Draft Basic Assessment Report and Environmental Management Programme for the Extension of the Existing Styldrift Conveyor Belt, North West Province

DMR Ref: NW30/5/1/2/3/2/1/ (312) EM SAMRAD: NW-00227-MR/102

Report Prepared for Royal Bafokeng Platinum Limited

Report Number 523640





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Disclaimer

The opinions expressed in this Report are based on information supplied to SRK Consulting (South Africa) (Pty) Ltd (SRK) by Royal Bafokeng Platinum Limited (RBPlat). This report has been compiled to comply with the specific requirements of the National Environmental Management Act (No. 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations (2014), as amended.

SRK has exercised all due care in reviewing the supplied information provided by RBPlat during the course of the Environmental Assessment Process and has included the requirements of commenting authorities. The appropriateness and practicality of the management measures have been considered in terms of comments received and discussed with RBPlat as necessary. RBPlat is fully responsible for the implementation management and mitigation measures proposed.

The Environmental Management Programme (EMPr) has been provided to RBPlat for review, prior to submission, to determine whether the EMPr is implementable and accurate. SRK cannot be held responsible for failure of RBPlat to comply with the EMPr for any reason whatsoever. The EMPr by nature is a dynamic document and the NEMA provides for continual updating of the EMPr, with approval from the Competent Authority.

SRK does not accept responsibility for any errors or omissions in the information supplied by RBPlat and do not accept any consequential liability arising from commercial decisions, design changes or actions resulting from such decisions and/or changes. Management measures presented in this report relate to the project description and plans as they existed at the time of SRK's investigations, and those reasonably foreseeable. These management measures do not necessarily apply to conditions and aspects that may arise after the date of this report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

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List of Abbreviatior	۱S
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BAR	Basic Assessment Report
BID	Background Information Document
BPD	Bojanala Platinum District
BRPM	Bafokeng Rasimone Platinum Mine
СВА	Critical Biodiversity Areas
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GDP	Gross Domestic Product
GHG	Green House Gas
I&AP	Interested and Affected Parties
IDP	(Municipal) Integrated Development Plans
Masl	Meters above sea level
Magl	Meters above ground level
MPRDA	Mineral and Petroleum Resources Development Act (Act no. 28 of 2002)
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEM:AQA	National Environmental Management Air Quality Act (Act No. 39 of 2004
NEM:BA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act (Act No. 59 of 2008)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NWA	National Water Act (Act No. 36 of 1998)
NWREAD	North-West Department of Rural, Environment and Agricultural Development
PES	Present Ecological Status
RBPlat	Royal Bafokeng Platinum Limited
RLM	Rustenburg Local Municipality
RLS	Rustenburg Layered Suit
ROM	Run of Mine
SMS	Short Message Service
SRK	SRK Consulting South Africa (Pty) Ltd
Tpm	tonnes per month
UG2	Upper Group 2
WMA	Water Management Area





mineral resources

Department: Mineral Resources REPUBLIC OF SOUTH AFRICA

FINAL BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

DMR Ref: NW30/5/1/2/3/2/1/ (312) EM

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT:	Royal Bafokeng Resources Limited (67%) and Rustenburg Platinum Mines Ltd (33%) (Bafokeng Rasimone Platinum Mine Joint Venture
TEL NO:	(014) 153 0002
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POSTAL ADDRESS:	Private Bag x 82313, Rustenburg, 0299
PHYSICAL ADDRESS:	Styldrift Platinum Mine, Sun City Road R556, Styldrift Farm 90-JQ, Rustenburg, 0301

FILE REFERENCE NUMBER SAMRAD: NW-00227-MR/102

1 IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with uninterpreted information and that it unambiguously represents the interpretation of the applicant.

The objective of the basic assessment process is to, through a consultative process-

- a. determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- b. identify the alternatives considered, including the activity, location, and technology alternatives;
- c. describe the need and desirability of the proposed alternatives,
- d. through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) the degree to which these impacts-
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- e. (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative;
 - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
 - (iii) identify residual risks that need to be managed and monitored.

2.1 General Project Overview

Royal Bafokeng Resources Styldrift Mine Complex has an existing Environmental Management Programme (EMPr), dated June 2007, for its operation (Reference Number: NW30/5/1/2/3/2/1/ (312) EM) under the Mineral and Petroleum Resources Development Act (Act no. 28 of 2002) (MPRDA). The project is located near the existing Bafokeng Rasimone Platinum Mine (BRPM) in the North West Province of South Africa and is located about 37 km North West of Rustenburg.

Royal Bafokeng Platinum (Pty) Ltd (RBPlat) appointed SRK Consulting South Africa (Pty) Ltd (SRK) as the independent Environmental Assessment Practitioner (EAP) to facilitate the environmental authorisation process for its proposed extension to the existing Styldrift No. 1 conveyor belt. (Please refer to Appendix A for a copy of the EAP's Declaration of Interest).

The proposed project will cover an area of 5 hectares and is located approximately:

- 620 m from Chaneng;
- 510 m from Mafenya; and
- 270 m from Robega.

RBPlat requires an Environmental Authorisation for the proposed conveyor in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA). The competent authority for the Environmental Authorisation process is the North West Department of Mineral Resources (DMR).

The approved Styldrift EMPr allows for the mining of 230 000 tonnes per month (tpm) of ore from the reefs underlying the farms Styldrift 90 JQ and Frischgewaagd 96 JQ. This EMPr states that the mining method will be a combination of conventional and mechanised mining. The ore will be conveyed from the Styldrift No. 1 Shaft to the existing BRPM concentrator plant. The concentrate will be transported by road to Rustenburg Platinum Mine's smelting and refining operations near Rustenburg.

The proposed conveyor will run from the Styldrift No 1 Shaft existing conveyor to the Maseve Platinum Mine. Ore from the Styldrift No. 1 Shaft will be hoisted from underground from where it will be conveyed and stored in concrete silos situated to the south of the Styldrift No. 1 Shaft. Merensky ore will be stored in two 4 500 tonne live capacity silo's and waste material from underground will be stored in a 1 000 tonne silo. A fourth silo for the storage of Upper group 2 (UG2) ore will also be constructed although this will only be utilised during the production of UG2 or in later years.

Reclamation from the surface silo's will be by means of chutes and conveyor belts. Ore and waste rock will be discharged from the silo through a control chute with a hydraulically operating radial door and a vibration pan feeder. Ore will be discharged onto the existing conveyor belt as Run of Mine (ROM). From the existing conveyor belt, ROM will be directed towards the Maseve Platinum Mine, when required along the proposed conveyor belt.

