding environment.	Compliant	According to the Water Balance Excel Sheet (dated July 2020), runoff water captured from the re-fueling bay is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the raw water dam It is then diverted to the process water tanks which is then used for dust suppression. No discharge of dirty water from the workshop area was noted during the site visit.
2.70.					Rectification	All contaminated water reporting in bunded areas will be drained to an oil separator. Separated hydrocarbons will be disposed of in accordance with the relevant legislation.	Compliant	Oil separators are available at the refueling stations. The hydrocarbons are regarded as hazardous waste and are disposed off site by Interwaste to Halfpointein landfill site. Safe disposal certificate were provided for review during the audit period.
2.71.					Avoidance Reduction	Operation of the hydrocarbon storage facilities will be checked on a regular basis, to ensure that they are in working order, and to ensure that any malfunctions or irregularities are attended to and / or repaired as soon as possible.	Compliant	Inspections of the hydrocarbon storage tanks are conducted on monthly basis as part of the monthly inspection by Khwezela North Colliery Environmental Coordinator. No hydrocarbon leaks were noted during the site visit. Where concerns regarding hydrocarbon management are identified, such are reported as incidents and captured as incidents on the Enablon System for corrective and preventive actions.
2.72.					Minimisation Rectification	Hydrocarbon pollution management measures, such as oils traps, will be operated	Compliant	Oil traps are operated and well maintained. This was confirmed during the site visit.

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						and maintained in the workshop areas.		
2.73.					Avoidance Minimisation Rectification Reduction	The management measures pertaining to the storage and disposal of domestic and hazardous waste described in the Landau Colliery EMS Procedure will be implemented to avoid any possible contamination of surface water resources or soils with hazardous substances.	Compliant	It was confirmed during the site visit that general and hazardous waste is stored in designated waste bins and collected at intervals and disposed of at the licenced waste disposal facilities. Safe disposal certificates were provided for review during the audit period. According to the Hydrocarbon and Chemical Handling Procedure, any soil contamination must be cleaned up immediately and stored within or at designated areas. No spillages were noted during the site visit.
2.74.				Despite the implementation of a clean and dirty water separation system, and the use of purpose-built facilities to manage the dirty water generated at Landau Colliery, there is still a risk that unintended overflows and seepage of contained contaminated water may occur during adverse environmental conditions or in the event of mismanagement.	Avoidance	The dirty water impoundments will be managed and maintained in such a manner as to ensure that the available capacity and freeboard required by the applicable regulations are adhered to at all times.	Non-Compliant	<p>According to the water use licence granted for Umlalazi South Block Extension (License Number: 03/B20F/ACGIJ/5781), it is indicated that the pollution control dam shall be operated and maintained to have a minimum freeboard of 0.8 metres above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood-event on top of its mean operating level.</p> <p>It was confirmed during the site visit that the Navigation West Section pollution control dam does not maintain the 0.8 metre freeboard due to silt accumulation noted, with high water levels.</p> <p>It is therefore concluded that the above results in inadequacy of the dam to contain the approved capacities and to maintain the 0.8 freeboard. Desilting activities were undertaken during the site visit. (A contractor (Bovu) has been appointed to de-silt the dam, however Bovu has been failing to fulfil the requirements of the issued PO, matter has been escalated to management). Hence this will ensure that the dam capacity and the 0.8 freeboard are maintained as required by the approved water use licence and that overflow from the dam is prevented.</p>  <p>Silt accumulation at the pollution control dam</p>
2.75.						No discharge of excess mine water will be allowed to take place to the receiving environment without the required authorisations.	Compliant	No water contamination or discharge of dirty water to the natural environment from the Navigation West Section; South Block was noted during the site visit and reported during the audit period.
2.76.					Rectification	Should any dirty water storage facilities overflow, the emergency procedure (described in Part 8) will be followed.	Compliant	No overflow of dirty water to the natural environment from the Navigation West Section; South Block was noted during the site visit and reported during the site visit, therefore this EMPr commitment is not applicable.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
2.77.		Kromdraai Section	AMD is decanting from old mine workings within the Kromdraai Section mine boundary area. It is endeavoured to collect and neutralise this water before it is discharged into the fairly pristine Wilge River catchment. The poor quality of the decant has necessitated that the water be collected and kept within the dirty water management and treatment system. A preliminary groundwater balance model recently been done by Professor F. Hodgson (refer to the presentation, dated 2009, in Appendix E8.1), shows that unless the groundwater levels are controlled, the Kromdraai Section will decant from about 15 points (see Slide 31 of the presentation in Appendix E8.1). Also, it is anticipated that the mined out workings will flood as mining progresses, and so there will not be a "filling up" period after mining has ceased. This means that decant management will need to continue to be implemented at the mine throughout the remainder of the Operational Phase and during the Decommissioning Phase until Closure is obtained.	Avoidance Minimisation Rectification	Decanting acid mine water will be collected, treated and re-used or discharged (authorised discharge - see Appendix C12). The treatment and re-use of acid mine water at the Kromdraai Section is described in detail in Part 3.9.7.5.1.	Compliant	According to the Integrated Water and Waste Management Plan developed for the Kromdraai Section (dated March 2019), decant occurs at the North, Central and South Block of Kromdraai Section. According to the Water Reticulation Plan for Kromdraai Section, contaminated water emanating from the South and North decant areas is collected and pumped to the Kromdraai Holding dam (Lopies Dam), Dickson Dam and Peters Dam and then to the Kromdraai Plant for treatment. The treated mine water is re-used in the Kromdraai Plant and excess neutralised water is discharged to the Kromdraaispruit. Water results were provided for review during the audit period.

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2.78.				As mining progresses, more decant will need to be managed, therefore requiring more dirty water management facilities to be developed, to withhold the poor quality water from the receiving catchment. The increase in decant water and the dirty water management facilities to manage the decant will mean that there is an increased risk of overflows and seepage of AMD to the surrounding environment.	Avoidance Rectification	Any new water management infrastructure will be designed by a suitably qualified person, and will comply with legislative requirements such as GN 704, 1999, under the NWA, 1998. An application for a Water Use Licence will be submitted to the DWA for any new water uses, as defined in Section 21 of the NWA, 1998, before the commencement of the water uses.	Not Applicable	Khwezela North Colliery indicated that no new infrastructures have been constructed at Kromdraai Section, apart from the authorized infrastructures, therefore this EMP commitment is not applicable.
2.79.						The dirty water impoundments will be managed and maintained in such a manner as to ensure that the available capacity and freeboard required by the applicable regulations are adhered to at all times.	Compliant	<p>The water levels of Pollution Control Dams ("PCDs") are monitored on a regular basis with water level sensors in place at a few of the dams. Monthly inspections are undertaken by Khwezela Colliery Environmental Department to ensure that the dirty water infrastructures are operated accordantly and according to the DWS best practice guidelines. Although Khwezela North Colliery ensures proper continually management of the facilities or structures to maintain the capacities and freeboards as recommended, during the audit period (15 April 2021), peters stone wall dam, located at the Kromdraai was nearing capacity. The mine informed the DWS about these illegal mining activities. This was a result of an electrical cable joint that short circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow:</p> <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. <p>Therefore, the above causes are of a result of inadequacy of the dam to contain the approved capacities and to maintain the 0.8 freeboard.</p> <p>The following actions were undertaken:</p> <ul style="list-style-type: none"> • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed. • Daily inspections of Pollution Control Dams-action plan is ongoing. <p>No overflow from the above-mentioned the dam was noted during the site visit.</p>

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2.80.						No discharge of excess mine water will be allowed to take place to the receiving environment without the required authorisations.	Compliant	<p>No discharge/flow of dirty water to the natural environment was noted during the site visit.</p> <p>However, during the audit period, peters stone wall dam, located at the Kromdraai was nearing capacity, with decant water from illegal mining activities. The mine informed the DWS about these illegal mining activities. This was a result of an electrical cable joint that short circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow:</p> <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational. • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. <p>The following actions were undertaken:</p> <ul style="list-style-type: none"> • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed. <p>No overflow of the above-mentioned dam was noted during the site visit.</p>
2.81.						Should any dirty water storage facilities overflow, the emergency procedure (described in Part 8) will be followed.	Compliant	<p>During the audit period (15 April 2021), peters stone wall dam, located at the Kromdraai was nearing capacity, with decant water from illegal mining activities. The mine informed the DWS about these illegal mining activities This was a result of an electrical cable joint that short circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow:</p> <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. <p>The Incident Reporting and Management Procedure was followed by undertaking the following:</p> <ul style="list-style-type: none"> • Incident was reported to the Environmental Officer and actioned on Enablon. • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed.
2.82.				Unless appropriately managed, the increase in acid mine water decanting		Clean and dirty water separation, operation of dirty water management facilities	Compliant	Clean and dirty water separation, dirty water management facilities and systems are constructed for the management of dirty water within Kromdraai Section. The above mentioned are maintained regularly to ensure proper effectiveness.

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
				to the surface could become uncontrollable, resulting in future adverse conditions to the aquatic ecosystems and other downstream users in the receiving water environment (i.e. Kromdraaispruit, Saalboomspruit, Wilge River, Olifants River and Loskop Dam). It should be emphasised that fairly good quality of water from the Wilge River currently dilutes a very poor-quality contribution by the Klipspruit just after its confluence with the Olifants River. This dilution takes place just upstream from the Loskop Dam and will not be available once the Wilge River is also polluted by an increase in highly saline water from the Kromdraaispruit. Many users including agricultural, recreational, domestic as well as aquatic ecosystems may be affected adversely should the Wilge River loses its potential to dilute and neutralise the Klipspruit contribution.		and systems, and swift implementation of the environmental emergency procedure (if necessary) will be undertaken to reduce the risk of overflow of contaminated water to the receiving environment significantly.		<p>However, during the audit period, peters stone wall dam, located at the Kromdraai was nearing capacity, with decant water from illegal mining activities. The mine informed the DWS about these illegal mining activities t. This was a result of an electrical cable joint that short circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow:</p> <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational. • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. <p>The following actions were undertaken:</p> <ul style="list-style-type: none"> • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed. <p>No overflow from the above-mentioned dam was noted during the site visit.</p>
2.83.		Kromdraai Liming Plant			Minimisation	The mine has initiated a project to improve the quality of the effluent discharged from the Kromdraai Liming Plant, in an effort to abate water quality impacts on the downstream environment – refer to Part 3.9.7.5.1 for more detail. Landau Colliery will continue to investigate alternative means of treating acid mine water and contaminated process water, and will implement the best environmental option to replace or supplement the Kromdraai Liming Plant. Other measures to be implemented include the following: Upgrading of the Kromdraai Liming Plant; The investigation, planning and	Compliant	<p>The following has been proposed and implemented to improve the quality of the effluent discharged:</p> <ul style="list-style-type: none"> • Report on the Assessment of Cover Design, Construction and Aging on Water • Percolation, Oxygen Ingress and Acid Mine Drainage Generation for Coal Discard Facilities for Mpumalanga Highveld – Field Investigation, compiled by TerraSim Earth Technologies, dated 02 October 2018; and • A presentation presented by Albert van Zyl from TerraSim Earth Technologies was made available for review. The title of the presentation is, Research Project to Develop Guideline on Alternative Covers to Limit Acid Rock Drainage from Coal Discard Dumps and Backfilled Pits. • Strategies are also in place to treat excess mine water from Kromdraai at the EWRP, but has not been implemented yet. • Wetland offset strategy was investigated for KNC. The Wetland off-set strategy for Landau Colliery: Phase 2 – Development of an Offset Strategy and • Evaluation of Possible Gains dated August 2015 and compiled by Wetland Consulting Services (Pty) Ltd, presents offset target areas. With specific reference to KNC, six (6) wetland clusters were identified as possible target sites with all sites located predominantly on mine owned

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						design of the clean-up of the wetland system upslope of the weir Kromdraai weir; Implementation of measures to reduce the sulphate concentration in the effluent discharged after treatment.		land. Golder were appointed as contractor to address the following with regards to the wetland rehabilitation and offset project: <ul style="list-style-type: none"> Devised rehabilitation/rehabilitation measures Concept engineering design of the devised rehabilitation / rehabilitation measures Costing of the devised rehabilitation/rehabilitation measures.
2.84.		Navigation Section: water management system		According to the most recent groundwater balance modelling exercise undertaken for the Navigation Section (refer to the presentation by Professor Frank Hodgson in Appendix F8.2), a total of approximately 1 437 345 m ³ of excess water will need to be abstracted in 2010 for mining to continue safely and efficiently. Approximately 100 000 m ³ is expected to be reused, leaving an excess of approximately 3.7MI/day.	Minimisation Reduction Rectification	Contaminated mine water will be stored in the dirty water containment facilities at the mine and excess dirty water will be pumped to the eMalahleni Water Reclamation Plant for treatment to potable standards before being re-used by the SACE mines and the eMalahleni Municipality.	Compliant	According to the Water Balance Excel Sheet (dated July 2020), dirty water from the Navigation Section is pumped to the West and East pollution control dams. From there is to the Acid Water Dam adjacent to the Navigation Neutralisation Plants where it is neutralised for re-use in the Navigation Dense Medium Separation Plant or pumped to EWRP for treatment. According to the Water quality results of the EWRP, all variables were within the specified limits as per the water use licence.
2.85.				Dirty water containment facilities storing mine water are at risk of overflowing if not managed appropriately, and as such the dewatering of the mining areas at the Navigation Section of Landau Colliery could impact on the receiving surface water environment.	Avoidance Rectification	The dirty water impoundments will be managed and maintained in such a manner as to ensure that the available capacity and freeboard required by the applicable regulations are adhered to at all times. No discharge of excess mine water will be allowed to take place to the receiving environment without the required authorisations. Should any dirty water storage facilities overflow, the emergency procedure (described in Part 8) will be followed.	Compliant	The water levels of Pollution Control Dams ("PCDs") are monitored on a regular basis with water level sensors in place at a few of the dams. Monthly inspections are undertaken by Khwezela Colliery Environmental Department to ensure that the dirty water infrastructures are operated accordantly and according to the DWS best practice guidelines. No concerns with the East and West PCD's were reported and noted during the site visit.
2.86.				In the past, contaminated water contained within the Schoongezicht PCD overflowed during extreme wet conditions into the Brugspruit. Landau Colliery, has however, upgraded the pumping system of the Schoongezicht Valley water management system in order to ensure that contaminated contained water does not overflow from the PCDs that form part of the Schoongezicht Valley water management system (refer to the design drawings of the mentioned pumping system upgrade, attached as Appendix E5). Despite the upgrade in water				
2.87.					Avoidance	Cut-off drains have been constructed to divert clean. water These measures will be maintained and improved where necessary to ensure that the impacts associated with flooding are minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
						All direct rainfall within the operational areas is considered "dirty" and will be channelled to the pollution control dams from where it will be pumped back to the Plants for re-use or treatment	Compliant	According to the Water Balance Excel Sheet (dated July 2020), dirty water from the Navigation Section is pumped to the West and East pollution control dams. From there is to the Acid Water Dam adjacent to the Navigation Neutralisation Plants where it is neutralised for re-use in the Navigation Dense Medium Separation Plant or pumped to EWRP for treatment. According to the Water quality results of the EWRP, all variables were within the specified limits as per the water use licence.
						All infrastructure areas at the Landau Colliery are located	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

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				reticulation, the dam is still at risk of overflowing during extreme storm events or if mismanaged.		outside the 1:100 floodline and further than 100m from the nearest watercourse, thus minimising the impacts associated with flooding.		
2.88.				Water storage facilities will likely overflow, and storm water management infrastructure will likely be breached in extreme storm events, larger than the designed flood events. The contaminated water kept within the dirty water management area would flow into the surrounding catchment, influencing the water quality in receiving streams. However, it should be borne in mind that during an extreme flood event, it is expected that the water in the streams themselves will have a diluting effect, providing some mitigation against the contaminated overflow and runoff.	Reduction	All pollution control structures will be inspected after a flood rainfall event for signs of erosion.	Not Applicable	No flood rainfall event at Navigation Section has occurred during the audit period and no signs of erosions were noted at the pollution control dams, therefore this EMPr commitment is not applicable.
						Water levels will be checked to ensure that the operational capacities are maintained.	Compliant	According to the Water, water levels are monitored.
2.89.					Reduction	All damages to surface water management infrastructure, and erosion thereof, will be rectified.	Not Applicable	No damages to surface water management infrastructure and evident of erosion was reported and noted during the site visit, therefore this EMPr commitment is not applicable.
2.90.					Authorisation Rectification	Should an event greater than a 1:50 year flood event occur, and it is necessary for the mine to discharge contaminated water, emergency authorisation from the DWA will be applied for prior to the commencement of such discharge. Monitoring of the surface water quality within the receiving water bodies will take place following such discharge, and the integrity of the surface water management infrastructure will be inspected and repaired immediately, where necessary. If the data from the monitoring of affected water bodies following an extreme event greater than a 1:50 year storm event indicates that the impacts of the discharge of contaminated water from Landau Colliery are significant, suitable rehabilitation and remediation action will be taken as soon as possible after the flood to mitigate any damage that may have been caused as a result of the discharging of contaminated water.	Not Applicable	No flood event at the Navigation Section as a result of overflow occurred during the audit period and no discharge of dirty water to the environment was proposed, therefore this EMPr commitment is not applicable.
2.91.	Surface water: watercourse alterations	All infrastructure areas		No further disturbances to watercourses are expected to take place during the Operational Phase unless new infrastructure is constructed.	Avoidance Minimisation	Any new infrastructure will be located outside of the 1:100 year floodlines of the streams draining the mine boundary areas. However, should this not be possible, or should a watercourse crossing be required, an environmental impact assessment will be undertaken for the planned activity to inform the design of	Not Applicable	Khwezela North Colliery indicated that no new infrastructures have been constructed at Kromdraai Section, apart from the authorized infrastructures, therefore this EMPr commitment is not applicable.

NO.	ASPECTS	LOCATION AT KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					the infrastructure, and to inform decision making. The applicable authorisations will be obtained before construction or expansion of any watercourse alterations takes place.		
2.92.		Stone wall across unnamed tributary of the Kromdraaispruit	Stone wall (refer to the aerial photograph attached as Appendix E11), was constructed across an unnamed tributary of the Kromdraaispruit directly east (upstream) of the Kromdraai Liming Plant discharge point. The purpose of the stone wall is to prevent silt from accumulating in the system. The stone wall also allows for decant from the Blackstone defunct mine to be collected and pumped back to the Kromdraai Liming Plant for neutralisation before being discharged into the Kromdraaispruit. While this is essential to manage downstream water quality impacts, it means that the catchment yield of the stream is reduced.	Avoidance Reduction	The stone wall will be maintained to ensure that acid mine water decanting into the unnamed tributary is contained and treated before being released back into the catchment. No expansions or alterations to the stone wall will be undertaken without the appropriate EIA and authorisations.	Compliant	<p>The stone wall is maintained by conducting weekly inspections by Khwezela Colliery Environmental Department and daily visual inspections by the Liming Plant Team. If any issues are noted, such are addressed and reported on Enablon for further actioning.</p> <p>However, during the audit period (15 February 2021), peters stone wall dam, located at the Kromdraai Section overflowed, discharging dirty water into the receiving environment of the Kromdraaispruit. This was a result of an electrical cable joint that short-circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow:</p> <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. <p>The Emergency Preparedness and Response Procedure was followed by undertaking the following:</p> <ul style="list-style-type: none"> • Incident was reported to the Environmental Officer and actioned on Enablon. • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed. • <p>No overflows were noted during the site visit. Furthermore, no expansion to the stone wall was noted during the site visit.</p>
2.93.		Excelsior haul road crossing over the Suikerbosch-kopspruit	As part of the Excelsior Block construction activities, a haul road was constructed to facilitate the haulage of coal from the Excelsior Block open pit to the Kromdraai Plant. Part of the mentioned haul road crosses the Suikerboschkopspruit. The haul road crossing structure itself is an existing crossing that was in place prior to the commencement of the Construction Phase of the Excelsior Block. A new	Avoidance Reduction	No expansions or alterations to the haul road crossing will be undertaken without the appropriate EIA and authorisations.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, no expansions have been made with regards to the Excelsior Block haul road crossing.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
				crossing was thus not constructed as part of the haul road construction for the Excelsior Block. The mine ensured that a suitably qualified person verified that the crossing is capable of supporting the use of the road for haulage purposes, before incorporating the existing crossing into the haul road construction.				
2.94.				Should a spill of hazardous materials (including fuel and chemicals) occur on or near the haul road crossing, the soil and receiving surface water in the vicinity of the spill would become polluted, possibly affecting aquatic habitats and downstream water users.	Avoidance Rectification	Spillages of carbonaceous materials, hydrocarbons or other contaminating substances on soil will be prevented, but where such events do occur, the spilled material and affected watercourse will be cleaned up immediately in accordance with the Landau Colliery Emergency Procedure (see Part 9), and rehabilitated.	Compliant	<p>Khwezela North Colliery developed and is implementing an Emergency Preparedness Procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed:</p> <ul style="list-style-type: none"> • Oil and Silt Trap Procedure • Hydrocarbon and Chemical Handling Procedure • Incident Reporting Procedure. <p>From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by Interwaste. No spillages were reported during the site visit.</p>
2.95.		Kromdraai weir		<p>The weir is an existing weir that was present in the Kromdraaispruit before the commencement of opencast mining at Landau Colliery, and is located outside of the Kromdraai Section Mine Boundary Area.</p> <p>Changes to the flow in the Kromdraaispruit have occurred due to the placement of sand bags and gabions near the weir to prevent acid water from by passing the dosing station, and to allow for effective dosing of the water (which is acidic) with lime or limestone to increase the pH before the water enters the downstream receiving farm dam. The gabions and dosing of water to increase pH are seen as temporary measures which will only be in place until a more effective decant management system has been investigated and can be implemented.</p>	Rectification	<p>As part of the long term acid water decant management strategy, the following will be undertaken, which will mean the gabions and dosing plant will no longer be required and can be removed from the watercourse: The Kromdraai Liming Plant will be upgraded;</p> <p>The clean-up of the wetland system upslope of the weir will be investigated, planned and designed;</p> <p>Measures will be implemented to reduce the sulphate concentration in the effluent discharged after treatment;</p> <p>The weir system will be upgraded to a permanent structure for water monitoring purposes.</p>	Compliant	It should be noted that the liming plant has undergone upgrades in the past including the use of hydrated lime – this has reduced reliance on dosing station. However, due the neighbouring defunct mine as well as other possible sources of impact downstream of plant, dosing station is still required and is still utilised.
2.96.					Authorisation	A Water Use Licence Application under Chapter 4 of the NWA, 1998, will be submitted to the DWA for this water use.	Not Applicable	Khwezela North Colliery has been issued with several water use licences authorized by the Department of Water and Sanitation. However, no water use licence for the constructed gabions is undertaken and submitted to the DWS.

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2.97.	Groundwater quantity and levels	Access and haul roads, Workshops and stores, Plant areas, Buildings, Stockpiles	Compaction of the surface will reduce groundwater recharge.	Minimisation	The footprint areas where the surface is compacted will be minimised, although in the case of haul roads, the compacted surface area will generally progressively increase as opencast mining advances. However, even with the progressive enlargement of the compacted surfaces of haul roads, it is not anticipated to impact largely on groundwater infiltration. Haul roads will be located in pre-designated areas, and all traffic will be kept on the haul roads, minimising the area of surface disturbance, and resultant impacts on soil, surface water and groundwater infiltration.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, the access and haul roads, workshops and stores, plant areas, buildings and stockpiles are within the approved footprint area.
2.98.		Dirty water storage and waste disposal facilities	Where the groundwater gradient allows for infiltration of surface water, water contained in water storage facilities, and infiltration through waste discard facilities, will seep into the groundwater regime and will result in 'mounding' of groundwater beneath the facilities, from where it will seep into the surrounding geology. This is particularly so for those facilities that are not lined with impermeable liners or fitted with a suitable drainage or infiltration interception system.	Avoidance Minimisation	Any new dirty water management facilities or waste disposal facilities will be designed to comply with legislative requirements, which will reduce and possibly eliminate the seepage of water to the groundwater.	Not Applicable	No new infrastructures were required and constructed during the audit period, therefore this EMPr commitment is not applicable.
2.99.				Avoidance	No new dirty water management facilities or waste disposal facilities will be constructed without the required authorisations.	Compliant	No new infrastructures were constructed during the audit period, therefore this EMPr commitment is not applicable.
2.100.				Avoidance Minimisation	Should any new dirty water storage or waste disposal facilities be required, an EIA will be conducted during the planning phase to inform the design of the infrastructure and to also to inform decision-making.	Not Applicable	No new infrastructures were required and constructed during the audit period, therefore this EMPr commitment is not applicable.
2.101.					The management of acid mine water seepage on surface water were discussed in No.2.62 to No.2.65 above.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

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			were discussed in No.2.62 to No.2.65 above.				
2.102.			The Schoongezicht Dump No.3 has been rehabilitated in situ, and is expected to divert all runoff to the surrounding catchment rather than allowing infiltration through the dump, thus decreasing groundwater recharge over its surface area compared to pre-mining groundwater recharge.	N/A	No further mitigation necessary. Rehabilitation will be maintained.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
2.103.			Breaches in the rehabilitated surface of in situ rehabilitated discard disposal facilities (e.g. Schoongezicht Dump No.3), where erosion may expose the underlying coal discard would allow infiltration of direct rainfall and / or surface water runoff, which would result in groundwater recharge and mounding below the facility. While the impact on groundwater levels would not be significant, the resultant groundwater quality impacts would be. Refer to the discussion of groundwater quality impacts below.	Avoidance	The rehabilitated surface of the discard facility will be inspected regularly and repaired or maintained where necessary.	Not Applicable	The discard facility is still operational and no rehabilitation of the discard dump has commenced, therefore this EMP commitment is not applicable.
2.104.		Dirty water storage and waste disposal facilities	Schoongezicht Dump No.3), where erosion may expose the underlying coal discard would allow infiltration of direct rainfall and / or surface water runoff, which would result in groundwater recharge and mounding below the facility. While the impact on groundwater levels would not be significant, the resultant groundwater quality impacts would be. Refer to the discussion of groundwater quality impacts below.	Avoidance Minimisation	Any new dirty water management facilities or waste disposal facilities will be designed to comply with legislative requirements, which will reduce and possibly eliminate the seepage of water to the groundwater.	Not Applicable	No new infrastructures were constructed during the audit period, therefore this EMP commitment is not applicable.
2.105.					Seepage of contaminated water to the groundwater will be minimised where practicable. This will be achieved by minimising contact time between surface water and carbonaceous materials, and avoiding the ponding of contaminated water outside of purpose-built dirty water management facilities. Other actions that could be undertaken to prevent the seepage of contaminated water to the groundwater regime include the immediate clean-up of hazardous materials after spills. For more details in this regard, refer to No.2.43 - 2.86 - surface water management.	Compliant	<p>According to the Integrated Water and Waste Management Plan developed for the Navigation Section, seepage water from the Blaauwkrans Co-disposal facility, contained in the Kopseer- and Emergency Toe- dams, is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (Treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.</p> <p>According to Khwezela MRD action Plan (dated July 2020), seepage of contaminated water from the Blaauwkrans Co-Disposal Facility is of concern. The following management actions have been identified in the action plan:</p> <ul style="list-style-type: none"> • Installation of Kopseer seepage cut off trench and pump the seepage to liming plant to prevent the plume into the pan. • Groundwater quality data to include 2 years information not average by each quarter. Data to include metals parameters. <p>Khwezela North Colliery developed and is implementing an Emergency Preparedness procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed:</p> <ul style="list-style-type: none"> • Oil and Silt Trap Procedure • Hydrocarbon and Chemical Handling Procedure • Incident Reporting Procedure. <p>From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by TL Ideas. No</p>

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
								rehabilitation of contaminated soil is undertaken at Khwezela North Colliery. No spillages were reported during the audit period.
2.106.						Implementation of surface water management measures will contribute to the minimisation of impacts on groundwater quality resulting from the utilisation of surface infrastructure. Such measures include the minimisation of surface disturbance areas, the continued separation of clean and dirty water and the recycling, treatment and re-use of contaminated water.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, the dirty water storage and waste disposal facilities are within the approved footprint area. Dirty water from the Blaauwkrans Co-disposal facility ultimately is stored in the Navigation raw (treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. According to the Integrated Water and Waste Management Plan developed for the Navigation Section, cut-off drains surround the Blaauwkrans Co-disposal facility to prevent clean water entering the areas. It must be noted that seepage is of a concern at the disposal facility. Management actions have been identified to minimize the contaminated seepage water.
2.107.	Groundwater quality			Pollution Control Dams	Avoidance Reduction Rectification	Pollution control dams will be checked for damages and seepage due to cracks or any other faults. If necessary, repairs will be carried out as soon as practicable to reduce the period over which dirty water will seep through such damages or cracked areas into the groundwater.	Compliant	Khwezela North Colliery confirmed that if concerns are noted at any of the dams, this will be noted and recorded as an incident for corrective action.
2.108.		Dry discard disposal facilities, ROM stockpiles and Plant footprint areas			Avoidance	Any new dirty water management facilities or waste disposal facilities will be designed to comply with legislative requirements, which will reduce and possibly eliminate the seepage of water to the groundwater.	Not Applicable	No new infrastructures were required and constructed during the audit period, therefore this EMP commitment is not applicable.
2.109.					Avoidance Minimisation	Implementation of surface water management measures will contribute to the minimisation of impacts on groundwater quality resulting from the utilisation of surface infrastructure. Such measures include the minimisation of surface disturbance areas, the continued separation of clean and dirty water, capture and recycling of contaminated water, etc.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, the dirty water storage and waste disposal facilities are within the approved footprint area. Dirty water from the Blaauwkrans Co-disposal facility ultimately is stored in the Navigation raw (treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. According to the Integrated Water and Waste Management Plan developed for the Navigation Section, cut-off drains surround the Blaauwkrans Co-disposal facility to prevent clean water entering the areas. It must be noted that seepage of contaminated water is a concern at the disposal facility. Management actions have been identified to minimize the contaminated seepage water.
2.110.					Avoidance	No new dirty water management facilities or waste disposal facilities will be constructed without the required authorisations.	Compliant	No new infrastructures were constructed during the audit period, therefore this EMP commitment is not applicable.

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2.111.					Avoidance Minimisation	Should any new dirty water storage or waste disposal facilities or changes to existing disposal facilities be required, an EIA will be conducted during the planning phase to inform the design of the infrastructure and to also to inform decision-making.	Not Applicable	No new infrastructures were required and constructed during the audit period, therefore this EMP commitment is not applicable.
2.112.		Blaauwkrans Codisposal facility		Groundwater monitoring shows that there is a groundwater pollution plume emanating from the Blaauwkrans Co-disposal facility, and is moving in a north to north-westerly direction (refer to Part 4.7.2.2.4 and also to Plan 4D in Appendix F3.7). Boreholes NAW 4 and MAW7, located to the north and northwest of the Co-disposal facility, have shown a dramatic decline in water quality, whilst the other boreholes to the south-west, south and south-east are neutral with low salinity.		The Blaauwkrans Co-disposal facility was designed and will continue to be operated in such a manner as to minimise groundwater related impacts. The trenches around the Blaauwkrans Co-disposal facility that were dug deep to intercept deep seepage and lined with bentonite to minimise seepages will be inspected regularly and kept clear and free of debris. The erosion gulleys will continue to be frequently maintained to ensure that there is no standing water. The toe seep water flowing to a silt trap will continue to be pumped to the Toe seep Treatment Plant for treatment before being used at the Navigation Plant.	Compliant	Inspection of the trench's forms part of the inspections for the Blaauwkrans Co-disposal facility which is conducted on quarterly basis by the Environmental Department. Inspection reports were provided for review during the audit period. Seepage water has been emanating from the Blaauwkrans Co-disposal facility as indicated in the Khwezela MRD action Plan (dated July 2020). Management actions for the minimization of seepage have been identified which include the installation of Kopseer seepage cut off trench and pump the seepage to liming plant to prevent the plume into the pan and also Groundwater quality data to include 2 years information not average by each quarter. According to the photographic evidence of the trenches around the co-disposal facility, the trenches are not lined and no evidence of debris on the trenches was noted. Furthermore, toe seep water is pumped to the toe seep plant, then to the raw water dams where the water is used for dust suppression or either pumped to the process water tanks used at the Ngwenya plant and for slurry as indicated in the Water Balance Excel Sheet (dated July 2020).
2.113.					Avoidance Minimisation	The Blaauwkrans slimes dam (in the centre of the Co-disposal facility) will continue to be operated as per the Code of Practice and will continue to be audited bi-monthly by a suitably qualified civil engineer to evaluate whether or not best practice is being adhered to.	Compliant	Inspection of the slime dams' forms part of the inspections for the Blaauwkrans Co-disposal facility. Inspection reports were provided for review during the audit period. According to the inspection reports, no issues with the slime dams were reported.
						The slimes dam will continue to be operated to prevent beaching and minimise the formation of toe seep.	Compliant	No seepage emanating from the slimes dams was noted during the site visit.
						The pollution plume will continue to be measured at two yearly intervals and the rate growth or decline will be measured and modelled.	Compliant	The first Geohydrology Report for identification of pollution plume was conducted in 2017, following an update in 2019. According to the SACE Lifex Geohydrology Report (dated July 2019), growth rate of the pollution plume is modelled and measured. The next pollution plume modeling will be undertaken during the year 2021.
						The emergency dams for toe seep will continue to be operated in such a manner as to ensure that the pollution plume does not overflow or seep outside the Blaauwkrans Co-disposal and associated dirty water management area.	Compliant	No seepage from the emergency dams was emanating from emergency dams since during the site visit.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
2.114.					Avoidance Reduction	A high rate thickener was installed to reduce the volume of slimes being pumped to the Co-disposal facility. Weekly inspections will continue to be carried out to ensure that there are no incidences at the Blaauwkrans Co-disposal facility's slimes dam.	Compliant	Weekly and monthly inspections are conducted by Khwezela North Colliery Environmental Department. According to the inspection report provided, no issues related to the slime dams were reported.
2.115.					Minimisation Reduction	All the pollution control dams associated with the Blaauwkrans Co-disposal facility will be lined with HDPE and the Penstock will be upgraded.	Non-Compliant	Pollution control dams associated with the Blaauwkrans Co-disposal facility include the Kopseer dam, toe seep dams and the emergency toe seep dams. Toe Seep Dam, and Toe Seep Emergency Dams are lined facilities with only Kopseer dams not lined. Although the Kopseer dams are not lined, no seepage water as a result of an overflow from the dams was noted during the site visit. Monthly environmental inspections are conducted by the Environmental Department to inspect the dams for any seepage or overflows and no concerns were reported. Khwezela North Colliery must ensure that the dam is lined and investigations must be conducted to determine any groundwater impacts that may arise from the management of the Kopseer Dam.
2.116.						The Toe Seep Plant will also be upgraded to improve water recovery.	Not Applicable	The Toe Seep Plant is not upgraded. Strategies have been implemented for the management of water from the Toe Seep Plant which includes the pumping of water from the Blaauwkrans Co-disposal facility to the new Navigation East and West pollution control dams as indicated in the Water Reticulation Plan developed for Navigation water management.
2.117.						During maintenance of the Navigation Toe Seep Plant, toe seep from the Blaauwkrans Co-disposal facility will be treated at the Emalahleni Water Reclamation Plant ion exchange unit, once it has been commissioned.	Compliant	No maintenance of the Toe Seep Plant was undertaken during the audit period. According to the Integrated Water and Waste Management Plan developed for the Navigation Section, seepage water from the Blaauwkrans Co-disposal facility, contained in the Kopseer- and Emergency Toe- dams, is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.
2.118.						The trenches around the Blaauwkrans Co-disposal facility will be lined with cement and designed to be deep to capture deep seepage.	Compliant	It was confirmed during the site visit that all trenches surrounding the Blaauwkrans Co-disposal facility are lined.
2.119.						The groundwater pollution plume associated with the Blaauwkrans Co-disposal facility, Navigation Plant area and Navigation dump will be abstracted and will be collected and treated. Options in terms of treatment are currently being evaluated, but it is possible that an on-site ion exchange plant will be commissioned at the Navigation Plant area.	Not Applicable	No pollution plume is abstracted from the Blaauwkrans Co-disposal facility, Navigation Plant area and Navigation dump as yet. It was confirmed that certain environmental studies must be conducted to determine the pollution plume emanation. This includes the Geo-hydrological study.
2.120.		Schoongezicht PCD				No measure.	Not Applicable	No mitigation measures were proposed.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
2.121.		Carbonaceous stockpiles		Poor quality leachate emanates from the ROM, product and carbonaceous overburden stockpile areas, which may degrade the quality of groundwater to below the acceptable levels. However, the volume of recharge to the ground their location on compacted surfaces. Seepage through carbonaceous material will cause leachate of high salinity, which may also be slightly acidic. The salinity will increase, metals may be mobilised and overall groundwater quality degraded when the leachate enters the groundwater system. The expected TDS of the leachate from carbonaceous material is estimated to be between 2000 and 3000 mg/l.	Avoidance Minimisation	Implementation of surface water management measures will contribute to the minimisation of impacts on groundwater quality resulting from the utilisation of carbonaceous stockpiles. Such measures include the minimisation of surface disturbance areas, the continued separation of clean and dirty water, capture and recycling of contaminated water, etc.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, the ROM, product and carbonaceous overburden stockpile areas are within the approved footprint area. The ROM, product and carbonaceous overburden stockpile areas are protected by cut-off drains diverting clean storm water into the Schoongezicht- and BrugSpruit catchments, as well as the catchment of the unnamed tributary of the Groot Spruit near the Navigation West (Umlalazi) mini-pit. Dirty water from these areas is diverted to the Navigation East pollution control dam where the water is used for dust suppression at Navigation Lifex Pit.
2.122.	Air quality	Access and haul roads		Movement of heavy equipment, trucks and other machinery and vehicles along the gravel access and haul roads will generate dust, if not appropriately mitigated.	Avoidance Minimisation Reduction	All trucks transporting material from the mining operation will be required to obey a maximum 40 km / h speed limit. This will reduce the generation of dust on the haul roads.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
2.123.						Movement of vehicles will be restricted to areas where dust suppression will be undertaken, as far as practical. Clean water will be used for dust suppression in areas outside of dirty water management areas, whereas process water will be used for dust suppression within dirty water management areas. Ponding of excess dust suppression water will be avoided.	Compliant	It was confirmed during the site visit that the movement of vehicles is restricted to areas where dust suppression. According to the water balance excel sheet, clean water is used for dust suppression in areas outside of dirty water management areas, whereas process water is used for dust suppression within dirty water management areas. No ponding was noted during the site visit.
2.124.		Carbonaceous stockpiles			Avoidance Minimisation	Dust suppression will be undertaken to reduce vulnerability of fines to wind erosion, thereby reducing dust generation. Ponding of excess water for dust suppression will be avoided. Use of contaminated water for dust suppression will be restricted to	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the dirty water areas. Use of contaminated water for dust suppression is restricted to within the dirty water management areas at the mine as indicated in the Water Reticulation Plan. No ponding was noted during the site visit.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					within the dirty water management areas at the mine.		
2.125.		Soil stockpiles			Implementation of the soil management measures stipulated in No. 2.6, 2.9, 2.10, 2.11 and 2.16 will ensure that the dust generation potential of soil stockpiles will be minimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
2.126.		Conveyors		Avoidance	The conveyors will be covered to minimise dust generation, especially during windy conditions. Dust suppression water sprayers will periodically wet coal on conveyors to minimise dust generation.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the dirty water areas. According to the site visit conducted, the conveyors are covered to minimize dust generation.
2.127.		Plant areas		Avoidance Minimisation	Dust suppression will be undertaken to reduce vulnerability of fines to wind erosion, thereby reducing dust generation. Ponding of excess water for dust suppression will be avoided. Use of contaminated water for dust suppression will be restricted to within the dirty water management areas at the mine.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the dirty water areas. Use of contaminated water for dust suppression is restricted to within the dirty water management areas at the mine as indicated in the Water Reticulation Plan. No ponding was noted during the site visit.
2.128.		Carbonaceous stockpiles	Spontaneous combustion of exposed carbonaceous material or coal could occur, resulting in an impact on the air quality.	Avoidance Minimisation	Combusting spoils or coal will be smothered using noncarbonaceous overburden or subsoil. Alternatively, should more effective and feasible techniques or technology for the management of spontaneous combustion become available in future, such will be undertaken at Landau Colliery, where practicable.	Compliant	Spontaneous combustion ("sponcom") is managed through applying a strip cut and key mining method, cladding and implementation of rehabilitation. Such is also reflected in a Hazard Risk plan, with weekly Sponcom KPIs.
2.129.		All infrastructure areas	Trucks and other equipment or vehicles requiring the use of fuel will emit carbon dioxide into the atmosphere.	Minimisation Reduction	All machinery employed on site will be in good repair, and well maintained.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
2.130.					All machinery will be fitted with the correct exhaust systems, which will be maintained and in good repair. Procurement of replacement parts such as exhausts will require lower carbon emissions, to meet international and Anglo standards.	Compliant	All machinery and vehicles employed are fitted with exhaust systems and are maintained in a good state of repair. No concerns in this regard were evident. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission-reduction technology.
2.131.					The procurement policy for the purchase of new fuel-driven vehicles or equipment will require that emissions be reduced substantially, and will require the consideration of	Compliant	The procurement policy (dated May 2019) takes into account that emissions from the vehicles purchased be substantially reduced with low carbon fuels, where practicable.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					alternative, low carbon fuels, where practicable.		
2.132.	Noise	All Infrastructure areas		Avoidance Minimisation	Implementation of measures stipulated in No.1.101 to 1.107 will ensure that noise impacts at all infrastructure areas will be managed to within acceptable limits.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
2.133.				Minimisation Reduction	The crushers, tip areas, plant equipment and machinery, as well as vehicles will be properly maintained, contributing to an overall reduction of noise impacts.	Compliant	The maintenance of all crushers, tip areas vehicles and machinery are conducted in accordance to a maintenance schedule. This maintenance schedule is further maintained, tracked and actioned on the system known as SAP. Maintenance schedules were provided for review during the audit period.
2.134.					Transport of material off-site will be restricted to between 06:00 and 22:00 to reduce the noise impact on surrounding receptors.	Compliant	Transport manifests provided for review during the audit period, confirmed that restriction time for transportation purposes is between 06:00 and 22:00.
2.135.					Vehicle speeds will be restricted to 40 km / h within the mine boundary areas.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
2.136.					Silencers will be well maintained and replaced if they become noisy.	Compliant	The maintenance of all vehicles and machinery which include maintenance of the silencers at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
2.137.					Vehicles will be fitted with pneumatic suspensions rather than the traditional leaf springs.	Compliant	Khwezela North Colliery indicated that HMTVs are factory fitted with pneumatic suspensions, however, LDVs are fitted with standard leaf springs (as this is standard and impractical to be replacing with pneumatic suspensions).
2.138.					Rubber bushes will be fitted between trailer bodies and chassis' to prevent the load body slap which can occur, especially when the vehicles are empty.	Compliant	Site observations confirmed that trailers are fitted with rubber bushes. Maintenance plan was provided during the audit period.
2.139.	Sensitive areas	Navigation West Section Plant area		Minimisation	Implementation of surface water management measures will ensure that the impacts on affected downstream wetland areas will be minimised as far as practicable.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
2.140.		Kromdraai Liming Plant, Navigation West Section Plant area		Avoidance Minimisation Reduction	Implementation of surface water management measures will ensure that further impacts on wetlands and other sensitive landscapes downstream of the infrastructure areas at Landau Colliery will be minimised (Refer to No.2.62 - 2.65).	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
2.141.		Wetlands and receiving watercourses		Minimisation	Implementation of soil and surface water management measures will indirectly minimise such impacts on	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

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		downslope of soil stockpiles			aquatic habitat and biota in the receiving watercourses.		
2.142.	Historical and cultural aspects	All infrastructure areas, including mobile infrastructure such as some stockpiles		Avoidance Authorisation	Although no sites of archaeological or cultural interest were found within the study area during the baseline investigation, it is possible that some items or sites of historical significance are buried below the surface, and would only become detectable once the surface is disturbed. In such circumstances, further disturbance of the site will be halted until a suitably qualified specialist has been called to the site to investigate the find, and recommendations thereafter have been made. Action to be taken thereafter will need to be undertaken in consultation with the SAHRA.	Not Applicable	Khwezela North Colliery indicated that no sites of archaeological or cultural interest have been discovered during the construction and operational phase, therefore this EMP commitment is not applicable.
2.143.		Navigation West Section		Avoidance Reduction	Should any future development during the LOM be required, the applicable legislative processes will be followed, as recommended in the pre-mining HIA that was undertaken for the Navigation West Section.	Not Applicable	Khwezela North Colliery indicated that no sites of archaeological or cultural interest have been discovered during the construction and operational phase, therefore this EMP commitment is not applicable.
2.244. 2.245.	Visual aspects	All infrastructure areas		Minimisation Reduction	Management of impacts on soil, air quality and topography will ensure that the visual impacts of the utilisation and maintenance of the infrastructure at the mine are minimised as far as practicable. It should, however, be borne in mind that Landau Colliery is located in a region where opencast coal mining is common place. The large number of opencast coal mines in the region, together with the historical nature of the mining in the Witbank region (over 100 years of mining history) will most likely have desensitised local residents and frequent travellers through the area. On the contrary, the visibility of the mining areas and infrastructure from the surrounding areas could be of interest to passers-by, especially since coal mining is an important part of Mpumalanga's history, and visits to coal mines are even	Noted	This EMP commitment is understood by Khwezela North Colliery Management.

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
						cited as being of interest to tourists. It is therefore not considered necessary to implement specific measures to reduce visual impacts, although in the past, trees were planted at the Kromdraai Section to provide a screen between the mining operations and the surrounding areas. If deemed necessary, this could be implemented elsewhere at the mine, although careful consideration must be given to the species used for this, and the closure objectives of the mine.		
2.146.					Avoidance Minimisation Reduction	Management of the impacts on soil, air quality and topography would indirectly manage the impacts of dust generation in infrastructure areas on visual aspects.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
2.147.	Socioeconomic aspects	All infrastructure areas			Enhancement	The Social and Labour Plan will continue to be implemented, and will be updated periodically to remain in line with applicable legislative and regulatory requirements.	Compliant	The Social and Labor Plan developed for Khwezela North Colliery is implemented and is updated after every four years. An excel spreadsheet (dated 2019-2023) of the Social and Labor Plan reporting was provided during the audit period.
2.148.	Interested and affected parties	Blaauwkrans Codisposal facility			Avoidance Minimisation Reduction	Implementation of the groundwater management measures in No.2.112 to 2.119 will ensure that the impacts of the groundwater users in the vicinity of the Blaauwkrans Co-disposal facility area minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
2.149.					Rectification	If, despite the implementation of the groundwater measures stipulated in No.2.112 to 2.119, groundwater monitoring indicates that the surrounding groundwater users have been affected by the effect of opencast mining on the groundwater levels, an alternative source of water will be provided by the mine. Measures will be implemented as soon as impact on groundwater quality is confirmed through monitoring. If water supply is to be replaced, this should be done until groundwater in the affected boreholes is no longer contaminated.	Not Applicable	According to the Incident Report (dated 2020), no incident was reported of surrounding groundwater users affected by the effect of mining activities, therefore this EMPr commitment is not applicable.

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2.150.		All infrastructure areas		Minimisation Reduction	Implementation of the surface water management measures stipulated in No.2.51 - 2.86 will ensure that consequent impacts on downstream water users will be prevent, and where this is not possible, minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
2.151.				Avoidance Minimisation	Implementation of air quality management measures will ensure that nuisance dust impacts are minimised.	Compliant	The following management measures are undertaken to minimize impacts on air quality: <ul style="list-style-type: none">• Khwezela North Colliery uses water browsers to dust suppress the area around the dirty water areas.• Dust monitoring is conducted on Monthly basis to determine any issues and impacts arising from the mining activities. From the latest dust monitoring reported, no concerns were reported.
2.152.				Minimisation	In addition to the noise management measures stipulated in No.1.101 to 1.107 and No.2.133 to 2.138,	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.153.				Avoidance	Implementation of the measures stipulated in No.1.122 to 1.125 will ensure that no person enters the infrastructure areas without the proper authorisation and accompaniment.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
5.1.2 Environmental Management Programme – Management measures for the decommissioning phase							
Activity 3: Rehabilitation and restoration							
3.1.	Geology	All operational opencast mining areas	Blasted and broken overburden will be replaced back into the mined out pits behind the active mining cut(s). The backfilled rock would therefore be highly porous and subject to settling, leading to possible localised subsidence	Minimisation	The mining window will be maintained at between 3 and 5 open cuts.	Not Applicable	Mining activities are no longer undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mining areas are under rehabilitation.
3.2.					Rehabilitation will be undertaken concurrently with the mining in order to reduce the deterioration of the surrounding environment, including the groundwater regime to some extent.	Not Applicable	No mining activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mentioned areas are under rehabilitation.
3.3.					Rehabilitation will be undertaken in sequential layers with carbonaceous material (such as coal discard and carbonaceous overburden) at the bottom of the pit. The discard material will be placed below the coal seam during the backfilling of the opencast voids, to reduce the anticipated impacts on the groundwater. Refer to No.3.92-3.96 for a discussion of groundwater impacts.	Compliant	According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update, rehabilitation techniques and methods are developed by Anglo American that is based on proven agricultural methodology. Rehabilitation is undertaken in sequential layers with carbonaceous material such as coal discard and carbonaceous overburden) at the bottom of the pit. The discard material is placed below the coal seam during the backfilling of the opencast voids to reduce the anticipated impacts on groundwater. Subsoil is placed at a minimum depth of 1m over (mechanically compacted) overburden where after topsoil is placed as the final substrate with a minimum thickness. Furthermore, since the mine is implementing a Dozing rehabilitation technique, Khwezela North Colliery developed and is implementing a Dozing Procedure (dated December 2017) with the aim of rehabilitating the topography of the area by maximising the re-vegetation and free draining potential and minimising potential generation of erosion and water pollution. With regards to the Dozing Procedure, Khwezela North Colliery furthermore developed a Dozing Standard (dated December 2017) for the purpose of ensuring that all dozing practices are conducted and supervised safely and efficiently so as not to cause harm and jeopardise the safety of employees and equipment involved in dozing operations.

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3.4.		Final voids			If the long-term groundwater management strategy, which will be developed prior to the onset of the Decommissioning Phase, requires that some final voids should remain for the purpose of decant control and / or management, this EMP will be revised to reflect the change in end land use of the final void.	Not Applicable	The long-term groundwater management strategy has not yet been developed but is only required (as per the mitigation measure) prior to the onset of the Decommissioning Phase of the mine.
3.5.		All infrastructure areas			No further impacts are anticipated to occur on the geology during the Decommissioning Phase due to the demolition and removal of surface infrastructure, in situ rehabilitation of waste disposal facilities or continued utilisation of water management infrastructure as part of the long-term water management strategy.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
3.6.	Topography Soils	All operational opencast mining areas All operational opencast mining areas	Rehabilitation of the opencast mining area will be conducted concurrently with mining, which will restore the topography. Where the surface was marred by numerous sinkholes prior to the commencement of opencast mining, the backfilling and rehabilitation following mining will improve the surface topography. Restoration and improvement of the topography will have consequent impacts on surface water, visual aspects, and safety of future land users, amongst others. For a discussion of impacts on land capability, land use, surface water, visual aspects and I&APs during the Decommissioning Phase, refer to No.'s 3.39 - 3.56, 3.74-3.78, 3.85-3.87, 3.92-3.96, 3.103, 3.108-3.111 and 3.118.	Minimisation	Only three to five cuts will be open at any given time at each mining area, with successive cuts used to systematically backfill preceding cuts. This will minimise the size of the void at any point in time.	Not Applicable	No mining activities are undertaken at Kromdraai open-cast mine, Excelsior mini-pit, Schoongezicht mini-pit and Umlalazi mini-pit. The mentioned areas are under rehabilitation.
3.7.				Reduction	Spoil areas will be levelled and profiled, while voids will be backfilled and profiled continuously as mining proceeds.	Compliant	According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update (dated 2019), all rehabilitated voids are levelled and profiled with remaining voids still to be rehabilitated as according to the Colliery Rehabilitation Strategy and Implementation Plan.
3.8.				Minimisation Reduction	Open voids will be filled with a basal layer of shale and discard, not exceeding the coal horizon, and backfilled with overburden and subsoils.	Compliant	Furthermore, it was confirmed during the site visit that water filled voids are available at the Kromdraai mining area and the North Block. All voids situated at the North Block will be rehabilitated as part of the current rehabilitation activities. For Kromdraai mining section, it was confirmed that not all voids will be backfilled and profiled. This includes Ramp 5 located at the Central Block. An amendment application was submitted to the Department of Mineral Resources and Energy (DMRE) indicating that the commitments and closure objectives as stated in the EMP to backfill and re-slope Ramp 5 to achieve a free drainage topography cannot be achieved with the current shortfall of backfill material. Therefore, Ramp 5 will be sloped and remain a depression. All remaining water filled voids will be backfilled as part of the planned rehabilitation activities. According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update, it is indicated that all voids will be filled with a basal layer of shale and discard, not exceeding the coal horizon and further backfilled with overburden and subsoils. It must be noted that no infilling of voids was undertaken during the audit period.
3.9.					Filled voids will be compacted to promote encapsulation, prior to the placement of the subsoil and topsoil layers.	Compliant	According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update (dated 2019), it is indicated that all voids will be compacted to promote encapsulation, prior to the placement of the subsoil and

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								topsoil layers. It must be noted that no filling of voids was undertaken during the audit period.
3.10.				The backfilled rock would be highly fractured, in most cases leading to bulking. Furthermore, backfilled areas would be porous and subject to settling, leading to possible localized subsidence and cracking, if not appropriately managed.	Minimisation Rectification	Suitable rehabilitation techniques will be employed for the backfilling of the opencast voids, so as to promote free-drainage, and the re-establishment of pre-mining drainage patterns, as far as possible.	Compliant	<p>According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update (dated 2019), rehabilitation techniques and methods are developed for the rehabilitation of voids by Khwezela North Colliery that is based on proven agricultural methodology.</p> <p>Kromdraai Opencast, Excelsior Mini-pit and Schoongezicht Mini-pit Truck and shovel and dragline an operation is deployed which allows con-current rehabilitation. According to the plan, It will not be possible to replace the pre-mining geological sequence since the stratigraphy will have been destroyed. However, the mine uses truck and shovel and dragline operations with the replacement of weathered material (subsoils and rock) up to 4 meters on top of the levelled spoils, where after the topsoil are placed to the required thickness. This allows the post mining surface to be profiled and facilitate surface water drainage as well as, limit the ingress of water into the spoils.</p> <p>Navigation West (Umlalazi) Mini-pit Rehabilitation was undertaken in sequential layers with carbonaceous material such as coal discard and carbonaceous overburden) at the bottom of the pit. The discard material was placed below the coal seam during the backfilling of the opencast voids to reduce the anticipated impacts on groundwater. Subsoil was placed at a minimum depth of 1m over (mechanically compacted) overburden where after topsoil was placed as the final substrate with a minimum thickness.</p> <p>Furthermore, since the mine is implementing a Dozing rehabilitation technique and is implementing a Dozing Procedure (dated December 2017) with the aim of rehabilitating the topography of the area by maximising the re-vegetation and free draining potential and minimising potential generation of erosion and water pollution. With regards to the Dozing Procedure, Khwezela North Colliery furthermore developed Dozing Standard (dated December 2017) for the purpose of ensuring that all dozing practices are conducted and supervised safely and efficiently so as not to cause harm and jeopardise the safety of employees and equipment involved in dozing operations.</p>
3.11.						The rehabilitation of mined areas will be done so as to achieve the pre-planned final landscape configuration taking into account the depth of coal removed and the bulking ratio of the overburden replaced in the pit(s).	Compliant	According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update (dated 2019), it is indicated that it will not be possible to replace the pre-mining geological sequence since the stratigraphy will have been destroyed. However, the removal of old boards and pillars as a mining method will replace weathered material (subsoils and rock) up to 4 meters on top of the levelled spoils, where after the topsoil will be placed to the required thickness. This allows the post mining surface to be profiled and facilitate surface water drainage as well as, limit the ingress of water into the spoils.
3.12.						The post-mining surface topography will be modelled using suitable software, to ensure that appropriate measures can be implemented concurrently with the mining activities to ensure that a free-draining surface can be achieved.	Compliant	According to the Khwezela North Colliery Rehabilitation Strategy and Implementation Plan Update (dated 2019), digital terrain model will be used to model the post mining surface topography. Appropriate measures include: planning of final profiled surface to permit maximum slope angles of 7% (1:14) for arable land and 17% (1:6) for grazing land. Spoils will be reshaped to ensure that the slopes are continuous so that minor undulations, where surface run-off may accumulate, are avoided and free-draining surface can be achieved.
3.13.					Rectification	The Mine Surveyor will survey backfilled cuts to ensure that these are filled and rehabilitated to surface and conform to natural runoff patterns. No	Compliant	Survey of backfilled cuts is conducted on monthly basis by the Rehabilitation Department and the results thereof are included in the annual rehabilitation plan. Rehabilitation Plan and Survey Reports were provided for review during the audit period.

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						excessive ponding will be allowed.		
3.14.					Reduction Rectification	Ponding on the rehabilitated surfaces will be discouraged.	Compliant	Monitoring for potential subsidence areas within the rehabilitated opencast is undertaken to ensure that no excessive ponding of clean water occurs to prevent infiltration of excessive surface water. According to the assessment of the rehabilitated areas through Google Earth Image and the site visit conducted, no ponding on the rehabilitated areas was noted.
3.15.					Rectification	Pre-planning will allow for clean runoff from the rehabilitated area to reach the natural drainage channels outside the mining area in a controlled and uncontaminated manner.	Compliant	Pre planning (annual update of the rehabilitation plan) of the rehabilitated areas is undertaken to ensure that the rehabilitated areas are managed and monitored to control clean water release into the natural environment. This is conducted on an annual basis by Shangoni Management Services (Pty) Ltd. Annual Rehabilitation Plan was provided for review during the audit period.
3.16.						Monitoring for potential subsidence areas within the rehabilitated opencast will be undertaken to ensure that no excessive ponding of clean water on the rehabilitated pit surfaces occurs after rehabilitation of the surface areas has been completed, so as to prevent infiltration of excessive surface water to the groundwater.	Not Applicable	No subsidence of the rehabilitated areas was noted and reported during the audit period, therefore this EMPr commitment is not applicable.
3.17.						Should subsidence of the rehabilitated areas occur, maintenance will be undertaken to ensure that the identified subsidence areas are eliminated and the surfaces of the rehabilitated subsidence areas are suitably re-vegetated.	Not Applicable	No subsidence of the rehabilitated areas was noted and reported during the audit period, therefore this EMPr commitment is not applicable.
3.18.					Rectification	The original gentle slopes will be re-instated as part of continuous rehabilitation, as far as possible, to reduce erosion.	Compliant	The backfilled and rehabilitated areas are surveyed on a weekly basis and signed off by the surveyor. This ensures that the original slope of the rehabilitated areas is maintained as per the relevant slopes.
3.19.						Scrap metal from demolished and dismantled buildings and other infrastructure will be sold.	Compliant	The requirements of this EMPr commitment are to be implemented during the decommissioning phase of the mine.
3.20.						Non-saleable materials such a demolished building rubble and concrete will be disposed of in accordance with the relevant legislation.	Compliant	The requirements of this EMPr commitment are to be implemented during the decommissioning phase of the mine.
3.21.						Any remaining ROM will be removed from the final voids and associated mining infrastructure areas.	Not Applicable	Not all areas are rehabilitated. The requirements of this EMPr commitment are to be implemented during the final rehabilitation of the mine.
3.22.						Any remaining stockpiles of overburden, subsoil and topsoil will be removed, either through the rehabilitation of the final void(s), or for use elsewhere within the mine boundary areas.	Compliant	Stockpiled overburden, subsoil and topsoil are utilized for the rehabilitation of the mined-out pits and voids. This is further undertaken in accordance with the rehabilitation plan.

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3.23.		Schoongezicht No.3 dump, Blaauwkrans Co-disposal facility, Navigation dump, Kromdraai Old South dump.	The mentioned coal discard facilities will be rehabilitated in situ, and will result in a permanent change to the pre-mining topography.	Minimisation	Implementation of soil, surface water and groundwater management measures will ensure that the impact on post-mining topography, and consequent impacts on surface water and visual aesthetics, will be minimised as far as possible.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.25.		All mining and infrastructure areas		Enhancement	Implementation of soil, surface water and groundwater management measures will ensure that the agreed land use objectives will be achieved.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.26.		All mining areas		Minimisation Reduction	The implementation of surface water management measures, and mitigation of impacts on groundwater, will reduce the significance of the long-term topographical changes caused by the final voids, should any remain as part of the long-term groundwater management strategy.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.27.		All operational opencast mining areas		Minimisation Rectification	Topsoil will be placed to a minimum depth of 600 mm at Kromdraai opencast areas, and 300 mm at the Navigation West Section.	Compliant	Topsoil placement is conducted according to the approved rehabilitation plan with the aim of ensuring that the applicable soil depth is utilized for both Kromdraai opencast areas and Navigation West Section.
3.28.				Minimisation Reduction	Topsoil will be replaced in consolidated blocks in the final surface land use areas, to avoid varying soil depth and fragmented land capability classes. Correct use of depth markers will also contribute to the even distribution of the soil over the rehabilitated areas.	Not Applicable	Rehabilitation activities are not completed as yet, therefore this EMPr commitment is not applicable.
3.29.				Minimisation Rectification	Spoil and cover-soil surfaces will be shaped to allow free-drainage throughout the final rehabilitated areas to prevent water logging and subsidence.	Not Applicable	Rehabilitation activities are not completed as yet, therefore this EMPr commitment is not applicable.
3.30.				Avoidance Minimisation	Soil compaction in the final rehabilitated surface land use areas will be minimised by dumping sufficient soil per square unit to allow a once-off levelling on top, which will prevent compaction lower down in the soil profile.	Not Applicable	Rehabilitation activities are not completed as yet, therefore this EMPr commitment is not applicable.
3.31.				Avoidance Minimisation	Soil amelioration will be done after rehabilitation according to soil analyses.	Not Applicable	Rehabilitation activities are not completed as yet, therefore this EMPr commitment is not applicable.
3.32.				Minimisation	Erosion on the exposed disturbed land use areas as well as rehabilitated land will be	Not Applicable	According to the Incident Report (dated July 2019-July 2020), no damages to surface water management infrastructure and evident of erosion was reported, therefore this EMPr commitment is not applicable.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					minimised by the establishment of a vegetation cover as soon as possible after replacement of soil. The rehabilitated workings will be seeded in accordance with identified suitable seed mixture.		
3.33.				Minimisation	If necessary during windy conditions, dust suppression will be undertaken with raw water in rehabilitated areas.	Compliant	Khwezela North Colliery uses dirty water from various pollution control facilities to dust suppresses the dirty water areas and the rehabilitated areas even during windy condition. The volumes of the contaminated water used for dust suppression are recorded on monthly basis. Water Enablon Results (dated 2020) were provided for review during the audit period.
3.34.		Mining and infrastructure areas		Avoidance Rectification	Any remaining carbonaceous material will be covered with noncarbonaceous material or removed from the mining infrastructure areas before soil is replaced and the surface is rehabilitated.	Compliant	Rehabilitation is undertaken as outlined in the approved rehabilitation plan whereby backfilling is undertaken by placement of carbonaceous material, then topsoil placement and finally subsoil for profiling.
3.35.					Spillages of carbonaceous materials, hydrocarbons or other contaminating substances on soil will be prevented, but where such events do occur, the spilled material and affected soil will be cleaned up immediately in accordance with the Landau Colliery Emergency Procedure, and the soil will be rehabilitated.	Compliant	Khwezela North Colliery developed and is implementing an Emergency Preparedness Procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed: <ul style="list-style-type: none"> • Oil and Silt Trap Procedure • Hydrocarbon and Chemical Handling Procedure • Incident Reporting Procedure. From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by Interwaste. No spillages were reported during the site visit.
3.36.		Soil stockpiles		Rectification	Any remaining stockpiled subsoil and topsoil will be removed, either through the rehabilitation of the final void(s), or for rehabilitation elsewhere within the mine boundary areas.	Compliant	Stockpiled subsoils are utilized for the rehabilitation of the mined-out pits and voids. This is further undertaken in accordance with the rehabilitation plan.
3.37.		All rehabilitated surfaces		Avoidance Minimisation	Compaction of soils will be prevented by minimising vehicle movement over rehabilitated areas, and restricting movement of vehicles through rehabilitated areas to designated pathways.	Compliant	It was confirmed during the visit that movement of vehicles is restricted to designated pathways.
3.38.				Rectification	Implementation of measures to minimise adverse impacts on topography, soil, vegetation, surface water, groundwater, and air quality will contribute to the commencement of the recovery of the soil to natural conditions.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.39.	Land capability			Rectification	Implementation of measures to minimise impacts on	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.


NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		Kromdraai opencast and infrastructure areas			topography, soil, vegetation, surface water, groundwater, and air quality will enable the end land capability objectives to be achieved.		
3.40.				Enhancement	Implementation of measures to restore topography, and manage incidences of localised surface subsidence and soil erosion within the rehabilitated areas will ensure that the land capability is maximised in rehabilitated opencast areas.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.41.		Schoongezicht No.2 Seam mini pit area		Enhancement	Implementation of measures to manage impacts on topography, soil, vegetation, surface water and air quality will contribute to achieving of the end land capability objectives for the Schoongezicht No.2 Seam mini pit.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.42.				Enhancement	The compacting of overburden, levelling of replaced soil, and planting of vegetation cover suited to the end land use objectives will be undertaken to ensure that the surface will be capable of supporting future township development and sports facilitation.	Compliant	A Preliminary End Land Use Plan for Khwezela North Colliery, February 2014 (Golder Associates) was provided for review, providing for likely land uses, possible land uses, and unlikely land uses for the various Khwezela North Colliery Sections. Measures are in place to address the impacts on topography, soil, vegetation, surface water, groundwater, and air quality in ensuring suitable end use land.
3.43.		Navigation Plant area		Rectification	Implementation of measures to minimise impacts on topography, soil, vegetation, surface water, groundwater, and air quality will enable the end land capability objectives to be achieved.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.44.		Navigation West Section		Rectification	Management of impacts on topography, soil, surface water and groundwater will ensure that the end land capability objectives will be achievable.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.45.		All mining areas		Minimisation Reduction	The surface area(s) to be affected by final open voids will be minimised while simultaneously achieving the objective of groundwater decant management. Implementation of groundwater management measures will ensure that the impacts on land capability are minimised.	Compliant	A Preliminary End Land Use Plan for Khwezela North Colliery, February 2014 (Golder Associates) was provided for review, providing for likely land uses, possible land used, and unlikely land uses for the various Khwezela North Colliery Sections. Mine personnel indicated that the amount of final open voids will be minimised by backfilling where possible. Furthermore, groundwater monitoring will continue to be conducted and groundwater will be pumped to the EWRP for further re-use.
3.46.					Mowing of vegetation covering facilities that have been rehabilitated in situ will be done manually, since use of heavy	Not Applicable	All activities proposed for Khwezela North Colliery are mining related activities, therefore this EMPr commitment is not applicable.

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
						machinery to mow the vegetation would likely damage the surface, promoting erosion of the soil, leading to consequent surface water, groundwater and air quality impacts in future.		
3.47.					Minimisation Reduction	Use of in situ rehabilitated facilities for grazing will be prohibited, since hooves could damage the rehabilitated surface and promote erosion and consequent surface water and groundwater impacts.	Compliant	This statement provided regarding “use of in situ rehabilitated facilities” is assumed to relate to residue deposits. No grazing is allowed on such rehabilitated areas. Controlled grazing is done within the nature reserve at Kromdraai, which is a previously rehabilitated area.
3.48.		All rehabilitated surfaces			Rectification	Management of topography, soil, land capability, vegetation, surface water, groundwater and air quality impacts will ensure that rehabilitated areas will be able to support grazing, and will enable the end land use objectives of the mine to be achieved.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.49.					Reduction	Rehabilitated areas will be actively monitored and maintained.	Compliant	Inspection of the rehabilitated area is conducted on monthly basis by the Rehabilitation Department. Furthermore, the Khwezela Colliery Environmental Department conducts monthly inspections of the mining area including rehabilitated areas. Monthly inspection reports were provided for review during the audit period.
3.50.					Rectification	The sustainable productive use of land which is not used for mining activities will be maximised and controlled.	Not Applicable	All activities proposed for Khwezela North Colliery are mining related activities, therefore this EMPr commitment is not applicable.
3.51.	Land use				Rectification	Rehabilitated areas will be maintained until they are selfsustaining, or for at least 3 years, before being released for grazing or other appropriate long-term sustainable uses.	Compliant	Inspection of the rehabilitated area is conducted on monthly basis by the Rehabilitation Department. Furthermore, the Khwezela Colliery Environmental Department conducts monthly inspections of the mining area including rehabilitated areas. Monthly inspection reports were provided for review during the audit period.
3.52.		Navigation West Section			Rectification Enhancement	End land use objectives will be finalised in consultation with the relevant authorities.	Not Applicable	A Preliminary End Land Use Plan for Khwezela North Colliery, February 2014 (Golder Associates) was provided for review, providing for likely land uses, possible land uses, and unlikely land uses for the various Khwezela North Colliery Sections. The identified end uses are not finalized as yet.
3.53.		In situ rehabilitated discard facilities			Reduction	Implementation of the measures stipulated in No.3.46 - 3.47 will reduce the significance of this impact on the vegetative productivity of the applicable surface area.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.54.					Reduction	The rehabilitated surface of the discard facility will be inspected regularly and repaired or maintained where necessary (refer also to No.2.103).	Not Applicable	The Blaauwkrans Co-disposal Facility is still under operational phase, therefore this EMPr commitment is not applicable.
3.55.		Remaining water management and treatment facilities			Minimisation Reduction	The surface area(s) to be affected by water management and treatment infrastructure will	Not Applicable	This EMPr commitment is applicable to decommissioning phase of the mine.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3.56.					be minimised while simultaneously effectively managing and / or treating mine water.		
					Implementation of the measures stipulated in the following commitments will ensure that impacts of the continued operation of water management infrastructure on land capability and land use will be minimised: No.2.36, 2.37, 2.41, 2.44, 2.46, 2.74, 2.75, 2.77, 2.79, 2.80, 2.84, 2.85, 2.88, 2.89, 2.90, 2.105, and 2.107.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.57.	Vegetation	All opencast mining and surface infrastructure areas		Reduction Enhancement	Vegetation cover inspection of rehabilitated land will be conducted.	Compliant	Vegetation cover inspection of the rehabilitated areas is conducted on monthly basis by Khwezela North Colliery Rehabilitation Department. Rehabilitation reports were provided for review during the audit period.
3.58.				Avoidance	Backfilled and rehabilitated workings and prepared surface infrastructure footprint areas will be seeded with an appropriate seed mixture.	Compliant	The Landau Vegetation Monitoring Procedure (AATC016070) outlines the required seed mix as being implemented by the mine. Species as included are: • Eragrostis teff. • Cynodon dactylon. • Chloris gayana. • Digitaria eriantha. • Medicago sativa.
3.59.					Vegetation cover inspection of rehabilitated land will be conducted.	Compliant	Vegetation cover inspection of the rehabilitated areas is conducted on monthly basis by Khwezela North Colliery Rehabilitation Department. Rehabilitation reports were provided for review during the audit period.
3.60.				Avoidance Minimisation Reduction Rectification	All declared alien weeds will be effectively controlled.	Compliant	Alien Vegetation Plans (dated May 2019) were provided during the audit period. The plan aims at monitoring of the identified weeds.
3.61.				Avoidance	Where necessary, implementation of dust control measures (refer to No.3.98-3.100) will indirectly minimise such impacts on surrounding vegetation.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.62.		Kromdraai and Navigation West Section		Avoidance Minimisation	Management of the impacts on soil, surface water and groundwater would indirectly manage the impacts on wetland vegetation.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.63.				Avoidance Minimisation			
3.64.	Animal life	All mining and infrastructure areas		Enhancement	Rehabilitated areas will be inspected.	Compliant	Inspection of the rehabilitated area is conducted on monthly basis by the Rehabilitation Department. Furthermore, the Khwezela Colliery Environmental Department conducts monthly inspections of the mining area including rehabilitated areas. Monthly inspection reports were provided for review during the audit period.
3.65.				Avoidance Minimisation	Management of topographical, soil, surface water, groundwater and sensitive landscapes impacts will ensure that the impacts on aquatic habitats will be minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.66.				Avoidance Minimisation	Implementation of commitment No.2.30 - 2.35 will reduce the	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

NO.	ASPECTS	LOCATION AT KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					significance of the potential impacts of rehabilitation and other decommissioning activities on animal life.		
3.67.		Navigation Plant area, Blaauwkrans Codisposal facility and Navigation West Section		Enhancement	Implementation of the measures stipulated in No.3.49 to 3.51 will ensure that the end land use objectives will be achieved.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.68.	Surface water: General	Kromdraai and Navigation Sections		Avoidance Minimisation Rectification Reduction	If a Water Use Licence is granted to Landau Colliery under Chapter 4 of the NWA, 1998, the conditions of the Licence will continue to be implemented.	Compliant	Khwezela North Colliery has been issued with several water use licences. Annual water use licence audits are undertaken to check compliance with the conditions contained in the water use licences. If non-compliances are identified, action plans are drafted and the actions are implemented in order to comply with the water use licence.
3.70.					Auditing of compliance with the IWWMP commitments (and if a WUL is granted, to the conditions of the Licence) will be conducted regularly in accordance with the timeframes set by the DWA or committed to in the IWWMP.	Compliant	Annual internal and external audits are undertaken on the approved WULs for Khwezela North Colliery. A WUL audit was undertaken by Geovicon Environmental (Pty) Ltd in conjunction with this audit, and audited the compliance of Khwezela North Colliery to the conditions of the WULs.
3.71.					All new infrastructure will be designed to comply with GN 704, 1999, under the NWA, and where existing infrastructure does not comply, Exemption will be sought or the infrastructure will be upgraded accordingly, where applicable.	Compliant	Khwezela North Colliery indicated that no infrastructures have been proposed except those authorized in the water use licences, therefore this EMPr commitment is not applicable.
3.72.					Compliance with Regulations GN 704, titled "Regulations on use of water for mining and related activities aimed at the protection of water resources", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be audited annually, and reported to the DWA.	Non-Compliant	GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020 due to Covid restrictions. Khwezela Colliery has however, submitted a proposal to conduct GN 704 audit for the year 2021. The proposal was provided during the audit period.
3.73.					Employees and contractors will be trained to identify activities that would impact on the surface water aspect of the mine, such as overflow of pollution control dams, spillages of contaminating substances such as diesel, carbonaceous material, etc. Furthermore, they will be informed on the environmental emergency procedure, and will be trained to contact the appropriate person to report such incidents.	Compliant	Employees and contractors are made aware of activities that would impact on the surface water aspect of the mine, such as overflow of pollution control dams, spillages of contaminating substances such as diesel, carbonaceous material through induction presentations, monthly environmental topics and toolbox talks. Induction presentations, monthly environmental topics were provided for review during the audit period. The induction presentation includes the emergency response procedure and the appropriate person to report any emergency or incident that may occur.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3.74.	Surface water: quantity	Applicable opencast mining areas		Enhancement	No mitigation measures are applicable.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.75.		In situ rehabilitated discard facilities		Enhancement	The rehabilitated surface of the discard facilities will be inspected regularly and repaired or maintained where necessary.	Not Applicable	The Blaauwkrans Co-disposal Facility is still under operational phase, therefore this EMPr commitment is not applicable.
3.76.		Water management infrastructure and final open voids		Avoidance Minimisation	This impact will be limited to the within the surface area occupied by the water storage facilities and final open voids, thereby minimising the loss of runoff to the receiving catchments.	Not Applicable	The Blaauwkrans Co-disposal Facility is still under operational phase, therefore this EMPr commitment is not applicable.
3.77.		Schoongezicht No.2 Seam mini pit, Navigation West Section		None	Little to no mitigation of the remaining impact on surface water quantity after surface rehabilitation will be possible during the Decommissioning Phase, since the treatment of AMD will have greater benefit to the environment and public than the restoration of catchment yield would be by allowing the AMD to discharge to the receiving wetlands and catchment areas.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.78.		All opencast mining areas		Avoidance Minimisation	Implementation of the management measures stipulated in No.3.10 to 3.18 will ensure that the long-term impacts on surface water catchment yield and groundwater recharge rates will be minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.79.	Surface water: quality	All operational opencast mining areas and final rehabilitated voids, in situ rehabilitated discard disposal facilities and footprint areas of removed infrastructure		Minimisation	Erosion on the exposed disturbed land use areas as well as rehabilitated land will be minimised by the establishment of a vegetation cover as soon as possible after replacement of soil. The rehabilitated workings will be seeded in accordance with identified suitable seed mixture.	Not Applicable	According to the Incident Report (dated July 2019-July 2020), no damages to surface water management infrastructure and evident of erosion was reported, therefore this EMPr commitment is not applicable.
3.80.					If necessary during windy conditions, dust suppression will be undertaken with raw water in rehabilitated areas.	Compliant	Khwezela North Colliery uses dirty water from various pollution control facilities to dust suppresses the dirty water areas and the rehabilitated areas even during windy condition. The volumes of the contaminated water used for dust suppression are recorded on monthly basis. Water Enablon Results (dated 2020) were provided for review during the audit period.
3.81.					Clean and dirty water separation berms will only be removed from rehabilitated areas once the vegetation has become selfsustaining and	Compliant	It was confirmed during the site visit that clean and dirty water separation berms/trenches are available and still maintained.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
						erosion of rehabilitated soils is unlikely to occur.		
3.82.					Avoidance	Until the surface water management system is removed, the surface diversion berms and drains will be kept free from any obstructions (debris) to ensure that the efficiency is not affected. Changes to the layout of the storm water control measures will be implemented, if required, to accommodate actual conditions and to enhance the efficiency of the management system.	Not Applicable	The surface water management system is still operational, therefore this EMPr commitment is not applicable.
3.83.					Reduction	Repair of damages to the clean and dirty water separation infrastructure due to erosion and scouring of areas will be performed following storm events.	Not Applicable	According to the Incident Report (dated July 2019-July 2020), no infrastructures from damage of erosion was reported during the audit period. Furthermore, no damage was noted during the site visit. Therefore this EMPr commitment is not applicable.
						Normal continuous maintenance throughout Life of Mine will also be performed for all slopes, berms and points of discharge (i.e. clearing of silts and sediments washed into drains, erosion marks will be filled up again, berms will be kept intact, etc.).	Non-Compliant	<p>It was confirmed during the site visit that erosion from disturbed operational areas were identified at the Klipspruit crossing. In order to manage the identified erosion, Khwezela North Colliery developed a Detailed Engineering Design and Cost Estimation for Khwezela North Colliery Wetland Rehabilitation strategy of the affected Cluster systems within the Khwezela North Colliery. According to the strategy, the rehabilitation of the affected wetland system (erosion) will be considered and implementation of the strategy thereof will be initiated and scheduled. However, management action will not be undertaken separately, but rather in consideration with the other mining sections. Khwezela North Colliery must ensure that the area is repaired to avoid further deterioration of the Klipspruit crossing.</p>  <p>Erosion identified next to Klipspruit crossing</p>
3.84.					Avoidance Minimisation Rectification	Decanting acid mine water will be collected, stored in dirty water management facilities until is treated and re-used or discharged, based on the long-term water management strategy and conditions of relevant authorisations.	Compliant	<p>According to the Integrated Water and Waste Management Plan developed for the Kromdraai Section (dated March 2019), decant occurs at the North and South Block of Kromdraai Section.</p> <p>According to the Water Reticulation Plan for Kromdraai Section (dated 2018), contaminated water emanating from the South and North decant areas is collected and pumped to the Kromdraai Holding dam (Lopies Dam) and then to the Kromdraai Plant. The treated mine water is re-used in the Kromdraai Plant and excess neutralised water is discharged to the Kromdraaispruit.</p>

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3.85.	Surface water: watercourse alterations				Avoidance	Continuous managing, improvement and monitoring of the water balances will be undertaken to identify risk areas and excess water volumes, and for reporting on conditions on a monthly base.	Compliant	Daily abstraction and distribution volumes are captured in an electronic database with the aid of the SCADA system. Data from the SCADA system are used to update the water balance model on an annual basis.
3.86.						Contaminated surface water will not be allowed to flow or be intentionally discharged to the receiving environment without being treated first, and without the applicable authorisations.	Compliant	No intentional discharge/flow of dirty water to the natural environment was noted during the site visit. However, during the audit period, peters stone wall dam, located at the Kromdraai Section overflowed, discharging dirty water into the receiving environment of the Kromdraaispruit. This was a result of an electrical cable joint that short circuited, cutting power to the dedicated electrical pump. According to the incident report, the following was identified as the cause of overflow: <ul style="list-style-type: none"> • Liming plant running on generators resulting in SCADA and Level Detector not being operational • Increase in decant from Blackstone, the water amounts were rather significant on the day due to the recent rains and pumping from the mine • Increase decant from Central Block/Ramp 5. • Increased rainfall over the area due to tropical storm. The following actions were undertaken: <ul style="list-style-type: none"> • Procure and install replacement cables for power supply-action plan is completed. • Standby diesel pump identified and installed -action plan is completed. • Samples collected for analysis of the overflow water quality -action plan is completed. • Identify and implement measures to better secure and protect the power supply: Cable has been Concrete-Tubed, trenched, concreted and buried. -action plan is completed. No overflow of the above-mentioned dam was noted during the site visit.
3.87.					Avoidance Minimisation Rectification	Decanting acid mine water will be collected, stored in dirty water management facilities until is treated and re-used or discharged, based on the long-term water management strategy and conditions of relevant authorisations.	Compliant	According to the Integrated Water and Waste Management Plan developed for the Kromdraai Section (dated March 2019), decant occurs at the North and South Block of Kromdraai Section. According to the Water Reticulation Plan for Kromdraai Section (dated 2018), contaminated water emanating from the South and North decant areas is collected and pumped to the Kromdraai Holding dam (Lopies Dam) and then to the Kromdraai Plant. The treated mine water is re-used in the Kromdraai Plant and excess neutralised water is discharged to the Kromdraaispruit.
3.88.					Avoidance Minimisation Rectification	Implementation of measures described in No.2.54-2.58 and 2.66 - 2.73 will ensure that contamination of surface water due to contact with contaminating and / or hazardous materials will be minimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
3.89.	Surface water: watercourse alterations	Watercourse alterations			Authorisation Avoidance Minimisation	No new watercourse alterations or changes of the current watercourse alterations will be undertaken without the prior appropriate authorisations.	Not Applicable	No new watercourse alterations or changes of the current watercourse alterations was proposed and undertaken during the audit period, therefore this EMP commitment is not applicable.

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3.90.	Surface water: flooding	All mining and infrastructure areas			Any new infrastructure constructed as part of the rehabilitation measures during the Decommissioning Phase will be located outside the 1:100-year flood line of watercourses draining the study area.	Not Applicable	Khwezela North Colliery indicated that no new infrastructures have been constructed during the audit period, therefore this EMPr commitment is not applicable. According to the site visit conducted, no new infrastructures were noted.
3.91.		All rehabilitated surfaces and remaining surface infrastructure		Avoidance Reduction	Rehabilitated areas and remaining surface infrastructure will be inspected.	Compliant	Inspection of the rehabilitated area is conducted on monthly basis by the Rehabilitation Department. Furthermore, the Khwezela Colliery Environmental Department conducts monthly inspections of the mining area including rehabilitated areas. Monthly inspection reports were provided for review during the audit period.
3.92.	Groundwater	Opencast mining areas		Reduction Rectification	A long-term water management strategy will be developed during the Operational Phase, and will be finalised prior to the onset of the Decommissioning Phase. The strategy will consider the capture, containment and effective treatment of contaminated decant from mined out workings and seepage from discard disposal facilities, as well as other possibilities such as the lowering of the groundwater levels in mined out workings or use of final open voids, using the best available and feasible technology whileimplementing best environmental practice.	Not Applicable	The long-term groundwater management strategy has not yet been developed but is only required (as per the mitigation measure) prior to the onset of the Decommissioning Phase of the mine.
3.93.							
3.94.							
3.95.			Minimisation	Coarse discard and carbonaceous material will be placed back into the pits to the pre-mining coal horizon. This will ensure that once groundwater levels in the backfilled areas inundate the carbonaceous layers, the availability of oxygen for the generation of acid mine drainage will be limited, and will significantly minimize long-term groundwater impacts.	Compliant	Current rehabilitation practice ensures placement of coarse discard and carbonaceous material into the mined-out pits. This is also conducted according to the approved rehabilitation plan provided for review during the audit period.	
3.96.		In situ rehabilitated discard facilities	Rectification	As stipulated in No.2.119, contaminated groundwater resulting from the discard disposal facilities at the Navigation Section will be abstracted and treated (treatment options are currently under investigation). It is anticipated that this will reduce the risk of contamination	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.	

NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					of the surrounding groundwater environment.		
3.97.	Air quality	All mining and infrastructure areas		Minimisation Reduction	Where necessary, dust suppression will be undertaken with clean water in rehabilitated areas.	Compliant	Khwezela North Colliery uses dirty water from various pollution control facilities to dust suppresses the dirty water areas and the rehabilitated areas even during windy condition.
3.98.					Rehabilitated areas will be seeded as soon as possible after replacement of soil, to minimise potential dust generation.	Not Applicable	Seeding of the rehabilitated areas has not commenced as yet. Mined out areas or disturbed areas are in the process of rehabilitation.
3.99.					Air quality impacts will be similar to those experienced during the Operational Phase. Implementation of measures stipulated in No.1.90-1.93, 2.122, 2.123, 2.128-2.131 will ensure that negative Decommissioning Phase impacts will be suitably minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.100.	Noise	All opencast mining and infrastructure areas		Avoidance Minimisation	Implementation of the noise management measures stipulated in No. 1.100-1.103, 105 and 107 will ensure that noise impacts during rehabilitation are minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.101.		Infrastructure areas located near residential areas		Avoidance Minimisation	Dismantling of redundant surface infrastructure will be done during the daytime, and will be limited on weekends.	Compliant	Dismantling of surface infrastructure was undertaken at Excelsior Mining Block during the audit period. It was confirmed by Khwezela North Colliery Team that the dismantling was undertaken during the day and further not during weekends.
3.102		All opencast mining and infrastructure areas		Enhancement	No mitigation is required.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.103.	Sensitive landscapes	Wetlands downslope of mining and infrastructure areas		Restoration	Management of surface water and groundwater impacts will indirectly mitigate impacts on receiving wetlands and aquatic habitats.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.104.				Minimisation Rectification			
3.105.				Minimisation Reduction	Implementation of soil and surface water management measures will prevent or minimise the potential impacts on wetlands and aquatic habitats.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.106.				Compensation	The conservation management plan for the Clewer Nature Reserve, adjacent to the west of the Navigation West Section, will continue to be implemented as compensation for the loss of the pan in the Navigation West Section; North Block opencast area.	Compliant	According to the conservation management plan (dated 20 November 2019), implementation measures for alien vegetation management, fire management, vegetation management, game management and soil management must be undertaken for the selected off-set sensitive landscape areas. According to the action plan extracted from the Enablon system, implementation of the plan will commence on the 15 December 2021.

NO.	ASPECTS	LOCATION AT KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					The effectiveness of the conservation management plan will be audited annually.	Noted	No auditing of the Conservation Management Plan has been conducted as yet. The Conservation Management Plan (dated 20 th November 2019) was finalised in November 2019. According to the action plan extracted from the Enablon, the commencement date for auditing of the conservation management plan will be on the 15 December 2021. Khwezela North Colliery must ensure that the conservation management plan is audited as per the above-mentioned timeframe.
3.107.	Historical and cultural aspects			Avoidance Reduction	Implementation of the measures in No.2.142 and 2.143 will ensure that any sites of historical or cultural importance (such as graveyard GY01 at Navigation West section) will be prevented or minimised	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
3.108.	Visual aspects	All mining and infrastructure areas		Minimisation Rectification	Implementation of the management measures stipulated in No. 3.6, 3.10-3.13, and No.3.19-3.22 will indirectly mitigate the operational impacts of Landau Colliery on the visual aspects of the study area.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
3.109.		In situ rehabilitated discard facilities and water management infrastructure		Minimisation	Implementation of commitments No.3.23 and 3.24 will ensure that the visual impacts of the remaining surface infrastructure will be minimised as far as practicable.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
3.110.		Possible final open voids			No mitigation of visual impacts of final voids is possible.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
3.111.		All mining and infrastructure areas		Rectification	Implementation of commitments No.3.39, 3.43, 3.44, and 3.48-3.51 will ensure that the Operational Phase visual impacts will be reduced.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
					Once final rehabilitation has been completed, the negative visual impacts that will have occurred during the Operational Phase will cease, or be minimised (in the case of in situ rehabilitated infrastructure).	Not Applicable	No final rehabilitation of the mining activities has commenced, the mining operations are either still operational or under the decommissioning phase.
3.112.		All mining and infrastructure areas		Minimisation	Implementation of commitments No.3.98 - 3.100 will ensure that visual impacts relating to dust generation will be minimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
3.113.	Socioeconomic impacts	All mining and infrastructure areas		Reduction	The impact of mine closure on businesses providing goods and services is unavoidable, as is the cessation of contribution to community projects. However, the impacts on employees would be mitigated by the continued implementation of the Social and Labour Plan.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3.114.	Interested and affected parties	All mining and infrastructure areas			Minimisation Reduction	Employees will be skilled and career progressed through the human resources development programme, which will enable them to acquire skills that will help them re-enter the work place after closure of the mine.	Compliant	Employees are skilled and career progressed through the human resources development programme and the Social and Labour Plans. Reports were provided for review during the audit period.
3.115.					Minimisation Reduction	Anglo Operations Limited will, through the Social and Labour Plan (Processes pertaining to management of downscaling and retrenchments) and the relevant legislation, re-skill all employees to be retrenched. This will ensure that the employees affected by the closure of this mining operation can re-enter the workplace. Note, however, that the mine and the mining contractor may still use the employees in other mining projects, hence retrenchments may not occur.	Not Applicable	No retrenchment was proposed during the audit period, therefore this EMPr commitment is not applicable.
3.116.					None	As coal is a fossil fuel, it is a non-renewable resource. The impacts of the depletion of coal on national, regional and local socio-economic aspects are unavoidable, and no mitigation is possible.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.117.					Rectification	Implementing measures to ensure that the land capability and end land use objectives can be achieved will ensure that the anticipated future long-term socio-economic impacts will be possible.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.118.					Rectification	Implementation of measures to mitigate impacts on topography, soils, vegetation, surface water and air quality will indirectly mitigate negative visual impacts.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.119.					None	Communication with I&APs will continue through the Decommissioning Phase - refer to commitment No.'s 1.123 - 1.127.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.120.					Minimisation Reduction Rectification	In addition to implementing measures to manage impacts on surface water, signs will be erected within the mine boundary area, and for a reasonable distance downstream, in strategic locations to warn people of the	Noted	Signs are erected around and within the mining boundaries. This was confirmed during the site visit. However, it was indicated by Khwezela Colliery that signs are stolen on regular basis as a result of criminal activities.

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
						unsuitability of the water for domestic use or watering of animals. Measures will be taken to try to minimise vandalism of such notices.		
3.121.					Avoidance Minimisation Reduction	Implementation of soil and surface water management measures will prevent or minimise the potential impacts on downstream water users.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.122.					Avoidance Minimisation Reduction Rectification	Implementation of groundwater management measures will ensure that potential impacts on groundwater users will be avoided. However, should groundwater monitoring show that the yield and quality of the groundwater of surrounding users are affected, an alternative water resource will be provided to replace the loss.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.123.					Enhancement	Implementation of measures to ensure that the pre-mining land capability is restored as far as practicable, and that the land is used for long-term sustainable activities.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.124.					Avoidance	Implementation of the measures stipulated in commitment No.1.135 - 1.140 will ensure that possible impacts on the Sasol gas pipeline are avoided.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
3.125.					Enhancement	Continued supply of mine water to the EWRP for treatment will ensure that the onward supply of potable water to the Local Municipality will continue.	Compliant	Affected mine water is supplied to the EWRP (currently only Navigation Section) with further upgrades in infrastructure to allow for full supply (Kromdraai Section (upgrades to communication line currently underway)).

5.1.3 Environmental Management Programme – Management measures for the post closure phase

No.	Environmental component	Location at Khwezela North Colliery	Management Measure	Mitigation Measures	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
4.1.	Geology	Mined out opencast areas	None.	Replacement of overburden into mined out voids will have taken place throughout the Operational and Decommissioning Phase. No further management of geological impacts will be required during the Post-Closure Phase.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.2.		Possible final voids	None.	The size of the voids will be minimised, while being of sufficient capacity to accommodate groundwater ingress to the pit and direct rainfall. The required size and	Not Applicable	Post closure phase mitigation measures are not applicable as yet.

NO.	ASPECTS	LOCATION AT KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					capacity of the possible final voids will be determined during the Operational and Decommissioning Phases, and will require no further management during the Post Closure Phase.		
4.3.	Topography	Mined out opencast areas			Monitoring of backfilled areas for localised subsidence and cracking, and maintenance thereof where necessary, will need to be conducted after Closure to minimise the consequent impacts on surface water and groundwater, as well as land capability and safety of land users.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.4.		n situ rehabilitated surface infrastructure		None.	The impact of in situ rehabilitated facilities on the topography will be permanent, and is unavoidable if surface water and groundwater impacts are to be managed sustainably. No mitigation of the direct impact on topography is possible. Mitigation of the indirect impacts on land capability, land use, surface water and groundwater is described below, relative to the environment aspect under consideration.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.5.		Remaining water management infrastructure		Minimisation Reduction	Water management infrastructure required for the continued containment of mine water prior to treatment thereof after mine closure will need to be operated to comply with legislative requirements (e.g. GN 704) and maintained. Which of the water management measures will remain in use, and whether or not they should be modified to cope with Post-Closure conditions, will be determined during Closure planning in the Decommissioning Phase, and will be subject to the relevant required authorisations (e.g. Water Use Licence under the NWA, 1998).	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.6.		Mined out opencast areas		None.	Refer to No.4.3.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.7.	Soil	All rehabilitated areas		Enhancement	Monitoring and repair of the soil where necessary, e.g. where	Not Applicable	Post closure phase mitigation measures are not applicable as yet.

NO.	ASPECTS	LOCATION AT KHWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					erosion has occurred, should be undertaken throughout the Operational and Decommissioning Phases, to ensure that the recovery of the soil to pre-mining conditions will be possible, and to ensure that the soil will be self-sustaining during the PostClosure Phase.		
4.8.	Land capability and Land use	All rehabilitated areas		None.	Refer to No.4.2.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.9.		Mined out opencast areas		None.	Refer to No.4.3.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.10.		Schoongezicht No.2 Seam mini pit		None.	Management of the surface will be taken over by a third party, subject to end land use agreements.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.11.		Kromdraai Section, Navigation West Section		None.	Management of the surface will be taken over by a third party, subject to end land use agreements.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.12.	Sensitive areas	Navigation West Section		Compensation	The conservation management plan for the Clewer Nature Reserve, adjacent to the west of the Navigation West Section, will continue to be implemented as compensation for the loss of the pan in the Navigation West Section; North Block opencast area. The effectiveness of the conservation management plan will be audited annually.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.13.		Wetlands downslope of mining and infrastructure areas		Minimisation Rectification	Post-closure decant management (capture and treatment) will indirectly mitigate impacts on receiving wetlands and aquatic habitats.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.14.	Surface water and groundwater	Mined out opencast areas and old underground workings.		Reduction Rectification	A long-term water management strategy will be developed during the Operational Phase, and will be finalised prior to the onset of the Decommissioning Phase. The strategy will consider the capture, containment and effective treatment of contaminated decant from mined out workings and seepage from discard disposal facilities, as well as other possibilities such as the lowering of the groundwater levels in mined out workings or use of final open voids, using the best available and feasible	Not Applicable	Post closure phase mitigation measures are not applicable as yet.

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NO.	ASPECTS	LOCATION AT KHEWEZELA NORTH COLLIERY	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					technology while implementing best environmental practice.		
4.15.	Visual aspects	All rehabilitated surfaces and remaining surface infrastructure		Avoidance Reduction	Rehabilitated areas and remaining surface infrastructure will need to be inspected after extreme storm events and maintained or repaired where necessary.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.16.		In situ rehabilitated discard facilities and water management infrastructure		None.	Management of the surface will be taken over by a third party, subject to end land use agreements.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.17.		Possible final open voids		None.	No mitigation of visual impacts of final voids is possible.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.18.		All mining and infrastructure areas		None.	Implementation of commitments No.3.39, 3.43, 3.44, and 3.48-3.51 will ensure that the Operational Phase visual impacts will be reduced. Once final rehabilitation has been completed, the negative visual impacts that will have occurred during the Operational Phase will cease, or be minimised (in the case of in situ rehabilitated infrastructure).	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.19.	Socioeconomic impacts	All mining and infrastructure areas		None.	No mitigation required.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.20.	Interested and Affected parties	All mining and infrastructure areas		None.	No mitigation required.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.22.				Reduction Rectification	Refer to No.4.14	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.23.				Avoidance Reduction	Refer to No.4.15.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.24.				Compensation	Implementation of long-term groundwater management measures will ensure that potential impacts on groundwater users will be avoided. However, should groundwater monitoring show that the yield and quality of the groundwater of surrounding users were affected during the Operational or Decommissioning Phase of the mine, an alternative water resource will continue to be provided to replace the loss.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.
4.27.				Enhancement	Continued supply of mine water to the EWRP for treatment will ensure that the onward supply of potable water to the Local Municipality will continue.	Not Applicable	Post closure phase mitigation measures are not applicable as yet.

Cumulative Impacts

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
1	Geology	N/A		The Witbank Coal Field, located mostly within the Mpumalanga Highveld region between Bethal and Springs in Gauteng, generally contains five seams of coal most of which is good quality and high calorific value. As such, coal is extracted from numerous mines located near eMalahleni, in the Emalahleni Local Council's area of jurisdiction. Due to the existing surrounding coal mining operations (Xstrata South Africa (Pty) Ltd. and other Anglo Operations Ltd. mines) in the surrounding area, the geological strata in the region will be permanently altered.	N/A	Implementation of measures during the Operational and Decommissioning Phases of the mine (refer to Table 7.3.1 and 7.3.2) will ensure that the contribution of the mine to cumulative impacts on geology will be minimised as far as practicable. However, due to the nature of coal mining, particularly opencast mining, destruction of the geology is unavoidable. Of greater importance to this part of the EIA is the indirect impacts that the geological impacts will have on other environmental aspects such as surface water and groundwater.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
2	Geology and Socio-economic conditions	N/A		The extraction of coal from the Witbank Coal Field has occurred over a period spanning more than a century, and modern day opencast mining techniques enable coal extraction to be maximised. This has led to the systematic depletion of the coal reserves in the region, increasing significantly in the last several decades due to improvements in mining technology. Since coal is a fossil fuel it is a non-renewable resource, and as the remaining coal reserves decrease, the value of the coal will increase because of supply and demand principles. This will lead to an increase in income generation and positive contributions to the regional socio economic conditions during the Operational Phase of the mine, but will ultimately result in the complete exhaustion of the coal reserves, leaving no coal for future generations.	N/A	The exhaustion of the non-renewable coal reserves at Landau Colliery is an inevitable and unavoidable consequence of coal mining. No mitigation is possible.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3	Topography, Land use and Visual aspects	N/A		Landau Colliery is located in a region where opencast coal mining is common place. The large number of opencast coal mines in the region, together with the historical nature of the mining in the Witbank region (over 100 years of mining history) will most likely have desensitised local residents and frequent travellers through the area. On the contrary, the visibility of the mining areas from the surrounding areas could be of interest to passersby, especially since coal mining is an important part of Mpumalanga's history, and visits to coal mines are even cited as being of interest to tourists.	N/A	Management of impacts on topography will ensure that the contribution of the mine to cumulative visual impacts will be minimised as far as practicable.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
4							Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
5		N/A			N/A	No mitigation required.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
6	Topography	N/A		Large sections of the Emalahleni Municipal area affected by shallow undermining, which has had a significant impact on the environment, resulting in sinkhole formation, subsidence and seepage of water from underground workings (ELM IDP, 2009-2010), amongst others.	N/A	Implementation of measures during the Operational and Decommissioning Phases of the mine (refer to Table 7.3.1 and 7.3.2) will ensure that the contribution of the mine to positive cumulative impacts on topography will be maximised, as far as practicable.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7	Topography, surface water and groundwater	N/A			N/A	Implementation of measures during the Operational and Decommissioning Phases of the mine (refer to Table 7.3.1 and 7.3.2) will ensure that the contribution of the mine to subsidence in rehabilitated areas win the region will be minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
8	Soil, land capability and Socio-economic conditions	N/A		Agriculture is one of the largest economic sectors in Mpumalanga, producing 15% of total output in South Africa (South Africa Yearbook, 2001/02). The number of opencast mines in Mpumalanga, particularly large operations, have led to a significant loss of high agricultural potential soils that would otherwise continue to be capable of	N/A	Implementation of measures during the Operational and Decommissioning Phases of the mine (refer to Table 7.3.1 and 7.3.2) will ensure that the contribution of the mine to the reduction of food production due to soil impacts will be minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
				supporting crop cultivation. Loss of high potential agricultural land due to opencast mining activities in the area will reduce the food production capability of the region.				
9	Soil, land capability, biodiversity and sensitive landscapes	N/A		In addition, large areas of the surface have been affected by agriculture and opencast mining, which has led to loss of soil structure and function, and ultimately to loss of biodiversity due to the transformation and fragmentation of natural habitats and ecosystems.	N/A	Implementation of measures to manage the impacts on topography, soil, vegetation, animal life, surface water and groundwater during the Operational and Decommissioning Phases of the mine (refer to Table 7.3.1 and 7.3.2) will ensure that the contribution of the mine to biodiversity loss, habitat transformation and fragmentation will be minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
10	Land use and Socio-economic conditions	N/A		Mining is an important sector in Mpumalanga providing jobs and contributing to over one fifth of Mpumalanga's Gross Geographic Product (Mpumalanga SoE, 2003).	N/A	None required.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
11	Biodiversity - Alien species	N/A		Invading alien plants are the single biggest threat to plant and animal biodiversity through the effects of predation, alteration of habitat or disruption of ecosystem process and services. Invading alien plants have become established in over 10 million hectares of land in South Africa. If left uncontrolled, the problem will double within 15 years. Invading alien plants waste 7% of our water resources, reduce farming productivity, intensity flooding and fires, cause erosion, degrade river systems, increase rate of siltation of dams and estuaries, reduce water quality and can cause extinction of indigenous plants and animals	N/A	All declared alien weeds will be effectively controlled during the remaining Life of Mine.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

NO.	ASPECTS	LOCATION KHEWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
				(Mpumalanga SoE, 2003).				
12	Biodiversity - Threatened species	N/A		Numerous species in Mpumalanga face the risk of extinction due to factors such as habitat loss, environmental degradation and fragmentation of landscapes (Mpumalanga SoE, 2003).	N/A	Implementation of measures to manage the impacts on topography, soil, vegetation, animal life, surface water, groundwater and sensitive landscapes during the Operational and Decommissioning Phases of the mine (refer to Table 7.3.1 and 7.3.2) will ensure that the contribution of the mine to impacts on local populations of the Grass Owl will be reduced.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
13	Surface water	N/A		The bulk (65%) of water resources available in Mpumalanga comes from surface water resources, water transfers into the province provide 19% of total water availability, groundwater contributes 6% of available water and return flows from mining, industrial, irrigation and urban sectors contribute 10%. Water use in South Africa is dominated by irrigation and Mpumalanga province is no exception with 46% of its water being used for irrigation. The second largest requirement for water is for water transfers to neighbouring catchments and Water Management Areas (WMAs) which accounts for 16% of water use in the province, while water use in the urban sector is slightly less (8%) and requirements for the industrial, forestry and mining sectors each account for 9% of the province's water use (Mpumalanga SoE, 2003).	N/A	Implementation of surface water management measures during the Operational and Decommissioning Phases will ensure that the overall volume that need to be withheld from the catchment for water quality management purposes will be minimised. In addition, the treatment of mine water, including AMD decanting from old underground workings and backfilled opencast workings, at the EWRP will enable the return of treated water back to the affected catchments, as far as practicable.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
14		N/A		Water quality indicators have shown a general decrease in water quality over time. Median levels of surface water nutrients have increased and indicate	N/A	Implementation of Operational and Decommissioning Phase mitigation measures to minimise and reduce impacts on water quality, including decant management and treatment, will	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

NO.	ASPECTS	LOCATION KHWEZELA NORTH COLLIERY	AT	POTENTIAL IMPACTS	MANAGEMENT MEASURE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
				a potential for enrichment. The consequences of these elevated levels are: A greater potential for algal blooms; An impact on riverine ecosystems; and Impairment of human health. High (and increasing) total dissolved solids (TDS) levels in the Olifants Water Management Area (WMA) have the potential for decreasing the aesthetic value of the water. Exceedance of the guideline levels for certain metals in the Olifants WMA may be attributed to the numerous industrial and mining activities taking place in that area. At the WMA scale, high exceedances above water quality guideline levels exist for pH levels in the province.		significantly reduce the overall contribution of Landau Colliery to the negative water quality issues of the applicable catchments.		
15		N/A		Groundwater contributes 6% of available water in Mpumalanga (Mpumalanga SoE, 2003).	N/A	Implementation of Operational and Decommissioning Phase mitigation measures to minimise and reduce impacts on groundwater quality will significantly reduce the overall contribution of Landau Colliery to regional groundwater contamination.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.

7.2 LANDAU COLLIERY LIFEX EXTENSION PROJECT: EMP UNDER THE MPRDA (2002)" WITH DMRE REFERENCE NUMBER: MP 30/5/1/2/3/2/1 (306) EM.

REF. NO	ENVIRONME NTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.1 CONSTRUCTION OF INITIAL BOX CUTS AND BORROW PITS					
7.9.1.1.	Geology	Drilling and blasting of the hard overburden to expose the underlying coal seams will permanently destroy the geological sequence of the coal seams to be mined. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Drilling and blasting will be conducted by a certified blasting technician where blasting techniques are localised to the footprint area of the box cuts only.	Compliant	Henru Francois Van Zyl and Gideon Vincent Magagula are appointed as the certified blasting technician responsible for drilling and blasting activities. Certificates of competence were provided during the audit period.
7.9.1.2.		The blasting of the hard overburden to expose the underlying coal seams might disrupt the underlying geology in the new opencast areas. The extent of this impact	Blasting will be conducted by a certified blasting technician in accordance with specialised and localised blasting techniques in order to prevent any possible impact on surrounding or underlying geological strata.	Compliant	Henru Francois Van Zyl and Gideon Vincent Magagula are appointed as the certified blasting technician responsible for drilling and blasting activities. Certificates of competence were provided during the audit period.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		will be reduced by the removal of the Schoongezicht West Block: South mini-pit.			
7.9.1.3.	Topography	The stockpiling of topsoil, subsoil and non-carbonaceous overburden will result in mounds being created within the surface land use area, thereby altering the topography. The extent of this impact will be reduced by the significant reduction in sizes of the overburden and topsoil stockpiles.	Stockpiled soil and non-carbonaceous overburden will be used in the concurrent rehabilitation of the progressive opencast voids as soon as possible in order to limit the duration of the impact on the topography.	Not Applicable	No concurrent rehabilitation of the Lifex Extension project has not commenced as yet, therefore this EMP commitment is not applicable. Stockpiled soils are available and will be utilised during commencement of the concurrent rehabilitation.
7.9.1.4.		The creation of the box-cut(s) will cause a change in the topography of the affected sites by creating depression(s). The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Concurrent rehabilitation will take place during the operational phase.	Not Applicable	No concurrent rehabilitation of the Lifex Extension project has not commenced as yet, therefore this EMP commitment is not applicable. Stockpiled soils are available and will be used during the commencement of the concurrent rehabilitation.
7.9.1.5.	Soil	Stripping and stockpiling of soils in initial boxcut and borrow pits will result in mixing of the soil's A and B-horizons with subsequent reduction in fertility, water holding capacity and buffer capacity against compaction. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Soils will be stripped at specified depths in order to prevent stripping of lower quality subsoil together with topsoil.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.6.		Stripping of lower quality subsoil together with high quality topsoil from initial boxcut and borrow pit footprint areas will result in a reduction of soil quality and subsequent land capability. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Topsoil will be stripped and stockpiled based on soil type groups (red soils, yellow brown soils and grey wetland soils) in order to preserve pre-mining soil potential and land capability as far as possible as indicated by Figure 6 and Table 8 in draft soil report (Refer to Appendix D1).	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.7.		The planned topsoil stockpiles will cover productive soil surface and cause the majority of soil functions (growth and nutrient medium and habitat) within the footprint areas of the stockpiles to cease. The extent of this impact will be reduced by the significant reduction in sizes of the topsoil stockpiles.	The topsoil stockpiles will be removed as soon as practical during rehabilitation.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced as yet, therefore this EMP commitment is not applicable. Stockpiled soils are available and will be used during the commencement of the concurrent rehabilitation.
7.9.1.8.		Digging or drilling of holes to cast fence poles in concrete around the planned opencast areas will result in the mixing of the soil's A and B-horizons by digging or drilling of holes for fence poles will reduce soil quality. Filling of holes with concrete to support fence posts around opencast areas will cause all soil functions, land capability and land uses to cease at each pole footprint. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Due to the small amount of excavated soil it will be impractical to store for backfilling during the decommissioning phase. However, the footprint area over which the soil is disturbed during the construction of the fencing will be minimised as far as practicable to correspondingly minimise the disturbance of the soils.	Not Applicable	The construction of the fencing is completed, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.1.9.		Removal of vegetation will expose soils to erosion forces such as wind and water. The extent of this impact will be reduced by the significant reduction in sizes of the topsoil stockpiles.	The removal of vegetation will be restricted to the planned mining and infrastructure areas only. Re-vegetate any unnecessarily exposed soil immediately.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.10.			Stockpiles will be vegetated as soon as possible to maintain the microbial components in the soils, as well as to minimise the loss of soil through erosion.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable.
7.9.1.11.		Should spills from hazardous materials (including fuel and chemicals) occur, the soil in the vicinity of the spill may be polluted with a resultant change in the chemical properties of the soil. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit, and reduction of stockpile sizes.	The existing Standard of Practice (SOP) for soil management and environmental hazard management will be modified to include the EMP commitments pertaining to the Lifex Extension Project. The revised SOP will be used to train the applicable mining personnel and contractors prior to the commencement of the Construction Phase.	Compliant	From a review of the Topsoil Management Procedure, Khwezela Hydrocarbon and Chemical Handling Procedure, Khwezela Incident Reporting and Management Procedure and the Landau Stabilizing Potential Sinkhole Areas Procedure, it was noted that the EMP commitments pertaining to the Lifex Extension Project are included. These include management of soil contamination by the hazardous material. It must be noted that the construction activities for Lifex Extension Project are completed.
7.9.1.12.			Vehicles will be checked for hydrocarbon leakages before being employed near or at the initial box-cut area.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
			Spillages will be avoided, if they do occur they will be contained, the affected area cleaned and the affected soil will be bioremediated before being reused for rehabilitation.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.13.	Land capability	The land capability within the footprint of the initial box cuts, borrow pits and fencing poles will reduce from arable land and grazing to none because there will be no topsoil. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit. • The land capability within the footprint where topsoil will be stockpiled will reduce from arable and grazing to none because the topsoil stockpile will cover the productive soil surface. The extent of this impact will be reduced by the significant reduction in sizes of the topsoil stockpiles. • The soil quality of the stockpiled topsoil will decrease due to compaction and mixing of soil horizons and subsequent deterioration of soil properties such as water holding capacity and fertility status. The extent of this impact will be reduced by the significant reduction in sizes of the topsoil stockpiles.	Areas to be disturbed by the establishment of the initial box-cuts, borrow pits and fencing will be limited to the planned footprint areas only. This will be facilitated by clearly designating the areas within which stripping of soils, and removal of soils and overburden will take place as a matter of standard practice.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.14.			Implementation of the soil management measures (above) will also mitigate impacts on land capability.	Noted	Khwezela North Colliery Management understands this EMP commitment.
7.9.1.15.	Land use	Due to the removal of soils and overburden, the current land use (mostly agriculture, with some wetlands) within the footprints of the initial box-cuts and topsoil stockpiles will be altered to a mining land use. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-	Areas to be disturbed by the establishment of the initial box-cuts will be limited to the planned footprint areas of the box-cuts as indicated on the mine plan. This will be facilitated by clearly designating the areas within which stripping of soils, and removal of soils and overburden will take place as a matter of standard practice.	Compliant	It was confirmed during the site visit and the approved mine plan for the Lifex Extension Project that the establishment of the initial box-cuts is undertaken within the approved footprint area and no unnecessarily clearing of vegetation was noted.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		pit, as well as the significant reduction in sizes of the topsoil stockpiles			
7.9.1.16.		The change in land use from agriculture to mining in areas not already used for mining will result in a higher income per hectare over the short-term in comparison with agriculture. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit, however the overall impact of the project will remain a positive impact.	Environmental impacts will be managed so as to minimise environmental liability, thus maximising profits and revenue, thus maximising positive impacts on socio-economy.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.17.	Vegetation	Direct loss of untransformed vegetation. No Rocky Scarp Vegetation will be affected. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Areas to be disturbed by the establishment of the initial box-cuts will be limited to the planned footprint areas of the box-cuts as indicated on the mine plan. This will be facilitated by clearly designating the areas within which stripping of vegetation will take place ahead of mining.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.18.			Conservation Biodiversity Management Areas (CBMAs) and corridors linking the CBMA's will be identified taking the ecology and wetland specialists' recommendations (refer to the Ecology report in Appendix D2 and the Wetland report in Appendix D6) into consideration and incorporated into Landau Colliery's existing Biodiversity Action Plan (BAP).	Compliant	Conservation Biodiversity Management Areas have been identified in the Botanical Survey Report compiled for the Lifex Extension Area. The identified areas are incorporated into the Khwezela North Colliery Conservation Management Plan.
7.9.1.19.			The CBMA's of high biodiversity conservation value identified as above will be fenced, where feasible, and protected. The fencing used to demarcate and protect the CBMA's will be designed so as not to hinder animal movement.	Compliant	The CBMAs of high biodiversity conservation value are demarcated and fenced off. This was confirmed during the site visit 2021.
7.9.1.20.		Establishment of the initial boxcuts may impact on some or part of the wetlands (including the associated vegetation) within the study area through direct loss of habitat. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	No mitigation possible that will reduce the significance of this impact. However, a wetland offset strategy is being developed which will be implemented during the Operational Phase which may enable this impact to be deemed more acceptable. Phase 1 of the Wetland Offset Strategy has been completed – refer to the report attached as Appendix D14.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.1.21.		Indirect impacts. Degradation and transformation of wetland plant communities as a result of disruption of hydrological patterns within catchments, habitat fragmentation, increased sedimentation (sediment laden runoff and dust), accidental spills (fuels, cement, etc.) and alien plant invasion. Impacts to mesophyllous vegetation mainly as a result of 'edge effects' such as dust, alien plant invasion and habitat fragmentation. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	It will be ensured that all areas of surface disturbance are located more than 100m from the seasonal hydromorphic soils of the valley-bottom wetland, wherever practicable.	Compliant	According to the Wetland Figure outlined in the EMPr, According to the Integrated Water Use Licence for the Navigation Lifex Extension, infrastructures are located within 500 m from the wetland areas. Furthermore, through the assessment of the Google Earth Image, no infrastructures are located within the 100 m from the seasonal hydromorphic soils of the valley-bottom wetland.
7.9.1.22.			Informal crossings of vehicles or machinery over these wetlands will be avoided.	Compliant	According to the Integrated Water Use Licence for the Navigation Lifex Extension, a haul road crosses the Schoongezichtspruit. As such, a bridge is constructed over the Schoongezichtspruit for this purpose to avoid informal crossing. It must be noted that the bridge was in existence before commencement of the Lifex Extension Project.
7.9.1.23.			Sedimentation and erosion will be minimised by constructing water management berms and applying dust suppression measures (e.g. watering of access and haul roads).	Compliant	Berms and trenches (clean and affected water) are constructed around the opencast mining area to minimise sedimentation and erosion and to ensure separation of the clean and affected water management systems. Furthermore, Khwezela North Colliery uses water browsers to dust suppress the access and haul roads.
7.9.1.24.			CBMA's, and corridors linking the CBMA's that will have been identified during the Design and Planning Phase will be fenced, where feasible and protected (refer also to Ref. no. 7.9.1.18).	Compliant	The CBMAs of high biodiversity conservation value are demarcated and fenced off. This was confirmed during the site visit 2021.
7.9.1.25.			As per the Conservation of Agricultural Resources Act (Act No. 43 of 1983), weeds and alien invader plants will be monitored and	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			controlled within the construction footprint and immediate surrounds.		EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.26.			All construction activities will be restricted to fenced areas.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.27.			All hazardous substances will be stored on impervious surfaces that allow for the containment of spills and leakages (e.g. bunded areas). Should spills occur, these will be reported to the Environmental Coordinator.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.28.			All opencast areas will be rehabilitated progressively upon completion of mining.	Not Applicable	The opencast mining is still under operational phase, therefore this EMPr commitment is not applicable.
7.9.1.29.		No direct losses of Threatened or Near Threatened species expected, but loss of some individuals of Declining and Protected species likely to occur. These losses will be restricted to the areas of Valley Bottom Wetland and Untransformed Grassland situated within the proposed footprints of the opencast pits. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Footprint areas of all proposed infrastructure situated within untransformed vegetation for the Declining and Protected species known to occur, will be searched for species requiring protection prior to commencement of construction activities.	Compliant	Current practices provide for inspections of areas to be stripped prior to construction, to identify the presence of protected species. Such practices are further adapted for stripping activities associated with the opencast pits. It was further provided that such surveys were undertaken during the application phase for the Life Extension Project, with no protected species identified within the proposed infrastructure areas and areas earmarked for mining.
7.9.1.30.			Protected species will be rescued and placed in a nursery or donated to a research institute (e.g. SANBI or botanical garden) prior to mining, and will not be destroyed. Where feasible, viable populations of such species will be translocated to degraded or untransformed areas within the study area which provide potentially suitable habitats; such translocations will be carried out in a manner that ensures that no ecological degradation of the host habitat occurs, and will be evaluated by a botanist for each species and each potential translocation area		
7.9.1.31.			The required authorisation(s) for the destruction of any Protected species in accordance with the MNCA (Act no. 10 of 1998) will be obtained, and /or preferably plants will be rescued and translocated as described in 7.9.1.32 above.		
7.9.1.32.			The CBMA's, and corridors linking the CBMA's that will have been identified in the BAP during the Design and Planning Phase will be fenced, where feasible, using a five-strand cattle fence, and apply access control to these areas. Progressive re-vegetation of all disturbed areas will be carried out.	Compliant	The CBMA's of high biodiversity conservation value are demarcated and fenced off. This was confirmed during the site visit 2021.
7.9.1.33.			The movements of all construction personnel will be limited to construction areas and clearly demarcated access roads.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
			Medicinal plants will be monitored as per the mine's existing Biodiversity Action Plan (BAP).	Compliant	Monitoring of the medicinal plants identified in the existing Biodiversity Action Plan (BAP) is conducted as part of the annual review of the Bio-

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					diversity Action Plan. Biodiversity Action Plan was provided for review during the audit period.
7.9.1.34.	Vegetation	Due to removal of soils, any seed banks that may have built up in the soils may be lost, leading to a loss of propagation potential of flora. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Implementation of the topsoil management measures identified previously in this table is expected to contribute to a reduction in the significance of this impact, since the seed bank in the topsoil will be replaced when the topsoil is replaced during rehabilitation. While this will likely not totally counteract the full impacts of soil stripping and vegetation clearing on the seed banks within the soils, the pre disturbance seed banks will not be entirely lost.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
			Access to these CBMA's will be strictly controlled.	Compliant	Strict access control is implemented to these CBMA's. The CBMA's of high biodiversity conservation value are demarcated and fenced off.
7.9.1.36.		Indirect impacts. Increased human presence in previously inaccessible areas likely to lead to increased hunting pressure, persecution and disturbance of certain sensitive species such as Serval (Near Threatened). The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Movements of all construction personnel will be limited to fenced construction areas and clearly demarcated access roads.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
			Access to CBMA's identified in the BMP will be strictly controlled.	Compliant	Strict access control is implemented to these CBMA's. The CBMA's of high biodiversity conservation value are demarcated and fenced off.
7.9.1.37.		Loss of animals through vehicle collisions is also a concern where animals of conservation importance are concerned. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	The movement of construction / mining vehicles and machinery will be limited to predetermined routes along the access and haul roads as well as the initial box cut areas.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.38.			Low speed limits (60 km/hr) will be imposed for vehicles and machinery.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.39.	Animal life	Noise from the construction vehicles, machinery, drilling and blasting may frighten animals and possibly cause them harm. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Same as Ref. no.'s 7.9.1.37 and 7.9.1.38, above.	Not Applicable	The construction activities are completed, therefore this EMPr commitment is not applicable.
7.9.1.40.	Surface Water Flow Patterns	The change in topography caused by the open cut and the construction of the water management system will change the natural flow patterns of the surface water runoff. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	A surface water monitoring programme will be implemented to verify the impacts on surrounding water environment.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.41.			Infrastructure designed to divert clean runoff around the box-cut area and to keep affected surface water runoff from the mining area contained, will be implemented and maintained.	Compliant	Berms are constructed to divert clean runoff around the box-cut area. Furthermore, pollution control dams (Navigation East and West PDC's) are constructed for the containment of dirty water from the box-cut. Khwezela North Colliery indicated that monthly inspections are conducted to check the functionality of the storm water management structures.
7.9.1.42.			The infrastructure will be constructed under the supervision of a suitably qualified engineer.	Compliant	All infrastructures (berms and pollution control dams) are constructed under the supervision of a suitably qualified engineer. Design reports and certificate of the qualified engineer was provided during the audit period. Site visit confirmed that all infrastructure on site is constructed in accordance to approved plans and under the supervision of a suitably qualified engineer.
7.9.1.43.			Damming of clean water will be prevented.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of

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					box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.45.	Surface Water Quantity	The change in topography caused by the open cut and the construction of the water management system will change the natural flow patterns of the surface water runoff. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit. Isolation of the dirty water management area will result in a marginal reduction in catchment yield. The loss of yield associated with mining relates to the following: • Loss of catchment from areas that will no longer drain to the catchment during mining. The loss in yield associated with mining is primarily due to the active pit and ramp areas, overburden dumps (isolated from the catchment) and the related surface infrastructure areas. • Loss of hill slope wetlands and associated seepage from these areas. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit, and the significant reduction in stockpile sizes.	An Application for Integrated Water Use Licence under Chapter 4 of the NWA will be submitted to the DWS.	Compliant	Khwezela North Colliery is in possession of an approved WUL for the Lifex Extension Project with licence no.: 06/B11K/ACGIJ/5335 for the opencast mining areas.
7.9.1.46.			The existing Landau Colliery surface water monitoring programme will be revised to include proposed new monitoring points for the Lifex Extension project (described in Part 9) and implemented to verify impacts on surrounding water environment.	Compliant	According to the surface water monitoring reports provided during the audit, monitoring points for the Lifex Extension project are included to identify any impacts on surrounding water environment by the opencast activities.
7.9.1.47.			The proposed surface water management infrastructure (described in Part 2 of this document and in the Surface Water Specialist Study and Design Report, attached in Appendix D10) will be constructed and commissioned as soon as practicable during the Construction Phase.	Compliant	Berms, trenches and pollution control dams are constructed for the management of dirty water emanating from the opencast areas.
7.9.1.48.			The proposed surface water management infrastructure will be constructed under the supervision of a suitably qualified engineer.	Compliant	All infrastructures (berms and pollution control dams) are constructed under the supervision of a suitably qualified engineer. Design reports and the certificate of the qualified engineer were provided during the audit period. Site visit confirmed that all infrastructure on site is constructed in accordance to approved plans and under the supervision of a suitably qualified engineer.
7.9.1.49.			The extent of the disturbed and potentially contaminated areas will be kept to a minimum.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.50.			Areas where dirty construction activities are carried out (e.g. servicing areas and workshops, fuel storage areas, waste storage areas) should be minimised and surrounded by bund walls	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.51.			Upslope runoff should be diverted around construction activities, in so far as is practically possible.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.52.			The revised mine water balance (described in Part 2 of this document and in the Surface Water Specialist Study attached in Appendix D10) will be updated, verified through water monitoring, and managed according to the DWS Guidelines.	Compliant	Updated water balance that includes the Lifex Extension Project was provided during the audit period. The water balance is updated on an annual basis.
7.9.1.53.			The mining window will be kept to pre-strip, one open cut and two spoil rows, i.e. these areas will be considered unavailable but all other areas will be concurrently rehabilitated.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. It was confirmed during the site visit that mining window is kept to pre-strip, one open cut and two spoil rows.
7.9.1.54.		Removal of material from boxcut The construction phase is considered to end once carbonaceous material, in the form	Surface water management measures, such as storm water canals, sediment traps and PCDs will be constructed first to ensure that runoff and dirty water spills are contained.	Compliant	Surface water management infrastructures (pollution control dams, trenches and berms) are constructed for the containment of dirty water emanating from the opencast mining activities.

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		of the coal seam, is exposed within the boxcut. However, much of the overburden removed prior to the exposing of coal has the potential to contain some carbonaceous material.	Construction of the East and West PCDs will allow for the removal of the existing Navigation Dam, which is expected to result in and improvement of the water quality of the receiving water resource.	Compliant	The East and West pollution control dams have been constructed and the Navigation pollution control dam is no longer in used. According to the mining plan, the existing Navigation Dam will be mined. It must be noted that mining of the Navigation Dam has not commenced.
7.9.1.55.	Surface Water Quality	The hard rock removed from the initial boxcut will be placed in the overburden stockpile area. This material will remain in the stockpile for the duration of mining. Thereafter it will be placed back into the final void. Impacts may arise from: • Erosion during rainfall events, resulting in increased turbidity and suspended solids in the runoff water, reporting to the local watercourses. • Deposition of sediments in the local watercourses, impacting on the aquatic ecology. • Overburden stockpiles will potentially contain carbonaceous material, with the potential to affect downstream watercourses by increasing sulphate and TDS concentrations. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit, as well as the significant reduction in overburden stockpile requirements.	Any clean catchment draining towards the overburden stockpiles will be diverted around by means of clean water diversion canals.	Compliant	It was confirmed during the site visit that berms are constructed to divert clean water around the overburden stockpiles.
7.9.1.56.			The overburden stockpiles will be located within the designated dirty water area.	Compliant	It was confirmed during the site visit that the overburden stockpiles are located within the mine's dirty water management area in minimising the potential impacts of the overburden (particularly carbonaceous overburden) on the receiving environment.
7.9.1.57.			Where practically possible, runoff and seepage from the overburden stockpiles will be directed to the opencast workings.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
			Where an overburden stockpile cannot drain to the dirty water system, a series of continuous paddocks will be provided at the toe to collect any runoff and seepage and contain / evaporate the water.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.59.			Water quality monitoring will be undertaken downstream of the construction areas before and during construction, where practical, in order to detect any increase in suspended solids or turbidity. Refer to Part 9 for a detailed description of the proposed surface water monitoring programme.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.60.			Groundwater monitoring, via boreholes, will also be undertaken on the downgradient of the overburden stockpile. Refer to Part 9 for a detailed description of the proposed groundwater monitoring programme.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.61.			Surface water management measures, such as storm water canals, sediment traps and PCDs will be constructed first to ensure that runoff and dirty water spills are contained.	Compliant	Surface water management infrastructures (pollution control dams, trenches and berms) are constructed for the containment of dirty water emanating from the opencast mining activities.
7.9.1.62.			Water that is pumped out of the box cut in the dirty water system will be contained to prevent it from contaminating the clean catchment areas.	Compliant	According to the Water Balance, all dirty water from the box cut is diverted to the new East pollution control dam.
7.9.1.63.			Infrastructure designed to divert clean runoff around the box-cut area will be implemented and maintained to keep surface water runoff from the mining area contained.	Compliant	According to the site visit conducted and a plan titled clean water drains model (dated August 2019), berms are constructed to divert clean runoff around the box-cut area.
7.9.1.64.			The surface water management infrastructure will be constructed under the supervision of a suitably qualified engineer.	Compliant	All infrastructures (berms and pollution control dams) are constructed under the supervision of a suitably qualified engineer. Design reports and the certificate of the qualified engineer was provided during the audit period. Site visit confirmed that all infrastructure on site is constructed in accordance to approved plans and under the supervision of a suitably qualified engineer.
7.9.1.65.		Dewatering of water ingress to boxcut The available geological information indicates that the overburden material excavated for the boxcut will be carbonaceous. Water that enters the boxcut excavations, both from groundwater seepage and direct rainfall, is therefore likely to make contact with carbonaceous and pyritic materials. However, this water is expected to be largely clean due to the anticipated low time of contact with the overburden materials. The water quality from the boxcut is therefore likely to be slightly to moderately impact in terms of sulphate, TDS and suspended solids. Impacts may arise from: • The groundwater quality from the box-cut is likely to be slightly to moderately impacted in terms of sulphate and TDS. Discharge of this potentially impacted water to the catchment will result in an increase in sulphate and TDS concentrations. • Deposition of sediments in the local watercourses, impacting on the aquatic ecology. The extent of this impact will be reduced by the removal of the	The water will be contained at the site, in Erikson dams and from there pumped to PCDs. Water will be used for make-up to the coal processing plant, dust suppression for haul roads, to assist with construction or pumped to the EWRP for treatment.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.66.			Surplus water will be pumped to the EWRP.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.67.			No contaminated water will be discharged or allowed to flow into the surrounding environment without the required authorisations.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		Schoongezicht West Block: South mini-pit.			box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.68.		Transport and mining vehicles and machinery may leak or spill hydrocarbons in areas of use. This will pollute the surface water runoff, if not appropriately mitigated. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit, and the significant reduction in stockpile sizes.	Hydrocarbon spillages should be avoided, but if they occur will be neutralised and cleaned up immediately. Refer also to Ref. no.'s 7.9.1.11 and 7.9.1.12. - 10 1 5 1 16 LOM Environmental Coordinator.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.69.			Once the hydrocarbon spillage has been cleaned up the soils will be tested, rehabilitated and fertilised if necessary.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.70.			Vehicles and machinery will be maintained and repaired on a regular basis.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable.
7.9.1.71.			All spills that have the potential to pollute the receiving environment including water resources will be reported to the relevant Authorities, such as the DWS and MDEDET as required in terms of the respective legislation. All spillages will be contained and cleaned up and all contaminated material will be disposed of in accordance with legislative requirements.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.72.	Groundwater Quantity	With the construction of the initial box-cuts and borrow pits, dewatering of the aquifer will begin to occur, but only within the immediate vicinity of the affected areas. The aquifer structure will be destroyed wherever it is intersected by the box-cuts and borrow pits. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	An Integrated Water Use Licence under Chapter 4 of the NWA, 1998, will be applied for prior to commencement of construction.	Compliant	Khwezela North Colliery is in possession of an approved WUL for the Lifex Extension Project with licence no.: 06/B11K/ACGIJ/5335 for the opencast mining areas.
7.9.1.73.			A groundwater monitoring programme will be implemented to verify impacts on surrounding water environment.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.74.					
7.9.1.75.			Groundwater influx to the initial opencast pit will be pumped to the surface for reuse within the dirty water management area or treatment at the eMalahleni Mine Water Reclamation Plant (EWRP).	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.76.			No additional groundwater will be removed from the mining area, and no water removed from the open pit will be discharged or allowed to flow into the surrounding environment.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.77.	Groundwater Quality	Construction vehicles and machinery may leak or spill hydrocarbons in areas of use. These pollutants could then in turn infiltrate and pollute the groundwater. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile sizes.	A surface water monitoring programme will be implemented to verify impacts on the surrounding water environment.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
			Mitigation of the potential impacts of hydrocarbon spillages on surface water (refer to Ref. no.'s 7.9.1.68 – 7.9.1.71) and soil (see Ref. no.'s 7.9.1.11 and 7.9.1.12) will mitigate the resultant impacts thereof on the groundwater.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.78.	Air Quality	The drilling and blasting of the overburden and coal layer at the initial box-cut will generate dust. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Dust suppression will take place at the initial box-cut following blasting to minimise dust emissions as far as practicable. Blasting during windy conditions will be avoided wherever possible.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.79.		Debris Handling which will if left unmitigated result in the generation of	Water retained within the dirty water management system will be used for dust suppression. The volume of water used for dust	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of

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		dust that will lower the air quality within the study area. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	suppression will be controlled to ensure that excessive ponding or runoff is not generated.		box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.80.		Truck transport and road dust entrainment which will if left unmitigated result in the generation of dust that will lower the air quality within the study area. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	Dust emission from haul roads will be controlled through wet and/or chemical stabilisation.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.81.			Strict speed control will be implemented on the gravel roads within the project boundary area.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.82.			Movement of haul trucks will be restricted to purpose-built haul roads within the Lifex Extension Project boundary area, as well as to predetermined routes outside of the boundary area.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.83.		Materials storage, handling and transfer operations which will if left unmitigated result in the generation of dust that will lower the air quality within the study area. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	Water retained within the dirty water management system will be used for dust suppression. The volume of water used for dust suppression will be controlled to ensure that excessive ponding or runoff is not generated.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.84.		Earthmoving operations which will if left unmitigated result in the generation of dust that will lower the air quality within the study area. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.			
7.9.1.85.		Open areas (wind-blown emissions) which will if left unmitigated result in the generation of dust that will lower the air quality within the study area.	The frequency of disturbance of surfaces that could result in dust emissions will be minimised as far as practicable.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.86.			Exposed areas will be re-vegetated as soon as practicable.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.87.		The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	Disturbed soil will be stabilised through chemical or vegetative means.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.88.		Vehicles and machinery fuelled by hydrocarbons (e.g. diesel) will contribute to carbon emissions in the area, as well as to the carbon emissions of the region. The potential extent of this impact will be	AO's buying policy will continue to be implemented to ensure that new and replacement equipment and vehicles purchased incorporate emission reduction technology.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPR commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.

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7.9.1.89.		reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	All vehicles and machinery will be well maintained.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.90.			Construction of the berm/barriers and mine infrastructure near receptors will take place only during the day. No night-time construction of the berm/barriers and infrastructure will take place within 500 meters of a receptor.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.91.			In line with Anglo American's policy, vehicles that are purchased will have a cab sound pressure level of below 85 dB.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.92.			Equipment and vehicles will be well-maintained and fitted with the correct and appropriate noise abatement measures.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.93.			Viability of using white noise (not tonal) reverse alarms on vehicles traversing the proposed site will be assessed.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.94.			A mine representative will discuss the calculated noise levels with receptors, materials stockpile, and opencast pit areas near receptors of Schoongezicht, Vosman, Clewer communities as well as at NSD09 (if receptors are not required to be relocated). The mine representative will indicate that construction activities will be short-term.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.95.			The mine will also consult with a blasting specialist if/when blasting occurs near receptors specifically the communities of Clewer and Schoongezicht.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.96.			The mine will conduct noise monitoring as described in Part 9 of this document.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.97.			If a valid and reasonable complaint is registered at the mine relating to the operation of the facility additional noise measurements will be undertaken.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.

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7.9.1.98.			The mine will implement a means of communication. All potential sensitive receptors will be made aware of the mine employee contact numbers. The mine will maintain a commitment to the local community and respond to concerns in an expedient fashion. Sporadic and legitimate noise complaints could develop. For example, sudden and sharp increases in sound levels could result from mechanical malfunctions.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.99.	Sensitive landscapes	Loss and disturbance of wetland habitat and species. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	Soil stripping activities will be limited to the footprint of the proposed opencast pits only.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.100.			Either the development footprint or the adjacent wetlands will be fenced off to prevent access to the wetland areas.	Compliant	It was confirmed during the site visit that all development footprint areas are fenced prior to any disturbances taking place.
7.9.1.101.			All wetland areas adjacent to the mining areas will be clearly demarcated as such and all staff educated as to the sensitivity of the wetland areas.	Compliant	Wetlands areas are demarcated. Employees are trained on the aspects of the sensitivity of the wetland areas through induction presentation. Induction presentation was provided for review during the audit period.
7.9.1.102.			Sediment barriers (refer to Appendix 2 in wetland report, attached as Appendix D6) will be installed between stripped areas and downslope wetlands.	Compliant	Pre-strip activities include the establishment of berms between the stripped area and the opencast pit. It was confirmed during the site visit that berms are constructed surrounding the opencast areas.
7.9.1.103.		Establishment of the initial boxcuts may impact on some or part of the wetlands (including the associated vegetation) within the study area through direct loss of habitat. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	The possibility of implementing wetland offsets as a means of mitigating against the loss of wetland habitat within the Lifex Extension Project boundary area are being investigated during the Design and Planning Phase. A wetland offset strategy is being developed by a suitably qualified person using the SANBI offset guideline methodology. If authorisation is granted, management of the offset wetland area(s) will continue throughout the life of mine of the proposed Lifex Extension Project.	Compliant	A Wetland offset strategy was investigated for Khwezela North Colliery. Wetland Mitigation Strategy for Khwezela North Colliery: Navigation Lifex Extension Project (dated June 2017) and compiled by Wetland Consulting Services (Pty) Ltd., presents offset target areas. The Wetland Mitigation Strategy Report determine the required wetland offset targets calculated as per the guidelines developed by SANBI & DWS (2014). The wetland offset strategy has not yet been authorised, therefore, this condition is not yet applicable.
7.9.1.104.		Increased sediment transport into wetlands. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	Vegetation clearing and earthworks will be limited to as small an area as possible, preferably no larger than the direct footprint of the proposed development.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.105.			Bare soil areas falling outside the direct footprint will be re-vegetated as soon as possible.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.106.			Where practically possible, the major earthworks will be undertaken during the dry season (roughly from June to September) to limit erosion due to rainfall runoff.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.107.		Water quality deterioration. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	A construction storm water management plan will be implemented that aims to limit sediment movement off site and prevents the concentrated discharge of flows and high velocity discharges off site.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMP commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMP commitment will also be assessed during the establishment of the other proposed box-cuts.

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7.9.1.108.			All clean water from upslope will be diverted around the opencast area.	Compliant	It was confirmed during the site visit and a plan titled clean water drains model (dated August 2019) that berms are constructed to divert clean runoff around the box-cut area.
7.9.1.109.			Surface run-off from the opencast area will be retained before treatment and / or re-use.	Compliant	According to the Water Balance Excel Sheet, all dirty water from the box cut is diverted to the new East pollution control dam for further re-use.
7.9.1.110.			Sediment barriers or low berms will be installed along the downslope edge of the opencast areas to trap sediments.	Compliant	Pre-strip activities include the establishment of berms between the stripped area and the opencast pit. It was confirmed during the site visit that berms are constructed surrounding the opencast areas.
7.9.1.111.			Limited opportunity to mitigate.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
		Decreased water make to downslope wetlands. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	All clean water from upslope will be diverted around the opencast areas. Discharge points (of clean upslope runoff) to wetlands will incorporate sediment traps and will encourage low velocity, diffuse flows through the receiving wetland.	Compliant	It was confirmed during the site visit and a plan titled clean water drains model (dated August 2019) that berms are constructed to divert clean runoff around the box-cut area. No discharge points are proposed for the Lifex Extension.
7.9.1.112.		Vehicles and machinery may leak or spill hydrocarbons in areas of use. If such an incident occurs within a wetland area, the hydrocarbon spillage would pollute the wetland soils and surface water, and thus alter the functioning of the wetland. The potential extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit and the significant reduction in stockpile areas.	Hydrocarbon spillages will be avoided as far as possible, but if such incidents occur, they be cleaned up immediately.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.113.			Once the hydrocarbon spillage has been cleaned up the soils will be tested, rehabilitated and fertilised if necessary.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.114.			Vehicles and machinery will be maintained and repaired on a regular basis to minimise the likelihood and frequency of possible hydrocarbon spills.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.115.			All spills that have the potential to pollute the receiving environment including water resources will be reported to the relevant Authorities, such as the DWS and MDEDET as required in terms of the respective legislation.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.116.			All spillages will be contained and cleaned up and all contaminated material will be disposed of or bioremediated for re-use in accordance with legislative requirements.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.117.		Visual aspects	Implementation of mitigation measures for the management of impacts on soil, vegetation and air quality will indirectly also contribute to minimising the expected visual impacts.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.9.1.118.		Visibility of and exposure to views of operations, particularly dragline and hauling operations, which employ vehicles in constant movement, creating dust clouds during the operation thereof. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit as haulage from that pit will no longer be undertaken.			



REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.1.119.		Visibility of and exposure to views of dust clouds created by blasting operations. The extent of this impact will be reduced by the			
7.9.1.120.	Sites of Archaeological and cultural importance	Graveyard GY02 is located near the initial box-cut of the Schoongezicht West Block - South Pit. The graveyard will be destroyed by the removal of soil and blasting, unless appropriately mitigated. This impact will no longer occur due to the removal of the Schoongezicht West Block: South mini-pit.	Graves in this graveyard will be exhumed and relocated by a reputed undertaker or forensic archaeologist following the required public consultation period and in accordance with legislative requirements (obtaining the applicable authorisation(s)).	Not Applicable	As per the documentation provided for review, the relevant permits / authorisations were obtained from the South African Heritage Resources Agency ("SAHRA") (permit ref: 2772), the Mpumalanga Department of Health (dated 02 October 2018) and the eMalahleni Local Municipality, dated 12 June 2018. According to mine personnel, PGS heritage was contracted to conduct the exhumation of the graves. The graves have not yet been exhumed. Therefore, this EMPr commitment is not applicable.
7.9.1.121.	Socioeconomic aspects	The opening of the initial boxcut and excavation of the planned borrow pits at the proposed Landau Colliery Lifex Extension Project area may, in addition to providing continued employment for existing Landau Colliery employees, create some additional opportunities for employment and skills transfer during this phase. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit, however the overall impact of the project will remain a positive impact.	A skills development programme for the duration of the Lifex Extension Project will be developed by AO.	Compliant	The following skill development programmes are initiated by Khwezela North Colliery as per the Social and Labour Plan Reporting (dated 2019-2023): <ul style="list-style-type: none"> Community scholarships scheme: Experiential learning for TVET (S1/S2 & P1/P2) Community skills development and capacity building
7.9.1.122.			Educational programmes will be awarded to residents who live in a two kilometre radius of the Navigation Section. The selection process will be transparent and will include both men and women.	Compliant	The following skill development programmes are initiated by Khwezela North Colliery as per the Social and Labour Plan Reporting (dated 2019-2023): <ul style="list-style-type: none"> Community scholarships scheme: Experiential learning for TVET (S1/S2 & P1/P2) Community skills development and capacity building Both men and women are selected.
7.9.1.123.			All unskilled labour used during construction will be preferentially sourced from local labourers who live within a one kilometre radius of the Navigation Section of Landau Colliery, if feasible.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.124.			Contractors will only be employed on condition that they preferentially employ people from the local community who live within a one kilometre radius of the Navigation Section mine boundary area. Only if skilled labour is required and cannot be sourced from within the 1 km radius, will other labour be considered.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.1.125.			Where possible, AO will support local SMME's.	Compliant	According to the Social and Labour Plan process, local communities are the first preference in terms of employment and training initiatives.
7.9.1.126.			Landau Colliery will continue its training initiatives in the local community.	Compliant	The following training programmes are initiated by Khwezela North Colliery as per the Social and Labour Plan Reporting (dated 2019-2023): <ul style="list-style-type: none"> Community scholarships scheme: Experiential learning for TVET (S1/S2 & P1/P2) Community skills development and capacity building
7.9.1.127.	I&APs	Occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected by nuisance noise generated by the construction of the initial box-cut, including the movement of vehicles, operation of machinery and also blasting. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Noise management measures as described previously will be implemented to reduce the anticipated noise-related impacts on I&APs.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.1.128.		Similarly, occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected	Air quality management measures as described previously will be implemented to reduce the anticipated dust-related impacts on I&APs.	Noted	Khwezela North Colliery Management understands this EMPr commitment.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		by nuisance dust generated by the construction of the initial box-cut, including the movement of vehicles, operation of machinery and also blasting. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.			
7.9.1.129.		Occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected by the visual effects of the construction of the box-cut. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Management measures to reduce visual impacts as described previously will be implemented to reduce the impacts on I&APs associated with the anticipated change in sense of place.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.1.130.		Drilling, blasting and the loading of soil and overburden can generate dust which may settle on nearby vegetation and affect their functioning. Where this occurs on grazing veld or cultivated maize, this may affect the current land use of adjacent landowners and land users within the existing Landau Colliery Lifex Extension Project boundary area. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Dust suppression will be implemented within the disturbed surface area and in the box-cut.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.131.		Blasting may affect surface structures within close proximity to the mining operations. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	A pre-blasting video/photographic survey will be conducted on all surface structures within a 500 m radius of the proposed mining activities. Should it be proven that any damage occurred to structures after this survey specifically due to the blasting activities at the Landau Colliery Lifex Extension Project, the mine will assist the owners of these structures in repairing the damage or provide an alternative management measure that is acceptable to the impacted party.	Compliant	Photographic House Inspection Crack Survey for Ngewane Village adjacent Navigation Pit Clewer was conducted. The survey include photographs of surface structures within a 500 m radius of the Lifex Extension Project. No damages of these structures were reported during the audit period.
7.9.1.132.			The Lifex Extension Project will be included into the existing Landau Colliery programme for continuous monitoring of blast vibration and air blast as described in Part 9 of this document.	Compliant	Khwezela North Colliery Ground Vibration and Air Blast Monitoring include the Lifex Extension Project. Ground Vibration and Air Blast Monitoring was provided for review during the audit period.
7.9.1.133.			All complaints received regarding blasting will be followed up and tests will be done to determine if the blasting was the problem within 60 days of the complaint being received.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPr commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.134.			Adequate warning will be provided to the surrounding communities to notify them of blasting activities.	Compliant	Blasting notices are available for notifying the communities of blasting activities.
7.9.1.135.			Should haulage trucks be used in future: Haulage routes outside the mine boundary area will be predetermined and communicated to the surrounding communities.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
			Residential areas will be avoided wherever possible.	Compliant	No mining outside of the approved footprint area was noted during the audit and all construction activities are completed.
			Subcontractors will be held to the same standard as Landau Colliery in terms of haul routes, travelling speeds, covering of trucks with tarps / other suitable methods to minimise ancillary impacts on I&APs, etc.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.1.136.		The implementation of the Landau Colliery Lifex Extension Project would provide the mine with an opportunity to	Landau Colliery will conduct education campaigns on awareness of sexually transmitted diseases.	Compliant	Training and awareness campaigns on STD's and HIV are provided by Khwezela North Colliery to all employee. Khwezela North Colliery indicated that posters are used to raise awareness of sexually transmitted