The proposed conveyor will be located above ground between the Styldrift No. 1 Shaft conveyor and the Maseve Platinum Mine.

The conveyor will be approximately 1.7 km in length with a servitude of 30 m. A service/maintenance road will be constructed alongside the conveyor to allow ease of access to the conveyor for maintenance purposes and provide a means of transportation to and from the Maseve Platinum Mine.

Provision has also been made for one pedestrian/animal crossings along the entire length of the conveyor. This pedestrian/animal crossings will be at ground level with the conveyor sections crossing over.

The stakeholder engagement process, as part of the Environmental Authorisation process, is conducted in terms of NEMA (as amended) which provides clear guidelines for stakeholder

engagement during an Environmental Impact Assessment (EIA). One of the general objectives of integrated environmental management set out in Section 23(2) of NEMA is to ensure the "adequate and appropriate opportunity for public participation in decisions that may affect the environment".

The stakeholder engagement process is primarily aimed at affording Stakeholders and Interested and Affected Parties (I&APs) the opportunity to gain an understanding of the project. In addition, the purpose of consultation with the landowner, affected parties and communities is to provide them with the necessary information about the proposed project so that they can make informed decisions as to whether and to which degree the project will affect them. In addition, the purpose of consultation with the Stakeholders and I&APs is to provide the competent authority with the necessary information in order for them to make informed decisions.

Before an EAP submits a final report, they must have given registered I&APs access to, and an opportunity to comment on the report prior to the submission of the final report to the competent authority for approval.

Stakeholders have therefore been provided with an opportunity to participate in the public review period of the Draft BAR from 3 October 2018 to – 2 November 2018 to ensure that the assessment of impacts and proposed management of impacts have addressed their concerns. Comments received during the 30 day comment period (from the Draft BAR review and public meeting held on 5 July 2018) will be incorporated into the Final Basic Assessment Report (BAR) / EMPr.

This EIA and EMPr has been compiled in terms of the provisions of Appendix 3 and Appendix 4 of December 2014 GNR 982 of the NEMA, as amended in 2017. These requirements are cross-referenced to the various sections in this report where these requirements are addressed (Table A and Table B).

EIA Regulation requirement	Section addressed	Page number
a) Details of –	PART A -Section 3 (a)	1
(i) The EAP who prepared the report and;		
(ii) The expertise of the EAP, including a curriculum vitae;		
b) The location of the activity, including –	PART A -Section 3 (b)	2
(i) The 21 digit Surveyor General code of each cadastral land parcel;		
(ii) Where available, the physical address and farm name;		
(iii) Where the required information in terms of (i) and (ii) is not available, the coordinates of the boundary of the property or properties;		
c) A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is –	PART A -Section 3 (c)	2
(i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	Appendix C	
(ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken;		
(d) A description of the scope of the proposed activity, including –	PART A -Section 3 (d)	4
(i) All listed and specified activities triggered and being applied for; and		
(ii) A description of the associated structures and infrastructure related to the development;		
(e) A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;	PART A -Section 3 (e)	8
(f) A motivation for the need and desirability for the proposed development, including the need a desirability of the activity in the context o the preferred location;	PART A -Section 3 (f)	9
(g) A motivation for the preferred development footprint within the approved site;	PART A -Section 3 (g)	10
(h) Full description of the process followed to reach the proposed preferred alternatives within the site;	PART A -Section 3 (h)	11
(i) details of the development footprint alternatives considered;	PART A -Section 3 (h) (i)	12
(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	PART A -Section 3 (h) (ii)	12
(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated or the reasons for not including them;	PART A -Section 3 (h) (iii)	14
(iv) the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological social, economic, heritage and cultural aspects;	PART A -Section 3 (h)(iv)	15

EIA Regulation requirement	Section addressed	Page number
(v) the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts –	PART A -Section 3 (h)(v)	34
(aa) can be reversed;		
(bb) may cause irreplaceable loss of resources; and		
(cc) can be avoided, managed or mitigated;		
(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;	PART A -Section 3 (h)(vi)	54
(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	PART A -Section 3 (h)(vii)	56
(viii) the possible mitigation measures that could be applied and level of residual risk	PART A -Section 3 (h)(viii)	57
(ix) if no alternative development locations for the activity were investigated, the motivation for not considering such; and	PART A -Section 3 (h)(ix)	57
(x) a concluding statement indicating the preferred alternative development location within the approved site;	PART A -Section 3 (h)(x)	57
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including-	PART A -Section 3 (i)	57
(i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and		
(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;		
(j) an assessment of each identified potentially significant impact and risk, including-	PART A -Section 3 (j)	59
(i) Cumulative impacts;		
(ii) The nature, significance and consequences of the impact and risk;		
(iii) The extent and duration of the impact and risk;		
(iv) The probability of the impact and risk occurring;		
(v) The degree to which the impact and risk can be reversed;		
(vi) The degree to which the impact and risk may cause irreplaceable loss of resources; and		
(vii) The degree to which the impact and risk can be mitigated;		

EIA Regulation requirement	Section addressed	Page number
(k) where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;	PART A -Section 3 (k)	62
(I) an environmental impact statement which contains-	PART A -Section 3 (I)	64
(i) a summary of the key findings of the environmental impact assessment:	PART A -Section 3 (I)(i)	64
(ii) map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	Appendix C	107
(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	PART A -Section 3 (I)(iii)	64
(m) based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;	PART A -Section 3 (m)	65
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	PART A -Section 3 (n)	66
(o) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	PART A -Section 3 (o)	66
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	PART A -Section 3 (p)	67
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	PART A -Section 3 (q)	67
(r) an undertaking under oath or affirmation by the EAP in relation to:	PART A -Section 3 (r)	67
(i) the correctness of the information provided in the reports;	and PART B – Section 2	and 102
(ii) the inclusion of comments and inputs from stakeholders and I&APs		102
(iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and		
(iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;		
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management o negative environmental impacts;	PART A -Section 3 (s)	67
(t) any specific information that may be required by the competent authority; and	PART A -Section 3 (t)	69
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	PART A -Section 3 (u)	71