REF. NO	ENVIRONMEN- TAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		continue contributing to the upliftment of the surrounding communities. There will be no change to this impact.			diseases. Such posters and awareness campaigns were provided during the audit period.
7.9.1.137.			Landau Colliery will continue to contribute to the eMalahleni Municipality's community development programme. Such contributions will be made more visible to the surrounding communities through communication.	Compliant	The following community development programmes are initiated by Khwezela North Colliery as per the Social and Labour Plan Reporting (dated 2019-2023): <ul style="list-style-type: none">• Career expo• Matric Team building• Mandela day Initiative• Sport & recreation• Stakeholder Engagement
7.9.1.138			Communication channels between Landau Colliery and the surrounding communities will be renewed and strengthen and the appropriate contact details will be distributed through the communities.	Compliant	Khwezela North Colliery conducts Forum meetings as a form of communication with the surrounding communities. Minutes of the meetings were provided for review during the audit period.
7.9.1.139.			Landau Colliery will continue to consider suggestions from the local communities regarding possible community upliftment projects.	Not Applicable	The construction activities of the initial box cut are completed, therefore this EMPr commitment is not applicable. It must be noted that a series of box cuts will be established as outlined in the mining plan, therefore this EMPR commitment will also be assessed during the establishment of the other proposed box-cuts.
7.9.1.140.			As part of its Community Development Programme, Landau Colliery will consider supporting a SMME to provide public transport from KwaMthunzi Vilakazi (formerly Clewer) to Vosman and eMalahleni.	Compliant	Public transport is provided to SMME transport from KwaMthunzi Vilakazi (formerly Clewer) to Vosman and eMalahleni. However. Proof of payment to the appointed contractor for transporting employees from KwaMthunzi Vilakazi (formerly Clewer) was provided during the audit period.
7.9.1.141.		An influx of work seekers to the surrounding communities could take place in response to the proposed Landau Colliery Lifex Extension Project. Associated with this phenomenon is the potential rise in crime and other related social issues. There will be no change to this impact.	Landau Colliery has no control over the migration or movement of people to the local area in search of work. However, the mine remains committed to preferentially sourcing unskilled labour from within 1km of the Navigation Section of Landau Colliery (see Ref. no. 7.9.1.123), as well as the allocation of local economic development initiatives and other community focused initiatives such as awarding of bursaries to youths in the surrounding communities.	Compliant	According to the Social and Labour Plan process, local communities are the first preference in terms of employment and training initiatives and unskilled labour is sourced from local labourers.
7.9.1.142.		Landau Colliery has previously experienced problems with security fencing being removed (stolen) or destroyed. Should such an event occur at the proposed Landau Colliery Lifex Extension Project, the lack of access restriction resulting from the missing fencing could pose a significant danger (risk of injury or death) to trespassers and / or the livestock of the land users. There will be no change to this impact.	Access to the opencast pits and other infrastructure areas at the proposed Landau Colliery Lifex Extension Project will be strictly controlled, with the construction of an appropriate barrier (e.g. fence and trenches) being undertaken during the Construction Phase.	Compliant	According to the assessment of the Google Earth Image, fences are erected around the Lifex Extension Project. Berms are also constructed to restrict access to the mine. Furthermore, Security personnel are available on site to ensure that only authorised persons are allowed to enter the site.
			The fence will be inspected regularly thereafter.	Compliant	Visual inspections of the fences are undertaken on daily basis by the Security Personnel.
			Maintenance and / or replacement of damaged or missing fencing will be commenced with within a reasonable time of the discovery / reporting of fence damage or absence,	Not Applicable	No stolen or damaged fence was noted and reported during the audit period, therefore this EMPR commitment is not applicable.
			And other methods such as warning signs, will be implemented to ensure that trespassers are discouraged and that all potential I&APs will be warned of the dangers posed at the opencast mine and associated infrastructure areas.	Compliant	Signs are erected at the entrance of the mine and at the specific locations of the infrastructures for warning the public of the dangers posed by the opencast mine and associated infrastructure areas.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			An I&AP complaints register will be available at the security entrance to the mine to allow adjacent or nearby residents to notify the mine of any stolen or damaged fences.	Compliant	An attendance register is kept at the mine's security gate.
7.9.2 CONSTRUCTION OF SURFACE INFRASTRUCTURE					
7.9.2.1	Geology	No significant impacts on the geology are expected to occur as a result of the construction of the planned surface infrastructure. There will be no change to this impact			
7.9.2.3.	Soil	Soils will be disturbed in all areas where surface infrastructure will be constructed. This will be due to the following: <ul style="list-style-type: none"> Removal of vegetation will expose soils to erosion forces such as wind and water. Physical degradation such as compaction, surface crusting, erosion and hard setting of soils may occur due to the movement of vehicles and removal of vegetation 	Height restrictions will be applied to infrastructure that is highly visible to sensitive receptors, and measures will be taken to minimise the potential secondary impacts of topographical changes on surface water and postmining land capability during the Operational and Decommissioning Phases of the Life Extension Project.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.3.			The extent of soil disturbance will be restricted to designated land use areas through the use of barriers and notifications to responsible personnel.	Compliant	According to the assessment of the site visit conducted and the approved layout plan, all activities associated with the Navigation Lifex Extension Project are undertaken within the approved footprint area.
7.9.2.4.			Compaction of soils outside of construction footprint areas will be minimised by limiting movement of construction vehicles to designated pathways only.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.5.			Spillages will be cleaned up immediately.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.6.		Vehicles and machinery may leak or spill hydrocarbons in areas of use. This will pollute the soils adjacent to the haul and access roads and alter the structure and functioning of the soils. There will be no change to this impact.	Spillages will be neutralised if necessary.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.7.			Once the spillage has been cleaned up the soils will be tested and fertilised if necessary.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.8.			Natural vegetation will be established.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.9.			Vehicles and machinery will be maintained and repaired on a regular basis.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.10.		Construction of haul roads The upper 300 mm (A-horizon) will be graded side ward and placed as a berm along the haul road edges. The B-horizon (>300 mm) will be compacted and covered with base materials. <ul style="list-style-type: none"> Disturbance and removal of the A-horizon by storing it as a berm along the haul road. Compaction of the B-horizon will alter the soils physical properties negatively. Covering the soil surface with base materials will cause productive soil functions (growth and nutrient medium and habitat) at the road footprint to cease completely. Possible contamination of soils by spillages of fuel or oil by mechanical equipment. There will be no change to this impact. 	The soil's A-horizon will be stored as a berm along the edges for later replacement.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.11.			All accidental fuel and oil spillages will be cleaned up immediately.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.12.		Construction of access roads: The upper approximately 150 mm of the A-horizon may be graded away and placed as a berm along the road edges. The remaining part of the A-horizon and B-horizon will be compacted and covered	The soil's A-horizon will be stored as a berm along the edges for later replacement.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.
7.9.2.13.			All accidental fuel and oil spillages will be cleaned up immediately.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		with base materials. • Disturbance and removal of the A-horizon by storing it as a berm along the road. • Compaction of the B-horizon will alter the soils physical properties negatively. • Covering the soil surface at the footprint of the road with base materials will cause natural soil functions (growth and nutrient medium and habitat) to cease completely. • Possible contamination of soils by spillages of fuel or oil by mechanical equipment. There will be no change to this impact.			
7.9.2.14.		Construction of new bridge: Upgrading of existing bridge: The A and E-horizon may be removed completely if soil stability is questionable and then backfilled with base materials. Or a thick layer of base material will be placed directly on the soil surface. • Removal and stockpiling of the A and E-horizons will result in mixing of the A and E-horizons resulting in a reduction of soil quality. • Compaction of the soil layer will alter soil physical properties negatively. • Covering the soil surface at the footprint of the bridge with base materials will cause productive soil functions (growth and nutrient medium and habitat) to cease completely. • Possible contamination of soils by spillages of fuel or oil by mechanical equipment. There will be no change to this impact.	If the soil horizons are stripped it will be stockpiled for rehabilitation during the Decommissioning Phase.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMP commitment is not applicable.
7.9.2.15.			All accidental fuel and oil spillages will be cleaned up immediately.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMP commitment is not applicable.
7.9.2.16.		Digging of shallow holes to cast conveyer footings in concrete. • Disturbance of the soil's A-horizon by digging holes for the conveyer footings. • Filling of holes with concrete will cause all productive soil functions, land capability and land uses to cease. • Due to the small amount of excavated soil it will be impractical to store for backfilling during the Decommissioning Phase. • Possible contamination of soils by spillages of fuel or oil by mechanical equipment during construction. The extent of this impact will be reduced by the reduction in length and extent of the conveyor.	The extent of soil disturbance will be restricted to the designated land use areas along the planned conveyor route, and dimensions of the excavations in preparation for the casting the footings in concrete will be restricted to the smallest area possible.	Compliant	According to the assessment of the Google Earth Image, site visit conducted and the approved layout plan, the conveyer is constructed within the approved footprint area.
7.9.2.17.			All accidental fuel and oil spillages will be cleaned up immediately.	Not Applicable	The construction activities of the conveyers are completed, therefore this EMP commitment is not applicable.
7.9.2.18.		Digging of holes to cast pylon footings in concrete (Relocation of power lines). • Digging of holes for pylon footings and anchor lines and stockpiling of soil will result in mixing of the A and B-horizons and subsequent reduction of soil quality. • Filling of holes with concrete will cause all soil functions, land capability and land	All excavated topsoil will be stockpiled to be replaced during the decommissioning phase.	Compliant	Topsoil are available for use during the rehabilitation decommissioning phase. Stockpile Management Plan was provided for review during the audit period.
7.9.2.19.			All accidental fuel and oil spillages will be cleaned up immediately and all mechanical equipment will be serviced at a suitable facility.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		uses to cease. • Possible contamination of soils by spillages of fuel or oil by mechanical equipment during construction. There will be no change to this impact.			
7.9.2.20.		Construction of pollution control infrastructure. Stripping of topsoil at the footprint of pollution control dams, silt traps and drainage canal where the upper 300 mm will be stockpiled and the remainder used for construction of the wall embankments. Stripping and stockpiling may result in mixing of the soil's A and B-horizons with subsequent reduction in soil quality. • Possible stripping of lower quality subsoil together with high quality topsoil will result in a reduction of soil quality. • The topsoil stockpiles will cover the productive soil surface and cause the majority of soil functions (growth and nutrient medium and habitat) to cease. • Possible contamination of soils by spillages of fuel or oil by mechanical equipment during construction. There will be no change to this impact.	The upper 300 mm of topsoil (A-horizon) will be removed and stockpiled for final rehabilitation.	Compliant	Topsoil's are available for use during the rehabilitation decommissioning phase. Stockpile Management Plan was provided for review during the audit period.
7.9.2.21.			The dam floor and embankments will be lined with a polyethylene membrane or similar to prevent soil pollution by low quality mine water.	Compliant	It was confirmed during the site visit that the dam floors and embankments of the East and West PCD's are lined with a polyethylene membrane. 
7.9.2.22.			Dirty water channels will be lined with concrete or a polyethylene membrane.	Compliant	Concreted dam floors The dirty water channels are lined with concrete layers. 
7.9.2.23.			All accidental fuel and oil spillages will be cleaned up immediately and all mechanical equipment will be serviced at a suitable facility.	Not Applicable	Dirty water channels lined with concrete layers The construction activities of the East and West PCD's are completed, therefore this EMP commitment is not applicable.
7.9.2.24.		Construction of dirty water conveyance pipelines. • Pipelines lain above ground. Possible contamination of soils by spillages of fuel or oil by mechanical equipment during construction. There will be no change to this impact	All accidental fuel and oil spillages will be cleaned up immediately and all mechanical equipment will be serviced at a suitable facility.	Not Applicable	The construction activities of the dirty water conveyance pipelines are completed, therefore this EMP commitment is not applicable.
7.9.2.25.		Construction of other infrastructure. The construction of structures that cover the soil surface by means of concrete, tar or paving. • Compaction of the soil surface for building foundations, parking areas etc. will alter the soil's physical properties negatively. • Covering the soil surface with concrete, tar or paving will cause productive functioning of the soil to cease. • Possible contamination of soils	The footprint of the disturbed area will be minimised as far as practicable.	Not Applicable	The construction activities of the dirty water conveyance pipelines are completed, therefore this EMP commitment is not applicable.
7.9.2.26.			All accidental fuel and oil spillages will be cleaned up immediately and all mechanical equipment will be serviced at a suitable facility.	Not Applicable	The construction activities are completed, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		by spillages of fuel or oil by mechanical equipment during construction.			
7.9.2.27.		Construction of other infrastructure. Construction of emergency ROM coal stockpile and other temporary stockpiles.	The soil surface will be covered with a soft overburden layer which will serve as a sealing layer for salt and heavy metal pollution.	Not Applicable	The construction activities of the emergency ROM coal stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.28.		• Covering the soil surface with a base layer (probably soft overburden material) will cause productive functioning of the soil to cease. • Compaction of soil by heavy mechanical equipment will alter soil physical properties negatively. • Possible contamination of soils by spillages of fuel or oil by mechanical equipment during construction. There will be no change to this impact	A soft overburden berm will be constructed around the structure to manage storm water and pollution of surrounding area.	Compliant	It was confirmed during the site visit that berms are constructed around the ROM stockpiles.
7.9.2.29.			All accidental fuel and oil spillages will be cleaned up immediately and all mechanical equipment will be serviced at a suitable facility.	Not Applicable	The construction activities of the emergency ROM coal stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.30.		Construction of the Blaauwkrans Co-disposal facility extension. Progressive stripping and stockpiling of topsoil at the proposed extension footprint.	Soils will be stripped at specified depths in order to prevent stripping of lower quality subsoil together with topsoil.	Compliant	Stripping of soils is undertaken according to the Rehabilitation Plan. The rehabilitation plan outlines the specific depth for soil stripping.
7.9.2.31.		• Stripping and stockpiling result in mixing of the soil's A and B-horizons with subsequent reduction in soil quality.	Areas to be disturbed by the extension of the Blaauwkrans Co-disposal facility will be limited to the planned footprint area, as indicated in the Blaauwkrans Co-disposal facility design drawings and report attached in Appendix G.	Compliant	All activities associated with the extension of the Blaauwkrans Co-disposal facility are undertaken within the approved footprint areas.
7.9.2.33.		• The topsoil stockpiles will cover the natural soil surface and cause all productive soil functions to cease. • Possible contamination of soils by spillages of fuel or oil by mechanical equipment. There will be no change to this impact.	All accidental fuel and oil spillages will be cleaned up immediately and all mechanical equipment will be serviced at a suitable facility.	Not Applicable	The construction activities of the Blaauwkrans Co-disposal facility extension are completed, therefore this EMPr commitment is not applicable.
7.9.2.34.	Land capability	The pre-mining land capability will cease completely until the surface structures are removed and the footprint rehabilitated. There will be no change to this impact.	Soil management measures will be implemented to minimise impacts on land capability.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.9.2.35.		The land capability at the footprint of the pollution control dams will reduce from arable land and grazing to none because there the structure will occupy the productive surface. The land capability at the footprint where topsoil is stockpiled will reduce from arable and grazing to none because the topsoil stockpile will cover the productive soil surface. The soil quality of the stockpiled topsoil will decrease due to compaction and mixing of soil horizons and subsequent deterioration of soil properties such as water holding capacity and fertility status. The extent of this impact will be reduced by the reduction in size of west PCD and the topsoil stockpiles.			
7.9.2.36.		The pre-mining land capability at the Blaauwkrans co-disposal facility will cease permanently. There will be no change to this impact.	Areas to be disturbed by the extension of the Blaauwkrans Co-disposal facility will be limited to the planned footprint area, as indicated in the Blaauwkrans Co-disposal facility design drawings and report attached in Appendix G (see also Ref. 7.9.2.31).	Compliant	All activities associated with the extension of the Blaauwkrans Co-disposal facility are undertaken within the approved footprint areas.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.2.37.			Soil will be stripped and stockpiled in the pre-designated soil stockpile, to be used later during in situ rehabilitation of the Blaauwkrans Co-disposal facility extension.	Compliant	According to the assessment of the Google Earth Image, topsoil exist within the Blaauwkrans Co-disposal facility extension area which will be used later during in situ rehabilitation of the Blaauwkrans Co-disposal facility extension.
7.9.2.38.	Land use	The pre-mining land use will alter to that of 'mining and related activities' until rehabilitation of surfaces during the Decommissioning Phase. There will be no change to this impact.	Soil management measures will be implemented to minimise impacts on and capability.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.9.2.39.		The pre-mining land use at the Blaauwkrans Co-disposal facility will be permanently altered due to the permanent nature of the facility. There will be no change to this impact.	Refer to Ref. no.'s 7.9.2.31 to 7.9.2.33.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.2.40.	Vegetation	Construction of access and haul roads. Two high sensitivity vegetation units will experience direct loss of habitat through clearing. Up to 15 ha of Untransformed Grassland and 9 ha of Valley-bottom Wetlands will be affected in this way. There will be no change to this impact.	Compensation for some wetland loss will include rehabilitation of degraded wetlands outside of the impact footprint.	Not Applicable	No clearance of wetland soils apart from the approved footprint areas was noted; therefore, this EMPr commitment is not applicable.
7.9.2.41.		Construction of access and haul roads. Indirect impacts. Some of these may be significant impacts, such as increased sedimentation (sediment-heavy runoff and dust) of wetland habitats, accidental spills (fuels, cement, etc.) and alien plant invasion. There will be no change to this impact.	Minimise sedimentation by constructing berms and applying dust suppression measures (e.g. regular watering of roads during dry spells).	Not Applicable	The construction activities of the access and haul roads are completed, therefore this EMPr commitment is not applicable.
7.9.2.42.			As per the Conservation of Agricultural Resources Act (Act No. 43 of 1983), weeds and alien invader plants will be monitored and controlled within servitudes of haul roads and other linear infrastructure and immediate surrounds.	Not Applicable	The construction activities of the access and haul roads are completed, therefore this EMPr commitment is not applicable.
7.9.2.43.			All construction activities will be restricted to pre-designated areas.	Not Applicable	The construction activities of the access and haul roads are completed, therefore this EMPr commitment is not applicable.
7.9.2.44.			Construction vehicles will be serviced in concrete lined service bays with berms and oil traps. Refuelling will preferentially occur in a designated concrete lined station but if in-field refuelling must occur, drip trays will be used.	Not Applicable	The construction activities of the access and haul roads are completed, therefore this EMPr commitment is not applicable.
7.9.2.45.			Topsoil husbandry will be emphasised.	Not Applicable	The construction activities of the access and haul roads are completed, therefore this EMPr commitment is not applicable.
7.9.2.46.			Progressive revegetation of road verges will be carried out.	Not Applicable	The construction activities of the access and haul roads are completed, therefore this EMPr commitment is not applicable.
7.9.2.47.			Where the road crosses the valley bottom wetland, it will be walked by an experienced botanist prior to vegetation clearing; the botanist needs to locate any plant species of conservation concern, as well as Protected species, and mark these for relocation to adjacent suitable habitat. This will be undertaken by someone with suitable experience in plant relocation.	Not Applicable	The construction activities of the access and haul roads are completed, therefore this EMPr commitment is not applicable.
7.9.2.53.		Construction of overburden and soil stockpiles. Direct loss of untransformed vegetation. The footprints of the ROM and Topsoil stockpiles are situated mostly within transformed areas, but approximately 11 ha of Untransformed Grassland, 1.7 ha of Rocky Scarp Vegetation and 30 ha of Valley-bottom Wetlands will be lost under the current	The majority of the footprints of the stockpiles are already situated within transformed vegetation and land-cover type units. The footprints of the stockpiles will be adjusted slightly to exclude all areas of untransformed vegetation, as far as possible. This is regarded as particularly important in the case of the eastern hard material stockpile (Overburden Stockpile 2) which as currently proposed will impact Rocky Scarp Vegetation.	Noted	Khwezela North Colliery Management understands this EMPr commitment.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		stockpile layout. The extent of this impact will be reduced by the significant reduction in stockpile areas required.			
7.9.2.54.		Construction of overburden and soil stockpiles. Indirect impacts. Degradation and transformation of wetland plant communities as a result of disruption of hydrological patterns within catchments, habitat fragmentation, increased sedimentation (sediment laden runoff and dust), accidental spills (fuels, cement, etc.) and alien plant invasion. Impacts to mesophyllous vegetation mainly as a result of 'edge effects' such as dust, alien plant invasion and habitat fragmentation. The extent of this impact will be reduced by the significant reduction in stockpile areas required.	Sedimentation and erosion will be minimised by constructing berms and applying dust suppression measures (e.g. watering of access roads).	Compliant	It was confirmed during the site visit that berms are constructed around the overburden and soil stockpiles. Khwezela North Colliery uses water browsers to dust suppress the access roads.
7.9.2.55.			CBMA's, and corridors linking the CBMA's that will have been identified during the Design and Planning Phase will be fenced, where feasible and protected (refer also to Ref. no. 7.9.1.19).	Not Applicable	The construction activities of the overburden and soil stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.56.			As per the Conservation of Agricultural Resources Act (Act No. 43 of 1983), weeds and alien invader plants within construction footprint and immediate surrounds will be identified.	Compliant	Weeds and alien invader plants have been identified within and around the overburden and soil stockpiles.
7.9.2.57.			The existing Alien Plant Control Programme will be expanded to include the Lifex Extension Project area.	Not Applicable	The construction activities of the overburden and soil stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.58.			All construction activities will be restricted to pre-designated areas. Development within 100 m of the seasonal hydromorphic soils of any valley-bottom wetland will be avoided or minimised where it cannot be avoided.	Not Applicable	The construction activities of the overburden and soil stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.59.			All hazardous substances will be stored on impervious surfaces that allow for the containment of spills and leakages (e.g. bunded areas). Where spills occur, these will be reported to the Environmental Coordinator.	Not Applicable	The construction activities of the overburden and soil stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.60.			All opencast areas will be rehabilitated progressively upon completion of mining.	Not Applicable	The construction activities of the overburden and soil stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.61.		Construction of overburden and soil stockpiles. Loss of potential habitat (Rocky Scarp Vegetation) for Threatened <i>Frithia humilis</i> . No direct losses of any other Threatened or Near Threatened species expected, but loss of some individuals of Declining and Protected species very likely to occur if footprints of stockpiles not shifted to avoid untransformed vegetation (see Ref. no. 7.9.2.53). The extent of this impact will be reduced by the significant reduction in stockpile areas required.	The footprints of the stockpiles will be adjusted slightly to exclude all areas of untransformed vegetation, as far as possible.	Not Applicable	The construction activities of the overburden and soil stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.62.			Footprints of all proposed infrastructure situated within untransformed units will be searched for the Declining and Protected species known to occur, as well as all other potentially occurring species of conservation concern (refer to the Ecology Specialist Report attached as Appendix D2), prior to commencement of construction activities.	Not Applicable	From a review of the Khwezela Navigation Lifex – Botanical Survey Report dated December 2018, it was noted that the area was walked by an experienced botanist prior to vegetation clearing. The report located plant species of conservation concern, as well as Protected species. The construction activities are completed, therefore this EMPr commitment is not applicable.
7.9.2.64.			The CBMA's, and corridors linking the CBMA's that will have been identified in the BAP during the Design and Planning Phase will be fenced, where feasible, using a five-strand cattle fence, and apply access control to these areas.	Not Applicable	The construction activities of the overburden and soil stockpile are completed, therefore this EMPr commitment is not applicable.
7.9.2.65.	Animal life	Construction of access and haul roads. Habitat fragmentation as a result of fencing of haul road. Erection of security fencing will cut off migration corridors between the untransformed habitats along the Brugspruit in the study area. These areas constitute habitat for Near Threatened species such as Serval. There will be no change to this impact	Fences along the haul roads will allow for free movement of small mammals (up to the size of Serval and Brown Hyena), reptiles and amphibians. Five-strand cattle fencing will be used, and not security fencing (diamond mesh razor wire fencing). No electric fencing will be utilised near ground level to prevent electrocution of fauna.	Compliant	According to site visit conducted, all operational areas at Khwezela North Colliery are fenced to prevent unauthorised access, for safety and security purposes. It was further confirmed during the site visit that the fencing employed is a diamond mesh fencing with cattle fencing used in suitable places. No electric fencing is utilised.
7.9.2.66.		Rerouting of power lines. Bird mortalities as a result of collision and electrocution with overhead transmission lines. Since the re-routing is unlikely to cross significant areas of untransformed natural habitat, the significance is likely to be low. One Near Threatened bird species confirmed to occur in the study area (Secretarybird) could be impacted by the overhead lines, although this	Main mitigation measures will be implemented during the Operational Phase of the project (see Table 7.10).	Noted	Khwezela North Colliery Management understands this EMPr commitment.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		species is only likely to be an irregular visitor to the study area and is unlikely to have any regular flight paths through the area. There will be no change to this impact.			
7.9.2.67.		Construction of overburden and soil stockpiles. Direct loss of habitat for potentially occurring Threatened and Near Threatened species such as Serval, Brown Hyena, Southern Bald Ibis, Secretarybird, African Grass Owl and Peregrine Falcon. Large proportion of habitat within stockpiles is transformed, subject to fairly high levels of human activity, and is regarded as of marginal importance for most of these species. Habitat fragmentation may be of significance to the Serval, which was confirmed to be present. The extent of this impact will be reduced by the significant reduction in stockpile areas required.	The footprints of the stockpiles will be adjusted slightly to exclude all areas of untransformed vegetation, as far as possible.	Not Applicable	The construction activities of the surface infrastructures are completed, therefore this EMP commitment is not applicable.
7.9.2.68.	Surface Water Quantity	Isolation of the dirty water management areas in which the proposed surface infrastructure will be constructed will result in a marginal reduction in catchment yield. There will be no change to this impact.	The existing IWWMP of the Navigation Section of Landau Colliery will be revised and updated to include the planned water and waste management system to be implemented at the proposed Landau Colliery Lifex Extension Project, and its overlapping / connections with the existing water and waste management system at the Navigation Section of Landau Colliery.	Compliant	The water and waste management system implemented at the Landau Colliery Lifex Extension Project forms part of the Khwezela North Colliery's existing IWWMP. Latest IWWMP was provided for review during the audit period.
			The revised IWWMP will be submitted to the DWS together with an application for an amendment to the existing Navigation Section Integrated Water Use Licence to include the proposed changed Water Uses (as defined in Section 21 of the NWA (1998)), as well as an application for an Integrated Water Use for the proposed new Water Uses (as defined in Section 21 of the NWA (1998)).	Compliant	The IWWMP submitted as part of the application for the Life Extension Project Water Use Licence was an integrated IWWMP for Navigation Section and the proposed water use activities to be undertaken as part of the Life Extension Project. A separate Water Use Licence for the Life Extension Project was issued (Licence Number: 06/B11K/ACGIJ/5335). Proof of submission was provided during the audit period.
7.9.2.69.			The proposed Landau Colliery Lifex Extension Project will be incorporated into the existing surface water monitoring programme at the Navigation Section of Landau Colliery. Information obtained through this monitoring system regarding the planned Lifex Extension Project will be reported as part of the overall water monitoring system at Landau Colliery. This will enable the actual impacts on surface water quality to be verified during the Operational and Decommissioning Phases of the Lifex Extension Project, and indeed the Life of Mine of the Navigation Section of Landau Colliery. The monitoring programme is described in detail Part 9 of this EMP Amendment.	Compliant	The Landau Colliery Lifex Extension Project is incorporated in the existing surface water monitoring programme at the Navigation Section of Landau Colliery. Water monitoring reports were provided for review during the audit period.
7.9.2.70.			Infrastructure designed to divert clean runoff around the road area and to keep surface water runoff from the construction site contained, will be constructed.	Not Applicable	The construction activities of the roads are completed, therefore this EMP commitment is not applicable.
7.9.2.71.			The infrastructure was designed by a qualified engineer, and will also be constructed under the supervision of a suitably qualified engineer.	Compliant	All infrastructures (berms and pollution control dams) are constructed under the supervision of a suitably qualified engineer. Design reports and the certificate of the qualified engineer was provided during the audit period. Site visit confirmed that all infrastructure on site is constructed in accordance to approved plans and under the supervision of a suitably qualified engineer.
7.9.2.72.			The revised mine water balance (described in Part 2 of this document and in the Surface Water Specialist Study attached in	Compliant	Updated water balance that includes the Lifex Extension Project was provided during the audit period.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			Appendix D10) will be updated, verified through water monitoring, and managed according to the DWS Guidelines.		
7.9.2.73.	Surface Water Quantity	The change in topography at surface infrastructure construction sites may change the natural flow patterns of the surface water runoff. Access and haul roads may also become conduit for surface water runoff. There will be no change to this impact.	Rehabilitation of access and haul roads will be done once the construction and operation of the roads have ceased.	Not Applicable	The access and haul roads are still under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.74.		Construction of linear infrastructure (roads, overland conveyor, power supply infrastructure and pipelines). Storm water from the general construction areas will not be contained during the Construction Phase. If necessary, sediment control measures will be implemented. Impacts may arise from: • Containment of contaminated runoff water emanating from the site, with no release to the catchment, i.e. loss in yield. • Although runoff from dirty areas (i.e. fuel storage or vehicle servicing areas) will be contained and the probability of impact is definite, its significance has still been assessed as very low on the basis of the very small area that will be contained. There will be no change to this impact.	Implementation of the mitigation measures set out in Ref. no.'s 7.9.1.49- 51 will ensure that these impacts will be minimised.	Not Applicable	The roads, overland conveyor, power supply infrastructure and pipelines are under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.75.		Construction of water and waste management infrastructure Storm water from the general construction areas will not be contained during the construction phase, prior to commissioning of the PCDs. If necessary, sediment control measures will be implemented. The water management infrastructure will be constructed first to enable the containment of dirty water generated during the remainder of the construction period. Impacts may arise from the containment of contaminated runoff water emanating from the site, with no release to the catchment, i.e. loss in yield. There will be no significant change to this identified impact associated with the proposed amendment of approved infrastructure proposed in this Part 1 amendment application. Containment of contaminated runoff in the purpose build PCDs will continue to have an impact on the surface water quantity downstream, although it may be partially less due to the need for less PCDs should this amendment be approved.	Implementation of the mitigation measures set out in Ref. no.'s 7.9.1.47- 52 will ensure that these impacts will be minimised.	Not Applicable	The roads, overland conveyor, power supply infrastructure and pipelines are still under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.76.		Construction of offices and workshops area (including hydrocarbon storage area), and ROM tip Storm water from the	Implementation of the mitigation measures set out in Ref. no.'s 7.9.1.47- 52 will ensure that these impacts will be minimised.	Not Applicable	The construction activities associated with the offices and workshops area offices and workshops area are completed and the areas are under the operational phase, therefore, this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		general construction areas will not be contained during the construction phase, prior to commissioning of the PCDs. If necessary, sediment control measures will be implemented. The water management infrastructure will be constructed first to enable the containment of dirty water generated during the remainder of the construction period. Impacts may arise from the containment of contaminated runoff water emanating from the site, with no release to the catchment, i.e. loss in yield. Due to the smaller extent of the offices and workshops areas and ROM tip areas, it is anticipated that the significance of this impact may be partially reduced, should this Part 1 amendment application for the change in location and layout of these areas be approved.			
7.9.2.77.		The haul road crossing over the Schoongezichtspruit (Activity 6) may impede the flow of water in a watercourse and may also alter the bed, banks, course or characteristics of a water course (as defined in terms of Section 21 (c) and (i) of the National Water Act (NWA), 1998 (Act 36 of 1998). Thus, the haul road crossing the stream could be considered to be a Water Use in terms of the Section 21 of the NWA, 1998, for which a Water Use Application will need to be submitted to the Department of Water and Sanitation (DWS). This impact will now occur at the upgrading of the existing bridge and will no longer be a new bridge.	During the design of the haul road crossing over the Schoongezichtspruit, mitigation measures will be taken into account to minimise the likelihood of occurrence of this impact, and to ensure that the structure will adhere to the applicable legislative requirements.	Noted	Khwezela North Colliery Management understands this EMP commitment.
7.9.2.78.		During the construction phase topsoil will be stripped and civil works, in the form of earthworks and terracing, will be undertaken as part of preparation of the area for the construction of linear infrastructure. Impacts may arise from: • Erosion of soils during rainfall events, with elevated suspended solids in the runoff water. • Resultant elevated suspended solids in the watercourses, as well as sedimentation in the watercourses and the associated dams. • Hydrocarbon spillages from fuel storage, servicing areas or construction equipment itself, with resultant elevated hydrocarbon concentrations in runoff water, watercourses and the associated dams. • The surrounding and	Construction activities will be timed to take place in the dry season, as far as is practicable.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.79.			The footprint of disturbed areas will be minimised.	Not Applicable	The construction activities associated with the offices and workshops area offices and workshops area are completed and the areas are under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.80.			"No-go" zones will be delineated for construction plant and personnel.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.81.			Appropriate storm water management measures will be implemented, including the temporary diversion of upstream runoff from the construction and laydown areas.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.82.			Surface water management measures, such as storm water canals, sediment traps and PCDs will be constructed first to ensure that runoff and dirty water spills are contained.	Compliant	Site visit confirmed that surface water management infrastructure has been constructed first before mining activities commenced. All dirty water infrastructures for the containment of dirty water from the dirty water areas are constructed, hence it is concluded that all infrastructures were constructed first before mining activities commenced.
7.9.2.83.			Servicing of construction vehicles will take place only in dedicated areas that are equipped with drip trays.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.84.			Bunded containment and settlement facilities will be provided for hazardous materials, such as fuel and oil.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.2.85.		downstream surface water resources, namely the Brugspruit, Schoongezichtspruit, Klipspruit, Wilge and Olifants Rivers, are considered stressed water resources in terms of both the quantity of water in the system and the quality of the water. It also forms part of the water supply for irrigation water further downstream (from the Loskop Dam). Any impact on the quantity or quality of water in the system has the potential to affect the quality and assurance of supply to the community and agriculture. There will be no significant change to this previously identified impact, although the probability of this impact occurring will be less, should the Part 1 amendment activities be approved and implemented / constructed.	Spill absorption product(s) will be kept on site, and used to clean up hydrocarbon spills in the event that they should occur.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.86.			Erosion protection measures (rip-rap, gabions, etc.) will be implemented at steep areas.	Not Applicable	No steep areas occur within the Lifex Extension Project area, therefore this EMP commitment is not applicable.
7.9.2.87.			A waste management plan will be developed for the construction phase as part of the IWWMP update to include the proposed Lifex Extension Project.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.88.			An appropriate sewage management strategy (such as portable toilets) will be implemented during the construction phase.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.89.			Water quality monitoring will be undertaken upstream and downstream of the construction areas, before and during construction where practical, in order to detect any increase in suspended solids or turbidity. Refer to Part 9 for a more detailed description of the proposed surface water monitoring programme.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.90.			If erosion is evident, or the water quality monitoring indicates an increase in suspended solids, water management around the construction areas will be reviewed and improved as soon as possible.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.91.			Implementation of the measures identified in Ref. no.'s 7.9.2.78-90 will ensure that these impacts will be appropriately addressed.	Not Applicable	The construction activities associated with the offices and workshops area offices and workshops area are completed and the areas are under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.92.		The construction of the Workshop and office complex (including hydrocarbon storage area) will have similar impacts to those described in Ref. no.'s 7.9.2.78-90 above. There will be no change to this impact	Implementation of the measures identified in Ref. no.'s 7.9.2.78-90 will ensure that these impacts will be appropriately addressed.	Not Applicable	The construction activities associated with the offices and workshops area offices and workshops area are completed and the areas are under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.93.		Areas that have been disturbed due to vegetation removal, soil stripping and soil compaction are more susceptible to erosional forces including runoff. This will increase the suspended particles in surface water runoff and affect surface water quality, if not appropriately mitigated. There will be no change to this impact.	The extent of areas disturbed during construction and included in the dirty water management areas will be minimised as far as practicable.	Not Applicable	The construction activities associated with the offices and workshops area offices and workshops area are completed and the areas are under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.94.			Silt traps will be installed to help monitor the amount of suspended particles in clean surface water runoff. If monitoring shows increased loads, the surface water management system needs to be revised.	Compliant	Silt traps are installed at the pollution control dams for containment of silt.
7.9.2.95.		Construction vehicles and machinery may leak or spill hydrocarbons in areas of use. This may pollute the surface water runoff. There will be no change to this impact	Spillages will be cleaned up immediately	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.96.			Spillages will be neutralised if necessary	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.97.			Once the spillage has been cleaned up the soils will be tested and fertilised if necessary	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.98.			Natural vegetation will be established in cleaned up and rehabilitated areas.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.99.			Vehicles and machinery will be maintained and repaired on a regular basis	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.100.	Surface Water Quality	The haul road crossing over the Schoongezichtspruit (Activity 6) and associated storm water infrastructure may adversely affect the rights of downstream water users and the health of the natural aquatic environment by affecting the water quality (through spillage of potentially contaminating materials, if not appropriately mitigated), the quantity of surface water available (if	Surface water monitoring and biomonitoring of the altered stream will be done on a regular basis. The detailed monitoring programme is included in Part 9 of this EMP Amendment. Results from the monitoring will determine whether the surface water management measures proposed are sufficient.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
			Any complaints from downstream water users will be followed by a full investigation to the problem and alternative water sources supplied if need be.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		not appropriately designed and constructed to comply with legislative requirements), the access to water, and the habitat required for the natural aquatic ecosystems. There will be no change to this impact.			
7.9.2.101.	Groundwater	Construction of access and haul roads and other infrastructure where surfaces will be compacted. A reduction in recharge will result due to the compaction of the surface of the access and haul roads. There will be no change to this impact.	Compaction of surfaces during construction will be limited to the predetermined footprint areas of the infrastructure.	Not Applicable	The access road is under the operational phase, therefore, this EMPr commitment is not applicable.
7.9.2.102.		Construction of access and haul roads and other infrastructure where surfaces will be compacted. Surface water runoff from roads and other compacted surfaces may come into contact with dirty material (diesel, oil, etc.) that may contaminate the water and eventually the underlying aquifer/s. There will be no change to this impact.	All spills of potentially contaminating materials on roads will be cleaned immediately.	Not Applicable	The access road is under the operational phase, therefore, this EMPr commitment is not applicable.
7.9.2.103.		Construction of surface water pollution control infrastructure. Seepage from carbonaceous material may be of high salinity and slightly acidic, which will increase salinity, mobilise metals and degrade the quality of groundwater when entering the groundwater system. Therefore, any construction undertaken with carbonaceous material can be viewed as a potential source of groundwater contamination and will be avoided. There will be no change to this impact.	Clean surface water will be prevented from coming into contact with contaminants such as dirty water, coal bearing material, hydrocarbon substances, or any other potentially contaminating materials, as far as practicable. The extent of dirty water management areas will be minimised as far as practicable.	Not Applicable	The access road is under the operational phase, therefore, this EMPr commitment is not applicable.
7.9.2.104.		Construction of stockpiles. Seepage from carbonaceous overburden stockpiles may be acidic, which will mobilise metals and degrade the quality of the groundwater when entering the groundwater system. The extent of this impact will be reduced by the significant reduction in sizes of overburden stockpiles.	Stockpile footprint areas will be compacted during the Construction Phase to limit the infiltration of acidic water into the groundwater system during the remaining LOM.	Not Applicable	The access road is under the operational phase, therefore, this EMPr commitment is not applicable.
7.9.2.105.	Air Quality	Debris handling which will if left unmitigated result in the generation of dust that will lower the air quality within	Water retained within the dirty water management system will be used for dust suppression. The volume of water used for dust	Not Applicable	The access road is under the operational phase, therefore, this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		the study area. There will be no change to this impact.	suppression will be controlled to ensure that excessive ponding or runoff is not generated.		
7.9.2.106.		Truck transport and road dust entrainment which will if left unmitigated result in the generation of dust that will lower the air quality within the study area. There will be no change to this impact.	Dust emission from roads will be controlled through wet and/or chemical stabilisation.	Not Applicable	The access road is under the operational phase, therefore, this EMP commitment is not applicable.
7.9.2.107.			Strict speed control will be implemented on the gravel roads within the project boundary area.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
7.9.2.108.			Movement of vehicles will be restricted to purpose-built haul roads within the Lifex Extension Project boundary area, as well as to predetermined routes outside of the boundary area.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.109.		Materials storage, handling and transfer operations which will if left unmitigated result in the generation of dust that will lower the air quality within the study area. There will be no change to this impact.	Water retained within the existing Navigation Section's dirty water management system will be used for dust suppression. The volume of water used for dust suppression will be controlled to ensure that excessive ponding or runoff is not generated.	Compliant	According to the Water Balance Excel Sheet (dated July 2020), mine affected water is utilised for dust suppression, reuse within the dirty water system or is transferred to the EWRP for treatment. The volumes of the contaminated water used for dust suppression are recorded on monthly basis. Water Enablon Results (dated 2020) were provided for review during the audit period.
7.9.2.110.		Earthmoving operations which will if left unmitigated result in the generation of dust that will lower the air quality within the study area. There will be no change to this impact	Earthmoving activities will be limited to the dry season, wherever practicable.	Not Applicable	Lifex Extension Project area is currently in an operational phase and no earthmoving construction related activities are undertaken, therefore this EMP commitment is not applicable.
7.9.2.111.		Open areas (wind-blown emissions) which will if left unmitigated result in the generation of dust that will lower the air quality within the study area. There will be no change to this impact.	Exposed areas will be re-vegetated as soon as practicable.	Compliant	No unnecessary exposed soil was noted during the audit period. Khwezela North Colliery developed and is Implementing a Vegetation Monitoring Procedure which deals with requirements of the preparation of soil, maintenance of soil and vegetation, the establishment of vegetation, the production requirements of vegetation and monitoring and managing rehabilitated areas.
7.9.2.112.			Once construction is completed, remaining disturbed (and thus exposed) surfaces will be stabilised through chemical or vegetative means.	Not Applicable	No exposed surfaces except for the approved areas was noted during the site visit.
7.9.2.113.	Noise	The movement of haulage trucks during the construction of infrastructure along the transport routes and on the construction sites will generate intermittent noise that may present a nuisance to people living close to the transport routes and construction areas. There will be no change to this impact.	Vehicles will be maintained in good working order to minimise noise during transportation.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.114.			Roads will be kept at a low gradient where possible and will be well maintained.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.115.			All flaps and tailgates of vehicles will be secured and rubber bushes will be fitted between the trailer bodies and the chassis in order to prevent noise caused by body slapping (especially when the vehicles are empty).	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.116.			Movement of vehicles will be limited to daylight hours to minimise the impact of transport noise on surrounding noise receptors.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.117.	Sensitive landscapes	Construction of some of the planned surface infrastructure will result in the disturbance of wetland habitat, and also in compaction of soils in wetland areas, unless managed appropriately. The overall extent of wetland to be disturbed will be reduced by the implementation of activities as proposed in this Part 1 application as opposed to those already approved.	Construction will be undertaken during the dry season as far as possible.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.118.			Existing tracks and roads will be used to access the designated construction sites where possible.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.119.			The relocation of the proposed workshops and offices outside of the delineated wetland habitat associated with the presence of springs were considered during the Planning Phase but were not considered feasible for the current mine plan alternative chosen. Should changes to the mine plan be considered or required in future prior to construction of the infrastructure near	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.120.			All laydown areas and temporary construction infrastructure will be located at least 100 m from delineated wetland habitat, preferably on already disturbed land, and will be clearly demarcated.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMEN- TAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.2.121.			Following completion of the construction activities, remaining disturbed and exposed surface areas will be rehabilitated.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMPr commitment is not applicable.
7.9.2.122.			Detailed method statements will be submitted to the DWS for authorisation prior to the disturbance of any wetlands and water resources within the study area.	Compliant	The Life Extension Project Water Use Licence (“WUL”) with licence no.: 06/B11K/ACGIJ/5335 authorises KNC to mine within 500 m of wetlands and watercourses (Schoonie North Mini-Pit and Navigation Pit). A detailed method statement was included as part of the application process as such is a requirement from the DWS.
7.9.2.123.		Establishment of surface infrastructure on some or part of the wetlands (including the associated vegetation) within the study area will result in the direct loss of wetland habitat. The overall extent of wetland to be disturbed will be reduced by the implementation of activities as proposed in this Part 1 application as opposed to those already approved.	The possibility of implementing wetland offsets as a means of mitigating against the loss of wetland habitat within the Lifex Extension Project boundary area is being investigated. A wetland offset strategy is being developed by a suitably qualified person using the SANBI offset guideline methodology (Phase 1 of the study has been completed – refer to Appendix D14). If authorisation is granted, management of the offsite wetland area(s) will continue throughout the life of mine of the proposed Lifex Extension Project.	Compliant	A Wetland offset strategy was investigated for Khwezela North Colliery. Wetland Mitigation Strategy for Khwezela North Colliery: Navigation Lifex Extension Project (dated June 2017) and compiled by Wetland Consulting Services (Pty) Ltd., presents offset target areas. The Wetland Mitigation Strategy Report determine the required wetland offset targets calculated as per the guidelines developed by SANBI & DWS (2014). The wetland offset strategy has not yet been authorised, therefore, this condition is not yet applicable.
7.9.2.124.		Construction of surface infrastructure could increase sediment transport into adjacent and downstream wetlands. There will be no change to this impact.	Earthmoving activities will be limited to the dry season, wherever practicable.	Not Applicable	Lifex Extension Project area is currently in an operational phase and no earthmoving construction related activities are undertaken, therefore this EMPr commitment is not applicable.
7.9.2.125.			The extent of exposed soil surfaces at any one time by phasing clearing activities will be minimised as far as practicable.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, all activities associated with the Lifex Extension Project situated within the approved footprint area.
7.9.2.126.			Areas will only be cleared in the week prior to the commencement of construction activities, as far as practicable.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMPr commitment is not applicable.
7.9.2.127.			A construction storm water management plan will be designed and implemented to limit sediment movement off site and prevents the concentrated discharge of flows and high velocity discharges off site.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMPr commitment is not applicable.
7.9.2.128.			Detailed method statements of all required wetland crossings will be developed and submitted to the DWS for approval.	Compliant	The Life Extension Project Water Use Licence (“WUL”) with licence no.: 06/B11K/ACGIJ/5335 authorises KNC to mine within 500 m of wetlands and watercourses (Schoonie North Mini-Pit and Navigation Pit). A detailed method statement was included as part of the application process as such is a requirement from the DWS.
7.9.2.129.		Construction of surface infrastructure could increase the risk of erosion within wetlands. There will be no change to this impact	Construction will be undertaken during the dry season as far as possible.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMPr commitment is not applicable.
7.9.2.130.		Existing tracks and roads will be used to access the designated construction sites where possible.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMPr commitment is not applicable.	
7.9.2.132.		Capacity of the bridge over the Schoongezichtspruit will be sufficient to ensure no impoundment of flows upslope of the crossing during regular return storm events (up to 1:5 year).	Noted	The condition could not be determined as the condition is not specific to the bridge that will cross the Schoongezichtspruit. Currently all crossings over the Schoongezichtspruit are existing crossings with footings in the active channel. This EMPr commitment is understood by Khwezela North Colliery Management.	
7.9.2.133.		Following completion of the construction activities, remaining disturbed and exposed surface areas will be rehabilitated.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMPr commitment is not applicable.	
7.9.2.134.		Detailed method statements of all required wetland crossings will be developed and submitted to the DWS for approval.	Compliant	The Life Extension Project Water Use Licence (“WUL”) with licence no.: 06/B11K/ACGIJ/5335 authorises KNC to mine within 500 m of wetlands and watercourses (Schoonie North Mini-Pit and Navigation Pit). A detailed method statement was included as part of the application process as such is a requirement from the DWS.	
7.9.2.135.		Construction of surface infrastructure could increase the risk of invasion of alien vegetation into wetlands. There will be no change to this impact.	The mine’s alien invasion removal and management plan will be expanded to include the proposed Lifex Extension Project, and will deal with all invasive alien species within the mine boundary area. See also Ref. no.’s 7.9.2.56 and 7.9.2.57	Compliant	The Alien Management Plan for Khwezela North Colliery include the Lifex Extension Project area.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.2.136.		The collection and disposal of construction waste could result in water quality deterioration within wetland areas, if not appropriately managed. There will be no change to this impact.	Areas disturbed during construction activities will be monitored for signs of alien invasive species and cleared as soon as possible. See also Ref. no.'s 7.9.2.56 and 7.9.2.57.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.137.			Clearly marked, designated waste collection and storage facilities will be used at all construction sites.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.138.			Regular removal of waste offsite will be undertaken by suitably qualified contractors to authorised appropriate waste disposal facilities	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.139.			All employees and contractors will be educated as part of the environmental awareness plan on the waste management policies and procedures of Landau Colliery.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.140.	Visual aspects	Construction of the planned surface infrastructure, including the following, will result in a change in the visual landscape through the introduction of new features: <ul style="list-style-type: none"> • New Upgraded bridge over the Schoongezichtspruit. • Conveyors. • Blaauwkrans Co-disposal extension. There will be no change to this impact.	Avoid the unnecessary removal of vegetation.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.141.			Rehabilitate exposed areas as soon as possible after construction to minimise soil exposure to wind and water erosion, and to minimise visual impacts. These areas will be rehabilitated using live placing of soil (as far as practicable) which will reduce the need to handle and stockpile soil. This will also reduce the expected consequent impacts on visual conditions caused by dust generated by soil handling. The implementation of dust management measures (see Ref. no.'s 7.9.2.105, 7.9.2.106, 7.9.2.109 - 112) will also address the visual impacts associated with dust.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.142.			The housing of the conveyor will be designed to blend into the background as far as practicable.	Compliant	It was confirmed during the site visit that the housing of the conveyor blend with the surrounding environment (green colour).
7.9.2.143.			The side slopes of the Blaauwkrans Codisposal facility will be clad with soil and vegetated in situ concurrently during the Operational Phase. This will serve multiple functions, including the mitigation of visual impacts cause by the construction of the facility extension.	Compliant	It was confirmed during the site visit that the side slopes of the Blaauwkrans Co-disposal facility are vegetated. It was indicated during the site visit that concurrent rehabilitation of the side walls of the Blaauwkrans Co-disposal Facility has ceased, as a portion of the Blaauwkrans Co-disposal Facility will be reworked as part of the proposed Khanyisa Project. Authorisation with this regard has been approved.
7.9.2.144.			Dust control measures, as described in Ref. no.'s 7.9.2.105, 7.9.2.106, 7.9.2.109 -112, will be implemented to simultaneously control dust emissions and reduce the visual impacts associated with the generation of dust through handling of soil during construction.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMP commitment is not applicable.
7.9.2.145.	Sites of Archaeological and cultural importance	Grave G01 is located within the footprint of a stockpile area, and will be buried and possibly destroyed if no mitigation is implemented. There will be no change to this impact.	These graves will be exhumed and relocated by a reputed undertaker or forensic archaeologist following the required public consultation period and in accordance with legislative requirements (and only after obtaining the applicable authorisation(s))	Not Applicable	As per the documentation provided for review, the relevant permits / authorisations were obtained from the South African Heritage Resources Agency ("SAHRA") (permit ref: 2772), the Mpumalanga Department of Health (dated 02 October 2018) and the eMalahleni Local Municipality, dated 12 June 2018. According to mine personnel, PGS heritage was contracted to conduct the exhumation of the graves. The graves have not yet been exhumed. Therefore, this EMP commitment is not applicable.
7.9.2.146.		Graveyards GY04.1 and GY04.2 are located close to the proposed footprint area of the planned Blaauwkrans Co-disposal facility, and will likely be damaged or even possibly lost, if not mitigated appropriately. There will be no change to this impact.			
7.9.2.147.		Graveyard GY03 and the Historical Structures and Historical Houses will not be directly disturbed by the proposed	The graveyard GY03 will be conserved according to the Graveyard Conservation Plan attached as Appendix D8.2.	Not Applicable	As per the documentation provided for review, the relevant permits / authorisations were obtained from the South African Heritage Resources Agency ("SAHRA") (permit ref: 2772), the Mpumalanga Department of

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.9.2.148.		Lifex Extension project. However, GY03 was identified as being at risk of damage. The graveyard could be defaced or otherwise damaged due to the relative proximity to the proposed new infrastructure at the Lifex Extension Project. There will be no change to this impact.	The conservation of these structures will be proactively addressed through the incorporation thereof into the environmental training and awareness programme. By educating the workforce about these structures, and possibly imparting a sense of respect for the cultural heritage associated with the said structures, the historical structures and houses will be protected through behaviour, and not defaced or destroyed.	Compliant	Health (dated 02 October 2018) and the eMalahleni Local Municipality, dated 12 June 2018. According to mine personnel, PGS heritage was contracted to conduct the exhumation of the graves. The graves have not yet been exhumed. Therefore, this EMPr commitment is not applicable. As per the environmental awareness training presentation provided for review, training and awareness regarding graves, heritage and archaeological structures are provided to employees.
7.9.2.149.		The construction of infrastructure at the proposed Landau Colliery Lifex Extension Project area may, in addition to providing continued employment for existing Landau Colliery employees, create some additional opportunities for employment and skills transfer during this phase. There will be no change to this impact.	Mitigation of the negative impacts, and enhancement of the positive impacts will be the same as that identified in Ref. no.'s 7.9.1.121 - 7.9.1.126.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.9.2.150.	I&APs	Occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected by nuisance noise generated by the construction of surface infrastructure, including the movement of vehicles and operation of machinery. This is most likely to be of greatest significance during the daytime near Kwa-Mthunzi Vilakazi (Noise sensitive receptors NSD 03 and 04) and near the residential property identified as NSD 09, located to the east of the existing Navigation Dense-Medium Separation Plant., during the Construction Phase. There will be no change to this impact.	Noise management measures as described in Ref. no.'s 7.9.2.113- 7.9.2.116 will be implemented to reduce the anticipated noise-related impacts on I&APs.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.2.151.		Similarly, occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected by nuisance dust generated by the construction of the construction of the planned infrastructure, including the movement of vehicles and operation of machinery. There will be no change to this impact.	Air quality management measures as described in Ref. no.'s 7.9.2.105 -112 will be implemented to reduce the anticipated dust-related impacts on I&APs.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.2.152.		Occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected by the visual effects of the construction of the planned infrastructure. There will be no change to this impact.	Management measures to reduce visual impacts as described in Ref. no.'s 7.9.2.140-144 will be implemented to reduce the impacts on I&APs associated with the anticipated change in sense of place.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.9.2.153.		The clearing of vegetation and the loading of soil and subsoil can generate dust which may settle on nearby vegetation and affect their functioning. Where this occurs on grazing veld or cultivated maize, this may affect the	Dust suppression will be implemented within the disturbed construction surface areas, particularly in areas where vegetation has been cleared and soil removed or graded ahead of construction.	Not Applicable	No construction activities are undertaken at the Lifex Extension area, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		current land use of adjacent landowners and land users within the existing Landau Colliery Lifex Extension Project boundary area. There will be no change to this impact.			
7.9.2.154.		The implementation of the Landau Colliery Lifex Extension Project would provide the mine with an opportunity to continue contributing to the upliftment of the surrounding communities. There will be no change to this impact.	Measures discussed in Ref. no.'s 7.9.1.121 -126 will be implemented to enhance this potential positive impact.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.10.1 PROGRESSION OF OPENCAST VOID (SEQUENTIAL OPENING OF BOX CUTS AND EXTRACTION OF COAL)					
EIAMAP: OPERATIONAL PHASE					
7.10.1.1	Geology	The impacts and mitigation measures identified in Ref. no.'s 7.9.1.1 and 7.9.1.2 of Table 7.9 (Construction Phase EIAMAP) will continue to apply during the Operational Phase. The area over which the geology is affected will increase as mining progresses. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.2.	Topography	The proposed Landau Extension Project open pit will form a depression in elevation for the duration of the Operational Phase. However, the rollover opencast mining method that will be used will ensure that the extent of the open pit is limited to three cuts behind the active face. This will ensure that impacts on topography due to the active opencast pit (also referred to as the 'mining window') will be limited in extent at any specific future point in time. The possible impacts on topography experienced during the Operational Phase of the proposed Landau Extension Project opencast mining activities will indirectly impact on aspects such as the visual aesthetics of the area, as well as surface water flow patterns and drainage direction, which are discussed under the relevant environmental component. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to a decrease in overall extent of the opencast pits).	Measures will be implemented to manage the indirect impacts on surface water and visual aspects, as discussed under the relevant environmental components in this table. Management of the indirect impacts will in turn mitigate the direct impacts that the opencast mining activities will have on the topography. Concurrent rehabilitation of mined out voids will minimise the impact on topography and related aspects, during the Operational Phase of the project by reducing the extent of disturbance at any time.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.10.1.3.	Soil	Stripping and replacing will result in mixing of the soil's A and B-horizons with subsequent reduction in fertility, water holding capacity and buffer capacity against compaction. In addition, Stripping of lower quality subsoil together with high quality topsoil will result in a reduction of soil quality and subsequent land capability. The amended layout of the activity will not result in a change to the existing impact identified.	Soils will be stripped at specified depths in order to prevent stripping of lower quality subsoil together with topsoil.	Compliant	Stripping of soils is undertaken according to the Rehabilitation Plan. The rehabilitation plan outlines the specific depth for soil stripping.
7.10.1.4.			Open pits will be backfilled and spoil surfaces will be levelled and shaped to a free draining topography similar to the pre-mining surface.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced as yet. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover.
7.10.1.5.			Topsoil will be dumped in sufficient quantities to achieve agreed land capability.	Compliant	Topsoil's are dumped in quantities as prescribed in the Topsoil Management Procedure developed for Khwezela North Colliery.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.6.			Soil amelioration and revegetation will be done as described in section 7.2.3 to 7.2.6 in the specialist soil report.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.1.7.		Removal of vegetation will expose soils to erosion forces such as wind and water. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits)	The removal of vegetation will be restricted to the planned mining and infrastructure areas only. Any unnecessarily exposed soil will be re-vegetated immediately.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, the opencast activities are undertaken within the approved footprint area and no unnecessary clearing of vegetation was noted.
7.10.1.8.			Stockpiles will be vegetated as soon as possible to maintain the microbial components in the soils, as well as to minimise the loss of soil through erosion.	Compliant	It was confirmed during the site visit and the approved layout plan for the Lifex Extension Project that the establishment of the initial box-cuts, and fencing are undertaken within the approved footprint area and no unnecessary clearing of vegetation was noted.
7.10.1.9.			The existing Standard Operating Procedure (SOP) for soil management and environmental hazard management will be modified to include the EMP commitments pertaining to the Lifex Extension Project.	Compliant	From a review of the Topsoil Management Procedure, Khwezela Hydrocarbon and Chemical Handling Procedure, Khwezela Incident Reporting and Management Procedure and the Landau Stabilizing Potential Sinkhole Areas Procedure, it was noted that the EMP commitments pertaining to the Lifex Extension Project are included. These include management of soil contamination by the hazardous material. It must be noted that the construction activities for Lifex Extension Project are completed.
		Should spills from hazardous materials (including fuel and chemicals) occur, the soil in the vicinity of the spill may be polluted with a resultant change in the chemical properties of the soil. The amended layout of the activity will not result in a change to the existing impact identified	The revised SOP will be used to train the applicable mining personnel and contractors prior to the commencement of the Construction Phase.	Not Applicable	The opencast construction activities are completed, therefore this EMP commitment is not applicable.
7.10.1.10.			Vehicles will be checked for hydrocarbon leakages before being employed.	Compliant	All vehicles inspected (and a start-up checklist completed and signed-off) prior to the utilisation thereof. Should the inspection reveal any concerns, the concern is logged and reported to the appropriate section for actioning. Spillages are handled in accordance with the following procedures: <ul style="list-style-type: none"> • Khwezela Hydrocarbon and Chemical Handling Procedure • Khwezela Colliery Incident Reporting and Management Procedure Start-up checklists were provided for review during the audit period.
			Spillages will be avoided; if they do occur they will be contained, the affected area cleaned and the affected soil will be bioremediated before being reused for rehabilitation. If bioremediation is not possible, polluted soils will be disposed of at an appropriately licenced hazardous waste facility.	Compliant	Khwezela North Colliery developed and is implementing an Emergency Preparedness Procedure. The procedure outlines a systematic diagram of how chemical spillages (oil and diesel) should be managed and avoided. Khwezela North Colliery further developed the following procedures that indicate how a spillage of carbonaceous materials, hydrocarbons should be managed: <ul style="list-style-type: none"> • Oil and Silt Trap Procedure • Hydrocarbon and Chemical Handling Procedure • Incident Reporting Procedure. From the procedures above, it is indicated that should the spillages occur, that is regarded as hazardous waste and is removed on site by Phambili No rehabilitation of contaminated soil is undertaken at Khwezela North Colliery. No spillages were reported during the audit period.
7.10.1.11.		The movement of mining vehicles and machinery over undisturbed areas and also on soils replaced on rehabilitated mining voids would compact the soils changing the structure and function of the soils. This could lead to secondary surface and groundwater impacts which are discussed below, and could inhibit successful rehabilitation of mined out voids. The amended layout of the activity will not result in a change to the existing impact identified.	Mining vehicles and machinery will be limited to access and haul roads as well as disturbed in-pit areas.	Compliant	It was confirmed during the site visit that mining vehicles and machinery are limited to access and haul roads as well as disturbed in-pit areas.
7.10.1.12.			Soil erosion in undisturbed as well as rehabilitated areas will be prevented through implementation of appropriate measures such as establishing vegetation.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, no undisturbed areas were noted apart from the approved footprint area. From the review of the Incident Report and the site visit conducted, no erosion issues were identified. It must be noted that no rehabilitation activities have commenced yet.
7.10.1.13.			Employees will be trained through the environmental awareness programme.	Compliant	Employees are trained through induction and through monthly topics.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.14.	Land capability	The land capability within the footprint of the mining areas will reduce from arable land and grazing to none because there will be no topsoil. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits)	Mitigation of impacts on soil, surface water and groundwater will ensure that the impacts on land capability are minimised.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.10.1.15.		The land capability within the footprint areas where topsoil will be stockpiled will reduce from arable and grazing to none because the topsoil stockpile will cover the productive soil surface. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits)			
7.10.1.16.		The impacts on soils as described above will result in a reduction in land capability until backfilling of the void is complete as part of the rehabilitation methods employed during the Operational Phase. However, the post-mining land capability will remain arable if the mitigation measures are followed. The amended layout of the activity will not result in a change to the existing impact identified.	Suitable rehabilitation procedures will enable the land capability of disturbed land use areas to support the agreed end land capability. Such procedures will include the soil management measures discussed in this table.	Compliant	<p>The following procedures are implemented for ensuring suitable rehabilitation to support the agreed end land capability:</p> <ul style="list-style-type: none"> Landau Dozing Standard (AATC014529) presents the actions required during dozing, with specific reference to the levelling of spoils to rehabilitate the topography of the area by maximising the re-vegetation and free draining potential and minimising the potential for future erosion and water pollution. Landau Dozing Procedure (AATC016055) presents the actions to be undertaken during spoil levelling and final topographical contouring in order to reduce impacts. Landau Vegetation Monitoring Procedure (AATC016070) that provides the requirements of the preparation of soil, maintenance of soil and vegetation, the establishment of vegetation, the production monitoring and problems of rehabilitated areas. The Landau Topsoil Management Procedure (AATC016071) describes the requirements during the removal of the topsoil portion of the overburden, topsoil placement and stockpiling, general topsoil monitoring and topsoil thickness control. <p>It must be noted that no rehabilitation activities have commenced.</p>
7.10.1.17.			Landau Colliery will ensure that rehabilitation of the opencast area commences, at any given time no more than the pre strip area, one open cut and two spoils rows are unavailable for rehabilitation.	Not Applicable	
7.10.1.18.			Furthermore, mitigation of impacts on soil, surface water and groundwater will ensure that the impacts on land capability are minimised.	Noted	

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.19.	Land use	The land use within the footprint of the open mining cuts will reduce from cultivation and grazing to none because there will be no topsoil. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits).	Mitigation will be the same as for land capability (Ref. no.'s 7.10.1.14-7.10.1.18, above).	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.10.1.20.		The land use within the footprint where topsoil will be stockpiled will reduce from cultivation and grazing to none because the topsoil stockpile will cover the productive soil surface. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.21.		A reduction in land capability will reduce crop production potential and subsequent crop yields. However, the pre-mining land uses which are mainly crop farming and grazing can be reinstated after rehabilitation if the mitigation measures are followed properly. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.22.		Once the coal layer has been removed, coal discard, overburden, subsoil and topsoil will be sequentially replaced into the void for rehabilitation purposes. The blasting of the geological layers will result in the fragmentation of the strata during the opening of the cut prior to the extraction of the coal, and will result in the bulking of the overburden layer that will be replaced into the void during rehabilitation. Even though compacting of the coal discard and overburden in the void will occur during rehabilitation, the surface stability will be insufficient for certain land uses (e.g. the erection of buildings or construction of water containment facilities (such as dams, etc.). The instability of the surface will therefore permanently limit the land capability, and thus will result in the restriction of future land uses in areas where opencast mining was previously undertaken. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.23.		The change in land use from agriculture to mining in areas not already used or mining will result in a higher income per hectare over the short-term in	Environmental impacts will be managed so as to minimise environmental liability, thus maximising profits and revenue, thus maximising positive impacts on socio-economy. See also Ref.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		comparison with agriculture. The amended layout of the activity will not result in a change to the existing impact identified.	no.'s 7.9.1.121-126, and 7.9.1.136-140 in Table 7.9 (Construction Phase EIAMAP).		
7.10.1.24.		The local community will benefit in the short term from the temporary land use of mining (as described in Ref. no.'s 7.9.1.121-126, and 7.9.1.141-145 in Table 7.9 (Construction Phase EIAMAP)), and will benefit in future from the ability of the rehabilitated land to support a long-term sustainable land use. Thus, the mining operation will generate a positive impact on the socio-cultural component of the environment. The amended layout of the activity will not result in a change to the existing impact identified.	Areas to be disturbed by the opencast pits will be limited to the planned footprint areas of the opencast-cuts as indicated on the approved mine plan. This will be facilitated by clearly designating the areas within which stripping of vegetation will take place ahead of mining.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, all opencast activities are undertaken within the approved footprint area and no unnecessary clearing of vegetation was noted.
7.10.1.25					
7.10.1.26.	Vegetation	Direct loss of untransformed vegetation. Destruction of 61 ha of Valley-bottom Wetlands and 70 ha of the Untransformed Grassland patch will occur. This represents approximately 26 % of Valley-bottom Wetland and 41 % of Untransformed Grassland occurring within the study area. No Rocky Scarp Vegetation will be affected. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits).	CBMA's, and corridors linking the CBMA's that will have been identified during the Design and Planning Phase will be fenced and protected (refer also to Ref. no. 7.9.1.19 and 7.9.2.55 of Table 7.9: Construction Phase EIAMAP).	Compliant	The CBMAs of high biodiversity conservation value are demarcated and fenced off. This was confirmed during the site visit 2021.
7.10.1.27.			The wetland offset project that would have commenced during the Construction Phase will continue to be implemented, and conservation of wetland habitats offsite will thus continue.	Compliant	A Wetland offset strategy was investigated for Khwezela North Colliery. Wetland Mitigation Strategy for Khwezela North Colliery: Navigation Lifex Extension Project (dated June 2017) and compiled by Wetland Consulting Services (Pty) Ltd., presents offset target areas. The Wetland Mitigation Strategy Report determine the required wetland offset targets calculated as per the guidelines developed by SANBI & DWS (2014). The wetland offset strategy has not yet been authorised, therefore, this condition is not yet applicable.
7.10.1.28.		Indirect impacts. Degradation and transformation of wetland plant communities as a result of disruption of hydrological patterns within catchments, habitat fragmentation, increased sedimentation (sediment laden runoff and dust), accidental spills (fuels, cement, etc.) and alien plant invasion. Impacts to mesophyllous vegetation mainly as a result of 'edge effects' such as dust, alien plant invasion and habitat fragmentation. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits).	No unplanned and unauthorised surface disturbance will take place within 100m from the seasonal hydromorphic soils of the valley-bottom wetland.	Compliant	According to the assessment of the Google Earth Image, no unplanned and unauthorised surface disturbance within 100m from the valley-bottom wetland was noted.
7.10.1.29.			No crossings of vehicles or machinery over these wetlands will take place unless appropriately licensed.	Compliant	According to the Water Use Licence, haul road crossing over the Schoongezicht is authorised. No unauthorised crossing over wetland areas apart from the licenced was noted.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.30.			Sedimentation and erosion from areas of surface disturbance will continue to be minimised through ongoing utilisation and maintenance of the dirty water isolation and management infrastructure.	Compliant	Dirty water from the opencast area is utilised within the mining areas diverted through trenches to East pollution control dam for containment and for further re-use.
7.10.1.31.			CBMA's, which will have been identified and fenced during the Design and Planning, and Construction Phases will continue to be managed towards achieving the applicable objectives as set out in the BAP.	Compliant	The CBMA's of high biodiversity conservation value are demarcated and fenced off. This was confirmed during the site visit 2021.
7.10.1.32.			As per the Agricultural Resources Act (Act 43 of 1983), weeds and alien invader plants will continue to be monitored and controlled within the entire Landau Colliery mine boundary area, including the proposed Lifex Extension Project area.	Compliant	According to the alien invasive eradication plan (dated May 2019) developed for the Navigation Section, weeds and alien invader plants are located along the haul road servitudes. The plan act as a monitoring purpose for the weeds and alien invader plants
			Rehabilitated mined out areas will be vulnerable to invasion by such species, and will accordingly be more intensively and closely managed.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.1.33.			All mining including the associated concurrent rehabilitation will be restricted to the predetermined, authorised areas, thus minimising the extent of the footprints of the disturbed areas as far as practicable.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, all opencast activities are undertaken within the approved footprint area and no unnecessary clearing of vegetation was noted.
7.10.1.34.			Potential spillages of contaminating materials within the mining or rehabilitated mined out areas will be immediately reported to the Environmental Coordinator and cleaned up. Where possible, soils contaminated by hydrocarbon spills will be bioremediated and re-used for rehabilitation of disturbed areas within the Landau Colliery mine boundary area.	Compliant	Spillages are reported to the Environmental Coordinator of Khwezela North Colliery in accordance with the Incident and Reporting Procedure. If spillages occur, all are handled as hazardous waste and are disposed off at the hazardous waste bins and further disposed in a licenced landfill site. No spillages were noted during the site visit. It must be noted that no rehabilitation of the mined out opencast pits have commenced.
7.10.1.35.			All opencast areas will be rehabilitated progressively behind the active open cut(s).	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced as yet. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover.
7.10.1.36.			Mitigation of the potential impacts on the wetlands within the study area (see Ref. no.'s 7.10.1.88- 7.10.1.103) will simultaneously contribute towards the mitigation of the impacts of opencast mining on the vegetation units associated with the wetland	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.1.37.			Mitigation measures will be implemented to manage the impacts of the roll-over opencast mining to be used at the Landau Colliery Lifex Extension Project on the receiving water environment and wetlands, as described in Ref. no.'s 7.10.1.86-7.10.1.99.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.1.38.		Indirect impacts. Habitat and untransformed vegetation loss and degradation as a result of increased infiltration of water into old opencast pits and accompanying Acid Mine drainage. Acid Mine drainage, if decanting on the surface, can lead to permanent degradation of terrestrial and wetland plant communities by altering species composition and physiognomy of the vegetation, and reducing plant species richness. Increased salinity associated with acid mine drainage is one of the main causes of vegetation degradation. Such changes in vegetation lead to habitat degradation or even loss for	As 'offsets' the four areas of high biodiversity conservation value (CBMA's) identified within the Landau Colliery study area will be fenced.	Compliant	The CBMA's of high biodiversity conservation value are demarcated and fenced off. This was confirmed during the site visit 2021.
7.10.1.39.			The impacts and mitigation measures identified in Ref. no.'s 7.9.1.29-34 of Table 7.9 (Construction Phase EIAMAP) are also applicable to this environmental aspect throughout the Operational Phase. The amended layout of the activity will not result in a change to the existing impact identified.		This EMPr commitment is understood by Khwezela North Colliery Management.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		certain animal species and lower faunal species richness. The amended layout of the activity will not result in a change to the existing impact identified			
7.10.1.40.	Animal life	Direct loss of habitat for potentially occurring Threatened and Near Threatened species such as Serval, Brown Hyena, Southern Bald Ibis, Secretarybird, African Grass Owl and Peregrine Falcon. Large proportion of habitat within opencast footprints is transformed, subject to fairly high levels of human activity, and is regarded as of marginal importance for most of these species. Habitat fragmentation may be of significance to the Serval, which was confirmed to be present. Periodic disturbance as a result of blasting and other construction activities may occur. The amended layout of the activity will not result in a change to the existing impact identified.	The mitigation measures discussed in Ref. no. 7.9.1.35) will continue to be implemented during the Operational Phase, as they apply to the progression of mining and concurrent rehabilitation of the roll-over opencast mining method to be used at the proposed Lifex Extension Project.	Noted	Khwezela North Colliery Management understands this EMP commitment.
7.10.1.41.		Indirect impacts. Increased human presence in previously inaccessible areas likely to lead to increased hunting pressure, persecution and disturbance of certain sensitive species such as Serval (Near Threatened). The amended layout of the activity will not result in a change to the existing impact identified.	Movements of all mining personnel and contractors working will be limited to the progressing mining and concurrent rehabilitation areas and clearly demarcated access roads.	Compliant	It was confirmed during the site visit that movements of mining personnel and contractors working is limited to the progressing mining and on the clearly demarcated access roads. It must be noted that no rehabilitation of the mined out opencast pits have commenced.
7.10.1.42.			Access to CBMA's identified in the BAP will continue to be strictly controlled.	Compliant	Strict access control is implemented to these CBMA's. The CBMA's of high biodiversity conservation value are demarcated and fenced off.
7.10.1.43.		The impacts and mitigation measures identified in Ref. no.'s 7.9.1.37 - 7.9.1.39 of Table 7.9 (Construction Phase EIAMAP) are also applicable to this environmental aspect throughout the Operational Phase. The amended layout of the activity will not result in a change to the existing impact identified.		Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.1.44.		Indirect impacts. Increased human presence in previously inaccessible areas likely to lead to increased hunting pressure, persecution and disturbance of certain sensitive species such as Serval (Near Threatened). The amended layout of the activity will not result in a change to the existing impact identified.	The surface water monitoring programme (described in Part 9) that will have commenced during the Construction Phase will continue to be implemented to verify the impacts of the progressive mining and concurrent rehabilitation on the surrounding water environment.	Compliant	Surface water monitoring programme is implemented to determine the impacts of the progressive mining on the surrounding water environment. Surface water monitoring reports were provided for review during the audit period.
7.10.1.45.			Infrastructure designed to divert clean runoff around the mining area and to keep surface water runoff from entering the associated dirty water management areas will continue to be implemented and maintained.	Compliant	It was confirmed during the site visit and a plan titled clean water drains model (dated August 2019) that berms are constructed to divert clean runoff around opencast area. Furthermore, trenches are constructed for the diversion of dirty water from the opencast areas to the East pollution control dam.
7.10.1.46.			Pooling of clean water will be avoided to ensure clean runoff flows unhindered to the receiving watercourses.	Compliant	The berms around the opencast pits and dirty water areas are inspected regularly to check for blockage. Monthly inspection reports were provided during the audit period.
7.10.1.47.			The mining window will be kept to pre-strip, one open cut and two spoil rows i.e. these areas will be considered unavailable but all other areas will be concurrently rehabilitated.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced as yet. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. It was confirmed during the site visit that mining window is kept to pre-strip, one open cut and two spoil rows.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.48.	Surface Water Quantity	Isolation of the dirty water management area will result in a reduction in catchment yield, which, unless appropriately managed, could increase over time as mining progresses. The loss of yield associated with mining relates to the following: • Loss of catchment from areas that will no longer drain to the catchment during mining. The loss in yield associated with mining is primarily due to the active pit and ramp areas, overburden dumps (isolated from the catchment) and the related surface infrastructure areas. • Loss of hill slope wetlands and associated seepage from these areas. The maximum percentage reduction in yield at the Loskop Dam (the receiving water body) due to the isolation of opencast mining and dirty infrastructure areas is expected to be significantly less than 0.18%. However, the potential impact on catchment yield to the watercourses in the immediate vicinity of the mining operations, most notably the Schoongezichtspruit, is expected to be high. If no mitigation measures are undertaken then the expected maximum reduction in yield for the Schoongezichtspruit catchment is 51.4% and 2.6% for the Western Brugspruit tributary. This is a conservative estimation, assuming that all infrastructure areas and the entire footprint of the three pits simultaneously reduce the catchment yield. However, if appropriate mitigation measures are employed then the potential reduction in catchment yield is 31.6% for the Schoongezichtspruit and an additional 3.6% is expected to enter into the Western Brugspruit tributary. This is also a conservative estimation based on 50% of the entire pit areas simultaneously reducing the catchment yield. However, with timeous concurrent rehabilitation, to a free draining landform, this impact can be further reduced. The amended layout of the activity will not result in a change to the existing impact identified.	As previously indicated, application will be made for an Integrated Water Use Licence under Chapter 4 of the NWA to be issued by the DWS for the Water Uses (as defined in Section 21 of the NWA) that are expected to form part of the Lifex Extension Project, prior to commencement with any such Water Uses.	Compliant	Khwezela North Colliery is in possession of an approved WUL for the Lifex Extension Project with licence no.: 06/B11K/ACGIJ/5335 for the opencast mining areas.
			Thus, it is anticipated that a WUL will be in place during the Operational Phase of the Lifex Extension Project, and the mine will adhere to the conditions of such a Licence during the LOM or for the duration of the implementation of these Water Uses.	Compliant	Khwezela North Colliery is in possession of an approved WUL for the Lifex Extension Project with licence no.: 06/B11K/ACGIJ/5335, which covers the opencast mining activities. The implementation of the IWUL is undertaken through the following: <ul style="list-style-type: none"> • Conducting of the internal and external annual water use licence audits. • Monthly inspections to ensure compliance with the water use licence. Furthermore, although non-compliances are identified from the auditing of the water use licence, action plans are compiled and implemented to ensure compliance with such specific condition in the IWUL.
7.10.1.49.			The infrastructure that will have been designed to divert clean runoff around the mining area and back into the catchment, and to keep surface water runoff from the mining area contained, will continue to be implemented, inspected regularly and maintained when necessary.	Compliant	Khwezela North Colliery uses berms for the diversion of clean water around the opencast areas and pollution control facilities are utilised for the storage of dirty water emanating from the opencast areas. These infrastructures are continuously implemented. Monitoring of these infrastructures is conducted on monthly basis by Khwezela North Colliery Environmental Department. Monthly monitoring reports were provided for review during the audit period.
7.10.1.50.			The Schoongezicht stream diversion around the proposed Navigation Pit will be constructed, which will return the water to the Schoongezichtspruit downstream of the Navigation Pit.	Not Applicable	Diversion of Schoongezicht stream has not commenced yet, therefore this EMPR commitment is not applicable.
7.10.1.51.			The mine water balance will continue to be managed monthly and updated annually and / or prior to any changes being made to the water management system.	Compliant	Daily abstraction and distribution volumes are captured in an electronic database with the aid of the SCADA system. Data from the SCADA system is used to update the water and salt balance model monthly. The monthly salt balance model was provided during the audit.
7.10.1.52.			The mining window will be kept to pre-strip, one open cut and two spoil rows, i.e. these areas will be considered unavailable but all other areas will be concurrently rehabilitated.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. It was confirmed during the site visit that mining window is kept to pre-strip, one open cut and two spoil rows.
7.10.1.53.			The dirty footprint will be minimised through concurrent rehabilitation with rehabilitated areas draining back to the catchment.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover.
7.10.1.54.	Surface Water Quality	Runoff and direct rainfall to the open cuts will become contaminated as carbonaceous material is exposed, impacting on surface water quality. The	Dirty water that will be pumped from the open pits will continue to be isolated and managed within a purpose-designed system, in compliance with the applicable legislative requirements.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), all dirty water from the opencast areas is diverted to the new East pollution control dam for containment. This is conducted in compliance with the National Water Act together with the GN 704 Regulations.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.55.		amended layout of the activity will result in a reduction in the existing impact identified due to the reduction in the surface extent of the open cuts although the reduction will not be significant at any point in time, it will be noticeable over time, and thus the duration would be less.	Infrastructure designed to divert clean runoff around the box-cut area will continue to be implemented and maintained to keep surface water runoff from entering the active mining area.	Compliant	It was confirmed during the site visit and a plan titled clean water drains model (dated August 2019) that berms are constructed to divert clean runoff around opencast area. Furthermore, trenches are constructed for the diversion of dirty water from the opencast areas to the East pollution control dam.
7.10.1.56.			The dirty water generated within the open pits will be pumped to the purpose-designed storage facilities on the surface before being re-used for e.g. dust suppression, at the existing Navigation Plant, or being transferred to the EWRP for treatment and re-use.	Compliant	Trenches are constructed for the diversion of dirty water from the opencast areas to the East pollution control dam for further use.
			The management of dirty water will be aligned with the DWS's best practice guidelines as far as practicable, as well as being in line with the DWS's decision-taking hierarchy.	Compliant	Management of dirty water is aligned with the DWS's best practice guidelines. This was confirmed during the site visit.
7.10.1.58.			No contaminated water will be discharged or allowed to flow into the surrounding environment without the required authorisations.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), all dirty water from the opencast areas is diverted to the new East pollution control dam for containment. Khwezela North Colliery indicated that no authorisations for the discharge of dirty water to the environment has been applied. Furthermore, no discharge of dirty water to the natural environment was noted during the site visit.
7.10.1.59.			The mining window will be kept to pre-strip, one open cut and two spoil rows, i.e. these areas will be considered unavailable but all other areas will be concurrently rehabilitated.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. It was confirmed during the site visit that mining window is kept to pre-strip, one open cut and two spoil rows.
7.10.1.60.		Mine water discharge : Discharge of contaminated water (including dewatering of old underground workings ahead of mining) It is important to note that the mine water balance assessment undertaken in Section 5 of the surface water specialist report, is aimed at ensuring that the mine does not spill water during the operational phase, except for extreme events related to floods in excess of at least the 1:50 year event. The water management measures detailed in Sections 4 and 5 of the surface water specialist report, are mitigation measures, focusing primarily on the treatment and reuse of water. However, to merely indicate that the mine will not spill dirty water does not allow an assessment of the potential impact of non-compliance with the mitigation measures proposed. In order to assess the impact without mitigation, this impact assessment assumes that all dirty water is discharged to the catchment, whereafter detail is provided on how this will be prevented, and the impact after management is then	The mine water balance will be managed as detailed in Sections 4 and 5 of the surface water specialist report (attached in Appendix D10). These measures include the following: <ul style="list-style-type: none"> • Containment of all dirty water generated on the mine in lined PCDs sized to have a risk of spill of 2% or less in any one year. • Pumping of excess dirty water for treatment, to the EWRP. • Provision of water management facilities with a risk of spill that is lower than 2% in any one year. 	Compliant	It was confirmed during the site visit that the East pollution control dam is lined to have a risk of spill of 2% or less. According to the Water Balance Excel Sheet, all dirty water from the opencast areas is diverted to the new East pollution control dam, then to the EWRP for treatment.
7.10.1.61.			A surface water quality monitoring programme will be implemented, as described in Part 9 of this document, to detect any impacts.	Compliant	Surface water monitoring programme was provided during the audit period which is implemented continuously, with surface water monitoring conducted on a monthly basis. Surface water monitoring reports were provided for review during the audit period.
7.10.1.62.			A water balance monitoring programme will be implemented, as detailed in Section 11 of the surface water specialist report in Appendix D10, to enable calibration of the water balance.	Compliant	Water balance monitoring programme is implemented. The abstraction and disposal volumes are captured in an electronic database with the aid of the SCADA system, the water and salt balance from the system is updated monthly basis. This was provided during the audit period.
7.10.1.63.			In the event of a spill, emergency clean up and monitoring measures will be implemented and the applicable authorities will be notified in accordance with legislative requirements.	Compliant	The following procedures are implemented to avoid spillages: <ul style="list-style-type: none"> • Hydrocarbon and Chemical Handling Procedure • Colliery Incident Reporting and Management Procedure • Waste Management Procedure If spillages occur, all are handled as hazardous waste and are leaned and disposed off at the hazardous waste bins and further disposed in a licenced landfill site. No spillages were reported during the site visit.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		assessed. Impacts are as a result of runoff entering the pits and coming into contact with carbonaceous material. The potential impact on aquatic life or downstream users of water within the rivers is highly dependent on the pH of the water discharged. This is because acidic conditions will result in mobilisation of metals, and this would be a major contributing factor to the potential toxicity of the water. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.64.		The impacts and mitigation measures identified in Ref. no.'s 7.9.1.68 - 71 of Table 7.9 (Construction Phase EIAMAP) are also applicable to this environmental aspect throughout the Operational Phase. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.65.	Groundwater Quantity	Groundwater levels are expected to decrease within the immediate vicinity of the opencast pits (± 1 km radius) as a result of mine dewatering. The degree of aquifer dewatering depends on the extent and depth of the opencast pits. The amended layout of the activity will not result in a change to the existing impact identified.	No mitigation measures are available to prevent aquifer dewatering and the destruction of the aquifer structure. However, mining will be undertaken in accordance with the approved mine plan, thus limiting the extent of the disturbance of the geology, and thus the groundwater, to the planned footprint of the mining areas. This will simultaneously limit the associated expected 700 m radius of the drawdown cone that will form around the mining areas during the Operational Phase.	Compliant	According to the assessment of the Google Earth Image and the approved mining plan, the opencast mining activities are undertaken within the approved footprint area and no unnecessary clearing of vegetation was noted.
7.10.1.66.		The aquifer structure will be destroyed wherever it is intersected by the opencast pits. The effect will be slightly more significant where no existing underground mining has been conducted that already had an effect on groundwater quality and quantity. The amended layout of the activity will not result in a change to the existing impact identified.	As previously indicated, application will be made for an Integrated Water Use Licence under Chapter 4 of the NWA to be issued by the DWS for the Water Uses (as defined in Section 21 of the NWA) that are expected to form part of the Lifex Extension Project, prior to commencement with any such Water Uses.	Compliant	Khwezela North Colliery is in possession of an approved WUL for the Lifex Extension Project with licence no.: 06/B11K/ACGIJ/5335. A separate WUL application for the Blaauwkrans Co-disposal Facility was submitted to the DWS as was granted on 31 August 2018.
			Thus, it is anticipated that a WUL will be in place during the Operational Phase of the Lifex Extension Project, and the mine will adhere to the conditions of such a Licence during the LOM or for the duration of the implementation of these Water Uses.	Compliant	Khwezela North Colliery is in possession of an approved WUL for the Lifex Extension Project with licence no.: 06/B11K/ACGIJ/5335, which covers the opencast mining activities. The implementation of the IWUL is undertaken through the following: <ul style="list-style-type: none"> Conducting of the internal and external annual water use licence audits. Monthly inspections to ensure compliance with the water use licence. Furthermore, although non-compliances are identified from the auditing of the water use licence, action plans are compiled and implemented to ensure compliance with such specific condition in the IWUL.
7.10.1.67.			The groundwater monitoring programme (described in Part 9) that will have commenced during the Construction Phase will continue to be implemented to verify impacts on surrounding groundwater environment.	Compliant	Ground water monitoring programme is implemented continuously, by conducting ground water monitoring. Ground Water Monitoring reports were provided for review during the audit period.
7.10.1.68.			Groundwater removed ahead of mining will be re-used within the existing mine water management system at the Navigation Section of Landau Colliery, with excess water being transferred for treatment at the eMalahleni Mine Water Reclamation Plant (EWRP).	Compliant	According to the Water Balance, groundwater removed from the opencast areas is diverted to the East pollution control dam. The water is then used for re-use, with any excess water provided to EWRP for treatment.
7.10.1.69.			No water removed from the open pit will be discharged or allowed to flow into the surrounding environment, unless appropriately authorised.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), all dirty water from the opencast areas is diverted to the new East pollution control dam for containment. Khwezela North Colliery indicated that no authorisations for the discharge of dirty water to the environment has been applied. Furthermore, no discharge of dirty water to the natural environment was noted during the site visit.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.70.	Groundwater quality	Infiltration of water from dirty water management areas to groundwater may occur during the Operational Phase. The quality of this water will depend on the contact time of the water with the coal and other carbonaceous materials. The amended layout of the activity will not result in a change to the existing impact identified.	Spillages of coal-bearing material outside the allocated dirty water management area during the Operational Phase will be prevented.	Compliant	Spillages coal-bearing material are prevented by the following: <ul style="list-style-type: none"> Procedures are developed and implemented for the management of spillages Environmental awareness with employees, contractors on the management and avoidance of spillage is undertaken by the implementation of induction presentations and monthly environmental toolbox. No spillages were noted during the site visit.
7.10.1.71.			No construction or maintenance of any water management measures, such as storm water management measures will be undertaken with carbonaceous material.	Compliant	No maintenance of any water management infrastructures is undertaken by the use of carbonaceous materials. This was confirmed during the site visit.
7.10.1.72.			Dirty water accumulated in the pit will be pumped to the surface and contained within purpose designed facilities, which will limit infiltration of contaminated water to the groundwater.	Compliant	According to the Water Balance, groundwater removed from the opencast areas is diverted to the East pollution control dam. The water is then used for re-use, with any excess water provided to EWRP for treatment.
7.10.1.73.			Monitoring of groundwater boreholes for water level and quality aspects will continue to be undertaken as described in Part 9.	Compliant	Monitoring of groundwater levels is conducted on monthly basis. Groundwater quality monitoring is conducted on quarterly basis. Results of the water qualities and levels were provided during the audit period.
7.10.1.74.	Groundwater quality	Ponding and infiltration of excess contaminated water used for dust suppression will contribute to the deterioration of groundwater quality (if not mitigated and appropriately managed to avoid excess dust suppression water). The amended layout of the activity will not result in a change to the existing impact identified.	Water retained within the dirty water management system will be used for dust suppression. The volume of water used for dust suppression will be controlled to ensure that excessive ponding or runoff is avoided.	Compliant	According to the Water Balance, mine affected water is utilised for dust suppression from the East pollution control dam, reuse within the dirty water system or is transferred to the EWRP for treatment. The volumes of the contaminated water used for dust suppression were provided for review during the audit period.
7.10.1.75.			Contact time between carbonaceous material and water will be minimised through the implementation of the water management system and the maintenance of surfaces to be free draining.	Compliant	According to the Water Balance (dated July 2020), Dirty water from the carbonaceous material is diverted to the West pollution control dam.
7.10.1.76.			Contaminated water will be contained within the dirty water management system and will be reused.	Compliant	According to the Water Balance (dated July 2020), Dirty water from the carbonaceous material is diverted to the West pollution control dam. Water from the West pollution control dam is pumped to the Raw Water. The water is re-used at the Navigation Dense Medium Separation Plant.
7.10.1.77.			No contaminated water will be discharged or allowed to flow into the surrounding environment without the required authorisations.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), all dirty water from the box cut is diverted to the new East pollution control dam for containment. Khwezela North Colliery indicated that no authorisations for the discharge of dirty water to the environment has been applied and according to the Incident Report (dated July 2019-July 2020), no uncontrolled dirty water to the environment was reported.
7.10.1.78.			As mentioned previously, the groundwater monitoring programme that will have commenced during the Construction Phase (described in Part 9) will continue to be implemented to verify impacts on surrounding groundwater environment.	Compliant	Surface water monitoring programme was provided during the audit period that is implemented continuously.
7.10.1.79.		The amended layout of the activity will not result in a change to the existing impact identified.	Mitigation of the potential impacts of hydrocarbon spillages on surface water (see Ref. no.'s 7.9.1.68 – 71 of Table 7.9 (Construction Phase EIAMAP)) and soil (see Ref. no.'s 7.9.2.5-7.9.2.9 of Table 7.9, and Ref. no.'s 7.10.1.9-10 of this table) will mitigate the resultant impacts thereof on the groundwater.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.1.80.	Air Quality	The drilling and blasting of the overburden and coal layer in the active mining area will generate dust. The amended layout of the activity will not result in a change to the existing impact identified.	Dust suppression will take place following blasting to minimise dust emissions as far as practicable. Blasting during windy conditions will be avoided wherever possible.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the opencast area. According to the Blasting Procedure, it is indicated that no blasting activities are planned to be undertaken during windy conditions.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.81.		Use of a dragline during opencast mining operations will generate dust. The amended layout of the activity will not result in a change to the existing impact identified.	If the dust monitoring programme indicates that excessive dust is generated by the dragline, appropriate mitigation will be applied either by restricting the dragline drop height or implementing dust suppression measures.	Not Applicable	According to the Air Quality Monitoring Report Khwezela Colliery, no dust related concern associated with the use of the dragline were reported, therefore this EMP commitment is not applicable.
7.10.1.82.		The utilisation of vehicles and machinery fuelled by hydrocarbons (e.g. diesel) that will have commenced during the Construction Phase and will continue through the Operational and Decommissioning Phases will continue to contribute to carbon emissions in the area, as well as to the carbon emissions of the region. The amended layout of the activity will not result in a change to the existing impact identified.	AO's buying policy will continue to be implemented to ensure that new and replacement equipment and vehicles purchased incorporate emission-reduction technology.	Compliant	All machinery and vehicles employed are fitted with exhaust systems and are maintained in a good state of repair. No concerns in this regard were evident. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission reduction technology
7.10.1.83.			All vehicles and machinery will be well maintained.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
7.10.1.84.			The impacts and mitigation measures identified in Ref. no.'s 7.9.1.78 – 87 in Table 7.9 (Construction Phase EIAMAP) are also applicable to this environmental aspect throughout the Operational Phase. The amended layout of the activity will not result in a change to the existing impact identified.		
7.10.1.85.	Noise	Open cast truck and shovel mining techniques and equipment will generate noise. The amended layout of the activity will not result in a change to the existing impact identified.	The commitments that will be implemented during the Construction Phase will continue to be implemented during the Operational Phase. See Ref. no.'s 7.9.1.90 – 7.9.1.98 of Table 7.9 (Construction Phase EIAMAP).	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.1.86.	Sensitive landscapes	Loss and disturbance of wetland habitat and species. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits).	Soil stripping activities will be limited to the footprint of the proposed opencast pits only.	Compliant	According to the assessment of the Google Earth Image and approved layout plan, soil stripping activities are undertaken within the approved footprint area and no unnecessary clearing of vegetation was noted.
7.10.1.87.			The development footprint or the adjacent wetlands will be fenced off to prevent access to the wetland areas.	Compliant	According to the assessment of the Google Earth Image and the site visit conducted, all development footprint areas are fenced prior to any disturbances taking place.
7.10.1.88.			All wetland areas adjacent to the mining areas will be clearly demarcated as such and all staff educated as to the sensitivity of the wetland areas.	Compliant	Wetland areas are demarcated. Employees are trained on the aspects of the sensitivity of the wetland areas through induction presentation. Induction presentation was provided for review during the audit period.
7.10.1.89.			Sediment barriers (refer to Appendix 2 in wetland report – see Appendix D6) will be installed between stripped areas and downslope wetlands.	Compliant	Pre-strip activities include the establishment of berms between the stripped area and the opencast pit. It was confirmed during the site visit that berms are constructed surrounding the opencast areas.
7.10.1.90.			The possibility of implementing wetland offsets as a means of mitigating against the loss of wetland habitat within the Lifex Extension Project boundary area is being investigated during the Design and Planning Phase. A wetland offset strategy is being investigated and developed by a suitably qualified person using the SANBI offset guideline methodology (Phase 1 of the Wetland Offset Study has been completed – see the report attached in Appendix D14). If authorisation is granted, management of the offsite wetland area(s) will continue throughout the life of mine of the proposed Lifex Extension Project.	Not Applicable	A Wetland offset strategy was investigated for Khwezela North Colliery. Wetland Mitigation Strategy for Khwezela North Colliery: Navigation Lifex Extension Project (dated June 2017) and compiled by Wetland Consulting Services (Pty) Ltd., presents offset target areas. The Wetland Mitigation Strategy Report determine the required wetland offset targets calculated as per the guidelines developed by SANBI & DWS (2014). The wetland offset strategy has not yet been authorised, therefore, this condition is not yet applicable.
7.10.1.91.		Increased sediment transport into wetlands. The amended layout of the activity will not result in a change to the existing impact identified.	Vegetation clearing and earthworks will be limited to as small an area as possible, preferably no larger than the direct footprint of the proposed development.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, all vegetation clearance of the opencast areas is limited to the approved footprint area and no unnecessary clearance of vegetation was noted.
7.10.1.92.			Bare soil areas falling outside the direct footprint will be revegetated as soon as possible.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, no bare soil falling outside the direct footprint was noted.
7.10.1.93.		Water quality deterioration. The amended layout of the activity will not	As mentioned previously, sediment barriers (refer to Appendix 2 in wetland report – see Appendix D6) will be installed between stripped areas and downslope wetlands.	Compliant	Pre-strip activities include the establishment of berms between the stripped area and the opencast pit. It was confirmed during the site visit that berms are constructed surrounding the opencast areas.
7.10.1.94.			The storm water management plan that was designed prior to the commencement of the Construction Phase will continue to be implemented. This will limit sediment movement off site and	Compliant	It was confirmed during the site visit that all infrastructures designed and contained in the storm water management plan are adhered to. No concerns with regards to storm water management and infrastructures