Table B: Structure of the Environmental Management Programme

EMPr Regulation requirement	Section addressed	Page number
 (a) Details of – (i) The EAP who prepared the EMPr; and (i) The expertise of the EAP to prepare an EMPr, including a curriculum vitae 	PART B -Section 1 (a)	72
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	PART B -Section 1 (b)	72
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	eAppendix C	107
(d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	PART B -Section 1 (d) t	73
(i) planning and design;		
(ii) pre-construction activities;		
(iii) construction activities;		
(iv) rehabilitation of the environment after construction and where applicable post closure; and		
(v) where relevant, operation activities;		
(e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	PART B -Section 1 (e)	83
(f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to-	PART B -Section 1 (f)	86
(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;		
(i) comply with any prescribed environmental management standards or practices;		
(i) comply with any applicable provisions of the Act regarding closure, where applicable; and		
(i) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;		
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph	PART B- Section 1 (g)	94
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph	PART B- Section 1 (h)	94
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	PART B- Section 1 (i)	94
(j) the time periods within which the impact management actions contemplated in paragraph	PART B- Section 1 (j)	96
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph	PART B- Section 1 (k)	96

EMPr Regulation requirement	Section addressed	Page number
(I) a program for reporting on compliance, considering the requirements as prescribed by the Regulations;	PART B- Section 1 (I)	99
(m) an environmental awareness plan describing the manner in which-	PART B- Section 1 (m)	99
(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and		
(i) risks must be dealt with in order to avoid pollution or the degradation of the environment; and		
(n) any specific information that may be required by the competent authority.	PART B – Section 1 (n)	101

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PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

3 Contact Person and correspondence address

a) Details of

i. Details of the EAP

Name of the Practitioner:	Mr. Andrew Caddick
Tel No.:	012 361 1902
Fax No:	086 231 3497
e-mail address:	acaddick@srk.co.za

ii. Expertise of the EAP

1) The qualifications of the EAP

(with evidence)

Mr Andrew Caddick is an Environmental Scientist with SRK Consulting South Africa (Pty) Ltd (SRK). He has a Master's degree in Environmental Management and Geography obtained from the North West University and has over 9 years of project experience in environmental management. During this time Mr Caddick has both personally prepared and given input to various Environmental Impact Assessments and EMPr's. Mr Caddick appropriately qualified and registered with the relevant professional bodies as a Professional Natural Scientists (Pr.Sci.Nat. 400021/16).

The project manager, Ms Manda Hinsch is a Partner at SRK, with 32 years' experience in the environmental consultancy industry. Ms Manda Hinsch is appropriately qualified and registered with the relevant professional bodies as a Professional Natural Scientists (Pr.Sci.Nat. 400164/09) with the South African Council of Natural Scientific Professions and has extensive experience in compilation, implementation, amendment and assessing environmental compliance of a diverse set of EIA's and EMPr's in terms of the NEMA.

Please refer to Appendix B for a copy of the EAP's Qualifications.

2) Summary of the EAP's past experience.

(In carrying out the Environmental Impact Assessment Procedure)

Please refer to Appendix B for a copy of the EAP's Curriculum Vitae and Professional Registration Certificate.

b) Location of the overall Activity.

Table 1: Location Details

Farm Name:	Styldrift 90 JQ Elandsfontein 102 JQ – Portion 2 Frischgewaagd 96 JQ – Portion 15.
Application area (Ha)	5 Hectares
Magisterial district:	Rustenburg Local Municipality (RLM) Bojanala District Municipality
Distance and direction from nearest town	Chaneng ~ 620 m Mafenya ~ 510 m Robega ~ 270 m
21 digit Surveyor General Code for each farm portion	Styldrift 90 JQ – B0JQ00000000000000000000000000000000000

c) Locality map

(show nearest town, scale not smaller than 1:250000).

Please refer Figure 1 illustrating the regional setting, as well as the farm portions associated with the project.



Figure 1: Locality Map of the Proposed Extension to the Styldrift Conveyor

CADD/hinm

d) Description of the scope of the proposed overall activity.

RBPlat has as existing mining right for the Styldrift No. 1 Shaft on the farm Styldrift 90 JQ and Frischgewaagd 96 JQ. An existing overland conveyor runs from the Styldrift No. 1 Shaft to the existing BRPM concentrator. This conveyor was approved by the North-West Department of Rural, Environment and Agricultural Development (NWREAD) with reference number NWP/EIA/73/2013 and serves to transport platinum ore mined at the Styldrift No. 1 Shaft to the BRPM concentrator.

RBPlat now proposed to construct an additional overland conveyor of approximately 1.7 km in length, with a 30 m servitude. This conveyor will link in to the existing conveyor and run into a western direction towards the existing Maseve Platinum Mine. This conveyor will transport platinum ore to the existing Maseve crusher for processing. An additional service road will be constructed within the proposed servitude, which will be utilised primarily for maintenance.

i) Listed and specified activities

Section 16 of the MPRDA requires, upon request by the Minister that an EMPr be submitted and that the applicant must notify and consult with I&APs. Section 24 of the NEMA requires that listed activities, which may potentially affect the environment negatively, must obtain an environmental authorisation from a relevant authority before the activities may commence.

Such activities are listed under the Environmental Impact Assessment (EIA) Regulations (2014 which has been amended in 2017) and consist of:

- EIA Process (Government Notice Regulation (GNR) 982);
- Listing Notice 1 GNR 983 Basic Assessment process,
- Listing Notice 2 GNR 984 Scoping and EIA process;
- Listing Notice 3 GNR 985 Activities in specific identified geographical areas only.

GNR 982, 983, 984 and 985 have been amended in 2017 through GNR 324, 325, 326 and 327, respectively. The purpose of these regulations is to avoid negative impacts on the environment, and where these cannot be avoided, ensure the mitigation and management of the impacts to acceptable levels, while optimising positive environmental impacts. The proposed activity triggers activities listed in NEMA GNR 983. Table 2 provides details in terms of the listed activities. It must be noted that no waste license is being applied for in terms of the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM: WA).

Table 2: Summary of NEMA Listed Activities being applied for

NAME OF ACTIVITY(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etcetcE.g. for mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etcetc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)
Construction of the conveyor from the existing conveyor to the Maseve Mine Concentrator.	~2000 Square metres	X	Activity 12 of GNR 985
Construction of a maintenance road of approximately 1.7 km in length and 7m wide.	~1.2 Hectares	X	Activity 4, and 12 of GN 985
Clearance of vegetation for the servitude establishment.	~ 5 Hectares	X	Activity 28 of GNR 983 Activity 12 of GNR 985
Establishment of contractor camps for site offices, change-rooms, workshops, vehicle parking, ablutions, materials storage, waste storage, and communications etc.	~ 500 Square metres	X	Activity 12 of GNR 985
Construction of surge bin with a capacity of approximately 500 tonnes.	~ 300 Square metres	X	Activity 12 of GNR 985
Construction of the transfer tower from the existing conveyor to the Maseve Mine.	~ 200 Square metres		Activity 12 of GNR 985
Construction of security fencing.	~ 3.5 km in length		Activity 12 of GNR 985



G:\proj\523640_SD CONVEYOR 2\8GIS\GISPROJ\MXD

Figure 2: Locality Map of the Proposed Extension to the Styldrift Conveyor

Revision: A Date: 00 00 201

(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

RBPlat propose to extend the existing Styldrift No. 1 Shaft overland conveyor in a western direction, destining at the Maseve concentrator. This conveyor will serve to transport mined platinum ore to the existing Maseve Concentrator for processing. The conveyor will be situated within a 30 metre (m) servitude, which will be fenced off. An additional maintenance road will be constructed alongside the conveyor, within the 30 m servitude.

Platinum reef transported along the Styldrift No. 1 Shaft Conveyor belt will be transferred at a transfer point approximately midpoint along Styldrift No. 1 Conveyor. The conveyor will intersect two servitudes (Magalies Water Pipeline and Eskom Powerlines), with a cattle crossing constructed along the route. The conveyor belt will terminate at a surge bin, with a capacity of approximately 500 tonnes, approximately 40 m before the Eskom Powerline. The conveyor will then run from the surge bin to the Maseve Concentrator. The surge bin will serve as temporary emergency storage of ore, to cater for the surplus of ore transported along the conveyor should the conveyor need to be switched off.

 Table 3: Applicable legislation and guidelines for the proposed Conveyor.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)
Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	Section 24	Section 24 of the Constitution provides that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations. The environmental management objectives are to ensure that the project is operated in an environmental friendly way.
NEMA	Section 24(1) Section 28 (1)	This Basic Assessment Report is required in terms of the NEMA
National Heritage Resources Act (Act No. 25 of 1999) (NHRA)	The project may trigger the requirements under Section 38 of the NHRA. However, the requirements for the permits have not yet been established.	The EMPr will regulate the applicant to apply for permits from the South African Heritage Resources Agency (SAHRA) prior to removal or relocation of any heritage resources. The BAR and EMPr will also be submitted to the South African Heritage Resources Information System (SAHRIS) to determine whether or not any permits will be required.
NEM: WA	EMPr and environmental awareness plan	Waste management on site. No waste license is required, although the hierarchy of the NEM: WA will be applied.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM:BA)	The possibility of the presence of protected flora	The EMPr will regulate the applicant to apply for tree removal permits prior to removal of any sensitive and/or protected species.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g. In terms of the National Water Act a Water Use License has/ has not been applied for)			
National Water Act, 1998 (Act No. 36 of 1998) (NWA)	Construction of conveyor	The Bonwakgogo stream is located to the east of the proposed project. Avoidance of this resources is essential.			
National Environmental Management Air Quality Act (Act No. 39 of 2004, Government Gazette No. 27318) (NEMAQA)	Mining Activities	The construction activities of the proposed project may result in the need for additional managemen measures to reduce any negative impacts on Air Quality.			
National Dust Control Regulations (Government Gazette No. 36974) (NDCR).	Mining Activities	The North West Spatial Development Framework shows that the area is not earmarked for any development by the North West Provincial Government.			
Integrated Development Plans (IDPs).	Land Claims and Mining Sector Objectives	One of the key issues identified by the IDPs is to facilitate the land claims. According to the provincial IDP, mining must maintain an average growth rate of 2.5 per cent between now and 2030.			
North West Provincial Development Plan.	Development of vacant land.	Municipal plans were used to identify relevant socio-economic information and spatial development information with regards to the area relevant to the project site.			
North West Province Spatial Development Framework.	Mining Activities	The SDF acknowledges the importance of Mining on the development of the province as a whole. Sustainable mining should be practised.			

f) Need and desirability of the proposed activities

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The Styldrift No.1 Shaft has an existing conveyor belt running from the Styldrift No. 1 Mine to the BRPM concentrator plant. At full capacity of the Styldrift No. 1 Shaft, the BRPM concentrator plant will not be able to accommodate the entire load mined form the Styldrift No. 1 Shaft and to create flexibility. RBPlat therefore planned to divert volumes of the ore mined at the Styldrift No. 1 Shaft to the Maseve Platinum Mine.

The conveyor belt will be situated within an area that is currently characterised by mining activities and falls within the vision of the IDP for the RLM. The proposed conveyor will therefore fit into the surrounding land use and will not Impact on the sense of place. The positive impacts associated with the construction and operation of the conveyor will outweigh the negative impacts. It is envisaged that the nature of the activities associated with the conveyor will result in minimal biophysical, social and cultural impacts that cannot be mitigated and managed to an acceptable level.

The proposed conveyor will assist the Styldrift No 1 Shaft to optimise processing of the ore mined which in totality will contribute to the National and North West Provincial economy in terms of an increase in Gross Domestic Product (GDP).

Mining has a dominant role in the economy of the North West Province employing a quarter of the labour force and contributing about 55% of its GDP with significant multiplier effects in the service and trade sectors. The GDP of the Bojanala Platinum District (BPD) could increase by approximately 4.32 %, while that of the Province could benefit by approximately 1.35 %. Although the Styldrift No. 1 Shaft will have a high positive impact on the economy for a minimum of 25 years, the dependence of the province on a single district (BPD) for at least 31 % of its economic activity necessitates greater diversification at a provincial level.

Job opportunities will be created during the construction and operational phases. Small business opportunities may be created through supplying the needs of visiting contractors/consultants. Increased productivity from the mine may benefit the local communities through an improved local economy. The conveyor will contribute to the continued operations of the mine; therefore, there will be continuation and growth of the benefits that the community gets from the mine. The construction and operation of the proposed conveyor belt is proposed to benefit the local communities, through temporary employment and procurements of local services when the required skill set is available.

The preferred location is the most viable economic and environmental option as this alterative will follow the shortest route to the Maseve Platinum Mine. The use of truck to transport the ore to the Maseve Platinum Mine will result in additional Green House Gas (GHG) emissions, which is in contradiction to the target South African government has set to reduce GHG emissions by 34% by 2020. The use of the conveyor will ultimately result in minimal GHG emissions and provide a cleaner means of transporting the ore.

g) Motivation for the overall preferred site, activities and technology alternative.

Feasibility studies proved that the rail route and haul road alternatives were economically unviable, the haul road option was additionally unviable from an environmental perspective due mainly to potentially excessive dust and carbon emissions. The transportation of ore via the proposed conveyor is a more economically and environmentally feasible option than transporting the ore via road. The conveyor is also a better option in terms of air quality due to reduce dust and exhaust emissions from tracks.