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		result in a change to the existing impact identified.	prevent the concentrated discharge of flows and high velocity discharges off site.		within and around the opencast areas were noted and reported during the site visit.
7.10.1.95.			Clean water from upslope will continue to be diverted around the opencast area.	Compliant	According to the assessment of the Google Earth Image, site visit conducted and a plan titled clean water drains model (dated August 2019), berms are constructed to divert clean runoff around the opencast area.
7.10.1.96.			Surface run-off from the opencast area will be retained before treatment and / or re-use.	Compliant	According to the Water Balance, all dirty water from the opencast areas is diverted to the East pollution control dam for further re-use.
7.10.1.97.			As mentioned previously, sediment barriers (refer to Appendix 2 in wetland report – see Appendix D6) will be installed between stripped areas and downslope wetlands.	Compliant	Pre-strip activities include the establishment of berms between the stripped area and the opencast pit. It was confirmed during the site visit that berms are constructed surrounding the opencast areas.
7.10.1.98.		Decreased water make to downslope wetlands. The amended layout of the activity will not result in a change to the existing impact identified.	Clean water from upslope will be diverted around the opencast areas and discharged back into the downslope wetland.	Compliant	According to the assessment of the Google Earth Image, site visit conducted and a plan titled clean water drains model (dated August 2019), berms are constructed to divert clean runoff around the box-cut area.
7.10.1.99.		The impacts and mitigation measures identified in Ref. no.'s 7.9.1.112 – 116 of Table 7.9 (Construction Phase EIAMAP) are also applicable to this environmental aspect throughout the Operational Phase. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.100.		In general, the visibility of opencast voids is expected to be low. On the other hand, the associated progression of the overburden stockpile behind the active mining strip is expected to increase the exposure and associated visual impact, especially where heights of 60 – 90 meters above ground are reached. The amended layout of the activity (including the removal of the Schoongezicht West Block: South mini-pit from the infrastructure plan) will result in a reduction of the existing impact identified (due to decrease in overall extent of the opencast pits).	The mining window will be limited to three cuts. This will contribute to minimising the heights and footprints of the overburden stockpiles behind the active mining area by continuous backfilling of opencast voids.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced as yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. It was confirmed during the site visit that mining window is kept to pre-strip, one open cut and two spoil rows.
7.10.1.101.	Visual aspects	The ongoing occurrence of dust plumes associated with blasting and stripping activities will create recurring visual impacts. The amended layout of the activity will not result in a change to the existing impact identified	Implementation of mitigation measures for the management of impacts on soil, vegetation and air quality will indirectly also contribute to minimising the expected visual impacts.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.10.1.102.		The utilisation of stockpiles entails the continued use thereof to store topsoil and overburden which will later be used in rehabilitation programmes. While under continued use, the stockpiles will provide a visual and sound barrier between the mining areas and the closest communities. However, these stockpiles will themselves create a visual impact. The amended layout of the activity will not result in a change to the existing impact identified.	Implementation of mitigation measures for the management of impacts on soil, vegetation and air quality will indirectly also contribute to minimising the expected visual impacts.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.10.1.103.	Sites of Archaeological and cultural importance	Grave G01 is located within the planned footprint of a soft overburden stockpile and will be buried and possibly lost or destroyed unless appropriately mitigated. The amended layout of the activity will not result in a change to the existing impact identified.	Graves in this graveyard will be exhumed and relocated by a reputed undertaker or forensic archaeologist following the required public consultation period and in accordance with legislative requirements (obtaining the applicable authorisation(s)).	Compliant	Khwezela North Colliery indicated that the Graveyard GY02 have been relocated to the Clewer community and proof of the reputed undertaker or forensic archaeologist and the consultation thereof was provided during the audit period.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.1.104.		Graveyard GY01 is located within the planned Navigation East Mining Block footprint, and will be mined through in approximately 2021 / 2022. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.1.105.	Socioeconomic aspects	The planned mining at the proposed Landau Colliery Lifex Extension Project area may, in addition to providing continued employment for existing Landau Colliery employees, create some additional opportunities for employment and skills transfer during this phase. The amended layout of the activity will not result in a change to the existing impact identified.	The commitments in Ref. no.'s 7.9.1.121-126 of Table 7.9 (Construction Phase EIAMAP) will continue to be implemented.	Noted	Khwezela North Colliery Management understands this EMP commitment.
7.10.1.106.	I&APs	It is anticipated that because of the flow towards the pit which acts as a groundwater sink (refer to Ref. no. 7.10.1.65), contamination of surrounding groundwater users cannot take place while the pit is still operational. The amended layout of the activity will not result in a change to the existing impact identified.	Not required.	Noted	Khwezela North Colliery Management understands this EMP commitment.
7.10.1.107.		As mentioned previously, a groundwater cone of depression will form around the opencast pits due to dewatering of the mining areas. Based on groundwater modelling, the extent of the drawdown cone is not expected to exceed 1 km from the opencast pits due to the geology of the surrounding area. No groundwater users were located within 1 km of the proposed mining areas at the time of writing, and as such it is not expected that existing legitimate groundwater users will be affected by the dewatering at the proposed Landau Colliery Lifex Extension Project. However, this will be verified through groundwater monitoring. The amended layout of the activity will not result in a change to the existing impact identified.	Should groundwater monitoring indicate that the yield of the groundwater of surrounding users has become affected, a third party will be appointed to determine if the impact is so significant that pre-mining water use cannot continue and whether it was caused by the planned mining activities. If it is determined that the mining activities are responsible for a significant impact, appropriate alternatives will be developed in consultation with the affected party.	Not Applicable	No complaints from downstream water users were reported, therefore this EMP commitment is not applicable.
7.10.1.108.		The impacts and mitigation measures identified in Ref. no.'s 7.9.1.127-142 of Table 7.9 (Construction Phase EIAMAP) are also applicable to this environmental aspect throughout the Operational Phase. The amended layout of the activity will not result in a change to the existing impact identified.			
7.10.2 PROGRESSIVE REHABILITATION OF OPENCAST VOIDS The amended layout of the activity will not result in a change to the existing impacts identified with regard to progressive rehabilitation of opencast voids.					
7.10.2.1.	Geology	The opencast voids will be sequentially backfilled with carbonaceous overburden, then non carbonaceous overburden. The unconsolidated material will fill up the areas previously occupied by geological strata, but cannot replicate	A Digital Terrain Model will be developed and used to determine the cut and fill volumes required to backfilled to a free draining topography.	Compliant	Rehabilitation designs (based on a 1:6 slopes) and the Digital Terrain Model ("DTM") are compiled by ACES, from which the rehabilitation plans are developed. Annual reviews of the rehabilitation plans are undertaken, and annual rehabilitation budgets compiled.
7.10.2.2.			The post-mining topography will be modelled so as to ensure that the rehabilitated areas are free draining.	Compliant	Rehabilitation designs (based on a 1:6 slopes) and the Digital Terrain Model ("DTM") are compiled by ACES, from which the rehabilitation plans

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		pre-mining conditions. The secondary impacts of the backfilled overburden on groundwater flow and surface stability (and thus future land capability and land use) are the main issues of concern, and are discussed in more detail below			are developed. Annual reviews of the rehabilitation plans are undertaken, and annual rehabilitation budgets compiled.
7.10.2.3.			Rehabilitation of the mined out voids will take place as mining progresses, due to the nature of the roll-over mining technique to be used.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. Therefore, no backfilling of the mined-out pits has commenced yet.
7.10.2.4.			The surface of the rehabilitated areas will be shaped to be free draining and to return runoff to the respective pre-mining receiving water bodies, as far as practicable.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. Therefore, no backfilling of the mined-out pits has commenced yet.
7.10.2.5.			Landau Colliery will ensure that rehabilitation of the opencast area follows behind the active mining cut, and that at any given time no more than the pre-strip area, one open cut and two spoils rows are unavailable for rehabilitation.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. Therefore, no backfilling of the mined-out pits has commenced yet.
7.10.2.6.	Soil	I Stripping and replacing ('live' placing) of soils will result in the mixing of the soil's A and B-horizons with subsequent reduction in fertility, water holding capacity and buffer capacity against compaction. Stripping of lower quality subsoil together with high quality topsoil will also result in a reduction of soil quality and subsequent land capability. It is not anticipated that the proposed amendment activities would result in the change to this impact identified	Stripping of soils ahead of mining will continue as specified in Ref. no. 7.10.1.3-6, above.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
7.10.2.7.			Open pits will be backfilled and spoil surfaces will be levelled and shaped to ensure that the post mining topography is free draining.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. Therefore, no backfilling of the mined-out pits has commenced yet.
7.10.2.8.			Topsoil will be replaced in sufficient quantities to render a soil depth similar to the stripping depth after levelling (refer to Table 8 of the specialist soil report in Appendix D1).	Compliant	Topsoil stockpiling is conducted in terms of the Topsoil Management Procedure which include the specified topsoil quantities that must be stockpiled at certain intervals.
7.10.2.9.			Management of the soils (as described above), and the live placing when possible of soils behind the advancing mining cut will ensure that the soils used for rehabilitation will be kept in good condition and that erosion will be minimised.	Noted	Khwezela North Colliery Management understands this EMPr commitment.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.2.10.			Soil amelioration and revegetation will be done as described in section 7.2.3 to 7.2.6 in the specialist soil report (Appendix D1), as far as practicable.	Not Applicable	No soil amelioration and revegetation are undertaken as yet, therefore this EMP commitment is not applicable.
7.10.2.11.		Rehabilitated soil surfaces will initially be exposed and susceptible to erosional forces; this could lead to a loss in soils.	Surface rehabilitation will take place throughout the year and will follow the levelling progress. This will shorten the period during which the replaced soils are exposed. If erosion occurs, it will be ameliorated through appropriate methods (described in Ref. no.'s 7.10.2.8 – 10, above).	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced as yet since the mine is still in the initial stage of mining where concurrent rehabilitation is not yet applicable. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. The topsoil is placed, levelled using a small dozer (Cat D6 or equivalent), enriched with fertiliser, and then seeded with a conventional seed mix to establish a vegetative cover. It was confirmed during the site visit that mining window is kept to pre-strip, one open cut and two spoil rows.
7.10.2.12.		The movement of vehicles and machinery over rehabilitated areas will compact the soils changing the structure and function of the soils, if not appropriately managed. This could lead to secondary impacts on land capability, land use, surface water and groundwater which are discussed below.	Movement of vehicles and machinery will be limited to access and haul roads.	Compliant	It was confirmed during the site visit that movement of vehicles and machinery is limited to the access and haul roads.
7.10.2.13.		The impacts and mitigation measures identified in Ref. no.'s 7.10.1.9-10 of this table are also applicable to this environmental aspect throughout the Operational Phase.			
7.10.2.14.	Land capability	The impacts on soils as described previously will cause an overall reduction in land capability. However, the land capability in the immediate area of where the opencast voids were located will gradually and progressively change from mining back to the agreed capability, if the soil mitigation measures identified in this document are followed.	Implementation of the identified soil management measures will ensure that the agreed post mining land capability will be restored.	Noted	Khwezela North Colliery Management understands this EMP commitment.
7.10.2.15.	Land use	A reduction in land capability will reduce crop production potential and subsequent crop yields. However, the pre-mining land uses, which are mainly crop farming and grazing, can be reinstated after rehabilitation.	Implementation of the identified soil management will ensure that the pre-mining land uses of crop farming and grazing can be reinstated after rehabilitation.	Noted	Khwezela North Colliery Management understands this EMP commitment.
7.10.2.16.		Rehabilitated areas behind the active mining window will gradually and progressively be released for crop farming and grazing use as natural processes become re-established. This will enable the surface of the mined out areas to become economically productive again, and possibly to provide new habitat for animal life that will have been chased away during the Construction and Operational Phases.			
7.10.2.17.		Despite the backfilling and rehabilitation of mined out voids to be free-draining and capable of supporting post-mining land uses such as crop cultivation and grazing, certain land uses will most likely not be possible in these areas in future. Such land uses include the use of	Although the mine is committed to rehabilitating the mining area to at least grazing potential, a post-mining Land use model / plan will be developed for the proposed Landau Colliery Lifex Extension Project, taking the most up-to-date available technologies and techniques, as well as authority requirements and community needs, into account. This will ensure that the post-mining land capability and land uses will be sustainable over the	Compliant	The report, Post Mining Land Capability Assessment for Landau Colliery, dated October 2014 was developed and compiled by Digby Wells Environmental which takes into account the most up-to-date available technologies and as well as authority requirements and community needs.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		rehabilitated mined out areas for the construction of buildings, amongst others. Unless appropriate and feasible technologies and / or techniques become available in future that may enable mined out areas to support infrastructure, this impact will be unavoidable.	long-term, and will optimise the range of land use options that will be available for future land users to choose from, and need not only be limited to grazing potential.		
7.10.2.18.	Vegetation	Once the topsoil has been landscaped, re-vegetation will be implemented to minimise soil erosion and to re-establish vegetation that will, over time, become self-sustaining.	The Landau Seed mix will be used for re-vegetation. This is described in more detail in Part 10.2.3.2 of this document.	Not Applicable	According to the Vegetation Monitoring Procedure, sow seed mixture given below with should be utilised for re-vegetation: <ul style="list-style-type: none"> Eragrostis Cynodon dactylo Chloris gayana kikuyu seed (whittet) Paspalum notatum No seeding of the backfilled opencast pits has been undertaken as yet, therefore this EMP commitment is not applicable as yet.
7.10.2.19.			Re-vegetation of backfilled, shaped and topsoiled mined out voids will take place during the s' growing season. This will shorten the period during which the replaced soils are exposed, and will enhance the success of rehabilitation.	Not Applicable	No backfilling of the mined out opencast voids was undertaken during the audit period, therefore no re-vegetation, shaping and topsoil of the voids has been undertaken.
7.10.2.20.		Rehabilitation sites are prone to the establishment of invader plants and declared weed species.	As per the Agricultural Resources Act (Act 43 of 1983), weeds and alien invader plants will continue to be monitored and controlled within the entire Landau Colliery mine boundary area, including the proposed Lifex Extension Project area. As mentioned previously, rehabilitated mined out areas will be vulnerable to invasion by such species, and will accordingly be more intensively and closely managed.	Compliant	An alien invasive eradication plan dated May 2019 was developed and is applied through the LOM.
7.10.2.21.	Animal life	Noise from vehicles and machinery used for rehabilitation may frighten any remaining animals and in turn cause them harm.	Mining vehicles and machinery will be limited to access and haul roads as well as disturbed mining areas and rehabilitation areas.	Compliant	It was confirmed during the site visit that movement of vehicles and machinery is limited to the access and haul roads.
7.10.2.22.		The continued human presence on site may affect the remaining animal life as hunting of animals for food or protection may occur, unless appropriately managed.	All on site employees will be made aware of the importance of animal life through on site notices and an environmental awareness plan.	Compliant	All on site employees are made aware of the importance of animal life through induction presentations.
7.10.2.23.			A warning and punishment system (such as fining of guilty parties) will be implemented if any employees or contractors are discovered poaching.	Compliant	No poaching was identified at Khwezela North Colliery. Should such occur, a SHE non-compliance will be raised and consequence management will be implemented.
7.10.2.24.			Access to the rehabilitated areas will be strictly controlled.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.25.			Management of soils, vegetation and surface water during rehabilitation, as well as a reduction in the noise generated in rehabilitated areas, would ensure that rehabilitated areas provide habitat for animal species and would likely encourage animal species to return to the site.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.26.		The impacts and mitigation measures identified in Ref. no.'s 7.10.1.40-43 of this table are also applicable to this environmental aspect throughout the Operational Phase			
7.10.2.27.	Surface Water Flow Patterns	Removal of surface water management infrastructure and rehabilitation of mined out voids will restore the topography to allow surface water flow patterns to return to as close to pre-mining conditions as possible, although the surface may be higher than pre-mining due to the bulking of overburden. Rehabilitation will be designed with this in mind, and therefore it is not anticipated	Rehabilitated areas will be monitored to ensure that the area is free draining.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.28.			Actual post-rehabilitation topography will be modelled to ensure that the planned topography has been implemented.	Not Applicable	A post-rehabilitation topography report has not been developed as yet since mining activities have recently commenced and no removal of surface water management infrastructure and rehabilitation of mined out voids is proposed as yet, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		that higher velocity runoff and resultant erosion will take place			
7.10.2.29.	Surface Water Quantity	Levelling and shaping of the backfilled spoils will reinstate free draining conditions, and will ensure that the contribution of the site to the receiving catchment will be restored as close to pre-mining conditions as possible, and that ponding of surface water on rehabilitated areas	Rehabilitated areas will be monitored to ensure that the area is free draining.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.30.			Actual post-rehabilitation topography will be modelled to ensure that the planned topography has been implemented.	Not Applicable	A post-rehabilitation topography report has not been developed as yet since mining activities have recently commenced and no removal of surface water management infrastructure and rehabilitation of mined out voids is proposed as yet, therefore this EMP commitment is not applicable.
7.10.2.31.		Initially rehabilitated areas will be exposed and soil erosion may take place. This could lead to an increase in suspended particles in surface water runoff and the resultant soil loss. The extent of this impact will be reduced by the removal of the Schoongezicht West Block: South mini-pit.	Vegetation will be re-established on backfilled voids that have been levelled and topsoiled to provide cover for the soil, which will reduce soil erosion and the resultant elevated suspended solids in surface runoff. Water monitoring will continue during the remaining LOM, and should provide information pertaining to the quality of surface runoff from rehabilitated areas.	Not Applicable	No backfilling of the mined out opencast pits has commenced; therefore, no re-vegetation, levelling and topsoil of the mined-out pits has been undertaken.
7.10.2.32.		The impacts and mitigation measures identified in Ref. no.'s 7.9.1.68-71 of Table 7.9 (Construction Phase EIAMAP) are also applicable to this environmental aspect throughout the Operational Phase.			
7.10.2.33.	Groundwater Quantity (levels)	Groundwater recharge will increase because of the easier percolation of infiltrating surface water through the unconsolidated material in the backfilled voids. Where rehabilitated areas fall within the draw down cone, this groundwater will be drawn down to the active opencast voids and incorporated into the dirty water management system for re-use or treatment at the EWRP. However, as the mining window advances, rehabilitated areas will begin to fall outside of the draw down cone created by the open pit - the groundwater level in such rehabilitated areas will gradually increase to more or less pre-mining levels.	None.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.34.	Groundwater Quality	Lower pH environment (see reactions 2 and 3 above). As the groundwater leaves the coal-containing areas, it will mix with better quality groundwater and the pH and bicarbonate values will be buffered back to more acceptable levels. Acid base accounting (ABA) was conducted on samples from each planned mining area. Results of the ABA showed that the rock at the Landau Colliery Lifex Extension Project is potentially acid forming, and should be managed as such to ensure that all reasonable measures are taken to minimize pollution and prevent pollution spread. In the Operational Phase the overall inorganic salinity of the water will increase over time as will be evident in the total dissolved solids (TDS) content of the water. Indicator parameters like sulphate and magnesium can also be expected to	Coal discard material from the Old Navigation dump will be placed first into the Navigation East Pit opencast void and then covered with non-carbonaceous overburden. Similarly, where practicable (e.g. where truck and shovel mining methods are used), carbonaceous overburden will be backfilled into the opencast void first, followed by non-carbonaceous overburden. Placing the carbonaceous material at the bottom of the pit below the coal horizon will ensure permanent inundation under water after Closure. This will create a redox environment for the carbonaceous material and will minimise the generation of AMD as there will be little to no oxygen available.	Not Applicable	No backfilling of the mined out opencast pits has commenced, therefore no placing of coal discard material into the pits has commenced.
7.10.2.35.			Backfilled layers will be compacted through the movement of bulldozers and trucks over the area and rehabilitation surfaces will be shaped to be free draining. This will contribute to a reduction in infiltration of surface runoff to the groundwater.	Not Applicable	No backfilling of the mined out opencast pits has commenced; therefore, this commitment is not applicable.
7.10.2.36.			No contaminated water will be discharged or allowed to flow to the surrounding environment without the required authorisations.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), all dirty water from the opencast areas is diverted to the East pollution control dam for containment. No authorisations for the discharge of dirty water to the environment has been applied during the audit period and no uncontrolled dirty water to the environment was noted during the site visit.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.2.37.		increase significantly from the ambient concentrations. With AMD reactions becoming active the pH and bicarbonate alkalinity values of the water can be expected to decrease. The majority of metals have very low solubility in the normal pH range (pH 6 to 8), but will go into solution as a result of the Metals should also precipitate and the sulphate and TDS concentrations should decrease through dilution. Outside the boundaries of the mineable coal reserves the Karoo rock types usually become thinner or they are absent altogether. Over the long-term, the groundwater quality will improve because of dilution effects with high quality recharging water. Such recharge will result in a stratified water quality distribution in the mine void with the best quality water on top and the more saline (and with slightly higher specific gravity) water in the bottom of the void.	Infrastructure to capture and temporarily store the contaminated groundwater that will decant from the rehabilitated mining areas will be designed as part of the Planning Phase. Towards the end of the Operational Phase and during the Decommission Phase, and after implementation of the rehabilitation plan, the sufficiency of the planned water management infrastructure for Closure purposes will be reassessed and, if necessary, additional infrastructure constructed. The mine water decant will be transferred to the EWRP for treatment to drinking water standards and either sold onwards or returned to the applicable catchments.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable and furthermore, no decommissioning and closure phases have commenced as yet.
7.10.2.38.		The impacts and mitigation measures in Ref. no.'s 7.10.1.78-79 of this table also apply to this environmental aspect.			
7.10.2.39.	Air Quality	Truck transport and road dust entrainment which will if left unmitigated result in the generation of dust that will lower the air quality within the study area.	Dust emission from roads will be controlled through wet and/or chemical stabilisation	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission.
7.10.2.40.			Strict speed control will be implemented on the gravel roads within the project boundary area.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
7.10.2.41.			Movement of vehicles will be restricted to purpose-built haul roads within the Lifex Extension Project boundary area, as well as to predetermined routes outside of the boundary area.	Compliant	It was confirmed during the site visit that movement of vehicles and machinery is limited to the access and haul roads.
7.10.2.42.		Materials storage, handling and transfer operations during rehabilitation which will if left unmitigated result in the generation of dust that will lower the air quality within the study area	Clean water will be used for dust suppression purposes in rehabilitation areas. The volume of water used for dust suppression will be controlled to ensure that excessive ponding or runoff is not generated.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.43.		Earthmoving operations which will if left unmitigated result in the generation of dust that will lower the air quality within the study area.			
7.10.2.44.		Open areas (wind-blown emissions) which will if left unmitigated result in the generation of dust that will lower the air quality within the study area.	Exposed areas will be revegetated as soon as practicable.	Not Applicable	No unnecessary exposed soil was noted during the site visit.
7.10.2.45.		The utilisation of vehicles and machinery fuelled by hydrocarbons (e.g. diesel) that will have commenced during the Construction Phase and will continue through the Operational and Decommissioning Phases will continue to contribute to carbon emissions in the area, as well as to the carbon emissions of the region.	AO's buying policy will continue to be implemented to ensure that new and replacement equipment and vehicles purchased incorporate emission-reduction technology.	Compliant	All machinery and vehicles employed are fitted with exhaust systems and are maintained in a good state of repair. No concerns in this regard were evident. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission reduction technology
7.10.2.46.			All vehicles and machinery will be well maintained.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.

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7.10.2.47.	Noise	Ambient noise levels will reduce as the mining window advances away from the area being rehabilitated. However, the use of earthmoving machinery and vehicles during rehabilitation will most likely continue to generate noise which would continue to affect adjacent land users who are located close to the proposed activity areas, and would also discourage animal life from returning to the rehabilitated areas until the vehicles and machinery are removed from the area. Overall, it is anticipated that noise levels will be reduced.	In line with AO's buying policy, vehicles that are purchased will have a cab sound pressure level of below 85 dB.	Compliant	Noise Monitoring reports are conducted that include the selection of vehicles in relation to the sound pressure levels. Noise monitoring reports to determine the noise levels was provided for review during the audit period.
7.10.2.48.			Vehicles will be maintained in good working order to minimise noise during transportation.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
7.10.2.49.			All flaps and tailgates of vehicles will be secured.	Compliant	Site visit confirmed that this EMP commitment is being complied with.
7.10.2.50.			Roads will be kept at a low gradient where possible and will be well maintained.	Compliant	It was confirmed during the site visit that access and haul roads are well maintained.
7.10.2.51.			Replaced spoils will be landscaped to be free draining, but will avoid steep slopes and concentrated runoff.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.52.			Rehabilitated areas will be revegetated as soon as possible following completion of the earthworks to minimise erosion.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.53.			Regular long-term follow up of rehabilitated areas as per the monitoring guidelines in the rehabilitation plan will be implemented to ensure the successful establishment of vegetation and to survey for any erosion damage on site.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.54.			Erosion damage will be repaired immediately.	Not Applicable	No rehabilitation of the opencast pits has commenced, therefore this EMP commitment is not applicable.
7.10.2.55.			Mitigation of impacts on soils and vegetation, as well as surface water, will also ensure that the impacts on wetlands are minimised during rehabilitation	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.56.	Visual aspects	Changes to topography, the establishment of vegetation and the replacement of soils will have a positive impact on the visual quality of the landscape. The backfilling of the mined out opencast voids will remove the depressions of the opencast pits from the surface, as well as reduce the size of the overburden and soil stockpiles, all of which will have a positive visual effect.	The mitigation measures set out in this table for the management of impacts on topography, soil, surface water, vegetation, sensitive landscapes, groundwater and land use will ensure that the associated positive impacts on the visual landscape will be optimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.57.		The generation of dust during the initial stages of rehabilitation will temporarily add to the visual impacts in the area, but it is anticipated that such impacts will occur over a limited period.	Mitigation measures set out in Ref. no.'s 7.10.2.39-46 above will be implemented to minimise dust related impacts on the visual impacts.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.58.	Sites of Archaeological and cultural importance	Graveyard GY03 and the Historical Structures and Historical Houses will not be directly disturbed by the proposed Lifex Extension project. However, GY03 was identified as being at risk of damage. The graveyard could be defaced or otherwise damaged due to the relative proximity to the proposed new infrastructure at the Lifex Extension Project.	The graveyard GY03 will be conserved according to the Graveyard Conservation Plan attached as Appendix D8.2. It is anticipated that the implementation of the said conservation plan will protect the graves in the future and could even enhance their current condition.	Non-Compliant	According to the Graveyard Conservation Plan (dated 20 November 2019), the following should be implemented for the protection of the graveyard GY03: <ul style="list-style-type: none"> GY03 should be demarcated with a fence or with a wall and it should be fitted with an access gate. Regulated visitor hours should be implemented that is compatible with mine safety rules. Corridors of at least 20m should be maintained between the graveyard's fences and any developmental components such as road or other infrastructure that may be developed in the future. The graveyard should be inspected on a monthly basis. Inspections should be noted in an inspection register. The register should outline the state of the graveyard during each inspection. Reports on damages to any of the graves or the graveyards fence (wall) and access gate should be followed with the necessary maintenance work. Maintenance work should be recorded in the inspection register.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					In relation to the above, the following were noted during the site visit and document review: <ul style="list-style-type: none"> No fence is erected at the identified graveyard. No visitor's hours are implemented and erected. Monthly inspections are undertaken by Khwezela North Colliery Environmental Department, which include the inspection of the identified graveyard. However, the inspection report does not include the state of the graveyard. No maintenance of the identified graves is conducted. No damages to the graves were noted. Khwezela North Colliery must ensure that the Graveyard Conservation Plan is implemented for the protection of the Graveyard GY03.
7.10.2.59.			The conservation of these structures will be proactively addressed through the incorporation thereof into the environmental training and awareness programme. By educating the workforce about these structures, and possibly imparting a sense of respect for the cultural heritage associated with the said structures, the historical structures and houses will be protected through behaviour, and not defaced or destroyed.	Compliant	As per the environmental awareness training presentation provided for review, training and awareness regarding graves, heritage and archaeological structures are provided to employees.
7.10.2.60.	Socioeconomic aspects	Rehabilitation of the mined-out areas will enable the land to support alternative land uses after mining. This will ensure that the post-mining land uses will be able to contribute in future either to the local and regional GDP and possibly provide jobs, or provide resources to the local community	Management of the impacts of opencast mining and concurrent rehabilitation on topography, soil, ecology, surface water, groundwater, land capability and land use during the Operational Phase will ensure that the positive impacts of rehabilitation on the regional socio-economy will be maximised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.61.			Although the mine is committed to rehabilitating the mining area to at least grazing potential, a post-mining Land use model / plan will be developed for the proposed Landau Colliery Lifex Extension Project, taking the most up-to-date available technologies and techniques, as well as authority requirements and community needs, into account. This will ensure that the post-mining land capability and land uses will be sustainable over the long-term, and will optimise the range of land use options that will be available for future land users to choose from, and need not only be limited to grazing potential.	Not Applicable	A post-rehabilitation topography report has not been developed as yet since mining activities have recently commenced and no removal of surface water management infrastructure and rehabilitation of mined out voids is proposed as yet, therefore this EMP commitment is not applicable.
7.10.2.62.	I&APs	Occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected by nuisance noise generated by the operation of machinery and movement of vehicles during rehabilitation. However, the noise levels will decrease as rehabilitation activities move away from the sensitive receptors, and also as active rehabilitation winds down and is replaced with natural regeneration processes (e.g. regrowth of vegetation).	Implementation of noise management measures as described previously will reduce the anticipated noise-related impacts on I&APs.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.63.			Implementation of air quality management measures as described previously will reduce the anticipated dust-related impacts on I&APs.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.64.		Occupiers of the properties surrounding the Landau Colliery Lifex Extension Project will likely be affected by the visual effects of the rehabilitation. The impacts of rehabilitation on the visual quality of the surrounding environment were described in Ref. no.'s 7.10.2.56-57, above	Implementation of management measures to reduce visual impacts as described previously, will reduce the negative impacts and enhance the positive impacts on I&APs associated with the rehabilitation of the mined out areas.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.2.65.		Unless appropriately mitigated, the loading, dumping and shaping of	Dust suppression will be implemented during rehabilitation, as described previously, above.	Not Applicable	No rehabilitation of the opencast pits have commenced, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONME NTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		overburden, subsoil and soil during rehabilitation of the mined out voids can generate dust which may settle on nearby vegetation and affect their functioning. Where this occurs on grazing veld or cultivated maize, this may affect the current land use of adjacent landowners and land users.			
7.10.2.66.		Impacts and mitigation measures identified in Ref. no.'s 7.9.1.135-142, and Ref. no.'s 7.10.1.106-107, are also applicable here.			
7.10.3 UTILISATION OF SURFACE INFRASTRUCTURE					
7.10.3.1.	Geology	No significant impacts are expected to occur as a result of the utilisation of the planned surface infrastructure.			
7.10.3.2.	Topography	No further significant impacts are expected to occur on topography during the Operational Phase as a result of the utilisation of surface infrastructure. Any impacts on topography would likely relate to maintenance issues such as potholes and uneven road surfaces, or water management berms that require repair and maintenance, for example. The amended name, location and or layout will not result in a change to the existing identified impact.	Surface infrastructure will be inspected, and if necessary maintained, regularly to ensure it is in good working order. This will minimise the need to disturb further surface areas during the Operational and Decommissioning Phases.	Compliant	Inspection of the surface infrastructures is conducted on a monthly basis by Khwezela North Colliery Environmental Department. Monthly inspection reports were provided for review during the audit period.
7.10.3.3.			Operational use of buildings, store areas, etc. will be kept to within the predetermined footprint areas (as shown on the Mining and Surface Infrastructure Plan attached as Appendix B2).	Not Applicable	No buildings are constructed within the Lifex Mining Project.
7.10.3.4.			The stockpiling of overburden and coal will commence at the beginning of the Operational Phase at the Emergency stockpile and tipping area. The size of the overburden and coal stockpiles will vary throughout the Operational Phase, and may contribute to the visual impacts of the proposed Lifex Extension Project on the receiving environment (refer also to Ref. no. 7.10.3.236, below). Also, the coal tip and stockpile area, as well as the overburden stockpiles, will be isolated from the receiving water environment, since they will form part of the dirty water management system at Landau Colliery's Navigation Section. This change in surface water flow patterns and related impacts on catchment yield and water quality will continue throughout the Operational Phase. The amended name, location and or layout will not result in a change to the existing identified impact	Mitigation of the expected visual and surface water impacts of the overburden and coal stockpiles, and the coal tipping area, on the receiving environment will simultaneously address the expected impacts on topography.	Noted
7.10.3.5.		The disposal of coal discard on the Blaauwkrans Co-disposal Facility Extension will lead to an increase in the footprint and height of the existing facility. The resultant change in the topography as a result of this will has associated visual impacts as well as impacts on surface water flow patterns. These are	Mitigation of the expected visual and surface water impacts of the proposed Blaauwkrans Co-disposal Facility Extension on the receiving environment will simultaneously address the expected impacts on topography as far as practicable. The concurrent in situ rehabilitation of the sidewalls of the Blaauwkrans Co-disposal Facility Extension will contribute to a reduction in the visual impacts resulting from the change in topography associated with Activitv 30 (coal discard disposal).	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		discussed in more detail in Ref. no.'s 7.10.3.56-71 (Surface water) and Ref. No. 7.10.3.239 (Visual), below. The amended name, location and or layout will not result in a change to the existing identified impact			
7.10.3.6.	Soil	The use of haul roads, including the bridge over the Schoongezichtspruit, will impact on soils as follows: • All impacts on soils during the Construction Phase will remain during the Operational Phase. • Coal and coal dust pollution along haul roads will cause salt pollution which will alter soil chemical status negatively. The amended name, location and or layout will not result in a change to the existing identified impact.	Implementation of the dust suppression measures discussed in Ref. no.'s 7.10.3.208-215 will minimise the potential impacts of settling coal dust on soil chemical properties.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.7.			Spillages of any material that may cause pollution of surface water resources and soils, such as carbonaceous material, outside of the isolated dirty water management areas, will be immediately removed and mitigation measures implemented when necessary (see also Ref. no.'s 7.10.3.152).	Not Applicable	No spillages that may cause pollution of surface water resources and soils were reported and noted during the site visit. If spillages occur, all are handled as hazardous waste and are cleaned and disposed off at the hazardous waste bins and further disposed in a licenced landfill site.
7.10.3.8.		The use of the conveyor to transport coal will have similar impacts to those identified above for the use of haul roads, relating to impacts on soil chemistry due to contact with carbonaceous material or contaminated water. The amended layout of the conveyor route will result in a reduction of the existing identified impact (due to a decrease in the disturbance footprint).	The implementation of dust management measures along the conveyor, as discussed in Ref. no.'s 7.10.3.208-215, and surface water management measures, as discussed in Ref. no.'s 7.10.3.68- 74 and 7.10.3.83-89, as well as 7.10.3.190, will simultaneously address the potential indirect impacts on the soil.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.9.		Maintenance and use of pollution control dams and silt traps will impact on soils as follows: • All impacts on soil during the construction phase will remain throughout the operational phase (productive soil functions will remain ceased). • Possible contamination of soils (salts) by leaking dams or overflows of pollution control dams during the rainy season will alter soil chemical status negatively. The amended layout and locations of the PCDs will result in a reduction of the existing identified impact (due to a decrease in the disturbance footprint and the relocation of the West PCD into a less sensitive area).	Good management of the surface water management system and infrastructure (as described in Ref. no.'s 7.10.3.68-71 and 7.10.3.109-115) will simultaneously, indirectly, minimise any secondary impacts of the use of the pollution control facilities on the soil in the receiving environment	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.10.			Pollution control dam levels will be frequently monitored in order to prevent overflows	Compliant	Monitoring of the pollution control dam levels is conducted on monthly basis by Khwezela Colliery Environmental Department. Monthly monitoring or inspection reports of the pollution control dam were provided for review during the audit period. No overflows of the dams was reported during the site visit.
7.10.3.11.			Frequent inspections of surface water management infrastructure will be carried out to identify leaks and immediate reparation thereof.	Compliant	Monitoring of the surface water management infrastructures is conducted on monthly basis by Khwezela Colliery Environmental Department. Monthly monitoring or inspection reports of the pollution control dam were provided for review during the audit period. No leaks from the structures were reported during the site visit.
7.10.3.12.			In the event of spillage from a pollution control dam, any sludge will be immediately removed.	Not Applicable	No sludge that require immediate clean-up and removal was identified at the pollution control dams.
7.10.3.13.			Water management trenches and silt traps will be frequently cleared and appropriately maintained.	Compliant	Trenches and silt traps are inspected on a regular basis by the respective Section Head, Engineers and as part of the monthly EMS inspections. Should any concerns/issues be identified, such are reported as incidents and logged on Enablon System for actioning. The responsible contractor appointed for silt clean-up is informed of the issues and therefore the trenches and silt traps are cleaned. No issues were noted during the site visit.
7.10.3.14.		With regard to the use of power lines, all impacts on soils that occurred during the Construction Phase will remain during the Operational Phase. No further impacts are expected to occur during the Operational Phase. The amended name,	Any maintenance work that may be required on the power lines will be undertaken in such a manner as to avoid disturbing the soils.	Not Applicable	According to Khwezela North Colliery, no maintenance work on powerlines was undertaken during the audit period.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		location and or layout will not result in a change to the existing identified impact.			
7.10.3.15.		Regular vehicular and foot traffic at the offices and workshop complex may further compact and erode soils if designated walkways and parking areas are not utilised - this will affect the structure and functioning of the soils remaining within the office areas. The amended name, location and or layout will not result in a change to the existing identified impact.	Vehicle and foot traffic will be restricted to designated roads, parking areas and walkways.	Compliant	It was confirmed during the site visit that vehicle and foot traffic are restricted to designated roads, parking areas and walkways.
7.10.3.16.			Site notices will be erected to inform employees to use designated walkways only.	Compliant	Site notices are erected on site to inform employees to use designated walkways.
7.10.3.17.		The storage and use of hydrocarbons and other potentially contaminating materials could lead to the spillage of such contaminants to the surrounding soils, which would result in the negative alteration of the soil chemistry. The amended name, location and or layout will not result in a change to the existing identified impact.	The designated hydrocarbon and chemical storage areas, as well as the refuelling station will be lined with a suitable material (such as concrete) to prevent spillage of contaminating substances onto the soils, and the consequent impacts on surface water and groundwater. The lining will be maintained as necessary during the Operational Phase to ensure that impacts on the receiving soils are avoided throughout the Life of Mine. Where oil drums are used for storage, these will be stored in bunded areas on concrete and under a roof.	Compliant	Designated hydrocarbon and chemical storage areas are stored in bunded areas. All spillages are reported on the Enablon system and the Environmental Coordinator is informed of the incident through the Enablon system. 
7.10.3.18.			Vehicles will be serviced in concrete lined service bays with berms and oil traps. Refuelling will preferentially occur in a designated concrete lined station but if in-field refuelling must occur, drip trays will be used.	Compliant	It was confirmed during the site visit that vehicles are serviced in concrete lined service bays with berms and oil traps and refuelling occurs in a designated concrete lined.
7.10.3.19.			All accidental fuel and oil spillages will be cleaned up immediately and all mechanical equipment will be serviced at a suitable facility. See also Ref. no.'s 7.9.2.95 - 7.9.2.99 in Table 7.9 (Construction Phase EIAMAP).	Compliant	All fuel and oil spillages are handled as hazardous waste and are removed and disposed of at the hazardous waste bins and further disposed in a licenced landfill site. This is conducted in accordance with Waste Management Procedure, Incident Reporting Procedure and Hydrocarbon and Chemical Handling Procedure. No spillages were noted during the site visit.
7.10.3.20.		Possible spillages of mine water from the conveyance pipelines could lead to soil contamination, as described in Ref. no. 7.10.3.186-188, below. The amended name, location and or layout will not result in a change to the existing identified impact.	The pipeline will be inspected on a monthly basis to identify potential leaks or weaknesses in the pipeline where maintenance may be required.	Compliant	Inspections of the conveyance pipelines are conducted on monthly basis by Khwezela Colliery Environmental Department. According to the monthly reports provided for review, no pipeline leaks were reported.
			If necessary, leaks or weak areas in the pipelines will be immediately repaired, and any soil that may have come into contact with the mine water leaking from the pipeline should be rehabilitated. Depending on the severity of the leak, and the timeframe of exposure of the receiving soils to the mine water, affected soils will be monitored and assessed to determine the most appropriate rehabilitation method that should be used, for example bioremediation or soils removal and disposal in accordance with the applicable legislative requirements.	Compliant	Inspections of the conveyance pipelines are conducted on monthly basis by Khwezela Colliery Environmental Department. Monthly inspection reports were provided for review during the audit period. No pipeline leaks were noted during the audit period.
7.10.3.21.		Utilisation of the soil and overburden stockpiles that were constructed during the Construction Phase will have no further impact on soils, unless the footprints of the stockpiles increase, in which case the following impacts are expected to occur on the soil as a result: • The topsoil stockpiles will cover the natural soil surface and cause the productive functions of soil to cease. •	The mitigation measures presented in Ref. no.'s 7.9.1.5-12 of Table 7.9 (Construction Phase EIAMAP) also apply here.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		Soil stockpiles will be susceptible to erosional forces such as wind and runoff. This could lead to a loss in soils. Possible contamination of soils by spillages of fuel or oil by mechanical equipment. The amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.22.		The dumping and storage of coal on coal stockpiles and at the ROM tip will have the following impacts on soil: All impacts of the Construction Phase will remain during the Operational Phase until the site is rehabilitated. • Possible salt pollution by surface runoff and leachates from the stockpile will alter soil chemical status negatively in the immediate surrounding area, unless appropriately managed. The amended layout and location of the ROM tip and stockpile area will result in a reduction of the existing identified impact (the new location is in a less sensitive area)	The storage and tipping of ROM coal will remain within the designated areas that will have been constructed during the Construction Phase. Any possible expansion of the ROM tipping area or coal stockpiles outside of the approved areas will be planned in advance, and only be undertaken after the necessary and applicable Environmental Authorisation applications have been approved. Should any new areas be disturbed for the purpose of expanding the ROM tip area or coal stockpiles areas, the mitigation measures discussed in Ref. no.'s 7.9.2.27-29 will be applied.	Compliant	From the review of the approved layout plan, storage and tipping of ROM coal area falls within the approved footprint areas.
7.10.3.23.			The implementation of dust management measures at the stockpile and tip areas, as discussed in Ref. no.'s 7.10.3.208-215, and surface water management measures, as discussed in Ref. no.'s 7.10.3.68- 75, will simultaneously address the potential indirect impacts on the soil.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.24.		The utilisation of the Blaauwkrans Co-disposal facility extension is expected to have the following impacts on soil: • All impacts associated with the Construction Phase will remain applicable during the Operational Phase. • Possible salt pollution and acidification of soils due to surface runoff and leachates from the dump which will alter soil chemical status negatively in the immediate surrounding area. • Coal dust pollution in surrounding area will alter soil chemical status negatively. The amended name, location and or layout will not result in a change to the existing identified impact.	The proposed extension of the Blaauwkrans Co-disposal facility will be kept within the predetermined footprint area, as indicated in the Blaauwkrans Co-disposal facility extension design report and associated layout map attached in Appendix G. Any disposal or temporary storage of coal discard outside of the planned extension footprint area will not be undertaken without obtaining the applicable authorisations required, and will only be undertaken with appropriate mitigation measures in place to minimise the potential impacts of such storage of coal discard outside of the planned extension footprint area on the receiving and surrounding soils.	Compliant	From the review of the approved layout plan, site visit conducted and Google Earth Image, the Blaauwkrans Co-disposal facility extension area falls within the approved footprint areas.
7.10.3.25.			The implementation of dust management measures at the proposed Blaauwkrans Co-disposal facility extension, surface water management measures, and groundwater management measures (discussed in this table) will simultaneously address the potential indirect impacts thereof on the surrounding soils.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.26.		The replacement of soil onto the Blaauwkrans Co-disposal facility extension side slopes during concurrent in situ rehabilitation is expected to have the following effects: • There will be a substantial loss of pre-mining soil potential in terms of production potential and topography. • The replaced soil will be highly susceptible to erosion, particularly on the steep edges of the facility extension. The amended name, location and or layout will not result in a change to the existing identified impact.	The side slopes and edges of the Co-disposal facility extension will be shaped to gradients suitable for soil replacement and revegetation.	Not Applicable	No rehabilitation of the side walls is undertaken, therefore no reshaping of the side walls is required as yet.
7.10.3.27.			The side slopes of the Co-disposal facility extension will be rehabilitated according to design, which will include the replacement of a topsoil layer and re-vegetation thereof with grass species with strong stabilising abilities. The Landau Seed mix (discussed in more detail in Part 10.3.2.3) will be used for this purpose.	Compliant	The side slopes of the Blaauwkrans Co-disposal facility is not vegetated. It was indicated during the site visit that concurrent rehabilitation of the side walls of the Blaauwkrans Co-disposal Facility has ceased as a portion of the Blaauwkrans Co-disposal Facility will be reworked as part of the proposed Khanyisa Project. Authorisation with this regard has been approved.
7.10.3.28.			Should any causes of soil pollution be identified on or around the Co-disposal facility extension, such causes will be rectified immediately.	Compliant	No soil pollution on or around the Co-disposal facility extension was noted during the site visit.
7.10.3.29.		Unless appropriately managed, possible leakage of domestic wastewater from septic tanks or associated sewage	The sewage treatment facility will be regularly inspected and maintained when necessary.	Compliant	Operation and maintenance of the navigation sewage treatment plant is inspected on weekly basis Fortchportch (Pty) Ltd. Inspection reports were provided for review during the audit period.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.30.		management infrastructure (e.g. pipelines) may occur, resulting in contamination of the soil, and consequent contamination of the receiving surface water, wetlands and groundwater. Key indicators of such contamination include elevated nitrate concentrations and the presence of faecal coliforms. The amended name, location and or layout will not result in a change to the existing identified impact.	Surface and groundwater monitoring downstream of the offices will include analysis of key indicator parameters (nitrate and faecal coliforms).	Compliant	Surface and groundwater monitoring include nitrate and faecal coliforms. Monitoring reports were provided for review during the audit period.
7.10.3.31.			Possible spillages will be cleaned immediately and appropriately handled. This will reduce impacts on soil, surface water and groundwater contamination as well as reducing possible hazards to human health.	Compliant	If spillages occur, all are handled as hazardous waste and are cleaned and disposed of at the hazardous waste bins and further disposed in a licenced landfill site. No spillages may cause pollution of surface water resources and soils were noted during the site visit.
7.10.3.32.		The movement of haul trucks over undisturbed areas would compact the soils changing the structure and function of the soils. This could lead to secondary surface and groundwater impacts, and could inhibit successful rehabilitation during the Decommissioning Phase. The amended name, location and or layout will not result in a change to the existing identified impact	Movement of vehicles and machinery will be restricted to access and haul roads as well as other predetermined pathways, as far as practicable.	Compliant	It was confirmed during the site visit that vehicles and machinery are restricted to access and haul roads as well as other predetermined pathways.
7.10.3.33.	Land capability	The impacts and mitigation measures that were identified in Ref. no.'s 7.9.2.34 - 37 in Table 7.9 (Construction Phase EIAMAP) will continue to apply during the Operational Phase. The amended name, location and or layout will not result in a change to the existing identified impact			
7.10.3.34.	Land use	The impacts and mitigation measures that were identified in Ref. no.'s 7.9.2.38 - 39 in Table 7.9 (Construction Phase EIAMAP) will continue to apply during the Operational Phase. The amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.35.	Vegetation	Operational Phase impacts on vegetation relate mostly to indirect impacts resulting from increased sedimentation (sediment-heavy runoff and dust) of wetland habitats, accidental spills (fuels, cement, etc.) and alien plant invasion, particularly in areas that were disturbed during the Construction Phase, such as the verges of access and haul roads. The amended layout and location of certain activities such as the ROM tip and stockpile area, as well as certain surface water infrastructure will result in a reduction of the existing identified impact (due to the decreased overall footprint and lower sensitivity of the new locations).	The mitigation of impacts on soils, surface water, groundwater and air quality (dust) will simultaneously mitigate the identified secondary impacts on vegetation.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.36.		The utilisation of stockpiles during the Operational Phase will result in the degradation and transformation of wetland plant communities as a result of disruption of hydrological patterns within catchments, habitat fragmentation, increased sedimentation (sediment laden runoff and dust), accidental spills (carbonaceous materials, fuels, , etc.) and alien plant invasion. The amended name, location and or layout will not result in a change to the existing identified impact.	The CBMA's identified in the BMP will continue to be fenced and managed through access control.	Compliant	The CBMAs of high biodiversity conservation value are demarcated and fenced off. This was confirmed during the site visit 2021.
7.10.3.37.			Progressive re-vegetation of all disturbed areas will continue to be carried out as necessary during the Operational Phase.	Not Applicable	Progressive rehabilitation primarily relates to the mining activities and no rehabilitation of the opencast pits has commenced.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.38.		The expected impacts of the utilisation of stockpiles to mesophyllous vegetation mainly relate to dust, alien plant invasion and habitat fragmentation. The amended name, location and or layout will not result in a change to the existing identified impact.	Implementation of dust control measures, described in Ref. no.'s 7.10.3.208 - 215 will simultaneously reduce the indirect impacts of dust settlement on the surrounding natural vegetation.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.39.			As per the Agricultural Resources Act (Act 43 of 1983), weeds and alien invader plants will continue to be monitored and controlled within the entire Landau Colliery mine boundary area, including the proposed Lifex Extension Project area. Areas that are more vulnerable to invasion by such species will be identified and accordingly be more intensively and closely managed.	Compliant	According to the alien invasive eradication plan (dated May 2019) developed for the Navigation Section, weeds and alien invader plants are located along the haul road servitudes. The plan act as a monitoring purpose for the weeds and alien invader plants
7.10.3.40.			All surface infrastructure and related activities will remain within the designated areas that are demarcated on the Mining and Surface Infrastructure Plan (attached as Appendix B2). Controlling the footprint areas of surface infrastructure (particularly stockpiles) to ensure that they remain within the pre-designated areas, no further habitat fragmentation is expected to occur during the Operational Phase.	Compliant	According to the DMRE approved surface layout plan for the Lifex Extension Project, the following infrastructures were proposed, these includes the initial box cuts, an office complex, storm water drainage infrastructure, power reticulation infrastructure, a tip and ROM stockpiling area, conveyor infrastructure, haul roads, water crossings (for roads, pipelines and the conveyor), pollution control dams, and topsoil and overburden stockpiles. All of the above-mentioned infrastructures are within the designated areas.
7.10.3.41.		The increased human presence during the Operational Phase may lead to an increase in harvesting pressure on Declining and Protected medicinal plants. The amended name, location and or layout will not result in a change to the existing identified impact.	Movements of all personnel will be limited to predetermined, clearly demarcated areas and roads.	Compliant	It was confirmed during the site visit that vehicles and machinery are restricted to access and haul roads as well as other predetermined pathways.
7.10.3.42.			Strict access control will be applied to areas immediately adjacent to the surface infrastructure and mining areas.	Compliant	According to site visit conducted, all operational areas at Khwezela North Colliery are fenced to prevent unauthorised access, for safety and security purposes. It was further confirmed during the site visit that the fencing employed is a diamond mesh fencing with cattle fencing used in suitable places. No electric fencing is utilised.
7.10.3.43.			Medicinal plant monitoring will be implemented as per the existing BMP.	Compliant	Monitoring of the medicinal plants identified in the existing Biodiversity Action Plan (BAP) is conducted as part of the annual review of the Bio-diversity Action Plan. Biodiversity Action Plan was provided for review during the audit period.
7.10.3.44.	Animal Life	Impacts that will have commenced during the Construction Phase, such as habitat fragmentation due to activities such as fencing of the haul roads, will continue to apply during the Operational Phase. The amended name, location and or layout will not result in a change to the existing identified impact.	Refer to Ref. no. 7.9.2.65 of Table 7.9 (Construction Phase EIAMAP).	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.45.		The utilisation of access and haul roads may lead to mortalities of bird and mammal species of conservation importance (e.g. African Grass Owl and Serval) as a result of collisions with vehicles. The amended name, location and or layout will not result in a change to the existing identified impact.	Appropriate speed limits will be imposed on all haul roads.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
7.10.3.46.		The use and maintenance of the haul road crossing and the conveyor where it	Environmental incident reports will be generated and submitted to the Environmental Coordinator for record keeping purposes when mortalities of birds and mammals as a result of collision with vehicles occur. Such incident reports will report on the type of bird or mammal killed and a description of the location of the mortality, as well as the time and date of occurrence. If quarterly monitoring of these incident reports reveals the presence of high collision risk areas, drivers should be informed of such areas, appropriate signage should be erected and speed reduction measures installed, where possible. A Procedure to manage this reporting and monitoring process will be generated and included in Landau Colliery's EMS.	Not Applicable	No mortalities of birds and mammals as a result of collision with vehicles were reported during the audit period, therefore this EMPr commitment is not applicable.
7.10.3.47.			Erosion will be controlled in areas of river crossings and in close proximity to wetlands.	Not Applicable	No conveyor crosses the Schoongezichtspruit, therefore this EMPr commitment is not applicable.


REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.48.		crosses the Schoongezichtspruit may cause water pollution and habitat destruction when fine coal and dust, silt and other pollutants enter the stream or run in close proximity to wetlands, if not mitigated or prevented. This could result in the deterioration of water quality and embeddedness of bottom substrates (clogging of interstitial spaces) by the fine sediments that impact on aquatic fauna, if not prevented. The amended layout of the conveyor route will result in a reduction to the existing identified impact as it will no longer require crossing with the Schoongezichtspruit.	Use of dust control measures as indicated in Ref. no.'s 7.10.3.208 - 215 will simultaneously reduce the potential for resultant soil and water pollution, and thus negative impacts on aquatic faunal habitat	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.49.			Measures will be implemented to limit the spillage of coal and coal dust at the haul road crossing (e.g. side barriers along bridge) and the conveyor crossing (e.g. conveyor housing will wrap around the section of the conveyor that crosses the stream). This will reduce the potential for secondary impacts of water quality deterioration on aquatic habitat in the receiving stream.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.50.		Utilisation of the power lines may lead to bird mortalities as a result of collision and electrocution with overhead transmission lines. Since the re-routing is unlikely to cross significant areas of untransformed natural habitat, the significance is likely to be low. One Near Threatened bird species confirmed to occur in the study area (Secretarybird) could be impacted by the overhead lines, although this species is only likely to be an irregular visitor to the study area and is unlikely to have any regular flight paths through the area. The amended name, location and or layout will not result in a change to the existing identified impact.	Bird mortalities from electrocution and collision with power lines will be monitored weekly by the Environmental Coordinator and environmental incident reports will be generated for record keeping purposes when mortalities of birds and mammals as a result of collision with power lines occur. Such incident reports will report on the type of bird killed and a description of the location of the mortality, as well as the time and date of occurrence.	Not Applicable	No mortalities of birds and mammals as a result of collision with vehicles were reported during the audit period, therefore this EMPr commitment is not applicable.
7.10.3.51.			Information from bird mortality monitoring (see Ref. no. 7.10.3.50) will be used to determine whether and where measures should be implemented to prevent collision of birds with power lines and resultant electrocution. Measures to prevent bird electrocution include insulating of energised components, gap earth wires, fit raptor protectors and move switchgear. Measures to minimise collisions include marking of lines, re-routing of lines, burying of cables and bundling of lines.	Not Applicable	No mortalities of birds and mammals as a result of collision with vehicles were reported during the audit period, therefore this EMPr commitment is not applicable.
7.10.3.52.		Animal life of conservation importance may be affected by the increased human presence in previously inaccessible areas. This is likely to lead to increased hunting pressure, persecution and disturbance of certain sensitive species such as Serval (Near Threatened). The amended name, location and or layout will not result in a change to the existing identified impact.	Movements of all personnel will be limited to predetermined, clearly demarcated areas and roads.	Compliant	It was confirmed during the site visit that movement of personnel was limited to predetermined, clearly demarcated areas and roads.
7.10.3.53.			Strict access control will be applied to areas immediately adjacent to the surface infrastructure and mining areas.	Compliant	According to site visit conducted, all operational areas at Khwezela North Colliery are fenced to prevent unauthorised access, for safety and security purposes. It was further confirmed during the site visit that the fencing employed is a diamond mesh fencing with cattle fencing used in suitable places. No electric fencing is utilised.
7.10.3.54.		Noise from the utilisation of infrastructure such as roads, conveyors, workshops, etc. may frighten animals and possibly cause them harm. This is of concern particularly regarding species of conservation importance. The amended name, location and or layout will not result in a change to the existing identified impact.	It is anticipated that implementation of measures to reduce the expected impacts of the utilisation of surface infrastructure on the sensitive I&AP receptors will simultaneously reduce the impacts on animals. Furthermore, it is expected that management of the (CBMAs) and corridors linking the CBMA's that will have been identified in the BAP and fenced during the Construction Phase (see Ref. no. 7.9.1.19 in Table 7.9) and maintenance of ecological corridors will ensure that the animals will have alternative habitat to move to, if necessary	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.55.		The impacts and mitigation measures discussed in Ref. no.'s 7.10.1.40 – 43 in this table also apply here insofar as the secondary impacts of habitat destruction on animal life are concerned. The amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.56.		To implement principles of the DWS's four step hierarchy of decision taking. To comply with requirements of the NWA and associated legislation and policy.	Management of surface water at the Landau Colliery Life Extension Project will be undertaken in accordance with the DWS's hierarchy of decision-taking, and the most recent best practice guidelines provided by the DWS.	Compliant	Management of surface water at the Landau Colliery Life Extension Project is undertaken in accordance with the DWS's hierarchy of decision-taking, and the most recent best practice guidelines provided by the DWS by implementation of the following: <ul style="list-style-type: none"> Obtaining the Water Use Licence for all Section 21 activities.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
					<ul style="list-style-type: none"> Construction and operation of surface water infrastructures for the management of clean and dirty water. Monitoring of the surface water infrastructures.
7.10.3.57.			Thus, it is anticipated that a WUL will be in place during the Operational Phase of the Lifex Extension Project, and the mine will adhere to the conditions of such a Licence during the LOM or for the duration of the implementation of these Water Uses.	Compliant	<p>Khwezela North Colliery is in possession of an approved WUL for the Lifex Extension Project with licence no.: 06/B11K/ACGIJ/5335, which covers the opencast mining activities. The implementation of the IWUL is undertaken through the following:</p> <ul style="list-style-type: none"> Conducting of the internal and external annual water use licence audits. Monthly inspections to ensure compliance with the water use licence. <p>Furthermore, although non-compliances are identified from the auditing of the water use licence, action plans are compiled and implemented to ensure compliance with such specific condition in the IWUL.</p>
7.10.3.58.			Auditing of compliance with the IWWMP commitments (and if a WUL is granted, to the conditions of the Licence) will be conducted regularly in accordance with the timeframes set by the DWS or committed to in the IWWMP.	Compliant	Annual internal and external audits are undertaken on the approved WULs for Khwezela North Colliery. A WUL audit was undertaken by Geovicon Environmental (Pty) Ltd in conjunction with this audit, and audited the compliance of Khwezela North Colliery to the conditions of the WULs.
7.10.3.59.			Compliance with Regulations GN 704, titled "Regulations on use of water for mining and related activities aimed at the protection of water resources", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be audited biennially, and reported to the DWS.	Non-Compliant	GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020 due to Covid restrictions. Khwezela Colliery has however, submitted a proposal to conduct GN 704 audit for the year 2021. The proposal was provided during the audit period.
7.10.3.60.			Employees and contractors will be trained to identify activities that would impact on the surface water aspect of the mine, such as overflow of pollution control dams, spillages of contaminating substances such as diesel, carbonaceous material, etc. Furthermore, they will be informed on the environmental emergency procedure, and will be trained to contact the appropriate person to report such incidents.	Compliant	Employees and contractors are made aware of activities that would impact on the surface water aspect of the mine, such as overflow of pollution control dams, spillages of contaminating substances such as diesel, carbonaceous material through induction presentations, monthly environmental topics, and toolbox talks. Induction presentations, monthly environmental topics were provided for review during the audit period. The induction presentation includes the emergency response procedure and the appropriate person to report any emergency or incident that may occur.
7.10.3.61.	Surface water (quantity and flow)	The storm water management system at the proposed Landau Colliery Lifex Extension Project has been designed (to conceptual level) to be a closed loop system in that all polluted water is collected and treated, while the clean storm water runoff is separated and discharged off the property into the respective catchments. The diversion of clean water around dirty water management areas, and from rehabilitated surfaces, will contribute to the minimisation of the dirty water management areas. This practice is therefore expected to reduce the overall impact on catchment yield. The amended name, location and or layout will not result in a change to the existing identified impact. Areas where soil is exposed during the Operational Phase (e.g. during reclamation of topsoil from stockpiles for rehabilitation) will be vulnerable to erosion, leading to an	The surface water monitoring programme that will have been modified to include the Life Extension Project prior to the commencement of the Construction Phase (as described in Part 9 of this document) will continue to be implemented to enable the actual impacts of the mining and related activities at the proposed Life Extension Project to be verified and quantified.	Compliant	It was confirmed through the review of the water monitoring report that the existing surface and groundwater monitoring programme for Navigation includes some of the monitoring localities as per the Life Extension Project.
7.10.3.62.			All activities will be restricted to the pre-designated areas and pathways. This will ensure that the extents of the areas that need to be incorporated into the dirty water management system are minimised.	Compliant	According to the DMRE approved surface layout plan for the Lifex Extension Project, the following infrastructures were proposed, these includes the initial box cuts, an office complex, storm water drainage infrastructure, power reticulation infrastructure, a tip and ROM stockpiling area, conveyor infrastructure, haul roads, water crossings (for roads, pipelines, and the conveyor), pollution control dams, and topsoil and overburden stockpiles. All the above-mentioned infrastructures are within the designated areas.
7.10.3.63.			Clean water will continue to be diverted around the infrastructure areas by infrastructure designed to comply with the requirements of the applicable legislation (e.g. GN704, dated 1999, under the NWA, 1998). Water management measures are proposed in the Surface water specialist study attached in Appendix D10.	Compliant	Clean water is diverted around infrastructure areas and areas considered and managed as part of the affected water management system, through the implementation of berms, trenches, and channels.
7.10.3.64.			Dirty water management areas will continue to be minimised as far as practicable.	Compliant	Affected water management systems are kept as small as possible by disposing the water to water management facilities (pollution control dams). This is done to prevent a reduction in the yield of the catchment, to minimise the area of disturbance as well as minimise the volume of

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		increase in suspended solids in storm water runoff and consequent sedimentation of the receiving environment. This would have indirect effects on capacities of natural watercourses and on aquatic habitats and species. The amended name, location and or layout will not result in a change to the existing identified impact			affected water to be contained and re-used within the affected water management system.
7.10.3.65.			Contaminated water will continue to be captured and re-used, or treated before re-use or discharge.	Compliant	According to the Water Balance, dirty water from the water management facilities is either pumped to the East and West pollution control dams and further used for dust suppression or for further treatment at the EWRP.
7.10.3.66.			Retained contaminated water will either be used for dust suppression, allowed to evaporate, or be transferred to the dirty water management system of Landau Colliery for reuse or for treatment (at the EWRP or the Navigation Liming Plant). The volume of contaminated water used for dust suppression will be controlled to ensure that excessive ponding or runoff is not generated.	Compliant	According to the Water Balance, dirty water from the water management facilities is either pumped to the East and West pollution control dams and further used for dust suppression or for further treatment at the EWRP.
7.10.3.67.			The dirty water impoundments will be managed and maintained in such a manner as to ensure that the available capacity and freeboard required by the applicable regulations are adhered to at all times.	Compliant	It was confirmed during the site visit that the pollution control dams are operated at a freeboard of 8.0, with no concerns noted.
7.10.3.68.			The extent of the dirty water management areas at the mine will be minimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management. Khwezela North Colliery will ensure that all dirty water areas and activities are kept within its approved areas.
7.10.3.69.			All clean water will be diverted around the infrastructure areas. The mine will maintain these diversion berms / trenches to ensure that no blockages occur.	Compliant	Clean water is diverted around infrastructure areas and areas considered and managed as part of the affected water management system, through the implementation of berms, trenches and channels. No blockages on these berms were noted during the site visit.
7.10.3.70.			The surface diversion berms and drains will be kept free from obstructions (debris) to ensure that the efficiency is not affected. Changes to the layout of the storm water control measures will be implemented, if required, to accommodate actual conditions and to enhance the efficiency of the management system.	Compliant	No blockages on these berms were noted during the site visit.
7.10.3.71.			Repair of damages to the clean and dirty water separation infrastructure due to erosion and scouring of areas will be performed following storm events. Normal continuous maintenance throughout Life of Mine will also be performed for all slopes, berms and points of discharge (i.e. clearing of silts and sediments washed into drains, erosion marks will be filled up again, berms will be kept intact, etc.).	Not Applicable	No damages of clean and dirty water separation infrastructure were reported and further noted during the audit period, therefore this EMP commitment is not applicable.
7.10.3.72.			The period during which the stripped soil would be exposed before being placed live on rehabilitated areas or stockpiled will be minimised as far as practicable.	Not Applicable	No soil stripping activities are undertaken, therefore this EMP commitment is not applicable.
7.10.3.73.			Exposed topsoil will be vegetated to minimise erosion and consequent impacts thereof on storm water quality, and the quality of water in the receiving environment.	Compliant	Four topsoil stockpiles are created at Lifex Extension Project, two topsoil stockpiles are vegetated (natural vegetation). The two other topsoil stockpiles not vegetated as they are the current stockpiling areas.
7.10.3.74.			Where soil will be exposed for longer periods of time, silt laden runoff from exposed soil will be intercepted and settled before being allowed to drain into the receiving environment.	Not Applicable	No concerns with regards to exposed soil in the clean water management system was identified.
7.10.3.75.	Surface water (Quality)	Utilisation of haul roads: The operation and maintenance of haul roads has the potential to generate poor quality runoff due to contact of the water with coal, hydrocarbons and waste material. Impacts may arise from: • Contaminated storm water runoff, as well as washdown water and hydrocarbon spills that discharges from the site, with resultant deterioration in water quality within the Brugspruit and its	All spills will be contained within dedicated bunded areas.	Compliant	No spillages were noted during the site visit.
7.10.3.76.			Spill absorption product(s) will be kept on site, and used to clean up hydrocarbon spills in the event that they should occur.	Compliant	Spill kits are used for the clean-up of spillages. This was confirmed during the site visit.
7.10.3.77.			Water quality monitoring will be undertaken downstream of the areas, where practical, in order to detect any increase in suspended solids or turbidity. Refer to Part 9 of this document for details regarding proposed surface water quality monitoring locations.	Compliant	Water quality monitoring is undertaken downstream of the haul roads. Water quality monitoring reports were provided for review during the audit period.
7.10.3.78.			If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the linear infrastructure will be reviewed.	Not Applicable	No erosion was evident on the haul roads and in close proximity to wetlands, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.79.		tributaries. Water quality deterioration may result in an increase in suspended solids, hydrocarbons (oils and greases), siltation of carbonaceous materials, and increase in salinity and potential decrease in pH in the watercourses. • Dirty water used for dust suppression on haul roads may impact the quality of storm water runoff. The amended name, location and or layout will not result in a change to the existing identified impact.	An operational procedure will be implemented on site to prevent overloading of haul trucks, thereby minimising the risk of spillage of coal on to the haul roads.	Compliant	Operational procedure title Load, Haul and Dumping Procedure is developed and implemented on site to prevent overloading of haul trucks.
7.10.3.80.			As far as is practical, ROM coal will be allowed to drain within the pit before being loaded onto the haul trucks, to prevent spillage of water from the haul truck load boxes onto the haul roads.	Compliant	ROM coal drain within the pit before being loaded onto the haul trucks. This was confirmed during the site visit.
7.10.3.81.			Application of dirty water to roads for dust suppression will be controlled to ensure that dust suppression water does not run off the roads and into the surrounding environment.	Compliant	The volumes of the contaminated water used for dust suppression are recorded on monthly basis. Water Enablon Results were provided for review during the audit period.
7.10.3.82			Where practically possible, storm water from haul roads will be directed (by means of berms and/or canals) to dirty areas and their associated PCDs.	Compliant	According to the site visit, haul roads were constructed with low level berms to prevent affected water from entering the clean water management system. Haul roads are also managed as part of the affected water management system whereby the affected water is contained, diverted to the pit area or diverted to the respective containment facilities.
7.10.3.83.		Utilisation of the conveyor: Transport of coal by conveyor has the potential to impact on watercourses and general runoff quality, primarily due to spillage of coal, as well as contaminated water from the belt itself and at transfer stations. Impacts may arise from: • Dripping of water from the conveyor belt at low points, as well as spillage at transfer stations. • Windblown dust at transfer stations settling on the adjacent surface and in watercourses. • Storm water runoff coming into contact with these emissions would suffer a deterioration in water quality, with increased salinity, particularly sulphate. The amended layout of the conveyor route will result in a reduction to the existing identified impact as it will no longer require crossing with the Schoongezichtspruit.	Transfer stations will be paved with concrete, bunded to prevent run-on of clean water and to contain dirty runoff. A lined PCD will be provided at each transfer station. PCDs will either be sized as evaporation ponds, or the water collected in them will be pumped along the conveyor to the relevant conveyor PCD.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
7.10.3.84.			Conveyors will be rotated at the transfer stations to ensure that the dirty side faces upwards at all times.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
7.10.3.85.			Transfer stations will also be provided with belt scrubbers to clean the belt to prevent carbonaceous material from being dropped along the route.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
7.10.3.86.			The conveyor will be completely enclosed at watercourse crossings to prevent any spillage of water or coal into the watercourses.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
7.10.3.87.			Watercourse crossings will be designed to accommodate at least the 1:100 year event without overtopping.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
7.10.3.88.			Dust suppression will be employed at the transfer stations to minimise dust emissions.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
7.10.3.89.			A shroud will be provided along the entire conveyor length to prevent rain from falling directly onto the conveyor and to protect it from wind.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
7.10.3.90.			Runoff from the upslope catchment will be diverted around the discard facilities. The clean water diversion system has been designed to accommodate the peak flow expected for at least a 1:100-year event.	Compliant	Runoff from the upslope catchment is diverted around the Blaauwkrans Co-disposal Facility (including the expansion) by means of berms and purpose-built trenches. This was confirmed during the site visit.
7.10.3.91.			Runoff from discard dumps will continue to be collected in dedicated storm water channels and directed via a silt trap to various PCDs around the dump.	Compliant	According to the Water Balance, seepage water from the Blaauwkrans Co-disposal facility is diverted to the Kopseer and the Emergency Toe-dams via trenches and the water is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (Treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.
7.10.3.92.			The proposed dirty storm water channels will be lined with impermeable material (concrete, HDPE or similar) to prevent seepage of contaminated water from the channels.	Compliant	The cut-off trenches surrounding the Blaauwkrans Co-disposal Facility and the expansion are lined as they are cut-off trenches to intercept any seepage from the facility. It was identified that trenches channelling flow to the east PCD, the Toe Seep silt trap and Kopseer Dam were cement lined. The channel from the spillway of the east PCD is also cement lined.
7.10.3.93.			All dirty water containment facilities have been designed, and will be operated and maintained to have a risk of spill of 2% or less (1:50 year recurrence interval) in any one year.	Compliant	It was confirmed during the site visit that the dirty water containment facilities have been designed, and are operated and maintained to have a risk of spill of 2% or less (1:50 year recurrence interval) in any one year. No spillages were noted during the site visit.



REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.94.		areas, with resultant deterioration in water quality within the watercourses, as well as the runoff from the affected clean areas. • Contaminated storm water runoff and seepage discharging from the discard dumps into the watercourses with resultant increase in suspended solids, siltation of carbonaceous materials, increase in salinity, particularly sulphate, and potential decrease in pH in downstream watercourses. • Infiltration of contaminated seepage from the stockpiles area into the groundwater, with consequent groundwater contamination and potential seepage into the watercourses. The amended name, location and or layout will not result in a change to the existing identified impact.	The discard will be compacted to limit infiltration of rain water and reduce the potential for spontaneous combustion.	Compliant	It was confirmed during the site visit that the discard disposed of onto the Blaauwkrans Co-disposal Facility expansion is levelled and compacted.
7.10.3.95.			The footprint of the discard facility will be lined in accordance with the waste management regulations applicable at the time of design and construction, to minimise infiltration to the groundwater system.	Compliant	It was confirmed during the site visit that the blaauwkrans co-disposal facility expansion area is not lined. Such was further confirmed through review of the report Groundwater contaminant transport model for the Blaauwkrans Co-Disposal Facility, dated August 2017 and compiled Delta H. It should be noted that as part of the IWUL for Blaauwkrans, KNC motivated to the Civils Department within DWS to not line as the water will be collected and pumped to the EWRP. The pollution plume modelling was done with mitigation measures to prevent further diffusion of seep water.
7.10.3.96.			The discard facility will be equipped with toe-seep trenches and a 2m deep subsoil drain to intercept the anticipated northern seepage path. This will consist of a 2mm thick vertical HDPE liner in combination with a 160 mm diameter perforated pipe in a stone bed.	Compliant	The cut-off trenches surrounding the Blaauwkrans Co-disposal Facility and the expansion are not lined as they are cut-off trenches to intercept any seepage from the facility. It was identified that trenches channelling flow to the east PCD, the Toe Seep silt trap and Kopseer Dam were cement lined. The channel from the spillway of the east PCD is also cement lined.
7.10.3.97.			Water collected in the PCDs will be pumped back to the plant for reuse or to the EWRP for treatment.	Compliant	Seepage water from the Blaauwkrans Co-disposal facility is diverted to the Kopseer and the Emergency Toe- dams via trenches and the water is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (Treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.
7.10.3.98.			An inspection and maintenance plan will be implemented on the storm water, seepage collection systems, pumps and pipelines to ensure that all components, including the sediment handling facilities are maintained and that storm water canals and pipelines remain unblocked, free flowing and leak free – monthly inspections will be carried out.	Compliant	Monthly inspections on the storm water, seepage collection systems, pumps and pipelines are conducted by Khwezela Colliery Environmental Department. According to the inspection report provided, no issues related to the storm water, seepage collection systems, pumps and pipelines were reported.
7.10.3.99.			The coal processing plant will continue to source process water from the pollution control dams first, so as to maximise the reuse of water on site, and minimise the risk of spill.	Compliant	The coal processing plants (Ngwenya and Navigation) sources process water from the respective PCDs.
7.10.3.100.			A surface water quality monitoring programme will be implemented to detect any impacts.	Compliant	Surface water monitoring programme is implemented. Surface water monitoring is conducted on monthly basis. Latest reports were provided for review during the audit period.
7.10.3.101.			Dust suppression by means of spraying with dirty water will be implemented at the discard disposal facilities to minimise wind-blown dust leaving the discard dumps.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission.
7.10.3.102.			The existing stockpiles at the Navigation Plant will be utilised, with no new stockpiles planned, other than the ROM Tip stockpile.	Compliant	The existing stockpiles at the Navigation Plant are utilised, with no new stockpiles planned. Coal produced as a result of the extension activities is stored at the ROM tip area.
7.10.3.103.			The water management at the existing stockpiles will continue to be integrated with the plant, utilising the same dirty water containment and clean water diversion measures.	Compliant	An extensive network of trenches is constructed throughout the Navigation Plant area (including stockpile areas) to divert all affected surface water runoff towards the East PCD. A similar network of trenches has also been constructed at the Ngwenya Plant (Navigation West) to divert all affected surface water runoff towards Navigation West PC Dam.
7.10.3.104.			All dirty water containment facilities will be operated and maintained to have a risk of spill of 2% or less (1:50 year recurrence interval) in any one year.	Compliant	It was confirmed during the site visit that the dirty water containment facilities have been designed, and are operated and maintained to have a risk of spill of 2% or less (1:50 year recurrence interval) in any one year. No spillages were noted during the site visit.
7.10.3.105.			All storm water and seepage water from the stockpiles areas at the plant will be collected in the proposed new, lined Plant East and West PCDs.	Compliant	According to the Water Balance Excel Sheet (dated May 2020), all storm water and seepage water from the stockpiles areas at the plant is collected into the lined East and West PCDs.

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		<p>deterioration in water quality within the watercourses, as well as the runoff from the affected clean areas.</p> <ul style="list-style-type: none"> Contaminated storm water runoff and seepage discharging from stockpiles area into the Schoongezichtspruit, with resultant increase in suspended solids, siltation of carbonaceous materials, increase in salinity, particularly sulphate, and potential decrease in pH in the downstream watercourses. Infiltration of contaminated seepage from the stockpiles area into the groundwater, with consequent groundwater contamination and potential seepage into the watercourses. The amended name, location and or layout will not result in a change to the existing identified impact. 			 <p>Lined East and West PCDs</p>
7.10.3.106.			An inspection and maintenance plan will be implemented on the storm water and seepage collection systems to ensure that all components, including the sediment handling facilities are maintained and that storm water canals and pipelines remain unblocked and free flowing – monthly inspections will be carried out.	Compliant	Monthly inspections on the storm water, seepage collection systems, pumps and pipelines are conducted by Khwezela Colliery Environmental Department. According to the inspection report provided, no issues related to the storm water, seepage collection systems, pumps and pipelines were reported.
7.10.3.107.			The proposed surface water quality monitoring programme will continue throughout the operational phase to detect any impacts	Compliant	Surface water monitoring programme was provided during the audit period that is implemented continuously.
7.10.3.108.			Dust suppression by means of spraying with dirty water will be implemented to minimise windblown dust leaving the coal stockpile areas.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission.
7.10.3.109.		Pollution control dams: storage of polluted water: The water in the pollution control dams will be of poor quality, with potential to impact on the downstream water resources, primarily in terms of increased salinity (particularly sulphate) and potentially reduced pH if there are spillages or leaks from the dams. Impacts may arise from:	In line with best practice, the PCDs will be operated as empty as possible at all times to ensure that sufficient storm water retention capacity is available at all times.	Compliant	According to the Water Balance (dated May 2020), dirty water stored at the West PCD is transferred to the Umlalazi raw water dams and to the process water tank for re-use at the mine.
7.10.3.110.			In the event that there is insufficient available capacity in the PCDs during extreme rainfall conditions, excess storm water will be pumped to underground storage compartments for temporary storage to prevent spillage.	Not Applicable	Khwezela North Colliery indicated that no issues with the capacities of the pollution control dams was reported during the audit period.
7.10.3.111.		<ul style="list-style-type: none"> Inadequate sizing or lining system on the dams 	The pollution control dams will be equipped with a composite clay and geomembrane (e.g. HDPE) liner to minimise leakage of contaminated water to the surface or ground water systems.	Compliant	It was confirmed during the site visit that the pollution control dams constructed as part of the Life Extension Project, are lined.
7.10.3.112.		<ul style="list-style-type: none"> Poor operation of the dams, with failure to keep water levels at or below the designed maximum operating levels. 	An inspection and maintenance plan will be implemented to ensure that the dams are kept in good working order and to monitor sediment build-up.	Compliant	Monthly inspections of the pollution control dams are conducted Khwezela Colliery Environmental Department. According to the inspection reports provided, no issues related to the management of the pollution control dams were reported.
7.10.3.113.		<ul style="list-style-type: none"> Pump failures, resulting in accumulation of water in the dams and consequent spills. 	The proposed surface water quality monitoring programme will continue to detect any impacts.	Compliant	Surface water monitoring reports were provided for review during the audit period. The reports are used for the determination of any water quality impacts that might arise from the mining activities associated with the project. No water quality impacts were reported during the audit period.
7.10.3.114.		<ul style="list-style-type: none"> Poor maintenance resulting in loss of storage capacity due to sediment build-up in the dams. The amended name, location and or layout will not result in a change to the existing identified impact. 	Back-up pumps will be provided at the pump stations.	Compliant	Where required, pump stations are equipped with back-up diesel pumps.
7.10.3.115.			Dam operators / appropriate mine employees or contractors will be trained to keep dam water levels below the maximum	Compliant	Proof of training and completion certificates of the dam operators / appropriate mine employees or contractors on the management of dam water levels were provided during the audit period.