The preferred location is the most viable economic and environmental option as this alterative will follow the shortest route to the Maseve Platinum Mine. Minimal options are available for location alternatives as the extension to the existing Styldrift No. 1 Shaft conveyor needs to link into the existing mid drive construction on the existing conveyor. The use of truck to transport the ore to the Maseve Platinum Mine will result in additional Green House Gas emissions, which is in contradiction to the target South African government has set to reduce GHG emissions as signed by the international Paris agreement. The use of the conveyor will ultimately result in minimal GHG emissions and provide a cleaner means of transporting the ore.

h) Full description of the process followed to reach the proposed preferred alternatives within the site.

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

Ultimately an EIA is a decision-making process with the specific aim of selecting the option that will provide the most benefit and cause the least damage in the short and long term. The EIA process will identify and investigate alternatives, with feasible and reasonable alternatives to be comparatively assessed. If, however, after having identified and investigated alternatives, no feasible and reasonable alternatives were found, no comparative assessment of alternatives is required during the assessment phase. The only assessment that will be conducted will be the comparative assessment of the preferred alternative and the option of not proceeding. "Alternatives" are defined in the Regulations as different means of meeting the general purpose and requirements of the activity, which may include alternatives to: (a) the property on which or location where it is proposed to undertake the activity; (b) the type of activity to be undertaken; (c) the design or layout of the activity; (d) the technology to be used in the activity or process alternatives; (e) the operational aspects of the activity; and (f) the option of not implementing the activity. Alternatives are limited to the proposed conveyor belt running form the existing Styldrift Conveyor to the Maseve Platinum Mine. The alternative identification will strive to identify the Best Practical Environmental Option and posing the least risks to the biophysical, cultural and social context of the area.

The identification and protection of the crucial environmental attributes will focus on the key principles of sustainable development (biophysical, social and economic components) and the key components of the meaning of the term environment (geographical, physical, biological, social, economic and cultural aspects). Determination of the preferred alternative took cognisance of the following:

- Applicable legislation;
- Provincial and Municipal Policies and Guidelines;
- Making use of Geographic Information Systems (GIS);
- Site inspection of the area;
- Previous applications conducted in the area;
- Previous specialist studies conducted in the area;
- Historical knowledge of the area;
- Aerial data assessments, including research and examination; and
- Inputs raised during the stakeholder engagement process.

Visits to the site has provided an accurate assessment of the area which was subsequently confirmed through the use of GIS data. Furthermore, a number of specialist studies have been commissioned to assess the area. The proposed alternative was considered based on the location within land available to be leased and owned by the applicant, avoidance of any sensitivity on site, and aligns the proposed project with the surrounding land uses. No other location alternatives have been proposed for the project as this is the only site available for the applicant. The proposed conveyor will be located between the existing Styldrift No. 1 Shaft conveyor and the Maseve Platinum Mine. It is imperative that the conveyor links into the existing mid drive of the existing conveyor to ensure efficient operation of the conveyor. In addition to this, in order for the conveyor to operate effectively and safely, it needs to link perpendicular to the existing conveyor. Technology alternatives were not considered, as the applicant will be making use of the Best Practical Environmental Option that is available in the mining industry.

The stakeholder consultation process has not been finalised at this stage, and therefore the comments raised by the I&APs have not been incorporated in this section. This will be updated as part of the final report if any comments have been raised based on the location or technology of the conveyor.

i) Details of the development footprint alternatives considered.

With reference to the site plan provided as Appendix C and the location of the individual activities on site, provide details of the alternatives considered with respect to:

(a) the property on which or location where it is proposed to undertake the activity:

The preferred location is the most viable economic and environmental option as this alterative will follow the shortest route to the Maseve Platinum Mine. Minimal options are available for location alternatives as the extension to the existing Styldrift No. 1 Shaft conveyor needs to link into the existing mid drive construction on the existing conveyor

(b) the type of activity to be undertaken:

Feasibility studies proved that the rail route and haul road alternatives were economically unviable, the haul road option was additionally unviable from an environmental perspective due mainly to potentially excessive dust and carbon emissions. The transportation of ore via the proposed conveyor is a cheaper option than transporting the ore via road. The conveyor is also a better option in terms of air quality due to reduced dust and exhaust emissions from tracks.

(c) the design or layout of the activity:

The proposed conveyor will be located between the existing Styldrift No. 1 Shaft conveyor and the Maseve Platinum Mine. It is imperative that the conveyor links into the existing mid drive of the existing conveyor to ensure efficient operation of the conveyor. In addition to this, in order for the conveyor to operation effectively and safety, it needs to link perpendicular to the existing conveyor.

(d) the technology to be used in the activity:

The proposed technologies have been chosen based on long term proven success in construction and operation of conveyors in the mining industry

(e) the operational aspects of the activity:

The proposed conveyor will employ optimal operational technologies. The site layout and alternatives in the planning phase of the project have taken consideration of sensitive areas, spatial aspects and post mining appearance. The nature of the activity allows for minimal alterative assessments as part of the operational phase. A surge bin has been constructed to cater for the overflow of ore transported should a power failure occur.

(f) The option of not implementing the activity:

The no-go activity has been considered and assumes that should the proposed activity not proceed then the status quo would remain. This includes no clearing of land, no digging of trenches, no additional mining operations on site and no decommissioning at the end of the project life cycle. The no go alternative will result in the ore being mined at the Styldrift No, 1 Shaft to be transported via truck to the Maseve Platinum Mine, which will result in additional indirect impacts on the socio and environmental condition surrounding the mine. This will ultimately result in a reduced revenue capital.

ii) Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

A stakeholder database has been compiled using stakeholders on the pre-existing stakeholder database as well as information obtained from a social scan done in the area. The social scan was conducted to obtain the contact details of possible I&APs in the area.

The stakeholder database has been utilised to notify I&APs via email (or posted letter if no email option was available) and Short Message Service (SMS), to inform and update them of the new process being undertaken. This letter was supplemented by a Background Information Document (BID) and comment and response sheet to provide the opportunity to comment on the proposed process and for them to update their contact information. SRK conducted a deed search to identify landowners directly affected by, and adjacent to, the proposed project. Notification letters, including project announcement documentation, have been provided to the landowners, informing them of the proposed project. Potential I&APs were notified of the opportunity to participate and the invitation to register as I&APs.

Adverts were placed in English and Setswana in the Rustenburg Herald and Platinum Weekly introducing the project to the public.