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			operational level to ensure that the risk of spill from any dams will be limited to 2% or less in any one year.		
7.10.3.116.		Dust and fire suppression with contaminated water: Dust and fire suppression systems should be provided on surface along haul roads, at the plant, stockpile areas, discard dumps, workshop area, and new ROM tip area and along the conveyor. These will involve spraying of water onto coal handling areas, as well as a deluge system	Dust suppression application rates will be carefully controlled to prevent the application of excessive water and to prevent ponding and runoff of dust suppression water into the watercourses.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission.
7.10.3.117.			No dust suppression will be carried out on surfaces that are already moist.	Compliant	No concerns were noted with regards to suppressing already moist areas.
7.10.3.118.			Dust suppression with contaminated water will be confined to isolated dirty water management areas.	Compliant	According to the Water Balance Excel Sheet, dust suppression with contaminated water is confined to isolated dirty water management areas such as Navigation Plant area and Umlalazi West Section.
7.10.3.119.			All fire suppression will take place within the designated dirty water areas of the plant, stockpile, conveyor and discard facility areas. Excess fire suppression water will therefore drain via the dirty storm water system to the PCDs and be pumped back to the Balancing Dam, reused at the plant or pumped to the EWRP.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission at the plant, stockpile, conveyor and discard facility areas. According to the Water Balance Excel Sheet, dust suppression with contaminated water is confined to isolated dirty water management areas such as Navigation Plant area and Umlalazi West Section.
7.10.3.120.		Handling, disposal and treatment of sewage: Water from the ablution facilities will contain organic matter, which is high in nitrogen and could therefore cause eutrophication if it enters the water resource. The existing sewage treatment plant will be utilised to handle waste generated as part of the LIFEX project, with new septic tanks located at the offices and workshops area. Impacts may arise from:	All domestic waste water will be treated in the existing sewage treatment plant.	Compliant	Domestic waste water is treated in the existing sewage treatment plant located at the Lifex Extension Project.
7.10.3.121.			The sewage water will be treated in the plant to acceptable effluent standards.	Compliant	According to the weekly reports provided for review during the audit period, all variables are within the effluent standards.
7.10.3.122.			Sludge will be deposited in drying beds within the designated dirty water area and removed by a licensed waste contractor.	Compliant	Sludge is deposited in drying beds. This was confirmed during the site visit.
7.10.3.123.			An inspection and maintenance plan will be implemented to ensure that the sewage treatment plant always operates within specification.	Compliant	Operation and maintenance of the navigation sewage treatment plant is inspected on weekly basis Fortchportch (Pty) Ltd. Inspection reports were provided for review during the audit period.
7.10.3.124.			The treated sewage effluent and downstream surface water monitoring localities will continue to be monitored as part of the existing surface water quality monitoring programme will be utilised to detect any impacts.	Compliant	Treated sewage effluent monitoring is conducted on monthly basis. Results were provided for review during the audit period.
7.10.3.125.		• Discharge of untreated sewage into the watercourse. • Discharge of treated water not meeting the specified discharge standards into the watercourse. The amended name, location and or layout will not result in a change to the existing identified impact. Hydrocarbon storage area, ROM tip: The operation and maintenance of diesel storage tanks, ROM tip etc. have the potential to generate poor quality runoff due to contact of the water with coal, hydrocarbons and waste material. Impacts may arise from contaminated storm water runoff, as well as wash-down water and hydrocarbon spills that discharges from the mine, with resultant deterioration in water quality within the Brugspruit and its tributaries. This will potentially cause a resultant increase in suspended solids, hydrocarbons (oils and greases), siltation of carbonaceous materials, and increase in salinity and	Storage of hydrocarbons will take place only in dedicated bunded areas, which will contain any spills.	Compliant	Designated hydrocarbon and chemical storage areas are stored in bunded areas. All spillages are reported on the Enablon system and the Environmental Coordinator is informed of the incident through the Enablon system. No photographic evident of the refuelling storage was provided during the audit period.
7.10.3.126.			The hydrocarbon storage area will be located within the designated dirty water area of the offices and workshops, so that any spills escaping from the storage area will anyway be contained within the PCD.	Compliant	Hydrocarbon storage areas are located at the workshops. This was confirmed during the site visit. All dirty water emanating from the workshop area is diverted to the east PCD.
7.10.3.127.			Storm water runoff from the ROM Tip area will be collected in concrete lined dirty water canals and will be contained in a PCD dedicated to the ROM Tip area.	Compliant	Storm water runoff from the ROM Tip area is collected in concrete lined dirty water canals and is contained in the West PCD.




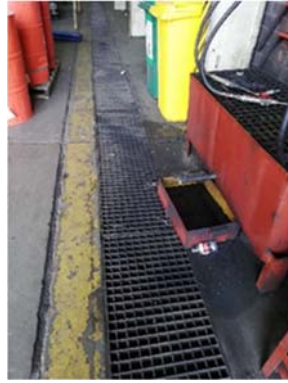
Bunded areas around the hazardous waste storage area

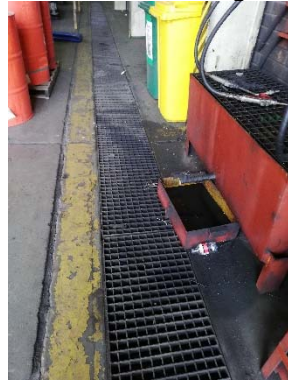
REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		potential decrease in pH in the watercourses. The amended name, location and or layout will not result in a change to the existing identified impact.			 <p>Concrete channels along the ROM Tip area</p>
7.10.3.128.			Spill sorb or a similar type of product will be kept on site and used to clean up hydrocarbon spills in the event that they should occur	Compliant	<p>Spill kits are kept on site and are used to clean up hydrocarbon spills in the event that they should occur.</p>  <p>Spill kits for clean-up of spillages.</p>
7.10.3.129.			The proposed surface water quality monitoring programme will continue to detect any impacts.	Compliant	The surface water quality monitoring programme detect any impacts that may occur from the results of the mining activities. According to the surface water quality monitoring programme, no impacts on surface water quality were identified.
7.10.3.132.			An oil trap will be provided at the MIA PCD.	Not Applicable	No MIA PCD is located at the Lifex Extension Project area.
7.10.3.131.			Employees and contractors will be trained to prevent spillages and to manage hydrocarbons safely and responsibly.	Compliant	All employees and contractors of Khwezela North Colliery are required to undertake mandatory induction and training, including training on the mine's environmental awareness programme and respective and applicable procedures. Water management and spillage management are included in the induction and training process.
7.10.3.132.		Workshops offices and stores: The workshops, offices, stores and waste handling areas have the potential to generate poor quality runoff due to contact of the water with coal, hydrocarbons and waste material.	The workshops, offices, waste handling areas, stores, etc. will be located within the designated dirty water area.	Compliant	Current practice at Khwezela North Colliery include all workshops, offices, waste handling areas and stores incorporated into the affected water management systems of the respective areas.
7.10.3.133.		Impacts may arise from: • Contaminated storm water runoff, as well as wash-down water and hydrocarbon spills that discharge from the site, with resultant	Bunded containment and settlement facilities will be provided for hazardous materials, such as fuel and oil.	Compliant	Fuel, oil and hazardous chemicals are stored within cement lined and bunded areas.
7.10.3.134.			All spills will be contained within dedicated bunded areas (at workshops, waste handling and storage areas, etc.).	Compliant	Fuel, oil and hazardous chemicals are stored within cement lined and bunded areas. If any spillage occurs, such will be within the bunded area.
7.10.3.135.			Both general and hazardous wastes will be stored in skips until removal from the site.	Compliant	General and hazardous waste are stored in skips and are removed off site by Phambili Safe disposal certificates were provided for review during the audit period.

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		deterioration in water quality within the natural watercourses , with resultant increase in suspended solids, hydrocarbons (oils and greases), siltation of carbonaceous materials, increase in salinity and potential decrease in pH in the watercourses. • Leakage of contaminated water from pipelines, poorly maintained storm water channels, sumps, sediment traps and oil skimmers, etc. The extent of this impact will be reduced by the implementation of the proposed amendment activities.			 <p>General and hazardous waste storage areas</p> <p>Designated oil storage area are stored in bunded areas.</p>
7.10.3.136.			Waste oil will be stored in drums in a bunded storage area.	Compliant	  <p>Bunded areas around the hazardous waste storage area</p>
7.10.3.139.			All contaminated runoff and spills that escape bunded areas will be collected and contained in the PCD.	Compliant	Contaminated runoff and spills report to the oil separator and then to the east PCD.
7.10.3.138.			All pipeline routes will be inspected regularly to enable early detection of leaks. Where necessary, repairs to the pipeline(s) will be undertaken as soon as practicable to minimise sustained leaking and the associated impacts on the receiving environment.	Compliant	Monthly inspections of all pipeline routes are conducted Khwezela Colliery Environmental Department. According to the inspection reports provided, no issues related to the pipelines were reported.
7.10.3.139.			All storm water and wash down water will be collected in a PCD. Surplus water will report from the PCD to the Balancing Dam, from where it will either be reused at the plant or sent to the EWRP for treatment.	Compliant	According to the Water Balance Excel Sheet provided for review during the audit period, dirty water from the Workshops offices and stores is disposed at the silt traps and then to the Acid Mine Dam and further to the liming plant for treatment.
7.10.3.140.			Washdown and waste water from the workshops will be passed through oil skimmers before discharging to the storm water system for containment in the PCD and eventual reuse in the process.	Compliant	According to the Water Balance Excel Sheet provided for review during the audit period, dirty water from the Workshops offices and stores is disposed at the silt traps and then to the Acid Mine Dam and further to the liming plant for treatment.
7.10.3.141.			Spill-sorb or a similar type product will be kept on site and used to clean up hydrocarbon spills in the event that they should occur	Compliant	<p>Spill kits are kept on site and are used to clean up hydrocarbon spills in the event that they should occur.</p> 
7.10.3.142.			The proposed surface water quality monitoring programme will continue throughout the operational phase to detect any impacts.	Compliant	<p>Spill kits for clean-up of spillages.</p> <p>Surface water monitoring reports were provided for review during the audit period. The reports are used for the determination of any water quality</p>

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					impacts that might arise from the mining activities associated with the project. No water quality impacts were reported during the audit period.
7.10.3.143.		The existing Navigation PCD and Schoongezicht PCD, which are situated in the Schoongezichtspruit and are unlined pollution control facilities, have been sources of contamination in the Schoongezichtspruit in the past. The removal of the existing, unlined Navigation PCD and replacement thereof with two, purpose-designed, legally compliant, lined PCDs (namely the proposed Plant East and Plant West PCDs) will mean that the Navigation PCD will no longer be a source of contamination in the Schoongezichtspruit and consequently on the Brugspruit and Upper Olifants River, downstream. Similarly, the proposed upgrade of the Schoongezicht PCD will mean that this PCD will no longer be a significant source of contamination in the Schoongezichtspruit and consequently on the Brugspruit and Upper Olifants River, downstream. However, unless appropriately managed, the decommissioning and removal of the Navigation PCD, and the upgrading of the Schoongezicht PCD, could impact negatively on the surface water in the receiving environment (i.e. Schoongezichtspruit and Brugspruit). The amended name, location and or layout will not result in a change to the existing identified impact.	Decommissioning of, and mining through, the existing Navigation PCD will only take place once the proposed replacement PCDs (namely the proposed Plant East and Plant West PCDs) have been constructed and commissioned.	Not Applicable	Mining of the Navigation PCD has not commenced yet. However, the East and West PCD's are constructed and in use.
7.10.3.144.			Once, the new replacement PCDs are operational, contaminated water in the Navigation PCD will be removed from the dam and returned to the Navigation Plant for treatment and re-use, or to the EWRP for treatment, as part of the decommissioning of the dam.	Compliant	According to the Water Balance Report provided during the audit period, dirty water from Navigation PCD is disposed at the middle dam, then to the Schoonie Dam and further to the EWRP for treatment.
7.10.3.145.			All carbonaceous material left in the PCDs (e.g. coal fines) will be removed and disposed onto the Blaauwkrans Co-disposal facility.	Not Applicable	Pumping from Navigation PCD has not commenced as yet, therefore this commitment is not applicable.
7.10.3.146.			Only once the contaminated water and carbonaceous materials in the dams have been removed, will the Navigation PCD be mined through, and the Schoongezicht PCD be upgraded.	Not Applicable	Pumping from Navigation PCD has not commenced as yet, therefore this commitment is not applicable.
7.10.3.147.		The removal of the Old Navigation dump and backfilling thereof into the Navigation East Pit as part of the concurrent rehabilitation of the rollover opencast method will mean that the dump will no longer be a source of contamination. Water quality of runoff from the remaining footprint area will therefore be improved. However, unless appropriately managed, this activity could impact negatively on surface water quality through increased suspended solids and turbidity of runoff until the removal of the dump is complete. The amended name, location and or layout will not result in a change to the existing identified impact.	Sediment barriers will be utilised to capture coal fines that may spill into adjacent areas (particularly the proposed Plant East and Plant West PCDs) during dump removal.	Not Applicable	The removal of the Old Navigation dump has not commenced as yet, therefore this commitment is not applicable.
7.10.3.148.		Surface water run-off coming into contact with carbonaceous material will become contaminated. The extent of this impact will be reduced by the implementation of the proposed amendment activities.	Contaminated surface water, such as direct rainfall entrapped in the dirty water management system, or runoff from the workshops and / or Blaauwkrans Co-disposal facility extension, will be contained, treated and reused in the dirty water management system.	Compliant	According to the Water Balance, dirty water from the Workshops offices and stores is disposed at the silt traps and then to the Acid Mine Dam and further to the liming plant for treatment. Furthermore, according to the Water Balance, seepage water from the Blaauwkrans Co-disposal facility is diverted to the Kopseer and the

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					Emergency Toe- dams via trenches and the water is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (Treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.
7.10.3.149.			The areas containing carbonaceous materials will be separated and isolated by means of berms and cut-off trenches to contain affected water and to maximise the diversion of clean surface water runoff past these areas.	Compliant	Berms are constructed for the diversion of clean water around the Blaauwkrans Co-disposal facility. Furthermore, seepage water from the Blaauwkrans Co-disposal facility is diverted to the Kopseer and the Emergency Toe- dams via trenches and the water is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (Treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.
7.10.3.150.			Contact time between entrapped surface water and carbonaceous material in the dirty water management areas will be minimised by removing such water as soon as possible after rainfall events. This will minimise the extent of contamination of the surface water in surface infrastructure areas.	Compliant	According to the Water Balance, seepage water from the Blaauwkrans Co-disposal facility is diverted to the Kopseer and the Emergency Toe-dams via trenches and the water is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (Treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.
7.10.3.151.			No construction, repair or maintenance of any surface infrastructure will be undertaken with any material (such as coal residue) that may cause pollution of water resources.	Compliant	No repairs or maintenance of surface infrastructure using material such as coal residue was noted during the site visit.
7.10.3.152.			Spillages of any material that may cause pollution of surface water resources, such as carbonaceous material, outside of the isolated dirty water management areas, will be immediately removed and mitigation measures implemented when necessary.	Compliant	If spillages occur, all are handled as hazardous waste and are cleaned and disposed of at the hazardous waste bins and further disposed in a licenced landfill site. No spillages may cause pollution of surface water resources and soils were noted during the site visit.
7.10.3.153.			To avoid excessive coal spillages on the haul roads, trucks will be restricted to within applicable weight limitations.	Compliant	Weight restrictions are applied on trucks and further no trucks are allowed to be filled above the full capacity level. Further, as previously described, strict speed limits are applied in accordance to the Traffic Management Plans.
			And suitable management measures enforced, such as reduced speed limits and covering of the coal trucks.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management. All haul trucks are covered.
7.10.3.154.			Continuous managing, improvement and monitoring of the overall water balance for the Navigation Section of Landau will be undertaken to identify risk areas and excess water volumes, and for reporting on conditions on a monthly base.	Compliant	Daily abstraction and distribution volumes are captured in an electronic database with the aid of the SCADA system. Data from the SCADA system is used to update the water and salt balance model monthly. The monthly salt balance model was provided during the audit.
7.10.3.155.			Contaminated surface water will not be allowed to flow or be intentionally discharged to the receiving environment without being treated first, and without the applicable authorisations.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), dirty water from the dirty water areas is disposed of at designated water management facilities. Khwezela North Colliery indicated that no authorisations for the discharge of dirty water to the environment has been applied. No uncontrolled dirty water to the environment was noted during the site visit.
7.10.3.156.			Contaminated water removed from underground will be collected, stored in dirty water management facilities until is treated and / or re-used.	Compliant	Contaminated water from underground is removed for containment within the affected water management system. As part of the Lifex Extension Project, Khwezela North Colliery has drilled three (3) abstraction boreholes from which the water is provided to EWRP for treatment.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.157.		Surface water run-off coming into contact with soil or other surfaces where hydrocarbons such as fuel or oil may have been spilled will become contaminated. Unless mitigated appropriately, the water containing hydrocarbons will enter the receiving environment and negatively affect the water quality in the surrounding streams. The extent of this impact will be reduced by the implementation of the proposed amendment activities.	The domestic waste water (sewage) generated at the proposed offices and workshops will be directed to the existing Navigation sewage treatment plant for treatment and re-use.	Compliant	According to the Water Balance, the domestic waste water (sewage) generated at the proposed offices and workshops is directed to the existing Navigation sewage treatment plant for treatment and re-use.
7.10.3.158.			Implementation of soil mitigation measures (discussed previously) will reduce the potential for secondary contamination of surface water runoff.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.159.			Runoff in the infrastructure areas will be kept within the isolated dirty water management area, which will significantly reduce the potential for such contaminated water to reach the receiving environment.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), dirty water from the dirty water areas is disposed of at designated water management facilities (either the West or East PCD). No uncontrolled dirty water to the environment was noted during the site visit.
7.10.3.160.			Spill absorption product(s) will be kept on site, and used to clean up hydrocarbon spills in the event that they should occur.	Compliant	Spill kits are kept on site and are used to clean up hydrocarbon spills in the event that they should occur. 
7.10.3.161.			Hydrocarbons will be removed from the water in the dirty water management system before the water is re-used, or treated before being released to the receiving environment under the applicable authorisation(s).	Compliant	Hydrocarbons waste are stored in skips and are removed off site by Interwaste. Safe disposal certificates were provided for review during the audit period.
7.10.3.162.			No contaminated water from workshop areas or refuelling stations will be discharged or allowed to flow into the surrounding environment.	Compliant	According to the Water Balance (dated May 2020), dirty water from the Workshops offices and stores is disposed at the silt traps and then to the Acid Mine Dam and further to the liming plant for treatment.
7.10.3.163.			All contaminated water reporting in bunded areas will be disposed of as required i.e. as hazardous waste or drained through an oil separator. Separated hydrocarbons will be disposed of in accordance with the relevant legislation.	Compliant	All contaminated water is drained through an oil separator located at the workshop area. All are handled as hazardous waste and are cleaned and disposed off at the hazardous waste bins and further disposed in a licenced landfill site. Safe disposal certificates were provided for review during the audit period. 
7.10.3.164.			Operation of the hydrocarbon storage facilities will be checked on a regular basis, to ensure that they are in working order, and to ensure that any malfunctions or irregularities are attended to and / or repaired as soon as possible.	Compliant	Oil traps located at the workshop area Inspection of the hydrocarbon storage tanks is conducted on monthly basis as part of the monthly inspection by Khwezela North Colliery Environmental Coordinator. No hydrocarbon leaks were during the site visit. Where concerns regarding hydrocarbon management are identified, such are reported as incidents and captured as incidents on the Enablon System for corrective and preventive actions.

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7.10.3.165.			Hydrocarbon pollution management measures, such as oils traps, will be operated and maintained in the workshop areas.	Compliant	Oil is drained through an oil separator/trap. 
7.10.3.166.			The management measures pertaining to the storage and disposal of domestic and hazardous waste described in the applicable Landau Colliery EMS Procedure will also be implemented at the proposed Landau Colliery Lifex Extension Project to avoid any possible contamination of surface water resources or soils with hazardous substances.	Compliant	Oil traps located at the workshop area General and hazardous waste are stored in skips and are removed off site by Interwaste. Safe disposal certificates were provided for review during the audit period.
7.10.3.167.		Surface water coming into contact with waste materials collected at the proposed Landau Colliery Lifex Extension Project may become contaminated. Unless appropriately managed, such contaminated surface water could impact negatively on the surface water quality in the receiving environment. The extent of this impact will be reduced by the implementation of the proposed amendment activities.	Non-mining waste management will be undertaken at the proposed Landau Colliery Lifex Extension Project in accordance with the existing waste management procedure at Landau Colliery.	Compliant	Non-mining hazardous waste, general waste and scrap metals are stored at the workshop area and in skips. The waste is removed on site by Phambili. Safe disposal certificates were provided for review during the audit.
7.10.3.168.			The dirty water impoundments will be managed and maintained in such a manner as to ensure that the available capacity and freeboard required by the applicable regulations are adhered to at all times.	Compliant	It was confirmed during the site visit that all dirty water structures are maintained to a freeboard and capacity authorised by the water use licence.
7.10.3.169.			The liners and underdrainage systems of the dirty water management system of Landau Colliery's Lifex Extension Project will be inspected monthly and maintained / repaired where necessary.	Compliant	Inspection of the liners and underdrainage systems of the dirty water management system is conducted on monthly basis as part of the monthly inspection by Khwezela North Colliery Environmental Coordinator. Where concerns regarding hydrocarbon management are identified, such are reported as incidents and captured as incidents on the Enablon System for corrective and preventive actions.
7.10.3.170.			No discharge of excess mine water will be allowed to take place to the receiving environment without the required authorisations.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), dirty water from the dirty water areas is disposed of at designated water management facilities. Khwezela North Colliery indicated that no

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					authorisations for the discharge of dirty water to the environment has been applied. No uncontrolled dirty water to the environment was noted during the site visit.
7.10.3.171.			Should any dirty water storage facilities overflow, the emergency procedure (described in Part 9) will be followed.	Not Applicable	No overflow of the dirty water storage facilities was reported during the audit period.
7.10.3.172.		According to the information provided in the groundwater study, a total of approximately 1 560 430 m ³ of excess water (Groundwater Complete, 2013) will need to be abstracted in 2014 for mining to be undertaken safely and efficiently. Unless managed appropriately, this contaminated water would enter the receiving environment. The amended name, location and or layout will not result in a change to the existing identified impact	The abstraction of excess water will be undertaken in accordance with the current approved Licence conditions for Landau Colliery and will, in future, also comply with a future Licence issued for the Lifex Extension Project. Contaminated mine water will be stored in purpose-designed dirty water containment facilities, both at the proposed Lifex Extension Project and at the Navigation Section of Landau Colliery, and excess dirty water will be incorporated into the existing system whereby mine water is pumped to the Emalahleni Water Reclamation Plant for treatment to potable standards before being re-used by the SACE mines and the Emalahleni Municipality.	Compliant	Groundwater is currently being extracted from three (3) boreholes drilled as part of the Lifex Extension Project and authorised under the approved WUL. Such water is abstracted and pumped to the EWRP for treatment.
7.10.3.173.			The dirty water impoundments will be managed and maintained in such a manner as to ensure that the available capacity and freeboard required by the applicable regulations are adhered to at all times.	Compliant	It was confirmed during the site visit that the pollution control dams are operated at a freeboard of 8.0.
7.10.3.174.			No discharge of excess mine water will be allowed to take place to the receiving environment without the required authorisations.	Compliant	According to the Water Reticulation Plan (dated October 2019 to October 2020), dirty water from the dirty water areas is disposed of at designated water management facilities. Khwezela North Colliery indicated that no authorisations for the discharge of dirty water to the environment has been applied. No uncontrolled dirty water to the environment was reported during the audit period.
7.10.3.175.			Should any dirty water storage facilities overflow, the mine's emergency procedure will be followed.	Not Applicable	No overflow of the dirty water storage facilities was reported during the audit period.
7.10.3.176.		Water storage facilities will likely overflow, and storm water management infrastructure will likely be breached in extreme storm events, larger than the designed flood events. The contaminated water kept within the dirty water management area would flow into the surrounding catchment, influencing the water quality in receiving streams. However, it should be borne in mind that during an extreme flood even, it is expected that the water in the streams themselves will have a diluting effect, providing some mitigation against the contaminated overflow and runoff. The amended name, location and or layout will not result in a change to the existing identified impact.	The cut-off drains that will have been constructed during the Construction Phase will continue to divert clean surface runoff towards the surrounding catchments. All direct rainfall within the operational areas will be considered "dirty" and will be channelled to the pollution control dams from where it will be pumped back to the Navigation Plant for re-use or to the EWRP for treatment.	Compliant	The cut-off drains are constructed continue to divert clean surface runoff towards the surrounding catchments. All direct rainfall within the operational areas is considered "dirty" and is channelled to the pollution control dams from where it will be pumped back to the Navigation Plant for re-use or to the EWRP for treatment.
			With the exception of the planned water crossings of the haul road and conveyor, all infrastructure areas at the Landau Colliery Lifex Extension Project will be located outside the 1:100 flood line and further than 100m from the nearest watercourse, thus minimising the impacts associated with flooding. These measures will be maintained and improved where necessary to ensure that the impacts association.	Compliant	According to the water use licence granted for the Lifex Extension Project and the site visit conducted, no infrastructure is constructed within 100 meters from any water course. Only infrastructures within 500 metres from watercourses is authorised.
7.10.3.177.			All pollution control structures will be inspected after a flood rainfall event for signs of erosion. Water levels will be checked to ensure that the operational capacities are maintained.	Compliant	All pollution control structures and water management structures and are inspected on a monthly basis (including after heavy rainfall). Should any concerns be identified (erosion and water level), they are actioned as soon as possible.
7.10.3.178.			All damages to surface water management infrastructure, and erosion thereof, will be rectified.	Not Applicable	No damages and erosion were noted on the surface water management infrastructure, therefore this EMPR commitment is not applicable.
7.10.3.179.			Should an event greater than a 1:50 year flood event occur, and it is necessary for the mine to discharge contaminated water, emergency authorisation from the DWS will be applied for prior to the commencement of such discharge. Monitoring of the surface water quality within the receiving water bodies will take place following such discharge, and the integrity of the surface water management infrastructure will be inspected and repaired immediately, where necessary. If the data from the monitoring of affected water bodies following an extreme event greater than a 1:50 year storm event indicates that the impacts of the discharge	Not Applicable	According to Khwezela North Colliery, no emergency discharge of mine affected water has been applied, therefore this EMPR commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			of contaminated water from Landau Colliery are significant, suitable rehabilitation and remediation action will be taken as soon as possible after the flood to mitigate any damage that may have been caused as a result of the discharging of contaminated water.		
7.10.3.180.			No mining within these areas will take place without the relevant authorisations, in terms of GN704 exemptions, Section 21(c) and (i) water use licenses (in terms of the NWA) or authorisations in terms of NEMA.	Compliant	Khwezela North Colliery is issued with a water use licence for Section 21(c) and (i) water uses with no new water uses undertaken without authorisation.
7.10.3.181.			A clean water diversion system, consisting of a clean water pond, pumping system with pipeline stream diversion canal, will be implemented upstream of the Navigation Pit. The diversion system has been designed (to conceptual level) to accommodate at least the 1:100 year event.	Compliant	Berms are constructed upslope of the opencast pits. This was confirmed during the site visit.
7.10.3.182.			The clean water diversion systems should be operated, inspected and maintained to ensure that they can adequately accommodate a 1:100 year flood event at all times. This would include ensuring that the channels are free of obstructions and that the capacity of the diversion pond is maintained through occasional desiltation and also ensuring the integrity of the diversion berms remains intact throughout the life of mine.	Compliant	Monthly inspections are conducted by the Environmental Department. Inspection report were provided for review during the audit period.
7.10.3.183.			Clean water diversion canals will be provided on the upslope perimeter of all opencast pits. In addition, sacrificial diversion canals will be provided at Navigation Pit and Schoongezicht South Mini Pit. See Section 4.6 of the surface water specialist report. All diversion canals should be designed to accommodate at least the 1:100 year event.	Compliant	Berms are constructed upslope of the opencast pits. This was confirmed during the site visit.
7.10.3.184.			The conveyor should be elevated above the 1:100 year level at all watercourse crossings. If practical the conveyor support infrastructure should be located outside of the 1:100 year flood line.	Not Applicable	The conveyors associated with this EMPr commitment has not been constructed as yet, therefore, this EMPr commitment is not applicable.
			All haul road crossings should be designed to accommodate at least the 1:100 year event.	Not Applicable	No haul road crossings have been constructed, therefore, this EMPr commitment is not applicable.
7.10.3.186.		Possible spillages of mine water from the conveyance pipelines could lead to contamination of surface water in the receiving environment, as described previously. The amended name, location and or layout will not result in a change to the existing identified impact.	The pipeline will be inspected on a monthly basis to identify potential leaks or weaknesses in the pipeline where maintenance may be required. Such inspections will also be undertaken if the pressure gauge(s) in the pipeline indicate a drop in pressure. If necessary, leaks or weak areas in the pipelines will be immediately repaired, and any soil that may have come into contact with the mine water leaking from the pipeline will be rehabilitated. Depending on the severity of the leak, and the timeframe of exposure of the receiving soils to the mine water, affected soils will be monitored and assessed to determine the most appropriate rehabilitation method that should be used, for example bioremediation or soils removal and disposal in accordance with the applicable legislative requirements.	Compliant	Inspections of the conveyance pipelines are conducted on monthly basis by Khwezela Colliery Environmental Department. According to the monthly reports provided for review, no pipeline leaks were reported.
7.10.3.187.			Significant leaks from, and failures of, the dirty water pipeline outside of dirty water management areas will be reported to the DWS.	Not Applicable	No dirty water pipeline outside of dirty water management areas are utilised, therefore this EMPr commitment is not applicable.
7.10.3.189.	Surface water: Watercourse alterations	No further disturbances to watercourses are expected to take place during the Operational Phase unless new infrastructure is constructed. The amended name, location and or layout will not result in a change to the existing identified impact.	Any new infrastructure will be located outside of the 1:100 year flood lines of the streams draining the mine boundary areas. However, should this not be possible, or should a watercourse crossing be required, an environmental impact assessment will be undertaken for the planned activity to inform the design of the infrastructure, and to inform decision making. The applicable authorisations will be obtained before construction or expansion of any watercourse alterations takes place.	Not Applicable	Khwezela North Colliery indicated that no new infrastructures have been constructed at Kromdraai Section, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.190.		Should a spill of hazardous materials (including dirty water, fuel and chemicals) occur on or near the planned haul road and / or conveyor crossings over the Schoongezichtspruit, the soil and receiving surface water in the vicinity of the spill would become polluted, possibly affecting aquatic habitats and downstream water users. The amended name, location and or layout will not result in a change to the existing identified impact	Spillages of hazardous materials, hydrocarbons or other contaminating substances on soil will be prevented, but where such events do occur, the spilled material and affected watercourse will be cleaned up immediately in accordance with the existing Landau Colliery Emergency Procedure and rehabilitated.	Compliant	Spillages coal-bearing material are prevented by the following: <ul style="list-style-type: none"> Procedures are developed and implemented for the management of spillages Environmental awareness with employees, contractors on the management and avoidance of spillage is undertaken by the implementation of induction presentations and monthly environmental toolbox. If spillages occur, all are handled as hazardous waste and are cleaned and disposed of at the hazardous waste bins and further disposed in a licenced landfill site (Phambili). No spillages may cause pollution of surface water resources and soils were reported and noted during the audit period.
7.10.3.191.		The diversion of clean surface water runoff from upslope around the planned mining and related surface infrastructure areas, and return thereof to the Schoongezichtspruit, is expected to contribute to an improvement in the water quality of the Schoongezichtspruit and possibly further downstream. Furthermore, the planned diversion of surface water around the dirty water management area will ensure that the water quality of the upslope runoff is not affected and complies with the GN 704 requirements to separate clean and dirty water, while simultaneously minimizing impacts on catchment yield. The amended name, location and or layout will not result in a change to the existing identified impact.	Construction of the stream diversion as proposed in the Draft Surface water conceptual design report (attached in Appendix D10) will ensure that the stream diversion will be implemented correctly, operated optimally, and will not impact negatively on the receiving environment.	Not applicable	No construction of the stream diversion has commenced as yet, therefore this EMP commitment is not applicable.
7.10.3.192.	Groundwater: Quantity and Flow	With the exception of the progressively lengthening haul roads through the mining areas and the progressive expansion of the Blaauwkrans Codisposal facility as part of the proposed extension, it is not anticipated that additional surface areas will be compacted during the Operational Phase for purposes relating to surface infrastructure. However, should such compaction occur, the infiltration of surface water to the groundwater (i.e. groundwater recharge) will decrease. The amended name, location and or layout will not result in a change to the existing identified impact.	The footprint areas where the surface is compacted will be minimised, although in the case of haul roads, the compacted surface area will generally progressively increase as opencast mining advances. However, even with the progressive enlargement of the compacted surfaces of haul roads, it is not anticipated to impact largely on groundwater infiltration.	Compliant	According to the assessment of the Google Earth Image, Blaauwkrans Co-disposal facility is constructed within the approved footprint area.
7.10.3.193.			Haul roads will be located in predesignated areas, and all traffic will be kept on the haul roads, minimising the area of surface disturbance, and resultant impacts on soil, surface water and groundwater infiltration.	Compliant	It was confirmed during site visit that haul roads are located in predesignated areas, and all traffic is kept on the haul roads.
7.10.3.194.	Groundwater: Quantity and Quality	Where the groundwater gradient allows for infiltration of surface water, water contained in the planned dirty water containment facilities, and infiltration through the proposed Blaauwkrans Co-disposal facility extension, will seep into the groundwater regime and will result in 'mounding' of groundwater beneath the facilities, from where it will seep into the	Implementation of the surface water impact mitigation measures discussed previously in this document, including the inspection and maintenance of the liners and underdrainage systems of the dirty water management system of Landau Colliery's Life Extension Project, will simultaneously ensure that the impacts of these facilities on groundwater quantity (mounding, flow, etc.) and quality (pollution plume formation and movement) will be minimised as far as practicable.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.195.		surrounding geology. Despite the use of some mitigation by design, such as HDPE lining of the new dirty water facilities and the underdrainage of the Blaauwkrans Co-disposal facility extension, this impact is still expected to occur, although to a significantly reduced degree. This artificial recharge will result in 'mounding' of groundwater beneath the facilities, which will result in a local increase in the groundwater gradient, causing an increased flow rate of contaminated seepage, and consequently resulting in groundwater pollution plumes. The amended name, location and or layout will not result in a change to the existing identified impact	Groundwater monitoring will be continued to inform on groundwater levels and movement as well as pollution plume formation and movement.	Compliant	Groundwater monitoring is conducted on quarterly basis for determination of groundwater levels. Water monitoring reports were provided for review during the audit period. According to the groundwater monitoring reports provided, no contamination and the associated pollution plume formation was reported.
7.10.3.196.			Should groundwater monitoring indicate that groundwater contamination and the associated pollution plume formation and movement are occurring despite the preventative measures incorporated into the design, options to reduce and / or rectify the effects on the receiving groundwater will be investigated.	Not Applicable	According to the groundwater monitoring reports provided, no contamination and the associated pollution plume formation was reported.
7.10.3.197.	Groundwater: Quality	Surface water run-off coming into contact with soil or other surfaces where hydrocarbons such as fuel or oil may have been spilled will become contaminated. Unless mitigated appropriately, the water containing hydrocarbons will enter the receiving groundwater regime and negatively affect the groundwater quality. The amended name, location and or layout will not result in a change to the existing identified impact	The mitigation measures set out in Ref. No.'s 7.10.1.75-79 apply here as well.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.198.		The in situ rehabilitation of the planned extension of the Blaauwkrans Codisposal facility will have a positive effect on the groundwater conditions, since infiltration through the carbonaceous discard will be greatly reduced. However, some poor quality seepage is still expected to seep through the discard material and into the subsurface, although if the rehabilitated side slopes are well maintained, the volume of the poor quality leachate should be significantly reduced. The amended name, location and or layout will not result in a change to the existing identified impact.	The soil cladding and vegetation of the sidewalls of the co-disposal facility will be regularly inspected for signs of erosion, damage or failure. Where necessary, repair work will be undertaken immediately to minimise the infiltration of surface water through the discard to the groundwater.	Compliant	The side slopes of the Blaauwkrans Co-disposal facility are not vegetated. It was indicated during the site visit that concurrent rehabilitation of the side walls of the Blaauwkrans Co-disposal Facility has ceased as a portion of the Blaauwkrans Co-disposal Facility will be reworked as part of the proposed Khanyisa Project. Authorisation with this regard has been approved.
7.10.3.199.			The Co-disposal facility extension will be managed to comply with the applicable safety and engineering standards, as well as best practice environmental management principles, particularly relating to water and waste management, as is currently practised at the existing Blaauwkrans Co-disposal facility.	Compliant	The Blaauwkrans Co-disposal Facility expansion is managed in accordance to the practices implemented as implemented at the existing section of the Blaauwkrans Co-disposal Facility. Further, as previously described, the Blaauwkrans Co-disposal is managed in accordance to the Khwezela Mandatory code of practice for mine residue deposits. Seepage water from the Blaauwkrans Co-disposal facility is diverted to the Kopseer and the Emergency Toe- dams via trenches and the water is transported to the Toe Seep water dam. The contaminated water is then treated at the Toe Seep Plant, and ultimately stored in the Navigation Raw (Treated) water dam for re-use in the Navigation Dense Medium Separation Plant Section. Excess raw water is pumped to the EWRP for treatment to potable standards before being distributed onwards.
7.10.3.200.		The existing Navigation PCD is an unlined pollution control facility, and has been a source of groundwater contamination in the past. The removal of the existing, unlined Navigation PCD and replacement thereof with two, purpose-designed, legally compliant, lined PCDs (namely the proposed Plant East and Plant West PCDs) will mean that the	Implementation of the measures set out in Ref. No.'s 7.10.3.143-146 will ensure that the positive impacts of this activity are maximised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.

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		Navigation PCD will no longer be a source of groundwater contamination. However, unless appropriately managed, the decommissioning and removal of the Navigation PCD could impact negatively on the surface water and groundwater in the receiving environment. The amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.201.		The removal of the Old Navigation dump will result in the removal of this existing groundwater contamination source. Backfilling of the Navigation East Pit with the discard material from the Old Navigation Dump will, once groundwater levels recover post mining, be largely under the water table and less exposed to oxygen, thus less likely to pose as much of a risk to groundwater quality over the long-term than at present. The amended name, location and or layout will not result in a change to the existing identified impact	Implementation of the measures set out in Ref. No.'s 7.10.2.34 and 7.10.3.147 will ensure that the positive impacts of this activity are maximised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.202.		Unless appropriately managed, possible leakage of domestic wastewater from septic tanks or associated sewage management infrastructure (e.g. pipelines) may occur, resulting in contamination of the soil, and consequent contamination of the receiving surface water, wetlands and groundwater. Key indicators of such contamination include elevated nitrate concentrations and the presence of faecal coliforms. The amended name, location and or layout will not result in a change to the existing identified impact.	The septic tanks and associated conveyance infrastructure at the Lifex Extension Project will be regularly inspected and managed by a suitably qualified person to ensure that it is in good working order at all times.	Compliant	Operation and maintenance of the navigation sewage treatment plant is inspected on weekly basis Fortchportch (Pty) Ltd who are appointed as the suitable qualified person. Inspection reports were provided for review during the audit period.
7.10.3.203.			Where necessary, repairs and maintenance will be undertaken in a timely manner to ensure that the potential for spillage of untreated domestic wastewater to the receiving environment will be minimised.	Compliant	It was confirmed during the site visit that all repairs and maintenance activities are undertaken on protected grounds.
7.10.3.204.			Surface and groundwater monitoring downstream of the offices will include analysis of key indicator parameters (nitrate and faecal coliforms).	Compliant	According to the Quarterly Surface Water Quality Report, monitoring includes the analysis of nitrate and faecal coliforms.
7.10.3.205.			Possible spillages will be cleaned immediately and appropriately handled. This will reduce impacts on soil, surface water and groundwater contamination as well as reducing possible hazards to human health.	Compliant	If spillages occur, all are handled as hazardous waste and are cleaned and disposed of at the hazardous waste bins and further disposed in a licenced landfill site (EnviroServe). No spillages that may cause pollution of surface water resources and soils were reported and noted during the audit period.
7.10.3.206.		Water from the wash bays at the workshop and office complex will be dirty and if allowed to drain onto nearby areas will contaminate surface water runoff. This may infiltrate and pollute groundwater resources. The amended name, location and or layout will not result in a change to the existing identified impact.	All water within the workshop and office dirty water management area(s) will be contained within the purpose-designed water management infrastructure.	Compliant	According to the Water Balance, dirty water from the Workshops offices and stores is disposed at the silt traps and then to the Acid Mine Dam and further to the liming plant for treatment.
7.10.3.207.			The implementation of the surface water management measures discussed previously will ensure that the potential impact of the use of wash bays and other areas within the workshop and office complex on groundwater will be minimised.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.208.	Air Quality	Movement of vehicles along access and haul roads will, if left unmitigated, result in the generation of dust that will lower the air quality within the study area. The amended name, location and or layout will not result in a change to the existing identified impact.	Dust emission from roads will be controlled through wet and/or chemical stabilisation.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission.
7.10.3.209.			Strict speed control will be implemented on the gravel roads within the project boundary area.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.

REF. NO	ENVIRONMEN- TAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.10.3.210.			Movement of vehicles will be restricted to purpose-built haul roads within the Lifex Extension Project boundary area, as well as to predetermined routes outside of the boundary area.	Compliant	It was confirmed during the site visit that the movement of haul trucks are restricted to purpose-built haul roads and to the predetermined routes.
7.10.3.211.		Materials storage, handling and transfer operations will, if left unmitigated, result in the generation of dust that will lower the air quality within the study area. The amended name, location and or layout will not result in a change to the existing identified impact.	Water retained within the dirty water management system will be used for dust suppression in dirty water management areas. The volume of water used for dust suppression will be controlled to ensure that excessive ponding or runoff is not generated.	Compliant	According to the Water Balance, mine affected water is utilised for dust suppression, reuse within the dirty water system or is transferred to the EWRP for treatment. The volumes of the contaminated water used for dust suppression are recorded on monthly basis. Water Enablon Results were provided for review during the audit period.
7.10.3.212.		Earthmoving operations will, if left unmitigated, result in the generation of dust that will lower the air quality within the study area. The amended name, location and or layout will not result in a change to the existing identified impact.	Exposed areas will be revegetated as soon as practicable.	Not Applicable	No unnecessary exposed soil was noted during the site visit, therefore this EMPR commitment is not applicable.
7.10.3.213.		Open areas (wind-blown emissions) will, if left unmitigated, result in the generation of dust that will lower the air quality within the study area. The amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.214.					
7.10.3.215.					
7.10.3.216.		Trucks and other equipment or vehicles requiring the use of fuel will emit carbon dioxide into the atmosphere. The amended name, location and or layout will not result in a change to the existing identified impact.	All machinery employed on site will be in good repair, and well maintained.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 000 km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
7.10.3.217.		will not result in a change to the existing identified impact.	All machinery will be fitted with the correct exhaust systems, which will be maintained and in good repair. Procurement of replacement parts such as exhausts will require lower carbon emissions, to meet international and Anglo standards.	Compliant	All machinery and vehicles employed are fitted with exhaust systems and are maintained in a good state of repair. No concerns in this regard were evident. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission-reduction technology.
7.10.3.218.			AO's buying policy will continue to be implemented to ensure that new and replacement equipment and vehicles purchased incorporate emission-reduction technology.	Compliant	All machinery and vehicles employed are fitted with exhaust systems and are maintained in a good state of repair. No concerns in this regard were evident. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission reduction technology
7.10.3.219.		All anticipated impacts on air quality were described briefly above. More detailed impact descriptions and impact modelling is presented in the Air Quality Specialist Study attached as Appendix D4. The amended name, location and or layout will not result in a change to the existing identified impact.	The existing air quality monitoring programme at Landau Colliery will be revised to include the proposed Lifex Extension Project (the air quality monitoring programme and planned changes to include the Lifex Extension Project will be discussed in detail in the EIR under NEMA (1998) and the EMP (under the MPRDA)). Measurements will be taken during the operational phase to verify and quantify the impacts on air quality, both as a result of the Lifex Extension Project as well as the cumulative effect of the Lifex Extension Project and the existing operations at Landau Colliery. The revision of the air quality programme would take the amended location of infrastructure such as the ROM Tip area into account, should this Part 1 amendment application be approved.	Compliant	The existing air quality monitoring programme include the Lifex Extension Project. Air quality monitoring report was provided for review during the audit period.
7.10.3.220.		In the event of a large hydrocarbon spill (e.g. from fuel storage tanks at the office and workshop complex), noxious and flammable gases may be emitted which are hazardous, both to the receiving environment and to people's health and	In the case of a large hydrocarbon spill, all employees should vacate the area where the spill has occurred. This would be considered an emergency and procedures regarding hazardous spills will be followed.	Not Applicable	No large hydrocarbon spills were reported and noted during the audit period, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		wellbeing. The amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.221.		Navigation dump will mean that the coal discard and fines of the dump will no longer be a source of dust and possibly also of carbon dioxide (due to spontaneous combustion, although whether the dump is still combusting will need to be confirmed by a suitably qualified person), and will consequently improve current air quality conditions. The amended name, location and or layout will not result in a change to the existing identified impact.	N/A	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.222.	Noise	The impacts and mitigation measures discussed in Ref. no.'s 7.9.1.90-98 and 7.9.2.113-116 of Table 7.9 (Construction Phase EIAMAP) will continue to apply to these activities during this phase of the LOM. No additional impacts are expected to occur as a result of the utilisation and maintenance of the surface infrastructure. The amended name, location and or layout will not result in a change to the existing identified impact. The revision of the noise monitoring programme would take the amended location of infrastructure such as the ROM Tip area into account, should this Part 1 amendment application be approved.			
7.10.3.223.	Sensitive landscapes	The use and maintenance of all surface infrastructure at the Lifex Extension Project could impact on water quality in the receiving wetland areas through the impacts on surface water quality, as discussed previously. The amended location and or layout of several surface water infrastructure will result in a reduction of the existing identified impact due to the	The implementation of the mitigation measures discussed in Ref. no.'s 7.10.3.72-191, above, will simultaneously address the potential indirect impacts of surface water quality impacts on wetlands in the study area.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.224.		Possible leaks from dirty water conveyance pipelines may impact on water quality in receiving wetlands, depending on the route(s) of the pipeline(s) and the location of the leak(s). The amended name, location and or layout will not result in a change to the existing identified impact	The mitigation measures and reporting and monitoring commitments discussed previously will ensure that the potential indirect impacts on water quality in the receiving wetlands of such a leak or failure in the dirty water conveyance pipeline outside of the dirty water management area will be prevented, minimised and / or rectified, as applicable.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.
7.10.3.225.		The discharge of surface water from surface infrastructure areas could lead to erosion in adjacent receiving wetland areas. The amended name, location and or layout will not result in a change to the existing identified impact.	Clean storm water discharge points will be located outside wetland areas, as far as practicable. Where this is not achievable, discharge points (of clean upslope runoff) to wetlands will incorporate sediment traps and will encourage low velocity, diffuse flows through the receiving wetland	Not Applicable	No clean water discharge points are located within the Lifex Extension area, therefore this EMPR commitment is not applicable.
7.10.3.226.			Clean storm water discharge points will be protected against erosion.	Not Applicable	No clean water discharge points are located within the Lifex Extension area, therefore this EMPR commitment is not applicable.
7.10.3.227.			Clean storm water discharge points will be inspected regularly, and maintained / repaired when necessary.	Not Applicable	No clean water discharge points are located within the Lifex Extension area, therefore this EMPR commitment is not applicable.
7.10.3.228.		Unless appropriately managed, the use and maintenance of surface infrastructure during this phase of the LOM could lead to further damage to, or loss of, wetland habitat within the study area. The amended name, location and or layout will not result in a change to the existing identified impact.	Maintenance activities will make use of existing roads and tracks and all vehicles will travel only on existing roads and tracks.	Compliant	It was confirmed during the site visit that maintenance activities only make use of existing roads and tracks and all vehicles travel only on existing roads.
7.10.3.229.			No off-road driving will be allowed unless absolutely unavoidable.	Compliant	Current practices ensure that all mine vehicles (HMs and LVDs) and machinery are restricted to predetermined roads, as also indicated by the displayed traffic management plans on site. No concerns in this regard were identified.
7.10.3.230.			No temporary stockpiling of material will take place in wetland habitat.	Compliant	No temporary stockpiling of material in wetland habitat was noted during the site visit.
7.10.3.231.			Implementation of the soil and surface water management measures discussed previously in this table and in Table 6.1 will	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		sediment transport into the receiving wetlands unless appropriately mitigated. The amended name, location and or layout will not result in a change to the existing identified impact.	ensure that this impact is minimised, and may even be avoided altogether.		
7.10.3.232.		The remaining wetlands could be subject to an increase in alien vegetation if not appropriately managed. The amended name, location and or layout will not result in a change to the existing identified impact.	Implementation of the mitigation measures identified in Ref. no. 7.10.1.32 will ensure that the significance of this impact is minimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.233.		The impacts and mitigation measures identified in Ref. no. 7.10.3.176 (pertaining to water management) and Ref. no.'s 7.10.3.202-205 (pertaining to sewage management) also apply to this environmental aspect. The amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.234.		The potential impacts of the operation, maintenance and in situ rehabilitation of the Blaauwkrans Co-disposal facility extension on wetlands relate to the deterioration in water quality, erosion of wetland soils, and increased sediment transport into the receiving wetlands, as well as the potential increase in alien vegetation in the adjacent wetlands. The amended name, location and or layout will not result in a change to the existing identified impact.	Implementation of the mitigation measures identified previously in this table and in Table 6.1 relating to soil management, surface water management, groundwater management, alien vegetation control and indirect impacts on wetlands will ensure that the expected impacts of the operation, maintenance and in situ rehabilitation of the Blaauwkrans Co-disposal facility extension on the receiving wetlands will simultaneously be minimised.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.235.		The removal of the Navigation PCD and the Old Navigation dump as described in Ref. no.'s 7.10.3.143-146 and 7.10.3.147, will improve the surface water quality in the Schoongezichtspruit. In addition, the diversion of clean water around the mining and infrastructure areas and return thereof to the Schoongezichtspruit further downstream will also contribute to an improvement in water quality in the downstream reaches of the Schoongezichtspruit. It is therefore anticipated that the improvement in water quality will also improve the present ecological status of the valley bottom wetlands associated with the downstream reaches of the Schoongezichtspruit. It is also expected that the improvement in water quality will improve habitat conditions for aquatic biodiversity. The amended name, location and or layout will not result in a change to the existing identified impact.	N/A.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.236.	Visual aspects	Overburden and topsoil stockpiles will provide a visual and sound barrier between the mining areas and the closest communities (see Part 7.2.1.2.2 – mitigation by design). However, the stockpiles will themselves have a High visual impact, as described under Ref. no.'s 7.9.1.117 – 7.9.1.119 in Table 7.9 (Construction Phase EIAMAP). The	None. The stockpiles will themselves be a mitigation measure to minimise the impacts on the surrounding communities, land users and land owners (sensitive receptors).	Noted	This EMP commitment is understood by Khwezela North Colliery Management.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		amended name, location and or layout will not result in a change to the existing identified impact.			
7.10.3.237.		Visibility of ROM tip and ROM stockpiles. The ROM stockpiles occur more or less in the centre of the mining area and are mostly shielded by stockpiles and other infrastructure. The amended name, location and or layout will not result in a change to the existing identified impact.	Visual impacts will be minimised as far as possible by applying dust control measures. The revision of the visual impact programme would take the amended location of infrastructure such as the ROM Tip area into account, should this Part 1 amendment application be approved.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.238.		The conveyor and its housing will continue to be visible during the Operational Phase, although the significance thereof is expected to be muted by the mitigation measures that were implemented during the Construction Phase (see Ref. no. 7.9.2.142 in Table 7.9). The amended name, location and or layout will not result in a change to the existing identified impact.	The conveyor housing will be inspected monthly and maintained and repaired when necessary. The maintenance of the colour of the conveyor housing will enable the conveyor to continue blending in to the background as far as practicable (refer also to Ref. no. 7.9.2.142 in Table 7.9). The revision of the visual impact programme would take the amended location of infrastructure such as the ROM Tip area into account, should this Part 1 amendment application be approved.	Compliant	Inspections of the conveyor housing are conducted by the Environmental Department of Khwezela North Colliery. The colour of the conveyor (olive green) blends in with the surrounding environment. Furthermore, the visual impact study conducted considered the location of the conveyor housing and the ROM Tip area. Monthly inspection reports and visual impact studies were provided for review during the audit period.
7.10.3.239.		The visual impact of the Blaauwkrans Co-disposal facility extension was described under the construction thereof (see Ref. no. 7.9.1.143 in Table 7.9 (Construction Phase EIAMAP)). The disposal of coal discard in itself is not a highly visible activity, but the progressive extension of the disposal facility will add to the existing visual impact, thereby creating cumulative visual impacts the amended name, location and or layout will not result in a change to the existing identified impact.	The mitigation measures described in Ref. no. 7.9.1.143 of Table 7.9 (Construction Phase EIAMAP) will continue to be applied progressively through the Operational Phase.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.240.		The utilisation of surface infrastructure is expected to generate dust plumes due to the stockpiling, handling and transport of coal, overburden and soils, as well as the movement of machinery and vehicles, which could impact on the visual aesthetics of the study area, unless appropriately mitigated. The amended name, location and or layout will not result in a change to the existing identified impact.	Dust control measures, as described Ref. no.'s 7.10.3.208 - 215, will be implemented to simultaneously control dust emissions and reduce the visual impacts associated with the generation of dust at surface infrastructure areas during the Operational Phase.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.241.		The removal of the Old Navigation dump, and rehabilitation of the remaining footprint area, will improve the visual landscape and will return the topography to more or less pre-mining conditions within the remaining footprint area of the dump. The amended name, location and or layout will not result in a change to the existing identified impact.	N/A	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.242.	Sites of Archaeological	Graveyard GY03 and the Historical Structures and Historical Houses will not be directly disturbed by the proposed	The graveyard GY03 will be conserved according to the Graveyard Conservation Plan attached as Appendix D8.2. It is anticipated that the implementation of the said conservation plan	Non-Compliant	According to the Graveyard Conservation Plan (dated 20 November 2019), the following should be implemented for the protection of the graveyard GY03:

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
	and cultural importance	Lifex Extension project. However, GY03 was identified as being at risk of damage. The graveyard could be defaced or otherwise damaged due to the relative proximity to the proposed new infrastructure at the Lifex Extension Project. The amended name, location and or layout will not result in a change to the existing identified impact.	will protect the graves in the future and could even enhance their current condition.		<ul style="list-style-type: none"> GY03 should be demarcated with a fence or with a wall and it should be fitted with an access gate. Regulated visitor hours should be implemented that is compatible with mine safety rules. Corridors of at least 20m should be maintained between the graveyard's fences and any developmental components such as road or other infrastructure that may be developed in the future. The graveyard should be inspected on a monthly basis. Inspections should be noted in an inspection register. The register should outline the state of the graveyard during each inspection. Reports on damages to any of the graves or the graveyards fence (wall) and access gate should be followed with the necessary maintenance work. Maintenance work should be recorded in the inspection register. <p>In relation to the above, the following were noted during the site visit and document review:</p> <ul style="list-style-type: none"> No fence is erected at the identified graveyard. No visitor's hours are implemented and erected. Monthly inspections are undertaken by Khwezela North Colliery Environmental Department, which include the inspection of the identified graveyard. However, the inspection report does not include the state of the graveyard. No maintenance of the identified graves is conducted. No damages to the graves were noted. <p>Khwezela North Colliery must ensure that the Graveyard Conservation Plan is implemented for the protection of the Graveyard GY03.</p>
7.10.3.243.			The conservation of these structures will be proactively addressed through the incorporation thereof into the environmental training and awareness programme. By educating the workforce about these structures, and possibly imparting a sense of respect for the cultural heritage associated with will be protected through behaviour, and not defaced or destroyed. the said structures, the historical structures and houses	Compliant	As per the environmental awareness training presentation provided for review, training and awareness regarding graves, heritage and archaeological structures are provided to employees.
7.10.3.244.	Socioeconomic impacts	The mining and related activities that will take place during the Operational Phase at the proposed Landau Colliery Lifex Extension Project area may, in addition to providing continued employment for existing Landau Colliery employees, create some additional opportunities for employment and skills transfer. The amended name, location and or layout will not result in a change to the existing identified impact.	Same as Ref. no.'s 7.9.1.121 – 7.9.1.126 in Table 7.9 (Construction Phase EIAMAP).	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.245.		The change in land use from agriculture to mining in areas not already used for mining will result in a higher income per hectare over the short-term in comparison with agriculture. The amended name, location and or layout will not result in a change to the existing identified impact.	Environmental impacts will be managed so as to minimise environmental liability, thus maximising profits and revenue, thus maximising positive impacts on socio-economy	Compliant	Environmental impacts are managed in accordance to the EMP and where required based on legislation. Non-compliances to the mitigation commitments as included within the approved EMP were identified as part of the audit.
7.10.3.246.	I&APs	Health issues may also arise from social conditions. The potential influx of work seekers to the area, particularly men, can	Landau Colliery will conduct education campaigns on awareness of sexually transmitted diseases.	Compliant	Training and awareness campaigns on STD's and HIV are provided by Khwezela North Colliery to all employee. Khwezela North Colliery indicated that posters are used to raise awareness of sexually transmitted

REF. NO	ENVIRONMEN- TAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		cause social ills. The number of men in the study area is already higher than the number of women. HIV/Aids are likely to increase with the introduction of a transient population. The amended name, location and or layout will not result in a change to the existing identified impact.			diseases. Such posters and awareness campaigns were provided during the audit period.
7.10.3.247.		It is anticipated that unless appropriately mitigated, the potential impacts on air quality may affect the health of the surrounding communities, and a number of lung diseases are already common in the area. The amended name, location and or layout will not result in a change to the existing identified impact.	Air quality management measures as described previously will be implemented to reduce the anticipated dust related impacts on I&APs. Refer also to Ref. no.'s 7.10.3.130 - 138.	Noted	This EMP commitment is understood by Khwezela North Colliery Management.
7.10.3.248.		The impacts on I&APs that were identified during the Construction Phase will apply during the Operational Phase as well. See Ref. no.'s 7.9.1.127-7.9.1.142 as well as Ref. no.'s 7.9.2.149 – 7.9.2.145 in Table 7.9 (Construction Phase EIAMAP)			
EIAMAP: Decommissioning Phase					
7.11.1.1.	Geology	Depending on the final agreed Closure objectives, the final opencast void will be sequentially backfilled with coal discard, carbonaceous overburden and then non carbonaceous overburden. The unconsolidated material will fill up the areas previously occupied by natural geological strata, but cannot replicate pre-mining conditions. The secondary impacts of the backfilled overburden on groundwater flow and surface stability are the main issues of concern, and are discussed in more detail below.	Management of the material balance will ensure that sufficient material remains for the backfilling of the final void during the Decommissioning Phase.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.2.		No further impacts are expected to occur on geology as a result of the removal of infrastructure and rehabilitation of disturbed areas.			
7.11.1.3.	Topography	Impacts on topography will remain where infrastructure is left intact or rehabilitated in situ. Infrastructure such as the Blaauwkrans Co-disposal facility (including the extension) and long-term groundwater water management infrastructure will be left intact, depending on the agreed Closure objectives	Infrastructure that will remain intact will be maintained by Landau Colliery until mine Closure is obtained, or until ownership of the said infrastructure and land is acquired by a third party in future.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.4.			Options for future use of the remaining facilities and buildings (e.g. letting or selling onwards to third parties) will be considered as part of the overall Landau Colliery Mine Closure Plan. See also impacts on land capability and land use, below, as well as the proposed Closure objectives in Part 7.7.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.5.			Permanent infrastructure such as the proposed and the Blaauwkrans Co-disposal facility will undergo final in situ rehabilitation to ensure that the potential impacts during the Decommissioning and Post-Closure Phases are minimised, and even prevented, as far as possible. Effective and proven strategies and methodologies will be used to ensure that the soil cladding and vegetation used as part of in situ rehabilitation will require minimal maintenance, and that the vegetation will become self-sustaining (see also Operational Phase commitments Ref. no.'s 7.10.3.26-28).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.6.		The removal of all surface infrastructure that will not form part of the final end land use(s) and the rehabilitation of the remaining footprint areas will contribute	Implementation of measures to ensure sustainable restoration and rehabilitation of other environmental components such as soil, vegetation and surface water will simultaneously enhance the	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.7.		to the restoration of the pre-mining topography.	positive impacts on topography and the related effects on visual aspects.		
7.11.1.8.		Storm water separation and dirty water management berms and trenches will be removed during rehabilitation, restoring the topography to pre-mining conditions as far as practicable.			
7.11.1.9.		The remaining soil stockpiles will be removed and used in the rehabilitation of disturbed areas previously used for infrastructure such as haul roads, etc			
7.11.1.10.		A positive impact is anticipated due to the backfilling of the final opencast void(s) and the associated rehabilitation, which will be conducted in such a manner as to create a free draining topography and limit erosion.	Rehabilitation of the final void will take place once the last load of coal has been hauled from the last pit. The surface of the rehabilitated final void will be shaped to be free draining and to return runoff to the receiving catchment, as far as practicable.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.11.		All remaining dirty water management infrastructure within the Schoongezichtspruit will be removed. The natural drainage line of the Schoongezichtspruit will be reinstated and rehabilitated.	Implementation of measures to ensure sustainable restoration and rehabilitation of other environmental components such as soil, vegetation and surface water will simultaneously enhance the positive impacts on topography and the related effects on visual aspects.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.12.			The topography of the Schoongezichtspruit will be reinstated where necessary and made free draining	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.13.	Soil	The movement of vehicles and machinery over the rehabilitated final void would compact the soils, changing their structure and function, and compromising the success of rehabilitation. This could lead to secondary surface and groundwater impacts which are discussed below.	A detailed method statement and rehabilitation plan for the reinstatement and final rehabilitation of the Schoongezichtspruit will be submitted to the DWS with the applicable Water Use Licence Application during the Operational Phase, prior to the commencement of the Decommissioning Phase.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.14.			Final void(s) will be backfilled and spoil surfaces will be levelled and shaped to a free draining topography (see also Ref. no. 7.11.1.9-10 above and Ref. no. 7.10.2.7 in Table 7.10 (Operational Phase EIAMAP)).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.15.			Topsoil will be replaced in sufficient quantities to render a soil depth after levelling which is similar to the stripping depth (refer to Table 8 of the specialist soil report attached as Appendix D1).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.16.			Soil amelioration and re-vegetation will be done as described in section 7.2.3 to 7.2.6 in the specialist soil report attached as Appendix D1.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.17.		Soils remaining in the footprint areas of the haul and service roads will be rehabilitated to ensure the maximum post-mining land capability can be achieved.	The remaining footprint areas will be thoroughly cleaned and all road building material will be removed to a suitable disposal facility.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.18.			The remaining footprint areas will be ripped to alleviate soil compaction. After ripping, the rough surface will be smoothed with a disc or multiple tooth implement and then graded to a smooth surface.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.19.			Topsoil stored as berms on the road edges (during the Construction and Operational Phases) will be spread over the ripped and smoothed road footprint areas. The topsoil will be ameliorated according to soil chemical analysis.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.20.			The remaining footprint areas over which the soil would have been ripped and replaced will be re-vegetated so as to become self-sustaining.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
		Removal of the conveyor equipment and housing will leave holes where the footing / supports of the conveyor had been during the Construction and Operational Phases.	Footing holes will be backfilled with soils from the surrounding areas.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.21.		Footing holes will be backfilled with soils from the surrounding areas.	The dam floors will be thoroughly cleaned and all polluted material will be removed to the Blaauwkrans Co-disposal facility (before the facility undergoes final rehabilitation).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.22.			Soil material used for wall embankments will be spread over the floor of the borrow pit.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.23.			The topsoil that was stockpiled ahead of dam construction will be replaced on the surface.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.24.			Soil compaction will be alleviated by ripping.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.25.			Soil amelioration will be done according to analyses of soil samples taken after replacement of the stored topsoil.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.26			The rehabilitated dam footprints will be revegetated with an appropriate grass seed mixture that will ensure that the agreed end land capability and land use will be achieved.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.27.		The recovery of any buried pipelines and other infrastructure will require the overlying soil to be removed before the pipelines can be removed. The impacts on soil that were identified during the Construction Phase (further mixing of soil horizons with the resultant reduction in soil quality) will be repeated.	The upper 300 mm of topsoil will be excavated and placed away from the resulting trench.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.28.			The soils will be backfilled.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.29.			Soil amelioration and rehabilitation will take place as described in Ref. no.'s 7.11.1.25-26, above.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.30.		The tip area and ROM stockpile area will be removed and the remaining footprint will be rehabilitated.	Carbonaceous materials will be removed from the footprint area of the tip area and ROM stockpile area, and disposed on the Blaauwkrans Co-disposal facility (before the facility undergoes final in situ rehabilitation).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.31.			Ref. no.'s 7.11.1.17-19 will be implemented where compacted areas remain within the remaining tip area footprint.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.32.		Depending on the agreed end land use objectives, the workshop and office complex may either be removed or remain in place.	Carbonaceous materials will be removed from the footprint area of the Workshop and office complex, and disposed on the Blaauwkrans Co-disposal facility (before the facility undergoes final in situ rehabilitation).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.33.			Ref. no.'s 7.11.1.17-19 will be implemented where compacted areas remain within the remaining Workshop and office complex footprint.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.34.		The final in situ rehabilitation of the Blaauwkrans Co-disposal facility extension will require the replacement of the remaining stockpiled topsoil that was removed ahead of construction onto the shaped and capped coal discard facility surface	The final shape of the disposal facility will achieve gradients suitable for re-vegetation.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.35.			The Co-disposal facility extension will be covered with a topsoil layer and re-vegetated with a suitable grass mixture with strong stabilizing capabilities.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.36.		The rehabilitated soil surfaces will initially be exposed and susceptible to erosional forces, this could lead to a loss of soils.	Soils will be placed in such a manner to minimise potential erosion by ensuring slopes less than 1:6.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.37.			Erosion of rehabilitated surfaces will be repaired and controlled.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.38.			Rehabilitated areas will be monitored and remediated when / if necessary, until mine Closure is achieved.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.39.		Vehicles and machinery may leak or spill hydrocarbons. This will contaminate the rehabilitated soil and alter the structure and functioning of the soil.	The mitigation measures identified in Ref. no.'s 7.10.1.9-10 of Table 7.10 (Operational Phase EIAMAP) will also be applied here.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.40.	Land capability	Depending on the final agreed Closure objectives, the land capability of the final void(s) will be returned to arable and grazing, and will be consistent with the	Backfilling of final void(s), shaping of the surface to be free-draining, and management of aspects such as soil, vegetation and surface water will ensure that the land capability will be restored to be able to support the agreed end land use objectives.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		mined out voids that will have been progressively rehabilitated during the Operational Phase. As with the rest of the rehabilitated opencast area, the land capability in the immediate area of where the final opencast void(s) was / were located will gradually and progressively change from mining to arable and grazing once rehabilitation is successful. Little reduction of land capability will take place if the soil measures identified throughout the LOM are followed.	As mentioned previously, if soil is managed throughout the Construction, Operational and Decommissioning Phases as committed to in Tables 7.9, 7.10 and above in this table, the possible land capabilities will be maximised for future land users.		
7.11.1.41.		Land capability in the areas where infrastructure will remain in place (e.g. workshops and access road - see discussion of proposed Closure objectives in Part 7.7) at the end of LOM will remain permanently altered from the pre-mining land capability. However, while the land may no longer be capable of supporting an agricultural land use in these areas, the potential benefits of the remaining infrastructure to future land users / owners is some of these areas would contribute to a sustainable future land use and would enable future land users / owners to generate an income through the use of the remaining infrastructure.	Infrastructure that will remain intact will be maintained in good repair by Landau Colliery until mine Closure is obtained, or until ownership of the said infrastructure and land is acquired by a third party in future.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.42.		The land capability of the in situ rehabilitated Blaauwkrans Co-disposal facility extension will remain permanently altered from the pre-mining land capability to a post-mining land capability of wilderness. The land in this areas will not be capable of supporting alternative land uses in future, with the possible exception of strictly controlled grazing at the rehabilitated Co-disposal facility.	Implementation of the soil, vegetation and surface water management measures identified for the Construction, Operational and Decommissioning Phases of the Blaauwkrans Co-disposal facility extension will contribute significantly to the successful in situ rehabilitation of the said infrastructure.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.43.		In areas that will be rehabilitated to arable or grazing, final land capabilities will be directly dependant on the soil and the success of rehabilitation. Little reduction of land capability will take place if the soil measures identified throughout the LOM are followed.	Implementation of the soil management measures throughout the Construction and Operational Phases, as well as the Decommissioning Phase will ensure that the maximum agricultural land capability can will be achieved, in line with the planned Closure objectives, best environmental practice and sustainability principles.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.44.	Land use	The land use of the final rehabilitated voids will be returned to grazing, The land use will change from the relatively short-term land use of 'mining' to a land use which is sustainable over the long-term. The Closure objectives are discussed in Part 7.7, and will be confirmed and finalised during the Closure planning process at the end of LOM.	Backfilling of final void(s), shaping of the surface to be free-draining, and management of aspects such as soil, land capability, vegetation and surface water will ensure that the land capability will be restored to be able to support the agreed end land use objectives. As mentioned previously, if soil is managed throughout the Construction, Operational and Decommissioning Phases as committed to in Tables 7.9, 7.10 and above in this table, the possibilities for post mining land use will be maximised.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.45.		The potential retention and maintenance of the infrastructure that will remain for possible utilisation post-closure, such as the workshop area and access road (see also Part 7.7 (Closure objectives)), will restrict the future land use to urban / peri-urban uses such as light industry. However, the close location to the existing urban area of KwaMthunzi Vilakazi (formerly Clewer) and the city of eMalahleni, as well as the neighbouring heavy industries such as Transalloys and Evraz Steel, makes the possible use of the workshops for post-closure light industrial use desirable.	Infrastructure that will remain intact will be maintained in good repair by Landau Colliery until mine Closure is obtained, or until ownership of the said infrastructure and land is acquired by a third party in future.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.46.		The land use of the in situ rehabilitated Blaauwkrans Co-disposal facility extension will remain permanently altered from the pre-mining land use. No alternative land uses will be possible in these areas in future, with the possible exception of strictly controlled grazing at the Blaauwkrans rehabilitated disposal facility.	Implementation of the soil, land capability, vegetation and surface water management measures identified for the Construction, Operational and Decommissioning Phases of the Blaauwkrans Co-disposal facility extension and possible Schoongezichtspruit will contribute significantly to the successful in situ rehabilitation of the said infrastructure. While no alternative land uses will be possible in these areas, the self-sustaining rehabilitated surfaces will ensure that the likelihood that the permanent infrastructure will impact negatively on the receiving environment during the Post-Closure Phase is minimised (see also Part 7.5.5).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.47.		The impacts and management measures identified in Ref. no. 7.10.2.17 and Ref. no.'s 7.11.1.13-39 will also apply to this environmental aspect during the Decommissioning Phase			
7.11.1.48.		Indirect habitat and untransformed vegetation loss and degradation as a result of possible exposure to contaminate mine water during rehabilitation. Acidic contaminated mine water can lead to permanent degradation of terrestrial and wetland plant communities by altering species composition and physiognomy of the vegetation, reducing plant species richness. Such changes in vegetation lead to habitat degradation or even loss for certain animal species and lower faunal species richness.	All contaminated water will be removed from site before all dirty water management infrastructure is removed and the remaining footprints are rehabilitated. The rehabilitation strategy will aim to minimise the potential for spillage of contaminated water to the receiving environment. No uncontrolled discharge or flow of contaminated water to the receiving catchment will be allowed during the Decommissioning Phase.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.49.	Vegetation	Increased invasion of untransformed vegetation and rehabilitated areas by alien plants.	As per the Conservation of Agricultural Resources Act (Act No. 43 of 1983), weeds and alien invader plants will continue to be monitored and controlled within the rehabilitated areas and their immediate surrounds. As mentioned previously, rehabilitated areas will be vulnerable to invasion by such species, and will accordingly be more intensively and closely managed.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.50.			Soils used for the purpose of rehabilitation will not be obtained from areas invaded by alien plants, as this will serve to disperse seeds and other propagules of aliens, some of which have very long-lived seeds (e.g. <i>Acacia mearnsii</i> and <i>Acacia dealbata</i>)	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.51.		Indirect degradation of untransformed vegetation as a result of temporary increased sedimentation during removal of infrastructure, filling in of voids and landscaping.	The storm water separation and dirty water area isolation berms will remain in place until the last of the rehabilitated areas have been successfully re-vegetated.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.52.			Dust suppression will be undertaken in open areas where rehabilitation is underway. Dust suppression will cease once all areas of bare soil have been successfully re-vegetated.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.53.		Re-vegetation of un-vegetated and severely degraded areas will have a beneficial impact on the environment. Established grassland, even though secondary, will reduce 'edge effects' to surrounding untransformed vegetation. These edge effects include soil erosion, sedimentation as a result of runoff and dust, and alien plant infestation. It will also provide migratory corridors and extended foraging areas for fauna (including recorded and potentially occurring Threatened and Near Threatened species such as Southern Bald Ibis, African Grass Owl, Lanner Falcon and Serval)	All rehabilitation activities will be restricted to designated rehabilitation areas.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.54.			Planting of seed mix for re-vegetation will take place in early Spring, before the first rains. This will shorten the period during which the replaced soils are exposed, and will enhance the success of rehabilitation.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.55.			Wherever possible re-vegetation will be allowed to occur through the encouragement of natural establishment of secondary grassland through the process of secondary succession.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.56.			Where seeding is required, alien species such as Chloris gayana and Pennisetum clandestinum will not be used.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.57.			The establishment of secondary vegetation dominated by indigenous species will be further enhanced by broadcasting seeds of indigenous grasses and forbs, and 'enrichment planting' of indigenous species such as rescued medicinal plants and Protected species.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.58.			Light grazing of these areas will be encouraged once vegetation is established.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.59.			Whale-backing will be reduced to a minimum and the natural topography will be reinstated wherever possible (see also Ref. no. 7.10.1.2).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.60.	Animal life	Noise from vehicles and machinery used for rehabilitation may frighten any remaining animals and in turn cause them harm.	Vehicles and machinery used for the rehabilitation of the final void will be limited to the remaining access and haul roads as well as rehabilitation areas.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.61.		Human presence on site will be significantly reduced during the rehabilitation of the final void and remaining footprint areas of the removed infrastructure, and would therefore improve conditions for animals occurring in the vicinity and utilising the rehabilitated mining areas for habitat and hunting purposes.	Human presence and movement of vehicles will be reduced on rehabilitated areas.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.62.		With the re-establishment of vegetation and topsoils, animal habitats will be restored or replaced with new habitat.	Management of soils, vegetation and surface water during rehabilitation, as well as a reduction in the noise generated in rehabilitated areas, will ensure that rehabilitated areas provide habitat for animal species and would likely encourage animal species to return to the site.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.63.	Surface water (general)	Utilisation and maintenance of surface infrastructure will have negative impacts on surface water flow and catchment yield, on the quality of surface water runoff from the affected areas, and in some cases on the receiving watercourses and wetlands themselves. These are discussed individually in more detail below. Water Uses, as defined in Section 21 of the NWA, 1998, will change during the Decommissioning Phase as mining will	An application will be made under Chapter 4 of the NWA, 1998, to amend the Water Use Licence to reflect the changes in Water Uses during the Decommissioning Phase.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.64.			If the above-mentioned Water Use Licence Amendment is granted to Landau Colliery under Chapter 4 of the NWA, 1998, the conditions of the Licence Amendment will be implemented.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.65.			Auditing of compliance with the IWWMP commitments (and if a WUL Amendment is granted, to the conditions of the Licence Amendment) will be conducted regularly in accordance with the timeframes set by the DWS or committed to in the IWWMP.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.66.			Any new infrastructure will be designed to comply with GN704, 1999, under the NWA.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.67.			Compliance with Regulations GN 704, titled "Regulations on use of water for mining and related activities aimed at the protection of water resources", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be audited annually, and reported to the DWS.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.68.	Surface water (quantity and flow)		Employees and contractors will be trained to identify activities that would impact on the surface water aspect of the mine, such as spillage of contaminated water from pollution control dams during emptying ahead of rehabilitation, or spillages of contaminating substances such as diesel, carbonaceous material, etc. Furthermore, they will be informed on the environmental emergency procedure, and will be trained to contact the appropriate person to report such incidents.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.69.			The surface water monitoring programme and biomonitoring programme will continue to be implemented to enable the actual impacts of the mining and related activities at the proposed Lifex Extension Project to be verified and quantified.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.70.		As described in Ref. no. 7.10.2.28 and Ref. no.'s 7.11.1.9-12, the topography of the remaining voids and the surface infrastructure areas will be rehabilitated and shaped to be free draining. This will ensure that storm water runoff, which will be clean once rehabilitation is completed, is no longer retained on site and is discharged to the receiving catchment			
7.11.1.71.		Although Blaauwkrans Co-disposal facility extension will be rehabilitated in situ resulting in the permanent alteration of the topography and localised surface water flow patterns, runoff from the rehabilitated surfaces of the extension will be clean and will also be allowed to discharge to the receiving catchments. This will contribute to the restoration of pre-mining catchment yield			
7.11.1.72.		Entrapment of rainfall on dirty water impoundments that will continue to be utilised during the Decommissioning Phase as part of the long-term groundwater management strategy at Landau Colliery will result in the continued retention of that direct rainfall, with the result of a marginal decrease in final, post-mining catchment yield.			
7.11.1.73.		Pre-mining groundwater contributions to base flow in the Schoongezichtspruit and the tributary of the Brugspruit will cease for as long as the groundwater is removed for treatment and maintained below decant level. However, it should be borne in mind that the groundwater that could decant from mined out workings at Landau Colliery (during the Post-Closure Phase) will very likely be poor quality AMD, and will be retained for treatment at the EWRP, and thus removed from the receiving sub catchment area permanently.			
7.11.1.74.		Backfilled opencast mining areas will continue to be subject to localised settling and cracking during the Decommissioning Phase. Ponding of surface water, the possible development	All rehabilitated areas will be inspected for settling and cracking and repaired where necessary to ensure ongoing free-drainage until mine Closure is obtained	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.75.		of surface water, the possible development	Suitable rehabilitation techniques will be employed for the backfilling of the opencast voids, so as to promote free-drainage,	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		of preferential flow paths, and the infiltration of surface water to the groundwater through surface cracks would impact negatively on the catchment yields. Infiltration to the groundwater would also increase the volume of AMD that would need to be retained and treated.	and the re-establishment of pre-mining drainage patterns, as far as possible.		
7.11.1.76.			The rehabilitation of mined areas will be done so as to achieve the pre-planned final landscape configuration taking into account the depth of coal removed and the bulking ratio of the overburden replaced in the pit(s).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.77.			The post-mining surface topography will be modelled using suitable software, to ensure that appropriate measures can be implemented concurrently with the mining activities to ensure that a free-draining surface can be achieved.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.78.			Backfilled cuts will be surveyed to ensure that these are filled and rehabilitated to surface and conform to natural runoff patterns. Pre-planning will allow for clean runoff from the rehabilitated area to reach the natural drainage channels outside the mining area in a controlled and uncontaminated manner.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.79.				Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.80.			Should subsidence of the rehabilitated areas occur, maintenance will be undertaken to ensure that the identified subsidence areas are eliminated and the surfaces of the rehabilitated subsidence areas are suitably re-vegetated.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.81.			Gentle slopes will be re-instated as part of continuous rehabilitation, as far as possible, to reduce erosion.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.82.		Groundwater recharge will increase because of the easier percolation of infiltrating surface water through the unconsolidated material in the backfilled voids. Post-mining recharge levels will increase from pre-mining levels of between 1 and 3 % of Mean Annual Precipitation (MAP) to between 20 and 30 % of MAP. This increase in groundwater infiltration will result in the equal reduction of MAP available for the receiving surface water catchment.	The final void(s) will be backfilled with overburden that will be distributed and shaped to be free draining. The implementation of the soil, surface water and ecology mitigation measures will ensure that the infiltration to the groundwater will be minimised as far as practicable.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.83.		Recovery of groundwater levels and possible decant At the opencast areas, water quality will be affected through oxidation of pyrites and contact with infiltration. Pits will be rehabilitated by backfilling, shaping and ensuring they are free-draining. Once the pits have been backfilled and reshaped dewatering will cease and water levels will begin to recover in the workings. It is not anticipated that decanting will commence during the decommissioning phase, but after closure. However, the construction of decant control measures may take place during the Decommissioning Phase.	All carbonaceous material should be removed and isolated by disposing of this material on the Blaauwkrans Co-disposal facility prior to its rehabilitation.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.84.			Monitoring of water levels and quality in the backfilled rehabilitated mine workings during the Operational and Decommissioning Phases will be undertaken. This will allow both calibration of the post mining water quality and water volumes	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.85.			The water level in the workings will be actively managed to ensure it remains below the decant elevation.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.86.			The post closure mine water make will be pumped from the mine workings and treated, in line with the long-term mine water management strategy of Landau Colliery.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.87.			Clean runoff from the rehabilitated areas will be discharged to the river system.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.88.	Surface water (quality)	Replaced soil in rehabilitated areas will be vulnerable to erosion, leading to increased suspended solids in runoff and resultant sedimentation of receiving catchments, if not appropriately mitigated.	Erosion on the exposed disturbed land use areas as well as rehabilitated land will be minimised by the establishment of a vegetation cover as soon as possible after replacement of soil. The rehabilitated workings will be seeded in accordance with identified suitable seed mixture	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.89.			If necessary during windy conditions, dust suppression will be undertaken with raw water in rehabilitated areas. Volumes of	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			water used will be sufficient to reduce dust generation, while avoiding infiltration and ponding of excess water.		
7.11.1.90.			Clean and dirty water separation berms will only be removed from rehabilitated areas once the vegetation has become self-sustaining and erosion of rehabilitated soils is unlikely to occur	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.91.		Until rehabilitation of the surface has been completed, possible failure of the storm water management system due to floods exceeding the design capacity may have surface water quality related influences on the receiving water resources.	Until the surface water management system is removed, the surface diversion berms and drains will be kept free from any obstructions (debris) to ensure that the efficiency is not affected. Changes to the layout of the storm water control measures will be implemented, if required, to accommodate actual conditions and to enhance the efficiency of the management system.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.92.			Repair of damages to the clean and dirty water separation infrastructure due to erosion and scouring of areas will be performed following storm events. Normal continuous maintenance throughout Life of Mine will also be performed for all slopes, berms and points of discharge (i.e. clearing of silts and sediments washed into drains, erosion marks will be filled up again, berms will be kept intact, etc.)	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.93.		If contaminated surface water (including acid mine water) is discharged, or allowed to flow, to the receiving environment, the water quality in the receiving environment would further deteriorate. Downstream users and aquatic habitats would be negatively affected by such discharge, and the wetlands associated with the streams would also be negatively impacted.	Continuous managing, improvement and monitoring of the water balances will be undertaken to identify risk areas and excess water volumes, and for reporting on conditions on a monthly base.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.94.			Contaminated surface water will not be allowed to flow or be intentionally discharged to the receiving environment without being treated first, and without the applicable authorisations. However, should such a spill / release occur, the emergency procedure described in Part 9 will be implemented to minimise the environmental damage and instigate prompt and effective clean-up.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.95.		During decommissioning, surface water would still be vulnerable to contamination due to contact with carbonaceous materials or hydrocarbons, until rehabilitation has been completed.	Implementation of measures described in Ref. no.'s 7.9.1.68-71 (in Table 7.9 Construction Phase EIAMAP) will ensure that contamination of surface water due to contact with contaminating and / or hazardous materials will be minimised.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.96.		General decommissioning and rehabilitation: Impacts resulting from general rehabilitation and decommissioning works will be similar to those during the Construction Phase, with rehabilitation earthworks and movement of construction equipment on the site. Unless appropriately managed, impacts may arise from: • Erosion of soils during rainfall events, with elevated suspended solids in the runoff water. • Resultant elevated suspended solids in the watercourses, as well as sedimentation in the watercourses and the associated dams.	Decommissioning and rehabilitation activities will be timed to take place in the dry season, as far as is practical.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.97.			With the exception of permanent infrastructure such as the Blaauwkrans Co-disposal facility extension, the footprint of disturbed areas will be progressively reduced until rehabilitation is completed.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.98.			"No-go" zones will be delineated for construction plant and personnel – particularly in close proximity and within the catchment areas of the dams.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.99.			The storm water management measures, including PCDs will be decommissioned last, to ensure adequate storm water management during the rehabilitation phase. Before demolition, the dams will be emptied by pumping the contaminated water to the EWRP for treatment	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.100.			Servicing of construction vehicles will take place only in dedicated areas that are equipped with drip trays. Such areas will only be removed once all remaining mining and rehabilitation vehicles are no longer required at the Lifex Extension Project area.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.101.			The bunded containment and settlement facilities provided for hazardous materials, such as fuel and oil, will be demolished and removed from the Lifex Extension Project area once all fuel, oil and other hazardous materials have been removed from the site.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.102.			Spill absorption product(s) will be kept on site until rehabilitation is completed. The material will be used to clean up hydrocarbon	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
			spills in the event that they should occur. This will be carried out in accordance with the mine's existing EMS waste management procedure.		
7.11.1.103.			Erosion protection measures will be implemented at steep areas, where required	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.104.			A waste management plan will be developed for the decommissioning phase, which will include the handling of contaminated materials / soils found on site. This will be carried out in accordance with the mine's existing EMS waste management procedure, which will be updated to include decommissioning activities, prior to the start of decommissioning.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.105.			All traces of hydrocarbons and residual waste should be removed before infrastructure is demolished.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.106.			All coal and carbonaceous material will be removed from the stockpiles prior to rehabilitation.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.107.			Contaminated soils will be excavated and placed on the discard facilities prior to their rehabilitation, or removed from site by an appropriately licensed waste contractor	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.108.			An appropriate sewage management strategy will be implemented during the decommissioning phase, including decommissioning of the sewage treatment plant as late as possible in the process.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.109.			Water quality monitoring will be undertaken downstream of the areas being decommissioned, before and during decommissioning where practical, in order to detect any increase in suspended solids or turbidity.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.110.			Erosion protection measures will be implemented at steep areas where required.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.111.			If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the decommissioning areas will be reviewed.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.112.			Contaminated soils will be excavated and placed on the discard facilities prior to their rehabilitation, or removed from site by an appropriately licensed waste contractor.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.113.			The discard dumps will be shaped, capped and rehabilitated with slopes gentle enough to be stable in the long term	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.114.			The opencast pits will be shaped, rehabilitated and made free draining	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.115.		Decommissioning and rehabilitation of water management infrastructure and PCDs: The water management berms and canals isolate active areas from the catchment by diverting upslope clean runoff around the active areas and containing runoff generated on the active areas. These can only be removed once the area has been rehabilitated, but may result in increased erosion if not properly planned. The PCDs will be used to contain affected runoff and seepage (from the discard facilities) until such time as the area becomes clean. Impacts may arise from: <ul style="list-style-type: none"> Erosion of soils during rainfall events, with elevated suspended solids in the runoff water. 	This infrastructure will be decommissioned and rehabilitated last. Refer to Ref. No.'s 7.11.1.96-114 above for general management measures. Where necessary, erosion protection in the form of rip-rap, gabions or other appropriate materials will be provided to prevent erosion in the rehabilitated areas.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		<ul style="list-style-type: none"> Resultant elevated suspended solids in the watercourses, as well as sedimentation in the watercourses and the associated dams. These impacts are expected to be relatively small, with the resultant impact post decommissioning being positive in comparison with the operational phase. Potential spillage of contaminated water during rehabilitation of dams if not managed appropriately. 			
7.11.1.116.	Surface water (watercourse alterations)	The removal of the haul road bridge and conveyor crossing, and the reinstatement of the Schoongezichtspruit, would temporarily disturb the bed and banks of the Schoongezichtspruit once more, until rehabilitation is completed.	Once the haul road bridge and conveyor crossing have been removed, the remaining footprints will be rehabilitated to re-establish natural conditions as far as practicable.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.117.			A method statement of the planned removal and rehabilitation of the haul road crossing, conveyor crossing and Schoongezichtspruit reinstatement will be submitted to the DWS as	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.118.			Removal of the haul road crossing and the conveyor crossing from the Schoongezichtspruit will be conducted during the dry season	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.119.		Removal of the haul road bridge and conveyor crossing infrastructure, and the reinstatement of the Schoongezichtspruit will likely result in increased suspended solids due to soil disturbance on the bed and banks of the Schoongezichtspruit.	Measures will be taken to capture any sedimentation that will likely be released upon uplifting the culverts beneath the haul road crossing. The exact rehabilitation strategy to be followed and measures to be implemented will be designed by a suitably qualified rehabilitation specialist, and included in the method statement to be submitted to the DWS (see Ref. no. 7.11.1.116).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.120.	Surface water (flooding)	All rehabilitated areas and remaining surface infrastructure, such as water management infrastructure and the in situ rehabilitated Blaauwkrans Codisposal facility extension could be damaged during an extreme storm event. Erosion of rehabilitated surfaces would result in elevated suspended solids in surface runoff, while overflow of dirty water containment facilities would result in contaminants entering the receiving environment.	Rehabilitated areas and remaining surface infrastructure will be inspected quarterly and will be maintained and repaired where necessary.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.121.			The implementation of measures identified in Ref. no.'s 7.11.1.82-89, and Ref. no.'s 7.11.1.92-93 will address possible secondary impacts of flooding on suspended solids and overflow of contaminated mine water on the receiving environment.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.122.	Groundwater (general)	Water Uses, as defined in Section 21 of the NWA, 1998, will change during the Decommissioning Phase as mining will have ceased and the associated removal of groundwater and re-use of dirty water will no longer take place. Some surface water storage will continue as part of the long-term water management strategy.	An application will be made under Chapter 4 of the NWA, 1998, to amend the Water Use Licence to reflect the changes in Water Uses during the Decommissioning Phase.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.123.			If the above-mentioned Water Use Licence Amendment is granted to Landau Colliery under Chapter 4 of the NWA, 1998, the conditions of the Licence Amendment will be implemented.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.124.			Auditing of compliance with the IWWMP commitments (and if a WUL Amendment is granted, to the conditions of the Licence Amendment) will be conducted regularly in accordance with the timeframes set by the DWS or committed to in the IWWMP	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.125.			Any new infrastructure will be designed to comply with GN704, 1999, under the NWA.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.126.			Compliance with Regulations GN 704, titled "Regulations on use of water for mining and related activities aimed at the protection of water resources", dated June 1999, under the NWA, 1998 (Act 36 of 1998), will be audited annually, and reported to the DWS.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.127.			Employees and contractors working at Landau Colliery during the Decommissioning Phase will be trained to identify activities that would impact on the groundwater aspect of the mine, such as spillages of contaminating substances e.g. diesel, carbonaceous material, etc. Furthermore, they will be informed on the environmental emergency procedure, and will be trained to contact the appropriate person to report such incidents.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.128.			The groundwater monitoring programme that will have been modified to include the Lifex Extension Project prior to the commencement of the Construction Phase will continue to be implemented to enable the actual impacts of the mining and related activities at the proposed Lifex Extension Project to be verified and quantified. Monitoring will also enable the early detection of negative impacts.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.129.	Groundwater Quantity	Once mining has been completed, water will no longer be removed from underground. The cessation of pumping out of groundwater will enable the groundwater levels to gradually recover to pre-mining levels (see also discussion in Ref. no.'s 7.10.2.33-38 in Table 7.10 (Operational Phase EIAMAP)). The recovery of groundwater levels will limit the availability of oxygen in the mine voids, which will contribute to the minimisation of the occurrence of acid mine drainage.	As described in Ref. no. 7.10.2.37, infrastructure to capture and temporarily store the contaminated groundwater that will decant from the rehabilitated mining areas during the Post Closure Phase will be constructed prior to the Decommissioning Phase. The mine water decant (which is expected to commence during the Post-Closure Phase) will then be transferred to the EWRP for treatment to drinking water standards and either sold onwards or returned to the applicable catchment(s).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.130.		Groundwater will move at a greater rate through the rehabilitated mine workings than pre-mining conditions, because the replaced overburden is broken and fractured, providing less resistance for the movement of water. For similar reasons, infiltration rates of surface water moving to the groundwater will be higher than pre-mining conditions, and will speed up the refilling of mined out workings. However, even with increased infiltration and groundwater level recovery rates, groundwater level recovery is only anticipated to commence during the Post-Closure Phase.	As described in Ref. no. 7.10.2.37, infrastructure to capture and temporarily store the contaminated groundwater that will decant from the rehabilitated mining areas during the Post Closure Phase will be constructed prior to the Decommissioning Phase. The mine water decant (which is expected to commence during the Post-Closure Phase) will then be transferred to the EWRP for treatment to drinking water standards and either sold onwards or returned to the applicable catchment(s).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.131.		The final in situ rehabilitation of the Blaauwkrans Co-disposal facility will reduce infiltration of water from the facility to the groundwater, discharging clean storm water runoff to the receiving catchment instead (see Ref. no. 7.11.1.71). It is anticipated that the contribution of the Blaauwkrans Codisposal facility to the existing pollution plume will gradually decrease with time during the Post-Closure Phase, commencing during the Decommissioning Phase. The groundwater pollution plume will	Contaminated groundwater resulting from the Blaauwkrans Co-disposal facility will be abstracted and treated together with contaminated water from the backfilled pit areas. It is anticipated that this will reduce the risk of contamination of the surrounding groundwater environment.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		continue to move away from the rehabilitated facility, since the groundwater gradient will be away from the facility due to artificial mounding of groundwater infiltration			
7.11.1.132.	Groundwater Quality	Contact of groundwater with carbonaceous material in the presence of air and water will lead to the oxidation of pyrites and consequently to acid mine drainage.	Coarse discard and carbonaceous material will be placed back into the final voids to the premining coal horizon. This will ensure that once groundwater levels in the backfilled areas inundate the carbonaceous layers, the availability of oxygen for the generation of acid mine drainage will be limited, and will significantly minimise long-term groundwater impacts.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.133.		Vehicles and machinery used during rehabilitation may leak or spill hydrocarbons in areas of use. These pollutants could then in turn infiltrate and pollute the groundwater.	As mentioned previously, the groundwater monitoring programme that will have commenced during the Construction Phase will continue to be implemented to verify impacts on surrounding groundwater environment.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.134.			Mitigation of the potential impacts of hydrocarbon spillages on surface water and soil will mitigate the resultant impacts thereof on the groundwater.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.135.	Air Quality	Topsoil recovered from stockpiles for rehabilitation and re-vegetation of surroundings, which will if left unmitigated, result in the generation of dust that will lower the air quality within the study area	Where necessary, dust suppression will be undertaken with raw water in rehabilitated areas. Volumes of water used will be managed to avoid ponding of excess dust suppression water on the surfaces.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.136.		Until vegetation in rehabilitated areas has become well established and provides sufficient cover for soil, rehabilitated areas will have the potential to generate dust, particularly during windy conditions.	Rehabilitated areas will be seeded as soon as possible after replacement of soil, to minimise potential dust generation. To maximise the success of rehabilitation, all remaining footprint areas will be topsoiled and seeded at the beginning of the growing season (see also Ref. no.'s 7.11.1.19, 49-50, and 54).	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.137.		Infrastructure removal at plant site, which will, if left unmitigated, result in the generation of dust that will lower the air quality within the study area.	Ref. no. 7.11.1.135 will also be implemented to address this potential impact.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.138.			Dust will continue to be controlled through wet suppression (see Ref. no. 7.11.1.135 above) and / or chemical stabilisation	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.139.		Vehicle entrainment on unpaved road surfaces, which will, if left unmitigated, result in the generation of dust that will lower the air quality within the study area.	Strict speed control will continue to be implemented on the remaining gravel roads within the study area until mine Closure is achieved.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.140.		Tailpipe emissions from vehicles utilised during the Decommissioning Phase, which will if left unmitigated result in the generation of air pollutants that will lower the air quality within the study area.	Ref. no. 7.10.3.216-218 will also be implemented to address this potential impact. In addition, vehicle operators will be trained to reduce standing / idling time.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.141.		All anticipated impacts on air quality during the Decommissioning Phase were described briefly above. More detailed impact descriptions and impact modelling is presented in the Air Quality Specialist Study attached as Appendix D4.	The air quality monitoring programme will continue to be implemented during this phase until Closure is achieved. Measurements will continue to be taken during the Decommissioning Phase to verify and quantify the impacts on air quality, both as a result of the Lifex Extension Project as well as the cumulative effect of the Lifex Extension Project and other operations at Landau Colliery.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.
7.11.1.142.		Until all stored hydrocarbons and other flammable substances are removed from the Landau Colliery Lifex Extension Project boundary area, the possibility of hydrocarbon spills (e.g. from fuel storage tanks at the office and workshop complex) remains a risk, and noxious	In the case of a large hydrocarbon spill, all employees should vacate the area where the spill has occurred. This would be considered an emergency and procedures regarding hazardous spills will be followed.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMPr commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
		and flammable gases may be emitted which are hazardous, both to the receiving environment and to people's health and wellbeing.			
7.11.1.143.	Noise	Concurrent and final rehabilitation of mined out workings will require the use of heavy vehicles and possibly noisy machinery and equipment. Noise impacts would therefore be similar to those identified during the Operational Phase, with the exception of noise impacts related to blasting which no longer take place.	The mitigation measures identified in Ref. no.'s 7.10.1.85 will continue to be implemented during the Decommissioning Phase until mine Closure is achieved.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.144.		Dismantling of redundant infrastructure near residential areas will generate nuisance noise that would impact on I&APs within the study area.	Dismantling of redundant surface infrastructure will be done during the daytime, and will be limited on weekends.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.145.		Once all active rehabilitation has taken place, noise impacts will cease	No mitigation is required.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.146.	Sensitive landscapes	The pre-mining hydrology of the wetlands will have been permanently altered as a consequence of mining	Replaced spoils will be landscaped to be free draining, but will avoid steep slopes and concentrated run-off. The commitments in this document with regard to soil, ecology and surface water will ensure that the success of rehabilitation is maximised.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.147.			The rehabilitated areas will be re-vegetated as soon as possible following completion of the earthworks to minimise erosion.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.148.			Regular long-term follow up of rehabilitated areas will be undertaken to ensure the successful establishment of vegetation and to survey for any erosion damage on site.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.149.			Erosion damage will be repaired as soon as possible.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.150.			The possibility of implementing wetland offsets as a means of mitigating against the loss of wetland habitat within the Lifex Extension Project boundary area is being investigated during the Design and Planning Phase. A wetland offset strategy is being developed by a suitably qualified person using the SANBI offset guideline methodology. If authorisation is granted, management of the offsite wetland area(s) will continue throughout the life of mine of the proposed Lifex Extension Project.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.151.		As mentioned previously, soils in the rehabilitated areas will be vulnerable to erosion. This could lead to increased sediment transport to the receiving wetlands within the study area.	Implementation of Ref. no.'s 7.11.1.146-149, as well as all measures to mitigate impacts on soils, vegetation and surface water will ensure that the significance of this impact will be minimised.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.152.		Unless appropriately managed, sediment movement could occur from the in situ rehabilitated Blaauwkrans Co-disposal facility into the adjacent wetlands.	Implementation of the soil, vegetation and surface water management measures pertaining to the in situ rehabilitation of the Co-disposal facility during the Operational and Decommissioning Phases will ensure that this impact will be minimised.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.153.		Rehabilitated areas and the wetlands remaining during this phase of the LOM will continue to be vulnerable to an increase in alien invasive plant species.	Implementation of Ref. no.'s 7.11.1.49 and 50 will ensure that this impact on wetlands will be addressed simultaneously	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.154.		Potential impacts on soils and surface water quality could, if not appropriately mitigated, negatively affect the functioning and ecological status of the wetlands within the study area.	Implementation of Ref. no.'s 7.11.1.88-90, and 92 will ensure that this impact on wetlands will be addressed simultaneously.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.155.		Unless appropriately mitigated, any remaining wetland habitat may be further disturbed during this phase of the LOM through impacts	Decommissioning activities will be limited to the existing disturbed footprints.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.156.			Only existing roads and tracks will continue to be used to access infrastructure areas.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.157.			Any laydown areas and temporary stockpiles will be located outside wetland areas.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.158.			Disturbed areas will be rehabilitated as soon as possible following removal of infrastructure.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.159.			Decommissioning activities will be undertaken in the dry season.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.160.		Unless appropriately mitigated, the discharge of clean runoff from the in situ rehabilitated Blaauwkrans Co-disposal facility extension may result in erosion at storm water discharge points if they are placed within or near a wetland.	Final rehabilitation of the Blaauwkrans Co-disposal facility will include the design and construction of a surface water management plan to protect the rehabilitated facility and the adjacent areas from erosion by high velocity, concentrated flows. Discharge points will be protected against erosion.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.161.		The potential seepage of contaminated water from the rehabilitated Co-disposal facility to the receiving surface water environment would lead to the deterioration of water quality in the adjacent, receiving wetlands.	Management of the potential impacts of the Blaauwkrans Co-disposal facility on the receiving groundwater and surface water environment (including wetlands) as described in Ref. no. 7.11.1.131 will continue until mine Closure is obtained. In line with the long-term groundwater management plan at Landau Colliery, permanent facilities for the ongoing collection and management (treatment or evaporation) of contaminated seepage from the facility will be constructed during this phase.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.162.			Continued groundwater and surface water monitoring as well as biomonitoring (see Ref. no.'s 7.11.1.69 and 128) will enable this potential impact to be verified and quantified.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.163.	Visual aspects	Available side slopes of the Blaauwkrans Co-disposal facility will be rehabilitated in situ during the Operational and Decommissioning Phases. This will be undertaken by soil cladding and vegetation of the sidewalls of the facility. This will improve the aesthetic appearance of the facility and increase the visual absorption capacity over distances of > 1 km.	Implementation of mitigation measures for the anticipated impacts on soils, vegetation, surface water, groundwater, air quality and wetlands will ensure that the anticipated positive impacts on the visual aspects of the study area associated with the rehabilitation of the facility will be maximised.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.164.		Backfilling and rehabilitation of mined out areas, and the removal of redundant infrastructure and rehabilitation of remaining footprints will restore the topography to pre-mining conditions, thus contributing to the pre-mining visual aesthetics of the study area.	Implementation of mitigation measures for the anticipated impacts on topography, soils, vegetation, surface water, groundwater, air quality and wetlands will ensure that the anticipated positive impacts on the visual aspects of the study area associated with the rehabilitation of the mined out areas and remaining footprints of removed infrastructure will be maximised.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.165.		Rehabilitation of mined out workings and footprint areas remaining once infrastructure has been removed to agricultural land capability and grazing land use will contribute to the restoration of the pre-mining 'sense of place' associated with the agricultural areas in the Mpumalanga Highveld region.	Implementation of Ref. no. 7.11.1.164 above will simultaneously maximise the positive effects of this impact.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.166.		Other impacts on visual aspects include secondary impacts of dust generation during rehabilitation (discussed in Ref. no. 7.11.1.135-139), if not appropriately mitigated.	Implementation of Ref. no. 7.11.1.135-139 will simultaneously address this impact on visual aspects.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.167.	Sites of Archaeological and cultural importance	The impacts and mitigation measures identified in Ref. no.'s 7.10.3.242 - 243 will continue to apply during the Decommissioning Phase, until mine Closure has been achieved.			
7.11.1.168.	Socioeconomic impacts	All positive impacts of the mine on the socio-economy that will have taken place during the Operational Phase will wane during the Decommissioning Phase until they cease, mainly due to the reduction or cessation of jobs and the related cessation of demand for goods and services	The impact of mine closure on businesses providing goods and services is unavoidable, as is the cessation of contribution to community projects. However, the impacts on employees would be mitigated by the continued implementation of the Social and Labour Plan.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.169.			Employees will be skilled and career progressed through the human resources development programme, which will enable them to acquire skills that will help them re-enter the work place after closure of the mine.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.170.			Anglo Operations Limited will, through the Social and Labour Plan (Processes pertaining to management of downscaling and retrenchments) and the relevant legislation, reskill all employees to be retrenched. This will ensure that the employees affected by the closure of this mining operation can re-enter the workplace. Note, however, that the mine and the mining contractor may still use the employees in other mining projects, hence retrenchments may not occur.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.171.		Depletion of mineable coal at Landau Colliery will mean that the contribution of the mine to national, provincial and local GDPs will cease. Similarly, the provision of coal for domestic electricity generation will cease, possibly contributing to the constraints and pressures of power generation in South Africa, which would impact further downstream on businesses and homes dependant on electricity	As coal is a fossil fuel, it is a non-renewable resource. The impacts of the depletion of coal on national, regional and local socio-economic aspects are unavoidable, and no mitigation is possible.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.172.		Rehabilitation of the surface to support pre-mining land capability means that future land use of the site will be sustainable over the long-term. Use of the land for agricultural purposes such as crop cultivation or grazing will enable the contribution of future land users to the local and regional socio-economy through food production and agricultural job creation	Measures will be implemented to ensure that the land capability and end land use objectives can be achieved, and will ensure that the anticipated positive future long-term socio-economic impacts will be possible.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.173.			Landau Colliery will conduct public participation during the Decommissioning Phase to understand how the surrounding communities would like to use the land during the Post Closure Phase.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.174.	I&APs	Restoration of surface topography and rehabilitation of disturbed areas to agricultural (arable and grazing) land capability and use for grazing will improve the visual aspects of the study area, restoring the 'sense of place associated with the natural topography and agricultural activities of the region.	The measures implemented to mitigate impacts on topography, soils, vegetation, surface water and air quality will indirectly mitigate negative visual impacts.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.175.		Nuisance dust and noise impacts will cease once rehabilitation has been completed.	Communication with I&APs will continue through the Decommissioning Phase - refer to Ref. No. 7.9.1.133.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.176.		Erosion of soil from rehabilitated areas will increase suspended solids and turbidity of runoff draining into receiving watercourses, causing sedimentation	Implementation of soil and surface water management measures will prevent or minimise the potential impacts on downstream water users.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

REF. NO	ENVIRONMENTAL COMPONENT	POTENTIAL IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
7.11.1.177.		and increased TDS, which could impact on downstream water users. Rehabilitation of the surface to agricultural potential means that land will become available behind mining during the Operational Phase, as well as once rehabilitation during the Decommissioning Phase has been completed. Such land will become available for use for grazing, and will be made available for tenancy by local farmers, but only after re-vegetation has suitably been re-established, until mine closure is obtained.	Implementation of measures to ensure that the pre-mining land capability is restored as far as practicable, and that the land is used for long-term sustainable activities.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.
7.11.1.178.		Treatment of mine water at the EWRP and onward sale of potable water to the Emalahleni Local Municipality will contribute positively to the availability of potable water, influencing downstream businesses and development, which will influence socio-economic impacts positively	Continued supply of mine water to the EWRP for treatment will ensure that the onward supply of potable water to the Local Municipality will continue.	Not Applicable	The Lifex Extension Project is under the operational phase, therefore this EMP commitment is not applicable.

7.3 ENVIRONMENTAL MANAGEMENT PROGRAMME – MANAGEMENT MEASURES FOR CUMULATIVE IMPACTS FOR LANDAU COLLIERY LIFEX EXTENSION PROJECT: EMP UNDER THE MPRDA (2002)” WITH DMRE REFERENCE NUMBER: MP 30/5/1/2/3/2/1 (306) EM.

REF. NO.	ENVIRONMENTAL COMPONENT	GENERAL DESCRIPTION OF REGIONAL CONDITIONS AND EXISTING CUMULATIVE IMPACTS	PROPOSED MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
1	Geology	The Witbank Coal Field, located mostly within the Mpumalanga Highveld region between Bethal and Springs in Gauteng, generally contains five seams of coal most of which is good quality and high calorific value. As such, coal is extracted from numerous mines located near eMalahleni, in the Emalahleni Local Council's area of jurisdiction. Due to the existing surrounding coal mining operations (Glencore and other Anglo Operations Ltd. mines) in the surrounding area, the geological strata in the region will be permanently altered.	Implementation of measures during the Operational and Decommissioning Phases of the mine (refer to Tables 7.9 and 7.10) will ensure that the contribution of the mine to cumulative impacts on geology will be minimised as far as practicable. However, due to the nature of coal mining, particularly opencast mining, destruction of the geology is unavoidable. Of greater importance to this part of the EIA is the indirect impacts that the geological impacts will have on other environmental aspects such as surface water and groundwater.	Noted	The condition is well understood by Khwezela North Colliery Management.
2	Geology and Socioeconomic conditions	The extraction of coal from the Witbank Coal Field has occurred over a period spanning more than a century, and modern day opencast mining techniques enable coal extraction to be maximised. This has led to the systematic depletion of the coal reserves in the region, increasing	The exhaustion of the non-renewable coal reserves at Landau Colliery is an inevitable and unavoidable consequence of coal mining, particularly since current legislation requires the holder of a Mining Right to mine the target mineral. No mitigation is possible.	Noted	The condition is well understood by Khwezela North Colliery Management.

		significantly in the last several decades due to improvements in mining technology. Since coal is a fossil fuel it is a non-renewable resource, and as the remaining coal reserves decrease, the value of the coal will increase because of supply and demand principles. This will lead to an increase in income generation and positive contributions to the regional socio-economic conditions during the Operational Phase of the mine, but will ultimately result in the complete exhaustion of the coal reserves, leaving no coal for future generations.			
3	Topography, Land use and Visual aspects	Landau Colliery is located in a region where opencast coal mining is common place. The large number of opencast coal mines in the region, together with the historical nature of the mining in the Witbank region (over 100 years of mining history) will most likely have desensitised local residents and frequent travellers through the area to the visual impacts caused by the changes to the topography and land use. On the contrary, the visibility of the mining areas from the surrounding areas could be of interest to passers-by, especially since coal mining is an important part of Mpumalanga's history, and visits to coal mines are even cited as being of interest to tourists.	Management of topography, air quality (dust), land use and visual impacts as committed to in Tables 7.9, 7.10 and 7.11 will ensure that the contribution of the mine to cumulative visual impacts will be minimised as far as practicable over the life of mine.	Noted	The condition is well understood by Khwezela North Colliery Management.
4				Noted	The condition is well understood by Khwezela North Colliery Management.
5				Noted	The condition is well understood by Khwezela North Colliery Management.
6			Implementation of the mitigation measures set out in Tables 7.9, 7.10 and 7.11 will ensure that the contribution of the Blaauwkrans Codisposal facility and extension to the existing cumulative visual impacts will be reduced.	Noted	The condition is well understood by Khwezela North Colliery Management.
7			Continued implementation of the current long-term mine water dewatering and treatment programme, and extension thereof to include the Landau Colliery Life Extension Project, will likely eliminate the need for opencast voids at the end of life of mine. This potential impact would therefore not occur.	Noted	The condition is well understood by Khwezela North Colliery Management.
8	Topography	Large sections of the Emalahleni Municipal area affected by shallow undermining, which has had a significant impact on the environment, resulting in sinkhole formation, subsidence and seepage of water from underground workings (ELM IDP, 2009- 2010), amongst others.	Implementation of measures during the Operational and Decommissioning Phases of the mine (refer to Table 7.10 and 7.11) will ensure that the contribution of the mine to positive cumulative impacts on topography will be maximised, as far as practicable.	Noted	The condition is well understood by Khwezela North Colliery Management.
9	Topography, surface water and groundwater		Implementation of measures during the Operational and Decommissioning Phases of the mine (refer to Table 7.3.1 and 7.3.2) will ensure that the contribution of the mine to subsidence in rehabilitated areas within the region will be minimised.	Noted	The condition is well understood by Khwezela North Colliery Management.
10	Soil, land capability and Socioeconomic conditions	Agriculture is one of the largest economic sectors in Mpumalanga, producing 15% of total output in South Africa (South Africa Yearbook, 2001/02). The number of opencast mines in Mpumalanga, particularly large operations, have led to a significant loss of high agricultural potential soils that would otherwise continue to be capable of supporting crop cultivation. Loss of high potential agricultural land due to opencast mining activities in the area will reduce the food production capability of the region, and may pose food security issues for future generations. The Bureau for Food and Agricultural Policy (BFAP), (2012) estimated that at the current rate of coal mining in Mpumalanga, approximately 12% of South Africa's total high potential arable land will	Implementation of measures during the LOM, including the LOM of the proposed Life Extension Project (refer to Table 7.9, Table 7.10 and Table 7.11) will ensure that the contribution of the mine to the reduction of food production due to soil impacts will be minimised.	Noted	The condition is well understood by Khwezela North Colliery Management.

		be transformed, with a further 13.6% undergo prospecting in Mpumalanga. The report also identified that the current mining and new prospects for mining could soon have meaningful effects on agricultural production as well as long-term implications for food prices for the entire country.			
11	Soil, land capability, biodiversity and sensitive landscapes	In addition, large areas of the surface have been affected by agriculture and opencast mining, which has led to loss of soil structure and function, and ultimately to loss of biodiversity due to the transformation and fragmentation of natural habitats and ecosystems.	Implementation of measures to manage the impacts on topography, soil, vegetation, animal life, surface water and groundwater during the LOM, including the LOM of the proposed Life Extension Project (refer to Table 7.9, Table 7.10 and Table 7.11) will ensure that the contribution of the mine to biodiversity loss, habitat transformation and fragmentation will be minimised as far as practicable.	Noted	The condition is well understood by Khwezela North Colliery Management.
12	Land use and Socioeconomic conditions	Mining is an important sector in South Africa, contributing 9.9% of the national GDP in the second quarter of 2014 (Statistics South Africa, 2014). The Gross Value Added (GVA) by mining to the district economy (Nkangala District) was 29.7% (Nkangala District Municipality, 2011).	None required.	Noted	The condition is well understood by Khwezela North Colliery Management.
Biodiversity - Alien species		Invading alien plants are a serious threat to plant and animal biodiversity through the effects of predation, alteration of habitat or disruption of ecosystem process and services. Invading alien plants waste 7% of our water resources, reduce farming productivity, intensity flooding and fires, cause erosion, degrade river systems, increase rate of siltation of dams and estuaries, reduce water quality and can cause extinction of indigenous plants and animals (Mpumalanga SoE, 2003). Invasive alien plants are widely considered as a major threat to biodiversity, human livelihoods and economic development. Invasive alien plants cost South Africans tens of billions of rand annually in lost agricultural productivity and resources spent on management (SANBI, 2014).	Implementation of the mitigation measures set out in Tables 7.9, 7.10 and 7.11 regarding the control of alien invasive species will reduce the significance of the associated impacts and therefore the potential contribution of Landau Colliery (including the proposed Life Extension Project) to the existing problems with alien invasive species in the region. In fact, the control of alien invasive species within the Landau Colliery surface boundary area may contribute positively to the local and possibly even regional control of such alien invasive species.	Noted	The condition is well understood by Khwezela North Colliery Management.
14	Biodiversity - Threatened species	extinction due to factors such as habitat loss, environmental degradation and fragmentation of landscapes (Mpumalanga SoE, 2003). The National Biodiversity Framework, published in the Government Gazette GN 813 (August 2009), identified the loss of natural habitat, and the fragmentation of the remaining habitat that goes with it, is the single biggest cause of biodiversity loss in South Africa. It further states that in almost all cases it is irreversible.	Implementation of measures to manage the impacts on topography, soil, vegetation, animal life, surface water, groundwater and sensitive landscapes during the LOM (including the proposed Life Extension Project) (refer to Tables 7.9, 7.10, and 7.11) will ensure that the negative contribution of the mine to existing impacts on habitats will be reduced. However, due to the nature of the proposed opencast mining, the loss and possible fragmentation of habitat within the proposed Life Extension Project area is unavoidable.	Noted	The condition is well understood by Khwezela North Colliery Management.
15	Surface water	The bulk (65%) of water resources available in Mpumalanga comes from surface water resources, water transfers into the province provide 19% of total water availability,	Implementation of surface water management measures during the LOM will ensure that the overall volume that need to be withheld from the catchment for water quality management purposes will be minimised. In addition, the treatment of mine water, including AMD extracted from old	Noted	The condition is well understood by Khwezela North Colliery Management.

		groundwater contributes 6% of available water and return flows from mining, industrial, irrigation and urban sectors contribute 10%. Water use in South Africa is dominated by irrigation and Mpumalanga province is no exception with 46% of its water being used for irrigation. The second largest requirement for water is for water transfers to neighbouring catchments and Water Management Areas (WMAs) which accounts for 16% of water use in the province, while water use in the urban sector is slightly less (8%) and requirements for the industrial, forestry and mining sectors each account for 9% of the provinces water use (Mpumalanga SoE, 2003).	underground workings and, in future, backfilled opencast workings, at the EWRP will enable the return of treated water back to the affected catchments, as far as practicable.		
16		Water quality indicators have shown a general decrease in water quality over time. Median levels of surface water nutrients have increased and indicate a potential for enrichment. The consequences of these elevated levels are: A greater potential for algal blooms; An impact on riverine ecosystems; and Impairment of human health. High (and increasing) total dissolved solids (TDS) levels in the Olifants Water Management Area (WMA) have the potential for decreasing the aesthetic value of the water. Exceedance of the guideline levels for certain metals in the Olifants WMA may be attributed to the numerous industrial and mining activities taking place in that area. At the WMA scale, high exceedances above water quality guideline levels exist for pH levels in the province.	Implementation of the mitigation measures set out in Tables 7.9, 7.10 and 7.11 will minimise and reduce impacts on water quality, including decant management and treatment, and will significantly reduce the overall contribution of Landau Colliery to the negative water quality issues of the applicable catchments. Furthermore, the retention of mine water within the isolated dirty water management system at the Life Extension Project, and the proper management thereof, will minimise, even possibly eliminate, the potential for the proposed project to contribute to the existing water quality problems of the Brugspruit and Loskop Dam.	Noted	The condition is well understood by Khwezela North Colliery Management.
17		Groundwater contributes 6% of available water in Mpumalanga (Mpumalanga SoE, 2003).	Implementation of Operational and Decommissioning Phase mitigation measures to minimise and reduce impacts on groundwater quality will significantly reduce the overall contribution of Landau Colliery to regional groundwater contamination.	Noted	The condition is well understood by Khwezela North Colliery Management.
18		Groundwater is used for irrigation and domestic consumption in the surrounding agricultural region. Groundwater levels are drawn down at all operational mines in the region, leading to an overall impact on groundwater levels but has also lead to a complicated flow of groundwater between mines.	No mitigation is possible, since dewatering is necessary for mining to proceed. Monitoring of the groundwater levels by each of the mines and the reporting of the results of the DWA will allow for the development of a central database of such groundwater information.	Noted	The condition is well understood by Khwezela North Colliery Management.
19	Air quality	Air quality is an issue of concern in Mpumalanga, as it is in many other parts of South Africa. Airshed (2013) identified the main sources likely to contribute to existing cumulative particulate impacts as the surrounding agricultural activities, domestic fuel burning, nearby mining activities as well as vehicle entrainment on paved and unpaved road surfaces. Other sources of air	Implementation of the mitigation measures proposed in Tables 7.9, 7.10 and 7.11 will minimise and reduce impacts on air quality, and will significantly reduce the overall contribution of Landau Colliery to regional air quality problems, and also to climate change	Noted	The condition is well understood by Khwezela North Colliery Management.
20				Noted	The condition is well understood by Khwezela North Colliery Management.

		pollution in Mpumalanga include industrial processes, power generation, paper and pulp processing, vehicle use and domestic use of fossil fuels (Mpumalanga Province, 2002).			
21	Noise	Noise generated by mining activities is related to blasting and use of equipment and vehicles. However, noise is directional, and dissipates with distance. The spatial distribution of mines and related operations in the region reduces noise impacts inherently. However, when the noise is generated near residential areas, the location of the I&APs within the noise transmission paths together with the actual generation of noise cumulatively increases the significance of the impact.	Implementation of the noise management measures stipulated in Tables 7.9, 7.10 and 7.11 will reduce the contribution of Landau Colliery to the regional ambient noise levels and consequent impacts on I&APs.	Noted	The condition is well understood by Khwezela North Colliery Management.
22	Socioeconomic	The annual household income for Mpumalanga remains fairly low, with most households earning less than R18 000 per annum. Adult literacy has improved in the past two decades, but still remains below the national average and many scholars do not complete their matriculation exams. Approximately 33% of the provinces population is unemployed.	Measures will continue to be implemented to focus employment and community projects in the local area.	Noted	The condition is well understood by Khwezela North Colliery Management.
23		Mine closure will raise unemployment levels in the region, and would increase significantly as more mines close down.	Anglo Operations Limited will, through the Social and Labour Plan (Processes pertaining to management of downscaling and retrenchments) and the relevant legislation, re-skill all employees to be retrenched. This will ensure that the employees affected by the closure of this mining operation can re-enter the workplace. Note, however, that the mine and the mining contractor may still use the employees in other mining projects, hence retrenchments may not occur.	Noted	The condition is well understood by Khwezela North Colliery Management.
24			Implementing measures during the LOM to ensure that the land capability and end land use objectives can be achieved will ensure that the anticipated positive future long-term socio-economic impacts will be possible.	Noted	The condition is well understood by Khwezela North Colliery Management.
25	I&APs	The use of provincial roads by heavy duty vehicles for the haulage of coal from the mines in the region leads to the deterioration of the public roads and increased safety hazards for all road users, particularly in poor visibility conditions which occur frequently on the Mpumalanga Highveld due to the weather (mist).	Landau Colliery's procurement policies ensure that drivers employed by contractors responsible for the transport of the coal will be well trained to manage the safety hazards presented on the roads in the region.	Noted	The condition is well understood by Khwezela North Colliery Management.
26		I&APs are generally affected indirectly by direct impacts of mining and related activities on environmental aspects. The location of I&APs in relation to the mining and related activities strongly influences the severity of the impacts	The infrastructure of the proposed Landau Colliery Life Extension Project was designed to minimise the potential air quality, noise and visual impacts of the proposed mining areas and surface infrastructure on the residents of the surrounding communities. In addition to implementing measures to mitigate impacts on the mentioned environmental aspects, communication between the mine and I&APs is essential to managing the significance of such impacts.	Noted	The condition is well understood by Khwezela North Colliery Management.

7.4 NAVIGATION SECTION UMLALAZI WEST SOUTH BLOCK EXTENSION PROJECT - EMP (IN TERMS OF NEMA, 1998) IN SUPPORT OF THE “APPLICATION FOR ENVIRONMENTAL AUTHORISATION: REFERENCE NUMBER: 17/2/3N-363.

REF NUMBER	ENVIRONMENTAL COMPONENT	ACTIVITY	MIGRATORY ACTION PLAN	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
PLANNING AND CONSTRUCTION PHASE					
8.1.1.	Topography and Geology	Development of the Opencast Pit	The disturbance area for the opencast pit will be kept at a minimum and in the designated area as indicated on the design for the proposed project attached hereto as Plan 3 in Appendix A.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area.
8.1.2.	Soil, land use and land capability	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Undertake a detail survey for the identification of topsoil and the depth thereof. The person responsible for the identification should be competent and have the relevant experience, and should also consult the pre-mining land capability assessment.	Compliant	A survey Report for the identification of topsoil and the depth thereof at the Navigation West South Block Extension was provided as per the Khwezela topsoil balance, dated May 2020.
			To ensure that the area to be disturbed by construction activities is to be kept to a minimum, only large enough to carry out the necessary activities as indicated on the design for the proposed project attached hereto as Plan 3 in Appendix A.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMP commitment is not applicable.
			Affected runoff from the plant areas and the opencast pit will be collected and contained in the affected water management system, with further diversion of the clean water. Conceptual water management strategies are contained within the storm water management plan and civil engineering designs of the approved by a registered professional civil engineer (Appendix A).	Compliant	According to the Water Balance Excel Sheet provided for review during the audit period, runoff from the dirty water management areas and excess pit water is diverted to the Navigation West (Umlalazi) PCD. It is therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use.
			The pollution control dam must be designed according to the design plans (Appendix A). The dam should be lined with a plastic lining of 2mm in thickness and the pump station to be installed should regularly maintained and water should be pumped from the pollution control dam to the Navigation Dam for process purposes to prevent overflow and to be used during emergency conditions.	Compliant	The Navigation West PCD was upgraded in accordance with the design plans. The design plans were submitted as part of the water use license application. The pollution control dam is lined with a plastic lining of 2mm in thickness. The PCD and pump station are regularly maintained and inspections are conducted on a monthly. No evidence of overflow was evident. Water is pumped from the pollution control dam to the Navigation Dam for process purposes to prevent overflow and to be used during emergency conditions.
			Implement a planned maintenance programme covering the affected water management circuit. This maintenance programme to assess aspects of siltation, capacity and containment integrity.	Compliant	Planned maintenance, generated from SAP, is conducted monthly as required in the EMS inspections. Records of maintenance inspections were provided for review.
			Areas of open ground that are to be utilised (i.e. equipment and vehicle storage) should be hard standing. Furthermore, a clean and dirty water separation system must be constructed to ensure that no contamination of clean water systems occurs. Should a spillage or leakage of a hydrocarbon, chemical or hazardous substance occur, the spill/leakage must be cleaned up as per procedures for Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMP commitment is not applicable.
			Ensure that areas containing chemical and hazardous substances are contained (e.g. in a bund) to ensure no contamination of surrounding water resources or soil is contaminated. The bunded area must be able to contain 110% of the total volume of materials stored at any given time.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMP commitment is not applicable.
			Small quantities (50 litres or less) of chemical and hazardous substances (oil, lubricant, etc.) shall be stored in appropriate containers within a	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is

			secure storage area. The base of the storage area should be impervious and designed to ensure that the contained substances do not infiltrate into the soil.		under operational phase, therefore this EMPr commitment is not applicable.
			Regular inspections of the integrity of all bund areas will be undertaken.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			MSDS for on-site chemicals, hydrocarbons and hazardous substances must be readily available. A MSDS should include information pertaining to environmental impacts and measures to minimise and mitigate against any potential environmental impact which may result from a spill.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Used fuels, oil, hydraulic fluids, paints, solvents, and grease should be stored in drums or other suitable containers and stored on a hard standing and impermeable surface. These should be labelled, sealed and removed from the site to an appropriate disposal site or recycling facility. Under no circumstances will these substances be disposed of on-site or into the surrounding environment.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			No mixing or storing of concrete is permitted on areas where topsoil will be stockpiled. A designated area should be demarcated to prepare concrete in order to minimise soil contamination. The area should contain any potential runoff. Soils that may be contaminated during the construction and operational phases are to be removed to prevent the contamination of the soils, surrounding surface water or underlying groundwater. Contaminated soil must be removed from site as hazardous waste.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			All construction materials used may be temporarily stored on-site, but bags and containers should be sealed during storage.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			All leakages, spillages and incidents must be cleaned-up and reported as per Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			No vehicles or equipment may be repaired or washed on-sites other than the designated wash bay area and maintenance workshop at the Workshop Complex.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Temporary drip trays must be placed underneath vehicles or equipment that are leaking hydrocarbons until such a time that they are repaired.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Implement the surface water (monthly) and groundwater (quarterly).	Compliant	Khwezela North Colliery has implemented a surface and groundwater monitoring programme as per the respective approved Navigation West South Block Extension WUL (Licence Number: 03/B20F/ACGIJ/4781). The monthly surface water and quarterly ground water excel spreadsheet were provided during the audit period.
			Undertake annual GN 704 compliance audits, to verify the effectiveness of clean/affected water separation. Any shortcomings, with further consideration to the surface water monitoring results, should be addressed as a matter of urgency.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Regular site inspections to be undertaken to assess if spillages or soil pollution incidents have occurred.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.

			The project site should be kept in an orderly state at all times. Littering is prohibited.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Suitably covered receptacles must be available at all times and conveniently placed for the disposal of waste. These receptacles will be removed to the central salvage yard before being removed from site and disposed of by a permitted contractor at a licensed site. While being stored on-site, the receptacles should be placed within designated areas on an impermeable surface and must be correctly labelled and/or adequately colour coded. Hazardous and general waste will suitably separate at source, with separate waste bins provided in accordance to the waste management procedure Waste Management. Under no circumstances is waste to be burnt or buried on-site.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Records of hazardous waste being taken off-site must be kept as evidence.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			All leakages, spillages and incidents must be cleaned-up and reported as per Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints procedure	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			All general and hazardous waste material will be disposed of at registered waste sites (appropriate to the type of waste as disposed of). Certificates of safe and legal disposal shall be kept on file at the mine.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Documentation (waste manifest) will be maintained detailing the quantity, nature and fate of any regulated waste.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Management and disposal of waste will be in accordance with relevant legislative requirements, including the use of licensed contractors.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			A Topsoil Management Standard Procedure shall be developed that describes the requirements during the removal of the topsoil portion of the overburden, topsoil placement and stockpiling, general topsoil monitoring and topsoil thickness control, with consideration to the land use capability to be achieved.	Compliant	The Landau Topsoil Management Procedure is developed and it describes the requirements during the removal of the topsoil portion of the overburden, topsoil placement and stockpiling, general topsoil monitoring and topsoil thickness control.
			Soil preparation and seeding will be undertaken in accordance with the identified land use and according to the existing Landau Vegetation Establishment and Maintenance Procedure.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			A rehabilitation plan will be developed at the planning phase, or with adoption of the existing rehabilitation procedures and plans as applicable to Landau Colliery. The rehabilitation plan and procedures must aim to meet end land use capability with consideration to pre-mining land capability of the Navigation West South Block.	Compliant	A Rehabilitation Plan (Title: Annual Rehabilitation Plan 2021) is developed, aiming at reflecting the progress made on the rehabilitation and remediation activities associated with the activities undertaken at Navigation West South Block. The rehabilitation plan outline The following procedures are also developed that aims to meet end land use capability with consideration to pre-mining land capability of the Navigation West South Block: <ul style="list-style-type: none"> • Dozing Procedure • Dozing Standard • Vegetation Monitoring Procedure • Topsoil Management Procedure

8.1.3.	Vegetation	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam	With mitigation measures it may be possible to reduce the impacts on the flora of the project area. This can be done by re-vegetating the opencast pit area by placing topsoil, ripping and seeding the rehabilitated areas in order to encourage the growth of grasses. These grasses would then provide habitat for the displaced animals thus mitigating against the initial habitat loss and will also prevent soil losses by wind and/or storm water erosion.	Compliant	Re-vegetation and seeding of the rehabilitated opencast areas is undertaken, although not all rehabilitated areas are re-vegetated and seeded. This was confirmed during the site visit conducted and the plan titled "Topsoil Management plan". The plan indicates the areas topsoiled and seeded.
			Minimise the footprint as far as possible to mitigate impacts associated with the clearance of existing vegetation.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area.
			Keep clean and dirty water systems separate and ensure that dirty water is not discharged into the environment to avoid impact occurring to flora and fauna species.	Compliant	According to the Storm water Management Plan and the site visit conducted, berms and trenches are constructed for the diversion of clean to the natural environment and dirty water to the Umlalazi PCD for containment to avoid dirty water discharge to the natural environment from the dirty water management activities.
			Keep infrastructure out of wetland vegetation (impacts assessed in the Wetland Specialist Report, compiled by Wetland Consulting, 2014) areas to minimise impact to flora and fauna as these areas are important habitat types.	Compliant	According to the wetland delineation and classification figure 37 of the EIR or EMPR (extracted from Wetland Report, 2015), approved surface layout plan and the site visit conducted, no infrastructures are situated within wetland areas.
			A grass mix should be selected for rehabilitation of disturbed open areas. The selected grass mix should consist of a mix of quick covering grassed pioneer species mat-forming grasses (e.g. Gynodondactylon, Chloris gayana) and tufted grasses (e.g. Eragrostis curvula) to ensure prompt and adequate coverage of the exposed soil whilst also achieving long-term stability. Alternatively, the current seed mix may be used as per Landau Colliery's Original Environmental Management Programme Report.	Compliant	A grass mix (Eragrostis teff, Cynodondactylon, Chloris gayana, Digitariaaerantha, Medicago sativa) detailed in the Vegetation Monitoring Procedure is used for the rehabilitation of the disturbed opencast areas.
			Control of alien plant species is essential to restore the natural biodiversity of the landscape. Alien trees utilise excessive amounts of water and often out compete local plants due to their lack of parasites. Removal of alien plants can lead to a net gain in biodiversity as the natural grassland is rehabilitated.	Noted	The condition is well understood by Khwezela North Colliery Management.
			Implement an alien invasive control procedure for the area.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMP commitment is not applicable.
8.1.4.	Animal Life	Activity: Removal of natural vegetation with incurred increased edge-effects and potential loss of ecosystem function	With mitigation measures it may be possible to reduce the impacts on the fauna of the project area. This can be done by re-vegetating the opencast pit area by placing topsoil, ripping and seeding the rehabilitated areas in order to encourage the growth of grasses. These grasses would then provide habitat for the displaced animals thus mitigating against the initial habitat loss and will also prevent soil losses by wind and/or stormwater erosion.	Compliant	Re-vegetation and seeding of the rehabilitated opencast areas is undertaken, although not all rehabilitated areas are re-vegetated and seeded. This was confirmed during the site visit conducted and the plan titled "Topsoil Management plan". The plan indicates the areas topsoil levelled and seeded.
			Removal of alien plants can lead to a net gain in biodiversity as the natural grassland is rehabilitated.	Noted	Khwezela North Colliery Management understands this EMP commitment.
			Minimise the footprint as far as possible to mitigate impacts associated with the clearance of existing vegetation.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area.
			Implement an alien invasive control procedure for that area.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMP commitment is not applicable.

			Keep clean and dirty water systems separate and ensure that dirty water is not discharged into the environment to avoid impact occurring to flora and fauna species.	Compliant	According to the Storm water Management Plan and the site visit conducted, berms and trenches are constructed for the diversion of clean to the natural environment and dirty water to the Umlalazi PCD for containment to avoid dirty water discharge to the natural environment from the dirty water management activities.
			Keep infrastructure out of wetland vegetation (impacts assessed in the Wetland Specialist Report, compiled by Wetland Consulting Services, 2014) areas to minimise impact to flora and fauna as these areas are important habitat types.	Compliant	According to the wetland delineation and classification figure 37 of the EIR or EMPR (extracted from Wetland Report, 2015), approved surface layout plan and the site visit conducted, no infrastructures are situated within wetland areas.
8.1.5.	Surface water	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Construct an upstream diversion berm at the box-cuts and ensure effective diversion of clean runoff from the operation towards the clean downstream environment.	Compliant	Berms have been constructed around the box-cut to ensure that clean runoff does not enter the dirty water area and also direct water to areas that are not susceptible to erosion, thereby reducing the adverse effects of running water on exposed topsoil.
			Construct clean water conveyance channels to effectively channel upstream runoff towards the downstream clean water environment.	Compliant	Berms and trenches have been constructed on site to avoid the runoff from being diverted towards the downstream clean water environment.
			Mining will take place progressively in sequences of box cuts with concurrent rehabilitation. Therefore, retention areas within the box cuts will be kept to a minimum.	Compliant	It was confirmed during the site visit that concurrent rehabilitation is conducted with a minimum of 3 to 4 cuts available.
8.1.5.	Surface water	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Ensure effective level control and maintain a 0.8 metre freeboard at the Navigation West pollution control dam above full supply level to comply with Schedule 6(e).	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Siltation of the PCD should be prevented by implementing a maintenance schedule to remove silt to ensure adequate capacity for storage of dirty water. The current silt traps at the PCD should also be inspected on a regular basis to ensure optimal functionality.	Compliant	The Umlalazi pollution control dam was silted during the site visit. Tender applications for desilting the pollution control dam are in progress.
			Surface water monitoring should be conducted downstream to identify alterations to surface water quality.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Implement effective storm water control, as per hydrological assessment, around stockpiles identified within the dirty area. Divert clean runoff and retain affected runoff from overburden if necessary.	Compliant	According to the Water Balance Excel sheet, runoff from the stockpiles is diverted to the Navigation West (Umlalazi) PCD and is pumped as required to the west pollution control dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. Furthermore, berms are used for the diversion of the clean water around the stockpile area. Furthermore, diversion berms are constructed for the containment of clean water around the stockpiling areas.
			Conduct regular inspections to identify occurrence of erosion on access roads and stockpiles. Rehabilitation should be conducted where necessary.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Prevent erosion of loose particles by vegetating cleared land / stockpiles as soon as possible.	Compliant	It was confirmed during the site visit that the stockpiles are no vegetated. A Dump Model Plan provided during the audit period confirmed the stockpiles vegetated. It must be noted that only one stockpile is not vegetated, as is the current stockpiling area.


			Ensure that the gradient of soil stockpiles is 1:3 or less (shallower) to allow for the establishment of vegetation on all stockpiles, and prevention of erosion.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Berms and trenches must be monitored regularly to ensure they are not blocked.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
8.1.5.	Surface water	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Although mining activities will impact on surface water flow patterns, the majority of the flow patterns within the project area will remain undisturbed due to the fact that mining will take place in sequence over a time period.	Compliant	According to the assessment of the Google Earth Imagery and the approved layout plan, the activities are undertaken within the approved footprint area and no unnecessary clearing of vegetation was noted. Berms have been constructed around the box-cut to ensure that clean runoff does not enter the dirty water area and also direct water to areas that are not susceptible to erosion, thereby reducing the adverse effects of running water on exposed topsoil.
			Implement effective diversion of storm water runoff to ensure surface flow towards the natural resource although surface water flow patterns will be disturbed by the box-cuts and stockpiles.		
8.1.5.	Surface water	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: A Haul road, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Regular site inspections to be undertaken to assess if spillages or water pollution incidents have occurred. Such incidents shall be reported (use of the incident reporting procedure), and immediately corrected.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Should a spillage or leakage of a hydrocarbon, chemical or hazardous substance occur, the spill/leakage must be cleaned up as per Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints procedure.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Ensure that areas containing chemical and hazardous substances are contained (e.g. in a bund) to ensure no contamination of surrounding water resources or soil is contaminated. The bunded area must be able to contain 110% of the total volume of materials stored at any given time. Also follow the procedure on Handling and Storage of hazardous materials	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.

			Implement the surface water (monthly), groundwater (quarterly)	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			And bio-monitoring programme (biannually) as within the receiving surface water environment.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Undertake annual GN 704 compliance audits, to verify the effectiveness of clean/affected water separation. Any shortcomings, with further consideration to the surface water monitoring results, should be addressed as a matter of urgency.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Regular site inspections to be undertaken to assess if spillages or soil pollution incidents have occurred. Such incidents shall be reported (use of the incident reporting procedure), and immediately corrected.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			The pump station to be installed at the pollution control dam should regularly maintained and water should be pumped from the pollution control dam to the Navigation Dam for process purposes to prevent overflow and to be used during emergency conditions.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			The mines existing emergency response plan should be updated to include activities associated with the new project.	Compliant	The mine emergency and response include activities associated with the Navigation Section Umlalazi West South Block Extension project. The emergency response plan was provided during the audit period.
			Adhere to the storm water management plan and civil engineering designs of the approved by a registered professional civil engineer.	Compliant	Site visit confirmed that the Stormwater Management Plan compiled by Shangani Management Services (Pty) Ltd and the civil designs are being adhered to. This undertaken through the construction of surface water management infrastructures and the monitoring of these structures thereof. Furthermore, all infrastructures have been constructed according to the design plans.
8.1.6.	Groundwater	Activity: Blasting and development of the box-cut and open pits	Prevent or contain contamination from blasting activities.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Handle and store blasting material according to manufacturing requirements.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Train staff and implement correct procedures for the handling of blasting material.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Only qualified staff should handle these materials.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Minimize seepage, prevent contact between clean and dirty areas, and recycle contaminated water.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is

		Activity: Utilisation of water management measures			under operational phase, therefore this EMPr commitment is not applicable.
			Contain contaminated water for re-use and evaporation.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Minimize the extent of disturbance of the aquifer.	Compliant	In general, it was noted that Khwezela North Colliery is committed to saving water and to implement strategies for the reuse of affected water as far as possible. Khwezela North Colliery implements general awareness campaigns (i.e. during water week) to raise awareness for conserving water and to minimise water usage. The volumes of water abstracted from the open pit are recorded to ensure that the PCD does not exceed the maximum capacity and overflow. Groundwater levels are also monitored quarterly and the surface water levels are monitored monthly. Dewatering as part of the South Block Extension Project is conducted in a controlled manner and only to allow for the safe continuation of mining activities.
			To prevent degeneration of groundwater quality.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			To manage the anticipated impacts associated with the inflow of groundwater to the opencast.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Haul roads and other compacted surfaces should be kept free of carbonaceous material by cleaning spillages, thereby reducing infiltration of contaminated water.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Dirty water should be contained in fit-for-purpose and lined designed facilities, which will limit infiltration of contaminated water to groundwater.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Water retention in the in-pit sump areas should be as minimal as possible to limit the quality related impacts.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Clean surface water should not come into contact with dirty water or coal bearing material.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Hazardous material should be stored in the correct designated and bunded areas that are specially designed and constructed for that purpose.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Staff should be trained to implement correct procedures for the handling of hazardous material.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Storage areas should be regularly inspected.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Oil contaminated water should be diverted from the bunded area during rain events to an interception or oil water separation facility.	Compliant	A sump is used for the containment of contaminated oil located at the diesel tank facility.

					
8.1.7.	Air Quality	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Phasing of earthmoving activities to reduce source size.	Not Applicable	Sump used for the containment of contaminated oil South Block Extension Project is currently in an operational phase and no earthmoving construction related activities are undertaken, therefore this EMPr commitment is not applicable.
			Dust suppression in dirty areas in accordance to the dust suppression procedure.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Early vegetation and stabilization of topsoil stockpile and reduction of the frequency of disturbance.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Speed control will be enforced on all roads.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
			Complaints register must be making available for the recording of complaints relating to dust – “: Environmental Incidents, Non-conformance and Complaints”	Compliant	A complaints register is kept at the security gate.
			Dust fall out monitoring plan must be developed and effectively implemented. Consideration should be given to ambient monitoring (PM10 and PM2.5).	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Greenhouse gas emissions must be managed through effective maintenance of all diesel driven vehicles.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
8.1.8.	Noise	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Ensure all equipment and vehicles are serviced regularly to prevent excessive noise. Vehicles and equipment generating excessive noise should be fitted with appropriate noise abatement measures.	Compliant	The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements. Further, personnel noise monitoring is undertaken on a regular on all employees operating various vehicle and machinery. This monitoring assists in determining noise exposure within the cab and if additional abatement equipment or PPE is required.
			Construction workers must be provided with the appropriate personal protection equipment in areas required as per the Mine Health and Safety Act (No. 29 of 1996) (MHSA). Records of the PPE supplied must be maintained for record keeping purposes.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			A complaints register must be made available the site security office and should any complaints be received; these must be logged in the complaints register and reported to the responsible person on-site.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is

					under operational phase, therefore this EMPr commitment is not applicable.
			Training and induction requirements must be undertaken as outlined in section 12.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Environmental incidents register (to be updated in Landau Colliery's EMS), with records of close-out on incidents received.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
8.1.9.	Wetlands and Sensitive landscapes	Activity: Inadequate storm water control and dewatering	Storm water control Management Measures To minimise loss of water inputs to the wetlands, the following measures should be implemented: Minimise the extent of the dirty water exclusion areas while ensuring the effective separation of clean and dirty water.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Maintain areas within the opencast footprint as clean water areas for as long as possible prior to mining activities commencing.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Divert all clean water around dirty water areas and discharge into adjacent wetland areas in a controlled, environmentally sensitive manner and as determined in the hydrological assessment.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			No discharge of dirty water should take place on site.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			A long-term monitoring programme reflecting quality and quantity is therefore proposed to monitor the ecosystem health.	Non-Compliant	The biomonitoring plan requires biannual monitoring during wet and dry seasons. Biomonitoring is conducted twice a year as per the biomonitoring plan. Biannual monitoring was undertaken for the 2018 and 2019. However, no bio-monitoring was undertaken for the year 2020 due to Covid restrictions. It must be noted that Khwezela Colliery conducted Aquatic Biomonitoring (dated June 2021) for the low flow survey. The final biomonitoring report will be finalised after the high flow assessment, planned for November/December 2021. The above-mentioned 2021 monitoring will determine a compliant finding for 2021 audit period. Khwezela North Colliery must ensure that the monitoring is undertaken as per the existing monitoring plan to determine any impacts to the receiving surface water environment.
			Wetland functioning should be assessed by monitoring water levels of a shallow borehole within the wetland. If not already present a borehole should be drilled to within the upper perched aquifer only (≤ 6 mbsl) and subsequently monitoring water levels on a monthly basis taking seasonal fluctuation into account.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
		Activity: Ineffective implementation of management measures at mining operation	The proposed mining & development footprint must be fenced off and all activities must be limited to the fenced off area.	Compliant	The Navigation Section Umlalazi West South Block Extension project is fenced. All activities are limited to the approved footprint area.

					
					Fencing around the Navigation Section Umlalazi West South Block Extension project area.
			Where possible, a 50m buffer zone should be maintained between the wetlands and the fenced off mining area.	Compliant	The Water Use Licenses (South Block Extension Project) includes for activities that will occur within 100 meters / 1:100-year flood line of watercourses. These activities are included as Section 21(c) and (i) water use activities. No activities will take place within the 50 m buffer from the wetland areas. A 50 m buffer is maintained between the wetlands and the fenced-off areas.
			Locate all temporary stockpiles, constructor's camps, laydown areas, ablution facilities etc. a minimum of 50m from any delineated wetland area.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Develop and implement a construction storm water management plan prior to the commencement of site clearing activities. Such a plan should aim to minimise sediment movement off the construction site and limit increases in turbidity of adjacent wetlands.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			All disturbed areas outside the direct development footprints should be rehabilitated and revegetated as soon as possible. Refer to the guidelines below.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			All construction staff should be educated on the sensitivity of wetland areas and should be made aware of all wetland areas in close proximity to the construction sites.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Sediment traps and sediment barriers should be installed where necessary, and discharge points should be protected against erosion and incorporate energy dissipaters.	Compliant	Storm water management infrastructure including berms have been constructed around operational areas and the opencast pit to minimise sedimentation and erosion as well as to ensure separation of the clean and affected water management systems. It must be noted that no discharge points are located within the Navigation Section Umlalazi West South Block Extension project.
			Erosion within the construction site must be minimised through the following: Limiting the area of disturbance and vegetation clearing to as small an area as possible;	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Where possible, undertaking construction during the dry season;	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Phasing vegetation clearing activities and limiting the time that any one area of bare soil is exposed to erosion;	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Control of storm water flowing onto and through the site. Where required, storm water from upslope should be diverted around the construction site	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is

					under operational phase, therefore this EMPr commitment is not applicable.
			Prompt stabilisation and re-vegetation of soils after disturbance and construction activities in an area are complete; and	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Protection of slopes. Where steeper slopes occur, these should be stabilised using geotextiles or any other suitable product designed for the purpose.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Sediment transport off the site must be minimised through the following: Establishing perimeter sediment controls. This can be achieved through the installation of sediment fences along downslope verges of the construction site. Where channelled or concentrated flow occurs, reinforced sediment fences or other sediment barriers such as sediment basins should be used (refer to US EPA guidelines on Storm water Pollution Prevention);	Not Applicable	No perimeter sediment controls have yet been constructed. No concerns have been identified.
			Discharge of storm water from the construction site into adjacent grassland rather than directly into wetland habitat.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Discharged flows must be slow and diffuse; and Regular inspection and maintenance of sediment controls.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
		Activity: Affected storm water release into the environment	Clean and dirty storm water need to be separated as per the strategies contained in the hydrological assessment;	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			No contaminated water should be allowed to enter the clean storm water system.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			No dirty mine or dirty storm water may be released into the wetlands and should be contained and treated on site, or used for dust suppression. Should contaminated water enter the wetlands due to spillages or other unforeseen circumstances a wetland/water quality expert should be consulted regarding implementation of suitable mitigation and/or rehabilitation measures;	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Required PCDs should be designed to be in compliance with the applicable legislation requirements as well as accepted best management practices;	Compliant	From a review of the PCD design report, the PCD was designed to contain a 1:100-year flood event. Level control is implemented at the PCD to prevent overflow to the receiving environment.
			To prevent seepage and leakage out of the PCDs, these facilities should be lined with a suitable engineered liner.	Compliant	The PCD is lined with a 2 mm HDPE liner and the associated trenches are concrete lined.
			A water quality and bio monitoring plan should be compiled and implemented (if not already in place) to monitor for any deterioration in water quality in the adjacent wetland systems; and	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Regular maintenance and inspections of the PCDs should be undertaken to ensure operation of the dams as per design specifications. A log book of inspections and maintenance activities must be kept.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Investigations should determine the feasibility to operate the Navigation West pollution control dam at 28 % capacity to ensure a buffer capacity during such a flood. Otherwise, the dam's capacity should be increased.	Compliant	The capacity of the PCD was upgraded from 60 000 m3 to 66 029 m3 as per the Navigation West South Block Extension WUL (Licence Number: 03/B20F/ACGIJ/4781). From a review of the PCD design report, the PCD was designed to contain a 1:100-year flood event. Level control is implemented at the PCD to prevent overflow to the receiving environment.

			The pollution control dam should be operated at “as low level as possible”.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Desilting of the pollution control dam must also be undertaken to ensure sufficient capacity at the facility.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
8.1.10.	Visual	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Keep disturbed areas to a minimum.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			No clearing of land to take place outside the demarcated footprint.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Only indigenous plant species to be introduced and planted. All areas must be vegetated with a suitable ground cover immediately after or construction activities to prevent erosion and mud slides.	Not Applicable	Revegetation has not yet commenced, therefore this EMPr commitment is not applicable.
			Buildings and similar structures must be in keeping with the principles of critical regionalism, namely sense of place, sense of history, sense of nature, sense of craft and sense of limits.	Compliant	It was confirmed during the audit period that no additional infrastructure was constructed as part of the Navigation West South Block Extension project. The existing buildings utilised as part of the project fits in with the sense of place.
			Maintain the site during operation of the mine. Inoperative equipment and poor housekeeping, in general, creates a poor image of the activity in the eyes of the public.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
			Implement a rehabilitation plan as previously discussed.	Compliant	A Rehabilitation Plan is developed, aiming at reflecting the progress made on the rehabilitation and remediation activities associated with the activities undertaken at Navigation West South Block. Rehabilitation plan was provided for review during the audit period.
8.1.11.	Sites of Archaeological and cultural importance	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex,	G01 and G02 must be demarcated with a fence and fitted with a gate in order to allow for family or friends to visit the deceased. This will also lessen the risk that the graveyards may be affected by any developmental activities. It is possible that this Phase I HIA study may have missed heritage resources in the Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences. If any heritage resources of significance are exposed during AOL's proposed new project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.	Not Applicable	It must be noted that the G01 and G02 are graveyards located outside of the project area but forms part of Navigation Section of Khwezela North Colliery. No heritage resources were identified within the Navigation West South Block Extension area. Should heritage resources be found during the project, confirmed that necessary authorisations will be obtained if it happens the mine is extended to a place where this grave are located, the ECO will arrange for the excavation to be examined by an Archaeologist as soon as possible, and the archaeologist will make sure that the graves are relocated to a safe site, away from the mine.
			If any palaeontological material is exposed during digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.	Not Applicable	No palaeontological materials (fossils) were reported during the audit period.

8.1.12.	Socioeconomic	Activity: Landau Colliery Navigation West South Block Extension Project .	<p>Landau Colliery currently provides jobs for over 900 people and funds and participates in community projects. The positive impacts of Landau Colliery on the regional socio-economic conditions during the Operational Phase are discussed in Part 4.</p> <p>All positive impacts of the mine on the socioeconomic that will have taken place during the Operational Phase will continue during the Decommissioning Phase until they cease, mainly due to the reduction or cessation of jobs and the cessation of demand for goods and services.</p>	Noted	Khwezela North Colliery Management understands this EMPr commitment.
5.3.2 Operational Phase					
8.2.1	Topography and Geology	Activity: Development of the Opencast Pit.	Rehabilitation of the opencast mining area will be conducted concurrently with mining. Open cuts will be minimised to between 3 and 5 at any given time with successive cuts used to systematically backfill preceding cuts. This will minimise the size of the void at any point in time.	Compliant	It was confirmed during the site visit that concurrent rehabilitation is conducted with a minimum of 3 to 4 cuts available.

			The disturbance area for the opencast pit will be kept at a minimum and in the designated area as indicated on the design for the proposed project attached hereto as Plan 3 in Appendix A.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit is currently being undertaken within the approved footprint area. No disturbance outside of the approved footprint area was noted.
			Spoil areas will be levelled and profiled, while voids will be backfilled and profiled continuously and progressively as mining advances.	Compliant	According to the topsoil plan, not all spoils areas levelled and profiled, but voids are being backfilled. Furthermore, concurrent rehabilitation is undertaken to ensure that all rehabilitated areas are then levelled and profiled following revegetation. A rehabilitation report depicting the process that must be followed when levelling and profiling rehabilitated areas and voids was provided for review during the audit periods.
			Suitable rehabilitation techniques will be employed for the backfilling of the opencast voids, so as to promote free-drainage, and the re-establishment of pre-mining drainage patterns, as far as practicable. The post-mining surface topography will be modelled (rehabilitation designs) using suitable software, to ensure that appropriate measures can be implemented concurrently with the mining activities to ensure that a free-draining surface can be achieved. Such rehabilitation designs will be compiled from which rehabilitation plans will be developed. Regular reviews of the rehabilitation plans will be undertaken, and actual rehabilitation surveyed to verify compliance with rehabilitation plans and the rehabilitation design.	Compliant	Rehabilitation is undertaken in sequential layers with carbonaceous material such as coal discard and carbonaceous overburden) at the bottom of the pit. The discard material was placed below the coal seam during the backfilling of the opencast voids to reduce the anticipated impacts on groundwater. Subsoil was placed at a minimum depth of 1m over (mechanically compacted) overburden where after topsoil was placed as the final substrate with a minimum thickness. Furthermore, since the mine is implementing a Dozing rehabilitation technique, a Khwezela North Colliery developed and is implementing a Dozing Procedure (dated December 2017) with the aim of rehabilitating the topography of the area by maximising the re-vegetation and free draining potential and minimising potential generation of erosion and water pollution. According to the Dozing Procedure, Khwezela North Colliery furthermore developed Dozing Standard (dated December 2017) for the purpose of ensuring that all dozing practices are conducted and supervised safely and efficiently so as not to cause harm and jeopardize the safety of employees and equipment involved in dozing operations.
			A Topsoil Management Standard Procedure shall be implemented that describes the requirements during the removal of the topsoil portion of the overburden, topsoil placement and stockpiling, general topsoil monitoring	Compliant	The Landau Topsoil Management Procedure is developed and it describes the requirements during the removal of the topsoil portion of the overburden, topsoil placement and

8.2.2.	Soil, land use and land capability	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	and topsoil thickness control, with consideration to the land use capability to be achieved.		stockpiling, general topsoil monitoring and topsoil thickness control.
			Soil preparation and seeding will be undertaken in accordance with the identified land use and according to the existing Landau Vegetation Establishment and Maintenance Procedure.	Compliant	According to the Google Earth Image, soil preparations for backfilling was undertaken according to the Vegetation Establishment and Maintenance Procedure. It must be noted that seeding has not commenced yet.
			Post rehabilitation monitoring will be undertaken to assess the effectiveness of rehabilitation that includes but not limited to assessing soil quality and further fertilization requirements, erosion concerns, success in natural vegetation establishment, including identifying concerns regarding alien invasive species. Recommendations from post rehabilitation monitoring will be implemented.	Noted	No Post rehabilitation monitoring report is developed as yet. Khwezela Colliery must ensure that the Post rehabilitation monitoring report is developed.
			Mitigation-Erosion: Erosion prevention measures (e.g. grass, cement or rock) should be in place at all concentration points. These areas include roads, trenches, berms and other infrastructure that may increase surface runoff.	Compliant	Site observations confirmed that trenches are concreted with berms vegetated. Furthermore, berms are also constructed along the access and haul roads as erosion measures.
			Erosion of access roads should be addressed by implementing energy dissipaters to drain surface runoff away from the roads if necessary.	Not Applicable	No concerns regarding erosion from access roads was noted during the site visit, therefore this EMPR commitment is not applicable.
			All berms should be inspected regularly for cracks that reduces the integrity of the structures.	Compliant	Monthly inspections are conducted on the berms by Khwezela Colliery Environmental Department. Monthly inspection reports were provided for review during the audit period. No cracks were noted on the berms during the site visit. Monthly inspection reports were provided for review during the audit period.
			Regular inspections will be undertaken and if signs of erosion are identified, mechanical inputs will be required.	Compliant	Monthly inspections are conducted on the berms by Khwezela Colliery Environmental Department for signs of erosion. No erosion was noted on the berms during the site visit. Monthly inspection reports were provided for review during the audit period.
			Mitigation-Topsoil preservation Based on the construction activities required, mine planning should include the removal and storage areas in the planning program and layout plans. Stripping of topsoil and subsoil will be restricted to pre-designated mining areas, and will be stripped ahead of mining in such a manner that the mining window is minimised to between 3 and 5 open cuts.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			The topsoil should be stripped to a maximum depth as measured during the initial survey, and after stripping verified for effectiveness of stripping.	Compliant	Stripping of soils is undertaken according to the Rehabilitation Plan. The rehabilitation plan outlines the specific depth for soil stripping.
			The removal of alien and invasive species ahead of mining will contribute to the eradication of such species from the local region. During removal of the alien and invasive species, care will be taken to minimise the likelihood of seeds or vegetative parts of the alien plants being trapped in the soil layer and thereby being preserved as part of the seed bank in the stockpiled topsoil to be used for rehabilitation after mining.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.

			Topsoil and subsoil will be stockpiled separately, according to the soil utilisation guide in the designated areas as indicated in Plan 3 of Appendix A where the stockpiles are positioned to be located downslope of the dirty water areas away from seepage zones, flood lines, watercourses and other ecological sensitive areas.	Compliant	According to the assessment of the Google Earth Image, Topsoil Dump Model and the site visit conducted, it was confirmed that topsoil and subsoil stockpiles are stockpiles separately.
	Soil, land use and land capability	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage	The volumes of the different topsoil stockpiles must be calculated and reflected on the surface layout plan. This is done to ensure that when rehabilitation is required the volume required and the volume available can be compared (topsoil balance).	Compliant	The volumes of the different topsoil stockpiles are calculated and are reflected on the surface layout plan. A topsoil balance was provided for review during the audit period.
			Where possible, subsoil and topsoil will be placed directly onto prepared rehabilitated opencast areas behind the active mining strip to minimise the volume of subsoil and topsoil that needs to be stockpiled.	Compliant	Concurrent rehabilitation is undertaken with the use of subsoil and topsoil material on the rehabilitated areas.
			To ensure that the area to be disturbed by construction activities is to be kept to a minimum, only large enough to carry out the necessary activities as indicated on the design for the proposed project attached hereto as Plan 3 in Appendix A.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Affected runoff from the plant areas and the opencast pit will be collected and contained in the affected water management system, with further diversion of the clean water.	Compliant	According to the Water, runoff from the dirty water management areas and excess pit water is diverted to the Navigation West (Umlalazi) PCD and is pumped as required to the West PCD. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use.
			Conceptual water management strategies are contained within the stormwater management plan and civil engineering designs of the approved by a registered professional civil engineer (Appendix A).	Noted	Khwezela North Colliery Management understands this EMPr commitment.
			Implement a planned maintenance programme covering the affected water management circuit. This maintenance programme to assess aspects of siltation, capacity and containment integrity.	Compliant	Planned maintenance, generated from SAP, is conducted monthly as required in the EMS inspections. Records of maintenance inspections were provided for review.

		system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Equipment and Vehicle Storage Area: Areas of open ground that are to be utilised (i.e. equipment and vehicle storage) should be hard standing. Furthermore, a clean and dirty water separation system must be constructed to ensure that no contamination of clean water systems occurs. Should a spillage or leakage of a hydrocarbon, chemical or hazardous substance occur, the spill/leakage must be cleaned up as per procedures for Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints.	Compliant	It was confirmed during the site visit that the hard park area is hard standing. An extensive network of trenches are constructed throughout the (Navigation West PCD) to divert all affected surface water runoff to Navigation West PC Dam. No spillages were noted during the site visit. However, should spillages occur, such are handled as hazardous waste and are cleaned and disposed of at the hazardous waste bins and further disposed in a licenced landfill site (EnviroServe). Safe disposal certificates were provided for review during the audit period. The spillages are handled according to the Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints procedures.
			Ensure that areas containing chemical and hazardous substances are contained (e.g. in a bund) to ensure no contamination of surrounding water resources or soil is contaminated. The bunded area must be able to contain 110% of the total volume of materials stored at any given time. Also follow the procedure on Handling and Storage of hazardous materials.	Compliant	Areas containing hazardous materials are bunded and the bunded areas include the volume of containment in ensuring that the area contain 110% of the total volume of materials stored. This was confirmed during the site visit.
			Small quantities (50 litres or less) of chemical and hazardous substances (oil, lubricant, etc.) shall be stored in appropriate containers within a secure storage area. The base of the storage area should be impervious	Compliant	 <p>Bunded diesel tanks, hazardous waste and oil storage facilities</p> <p>Areas containing hazardous materials are bunded with concreted surfaces. This was confirmed during the site visit.</p>


			and designed to ensure that the contained substances do not infiltrate into the soil.		   <p>Bunded diesel tanks, hazardous waste and oil storage facilities</p>
			Regular inspections of the integrity of all bund areas will be undertaken.	Compliant	Monthly inspection of the integrity of all bund areas is conducted by Khwezela Colliery Environmental Department. Monthly inspection reports were provided for review during the audit period.
			MSDS (Material Safety Data Sheet) for on-site chemicals, hydrocarbons and hazardous substances must be readily available. A MSDS should include information pertaining to environmental impacts and measures to minimise and mitigate against any potential environmental impact which may result from a spill.	Compliant	MSDS information is kept at the Workshop area at Navigation West Section. This was confirmed during the site visit conducted.
			Used fuels, oil, hydraulic fluids, paints, solvents, and grease should be stored in drums or other suitable containers and stored on a hardstanding and impermeable surface. These should be labelled, sealed and removed from the site to an appropriate disposal site or recycling facility. Under no circumstances will these substances be disposed of on-site or into the surrounding environment.	Compliant	It was confirmed during the site visit that the fuels, oil, hydraulic fluids, paints, solvent, and grease are stored in drums or suitable containers and stored on a hard standing and impermeable surface. The proof of collection that the used oil is collected from site for recycling was not provided also. All hazardous waste is removed by Phambili and fluorescent lights are removed by HazCom and disposed at Holfontein. Oil is recycled by eMalahleni Oil. Safe disposal certificates were provided during the audit period.
			Soils that may be contaminated during the construction and operational phases are to be removed to prevent the contamination of the soils,	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is

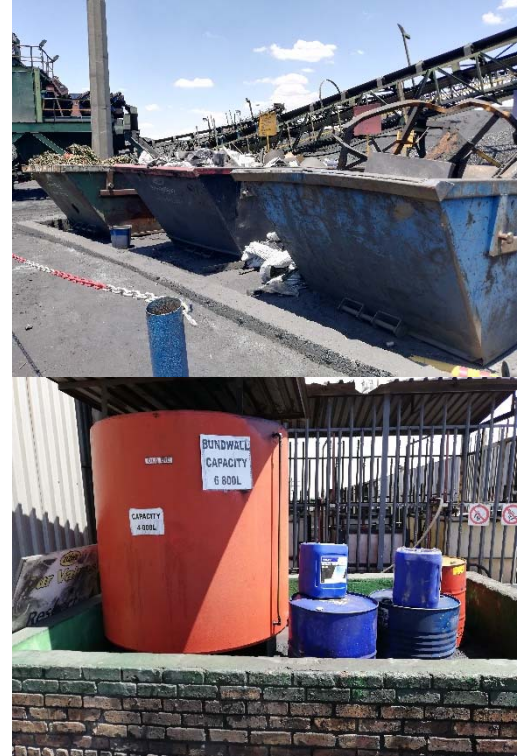
			surrounding surface water or underlying groundwater. Contaminated soil must be removed from site as hazardous waste.		under operational phase, therefore this EMPr commitment is not applicable.
			All construction materials used may be temporarily stored on-site, but bags and containers should be sealed during storage. All leakages, spillages and incidents must be cleaned-up and reported as per Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			No vehicles or equipment may be repaired or washed on-sites other than the designated wash bay area and maintenance workshop at the Workshop Complex.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Temporary drip trays must be placed underneath vehicles or equipment that are leaking hydrocarbons until such a time that they are repaired.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Monitor effectiveness of mitigation measures: Implement the surface water (monthly) and groundwater (quarterly).	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Undertake annual GN 704 compliance audits, to verify the effectiveness of clean/affected water separation. Any shortcomings, with further consideration to the surface water monitoring results, should be addressed as a matter of urgency.	Non-Compliant	GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020 due to Covid restrictions. Khwezela Colliery has however, submitted a proposal to conduct GN 704 audit for the year 2021. The proposal was provided during the audit period.
			Regular site inspections to be undertaken to assess if spillages or soil pollution incidents have occurred. Such incidents shall be reported (use of the incident reporting procedure), and immediately corrected.	Compliant	Monthly inspections are conducted by Khwezela Colliery Environmental Department for the assessment of spillages or water pollution incidents. No water pollution or spillages were noted during the site visit. Monthly inspection reports were provided for review during the audit period.
		Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Rehabilitation of the opencast mining area will be conducted concurrently with mining. Open cuts will be minimised to between 3 and 5 at any given time with successive cuts used to systematically backfill preceding cuts. This will minimise the size of the void at any point in time.	Compliant	It was confirmed during the site visit that concurrent rehabilitation is conducted with a minimum of 3 to 4 cuts available.
			Spoil areas will be levelled and profiled, while voids will be backfilled and profiled continuously and progressively as mining advances.	Compliant	According to the topsoil plan, not all spoils areas levelled and profiled, but voids are being backfilled. Furthermore, concurrent rehabilitation is undertaken to ensure that all rehabilitated areas are then levelled and profiled following revegetation. A rehabilitation report detailing the process that must be followed when levelling and profiling rehabilitated areas and voids was provided for review during the audit periods.
			Suitable rehabilitation techniques will be employed for the backfilling of the opencast voids, so as to promote free-drainage, and the re-establishment of pre-mining drainage patterns, as far as practicable. The post-mining surface topography will be modelled (rehabilitation designs) using suitable software, to ensure that appropriate measures can be implemented concurrently with the mining activities to ensure that a free-draining surface can be achieved. Such rehabilitation designs will be compiled from which rehabilitation plans will be developed. Regular reviews of the rehabilitation plans will be undertaken, and actual rehabilitation surveyed to verify compliance with rehabilitation plans and the rehabilitation design.	Compliant	It was confirmed during the site visit that rehabilitation is undertaken in sequential layers with carbonaceous material such as coal discard and carbonaceous overburden at the bottom of the pit. The discard material was placed below the coal seam during the backfilling of the opencast voids to reduce the anticipated impacts on groundwater. Subsoil was placed at a minimum depth of 1m over (mechanically compacted) overburden where after topsoil was placed as the final substrate with a minimum thickness. Furthermore, since the mine is implementing a Dozing rehabilitation technique, a Khwezela North Colliery developed and is implementing a Dozing Procedure (dated December 2017) with the aim of rehabilitating the topography of the area by maximising the re-vegetation and


					free draining potential and minimising potential generation of erosion and water pollution. According to the Dozing Procedure, Khwezela North Colliery furthermore developed Dozing Standard (dated December 2017) for the purpose of ensuring that all dozing practices are conducted and supervised safely and efficiently so as not to cause harm and jeopardize the safety of employees and equipment involved in dozing operations.
			A Topsoil Management Standard Procedure shall be implemented that describes the requirements during the removal of the topsoil portion of the overburden, topsoil placement and stockpiling, general topsoil monitoring and topsoil thickness control, with consideration to the land use capability to be achieved.	Compliant	The Landau Topsoil Management Procedure (AATC016071) describes the requirements during the removal of the topsoil portion of the overburden, topsoil placement and stockpiling, general topsoil monitoring and topsoil thickness control.
			Soil preparation and seeding will be undertaken in accordance with the identified land use and according to the existing Landau Vegetation Establishment and Maintenance Procedure.	Compliant	According to the Google Earth Image, soil preparations for backfilling was undertaken according to the Vegetation Establishment and Maintenance Procedure. It must be noted that no seeding was conducted.
			Post rehabilitation monitoring will be undertaken to assess the effectiveness of rehabilitation that includes but not limited to assessing soil quality and further fertilization requirements, erosion concerns, success in natural vegetation establishment, including identifying concerns regarding alien invasive species. Recommendations from post rehabilitation monitoring will be implemented.	Noted	No Post rehabilitation monitoring report is developed as yet. Khwezela Colliery must ensure that the Post rehabilitation monitoring report is developed.
8.2.3.	Vegetation	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: a Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	With mitigation measures it may be possible to reduce the impacts on the flora of the project area. This can be done by re-vegetating the opencast pit area by placing topsoil, ripping and seeding the rehabilitated areas in order to encourage the growth of grasses. These grasses would then provide habitat for the displaced animals thus mitigating against the initial habitat loss and will also prevent soil losses by wind and/or storm water erosion.	Compliant	Re-vegetation and seeding of the rehabilitated opencast areas is undertaken, although not all rehabilitated areas are re-vegetated and seeded. This was confirmed during the site visit conducted and the plan titled "Topsoil Management plan". The plan indicates the areas of topsoil levelled and seeded.
			Minimise the footprint as far as possible to mitigate impacts associated with the clearance of existing vegetation;	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area.