Laminated A 2 size site notices were placed in English and Setswana in order to introduce the project to the surrounding land owners and I&APs. The site notices met all the requirements of GNR 982 Regulation 41 (3), as amended, printed in terms of the National Environmental Management Act (Act No. 107 of 1998) and indicated where additional information can be obtained as well as the date of the proposed open day meeting. Site notices were placed at conspicuous positions by SRK in and around the project area. Proof of the site notices and advertisements can be found in Appendix D.

SRK engaged with the traditional leaders prior to the planning of the public meeting to gain their insight into the most effective means to conduct the public meeting to obtain inputs from the communities. The traditional leaders were provided with a background of the project and were provided an opportunity to comment and raise concerns on the project.

A public meeting was held on 5 July 2018 at a location in close proximity to the existing conveyor belt. Site notices. SMS, and notification letters were sent to I&APs to inform them on the planned public meeting. The public meeting was further advertised on the local radio station, Mafisa Radio, the day before as well as on the day of the public meeting. Loudhailers travelled through the communities, advertising the public meeting and handing out pamphlets. Buses were arranged for transport of I&APs to the public meeting.

iii) Summary of issues raised by I&APs

(Complete the table summarising comments and issues raised, and reaction to those responses)

Please refer to Appendix D for a detailed list of the Comments raised by I&APs as well as the responses provided to each comment. Comments received following the release of the Background Information Document and project announcements prior to the release of this document have been included in Appendix D. Comments received on the BAR will be included in the Final BAR submitted to the DMR.

Table 4: Summary of issues raised by Interested and Affected Parties

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Affected PartiesDateof persons consulted in thisCommentsark with an X where those whoReceivedted were in fact consulted.Received		EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
AFFECTED PARTIES					
Landowner/s					
Municipality					
Organs of state (Responsit	ole for infrastructure t	hat may be aff	ected Roads Depart	ment, Eskom, Telkom, DWS	
Communities					
Dept. Land Affairs					
Traditional Leaders					
Dept. Environmental Affairs	S				
Other Competent Authoritie	es affected				
OTHER AFFECTED PARTIE	S				

iv) The Environmental attributes associated with the alternatives. (The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

(1) Baseline Environment

The baseline environmental description is based on available information sourced from the various specialist's studies commissioned to provide input to the authorisation process. The baseline environmental condition is intended to provide required context to the rehabilitation and to assist in the understanding of the key issues that are required to be addressed and is not intended to provide a comprehensive description of environmental conditions. Details of the specialist studies will be found in the environmental specialist reports. Specialist studies were undertaken to assess the current land uses. I&APs were requested at key stakeholder meetings to provide information on the current land uses and biophysical conditions of the surrounding area. The compiled Basic Assessment Report will be placed in the public domain. I&APs will be notified of the availability of the report and how and when to submit comments on the report. I&APs will be requested to comment on the environmental attribute status quo, including the land uses description.

(a) Type of environment affected by the proposed activity.

(its current geographical, physical, biological, socio- economic, and cultural character).

Geographical

The proposed project is situated within the RLM of the BDP located in the North West Province. The wards affected by the proposed project are Wards 1 and 2. Figure 3 provides an illustration of the location of the project in relation to the local municipalities of the BDM. The following farms will be affected by the proposed activity:

- Styldrift 90 JQ;
- Frischgewaagd Portion 15; and
- Elandsfontein 102 JQ Portion 2.

<u>Topography</u>

The topography is gently undulating over the larger part of the area with slopes of less than 5% and there are few areas which can be classified as hilly. There are no major natural topographical promontories in or near the study area. The elevation of the project area is 1065 meters above surface level (masl) to the east and 1067 masl to the west.

The Bonwakgogo non-perennial stream runs to the east of the proposed conveyor at an elevation of 1065 mbsl and drains approximately 4 km into the Elands River to the north of the project area. Elevated areas can be experienced to the south, associated with mining activities of the BRPM.

Figure 3 provides a graphic representation of the topography of the site.



Figure 3: Topography of the Proposed Project Area

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<u>Climate</u>

The RLM can be classified as a humid subtropical climate characterised by summer rainfalls with very dry winters. The footprint of the proposed conveyor is situated in the northern section of the RLM. The climate is characterized by relatively high temperatures and evenly distributed precipitation throughout the year. In summer these regions are largely under the influence of moist, airflow from the western side of the subtropical anticyclonic cells Invalid source specified.

<u>Temperature</u>

Temperatures in the RLM are high and can lead to warm, oppressive nights. Summers are usually wetter than winters, with much of the rainfall coming from conventional thunderstorm activity. The coldest month is usually quite mild, although frosts are not uncommon.

Rainfall and evaporation

The average annual rainfall is 675.4 mm, 84% of which occurs in the summer months. The temperatures peak during the summer months and are lower during the winter months, dropping to below 0°C during some nights. Average summer temperatures range from 10-30°C and approximately 2 -24°C in winter. The month with the most rainfall on average is January with 137 mm of precipitation. The month with the least rainfall on average is July with an average of 3 mm. There is approximately 82 days of precipitation, with the most precipitation occurring in January (13 days) and the least precipitation occurring in July. Table 5 and Table 6 describe the mean monthly rainfall and temperatures of the Rustenburg area.

								•				
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average (mm)	137	92	79	62	13	7	3	7	21	56	89	110
Rainfall days	13	10	10	7	3	2	1	2	3	8	11	13

Table 5: Mean monthly and annual rainfall data for the Rustenburg area

Table 6: Mean monthly and annual temperatures for the Rustenburg area

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average high temp (°C)	30	29	28	25	23	20	21	23	27	28	29	30
Average low temp (°C)	17	16	15	11	6	3	2	5	9	13	15	16

Wind Direction and Speed

The winds are predominantly east-northeast, south-west and north-northwest. Average wind speeds are higher during the period from September to February coinciding with the warmer periods of the year. During the period from March to August, the prevailing wind conditions are calmer except for a few days when high speed winds are observed. Figure 4 shows the wind rose for the Rustenburg area, indicating the average wind direction and speed.



Figure 4: Wind Rose indicating the dominant wind direction for the Rustenburg area

<u>Geology</u>

The site falls within the Rustenburg Layered Suit of the Bushveld Complex with rocks of the gabbro and norite formation with interlayered anorthosite. The proposed project is not anticipated to detrimentally affect resident geology and the conveyor will be expected to be appropriately engineered to accommodate any geological issues that may arise during construction.