			Keep clean and dirty water systems separate and ensure that dirty water is not discharged into the environment to avoid impact occurring to flora and fauna species; and	Compliant	According to the Storm water Management Plan and the site visit conducted, berms and trenches are constructed for the diversion of clean to the natural environment and dirty water to the Umlalazi PCD for containment to avoid dirty water discharge to the natural environment from the dirty water management activities.
			Keep infrastructure out of wetland vegetation (impacts assessed in the Wetland Specialist Report, compiled by Wetland Consulting, 2014) areas to minimise impact to flora and fauna as these areas are important habitat types.	Compliant	According to the wetland delineation and classification figure 37 of the EIR or EMPR (extracted from Wetland Report, 2015), approved surface layout plan and the site visit conducted, no infrastructures are situated within wetland areas.
			A grass mix should be selected for rehabilitation of disturbed open areas. The selected grass mix should consist of a mix of quick covering grassed pioneer species mat-forming grasses (e.g. Gynodondactylon, Chloris gayana) and tufted grasses (e.g. Eragrostis curvula) to ensure prompt and adequate coverage of the exposed soil whilst also achieving long-term stability. Alternatively, the current seed mix may be used as per Landau Colliery's Original Environmental Management Programme Report.	Compliant	A grass mix (Eragrostis teff, Cynodondactylon, Chloris gayana, Digitariaaerantha, Medicago sativa) detailed in the Vegetation Monitoring Procedure is used for the rehabilitation of the disturbed opencast areas.
		Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Control of alien plant species is essential to restore the natural biodiversity of the landscape. Alien trees utilise excessive amounts of water and often out compete local plants due to their lack of parasites. Removal of alien plants can lead to a net gain in biodiversity as the natural grassland is rehabilitated.	Noted	Khwezela North Colliery Management understands this EMP commitment.
			Implement an alien invasive control procedure for the area.	Compliant	An alien invasive management plan has been developed covering the alien invasive species identified within the project area.
8.2.4.	Animal Life	Activity: Removal of natural vegetation with incurred increased edge-effects and potential loss of ecosystem function	With mitigation measures it may be possible to reduce the impacts on the fauna of the project area. This can be done by re-vegetating the opencast pit area by placing topsoil, ripping and seeding the rehabilitated areas in order to encourage the growth of grasses. These grasses would then provide habitat for the displaced animals thus mitigating against the initial habitat loss and will also prevent soil losses by wind and/or stormwater erosion.	Compliant	Re-vegetation and seeding of the rehabilitated opencast areas is undertaken, although not all rehabilitated areas are re-vegetated and seeded. This was confirmed during the site visit conducted and the plan titled "Topsoil Management plan". The plan indicates the areas of topsoil levelled and seeded.
			Removal of alien plants can lead to a net gain in biodiversity as the natural grassland is rehabilitated.	Noted	Khwezela North Colliery Management understands this EMP commitment.
			The following mitigations measures are proposed:		

			Implement an alien invasive control procedure for that area;	Compliant	An alien invasive management plan has been developed covering the alien invasive species identified within the project area.
			Keep clean and dirty water systems separate and ensure that dirty water is not discharged into the environment to avoid impact occurring to flora and fauna species; and	Compliant	According to the Storm water Management Plan and the site visit conducted, berms and trenches are constructed for the diversion of clean to the natural environment and dirty water to the Umlalazi PCD for containment to avoid dirty water discharge to the natural environment from the dirty water management activities.
			Keep infrastructure out of wetland vegetation (impacts assessed in the Wetland Specialist Report, compiled by Wetland Consulting Services, 2014) areas to minimise impact to flora and fauna as these areas are important habitat types.	Compliant	According to the wetland delineation and classification figure 37 of the EIR or EMPR (extracted from Wetland Report, 2015), approved surface layout plan and the site visit conducted, no infrastructures are situated within wetland areas.
8.2.5	Surface Water	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Mining will take place progressively in sequences of box cuts with concurrent rehabilitation. Therefore, retention areas within the box cuts will be kept to a minimum.	Compliant	It was confirmed during the site visit that concurrent rehabilitation is conducted with a minimum of 3 to 4 cuts available.
			Surface water quality: Ensure effective level control and maintain a 0.8 metre freeboard at the Navigation West pollution control dam above full supply level to comply with Schedule 6(e).	Non-Compliant	<p>According to the water use licence granted for Umlalazi South Block Extension (License Number: 03/B20F/ACGIJ/5781), it is indicated that the pollution control dam shall be operated and maintained to have a minimum freeboard of 0.8 metres above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood-event on top of its mean operating level.</p> <p>It was confirmed during the site visit that the Navigation West Section pollution control dam does not maintain the 0.8 metre freeboard due to silt accumulation noted, with high water levels.</p> <p>It is therefore concluded that the above results in inadequacy of the dam to contain the approved capacities and to maintain the 0.8 freeboard.</p> <p>Desilting activities were undertaken during the site visit. . (A contractor (Bovu) has been appointed to de-silt the dam, however Bovu has been failing to fulfil the requirements of the issued PO, matter has been escalated to management). Hence this will ensure that the dam capacity and the 0.8 freeboard are maintained as required by the approved water use licence and that overflow from the dam is prevented.</p>

					
					Silt accumulation at the pollution control dam
			Siltation of the PCD should be prevented by implementing a maintenance schedule to remove silt to ensure adequate capacity for storage of dirty water. The current silt traps at the PCD should also be inspected on a regular basis to ensure optimal functionality.	Non-Compliant	A maintenance schedule is developed for the removal of silt accumulation from the PCD. However, the Umlalazi pollution control dam was silted during the site visit. Desilting activities were undertaken during the site visit. Hence this will ensure that the dam capacity and the 0.8 freeboard are maintained as required by the approved water use licence and that overflow from the dam is prevented. All silt traps are inspected by Khwezela North Colliery Environmental Department.
			Surface water monitoring should be conducted downstream to identify alterations to surface water quality.	Compliant	Khwezela North Colliery has implemented a surface-monitoring programme as per the respective approved Navigation West South Block Extension WUL (Licence Number: 03/B20F/ACGIJ/4781) which include monitoring of the downstream of the pits. The monthly surface water excel spreadsheet were provided during the audit period.
			Implement effective storm water control, as per hydrological assessment, around stockpiles identified within the dirty area. Divert clean runoff and retain affected runoff from overburden if necessary.	Compliant	According to the Water Balance Excel sheet, runoff from the stockpiles is diverted to the Navigation West (Umlalazi) PCD and is pumped as required to the west pollution control dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. Furthermore, berms are used for the diversion of the clean water around the stockpile area. Furthermore, diversion berms are constructed for the containment of clean water around the stockpiling areas.
			As a general measure, minimise dirty water areas through concurrent rehabilitation during the operational phase.	Compliant	According to the assessment of the Google Earth Image and the site visit conducted, concurrent rehabilitation is practised.
			Prevent erosion of loose particles by vegetating cleared land / stockpiles as soon as possible.	Compliant	It was confirmed during the site visit that the stockpiles are no vegetated. A Dump Model Plan provided during the audit period confirmed the stockpiles vegetated. It must be noted that only one stockpile is not vegetated as is the current stockpiling area.
			Ensure that the gradient of soil stockpiles is 1:3 or less (shallower) to allow for the establishment of vegetation on all stockpiles, and prevention of erosion.	Compliant	The soil stockpiles are maintained to a slope of 1:3 or less (shallower).
			Berms and trenches must be monitored regularly to ensure they are not blocked.	Compliant	Monthly inspections are conducted by Khwezela Colliery Environmental Department to observe for any blockage on the berms and trenches. Should any concerns/issues be identified, such are reported as incidents and logged on Enablon System for actioning. The responsible contractor appointed for clean-up is informed of the issue and therefore the trenches are cleaned. Monthly inspection reports were provided for review during the audit period.

			Surface water flow: Although mining activities will impact on surface water flow patterns, the majority of the flow patterns within the project area will remain undisturbed due to the fact that mining will take place in sequence over a time period	Noted	No blockage was observed on the trenches. This EMPr commitment is understood by Khwezela North Colliery Management.
			Implement effective diversion of storm water runoff to ensure surface flow towards the natural resource although surface water flow patterns will be disturbed by the box-cuts and stockpiles.	Compliant	Storm water trenches and berms are constructed for the diversion of clean and dirty water around the opencast pits. All dirty water from the opencast area is diverted to the Navigation pollution control dam for further re-use.
			Ensure that subsided areas formed during concurrent backfilling and rehabilitation of box cuts are free draining.	Not Applicable	No subsidence has occurred on the backfilled areas. This was confirmed during the site visit.
			Fertilise and vegetate damaged subsided areas to restore its pre-mining status if required.	Not Applicable	No subsidence has occurred on the backfilled areas, therefore this EMPr commitment is not applicable.
			Monitoring and maintenance: Regular site inspections to be undertaken to assess if spillages or water pollution incidents have occurred. Such incidents shall be reported (use of the incident reporting procedure), and immediately corrected.	Compliant	Monthly inspections are conducted by Khwezela Colliery Environmental Department for the assessment of spillages or water pollution incidents. No water pollution or spillages were noted during the site visit. Monthly inspection reports were provided for review during the audit period.
			Should a spillage or leakage of a hydrocarbon, chemical or hazardous substance occur, the spill/leakage must be cleaned up as per Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints procedure.	Compliant	All spillages are cleaned up according to the Oil, Fuel and Chemical Spill Clean-up and Environmental Incidents, Non-conformance and Complaints Procedure. No spillages were noted during the site visit.
			Ensure that areas containing chemical and hazardous substances are contained (e.g. in a bund) to ensure no contamination of surrounding water resources or soil is contaminated. The bunded area must be able to contain 110% of the total volume of materials stored at any given time. Also follow the procedure on Handling and Storage of hazardous materials	Compliant	Areas containing hazardous materials are bunded and the bunded areas include the volume of containment in ensuring that the area contain 110% of the total volume of materials stored. This was confirmed during the site visit. 

					
					Bunded diesel tanks, hazardous waste and oil storage facilities
			Implement the surface water (monthly), groundwater (quarterly)	Compliant	Surface water is implemented monthly and groundwater on quarterly basis. Latest water monitoring reports were provided for review during the audit period.
			And bio-monitoring programme (biannually) as within the receiving surface water environment.	Non-Compliant	The biomonitoring plan requires biannual monitoring during wet and dry seasons. Biomonitoring is conducted twice a year as per the biomonitoring plan. Biannual monitoring was undertaken for the 2018 and 2019. However, no bio-monitoring was undertaken for the year 2020 due to Covid restrictions. It must be noted that Khwezela Colliery conducted Aquatic Biomonitoring (dated June 2021) for the low flow survey. The final biomonitoring report will be finalised after the high flow assessment, planned for November/December 2021. The above-mentioned 2021 monitoring will determine a compliant finding for 2021 audit period. Khwezela North Colliery must ensure that the monitoring is undertaken as per the existing monitoring plan to determine any impacts to the receiving surface water environment.
			Undertake annual GN 704 compliance audits, to verify the effectiveness of clean/affected water separation. Any shortcomings, with further consideration to the surface water monitoring results, should be addressed as a matter of urgency.	Non-Compliant	GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020 due to Covid restrictions. Khwezela Colliery has however, submitted a proposal to conduct GN 704 audit for the year 2021. The proposal was provided during the audit period.
			Regular site inspections to be undertaken to assess if spillages or soil pollution incidents have occurred. Such incidents shall be reported (use of the incident reporting procedure), and immediately corrected.	Compliant	Monthly inspections are conducted by Khwezela Colliery Environmental Department for the assessment of spillages or water pollution incidents. No water pollution or spillages were noted during the site visit. Monthly inspection reports were provided for review during the audit period.
			The pump station to be installed at the pollution control dam should regularly maintained and water should be pumped from the pollution control dam to the Navigation Dam for process purposes to prevent overflow and to be used during emergency conditions.	Compliant	Monthly inspections of the pump station are conducted by Khwezela Colliery Environmental Department. No water pollution or overflows were noted or reported during the site visit. Monthly inspection reports were provided for review during the audit period.
			Adhere to the storm water management plan and civil engineering designs of the approved by a registered professional civil engineer.	Compliant	Site visit confirmed that the Stormwater Management Plan compiled by Shangoni Management Services (Pty) Ltd and the civil designs are adhered to. This is adhered to through the construction of surface water management

					infrastructures and the monitoring of these structures thereof. Furthermore, all infrastructures have been constructed according to the design plans.
8.2.6.	Groundwater	Activity: Blasting and development of the box-cut and open pits	Management measures Prevent or contain contamination from blasting activities.	Compliant	According to the Water Balance, runoff from the blasting activities is diverted to the Navigation West (Umlalazi) PCD and is pumped as required to the Navigation West PCD. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. Furthermore, berms are used for the diversion of the clean water around the opencast area.
			Action plans Handle and store blasting material according to manufacturing requirements.	Compliant	Training is conducted by Khwezela North Colliery for employees and contractors on how to handle all hazardous material in a proper way and store blasting. Induction material and monthly environmental topics were provided for review during the audit period.
		Activity: Utilisation of water	Train staff and implement correct procedures for the handling of blasting material.	Compliant	All employees and contractors are required to undertake mandatory induction and training which include handling of blasting material. An induction register was provided for review during the audit period.
			Only qualified staff should handle these materials.	Compliant	The contractor (AEL) is appointed to conduct all blasting related activities at Khwezela North Colliery. Records were provided during the audit period.
			Minimize seepage, prevent contact between clean and dirty areas, and recycle contaminated water.	Compliant	According to the Water Balance, runoff from the blasting activities is diverted to the Navigation West (Umlalazi) PCD and is pumped as required to the Navigation West PCD. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. Furthermore, berms are used for the diversion of the clean water around the opencast area.
			Contain contaminated water for re-use and evaporation.	Compliant	Contaminated water from the Navigation West South Block Extension Project is pumped out of the PDC and is reused in the processing activities and for dust suppression activities, recycling, reuse.
			Minimize the extent of disturbance of the aquifer.	Compliant	In general, it was noted that Khwezela North Colliery Is committed to saving water and to implement strategies for the reuse of affected water as far as possible. Khwezela North Colliery implements general awareness campaigns (i.e. during water week) to raise awareness for conserving water and to minimise water usage. The volumes of water abstracted from the open pit are recorded to ensure that the PCD does not exceed the maximum capacity and overflow. Groundwater levels are also monitored quarterly and the surface water levels are monitored monthly. Dewatering as part of the South Block Extension Project is conducted in a controlled manner and only to allow for the safe continuation of mining activities.
			To prevent degeneration of groundwater quality.	Compliant	Water monitoring data is analysed and included in the quarterly water monitoring reports. The analysis includes water quality trends that indicate potential impact. Water monitoring data was provided for review. No issues were reported.
			To manage the anticipated impacts associated with the inflow of groundwater to the opencast.	Not Applicable	No excessive dewatering is taking place. The main purpose of dewatering is for the safe continuation of mining.
			Wastage of coal-bearing material outside the allocated dirty water management area during the operational phase should be prevented. Haul roads and other compacted surfaces should be kept free of	Compliant	It was confirmed during the audit period that haul roads surfaces are kept free of carbonaceous material and no spillages were noted.

			carbonaceous material by cleaning spillages, thereby reducing infiltration of contaminated water.		
			Dirty water should be contained in fit-for-purpose and lined designed facilities, which will limit infiltration of contaminated water to groundwater.	Compliant	The PCD is lined with a 2 mm HDPE liner and the associated trenches are concrete lined.
			Water retention in the in-pit sump areas should be as minimal as possible to limit the quality related impacts.	Compliant	According to the Water Balance, runoff from the dirty water areas is diverted to the Navigation West (Umlalazi) PCD and is pumped as required to the navigation dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. This will minimise the quality related impacts of water.
			Clean surface water should not come into contact with dirty water or coal bearing material.	Compliant	The Berms have been constructed around the pit to isolate the dirty water from clean water as to prevent the dirty water runoff from being in contact with the clean underground water. The berms also ensure that the dirty runoff enters the pollution control dam. Haul roads are considered to be dirty water areas and the runoff from the haul roads are diverted to the Navigation west PCD. The dirty water from the PCD is re-used for dust suppression and collected for purification.
			Hazardous material should be stored in the correct designated and bunded areas that are specially designed and constructed for that purpose.	Not Applicable	No hazardous material is stored at the South Section, therefore this EMP is not applicable.
			Staff should be trained to implement correct procedures for the handling of hazardous material.	Compliant	All employees are suitably trained in all aspects of their job from the most menial to the riskiest activities in the workplace and contractors to Khwezela North Colliery are required to undertake mandatory induction and training. The Khwezela Hydrocarbon and Chemical Handling Procedure (AATC026497) forms part of the training. Induction presentation was provided. Monthly toolbox talks are conducted to raise awareness on the management of hazardous waste.
			Storage areas should be regularly inspected.	Compliant	Monthly inspections are conducted by Khwezela Colliery Environmental Department for the management and storage of hazardous materials. Monthly inspection reports were provided for review during the audit period.
			Oil contaminated water should be diverted from the bunded area during rain events to an interception or oil water separation facility.	Compliant	A sump is used for the containment of contaminated oil located at the diesel tank facility. 
		Activity: Removal of groundwater influx (dewatering)	Drains and cut-off trenches (storm water management system) around the proposed opencast pits should be implemented before commencing with pit development to prevent clean run-off water from entering the pit.	Compliant	Sump used for the containment of contaminated oil The Berms have been constructed around the pit to isolate the dirty water from clean water as to prevent the dirty water runoff from being in contact with the clean underground water. The berms also ensure that the dirty runoff enters the pollution control dam. Haul roads are considered to be

					dirty water areas and the runoff from the haul roads are diverted to the Navigation west PCD. The dirty water from the PCD is re-used for dust suppression, collected for purification.
			Interception drainage around the pit. The dewatering of the aquifer system cannot be prevented. If the monitoring program indicates that nearby groundwater users are affected by the dewatering, the users need to be compensated for the loss.	Not Applicable	No groundwater impacts of the nearby water users was identified in the groundwater monitoring reports provided for review during the audit period, therefore this EMPr commitment is not applicable.
		Activity: Concurrent backfilling with discard material	Interception drainage around the pit – minimize surface area where operations would contaminate water (smaller disturbed areas mean smaller manageable volumes).	Compliant	Site observations confirmed that cut-off trenches and berms have been placed around the opencast pit to prevent clean run-off water from entering the pit. Furthermore, dirty water emanating from the pits is diverted to the PCD for containment and re-use.
			Groundwater infiltration should be controlled and can be achieved through installation of liners and sufficient surface drainage.	Compliant	The Umlalazi PCD is lined with a 2 mm HDPE liner and the associated trenches are concrete lined. The lining of the pit is not applicable as this is not financially feasible. Furthermore, the pit cannot be lined as blasting within the pit will cause damage to the lining. During rehabilitation, the pits are backfilled through con-current rehabilitation and shaped to ensure sufficient surface drainage.
			Implement and maintain proper storm water management infrastructure.	Compliant	Storm water trenches and berms are constructed for the diversion of clean and dirty water around the opencast pits. All dirty water from the opencast area is diverted to the Navigation pollution control dam for further re-use.
			Concurrent rehabilitation should follow the premining in-situ profile with coal spoils and carbonaceous material placed in the bottom beneath the water followed by the high neutralising rock (sandstone/tillite) and finally the clay and topsoil layer.	Compliant	A rehabilitation plan is implemented by martin Platt from Khwezela North Colliery who is a suitably qualified person. The rehabilitation process is by placing of spoils and carbonaceous material placed in the bottom beneath the water followed by the high neutralising rock (sandstone/tillite) and finally the clay and topsoil layer. This was also confirmed during the site visit.
		Activity: Rehabilitation of final void and post closure	Implement rehabilitation plan under supervision of suitably qualified person.	Compliant	A rehabilitation plan is implemented by martin Platt from Khwezela North Colliery who is a suitably qualified person. The rehabilitation plan provided for review indicate the progress of implementation measures provided.
			The rate and extent of ARD formation should be alleviated as far as possible by duplicating the pre-existing in situ profile.	Not Applicable	Rehabilitation of final voids and post closure activities have not commenced as yet, therefore this EMPr commitment is not applicable.
			Water infiltration and oxygen ingress into the backfilled voids should be minimised.	Not Applicable	Rehabilitation of final voids and post closure activities have not commenced as yet, therefore this EMPr commitment is not applicable.
			The final cut or pit should be filled to resemble the pre-mining in-situ profiles with the coal spoils and carbonaceous materials (mudstones) in the bottom followed by the higher neutralising potential rocks such as the sandstones and tillites (if present) and finally by a compacted clay and topsoil layer.	Not Applicable	Rehabilitation of final voids and post closure activities have not commenced as yet, therefore this EMPr commitment is not applicable.
			Rate and volume of water infiltration should be minimised by compaction and capping.	Not Applicable	Rehabilitation of final voids and post closure activities have not commenced as yet, therefore this EMPr commitment is not applicable.
			Coal spoils and carbonaceous material should be placed beneath the water table to limit the ingress of oxidation.	Not Applicable	Rehabilitation of final voids and post closure activities have not commenced as yet, therefore this EMPr commitment is not applicable.
			Seeding of landscaped areas (depending on specialist recommendations).	Not Applicable	Rehabilitation of final voids and post closure activities have not commenced as yet, therefore this EMPr commitment is not applicable.

			Continuous monitoring of groundwater quality conditions through purpose drilled groundwater monitoring boreholes to ensure early detection of negative impacts.	Not Applicable	Rehabilitation of final voids and post closure activities have not commenced as yet, therefore this EMPr commitment is not applicable.
8.2.7.	Air Quality Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Proposed mitigation: The following mitigation measures will be implemented: Phasing of earthmoving activities to reduce source size.	Not Applicable	South Block Extension Project is currently in an operational phase and no earthmoving construction related activities are undertaken, therefore this EMPr commitment is not applicable.
			Dust suppression in dirty areas in accordance to the dust suppression procedure.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission.
			Early vegetation and stabilization of topsoil stockpile and reduction of the frequency of disturbance.	Compliant	It was confirmed during the site visit that the stockpiles are no vegetated. A Dump Model Plan provided during the audit period confirmed the stockpiles vegetated. It must be noted that only one stockpile is not vegetated, as is the current stockpiling area. Furthermore, the topsoil stockpiles are used for concurrent rehabilitation of the mined out pits to ensure that disturbance is limited to the approved footprint areas and to avoid unnecessary clearance of vegetation outside of the approved footprint area.
			Early paving or treatment with chemical surfactant of mine-owned permanent roads.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission. This is in accordance with the dust suppression procedure.
			Speed control will be enforced on all roads.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
			Complaints register must be make available for the recording of complaints relating to dust – “: Environmental Incidents, Non-conformance and Complaints”	Compliant	A complaints register is kept at the security gate.
			Dust fall out monitoring plan must be developed and effectively implemented. Consideration should be given to ambient monitoring (PM10 and PM2.5).	Compliant	Khwezela North Colliery has implemented a dust fallout monitoring programme to monitor dust fallout. Such was confirmed through review of the report Air quality monitoring report, Khwezela Colliery compiled by WSP Environmental (Pty) Ltd (WSP). Consideration was being given to ambient monitoring (PM10 and PM2.5). Khwezela North Colliery has also implemented the procedure Khwezela control of dust and fumes procedure, which aims to indicate the required way of reducing dust and fume emissions from source.
			Greenhouse gas emissions must be managed through effective maintenance of all diesel driven vehicles	Compliant	Greenhouse emissions from operating vehicles is controlled to avoid high level of emission of ground-level ozone and particle pollution into the atmosphere. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission-reduction technology. The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g., LVDs serviced every 5 00km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
		Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water	Should areas of the surface dry out, resulting in the generation of dust, a water bowser will be utilised for dust suppression.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission.
			Dust suppression in dirty areas in accordance to the dust suppression procedure.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission. This is in accordance with the dust suppression procedure.

		and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Early vegetation and stabilization of topsoil stockpile and reduction of the frequency of disturbance.	Compliant	It was confirmed during the site visit that the stockpiles are no vegetated. A Dump Model Plan provided during the audit period confirmed the stockpiles vegetated. It must be noted that only one stockpile is not vegetated as is the current stockpiling area. Furthermore, the topsoil stockpiles are used for concurrent rehabilitation of the mined-out pits to ensure that disturbance is limited to the approved footprint areas and to further avoid unnecessary clearance of vegetation outside of the approved footprint area.
			Early paving or treatment with chemical surfactant of mine-owned permanent roads.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the haul roads for reducing dust emission. This is in accordance with the dust suppression procedure.
			Speed control will be enforced on all roads.	Compliant	Speed limit of 40 km/h is enforced within the mining area. The Nicholas Auto Enterprise System is also used by the mine to monitor speeds of mine vehicles. This monitoring system is driver coded and can hence monitor each employee. Speed exceedances are recorded and reported to mine management.
			Complaints register must be make available for the recording of complaints relating to dust – “Environmental Incidents, Non-conformance and Complaints”	Compliant	A complaints register is kept at the security gate.
			Implementation of the dust fall out monitoring plan. Consideration should be given to ambient monitoring (PM10 and PM2.5).	Compliant	Khwezela North Colliery has implemented a dust fallout-monitoring programme to monitor dust fallout. Such was confirmed through review of the report Air quality monitoring report, Khwezela Colliery compiled by WSP Environmental (Pty) Ltd (WSP). Consideration was being given to ambient monitoring (PM10 and PM2.5). Khwezela North Colliery has also implemented the procedure Khwezela control of dust and fumes procedure which aims to indicate the required way of reducing dust and fume emissions from source.
			Greenhouse gas emissions must be managed through preventing of sponcom of stockpiles and in-pit through effective deposition/compaction and rehabilitation, and effective maintenance of all diesel driven vehicles	Compliant	Greenhouse emissions from operating vehicles is controlled to avoid high level of emission of ground-level ozone and particle pollution into the atmosphere. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission-reduction technology. The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 00km). This maintenance schedule is further maintained, tracked and actioned on the system known as SAP.
			Continually assess the efficiency of dust mitigation measures.	Compliant	Monthly air quality monitoring reports are compiled by WSP to determine the efficiency of the dust mitigation measures as per the dust fallout monitoring report provided for review.
8.2.8	Noise	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices,	Ensure all equipment and vehicles are serviced regularly to prevent excessive noise.	Compliant	The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements. This monitoring assists in determining noise exposure within the cab and if additional abatement equipment or PPE is required.

		Diesel storage tanks, Power Lines, Pollution Control Dam.	Vehicles and equipment generating excessive noise should be fitted with appropriate noise abatement measures.	Compliant	All machinery and vehicles employed are fitted with exhaust systems and are maintained in a good state of repair. No concerns in this regard were evident. The Anglo-American policy ensures that all new and replacement equipment and vehicles are in line with standards and legislative requirements and further incorporate emission reduction technology
			Construction workers must be provided with the appropriate personal protection equipment in areas required as per the Mine Health and Safety Act (No. 29 of 1996) (MHSA). Records of the PPE supplied must be maintained for record keeping purposes.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			A complaints register must be made available the site security office and should any complaints be received; these must be logged in the complaints register and reported to the responsible person on-site.	Compliant	A complaints register is kept at the security gate.
			Training and induction requirements must be undertaken as outlined in section 12.	Compliant	All employees and contractors to Khwezela North Colliery are required to undertake mandatory induction and training, including training on the mine's environmental awareness programme. Awareness training is conducted at Khwezela North Colliery according to the Khwezela Training, Awareness and Competence Procedure
			Environmental incidents register (to be updated in Landau Colliery's EMS), with records of close-out on incidents received.	Compliant	A complaints register has been set up and is available at the entrance and reception of the mine. Copy of the complaints register was provided as evidence during the time of the audit. All environmental incidents are recorded on the Enablon system and the system includes the time, date, nature of complaint, response and investigation undertaken, corrective and preventative actions taken and by whom and all incidents are closed-out within 14 days of the complaint/incident received. This is done in accordance with the Khwezela Environmental Incident and Monitoring Procedure.
			Undertake environmental noise monitoring and keep records of monitoring reports.	Compliant	Environmental noise monitoring is undertaken during blasting activities and records are kept as per the monitoring report compiled by Blast Management and Consulting.
			Personal protective equipment register to be kept.	Compliant	PPE register was provided during the audit period.
			Induction training and register to be kept.	Compliant	Induction presentations and registers were provided for review during the audit period.
8.2.9	Blasting and Vibration	Activity: Continues development of the opencast pit	In review of the evaluations made it is certain that specific mitigation will be required with regards to ground vibration. This is specific to the structures at the Pit Area and closest to the pit area.	Compliant	Ground Vibration and Air Blast Monitoring is conducted. Reports were provided for review during the audit period.
			Air blast and fly rock can be controlled using proper charging methodology. It is advisable that a detail plan of action is put in place to manage ground vibrations in the areas of concern.	Compliant	Khwezela blasting and vibration monitoring procedure is developed for the management of ground vibration. Furthermore, blasting reports were provided for review during the audit period.
			In order to ensure that levels of ground vibration and that of air blast are within acceptable limits not to induce damage, the Blasting Study shows a combination of reduce charge mass per delay and increased distance from the structures of concern. The location of these structures is such that specific design changes are required for the blast operations on the northern side of the pit area. This will be dependent on the actual drill depths, quantity of charge per blast hole and the initiation system used. The recommendations made are based on minimum and maximum charge allowed to facilitate acceptable levels of ground vibration. Charge mass per delay less than that specified will allow for shorter distances.	No mitigation measures are provided in this statement.	
			The only mitigation that will be possible for the pipeline is a combination of distance between blast and charge mass per delay.	No mitigation measures are provided in this statement.	
			The proposed limits as applied in the Blasting study i.e. 6 mm/s, 12.5 mm/s and 25 mm/s and specific limits for industrial installations are considered sufficient to ensure that additional damage is not introduced	No mitigation measures are provided in this statement.	

			to the different categories of structures. It is expected that, should levels of ground vibration be maintained within these limits, the possibility of inducing damage is limited.		
			Monitoring can be done in permanent stations or on ad hoc basis – per blast basis monitoring. Additionally, to this it is recommended that a video of each blast is done as a standard.	Compliant	The monitors are situated in permanent stations mostly outside the mine boundary. Information recorded by the monitors is extracted daily and the results analysed and summarised in a monthly report. Videos of each blast are not conducted as this is not practical.
			Monitoring of ground vibration and air blast is done to ensure that the generated levels of ground vibration and air blast comply with recommendations. Ground vibration and air blast is monitored using a seismograph.	Compliant	Ground Vibration and Air Blast Monitoring is conducted. Reports were provided for review during the audit period.
			There is currently a monitoring program in place. It is further highly recommended that this program be continued and additional monitors used for the south pit extension. Additional positions are proposed and indicated in the blasting study.	Compliant	As per the vibration and blast monitoring reports provided for review, it was noted that 5 monitoring points are utilised. The additional 7 monitoring points as identified within the commitment are not practical as the layout of the pit changes as the mining commences.
			The monitoring of ground vibration will also qualify the expected ground vibration and air blast levels and assist in mitigating these aspects properly. This will also contribute to proper relationships with the neighbours. Four monitors are currently used. An additional 7 monitoring positions were identified for the pit.	Compliant	The monitoring of ground vibration did not exceed the maximum level for ground vibration and air blast levels. As per the vibration and blast monitoring reports provided for review, it was noted that 5 monitoring points are utilised. The additional 7 monitoring points as identified within the commitment are not practical as the layout of the pit changes as the mining commences.
		Activity: Continues development of the opencast pit	The current proposed stemming lengths at least must be maintained to ensure control on fly rock. Specific designs where distances and blast is known should be considered with this.	Compliant	Khwezela North Colliery indicated that the stemming lengths vary dependent on various receptors. The current proposed stemming lengths to control fly rock are 3.2 for Overburden stemming and 2.8 for coal stemming.
8.2.10.	Wetlands and Sensitive landscapes	Activity: Inadequate storm water control and dewatering	There are a public gravel road on the western side of the pit area and farm roads closer than 500m to the project area. These roads may be in danger of being damaged if consideration is not given to proper controls and fly rock control if no re-routing is to be done. Levels are extremely higher than the allowed limits for these points of interest and have specific concern to ground vibration and mitigation will be required. Proper road closure procedures in conjunction with the necessary authorities will be required. All blasting closer than 358 m to roads will require road closure procedures. Farm roads that are used daily may exist and should be considered for closure just when blasting is done in vicinity of these roads.	Compliant	Road closure procedures in conjunction with the necessary authorities are conducted where necessary.
			Storm water control Management Measures To minimise loss of water inputs to the wetlands, the following measures should be implemented:		
			Minimise the extent of the dirty water exclusion areas while ensuring the effective separation of clean and dirty water.	Compliant	According to the Storm water Management Plan, berms and trenches are constructed for separation of dirty and clean water. All dirty water activities are undertaken within the approved footprint areas.

			Maintain areas within the opencast footprint as clean water areas for as long as possible prior to mining activities commencing.	Compliant	According to the Storm water Management Plan, berms and trenches are constructed for separation of dirty and clean water. All dirty water activities are undertaken within the approved footprint areas.
			Divert all clean water around dirty water areas and discharge into adjacent wetland areas in a controlled, environmentally sensitive manner and as determined in the hydrological assessment.	Compliant	Berms are constructed for the diversion of clean water around the opencast pits. Dirty water is diverted to the PCD through berms and trenches that are constructed on site. The dirty water is pumped out of the PCD to the Navigation dam to avoid the PCD from overflowing. No discharge of clean water to the environment is undertaken at the project area.
			Ensure concurrent rehabilitation measures keep pace with mining activities so that the rehabilitated areas can be reinstated as clean water areas draining towards the wetlands.	Compliant	It was confirmed during the site visit that concurrent rehabilitation is undertaken according to the approved rehabilitation plan, keeping pace with mining for ensuring that the rehabilitated areas are reinstated as clean water areas draining towards the wetland areas.
			Rehabilitation of the opencast pit should ensure that catchment areas of the pre-mining landscape are reinstated.	Compliant	During rehabilitation, the pit is backfilled and shaped to ensure sufficient surface drainage. This is conducted according to the approved rehabilitation plan to ensure that the rehabilitated areas are distorted to the original land use.
			No discharge of dirty water should take place on site.	Compliant	No discharge of dirty water was noted during the site visit.
			Dewatering Management Measures.	Compliant	Dewatering as part of the South Block Extension Project is conducted in a controlled manner and only to allow for the safe continuation of mining activities. Water levels and abstraction volumes are recorded on a daily basis and included in the quarterly monitoring reports. Water results were provided for review during the audit period.
			A long-term monitoring programme reflecting quality and quantity is therefore proposed to monitor the ecosystem health.	Non-Compliant	The biomonitoring plan requires biannual monitoring during wet and dry seasons. Biomonitoring is conducted twice a year as per the biomonitoring plan. Biannual monitoring was undertaken for the 2018 and 2019. However, no bio-monitoring was undertaken for the year 2020 due to Covid restrictions. It must be noted that Khwezela Colliery conducted Aquatic Biomonitoring (dated June 2021) for the low flow survey. The final biomonitoring report will be finalised after the high flow assessment, planned for November/December 2021. The above-mentioned 2021 monitoring will determine a compliant finding for 2021 audit period. Khwezela North Colliery must ensure that the monitoring is undertaken as per the existing monitoring plan to determine any impacts to the receiving surface water environment.
			Wetland functioning should be assessed by monitoring water levels of a shallow borehole within the wetland. If not already present a borehole should be drilled to within the upper perched aquifer only (≤ 6 mbsl) and subsequently monitoring water levels on a monthly basis taking seasonal fluctuation into account.	Compliant	It was confirmed during the site visit that a shallow monitoring borehole is present to measure water levels. Furthermore, records provided indicate that monthly water level monitoring is undertaken.
		Activity: Ineffective implementation of management measures at mining operation	Disturbance of wetland habitat outside the direct development footprint must be avoided using the following measures, but not limited to:		
			The proposed mining & development footprint must be fenced off.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area. No disturbance outside of the approved footprint area was noted.

			And all activities must be limited to the fenced off area.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area. No disturbance outside of the approved footprint area was noted.
			Where possible, a 50m buffer zone should be maintained between the wetlands and the fenced off mining area.	Compliant	The Water Use Licenses (South Block Extension Project) includes for activities that will occur within 100 meters / 1:100-year flood line of watercourses. These activities are included as Section 21(c) and (i) water use activities. No activities will take place within the 50 m buffer from the wetland areas. A 50 m buffer is maintained between the wetlands and the fenced-off areas.
			Locate all temporary stockpiles, constructor's camps, laydown areas, ablution facilities etc. a minimum of 50m from any delineated wetland area.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			All disturbed areas outside the direct development footprints should be rehabilitated and re-vegetated as soon as possible. Refer to the guidelines below.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area. No disturbance outside of the approved footprint area was noted.
			If land adjacent to the mining area is leased, the leasee must be made aware of the presence and importance of wetland systems on the leased land, as well as the management measures adopted by the mine for these areas.	Not Applicable	No Land lease was undertaken during the audit period, therefore this EMPr commitment is not applicable.
			Sediment traps and sediment barriers should be installed where necessary, and discharge points should be protected against erosion and incorporate energy dissipaters.	Not Applicable	Berms and trenches are constructed for the diversion of clean and dirty water around the mining area. It must be noted that no discharge points are located within the project footprint area.
			Sediment transport off the site must be minimised through the following:		
			Establishing perimeter sediment controls. This can be achieved through the installation of sediment fences along downslope verges of the construction site. Where channelled or concentrated flow occurs, reinforced sediment fences or other sediment barriers such as sediment basins should be used (refer to US EPA guidelines on Storm Water Pollution Prevention).	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Discharge of storm water from the construction site into adjacent grassland rather than directly into wetland habitat.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
			Discharged flows must be slow and diffuse; and Regular inspection and maintenance of sediment controls.	Not Applicable	No construction activities are conducted. The Navigation Section Umlalazi West South Block Extension project is under operational phase, therefore this EMPr commitment is not applicable.
		Activity: Affected storm water release into the environment	Clean and dirty storm water need to be separated as per the strategies contained in the hydrological assessment.	Compliant	Storm water trenches and berms are constructed for the diversion of clean and dirty water around the dirty water areas. All dirty water from the opencast area is diverted to the Navigation pollution control dam for further re-use.
			No contaminated water should be allowed to enter the clean storm water system.	Compliant	Storm water trenches and berms are constructed for the diversion of clean and dirty water around the opencast pits. All dirty water from the opencast area is diverted to the Navigation pollution control dam for further re-use.
			No dirty mine or dirty storm water may be released into the wetlands and should be contained and treated on site, or used for dust suppression. Should contaminated water enter the wetlands due to spillages or other	Compliant	All dirty water from the dirty water areas is pumped to Umlalazi PCD for containment and for ensuring that no pollution to the wetland areas is experienced. No discharge

			unforeseen circumstances a wetland/water quality expert should be consulted regarding implementation of suitable mitigation and/or rehabilitation measures;		of dirty water to the environment was noted during the site visit.
			Required PCDs should be designed to be in compliance with the applicable legislation requirements as well as accepted best management practices;	Compliant	From a review of the PCD design report, the PCD was designed to contain a 1:100-year flood event. Level control is implemented at the PCD to prevent overflow to the receiving environment.
			To prevent seepage and leakage out of the PCDs, these facilities should be lined with a suitable engineered liner;	Compliant	The PCD is lined with a 2 mm HDPE liner and the associated trenches are concrete lined.
			A water quality and bio monitoring plan should be compiled and implemented (if not already in place) to monitor for any deterioration in water quality in the adjacent wetland systems.	Non-Compliant	The biomonitoring plan requires biannual monitoring during wet and dry seasons. Biomonitoring is conducted twice a year as per the biomonitoring plan. Biannual monitoring was undertaken for the 2018 and 2019. However, no bio-monitoring was undertaken for the year 2020 due to Covid restrictions. It must be noted that Khwezela Colliery conducted Aquatic Biomonitoring (dated June 2021) for the low flow survey. The final biomonitoring report will be finalised after the high flow assessment, planned for November/December 2021. The above-mentioned 2021 monitoring will determine a compliant finding for 2021 audit period. Khwezela North Colliery must ensure that the monitoring is undertaken as per the existing monitoring plan to determine any impacts to the receiving surface water environment.
			Regular maintenance and inspections of the PCDs should be undertaken to ensure operation of the dams as per design specifications. A log book of inspections and maintenance activities must be kept.	Compliant	Monthly inspections are conducted on the PCD's by Khwezela Colliery Environmental Department. Monthly inspection reports were provided for review during the audit period.
			Investigations should determine the feasibility to operate the Navigation West pollution control dam at 28 % capacity to ensure a buffer capacity during such a flood. Otherwise, the dam's capacity should be increased.	Compliant	According to the Water Balance (dated May 2020), runoff from the dirty water areas is diverted via pipelines to the Navigation West (Umlalazi) PCD and is pumped as required to the navigation dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. This will minimise the quality related impacts of water. This ensures that the pollution control dam operate at "as low level as possible". No capacity increase of the dam is required.
			The pollution control dam should be operated at "as low level as possible".	Compliant	According to the Water Balance, runoff from the dirty water areas is diverted via trenches to the Navigation West (Umlalazi) PCD and is pumped as required to the navigation West PCD. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use. This will minimise the quality related impacts of water. This ensures that the pollution control dam operate at "as low level as possible".
			Desilting of the pollution control dam must also be undertaken to ensure sufficient capacity at the facility.	Compliant	The Umlalazi pollution control dam overflowed on the 09th of December 2019 due to high siltation. This was confirmed during a site visit conducted by Khwezela North Colliery after a heavy rainfall event. The above-mentioned incident was reported to the Department of Water and Sanitation. Immediate and preventive actions were undertaken to minimize the contamination of the natural environment. This included pumping of water from the Umlalazi dam to the Navigation dam. The pollution control dam is still silted. It was

					confirmed during the site visit that desilting of the pollution control dam is in progress.
8.2.11.	Visual	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Keep disturbed areas to a minimum.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, the opencast pit and all associated infrastructures that forms part of the Umlalazi West South Block Extension Project are currently being undertaken within the approved footprint area.
			No clearing of land to take place outside the demarcated footprint.	Compliant	According to the Assessment of the Google Earth Imagery and the approved layout plan, no clearing of land apart from the authorised areas is undertaken.
			Buildings and similar structures must be in keeping with the principles of critical regionalism, namely sense of place, sense of history, sense of nature, sense of craft and sense of limits.	Compliant	Khwezela North Colliery indicated that no additional infrastructure was constructed as part of the Navigation West South Block Extension project. The existing buildings utilised as part of the project fits in with the sense of place.
			Maintain the site during operation of the mine. Inoperative equipment and poor housekeeping, in general, creates a poor image of the activity in the eyes of the public.	Compliant	It was confirmed during the site visit that housekeeping is well maintained.
			Implement a rehabilitation plan as previously discussed.	Compliant	A Rehabilitation Plan is developed, aiming at reflecting the progress made on the rehabilitation and remediation activities associated with the activities undertaken at Navigation West South Block. Rehabilitation report was provided for review during the audit period.
8.2.12	Sites of Archaeological and cultural importance	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	G01 and G02 must be demarcated with a fence and fitted with a gate in order to allow for family or friends to visit the deceased. This will also lessen the risk that the graveyards may be affected by any developmental activities. It is possible that this Phase I HIA study may have missed heritage resources in the Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences. If any heritage resources of significance are exposed during AOL's proposed new project the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.	Not Applicable	It must be noted that the G01 and G02 are graveyards located outside of the project area but forms part of Navigation Section of Khwezela North Colliery. No heritage resources were identified within the Navigation West South Block Extension area. Should heritage resources be found during the project, confirmed that necessary authorisations will be obtained if it happens the mine is extended to a place where this grave are located, the ECO will arrange for the excavation to be examined by an Archaeologist as soon as possible, and the archaeologist will make sure that the graves are relocated to a safe site, away from the mine.
		Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	If any palaeontological material is exposed during digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.	Not Applicable	No palaeontological materials were reported during the audit period, therefore this EMPR commitment is not applicable.
8.3.13.	Socio-Economic	Activity: Landau Colliery Navigation West South Block Extension Project	Landau Colliery currently provides jobs for over 900 people and funds and participates in community projects. The positive impacts of Landau Colliery on the regional socio-economic conditions during the Operational Phase are discussed in Part 4 All positive impacts of the mine on the socio economy that will have taken place during the Operational Phase will continue during the Decommissioning Phase until they cease, mainly due to the reduction or cessation of jobs and the cessation of demand for goods and services.	Noted	Khwezela North Colliery Management understands this EMPr commitment.
DECOMMISSIONING PHASE					
8.3.1.	Topography and Geology	Activity: Development of the proposed opencast pit.	The disturbance area for the opencast pit will be kept at a minimum and in the designated area as indicated on the design for the proposed project attached hereto as Plan 3 in Appendix A.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase,

					which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
		Activity: Development of the Opencast Pit	Spoil areas will be levelled and profiled, while voids will be backfilled and profiled continuously and progressively as mining advances.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Suitable rehabilitation techniques will be employed for the backfilling of the opencast voids, so as to promote free-drainage, and the re-establishment of pre-mining drainage patterns, as far as practicable. The post-mining surface topography will be modelled (rehabilitation designs) using suitable software, to ensure that appropriate measures can be implemented concurrently with the mining activities to ensure that a free-draining surface can be achieved. Such rehabilitation designs will be compiled from which rehabilitation plans will be developed. Regular reviews of the rehabilitation plans will be undertaken, and actual rehabilitation surveyed to verify compliance with rehabilitation plans and the rehabilitation design.		
			Soil preparation and seeding will be undertaken in Done accordance with the identified land use and according to the existing Landau Vegetation Establishment and Maintenance Procedure.		
			Post rehabilitation monitoring will be undertaken to assess the effectiveness of rehabilitation that includes but not limited to assessing soil quality and further fertilization requirements, erosion concerns, success in natural vegetation establishment, including identifying concerns regarding alien invasive species. Recommendations from post rehabilitation monitoring will be implemented.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.2.	Soil, land use and land capability	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Where possible, subsoil and topsoil will be placed directly onto prepared rehabilitated opencast areas behind the active mining strip to minimise the volume of subsoil and topsoil that needs to be stockpiled.		
		Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Soil preparation and seeding will be undertaken in accordance with the identified land use and according to the existing Landau Vegetation Establishment and Maintenance Procedure.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.

			Post rehabilitation monitoring will be undertaken to assess the effectiveness of rehabilitation that includes but not limited to assessing soil quality and further fertilization requirements, erosion concerns, success in natural vegetation establishment, including identifying concerns regarding alien invasive species. Recommendations from post rehabilitation monitoring will be implemented.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.3.	Vegetation	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Control of alien plant species is essential to restore the natural biodiversity of the landscape. Alien trees utilise excessive amounts of water and often out compete local plants due to their lack of parasites. Removal of alien plants can lead to a net gain in biodiversity as the natural grassland is rehabilitated. Implement the alien invasive control procedure for the area.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.4.	Animal Life	Activity: Removal of natural vegetation with incurred increased edge-effects and potential loss of ecosystem function	Keep activities out of wetland vegetation (impacts assessed in the Wetland Specialist Report, compiled by Wetland Consulting Services, 2014) areas to minimise impact to flora and fauna as these areas are important habitat types.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.6.	Groundwater	Activity: Utilisation of water management measures	Management measures:	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Minimize seepage, prevent contact between clean and dirty areas, and recycle contaminated water.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Contain contaminated water for re-use and evaporation.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Minimize the extent of disturbance of the aquifer.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			To prevent degeneration of groundwater quality.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			To manage the anticipated impacts associated with the inflow of groundwater to the opencast.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
		Activity: Removal of groundwater influx (dewatering)	The dewatering of the aquifer system cannot be prevented. If the monitoring program indicates that nearby groundwater users are affected by the dewatering, the users need to be compensated for the loss.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.

		Activity: Concurrent backfilling with discard material	Management measures	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Interception drainage around the pit – minimize surface area where operations would contaminate water (smaller disturbed areas mean smaller manageable volumes).	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Groundwater infiltration should be controlled and can be achieved through installation of liners and sufficient surface drainage.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Action plans		
			Concurrent rehabilitation should follow the premining in-situ profile with coal spoils and carbonaceous material placed in the bottom beneath the water followed by the high neutralising rock (sandstone/tillite) and finally the clay and topsoil layer.		
		Activity: Rehabilitation of final void and post closure	Management measures:	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Implement rehabilitation plan under supervision of suitably qualified person.		
			The rate and extent of ARD formation should be alleviated as far as possible by duplicating the pre-existing in situ profile.		
			Water infiltration and oxygen ingress into the backfilled voids should be minimised.		
			Action plans:		
			The final cut or pit should be filled to resemble the pre-mining in-situ profiles with the coal spoils and carbonaceous materials (mudstones) in the bottom followed by the higher neutralising potential rocks such as the sandstones and tillites (if present) and finally by a compacted clay and topsoil layer.		
			Rate and volume of water infiltration should be minimised by compaction and capping.		
			Coal spoils and carbonaceous material should be placed beneath the water table to limit the ingress of oxidation		
			Seeding of landscaped areas (depending on specialist recommendations).	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Continuous monitoring of groundwater quality conditions through purpose drilled groundwater monitoring boreholes to ensure early detection of negative impacts	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.7.	Air Quality	Activity: Reshaping of the final void, removal of all infrastructure, replacement of topsoil and revegetation. This further includes demolition activities (which may involve blasting) and dust generation from vehicle movement along unpaved roads.	Phasing of earthmoving activities to reduce source size.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Dust suppression in dirty areas in accordance to the dust suppression procedure.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Speed control will be enforced on all roads.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.

			Complaints register must be made available for the recording of complaints relating to dust –“Environmental Incidents, Non-conformance and Complaints”	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Greenhouse gas emissions must be managed through effective rehabilitation, to prevent the risk of sponcom.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.2.8.	Noise	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Ensure all equipment and vehicles are serviced regularly to prevent excessive noise. Vehicles and equipment generating excessive noise should be fitted with appropriate noise abatement measures.	Not Applicable	EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			A complaints register must be made available the site security office and should any complaints be received, these must be logged in the complaints register and reported to the responsible person onsite.		
			Training and induction requirements must be undertaken as outlined in section 12.		
			Environmental incidents register (to be updated in Landau Colliery's EMS), with records of close-out on incidents received		
			Undertake environmental noise monitoring and keep records of monitoring reports.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Personal protective equipment register to be kept		
8.3.9.	Wetlands and Sensitive landscapes	Activity: Inadequate storm water control and dewatering	Induction training and register to be kept	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			Ensure concurrent rehabilitation measures keep pace with mining activities so that the rehabilitated areas can be reinstated as clean water areas draining towards the wetlands.		
			Rehabilitation of the opencast pit should ensure that catchment areas of the pre-mining landscape are reinstated, i.e. areas draining to the north western wetland currently should again drain towards the same wetland in the post-mining landscape.		
			No discharge of dirty water should take place on site		
			A long-term monitoring programme reflecting quality and quantity is therefore proposed to monitor the ecosystem health	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
		Activity: Ineffective implementation of management measures at mining operation	All disturbed areas outside the direct development footprints should be rehabilitated and re-vegetated as soon as possible. Regular inspection and maintenance of sediment controls.		

		Activity: Affected storm water release into the environment	No contaminated water should be allowed to enter the clean storm water system;	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
			No dirty mine or dirty storm water may be released into the wetlands and should be contained and treated on site, or used for dust suppression. Should contaminated water enter the wetlands due to spillages or other unforeseen circumstances a wetland/water quality expert should be consulted regarding implementation of suitable mitigation and/or rehabilitation measures;	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.10.	Visual	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	Keep disturbed areas to a minimum. Only indigenous plant species to be introduced and planted. All areas must be vegetated with a suitable ground cover immediately after or construction activities to prevent erosion and mud slides. Maintain the site during operation of the mine. Inoperative equipment and poor housekeeping, in general, creates a poor image of the activity in the eyes of the public. Implement a rehabilitation plan as previously discussed.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.11.	Sites of Archaeological and cultural importance	Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	G01 and G02 must be demarcated with a fence and fitted with a gate in order to allow for family or friends to visit the deceased.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
		Activity: Construction and operation of the opencast pit and infrastructure related to the opencast pit including: an Haul roads, Dirty and Clean Water Separation Systems, The Workshop Complex, The Office Complex, including Water and Sewage system for the workshop and offices, Diesel storage tanks, Power Lines, Pollution Control Dam.	If any palaeontological material is exposed during digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.	Not Applicable	These EMPr commitments relate to the impacts associated with the decommissioning, closure and post closure phase, which has not commenced as part of Navigation West South Block Extension project and is not yet applicable.
8.3.12	Socio-Economic	Activity: Landau Colliery Navigation West South Block Extension Project	Landau Colliery currently provides jobs for over 900 people and funds and participates in community projects. The positive impacts of Landau Colliery on the regional socio-economic conditions during the Operational Phase are discussed in Part 4 All positive impacts of the mine on the socio economy that will have taken place during the Operational Phase will continue during the Decommissioning Phase until they cease, mainly due to the reduction or cessation of jobs and the cessation of demand for goods and services.	Noted	This EMPr commitment is understood by Khwezela North Colliery Management.

7.5 RELOCATION OF A DRAGLINE FROM THE KROMDRAAI SECTION TO NAVIGATION SECTION OF ANGLO OPERATIONS (PTY) LTD.'S LANDAU COLLIERY, EMPR MPUMALANGA PROVINCE" WITH DMRE REF. NO.: (MP) 30/1/2/3/2/1 306 (EM).

ACTIVITIES	PHASE	MITIGATION MEASURES	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Planning and design				
Engineering design	Planning and design	Objective: To ensure the design of the route takes the environment into account. Assimilate requirements of the EMPr in the design and construction management		
		The N4 crossing shall be designed and approved to the satisfaction of TRAC/SANRAL.	Not Applicable	The N4 crossing for the Dragline is rehabilitated, therefore this EMPr commitment is not applicable.
		The R547 and R104 crossings shall be designed and approved to the appropriate standards.	Not Applicable	The R547 and R104 crossings for the Dragline is rehabilitated, therefore this EMPr commitment is not applicable.
		Wetland crossings shall take into account all specialist recommendations as agreed upon, as well as authorisations as per Water Use Licence.	Not Applicable	The wetland crossings are no longer undertaken, therefore this EMPr commitment is not applicable.
		During the pre-construction walk down of the approved corridor, Anglo shall ensure that a person suitably qualified in ecology physically pegs out / marks all sensitive areas (exclusion zones) identified within the corridor in correlation to such identified during the EIA. These exclusion zones must be avoided and the associated infrastructure and construction activities must be kept outside these areas (unless otherwise permitted / licensed through the EIR and / or EMPr).	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
Pre-Construction Activities				
Fencing of construction sites that will be affected by proposed project	Preconstruction	Objective: Whilst establishing the site, the footprint of disturbance must be minimised and the extent of soil erosion, loss of vegetation and the potential for the pollution of soils must be prevented.		
		All excavations must be adequately demarcated using methods approved by the ECO.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The width of the construction footprint must be kept to a minimum. The maximum width of the construction footprint servitude will not exceed 50 m. The final construction footprint must be determined beforehand and indicated on plans.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Once the final route has been determined, a walk down of the route must occur in order to rescue and relocate any floral SCC that are encountered along the finalised route. An SCC rescue and relocation booklet should be developed prior to construction, and used by the ECO to guide rescue and relocation activities.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
Entering and construction on private properties	Preconstruction	Objectives: To minimise damage to existing access roads. To minimise loss of topsoil and erosion. To minimise financial impact due to construction activities.		
		Existing maintenance and access roads within the servitude shall be used for construction activities as far as possible.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Planning and construction of any additional access routes must be done in conjunction between the contractor, ECO, engineer and applicable landowners	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Should a landowner's access be disturbed, blocked or changed due to construction, an agreement must be reached between Anglo and the landowner in this regard.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		All agreements reached should be legally documented and no verbal agreements should be made. • The contractor shall properly mark all access roads. Markers shall show the direction of travel.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Roads not to be used shall be marked with a "NO ENTRY" sign.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Erosion to surrounding properties (including property access roads) must be prevented.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Any dangerous crossings shall be marked as such and where necessary, speed limits shall be enforced.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor shall identify all existing private infrastructure in agreement with the landowner prior to construction commencing. Such infrastructure must be tested and its working condition so ascertained before and after construction to assist in assessing if any damage has been caused by construction activities.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Should private infrastructure (e.g. boreholes) be damaged (intentionally or unintentionally) or removed by Anglo during the construction activities, Anglo shall compensate the owner as agreed between the two parties	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Disruption of business activities must be given adequate consideration by the contractor. Anglo is to ensure the contractor is aware of such business activities to ensure minimum disruption. The contractor should consult with the business owners regarding the construction work schedule on these properties.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.

		A complaints register must be established and kept up to date and available on site. This register must include detail on when and how the issues raised have been dealt with and closed out.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
Establishment of laydown areas and haul roads	Preconstruction	Objective(s): To prevent soil contamination to minimise erosion, loss of topsoil and unnecessary vegetation clearing		
		Site establishment shall take place in an orderly manner and all amenities shall be installed before the main workforce move onto site.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		A method statement is required from the contractor after appointment, for the management of ablution facilities, workshop areas, and any other components of the laydown area.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Site plans of the construction laydown areas must be provided indicating waste areas, storage areas and placement of ablution facilities.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor shall ensure the necessary ablution facilities are provided, with chemical toilets where such facilities are not available at commencement of construction.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor shall inform all site staff to use the supplied ablution facilities and under no circumstances shall indiscriminate excretion and urinating be allowed other than in supplied facilities.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor shall supply waste collection bins and all solid waste collected shall be disposed of at a registered landfill site.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		A certificate/record of safe disposal shall be obtained by the contractor and kept on file.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Buildings should preferably be pre-fabricated or constructed of re-usable / recyclable materials.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		All temporary structures must be soundly built and not pose a danger to workers.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Containers are to be used for the storage of materials which have the potential to release pollutants into the environment.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		All structure footprints to be rehabilitated and re-vegetated after construction is complete.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
Personnel conduct	Preconstruction	Objective: To ensure that personnel adhere to EMPr requirements		
		All personnel shall undergo environmental awareness training. Such training must include the requirements of the EMPr as well as the location of sensitive areas of which the workers must be aware.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		A signed register of attendance must be kept as proof.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
Construction activities on private land	Construction	Objective: To maintain good relationships with landowners.		
		The success of the project depends a lot on the good relations with the landowners. It is required that the contractor will supply one person to be the liaison officer (CLO) for the entire contract, and that this person shall be available to investigate all problems arising on the work sites concerning the landowners	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		A photographic site survey should be conducted prior to and after construction has been completed. This will then be available should any claims be instituted by any landowners.		
		The contact numbers of the contractor's liaison officer and Anglo's ECO shall be made available to the landowners. This will ensure open channels of communication and prompt response to queries and claims.		
		The rights of the landowners shall be respected at all times and all staff shall be sensitised to this.		
		Potentially affected households should be consulted if any night time construction activities are to take place.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
Operation of sanitation system(s)	Construction	Objective: To ensure good sanitation system and management throughout the project lifetime and in respect of the entire affected site.		
		Chemical toilets must be emptied / serviced on a regular basis to prevent overflowing. Proof of this service must be provided to the ECO.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		A minimum of one toilet must be provided per 15 persons at each working area within 100 m from worker activity.		
Vehicle parking areas Storage of equipment	Construction	Objective(s): To ensure that the environment is not polluted by ensuring that service areas and wash bays for vehicles and machinery are made available and utilised. To ensure vehicles are parked according to the specifications in the EMPr and that equipment is handled appropriately		
		Where possible and practical, all maintenance of vehicles and equipment shall take place in an approved and designated workshop area.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.

		<p>Leaking equipment shall be repaired immediately or be removed from site to facilitate repair.</p> <p>During servicing of vehicles or equipment in approved areas / workshops, or during emergency situations, a suitable drip tray shall be used to prevent spills onto the soil, especially where emergency repairs are conducted outside the workshop area.</p> <p>A suitable area for emergency repairs must be approved by the ECO</p> <p>All hazardous and non-degradable waste shall be collected and removed to a registered waste site</p> <p>Workshop areas shall be monitored for oil and fuel spills and such spills shall be cleaned and remediated to the satisfaction of the ECO.</p> <p>A method statement is required from the contractor for dealing with possible emergencies that can occur, such as fire, accidental leaks and spillage.</p>		
		<p>The contractor shall be in possession of emergency spill kits that must be complete and available at all times on site.</p> <p>The contractor must ensure that delivery drivers and plant operators are informed of all relevant procedures and restrictions required ensuring compliance with this document.</p>		
		<p>All vehicles and equipment must be well maintained to ensure that there are no oil or fuel leakages.</p> <p>The following shall apply: All contaminated soil shall be removed and be placed in containers for further disposal; Hazardous waste may only be stored on site for a maximum period of 90 days before it must be disposed of at a registered hazardous waste site. Contaminated material can be taken to one central point where bioremediation can be carried out; Smaller spills can be treated on site; A specialist contractor shall be used for the bio-remediation of contaminated soil where the required remediation material and expertise is not available on site; and</p> <p>All major spills of hazardous substances constituting a Section 30 Environmental Incident (according to the NEMA) must be reported to the ECO and relevant authorities within 14 days of the incident occurring.</p> <p>No storage of vehicles or equipment will be allowed outside of the designated area.</p> <p>Drip trays or any form of oil absorbent material must be placed underneath vehicles and equipment when not in use for periods longer than 3 days and/or for those vehicles and plant showing evidence of leaking hydrocarbons.</p>		
Personnel conduct	Construction	<p>Objective(s): To ensure that personnel adhere to EMPr requirements.</p> <p>Anglo induction must be attended by all parties involved in the construction.</p> <p>Weekly toolbox talks should include aspects of the EMPr.</p> <p>Labourers associated with the contractor must be easily recognisable (i.e. company issued overalls with company name/logo etc.)</p> <p>The contractor shall take all necessary precautions against trespassing on private properties.</p> <p>Basic firefighting equipment must be available on site.</p> <p>All environmental incidents should be reported to the ECO, investigated, documented and kept on file.</p>	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
			Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
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Construction activities	Construction	<p>Objective(s): To ensure that the Public at large is not injured or affected negatively in any way by the proposed project. To limit the amount of noise on site. To limit erosion and the loss of topsoil.</p> <p>The contractor shall recognise that the route runs along inhabited and mining areas and shall therefore take all reasonable measures to ensure the safety of people in the surrounding communities.</p>	Not Applicable	The Dragline Walk is rehabilitated, therefore this EMPr commitment is not applicable.

		Where the public could be exposed to danger by any of the works or site activities, the contractor shall, as appropriate, provide suitable flagmen, barriers and/ or warning signs in English, Afrikaans and isiZulu, all to the approval of the Project Manager.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		All unattended open excavations shall be adequately demarcated (fencing shall consist of a minimum of three strands of wire / danger tape and made clearly visible). Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed structures and protective scaffolding.		
		When working close to residential areas, working hours shall be from 06:00 to 18:00 on weekdays and from 07:00 to 15:00 on Saturdays. No work in close vicinity to residential areas shall take place on Sundays or public holidays, without prior arrangement.		
		No construction should continue outside working hours, all residents affected must be notified timeously.		
		All machinery and equipment must be maintained in good working order, and fitted with approved and specified muffler systems.		
		Water diversion berms shall be installed at the start of each Work Package. These berms shall be maintained at all times and be repaired at the end of the contract.		
		Where berms are introduced on steep slopes the outflow shall be suitably stone pitched to prevent erosion from starting at the berms.		
		Refuelling must occur on sealed areas to avoid hydrocarbon ingress into soils.		
		Schedule construction works such that there are no extended delays to the dragline relocation, such that the soil exposure duration is reduced to a minimum.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Strictly limit vegetation clearance and earthworks to the pre-determined road width, and progressively clear the required areas in small portions as roadwork progresses.		
Sourcing and transportation of material	Construction	Concurrent rehabilitation and mitigation implementation during project to avoid abuse of road as shortcut and subsequent withdrawal from agriculture.		
		Temporarily rehabilitate or re-vegetate certain areas to assist with erosion control, to limit run-off and to mitigate dust generation during the construction phase, where necessary (e.g., areas for which the final landscaping and rehabilitation will be delayed, and areas that will be subject to further construction activities at a later stage).		
		Cleared areas can be regularly dampened with water to suppress dust, especially during strong wind conditions.		
		Vegetation clearance and earthworks should be scheduled during the dry (low rainfall) season (where feasible) when chances of runoff and water erosion are minimal, and soil moisture content is also minimal, in order to avoid irreversible soil compaction. No vegetation clearance should be undertaken prior to periods of inactivity (e.g. December break).		
		Water should be allowed to drain from the road into side drains.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Oversize rock from pavement construction should be dumped at the outlets during construction to dissipate energy and prevent erosion.		
		Objective(s): To ensure that while material is transported, it cannot be of negative influence to the surrounding environment. To limit the spread of contaminated soil. To limit traffic congestion. To limit dust during transportation. To limit excessive noise	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Topsoil, fertile soil and other borrow material required for use by the project must be sourced from an area free of alien and invasive species infestation.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Existing access roads must be utilised as far as possible, with only the minimum new access roads being constructed where absolutely necessary. This must be done in agreement with the affected landowner if applicable.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Access to privately owned land will be arranged with the various landowners along the alignment by the contractor, in conjunction with the PM and Anglo,	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Adequate and appropriate traffic warning signage must be erected where applicable, along transport routes and access roads.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor shall take preventative measures e.g. screening, muffling, timing, and pre-notification of affected parties, to minimise complaints regarding noise nuisance.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.

		Vehicle speed on site shall be restricted to not more than 60km/h on dedicated and single purpose haul roads, not more than 40 km/h for construction vehicles and not more than 40 km/h for motor vehicles.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		All soil, rock or other materials must be securely covered during transportation when travelling on public roads.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
Trenching and transport of soils	Construction	Objective(s): To reduce the generation of dust on or close to the construction site.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		The contractor is to take appropriate measures to minimise the generation of dust as a result of excavation works. Such measures include frequent spraying of water during low rainfall.		
		Paved or surfaced roads should be used where possible.		
		Speed limits must be enforced in all areas to reduce the generation of dust.		
		Cover dump trucks before traveling on public roads or relevant as per ECO approved method statement.		
		Keep soil loads below the freeboard of the truck to minimise fugitive dust.		
		Revegetate disturbed areas as soon as possible after construction.		
		When feasible, shut down idling construction machinery.		
Construction activities in or around wetlands or watercourses	Construction	Objective(s): Minimal negative impact on affected and surrounding watercourses.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Storm water management systems, such as berms, should include energy dissipation structures to minimise the potential erosion and/or sedimentation of the affected watercourses.		
		Surface water management features should be placed in a manner to ensure flows remain unaltered in terms of direction, velocity and volume, thus the natural base flows, i.e. hydrological regime within these systems is maintained.		
		Clearing of vegetation should be kept to a minimum.		
		No vehicular traffic shall be allowed in wet areas and along the boundaries of pans unless authorised by means of a water use license or authorisation.		
		No equipment shall be used which may cause irreparable damage to wetland areas, other than that which is authorised.		
		The wet areas must be marked as "no-go zones" to prevent unauthorised access to these sensitive areas by construction activities as well as to prevent undue disturbance in these areas. Construction activities impacting on wetland areas must be kept to an absolute minimum with materials being laid down outside the sensitive boundary.		
		The conditions contained in the water use license must be adhered to.		
		No water may be abstracted from local water unless such abstraction is approved by the Department of Water and Sanitation.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Dust suppression on affected areas should not be over-sprayed to prevent water run-off and subsequent sediment loss in the vicinity of the study area.		
Protection of heritage sites and palaeontological finds	Construction	Objective(s): To ensure that heritage sites are preserved. To prevent the undue and unlawful damage to or loss of paleontological assets within the construction footprint.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		The grave sites and cemeteries identified in the HIA report will not be affected by the 50 m wide temporary servitude.		
		All workers must be made aware of the location of graves and cemeteries located around the construction site so as to avoid any undue damage to these areas.		
		Should any archaeological sites or palaeontological finds be uncovered during construction, construction within the immediate vicinity must be stopped, and reported to Anglo immediately, after which a heritage specialist should investigate the find.		
	Construction	Objective(s): To ensure that the environment is protected from cement that will be used on site, especially soil and water.		

Storage and use of cement Concrete batching		To ensure all agreements with landowners are adhered to.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		To prevent complaints from landowners. Successful rehabilitation of disturbed areas.		
		Cement must be delivered in secured bags or in approved bulk containers.		
		Cement products in bags must be stored in storage containers and should only be opened only when needed.		
		The storage facility and surrounding area must be swept and cleaned regularly as required to ensure that cement products do not the pollute the surrounding environment.		
		Empty cement bags are to be collected in larger hessian or material bags which, once full, should be disposed of at a registered landfill site.		
		Cement bags shall not to be burnt on site.		
		No concrete batching / mixing should be done on bare soil.		
		Batching plants shall be located within the designated working area on an impermeable surface to prevent cement spillages from contaminating bare soil.		
		Care must be taken to prevent concrete spills.		
		Unused batched concrete not used on site shall not be washed into drainage systems or watercourses as a means of disposal. The Contractor must provide a method statement for the proposed disposal of batched concrete not used in the works.		
		The siting of batching plants shall be decided in conjunction with the Anglo PM and ECO.		
		The batching plant area shall be operated in such a way as to prevent contaminated water runoff and pollution of nearby streams or waterbodies.		
		Anglo shall ensure that all agreements reached with the Landowner are fulfilled, and that such areas are rehabilitated once construction is completed		
Storage of topsoil	Construction	Objective(s): Topsoil is conserved, maintained and reused.		
		Topsoil should be removed (dependent on the soil profile) and temporarily stockpiled adjacent to the road for re-use during rehabilitation and landscaping in order to rescue the indigenous seedbank, as this layer is naturally the most fertile.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Avoid any further stripping/excavation and stockpiling of in-situ soils, as far as possible, to ensure that the soils remain in their natural horizon sequence.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Topsoil stripping should occur during the dry season, to avoid compaction.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The topsoil, including the existing grass cover is to be shallowly ripped (only the depth of the topsoil) before removal. This is to ensure that organic plant material, and the natural seed base is included in the stripping process.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Stockpiles shall not be allowed to become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor shall apply soil conservation measures to the stockpiles to prevent erosion. This could include the use of erosion control fabric or grass seeding. The use of berms should also be considered to prevent the topsoil from washing away during rainy periods.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		All grass and other vegetation should be left on the topsoil stockpiles so that they colonise the area after construction.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		A photographic record must be kept of the topsoil stockpiles.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Topsoil stockpiles must be placed on disturbed soil. Should no such area be available, the ECO is to advise on the laydown area for the stockpiles in each section.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor shall devise a soil conservation and stockpiling plan, to be approved by the ECO and engineer, which shall detail: Stockpile sizes, laydown areas and form; Means of erosion (wind and water) prevention for stockpiles; The rehabilitation measures to be taken for the area occupied by the temporary stockpile; Soil replacement should preferably run in parallel (where feasible) with the construction process;	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Alien vegetation growing on stockpiles must be eradicated.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Herbicides shall not be used to remove alien vegetation unless approved by the ECO and the PM and in accordance with legal prescriptions.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Construction equipment shall not be permitted to traverse (and compact) stockpile areas, nor shall stockpiles be used as laydown or storage areas, and no stockpiles may be used as loading ramps.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		It must be ensured that topsoil stockpiles are located outside of any drainage lines and areas susceptible to erosion. Stockpiles should be placed away from areas known to	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.

Storage and use of hazardous material		contain hazardous substances, such as fuel storage areas. If any soils are contaminated, it should be stripped and disposed of at a registered hazardous waste dumping site.		
		The location of topsoil stockpiles should be selected strategically such that minimal re-handling is required during rehabilitation.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Topsoil stockpiles should be placed (stockpiled) within the servitude and in designated areas in separate windrows, parallel to the proposed dragline route alignment.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Stockpiles shall be formed such that no ponding of surface water forms on the surface of the stockpile, and the windrows shall not exceed 2 m in height and shall be so placed to occupy minimum width compatible with the natural angle of repose of the material.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Measures should be taken to prevent the stockpiled soil material from being spread over too wide a surface.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Topsoil shall not be buried or rendered in any other way unsuitable for further use, and precautions shall be taken to prevent unnecessary handling and compaction	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Topsoil in particular shall not be subject to a compaction force greater than 1 500 kg/m ² and shall not be pushed by a bulldozer for more than 50 m.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Soil erosion from stockpiles can be minimised by providing suitable storm water and cut off drains, and/or establishing a temporary vegetation cover on the stockpiles.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
	Construction	Objective(s): To ensure adequate protection of soil and soil remediation measures in case of spills.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Hazardous materials – such as paint, cement, fuels, bitumen, fuel, oil, herbicides, battery acid or detergents – must be stored in a hazardous store which is bunded to contain 110% of the store's capacity, lockable and well ventilated when not in use.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		A register shall be kept on all hazardous substances and must be available for inspection at all times. Areas shall be monitored for spills and any spills shall be contained, cleaned and rehabilitated immediately.		
		No decantation into unmarked containers or containers with irrelevant labelling.		
		When handling hazardous materials, manufacturer's specifications must be complied with. Material Safety Data Sheets for all hazardous materials must be available where these materials are stored.		
		All reasonable care must be taken to prevent spills of any hazardous material when in use.		
		Emergency spill response and clean-up procedures must be in place with capable people listed as responsible parties. These parties must have the necessary training to adequately handle major accidents and/or spillages, including where such spillages might occur within a watercourse.		
		All spills (minor and major) must be cleaned and remediated to the satisfaction of the ECO within 24 hours of occurrence, or the shortest time possible.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Appropriate remedial measures must be designed and implemented at the site.		
		The contractor must ensure that there is a supply of absorbent material (e.g. Drizit) and clean-up materials readily available to absorb, break down and, where possible, encapsulate minor hazardous material spillages		
		All products are to be stored with compatibility in mind.		
		Storage areas shall display the required safety signs depicting "No smoking", "No naked lights" and "Danger". Containers shall be clearly marked to indicate contents as well as safety requirements.		
		The contractor shall supply a method statement to the engineer for approval for the storage of hazardous materials prior to site preparation works.		
		Objective(s): To ensure that there is optimum environmental protection (of especially soil) from fuel spills.		
		Fuel must be stored in above ground storage tanks or sealed containers, contained within a bunded area with sump drainage.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		All bunds must be designed to contain at least 110% of the tank or drum storage capacity (this shall apply to above ground storage, and include fuels, welding equipment and oxy-acetylene cutting equipment).	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		No drainage from fuel storage areas shall be permitted.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
		Any other hazardous substances stored in bulk will require appropriate bunding.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
	Construction	Objective(s):		

Storage, removal and disposal of construction waste		To ensure that waste is correctly stored and disposed of, decreasing the visual and environmental impacts during the construction and post-construction period. To keep the servitude neat and clean. Disposal of rubble and refuse in an appropriate manner. Minimise litigation. Minimise landowner complaints.		
		No material shall be left on site that could be of harm to humans and animals.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Surplus concrete may not be dumped indiscriminately on site, but shall be removed from site when nearing completion of the different Work Packages.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Concrete trucks shall not be washed on site unless adequate washing and concrete collection facilities are introduced to site.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Bins and containers must be made available by the contractor for the storage of construction waste, except earthworks spoil.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		All construction waste shall be stored in waste skips located strategically on site. A licensed waste contractor shall collect these skips for removal to a licensed landfill site. No construction waste may be stored on site for longer than 30 days.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		The contractor will be responsible to remove and transport all construction waste material off site to a registered waste disposal facility (proof of this as well as a copy of the site's Registration Permit, must be provided by the contractor to the ECO).	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		No burning of waste will be permitted on site.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
Storage, removal and disposal of domestic waste	Construction	Objective(s): To ensure that waste is correctly stored and disposed of, decreasing the visual and possible environmental impact during the construction and post-construction period.		
		The contractor must supply clearly marked waste bins at the laydown area for the storage of domestic waste.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Recyclable waste, including glass, paper and plastic must be separated at the construction camp, stored and recycled, where economically feasible.		
		Personnel must be informed about the necessity of using the waste drums.		
		The contractor must conduct site clean-ups of litter other than construction waste on a weekly basis, and dispose of it in the designated refuse bins provided at the contractor's laydown area.		
		The contractor must dispose of all domestic refuse generated by his staff and sub-contractors when waste containers are full. The contractor must provide proof of this to the ECO in the form of a safe disposal certificate, where applicable and regularly issued.		
		Where domestic waste is collected by the relevant municipality itself, a collection receipt will be suitable proof of safe disposal.		
		Storage, removal and disposal of hazardous waste		
The contractor is required to the National Environmental Management: Waste Act (Act No. 59 of 2008) to determine whether any substance (new or waste) stored on site is subject to controls contained within the Act.	Not Applicable		The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.	
All hazardous waste (including waste water) must be stored in sealed and suitably marked containers for removal to a registered hazardous waste disposal facility.	Not Applicable		The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.	
Hazardous waste may only be stored on site for a period of 90 days, after which it must be disposed of at a registered hazardous waste disposal site.				
Any oil spillage on site will be excavated to a depth determined between the ECO and disposed of for removal to a registered hazardous waste disposal site. Excavated areas are to be refilled with suitable replacement material. Alternative in-situ remediation techniques could be used, if approved by the ECO.				
Construction activities Vegetation clearing	Construction	Objective(s): Minimise scarring of the soil surface and land features Minimise disturbance and loss of topsoil. Minimise damage to vegetation. Minimise possibility of erosion due to removal of vegetation Minimise removal/ clearing of plant material. Rehabilitate all disturbed areas along the servitude. Prevent alien plants/ seeds from being introduced on the construction site. To remove alien plants where possible, from the construction site.		
		Keep the proposed dragline relocation operational activities within designated low sensitivity areas, as far as possible.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		If possible, avoid placement of the dragline route and related infrastructure in the sensitive wetland habitat unit and associated buffer zone, except where authorised by the WUL.		
		The construction and operational footprint must be kept as small as possible in order to minimise impacts on the surrounding environment.		

		<p>Edge effects of construction and operational activities need to be actively managed so as to minimise further impacts to the receiving environment.</p> <p>Alien and invasive vegetation control should take place throughout all development phases to prevent loss of floral habitat.</p> <p>Restrict vehicles to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.</p> <p>No uncontrolled fires whatsoever should be allowed.</p> <p>Crinum graminicola, Gladiolus vinosomaculatus, Gladiolus crassifolius or Crinum macowanii might be disturbed as a result of the proposed project. Should any plants be found during the site walk down, they must be relocated to suitable, similar habitat in close proximity to where they were removed from, outside the disturbance footprint, but on the same property. If moved to a different property, relevant permits must be obtained from the Mpumalanga Tourism and Parks Agency.</p>		
Construction activities potentially impacting on fauna	Construction	<p>Objective(s):</p> <p>To ensure that fauna found on site are protected and not interfered with.</p> <p>Prevent unintentional killing of fauna on site.</p> <p>Minimise faunal habitat loss.</p> <p>To minimise faunal pests on site.</p> <p>The contractor must ensure that the site is kept clean and free of litter that could potentially attract animal pests, and that refuse bins are scavenger proof.</p> <p>The contractor must report problem-animals or vermin to the ECO. The possibility exists that domestic animals from neighbouring communities could scavenge the site.</p> <p>Ensure that domesticated and livestock animals belonging to the local community are kept away from the construction works.</p> <p>The contractor may only make use of pesticide or poison to control unwanted animals through the appointment of a registered pest control operator.</p> <p>Workers should be educated so as not to kill any fauna found on site.</p> <p>The footprint of disturbance should be limited to the servitude.</p> <p>Hunting or trapping is strictly prohibited. Anyone found guilty of such an act shall be penalised.</p> <p>Access roads should be planned so that only minimum linear distances are developed.</p> <p>Excavations must be checked on a daily basis for any signs of fauna which may have fallen in.</p>	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.
Creation of employment opportunities and social benefits	Construction	<p>Objective(s): To ensure that temporary employment opportunities and social benefits are maximised. To ensure that the potential population influx is adequately mitigated to limit adverse effects on the social environment. To ensure that the potential influx of population is adequately mitigated to limit the possible social pathologies associated there with.</p> <p>The recruitment policy used to employ people on the project must be fair and transparent.</p> <p>The intention of giving preferential employment to locals is clearly communicated, so as to discourage an influx of job-seekers from other areas.</p> <p>Have clear rules and regulations for access to the construction site to control loitering.</p> <p>Construction workers should be clearly identifiable by wearing proper construction uniforms displaying the logo of the construction company.</p> <p>Construction workers must also be provided with identification tags.</p> <p>Unskilled job opportunities should be afforded to the local communities. The average unskilled labour component for projects of this nature and size range between 40% and 60% of the total labour force, the majority of these opportunities should be afforded to the local community. Core semi- and skilled staff is normally part of the contractors' core team, but make up a certain percentage of the total workforce.</p> <p>Equal opportunities for employment should be created to ensure that the local female population also has access to these opportunities.</p> <p>Payment should comply with applicable labour legislation in terms of minimum wages.</p> <p>Where local labourers are employed on a permanent basis, these labourers should be registered with the Unemployment Insurance Fund (UIF), Pay as You Earn or any other official bodies as required by law. This would enable the workers to claim UIF as a means of continuous financial support when the workers' construction phase positions have become redundant or once the construction phase comes to an end.</p> <p>Anglo Operations should encourage, in consultation with key stakeholders, construction companies to use local services.</p>	<p>Not Applicable</p> <p>Not Applicable</p> <p>Not Applicable</p>	<p>The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.</p> <p>The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.</p> <p>The Dragline Walk and its associated activities are rehabilitated, therefore this EMP commitment is not applicable.</p>

		Anglo Operations is to deliver on its SLP commitments.		
		Regarding safety and security, construction workers should be clearly identifiable		
		Overalls should have the logo of the construction company on it and construction workers should wear identification cards.		
		The construction site should be fenced and access controlled. Loitering of outsiders at either the construction site or at the laydown areas should not be allowed. Local security companies and SAPS should be requested to assist in this regard.		
		Liaison structures are to be established with local security companies and police to monitor social changes during the construction phase. Liaison should also be established with existing crime control organisations		
Crossing of distribution lines (22kV, 88kV, 132 kV, 400kV) and Telkom Line eMalahleni water pipeline crossing Sasol gas pipeline crossing	Construction, Operation, Rehabilitation	Objective(s): To exercise control and prevent temporary or permanent damage to infrastructure. To prevent interference with the normal operation of infrastructure. Securing of the safe use of infrastructure, plant and installations. Ensuring control over actions and activities in close proximity to inhabited areas.		
Crossing of national and provincial roads Transnet Freight Rail (TFR) crossing		Proper protection shall be afforded to and maintained for existing infrastructure affected by construction and operational activities	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Any damage to pipelines, distribution lines and the Telkom line shall be repaired immediately.		
		Upon completion of the project all roads directly damaged by construction activities shall be repaired to their original state.		
		The interruption of existing services to facilitate construction must be carefully planned. If possible, disruptions must be kept to a minimum and should be well advertised and communicated to the Landowners.		
	All existing services affected by the crossing should be identified, relocated and protected in accordance with the requirements of the service owners.			
Operational activities				
Dragline excavator walk	Operational	Objective(s): To ensure minimal damage to infrastructure (roads, TFR, distribution lines, pipelines etc.) during the dragline walk. To ensure minimal disruption to road users during the dragline walk.		
		Method statements and designs for the protection of infrastructure must be approved by the Engineer prior to construction activities commencement	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Cross drainage to be designed to same standards as main road.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Surfacing of bypass may require repair after dragline has crossed. Sufficient area should be provided for dragline to park, while bypass is repaired, before traffic is deviated.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Any information signs on the main roads, that will be bypassed, should be duplicated on the bypass.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Straw cushion and fill protection of N4:450 mm straw to limit punching and ease removal. ± 1.2 m selected fill material, G8 or better, with no stones larger than 0.1 m, lightly compacted in layers not exceeding 200 mm, compacted and placing at optimum moisture content. Protection layer to be removed after crossing. FWD tests at known positions outside and under feet and belly of dragline crossing before and after crossing.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Provincial design standards to be applied.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
		Spraying of water and other dust suppression could be considered on gravel roads, depending on traffic volumes and conditions.		
		Any information signs on the main roads, that will be bypassed, should be duplicated on the bypass.		
		Bypass should be protected prior to the dragline crossing it.		
	All damages to existing roads are to be repaired to its original condition.			
Rehabilitation and Post-Closure Activities				
Rehabilitation of dragline road	Rehabilitation and Post closure	Objective(s): To reduce residual impacts to the environment as a result of project activities. Successful rehabilitation of all damaged areas. Prevention of erosion. No loss of topsoil Prevention of alien and invasive vegetation establishment post-decommissioning. Ensure minimal loss of land capability. Successful rehabilitation of wetland areas.		
Rehabilitation of national, provincial		Disturbed and cleared areas need to be revegetated with indigenous grass species in order to help stabilise the soil surface.	Compliant	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), the areas disturbed by the Dragline Walk are revegetated.

and gravel roads Removal, decommissioning and rehabilitation of laydown areas Waste removal					
		Alien and invasive vegetation control should take place for a period of two years after rehabilitation.	Compliant	Rehabilitated areas for the Dragline Walk Monitoring of alien and invasive vegetation forms part of the annual monitoring conducted by EkoInfo CC. Dragline Walkway Rehabilitation Monitoring Report was provided for review during the audit period.	
		Where wetland areas have been affected, these areas need to be rehabilitated and in-stream flow must be reinstated, where necessary.	Compliant	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), all wetland areas affected by the Dragline Walk have been rehabilitated.	
		All soils compacted as a result of construction and operational activities should be ripped and profiled.	Compliant	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), all soils compacted as a result of construction and operational activities are ripped and profiled.	
		Soil compaction must be alleviated by ripping the soils to approximately 60 cm below ground surface to physically loosen the soil, using appropriate tillage implements. Rehab plan	Not Applicable	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), soil compaction is completed, therefore this EMPr commitment is not applicable.	
		Ripping of soils should occur prior to spreading of topsoil and reseeded, as per Anglo American Rehabilitation Guidelines).	Not Applicable	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), ripping of soils is completed, therefore this EMPr commitment is not applicable.	
		Soils should be tilled to at least 1350 kg/m ³ to improve infiltration and crop water and nutrients uptake following rehabilitation, particularly where the dragline route traverses cultivated fields;	Not Applicable	Tilling and rehabilitation of the Dragline Walk is completed, therefore this EMPr commitment is not applicable.	
		Compaction can be monitored biannually until the soil bulk density stabilises to at least 1350 kg/m ³ in topsoil and 1650 kg/m ³ in the subsoil horizons for at least three consecutive monitoring events;	Not Applicable	Soil compaction monitoring of the soil's forms part of the annual monitoring conducted by EkoInfo CC. Dragline Walkway Rehabilitation Monitoring Report was provided for review during the audit period.	
		After rehabilitation, and when soils are returned to agricultural use, annual replenishment of essential plant macronutrients, particularly nitrogen (N), phosphorus (P), and potassium (K), is recommended until normalised crop yields are attained.	Not Applicable	The area has not yet been proven for use of agricultural activities, therefore this EMPr commitment is not applicable. Monitoring of the areas is still undertaken.	
		Soil compaction monitoring should preferably be correlated with annual crop yield monitoring for at least five years, in order to assess the residual effects of the proposed dragline relocation on agricultural crop productivity.	Compliant	Soil compaction monitoring of the soil's forms part of the annual monitoring conducted by EkoInfo CC. Dragline Walkway Rehabilitation Monitoring Report was provided for review during the audit period.	
		Maintenance of the re-seeded areas shall be conducted until an acceptable cover has been established, meaning 75% ground cover with no gaps exceeding 500 mm. Maintenance includes watering, mowing and weeding as well as preventing the development of erosion channels.	Compliant	Maintenance of the re-seeded areas forms part of the annual monitoring conducted by EkoInfo CC. Dragline Walkway Rehabilitation Monitoring Report was provided for review during the audit period.	
		The removal of all construction facilities, materials, and waste from laydown areas will be required, and rehabilitation carried out. This includes the removal of concrete and compacted earth platforms, fuel storage tanks and chemical toilets.	Compliant	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), all construction facilities, concrete and compacted earth platforms, fuel storage tanks and chemical toilets, materials, and waste from laydown areas are removed and the Dragline Walk and its associated activities are rehabilitated.	
		All access roads constructed for the project which are no longer required shall be rehabilitated.	Compliant	All access roads used by the Dragline Walk have been rehabilitated.	
		Any contaminated material or soil must be removed to a registered hazardous waste disposal facility.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated and no contaminated material or soil would result, therefore this EMPr commitment is not applicable.	

Rehabilitation must be carried out as soon as possible after the dragline walk is completed.

Compliant

According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), the Dragline reached its destination in December 2019 and the rehabilitation of the walk commenced in January 2020.

All rehabilitation is to be done with approval of Anglo environmental management department.


Compliant

According to the Dragline Walkway Rehabilitation Monitoring, all rehabilitation activities were approved by Khwezela Colliery Rehabilitation Department and conducted according to the rehabilitation plan.


7.6 ENVIRONMENTAL AUTHORISATION FOR THE LANDAU COLLIERY LIFEX EXTENSION PROJECT WITH REFERENCE NUMBER: 17/2.3N-343.


CONDITION NO	CONDITIONS	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
Scope of authorisation			
3.1.	Authorisation of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.	Noted	The condition is well understood by the Khwezela North Colliery Management.
3.2.	The holder of the authorisation must ensure compliance with these conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.	Compliant	The Environmental Co-ordinator of Khwezela North Colliery is appointed to ensure compliance with the conditions of the authorisation. Khwezela North Colliery also indicated that the following is conducted to ensure that compliance with the conditions of the environmental authorisation are known to all contractors, subcontractors, agents and other people working on the site i.e.: monthly environmental topics and induction presentation.
3.3.	The activity which is authorised may only be carried out at the property indicated above.	Not Applicable	According to the EA, the activities associated with the Lifex Extension Project must be undertaken on portion 0 (RE) of the farm Schoongezicht 308 JS, portion 0 (RE), 15 and 23 of the farm Blaauwkrans 323 JS. From the review of the Google Earth Imagery and the approved layout plan, all activities are undertaken within the portions indicated above.
3.4.	Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	Not Applicable	No changes to, or deviations from, the project description set out in this Environmental Authorisation have been made, therefore this condition is not applicable.
3.5.	In the event that the impacts exceed the significance as predicted in the Environmental Impact Assessment Report, authorisation may be suspended after proper procedures have been followed.	Not Applicable	No impacts from the Environmental Impact Assessment Report are exceeded, therefore this condition is not applicable.
3.6.	In the event of any dispute concerning the significance of a particular impact, the opinion of the Department in respect of its significance will prevail.	Not Applicable	No impacts from the Environmental Impact Assessment Report are exceeded, therefore this condition is not applicable.
3.7.	The Department may change or amend any of the conditions of this authorisation if, in the opinion of the Department, it is environmentally justified.	Noted	The condition is well understood by the Khwezela North Colliery Management.
3.8.	This activity must commence within a period of three (3) years from the date of issue. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.	Compliant	The Environmental Authorisation is dated 19 April 2016, and the activities have commenced. An acknowledgment of receipt of the Appointment letter of the ECO and the letter of intent to start with activities under the Environmental Authorisation was signed and received by the DMRE on 17 August 2018.
3.9.	The holder of this authorisation is responsible for compliance with the provisions for Duty of Care and Remediation of Environmental Damage contained in Section 28 of the National Environmental Management Act, 1998 (Act 107 of 1998).	Noted	The condition is well understood by the Khwezela North Colliery Management.


3.10.	This authorization does not negate the holder of the authorization, responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	Noted	The condition is well understood by the Khwezela North Colliery Management.
Appeal of authorisation			
3.11.	The holder of the authorisation must notify every registered interested and affected party, in writing and within twelve (12) days of the date of this decision, of the outcome of the application.	Compliant	The environmental authorisation was issued on 19 April 2016 and the notification to the Registered Interested and Affected Parties of the decision was issued on 25 April 2016.
3.12.	The notification referred to above, must —		
	a) Specify the date on which the authorisation was issued;	Compliant	The notification referred to above includes the date on which the authorisation was issued.
	b) Inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the Regulations; and	Compliant	The notification referred to above includes information on the appeal procedure provided for in Chapter 7 of the Regulations.
	c) Advise the interested and affected party to the manner in which the decision can be accessed;	Compliant	The notification referred to above include advised the interested and affected party to the manner in which the decision can be accessed.
	d) Be published in the newspaper contemplated in Regulation 54(2) (c) and which newspaper was used for the placing of advertisements as part of the public participation process.	Compliant	The notification referred to above was published in the Witbank News on 29 April 2016, the same newspaper used for the placing of advertisements as part of the public participation process.
Management and monitoring of the activity			
3.13.	The Environmental Management Programme (EMPr) dated March 2015 and submitted as part of the Environmental Impact Assessment Report is hereby approved and must be implemented and adhered to throughout the lifecycle of the activity.	Compliant	Khwezela North Colliery ensures implementation/adherence of the EMPr through the following: <ul style="list-style-type: none"> Conducting internal and external environmental audits to check compliance with the commitments outlined in the EMPr. Monthly inspections to ensure that the activities associated of the project are undertaken according to the EMPr. Furthermore, if non-compliances are identified from the audits conducted, action plans are compiled and implemented to ensure continual compliance with such specific commitments.
3.14.	The applicant must appoint an Environmental Control Officer (ECO) that will have the responsibility of monitoring and reporting on compliance with the conditions of this environmental authorisation as well as monitoring and reporting on the implementation of the approved EMPr.	Compliant	The Environmental Coordinator for Khwezela North Colliery is the appointed ECO to ensure compliance with the conditions of this environmental authorization as well as monitoring and reporting on the implementation of the approved EMPr.
3.14.1.	The ECO must be appointed before the commencement of construction and the Department must be notified of such an appointment for communication purposes.	Not Applicable	The activities associated with the Lifex Extension Project are under the operational phase and all construction activities are completed, therefore this condition is not applicable.
3.14.2.	The ECO must oversee and monitor the success of all rehabilitation activities.	Noted	The condition is well understood by the Khwezela North Colliery Management. It must be noted that the rehabilitation activities have not yet commenced. The ECO will remain employed until all rehabilitation measures are completed.
3.14.3.	During the construction phase, the ECO must submit monthly compliance reports to the Department in writing and copy the applicant with such reports. Where applicable, the ECO may negotiate the required frequency for the submission of reports with the Department, which must be agreed to in writing by the Department. The reports must include a description of all activities on site, problems identified, transgressions noted and remedial action implemented. All reports must reflect the Department's reference number of the project on the cover page.	Compliant	From records provided for review, it was noted that the ECO (NTC Group) submitted monthly ECO reports to the Department. The reports include a description of all activities on site, problems identified, transgressions noted and remedial action implemented. Furthermore, it was noted that the reports reflect the Department's reference number.
3.14.4.	The ECO must maintain the following on site:		
	A Site diary	Not Applicable	The activities associated with the Lifex Extension Project are under the operational phase and all construction activities are completed, therefore this condition is not applicable.
	Copies of all reports submitted to the Department.	Not Applicable	The activities associated with the Lifex Extension Project are under the operational phase and all construction activities are completed, therefore this condition is not applicable.
	A complaints' register of all environmental complaints regarding the proposed project and the remedies applied to such complaints	Not Applicable	The activities associated with the Lifex Extension Project are under the operational phase and all construction activities are completed, therefore this condition is not applicable.
3.14.5.	The ECO must remain employed until all rehabilitation measures as well as site clean-up are completed and the site is handed over to the applicant by the contractor for operation.	Not Applicable	The activities associated with the Lifex Extension Project are under the operational phase and rehabilitation activities have not commenced as yet, therefore this condition is not applicable.
3.15.	The holder of the authorisation must submit an environmental audit report to the Department upon completion of the construction and rehabilitation activities. The environmental audit report must be compiled by an independent environmental auditor and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the conditions of this authorisation as well as the requirements of the EMPr.	Not Applicable	No environmental audit report contemplated in this EA was submitted to the Department of Mineral Resources and Energy upon completion of the construction activities. This was confirmed by Khwezela North Colliery. Therefore, in the absence of proof of submission to the Department of Mineral Resources and

			Energy and the fact that no environmental impacts that could have occurred as a results of construction activities and since the non-compliance is now administrative in nature and does not pose any significant risk to the environment, the condition is not applicable. It must be noted that the Navigation Lifex Extension project is still under the operational phase, therefore, submission of an environmental audit report for the rehabilitation activities is not required as yet.
3.16.	The Department retains the right to monitor and/ or inspect the proposed development during both construction and operational phases.	Noted	The condition is well understood by Khwezela North Colliery Management.
Commissioning and operation of the activity			
3.17.	Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence, and must include the name and contact details of the appointed ECO.	Compliant	The Environmental Coordinator for Khwezela North Colliery was the appointed ECO. A notification letter informing the DMRE that activities will commence in August 2017 and that an ECO was appointed was submitted to the DMRE on 19 July 2017. The letter details the name and the contacts of the ECO.
3.18.	The environmental authorization as well as any license or permits must be in place before construction commences and any recommendation contained in these permits, licenses and/or authorization must be incorporated into the project design.	Compliant	As part of the activities associated with the Lifex Extension Project, a Water Use Licence with licence no.: 06/B11K/ACGIJ/5335, an EMPr under the MPRDA with DMRE reference number: MP 30/5/1/2/3/2/1 (306) EM and Environmental Authorisation with reference number: 17/2.3N-343 have been obtained. The WUL for the expansion of the Blaauwkrans Co-Disposal Facility was obtained on 31 August 2018, although the activities associated with Blaauwkrans Co-Disposal Facility expansion commenced prior thereto.
3.19.	Areas to be disturbed by the proposed project must be limited to the planned footprint as indicated on the mining plan.	Compliant	According to the assessment of the site visit conducted and the approved layout plan, the Navigation Section Umlalazi West South Block Extension project is undertaken within the approved footprint area.
3.20.	The movements of construction personnel and vehicles must be limited to the construction areas and clearly demarcated access roads.	Not Applicable	The activities associated with the Lifex Extension Project are under the operational phase, therefore this condition is not applicable.
3.21.	A First Aid Team must be trained and equipped with adequate equipment should a health and safety incident occur.	Compliant	The mine has appointed Netcare 911 which has its own trained paramedics, paramedics are deployed in each section of the mine. Training certificates of all the paramedics were provided during the audit period for review.
3.22.	All Employees must undergo the necessary safety training and wear the necessary protective clothing at all times.	Compliant	All employees and contractors of Khwezela North Colliery are required to undertake mandatory induction and training. It was also observed during the site visit that all employees wear protective clothing in designated PPE zone areas.
3.23.	The Contractor must ensure that there is firefighting equipment on site at all times and that the equipment is readily available, accessible and functioning.	Compliant	It was confirmed during the site visit that firefighting equipment's are available on site.  Firefighting equipment available on site
3.24.	No waste must be disposed of or buried on site, or in any other location that is not a licensed waste disposal site.	Compliant	Khwezela North Colliery Waste Management Procedure outlines ways of separating, storing and disposing waste. By undertaking doing so, littering and burning of waste should be easily avoided. Environmental awareness and induction is also conducted for every employee, contractor and visitors on waste management. No littering or burying of waste was noted during the site visit.

3.14.	Storm water must be prevented from coming into contact with material that could pollute the water.	Compliant	According to the site visit conducted, trenches are constructed for the diversion of dirty water from the dirty water areas to the respective dirty water facilities (PCD). In so doing, avoiding pollution to the natural environment.
3.15.	Stringent measures must be applied to suppress dust emanating from the construction site.	Not Applicable	All activities associated with this authorisation are under operational phase and all construction activities are completed. Therefore, this condition is not applicable.
3.16.	Storm water management must adhere to the following:		
3.16.1.	Any point of overland discharge must be located at least 30m away from a wetland, riparian zone or dam and overland discharge must occur over areas that have a minimum vegetation cover of 80%.	Not Applicable	No discharge is currently taking place as part of the Lifex Extension Project, therefore, this condition is not applicable.
3.16.2.	All mechanisms for dissipating water energy must be implemented at the inception of the construction phase.	Not Applicable	All activities associated with this authorisation are under operational phase and all construction activities are completed, therefore this condition is not applicable.
3.16.3.	Flows leaving the site must be suitably attenuated, specifically for storm events with a return frequency of up to the 1:5-year return frequency.	Compliant	All dirty water from the dirty water areas are diverted to the respective dirty water facilities for containment.
3.16.4.	The rate of storm water runoff must be reduced by using mechanisms such as the construction of earth berms, grassed swales and armourflex lined channels and the construction of energy breakers at storm water outlet structures.	Compliant	<p>It was confirmed during the site visit that berms are constructed for the purpose of reducing the rate of storm water runoff. Energy breakers are also constructed at storm water outlet structures.</p>  <p>Energy breakers and berms</p>
3.16.5.	Sediment trapping facilities must be employed during the construction phase.	Not Applicable	All activities associated with this authorisation are under operational phase and all construction activities are completed.
3.25.	Storm water management must be designed to promote infiltration and slow the release of runoff into wetlands and watercourses.	Compliant	All dirty water from the dirty water areas are diverted to the respective dirty water facilities for containment and to avoid any contamination of the wetlands and watercourses.
3.26.	The Contractor is responsible for ensuring that there is access to clean drinking water for all employees on site.	Compliant	Clean drinking water is obtained from the office complex at Navigation West.






3.27.	Berms must be placed along sensitive areas to screen off unpleasant views on to the open pit mining activities and these berms must be rehabilitated with indigenous vegetation.	Compliant	<p>It was confirmed during the site visit that berms are constructed around the pit area, primarily acting as a safety measure as well as screens to screen off unpleasant views and these berms are vegetated with indigenous vegetation.</p>  <p>Vegetated berms</p>
3.28.	Mining related machinery and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective.	Compliant	<p>All equipment and machinery on the site are regularly maintained in accordance to the planned maintenance system on the SAP system (records available). Records of maintenance were provided for review during the audit period.</p>




3.29.	All conveyors used for the transportation of coal must be covered during coal transportation.	Compliant	<p>It was confirmed during the site visit that all conveyors used for the transportation of coal are covered to prevent coal spillages.</p>   <p>Conveyor belts covering</p>
	Trucks transporting coal must be covered with tarpaulin to prevent coal spillages on the roads.	Compliant	<p>It was indicated by the mine that trucks transporting coal are covered with tarpaulin; however, it must be noted that during the 2 days of site visit, no trucks leaving the mine with coal were observed.</p>
3.30.	Stockpiles and storage yards must be located in designated areas only.	Compliant	<p>From review of the approved layout plan, site visit conducted and Google Earth Imagery, all infrastructures are within the approved footprint areas.</p>
3.31.	Soils that become compacted through the activities of the development must be loosened to an appropriate depth to allow seed germination.	Not Applicable	<p>No rehabilitation activities as part of the authorisation have commenced, therefore this EMPr commitment is not applicable.</p>
3.32.	The holder of the authorisation must supervise the construction of haul roads in accordance with post mining topographical plan to ensure that topographical rehabilitation can be achieved with the minimum of expenditure.	Not Applicable	<p>The construction of the haul roads is completed; therefore, this condition is not applicable.</p>
3.33.	An increase in dust due to mining activities and related infrastructure to surrounding areas must be mitigated accordingly.	Not Applicable	<p>No dust related issues were reported during the audit period, therefore this condition is not applicable.</p>
3.34.	Dust must be suppressed by spraying water on access roads and construction site and construction vehicles must adhere to the specified speed limits.	Compliant	<p>Khwezela North Colliery uses water bowzers to dust suppress the access roads. It must be noted that no construction activities are undertaken.</p>


3.35.	Scouring, erosion or sedimentation of all watercourses must be prevented, and the stability of watercourses may not be detrimentally affected.	Compliant	All access and haul roads are constructed with low level berms in order to prevent clean surface water runoff from entering the area. Further, surface water runoff from the operational areas is contained as far as possible to prevent sedimentation of the surrounding areas.
3.36.	The contractor must ensure that there is always a supply of absorbent material readily available to absorb/breakdown spills.	Compliant	<p>Saw dust are used for the clean-up of spillages.</p>  <p>Saw dust used as an oil absorbent</p>
3.37.	The Contractor must prevent pollution of surface or groundwater from the release, accidental or otherwise of contaminated water as a result of construction activities.	Not Applicable	The construction of the haul roads is completed; therefore, this condition is not applicable.
3.38.	Rehabilitation must be done concurrently or progressively with the activity and on cessation of the activity.	Not Applicable	Concurrent rehabilitation of the Lifex Extension project has not commenced yet. The Annual Rehabilitation Plan, Navigation area is still an active mining area with little rehabilitation been conducted. The only rehabilitation activity conducted is the rehabilitation of the spoils created by the dragline during the overburden and inter-burden removal process which are now reshaped (or backfilled) to create a levelled profile for topsoil placement. It was confirmed during the site visit that mining window is kept to pre-strip, one open cut and two spoil rows.
General			
3.39.	A copy of this authorisation must be kept at the property where the activity will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.	Compliant	The copy of this Environmental Authorisation as well as its related environmental reports are kept on site at the Environmental Department.
3.40.	Non-compliance with a condition of this authorisation may result in criminal prosecution or other aims provided for in the National Environmental Management Act, 1998 and the regulations.	Noted	The condition is well understood by the Khwezela North Colliery Management.
3.41.	National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorisation or any other public authority shall not be held responsible for any damages or losses suffered by the applicant or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.	Noted	The condition is well understood by the Khwezela North Colliery Management.

7.7 LANDAU COLLIERY'S INSTALLATION OF TWO 61 200 LITRE ABOVEGROUND DIESEL TANKS, AND THE CONSTRUCTION OF OFFICES AND TOILETS FACILITIES WITH DALA REFERENCE NUMBER: 17/2/1 /7 MP-35.

CONDITION NO	CONDITIONS	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
1.	Authorization of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.	Noted	The condition is well understood by Khwezela North Colliery Management.
2	The holder of the authorisation must ensure compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub- contractor, employee or person rendering a service to the holder of the authorization.	Compliant	The Environmental Co-ordinator of Khwezela North Colliery is appointed to ensure compliance with the conditions of the authorisation. Khwezela North Colliery Indicated that the following is conducted to ensure that compliance with the conditions of the environmental authorisation is known to all contractors, subcontractors, agents and other people working on the site i.e.: monthly environmental topics and induction presentation.
3.	The activity which is authorized may only be carried out at the property indicated above.	Compliant	The activity is carried out on the coordinates as approved by this environmental authorisation.
4.	Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such Information as it deems necessary to evaluate the significance and Impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	Not Applicable	No changes have been made to this Environmental Authorisation.
5.	This activity must commence within a period of two (2) years from the date of Issue. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.	Not Applicable	It was confirmed using Google Earth Imagery that construction activities were taking place between March and April in 2011 as a tank is visible. Furthermore, a notification of commencement of construction dated 20 February 2009 was cited. However, proof of submission of notification was not provided for review. The actual date of commencement of the activities associated with the authorisation could not be verified. This non-compliance is administrative in nature and does not pose any significant risk to the environment.
6.	This authorization does not negate the holder of the authorization responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	Noted	The condition is well understood by Khwezela North Colliery Management.
Appeal of authorisation			
7.	The holder of the authorisation must notify every registered interested and affected party, in writing and within 10 (Ten) calendar days, of receiving notice of the Department's decision to authorize the activity.	Not Applicable	No evidence of notification, of approval of the authorisation, to the interested and affected parties was provided, as these activities were undertaken a number of years back (2009). Therefore, in the absence of proof of notification to the interested and affected parties, the condition is not applicable.
8.	The notification referred to in 7 must – 8.1 specify the date on which the authorisation was issued; 8.2 Inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the regulations; and 8.3 advise the interested and affected party that a copy of the authorisation and reasons for the decision will be furnished on request.	Not Applicable	No evidence of notification, of approval of the authorisation, to the interested and affected parties was provided, as these activities were undertaken a number of years back (2009). Therefore, in the absence of proof of notification to the interested and affected parties, the condition is not applicable. This is an administrative issue
Management of activity			
9.	The Environmental Management Plan ('EMP'), which fulfils the requirements of this authorization, must be compiled and submitted to the Department for approval. The EMP must: 9.1 contain all the information specified in regulation 34 of the regulation; 9.2 be approved by the Department before the commencement of any construction activities and 9.3 be adhered to during the commencement, operation and closure of the activity.	Compliant	Khwezela North Colliery ensures implementation/adherence of the EMPr through the following: <ul style="list-style-type: none"> Conducting internal and external environmental audits to check compliance with the commitments outlined in the EMPr. Monthly inspections to ensure that the activities associated of the project are undertaken according to the EMPr. Furthermore, if non-compliances are identified from the audits conducted, action plans are compiled and implemented to ensure continual compliance with such specific commitments
Commissioning and Operation of the activity			
10.	Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition Includes site preparation. The notice must include a date on which it is anticipated that the activity will commence.	Compliant	A notification of commencement of construction dated 20 February 2009 was cited that was submitted to the Department stating that construction activities will commence on 6 March 2009.
11.	The tank and pipe work installation must be in accordance with the SABS 089 code, which stipulates the Installation standards.	Not Applicable	The Above Ground Storage Tanks is under operational phase and no construction activities are undertaken. Therefore, this condition is not applicable.
12.	An SABS approved leak detection system must be installed to ensure early detection of possible leakage.	Not Applicable	The storage tanks are constructed above ground and no leak detection system is required. Therefore, this condition is not applicable.
13.	The tank must be installed within the concrete bund with the capacity to hold 110% of the contents of the tank.	Compliant	It was confirmed during the site visit that the tanks are situated on banded areas.

				
14.	The loading area must consist of concrete surfacing with a sump draining to an on-site separator.	Compliant	<p>Bunded diesel tanks storage area</p> <p>The loading area consist of concrete surfacing with a sump draining to an on-site separator.</p>   <p>Concrete surfacing with a sump draining to an on-site separator</p>	
15.	Storm water must be diverted away from work areas in order to prevent storm water leaving the area from being contaminated by any substance.	Compliant	According to the Water Balance (dated May 2020), all dirty water generated from the activity is disposed of in the Navigation west PCD.	
16.	The fuel supply company or the contractor must provide adequate sanitation facilities and potable water for construction workers.	Not Applicable	All activities associated with this authorisation are still operational, therefore this condition is not yet applicable.	
17.	The storage and handling of fuel, lubricants and other chemicals must be in especially demarcated impervious bunded areas.	Compliant	<p>The fuels, lubricants and other chemicals are stored and handled in demarcated impervious bunded areas.</p>  	

			 <p>Fuels and oils stored in demarcated impervious bunded areas</p>
18.	All general waste generated during construction and/or operation of the proposed development must be stored, handled and disposed of at a landfill site licensed in terms of section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989).	Compliant	<p>General waste are stored at designated waste bins and are collected and disposed off at the licenced waste disposal facility. Safe disposal certificates of the general waste were provided during the audit period.</p>  <p>General waste bins located at the aboveground diesel tanks</p>
19.	All equipment associated with the operation of the tank and pump must be properly maintained and appropriate safety measures must be implemented to ensure their effective operation.	Compliant	All equipment on the site is regularly maintained in accordance to the planned maintenance system on the SAP system (records available).
20.	In case of tank or pipe leaking, it must be removed and must not be abandoned on site. The area must be rehabilitated to the satisfaction of this Department and comply with Section 19 of the National Water Act, 1998 (Act 36 of 1998).	Not Applicable	According to the Incident Report (dated July 2019-July 202), no pipe leaking was reported.
21.	The Rehabilitation Management Plan must be submitted to this Department six (6) months before the decommissioning phase of the site.	Not Applicable	The diesel tanks are still operational; therefore, a Rehabilitation Management Plan is not yet applicable.
22.	The contractor must implement appropriate measures (berms, drains, trenches) to prevent overland flowing water from causing erosion.	Compliant	According to the assessment of the Google Earth Image, berms and trenches are in place, primarily acting as a safety measure but also to minimize surface water inflow.
23.	Any erosion channels developed during the construction period must be backfilled and compacted.	Not Applicable	All activities associated with this authorisation are still operational, therefore this condition is not yet applicable.
24.	No construction activities must take place within the 1:100-year flood line or within a distance of 100m from any water resource or wetland area.	Not Applicable	All activities associated with this authorisation are still operational, therefore this condition is not yet applicable.
25.	Access into wetland areas or other sensitive landscapes must be limited by ensuring access remains on demarcated road systems.	Not Applicable	No wetland areas are located Within or around the Aboveground Diesel Tanks, therefore this condition is not applicable.
26.	Contaminated water may under no circumstances be released to the natural environment.	Compliant	<p>The Aboveground Diesel Tanks are equipped with a sump for the collection of contaminated water from the tanks. Hence contamination to the natural environment is minimised.</p>  <p>Sump at the aboveground diesel tanks</p>


27.	Construction activities must be conducted during daylight hours only, normally between 06h00 and 18h00 Mondays to Fridays.	Not Applicable	All activities associated with this authorisation are still operational, therefore this condition is not yet applicable.
28.	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.	Compliant	All maintenance is done in the workshop area, which is sufficiently bunded and concrete lined. The area is surrounded by an affected water trench to contain all affected water run-off. Contaminated waste material is treated as hazardous waste and managed in accordance to the waste management procedure. The contractor collects all hazardous waste on site for safe disposal.
29.	Diesel, oil or any other petroleum product must not be used for the cleaning of workshop floors.	Compliant	No cleaning at the workshop with diesel, oil was noted during the site visit.
30.	All areas must ensure that proper spillage kits are implemented and maintained for cleaning of any spills.	Compliant	Spill kits are available on site for cleaning of any spillages. 
31.	An Environmental Control Officers (ECO) must be employed to ensure that all contractors are aware of their responsibilities with regards to pollution prevention on site.	Compliant	The environmental co-ordinator is the responsible person and is tasked in ensuring that all contractors are aware of their responsibilities with regards to pollution prevention. All contractors are also required to undergo mandatory induction prior to the commencement of any work on site, with pollution prevention forming a topic in such induction process. The Induction presentation was provided for review.
32.	Anglo Operations Limited is responsible for the removal and appropriate disposal at a landfill site of all maintenance waste produced during the operational phase.	Compliant	All hazardous and general waste are removed by a contractor for safe disposal. All hazardous waste is removed to the Licenced Holfontein Disposal Site and all general waste is removed to eMalahleni Local Municipality landfill site. Safe disposal certificates and waste manifests were provided for review.
33.	Anglo Operations Limited must ensure that the material generated during the decommissioning phase is cleared from the site and disposed of at a registered landfill site.	Not Applicable	All activities associated with this authorisation are still operational, therefore, decommissioning activities are not yet applicable.
General			
34.	A copy of this authorization must be kept at the property where the activity will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.	Compliant	The environmental authorisation is kept in hardcopy and electronically at the Khwezela North Colliery environmental office. The electronic copy of the authorisation is also kept on the mine's database system and is accessible on all computers located across the mine. A copy of the EA is made available upon request.
35.	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the applicant knows the new details.	Not Applicable	No changes of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details have been made to this environmental authorisation.
36.	The holder of the authorisation must notify the Department, in writing and within 24 (twenty-four) hours, if conditions of this authorisation are not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.	Not Applicable	No conditions of this authorisation that the mine cannot adhere to are proposed or indicated.
37.	Non-compliance with a condition of this authorization may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.	Noted	The condition is well understood by Khwezela North Colliery Management.

7.8 ENVIRONMENTAL AUTHORISATION: THE LANDAU COLLIERY NAVIGATION SECTION, UMLALAZI WEST-SOUTH BLOCK WITH REFERENCE NUMBER: 17/2/3N-363.

CONDITION NO	CONDITIONS	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
3.1	Authorisation of the activity is subject to the conditions contained in this authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.	Noted	The condition is well understood by Khwezela North Colliery Management.
3.2.	The holder of the authorisation must ensure compliance with these conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.	Compliant	The Environmental Co-ordinator of Khwezela North Colliery is appointed to ensure compliance with the conditions of the authorisation.

			Khwezela North Colliery Indicated that the following is conducted to ensure that compliance with the conditions of the environmental authorisation is known to all contractors, subcontractors, agents and other people working on the site i.e.: monthly environmental topics and induction presentation.
3.3.	The activity which is authorised may only be carried out at the property indicated above.	Compliant	The Navigation Section Umlalazi West South Block Extension project is carried out on the coordinates as approved by this environmental authorisation.
3.4.	Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	Not Applicable	No changes have been made to this Environmental Authorisation.
3.5.	In the event that the impacts exceed the significance as predicted in the Environmental Impact Assessment Report, authorisation may be suspended after proper procedures have been followed.	Compliant	No impacts from the Environmental Impact Assessment Report are exceeded.
3.6.	In the event of any dispute concerning the significance of a particular impact, the opinion of the Department in respect of its significance will prevail.	Noted	No impacts from the Environmental Impact Assessment Report are exceeded. The condition is well understood by Khwezela North Colliery Management.
3.7.	The Department may change or amend any of the conditions of this authorisation if, in the opinion of the Department, it is environmentally justified.	Noted	The condition is well understood by Khwezela North Colliery Management.
3.8.	This activity must commence within a period of three (3) years from the date of issue. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.	Compliant	The activities associated with the Navigation West South Block Extension have commenced within the period of three (3) years. The environmental authorisation was issued by the DARDLEA on 11 August 2016. A notification letter was submitted to DMRE on 19 July 2017 informing them that activities will commence in August 2017. The pollution control dam upgrade was completed in consultation with the DWS.
3.9.	The holder of this authorisation is responsible for compliance with the provisions for Duty of Care and Remediation of Environmental Damage contained in Section 28 of the National Environmental Management Act, 1998 (Act 107 of 1998).	Noted	The condition is well understood by Khwezela North Colliery Management.
3.10.	This authorization does not negate the holder of the authorization, responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	Noted	The condition is well understood by Khwezela North Colliery Management.
Appeal of authorisation			
3.11.	The holder of the authorisation must notify every registered interested and affected party, in writing and within twelve (12) days of the date of this decision, of the outcome of the application	Compliant	The environmental authorisation was issued on 11 August 2016. Proof was presented of notifications sent to Interested and Affected Parties on 17 August 2016.
3.12	Specify the date on which the authorisation was issued;	Compliant	The notification referred to above includes the date on which the authorisation was issued.
	Inform the interested and affected party of the appeal procedure provided for in Chapter 7 of the Regulations; and	Compliant	The notification referred to above includes information on the appeal procedure provided for in Chapter 7 of the Regulations.
	Advise the interested and affected party to the manner in which the decision can be accessed;	Compliant	The notification referred to above include advised the interested and affected party to the manner in which the decision can be accessed.
	Be published in the newspaper contemplated in Regulation 54(2) (c) and which newspaper was used for the placing of advertisements as part of the public participation process.	Compliant	The notification referred to the above was published in the Witbank News on 19 August 2016; the same newspaper used for the placing of advertisements as part of the public participation process.
Appeal of authorisation			
3.13.	The Environmental Management Programme (EMPr) dated 09th December 2015 and submitted as part of the Environmental Impact Assessment Report is hereby approved and must be implemented and adhered to throughout the lifecycle of the activity	Compliant	Khwezela North Colliery ensures implementation/adherence of the EMPr through the following: <ul style="list-style-type: none"> Conducting internal and external environmental audits to check compliance with the commitments outlined in the EMPr. Monthly inspections to ensure that the activities associated of the project are undertaken according to the EMPr. Furthermore, if non-compliances are identified from the audits conducted, action plans are compiled and implemented to ensure continual compliance with such specific commitments
3.14.	The applicant must appoint an Environmental Control Officer (ECO) that will have the responsibility of monitoring and reporting on compliance with the conditions of this environmental authorisation as well as monitoring and reporting on the implementation of the approved EMPr.	Compliant	The Environmental Coordinator for Khwezela North Colliery is the appointed ECO to ensure compliance with the conditions of this environmental authorization
3.14.1.	The ECO must be appointed before the commencement of construction and the Department must be notified of such an appointment for communication purposes. The ECO must oversee and monitor the success of all rehabilitation activities.	Compliant	The Environmental Coordinator for Khwezela North Colliery is the appointed ECO. A notification letter informing DMRE that activities will commence in August 2017 and that an ECO has been appointed was submitted to DMRE on 19 July 2017. The pollution control dam upgrade was completed in consultation with the DWS, the Environmental Coordinator was the ECO responsible to oversee the activities.

3.14.2.	During the construction phase, the ECO must submit monthly compliance reports to the Department in writing and copy the applicant with such reports. Where applicable, the ECO may negotiate the required frequency for the submission of reports with the Department, which must be agreed to in writing by the Department. The reports must include a description of all activities on site, problems identified, transgressions noted and remedial action implemented. All reports must reflect the Department's reference number of the project on the cover page.	Not Applicable	Construction activities associated with the Navigation West South Block Extension Project are completed. Therefore, this condition is not applicable.
3.14.2.	A Site diary.	Not Applicable	Construction activities associated with the Navigation West South Block Extension Project are completed. Therefore, this condition is not applicable.
	Copies of all reports submitted to the Department.	Not Applicable	Construction activities associated with the Navigation West South Block Extension Project are completed. Therefore, this condition is not applicable.
	A complaints' register of all environmental complaints regarding the proposed project and the remedies applied to such complaints.	Compliant	A complaints register has been set up and it is available at the entrance and reception of the mine. All complaints received are recorded on the Enablon system and corrective and preventative actions are taken and the incidents are closed-out within 14 days of the complaint/incident received. This is conducted in accordance with the Khwezela Environmental Incident and Reporting Procedure.
3.14.5	The ECO must remain employed until all rehabilitation measures as well as site clean-up are completed and the site is handed over to the applicant by the contractor for operation.	Noted	The condition is well understood by Khwezela North Colliery Management. The ECO will remain employed until all rehabilitation measures as well as site clean-up are completed and the site is handed over to the applicant by the contractor for operation.
3.15.	The holder of the authorisation must submit an environmental audit report to the Department upon completion of the construction and rehabilitation activities. The environmental audit report must be compiled by an independent environmental auditor and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the conditions of this authorisation as well as the requirements of the EMPr.	Not Applicable	No environmental audit report contemplated in this EA was submitted to the Department of Mineral Resources and Energy upon completion of the construction activities. This was confirmed by Khwezela North Colliery. Therefore, in the absence of proof of submission to the Department of Mineral Resources and Energy and the fact that no environmental impacts that could have occurred as a results of construction activities and since the non-compliance is now administrative in nature and does not pose any significant risk to the environment, the condition is not applicable. It must be noted that the Navigation Lifex Extension project is still under the operational phase, therefore, submission of an environmental audit report for the rehabilitation activities is not required as yet.
3.16.	The Department retains the right to monitor and/ or inspect the proposed development during both construction and operational phases.	Noted	The condition is well understood by Khwezela North Colliery Management.
Commissioning and operation of the activity			
3.17	Fourteen (14) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence, and must include the name and contact details of the appointed ECO.	Compliant	A notification letter informing DMRE that activities will commence in August 2017 and that an ECO was appointed was submitted to DMRE 19 July 2017. The notification letter also includes the name and contact details of the appointed ECO.
3.18.	The environmental authorization as well as any license or permits must be in place before construction commences and any recommendation contained in these permits, licenses and/or authorization must be incorporated into the project design.	Compliant	It was noted that all licenses or permits were obtained prior to the commencement of construction and the recommendations contained within the permits or licences are incorporated into the project design.
3.19.	Areas to be disturbed by the proposed project must be limited to the planned footprint areas as indicated on the mining plan.	Compliant	According to the assessment of the Google Earth Image and the approved layout plan, the Navigation Section Umlalazi West South Block Extension project is undertaken within the approved footprint area.
3.20.	Movements of all mine personnel and vehicles must be limited to operation areas and clearly demarcated access roads.	Compliant	It was confirmed during the site visit that movements of all mine personnel and vehicles are limited to operation areas and at clearly demarcated access roads.
3.21.	A First Aid Team must be trained and equipped with adequate equipment should a health and safety incident occur.	Compliant	All employees and contractors to Khwezela North Colliery are required to undertake mandatory induction and training, including first aid level 1 training. Records were provided during the audit period.
3.22.	All employees must undergo the necessary safety training and wear the necessary protective clothing at all times.	Compliant	All employees and contractors to Khwezela North Colliery are required to undertake mandatory induction and training and are always required to wear protective clothing in designated PPE zone areas.
3.23.	The contractor must ensure that there is firefighting equipment on site at all times and that the equipment is readily available, accessible and functioning.	Compliant	Fire firefighting equipment's were available at all sites during the audit period.
3.24.	No waste must be disposed of or buried on site, or in any other location that is not a licensed waste disposal site.	Compliant	Khwezela North Colliery Waste Management Procedure outlines ways of separating, storing, and disposing waste. By undertaking doing so, littering and burning of waste should be easily avoided. Environmental awareness and induction are also conducted for every employee, contractor and visitors on waste management. No burning of waste was noted during the site visit.
3.25.	Run-off water must be channelled to the dirty water system.	Compliant	According to the Water Balance (dated May 2020), runoff water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped

			as required to the Raw water dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use.
3.14.	Storm water must be prevented from coming into contact with material that could pollute the water.	Compliant	According to the assessment of the Google Earth Image, trenches are used for the diversion of dirty water from the Navigation West (Umlalazi) PCD.
3.15.	Stringent measures must be applied to suppress dust emanating from the operation areas.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the mining areas.
3.16.	Storm water management must adhere to the following:		
3.16.1.	All mechanisms for dissipating water energy must be implemented at the inception of the construction phase.	Not Applicable	Construction activities associated with the Navigation West South Block Extension Project are completed. Therefore, this condition is not applicable.
3.16.2.	The rate of storm water runoff must be reduced by using mechanisms such as the construction of earth berms, grassed swales and lined channels and the construction of energy breakers at storm water outlet structures.	Compliant	According to the assessment of the Google Earth Image, berms have been constructed to reduce the rate of storm water runoff. According to the Incident Report (dated July 2019-July 202), no concerns with this regard were noted.
3.16.3.	Sediment trapping facilities must be employed during the construction phase.	Not Applicable	Construction activities associated with the Navigation West South Block Extension Project are complete. Therefore, this condition is not applicable.
3.26.	Storm water management must be designed to promote infiltration and slow the release of runoff into wetlands and watercourses.	Compliant	Storm water management for the Navigation West South Block Extension Project has been constructed. Trenches and pollution control dams are constructed for the diversion and the containment of runoff water from the dirty water areas. Rainfall water captured is pumped to the Navigation West (Umlalazi) PCD. Runoff from the dirty water management areas and excess pit water-make collected in the Navigation West (Umlalazi) PCD is pumped as required to the Raw water dam. It, therefore, contributes to the process water that is treated for re-use, or is pumped to the EWRP for treatment to potable standards before being distributed to the Emalahleni Local Municipality or sent back to the mine for potable use.
3.27.	The contractor is responsible for ensuring that there is access to clean drinking water for employees on site.	Compliant	Clean water is obtained from the office complex at Navigation West.
3.28.	Berms must be placed along sensitive viewing areas to screen off unpleasant views on the open pit mining activities and these berms must be rehabilitated with indigenous grasses.	Compliant	According to the assessment of the Google Earth Image, berms are in place around the pit area, primarily acting as a safety measure but also to minimize surface water inflow. None of these berms have been rehabilitated with indigenous grasses as these berms are continually moved as the mining activities progress.
3.29.	Mining related machinery and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective.	Compliant	The maintenance of all vehicles and machinery at Khwezela North Colliery, is conducted in accordance to a maintenance schedule (e.g. LVDs serviced every 5 00km). This maintenance schedule is further maintained, tracked, and actioned on the system known as SAP. Maintenance schedules were provided for review during the audit period.
3.30.	Trucks transporting coal must be covered with tarpaulin to prevent coal spillages on the roads.	Compliant	It was confirmed during the site visit that coal trucks leaving the mining area are covered with tarpaulin to prevent coal spillages on roads.
3.31.	Stockpiles and storage yards must be in designated areas only.	Compliant	According to the assessment of the Google Earth Image, the stockpiles and storage yards are located within the approved footprint area.
3.32.	Soils that become compacted through the operations must be loosened to an appropriate depth to allow seed germination.	Not Applicable	No rehabilitation activities as part of the authorization has yet commenced.
3.33.	The holder of the authorisation must supervise the construction of haul roads in accordance with post mining topographical plan to ensure that topographical rehabilitation can be achieved with the minimum of expenditure.	Not Applicable	The construction of the haul roads is completed; therefore, this condition is not applicable.
3.34.	Dust must be suppressed on operation areas during dry periods by the regular application of water.	Compliant	Khwezela North Colliery uses water browsers to dust suppress the area around the mining areas.
3.35.	The contractor must ensure that there is always a supply of absorbent material readily available to absorb/breakdown spills.	Compliant	Spill kits are used for the clean-up of spillages. 

			Spill kits
3.36.	Rehabilitation must be done concurrently or progressively with the activity and on cessation of the activity.	Compliant	KNC conducts roll-over mining whereby progressive backfilling and rehabilitation are undertaken as the mining window progresses forwards. Current practices maintain that opencast areas are limited to the prestrip, one open cut and two (2) to three (3) spoil rows with concurrent rehabilitation undertaken.
General			
3.37.	A copy of this authorisation must be kept at the property where the activity will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.	Compliant	The copy of this Environmental Authorisation is kept on site by the Environmental Department. This was confirmed by the mine.
3.38.	Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.	Noted	The condition is well understood by Khwezela North Colliery Management.
3.39.	National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorisation or any other public authority shall not be held responsible for any damages or losses suffered by the applicant or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.	Noted	The condition is well understood by Khwezela North Colliery Management.

7.9 THE INTEGRATED ENVIRONMENTAL AUTHORISATION ISSUED IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, (NEMA) FOR THE RELOCATION OF A DRAGLINE EXCAVATOR VIA GRAVEL ROAD FROM KROMDRAAI SECTION TO NAVIGATION SECTION OF LANDAU COLLIERY AND LISTED ACTIVITIES) DISTRIBUTION LINES, DEVELOPMENT OF DRAGLINE ROAD CONSTRUCTION THROUGH WETLAND, DECOMMISSIONING OF TEMPORARY ROAD, RESIDUE DEPOSIT WITH REFERENCE NUMBER: (MP) 30/5/1/2/2 (306).

Ref. No.	CONDITION	FINDINGS	OBSERVATIONS/AUDIT EVIDENCE
8.1 Standard Conditions			
8.1.1.	Authorisation of the activity is subject to the conditions contained in this Authorisation, which forms part of the Environmental Authorisation and are binding on the holder of the Authorisation.	Noted	The condition is well understood by Khwezela North Colliery Management.
8.1.2.	The holder of the Authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the Authorisation.	Compliant	The Environmental Co-ordinator of Khwezela North Colliery is appointed to ensure compliance with the conditions of the authorisation. Khwezela North Colliery Indicated that the following is conducted to ensure that compliance with the conditions of the environmental authorisation is known to all contractors, subcontractors, agents, and other people working on the site i.e.: monthly environmental topics and induction presentation.
8.1.3.	This activity must commence within a period of ten (10) years from the date of issue. If commencement of the activity does not occur within that period, the Authorisation lapses and a new application for Environmental Authorisation must be made in order for the activity to be undertaken.	Compliant	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), the Dragline commenced in 2019 and the authorisation was received in July 2017. Therefore, this condition is complied with.
8.1.4.	If the proponent anticipates that commencement of the activity would not occur within ten (10) year period} he / she must apply and show good cause for an extension of the Environmental Authorisation three (3) months prior to its expiry date	Compliant	According to the Pre-Construction and Construction/Rehabilitation Close Out Report (dated 19 June 2020), the Dragline commenced in 2019 and the authorisation was received in July 2017. Therefore, this condition is complied with.
8.1.5.	Any changes to, or deviations from, the project description set out in this Authorisation must be approved, in writing, by the Department before such changes or deviations may be affected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the Authorisation to apply for further Authorisation in terms of the Regulations.	Not Applicable	No changes have been made to this environmental authorisation.
8.1.6.	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/or telephonic details, including the transfer of this authorization, the applicant must in writing notify the Regional manager of this Department, within fourteen (14) days of the above specified change	Not Applicable	No changes of the applicant's contact details, including the name of the responsible person, the physical or postal address and/or telephonic details, including the transfer of this Environmental Authorisation have been made.
8.1.7.	A copy of this authorisation must be kept on site. The Authorisation must be produced to any Governmental official(s) who may requests to see it for inspection purposes and must be made available to the contractor(s) /subcontractor(s) authorised to undertake to undertake work at the property.	Compliant	A copy of the Environmental are available on site by the Environmental Department. The Authorisation is produced to any Governmental official(s) who may requests to see it for inspection purposes and must be made available to the contractor(s) /subcontractor(s) authorised to undertake to undertake work at the property.
8.1.8.	This authorisation does not negate the holder of the Authorisation's responsible to comply with any other statutory requirements that may be applicable to the undertaking of the activity,	Noted	The condition is well understood by Khwezela North Colliery Management.
8.1.9.	After an appeal period has been expired and no good course to extent the appeal period has been submitted in accordance with Chapter 2 of the National Appeal Regulations of 2014, a thirty (30) day-written notice must be given	Not Applicable	No appeal was lodged for this Environmental Authorization.

	to the Department that the activity will commence, Commencement for purpose for the purpose of this condition includes site preparation, The notice must include a date on which it is anticipated that the activity will commence.		
8.2. Specific Conditions			
8.2.1. Commissioning of the Activity			
8.2.1.1.	This Authorization is hereby solely granted for a 250m wide corridor for the construction and walking of the dragline excavator on the farms listed above, situated within the magisterial district of eMalahleni,	Noted	The condition is well understood by Khwezela North Colliery Management.
8.2.1.2.	The activity may not commence without the necessary permits/licenses/approvals and/or service agreements, where it is relevant, 'from or with the relevant regulatory authorities whether national, provincial or local.	Compliant	An Environmental Authorisation and an Integrated Water Use Licence, which are environmental permits required for the operation, were obtained before commencement of the activities associated with the Dragline Walk.
8.2.1.3.	The applicant must apply the principle of best practicable environmental option for all technologies used/implemented during the proposed activity.	Compliant	The following. amongst others, is undertaken by Khwezela North Colliery for applying the best practicable environmental options for the technologies used/implemented during the project: <ul style="list-style-type: none">• Systems for monitoring of water and wetland areas are in place as a result of the rehabilitated areas.• A system of reporting and monitoring of non-compliances, incidents (Enablon) is implemented where corrective and preventive mitigation measures and action plans are outlined for avoiding the re-occurrence of such incidents.
8.2.1.4 Pre-construction Phase			
a.	The applicant must appoint an independent Environmental Control Officer (ECO) who will monitor contractors, compliance with EMP and EA	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
b.	The applicant must provide all contractors and sub-contractors with a copy of Environmental Management Plan and Environmental Authorisation prior to the commencement of activities.	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
c.	All pre-construction phase mitigation measures as outlined in the Environmental Management Programme (EMP) attached in Environmental Impact Assessment report must be adhered to at all times.	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
d.	In order to ensure safety, all employees must be given the necessary personnel protective equipment (PPE)	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
e.	Appropriate notification sign must be erected at the construction site, warning the public (residents, visitors etc,) about the hazard around the construction site and presence of heavy vehicles and machinery.	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
f.	Construction must include design measures that allow surface and subsurface movement of water along the drainage lines so as not to impede natural surface and subsurface water flow, and drainage measures must promote the dissipation of storm water runoff,	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
g.	Construction areas (e.g. material lay down areas), topsoil and subsoil must be protected from contamination or pollution, Stockpiling must not take place in drainage lines or areas where it will impede surface water runoff,	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
h.	If any soil contamination is noted at any phase of the proposed activity (les), the contaminated soil must be removed to a licensed waste disposal facility and the site must be rehabilitated to the satisfaction of the Department and Department of Water and Sanitation. The opportunity for the onsite remediation and re-use of contaminated soil must be investigated prior to the disposal and this Department must be informed in this regard.	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
8.2.1.5			
a.	Necessary signage and traffic measures must be implemented for safe and convenient access to the site from adjacent roads.	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
b.	Access roads must be well maintained throughout the operation,	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
8.2.1.6			
a.	Proper measures must be put in place to suppress dust in order to minimize nuisance conditions	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
b.	A speed restriction of 40 km/h must be enforced and monitored on site for all project vehicles.	Not Applicable	The construction activities associated with the Dragline Walk are completed, therefore this EMPr commitment is not applicable.
8.2.1.8.			
a.	All soil surfaces compacted as a result of mining/construction activities must be ripped, and imported materials must be removed.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
b.	Any erosion channel developed during mining/construction period or during vegetation establishment must be restored to a proper condition,	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
8.2.1.9			
a.	Topsoil must be stripped and stockpiled prior to excavation in a designated area.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
b.	Under no circumstances should material stockpiles be disposed of outside the boundary of the project area.		
8.2.2			
a.	General waste must be kept in containers which are wind and scavenger proof, and disposed of at a permitted landfill site. No temporary dumping and littering of waste is allowed on site.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.

b.	No waste must be disposed of through burying and burning,		
c.	All hazardous waste must be disposed of at an official registered site, or be removed by registered hazardous waste contractors,		
d.	An emergency preparedness plan to address any pollution incidents (such as oil spillage) that occur on site must be developed.		
8.2.22 Surface and groundwater contamination must be prevented and/or mitigated by implementation of the following conditions			
a.	Specific area must be demarcated for fuelling and workshop services. And such area must be bunded to reduce the possibility of soil and water contamination.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
b.	Irrespective of the nature of a spillage (whether major or minor), all spillages must be cleaned up as soon as they occur.		
c.	Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned, Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site,		
d.	Untreated sewage water must not be discharged directly into the natural environment.		
8.2.21 Fire prevention and management			
a.	Fire extinguishers that are in good working conditions must be made available at all times for their usage during the occurrence of accidental fires	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
b.	Workers must be adequately trained in the handling of firefighting equipment.		
c.	Open fires must strictly be prohibited,		
d.	Smoking must be prohibited in the vicinity of flammable substances,		
e.	Cooking and heating fires must be permitted only in designated areas with appropriate safety measures.		
8.2.22 Storm water management			
a.	Storm water management plan must be developed and implemented on site.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
8.2.21 Safety			
a.	Potentially hazardous area must be demarcated with danger tape.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
b.	Appropriate signage must be placed to caution employees and contractors not to attempt to enter certain structures without being authorised.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
8.2.22 Emergency Response Plan			
a.	An Emergency Response Plan should be available for accidental spills and firefighting during both construction and operation of the project.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
b.	In the event of emergency, the holder must notify the department within 24hrs, and contact relevant emergency services in the area.		
c.	All significant pollution incidents must be reported to this Department within forty-eight (48) hours of occurrences.		
8.2.23 Compliance with other legislation			
a.	The National Water Act, 1998 (Act 36 of 1998), with particular reference to the sections pertaining to activities in the proximity of dams and their catchments areas, rivers, marshes, streams, pans and other water courses.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated with all wetland affected by the Dragline Walk rehabilitated, therefore this EMPr commitment is not applicable.
b.	The Environmental Conservation Act, 1989 (Act 73 of 1989) with particular reference to the requirements of section 20 of the above-mentioned Act.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
c.	The National Environmental Management Air Quality Act (Act 36 of 2004), with particular reference to the sections pertaining to the liberation of dust, and other emissions, created by prospecting activities, into the atmosphere.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
d.	The Conservation of Agriculture Resources Act, 1983 (Act 43 of 1983), with particular references to the sections pertaining to soil conservation.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
e.	The National Heritage Resources Act, 1989 (Act No 25 of 1999), with particular reference to the protection of all historical and pre-historical cultural remains.	Compliant	According to the Heritage Impact Assessment Study (dated May 2012) complied for Nooitgedacht and Wildfontein Reserves, a number of formal and informal graveyards were identified. However, it was indicated by Khwezela North Colliery that no grave relocation was undertaken and currently the graves are fenced off, with safe and controlled access for any relatives or friends who wish to visit the deceased.
f.	The Mine Health and Safety Act, 1996 (Act 29 of 1996) in conjunction with the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), with particular reference to those sections and regulations pertaining to health and safety at mines; mining within 100 m from structures that must be protected; as well as those sections pertaining to rehabilitation of the surface.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated and no activities are undertaken, therefore this EMPr commitment is not applicable.
g.	The National Environmental Management Act, 1998 (Act 107 of 1998), with particular reference to the principles in chapter 2 of the said Act,	Compliant	The Dragline Walk and its associated activities complied with all the required legislations in terms of NEMA.
h.	Firebreaks should be established in terms of the requirements and conditions of the National Veld and Forest Fires Act, 1998 (Act No. 101 of 1998).	Not Applicable	The Dragline Walk and its associated activities are rehabilitated and no activities are undertaken, therefore this EMPr commitment is not applicable.

I	All provisions of the Occupational Health and Safety Act, 1993 (Act No.85 of 1993) and any other applicable legislation must be adhered to by the holder of this Authorisation.	Noted	The condition is well understood by Khwezela North Colliery Management.
8.2.24 Liability of the holder of this Authorisation			
a.	The competent authority shall not be held responsible for any damages or losses suffered by the holder or his/her successor in title in any instance where mining/ construction or operation subsequent to construction are to be temporarily or permanently stopped for reasons of noncompliance by the holder with conditions of approval as set out in the document or any other subsequent document emanating from this Authorisation. The holder shall be responsible for all the costs necessary to comply with the above condition unless otherwise specified.	Noted	The condition is well understood by Khwezela North Colliery Management.
b.	Any complaint from the public during the project duration must be attended to by the holder of this Authorisation as soon as possible to the satisfaction of parties concerned.	Not Applicable	According to the Incident Report (dated July 2019-July 202), no complaints from the public were noted.
c.	The contractor must ensure that serviceable ablution facilities are available for employees. It is the responsibility of the holder of the Authorisation to see to it that this condition is adhered to.	Not Applicable	The Dragline Walk and its associated activities are rehabilitated, therefore this EMPr commitment is not applicable.
8.2.25 Management of the Activity			
a.	A copy of an Environmental Authorisation and EMP must always be available on site so as to monitor compliance with conditions outlined in both the documents. Both documents must be used as on-site reference document during the project duration.	Compliant	A copy of the Environmental Authorisation and EMP are available on site by the Environmental Department. The documents must be used as on-site reference document during the project duration.
b.	The Environmental Management Plan (EMP) prepared by Aurecon Consulting (attached to the EIA Report) must be adhered to during the project duration.	Compliant	All commitments of the Environmental Management Plan (EMP) are adhered to. Refer to Table 7.8 of this report.
c.	All duties and responsibilities as outlined in the EMP attached are binding throughout the project duration.	Noted	The condition is well understood by Khwezela North Colliery Management.
d.	Any proposed amendments to the EMP (as a result of this authorisation or otherwise) must be submitted in writing to this Department for approval prior to the amendment being implemented. On approval of the proposed amendment the EMP must be accordingly amended and adhered to.	Not Applicable	No amendments to the EMP has been made, therefore this condition is not applicable.
8.2.26 Appointment of Environment Control Officer			
a.	An Environmental Control Officer must be appointed, who will monitor and ensure compliance and correct implementation of all mitigation measures and provisions as stipulated in the Environmental Authorisation and Environmental Management Plan, prior to any commencement of activities on site.	Compliant	The Environmental Co-ordinator of Khwezela North Colliery is appointed to monitor and ensure compliance and correct implementation of all mitigation measures and provisions as stipulated in the Environmental Authorisation and Environmental Management Plan ensure compliance with the conditions of the authorisation.
b.	The Environment Control Officer appointed must monitor the construction of the infrastructure to ensure that the layout plans are in accordance to the designs and record important findings of the site inspection.	Compliant	Environmental Coordinator for Khwezela North Colliery has appointed who ensures continual implementation of the EMP (specified elements) through internal and external environmental audits which will be conducted on annual basis; monthly monitoring of activities to ensure compliance with the EMP; ensuring environmental awareness of the EMP among members of the workforce and contractors through induction, toolbox talks and monthly environmental topics.
c.	The ECO must also monitor the implementation of specific elements of the Environmental Management Plan by contractors.		
d.	All duties and responsibilities as outlined in the EMP attached are binding throughout the project duration.	Noted	The condition is well understood by Khwezela North Colliery Management.
8.2.27 Site closure and Decommissioning			
a.	The commissioning and decommissioning of individual activity within the overall listed activities must take place within the phases and timeframes as set out in EMP or EMPr,	Not Applicable	All activities associated with this authorisation are still operational, therefore, decommissioning activities are not yet applicable.
b.	All mitigation measures for the decommissioning phase, as outlined in the EA. Including rehabilitation and monitoring must be adhered to.	Not Applicable	All activities associated with this authorisation are still operational, therefore, decommissioning activities are not yet applicable.
8.2.28 Monitoring			
a.	This Department reserves the right to monitor and audit the activity to ensure compliance with legislation and the conditions stipulated in this authorisation.	Noted	The condition is well understood by Khwezela North Colliery Management.
b.	It is the holder of this Authorisation's responsibility to ensure that an ongoing management and monitoring of the impacts of the activity on the environment throughout the life of the mine is put into practice.	Noted	The condition is well understood by Khwezela North Colliery Management.
8.2.20 Recording and Reporting to the Department			
a.	The authorization holder must submit an annual environmental audit report during the operation of the activity, unless otherwise requested by the department. The audit report must convey the following:	Compliant	An annual environmental audit report was submitted to the Department of Mineral Resources and Energy. Proof of submission of the audit report was provided for review during the audit period.
a.	The date in which the audit was carried out,	Compliant	The annual external audit report includes the date in which the audit was carried out.
b.	The outcome of the audit, in relation to the conditions stipulated in the environmental authorization and the approved EMPr as well as the actions taken to mitigate environmental impacts on site.	Compliant	The annual external audit report includes the outcome of the audit, in relation to the conditions stipulated in the environmental authorization and the approved EMPr as well as the actions taken to mitigate environmental impacts on site.
c.	Records of monitoring and / or auditing must be made available for inspection to this Department and any other relevant authority inspecting the development activities.	Compliant	Records of auditing must be made available for inspection to this Department and any other relevant authority inspecting the development activities.
d.	Records relating to compliance and non-compliance with the conditions of this authorisation must be kept in good order, Such records shall be made available to this Department within seven (7) days of receipt of a written request by the Department. Environmental compliance will further be monitored through complaints received from the public.	Compliant	Records relating to compliance and non-compliance with the conditions of this Authorisation are kept at Khwezela North Colliery Environmental Department files and are also logged in the Enablon system. Proof of the Enablon system was provided.

			According to the Incident Report (dated July 2019-July 202), no complaints with regards to this authorisation were noted. The Department has not requested the copy of the authorisation during the audit period.
e.	All records relating to the implementation of the Environmental Management Plan must be kept in the office where it is safe and can be retrievable.	Compliant	Records relating to compliance and non-compliance with the conditions of this Authorisation must be kept at Khwezela North Colliery Environmental Department files and drives.
8.2.21 Non-Compliance			
a.	In the event of non-compliance by any contractor during the mining/construction the authorised activity, the holder of this Authorisation will be liable.	Noted	The condition is well understood by Khwezela North Colliery Management.
b.	The holder shall be responsible for all costs necessary to comply with the above conditions unless otherwise specified.	Noted	The condition is well understood by Khwezela North Colliery Management.
c.	The holder must in the event of non-compliance with any condition of this Authorisation inform the Regional Manager of Mpumalanga region of this Department, in writing, within forty-eight (48) hours.	Noted	No non-compliances were identified in the previous audit. Khwezela North Colliery Management understands the condition, the condition is hence noted.
d.	Records relating to compliance and non-compliance with the conditions of this Authorisation must be kept in good order. Such records shall be made available to this Department within seven (7) days of receipt of a written request by the Department. Environmental compliance will further be monitored through complaints received from the public.	Compliant	Records relating to compliance and non-compliance with the conditions of this Authorisation are kept at Khwezela North Colliery Environmental Department files and are also logged in the Enablon system. Proof of the Enablon system was provided. According to the Incident Report (dated July 2019-July 202), no complaints with regards to this authorisation were noted.
e.	Non-compliance to this authorisation is an offence as provided for in terms of the National Environmental Management Act, 1998, Section 49(a) and Regulation 48. Any conviction of such offence may result in Section 49(a) being enforced,	Noted	The condition is well understood by Khwezela North Colliery Management.
8.2.22 Appeal of Authorisation			
	The holder of the authorisation must notify every registered interested and affected party, in writing and within fourteen (14) days, of receiving the Department's decision.	Compliant	A notification letter to registered I&APs and stakeholders, dated 07 July 2017, as well as a newspaper advertisement (published in the Witbank News on 07 July 2017) was provided for review. Both the notification letter and the newspaper advertisement present the following information: • Date on which the authorisation was received; • The appeals procedure to be followed; and • Where to obtain a copy of the authorisation.
	The notification referred to in 9.1 must		
a.	Specify the date on which the Authorisation was issued.		
b.	Inform the registered interested and affected parties of the appeal procedure provided for in Chapter 2 of the National Appeal Regulations of 2014.		
c.	Advise the interested and affected parties that a copy of the Authorisation and reasons for the decision will be furnished on request,		
d.	An appeal against the decision must be lodged in terms of Chapter 2 of the National Appeal Regulations of 2014.		

8 DELIBERATIONS

8.1 ADEQUACY AND COMPLIANCE WITH THE LANDAU'S ALIGNED EMPR

8.1.1 ADEQUACY OF THE LANDAU COLLIERY'S ALIGNED EMPR

An assessment was conducted for the determination of the ability of the EMPr to adequately address the impacts that are arising from the Khwezela North Colliery operations. It was clear that the EMPr is more than adequate for the management of any environmental impact that may arise from the mining activities.

8.1.2 COMPLIANCE WITH THE LANDAU'S ALIGNED EMPR

The following non-compliances were identified during the audit:

- It was confirmed during the site visit that erosion from disturbed operational areas were identified at the Klipspruit crossing. In order to manage the identified erosion, Khwezela North Colliery developed a Detailed Engineering Design and Cost Estimation for Khwezela North Colliery Wetland Rehabilitation strategy of the affected Cluster systems within the Khwezela North Colliery. According to the strategy, the rehabilitation of the affected wetland system (erosion) will be considered and implementation of the strategy thereof will be initiated and scheduled. However, management action will not be undertaken separately, but rather in consideration with the other mining sections. Khwezela North Colliery must ensure that the area is repaired to avoid further deterioration of the Klipspruit crossing.
- GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020. Hence no GN 704 audit report was provided.
- According to the water use licence granted for Umlalazi South Block Extension (License Number: 03/B20F/ACGIJ/5781), it is indicated that the pollution control dam shall be operated and maintained to have a minimum freeboard of 0.8 metres above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood-event on top of its mean operating level. It was confirmed during the site visit that the Navigation West Section pollution control dam does not maintain the 0.8 metre freeboard due to silt accumulation noted, with high water levels. It is therefore concluded that the above results in inadequacy of the dam to contain the approved capacities and to maintain the 0.8 freeboard. Desilting activities were undertaken during the site visit. Hence this will ensure that the dam capacity and the 0.8 freeboard are maintained as required by the approved water use licence and that overflow from the dam is prevented.
- Pollution control dams associated with the Blaauwkrans Co-disposal facility include the Kopseer dam, toe seep dams and the emergency toe seep dams. Toe Seep Dam, and Toe Seep Emergency Dams are lined facilities with only Kopseer dams not lined. Although the Kopseer dams are not lined, no seepage water as a result of an overflow from the dams was noted during the site visit. Monthly environmental inspections are conducted by the Environmental Department to inspect the dams for any seepage or overflows and no concerns were reported.

8.2 ADEQUACY AND COMPLIANCE WITH THE LIFEX EXTENSION PROJECT'S EMPR

8.2.1 ADEQUACY OF THE LIFEX EXTENSION PROJECT'S EMPR

An assessment was conducted for the determination of the ability of the EMPr to adequately address the impacts that are arising from the Lifex Extension Project. It was clear that the EMPr is more than adequate for the management of any environmental impact that may arise from the mining activities.

8.2.2 COMPLIANCE WITH THE LIFEX EXTENSION PROJECT'S EMPr

The following non-compliances were identified during the audit:

- According to the Graveyard Conservation Plan (dated 20 November 2019), the following should be implemented for the protection of the graveyard GY03:
 - GY03 should be demarcated with a fence or with a wall and it should be fitted with an access gate.
 - Regulated visitor hours should be implemented that is compatible with mine safety rules.
 - Corridors of at least 20m should be maintained between the graveyard's fences and any developmental components such as road or other infrastructure that may be developed in the future.
 - The graveyard should be inspected on a monthly basis. Inspections should be noted in an inspection register. The register should outline the state of the graveyard during each inspection. Reports on damages to any of the graves or the graveyards fence (wall) and access gate should be followed with the necessary maintenance work. Maintenance work should be recorded in the inspection register. In relation to the above, the following were noted during the site visit and document review:
 - No fence is erected at the identified graveyard.
 - No visitor's hours are implemented and erected.
 - Monthly inspections are undertaken by the Environmental Department, which include inspection of the graveyard. However, the inspection report does not include the state of the graveyard.
 - No maintenance of the identified graves is conducted.
 - No damages to the graves were noted.
- GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020. Hence no GN 704 audit report was provided.

8.3 ADEQUACY AND COMPLIANCE WITH THE NAVIGATION SECTION UMLALAZI WEST SOUTH BLOCK EXTENSION PROJECT EMPr

8.3.1 ADEQUACY OF THE NAVIGATION SECTION UMLALAZI WEST SOUTH BLOCK EXTENSION PROJECT EMPr

An assessment was conducted for the determination of the ability of the EMPr to adequately address the impacts that are arising from the Navigation Section Umlalazi West South Block Extension project. It was clear that the EMPr is more than adequate for the management of any environmental impact that may arise from the mining activities.

8.3.2 COMPLIANCE WITH THE NAVIGATION SECTION UMLALAZI WEST SOUTH BLOCK EXTENSION PROJECT EMPr

The following non-compliances were identified during the audit:

- GN 704 audits are undertaken on an annual basis. 2018 and 2019 audit reports were provided for review during the audit period. However, no GN 704 auditing was undertaken during the year 2020. Hence no GN 704 audit report was provided.
- According to the water use licence granted for Umlalazi South Block Extension (License Number: 03/B20F/ACGIJ/5781), it is indicated that the pollution control dam shall be operated and maintained to have a minimum freeboard of 0.8 metres above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood-event on top of its mean operating level. It was confirmed during the site visit that the Navigation West Section pollution control dam does not maintain the 0.8 metre freeboard due to silt accumulation noted, with high water levels. It is therefore concluded that the above results in inadequacy of the dam to contain the approved capacities and to maintain the 0.8

freeboard. Desilting activities were undertaken during the site visit. Hence this will ensure that the dam capacity and the 0.8 freeboard are maintained as required by the approved water use licence and that overflow from the dam is prevented.

- The bio-monitoring plan requires biannual monitoring during wet and dry seasons. Bio-monitoring is conducted twice a year as per the bio monitoring plan. Biannual monitoring was undertaken for the 2018 and 2019. However, no bio-monitoring was undertaken for the year 2020. A proposal for biomonitoring for the year 2021 is compiled and was provided during the audit period. The commencement date for monitoring is as from April 2021. It must be noted that the above-mentioned 2021 monitoring will determine a compliant finding for 2021 audit period. Khwezela North Colliery must ensure that the monitoring is undertaken as per the existing monitoring plan to determine any impacts to the receiving surface water environment.

8.4 ADEQUACY AND COMPLIANCES WITH THE RELOCATION OF A DRAGLINE FROM THE KROMDRAAI SECTION TO NAVIGATION SECTION EMPR

8.4.1 ADEQUACY OF THE RELOCATION OF A DRAGLINE FROM THE KROMDRAAI SECTION TO NAVIGATION SECTION EMPR

An assessment was conducted for the determination of the ability of the EMPr to adequately address the impacts that are arising from the Dragline Walk project. It was clear that the EMPr is more than adequate for the management of any environmental impacts that may arise from the project.

8.4.2 COMPLIANCE WITH THE RELOCATION OF A DRAGLINE FROM THE KROMDRAAI SECTION TO NAVIGATION SECTION EMPR

No non-compliances were identified during the audit period.

8.5 COMPLIANCE WITH THE ENVIRONMENTAL AUTHORIZATIONS

8.5.1 LANDAU NORTH COLLIERY'S AUTHORISATION FOR THE LIFEX EXTENSION PROJECT

No non-compliances were identified during the audit period.

8.5.2 LANDAU COLLIERY'S AUTHORISATION FOR NAVIGATION SECTION UMLALAZI WEST SOUTH BLOCK EXTENSION PROJECT

No non-compliances were identified during the audit period.

8.5.3 LANDAU COLLIERY'S AUTHORISATION FOR THE INSTALLATION OF TWO 61 200 LITRE ABOVEGROUND DIESEL TANKS, AND THE CONSTRUCTION OF OFFICES AND TOILETS

No non-compliances were identified during the audit period.

8.5.4 LANDAU COLLIERY'S AUTHORISATION FOR THE RELOCATION OF A DRAGLINE EXCAVATOR VIA GRAVEL ROAD FROM KROMDRAAI SECTION TO NAVIGATION SECTION

No non-compliances were identified during the audit period.

9 CONCLUSION

This environmental audit report was compiled to comply with the relevant legislative requirements specifically the NEMA, with the main objectives to report on the compliance status of the commitments and conditions, as well as the appropriateness and adequacy of the various EMPs and EAs. This audit report will be submitted to the competent authority. Within 7 days of submission of this Audit Report to the competent authority (DMRE), Anglo Operations (Pty) Limited, Khwezela North Colliery, must notify all potential and registered I&APs of the submission, and make this report immediately available to anyone on request and on a publicly accessible website.

10 DISCLAIMER

This report has been produced by Geovicon Environmental (Pty) Limited, with the skill and care normally exercised by a reasonable Independent Environmental Consultant during the rendering of the service. The service provided by Geovicon Environmental (Pty) Limited should not be considered as a legal opinion of any kind but shall be a representation of the findings. The work performed was based on the Client's scope of work, time and resource allocations, as well as information provided by the Client. Any reference to legislation in this report should not be considered as a substitute for the provisions of such legislation.

Geovicon Environmental (Pty) Limited ensures by all means, that information provided by management and/or representatives is correct and relevant, and that this report is based on information that could reasonably have been sourced within the time period allocated to the audit performed. It should not be assumed that all possible and applicable findings are included in this report as this report represents a sample of the audit. Therefore, should additional information become available, Geovicon Environmental (Pty) Limited reserves the right to amend its findings accordingly.



Signed: _____

Date: 30 November 2021

O.T. Shakwane

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