Figure 5: Geology of the Affected Area

Soils, Land Use and Land Capability

Two different soil, Shortland's form and Arcadia, forms were identified in the proposed project area (Figure 6). The site is dominated by structured soil of varying strength and clay content. The two sections of Shortland's soil occur in both the eastern and western ends of the proposed conveyor alignment with the Arcadia soil form occurring between. Signs of historical crop cultivation on the Shortland's form is present on site although natural vegetation has now established itself in the old crop fields. Below follows a discussion of each of the soil forms on site including the land capability of these soil units and the associated agricultural potential (Terra Africa Consult, 2018):

Shortland's form

The Shortland's form belongs to a larger group of oxidic soils that is distinguished by uniform soil colours of the sub-surface horizon (B horizon) and overlaid by an orthic A-horizon. The Shortland's form can also be referred to as a pedorhodic form as it has clearly visible structure development with higher content of smectitic clay than the apedal Hutton form commonly found in the crop fields of South Africa (Terra Africa Consult, 2018).

The Shortland's soil identified on site range in depth between 130 and 150 cm and is underlain by unspecified material which contain iron and manganese concretions but without the dominant features that will classify the underlying horizon as plinthic. The textural analysis of the modal profile analysis shows that there is an increase in clay content with soil depth. The A-horizon consists of 18.8% clay and 59.6% sand fractions and the B-horizon of 24.6% clay and 58.2% clay fractions. The organic carbon content is equally low in both horizons at 1.8% carbon. The red colour of this soil form is typically that as is specified for the red apedal horizon (Soil Classification Working Group, 1991).

The Shortland's soil form on site has arable land capability (following the Chamber of Mines Classification System) and can be classified as soil with potential for crop production with certain limitations to sustainable high yields.

Arcadia form

These dark browns to black Vertic soils have deep A-horizons (between 100 and 130 cm deep on site) and falls within the larger group of Vertic soils or Vertosols following the international classification approach. These soils are high in clay content with swelling-shrinking properties under conditions of water content changes. These expansive materials have the characteristic appearance as was defined by the Soil Classification Working Group (1991). These properties are strongly developed structure, shiny ped faces and consistence that is highly plastic when moist and sticky when wet. The swell-shrink potential is manifested typically by the formation of conspicuous vertical cracks in the dry state and the presence, at some depth, of slicken sides (polished or grooved glide planes produced by internal movement) (Terra Africa Consult, 2018).

The Arcadia soils on site have high grazing potential and very palatable, nutritious (sweet) grazing occurs on these soils (Fey, 2011). This soil form has Class V land capability (very good grazing) following the classification system by Schoeman et al. (2002). When following the land capability classification system of the Chamber of Mines, this soil form within the climatic conditions of the study area, also classifies as "Grazing".



Figure 6: Soil Classification of the Affected Area (Terra Africa Consult, 2018)

<u>Hydrology</u>

The proposed extension to the Styldrift No, 1 Shaft conveyor falls within the quaternary catchment of A2F of the Limpopo Water Management Area (WMA). The project is bordered by the Bonwakgogo nonperennial stream approximately 120 m east of the conveyor. The Bonwakgogo stream is a tributary of the Elands River, located approximately 3.5 km to the north of the project.

Flood lines

A flood assessment was undertaken for the Bonwakgogo River to determine the 1:50 and 1:100-year floodlines in the proximity of the proposed conveyor.

The floodlines were calculated using the HEC-RAS model, which determines the flood levels for various peak flows using standard Manning's based hydraulic equations. The input required to run the model includes:

- Cross sections were created from the 0.5 m lidar contours obtained from the client. The topographical data from the client were merged with 5 m contours to address data gaps;
- "Roughness" of the watercourse which is obtained from a site visit establishing the Manning's number to be 0.035;
- Peak flow data by using the Utility Program for Drainage.

The floodlines indicated that the conveyor will be located outside of the 1:50 and 1:100-year floodlines.

Geohydrology

Base flow to the Bonwakgogo stream may be minimal since this stream is non-perennial. Groundwater levels are envisaged to be lower than the base of the drainage lines, but base flow could still occur to the underlying alluvial aquifer potentially underlying the Elands River.

There are two distinct hydrogeological layers:

- An upper weathered layer which is typically the shallow weathered regional aquifer utilized by communities and which could be connected to alluvial deposits of local rivers and streams; and
- A deep fractured rock aquifer (+80 m >200 m).

The shallow aquifer is generally a confined to semi-confined weathered and/or fractured rock aquifer associated with the layering of the Rustenburg Layered Suit (RLS). The depth of weathering defines the base of this unit and based on the literature, may be as deep as 60 m. The highly weathered section of the aquifer generally occurs within the top 30 metres below ground level (mbgl). Water strikes in the vicinity of the Styldrift JQ 90 farm were estimated as c.9 to >20 mbgl. Groundwater movement will essentially be horizontal in the weathered, coarser grained pyroxenite/norite aquifer. Borehole yields is the wider area vary from 0.1 and 4.0 L/s with an average yield of 1.2 L/s.

This aquifer is typically overlain by unsaturated dark, silty clay, with a minimal depth of 1.5 m. The mafic rocks tend to weather to a low permeability clay known as "Black turf". Literature values for clay soils range from 10-8 m/day to 10-5 m/day (Freeze and Cherry, 1979). Work done in similar environments by SRK has shown the black turf at 1 x 10-4 m/day. For the purposes of this study, SRK have assumed that the underlying black turf has a hydraulic conductivity of 1 x 10-5 m/day; classified as low permeability. The low permeability of the black turf is considered to reduce seepage and recharge to the underlying aquifers.

The aquifer is therefore classified as a Minor aquifer system, (DWAF, 2005) which results in a "Low" vulnerability rating. Application of the ¹DRASTIC method of assessment of the intrinsic vulnerability of an aquifer to contamination from the surface, the aquifer in the Study Area is classified as having a "low" vulnerability to contamination due to the low recharge values and low K.

Air Quality

The proposed extension of the Styldrift No. 1 conveyor is situated in the Waterberg Bojanala Priority Area. The following have been identified as the main dust sources:

- Materials handling at transfer points on the conveyor system.
- The service road will be unpaved, and dust will be generated through vehicle entrainment.
- Windblown dust-off conveyors and unpaved service road during dry conditions. Windblown dust
 off the conveyors will be limited as the conveyor is covered.

Dust generation will be reduced as the conveyor will be covered along the route. According to the Australian National Pollutant Inventory (2012), covered conveyors can reduce dust by a minimum of 70%. The higher moisture content and ore size will result in lower dust emission rates being generated from the handling of ore on the conveyor. The large ore pieces will have finite erodibility, meaning only the initial layer of dust will be susceptible to wind erosion. Hence, the footprint of the area that is likely to be impacted as a result of the operation of the proposed conveyor is expected to be lower, and maximum concentrations are also expected to be lower (SRK Consulting South Africa (Pty) Ltd, 2018).

The residential areas near the conveyor are Robega, Chaneng and Mafenya. Based on the location of the villages, emission rates and the prevailing wind directions, it is unlikely that the villages will be impacted by the activities at the conveyor. The impact of the unpaved road will be short term and low as the road is only used for maintenance and servicing of the conveyor as and when required. Figure 7 illustrates the possible air quality impact zones (SRK Consulting South Africa (Pty) Ltd, 2018).

¹ Utilizing the method of DRASTIC, considering the seven indexes of Depth to Water, Net Recharge, Aquifer Media, Soil Media, Topography, Impact of the Vadose Zone Media, Conductivity of the Aquifer



Figure 7: Air Quality Impact Zones (SRK Consulting South Africa (Pty) Ltd, 2018)

<u>Noise</u>

A noise impact assessment was conducted for this proposed extension of the Styldrift No. 1 Conveyor. Measuring points for the study area were selected to be representative of the prevailing ambient noise levels for the study area and include all the noise sources such as distant traffic and domestic noise. The measuring points are illustrated in Figure 8.



Figure 8: Noise Measuring Points

The measuring points along the boundaries of the study area and the physical attributes of each measuring point are illustrated in Table 7 (dBAcoustics (Pty) Ltd, 2018).

Position	Latitude	Longitude	Remarks
1	25º 25,296S	027 ⁰ 6,656E	Western side of Chaneng Village. Distant traffic &
			domestic noise.
2	25º 25,576S	027 ⁰ 6,558E	Along feeder road and northern side of Robega
			Village. Traffic noise.
3	25º 25,690S	027 ⁰ 6,254E	Northern side of Frischgewaagd Village. Distant
			mine activities, domestic and traffic noise.
4	25 ⁰ 25,856S	027 ⁰ 6,933E	Northern side of Frischgewaagd Village. Distant
			mine activities, domestic and traffic noise.
5	25 ⁰ 25,995S	027 ⁰ 5,613E	Northern side of Frischgewaagd Village. Distant
			mine activities, domestic and traffic noise.
6	25º 26,050S	027 ⁰ 5,927E	Along feeder road in Frischgewaagd. Traffic and
			domestic noise.

Table 7: Measuring points and co-ordinates for the study area

The following are noise sources near and the boundaries of the study area:

- Domestic noises;
- Intermittent traffic along the feeder roads and haul road;
- Distant traffic noise from the abutting feeder roads;
- Insects;
- Birds;
- Wind noise.

Wetlands

A single freshwater feature was identified, approximately 120 m east of the proposed linear development. It should be noted that although a small drainage feature is indicated to the north of the linear development in topographical maps, this feature was not identified during the site assessment.

The identified freshwater feature to the east of the proposed linear development was classified according to the classification system (Ollis et. al., 2013) as an Inland System, falling within the Bushveld Basin Aquatic Ecoregion, and the Central Bushveld Group 2 WetVeg (wetland vegetation) group, which is considered by the SANBI (2013) to be 'Vulnerable' in terms of its conservation status. These freshwater resources were further classified at Level 3 and Level 4 of the classification system. The wetland system located to the east was classified as a moderately modified Present Ecological Status (PES) and a moderately low ecological status. The delineated wetland is illustrated in Figure 9 (Scientific Aquatic Services (Pty) Ltd, 2018).



Figure 9: Delineated Wetlands in and around the Proposed Project

Heritage Resources

Human remains older than 60 years are protected by the NHRA, with reference to Section 36. Human remains that are less than 60 years old are protected by the Regulations Relating to the Management of Human Remains (GNR 363 of 22 May 2013) made in terms of the National Health Act (Act No. 61 of 2003) as well as local Ordinances and regulations.

No Stone Age, Iron Age or other historical settlements, structures, features, assemblages or artefacts were recorded during the survey. No individual graves or graveyards were recorded (Coetzee, 2018).

Biodiversity

The study area is located within the Savanna Biome, the Central Bushveld Bioregion and within the Zeerust Thornveld vegetation type (Mucina & Rutherford, 2011). According to the North West Province BCP the northern portion of the study area falls within an area classified as a Critical Biodiversity Area (CBA) corridor, while the southern portion of the study area falls within an area characterised by CBA features. The entire study area is classified as a CBA2. According to the National List of Threatened Terrestrial Ecosystems (2011) the Zeerust Thornveld ecosystem is listed as being a terrestrial ecosystem that is of Least Concern (Pretorius & van Staden, 2015). Figure 10 illustrates the critical biodiversity areas in and around the proposed footprint.



Figure 10: Critical Biodiversity Areas

Socio – Economic Summary

A review of socio-economic baseline collected for the study area revealed a number of concerns for the socio-economic status of RLM, namely:

- The area is plagued by poverty and population influx, and traditional land disputes paired with poor service delivery have compounded the historical legacy issues of the former homeland (Bophuthatswana);
- With the low-income levels apparent in the study area, the ability to meet basic needs such as adequate food, clothing, shelter and basic amenities is hampered, indicating that the households within the study area are poverty stricken;
- The level of education and skills evident in the study area does not give a range of employment options to choose from and to build on. The lack of education and skills correlates with the inability to meet basic needs and to access employment opportunities, maintaining the poverty status quo. The focus on the mining sector in the area does open up a variety of opportunities to choose from, but this choice cannot be executed due to the lack of skills and education;
- The quality of the labour force gives an indication of the employability and is mostly reflected by the educational profile and the quality of the training and health centres. The employability of those within and outside the study area seems to be low;
- Infrastructure and services are poor, which limits economic growth. In-migration will add stress to limited existing infrastructure and services; the area does not have the capacity to meet needs of its own people. An influx of people could also lead to the depletion of natural resource, an increase in soil erosion, less soil productivity and eradication of biodiversity.

Social development projects, including those promoting local economic development, were identified for the Annual Social and Labour Plan (SLP) for the Styldrift No. 1 Shaft. The Styldrift No. 1 Shaft SLP Report showed RBPlat had an actual spending of just over R 13 million for poverty alleviation, basic infrastructure, education, health and community education and skills development and community skills development in the study area and RLM.

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Figure 11: Locality Map of the Proposed Styldrift Overland Conveyor

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Figure 12: Locality Map of the Proposed Affected Farm Portions

(b) Description of the current land uses.

The current land use of the affected farms and farm portions can be found in Table 8.

Table 8: Current Land Uses

Farm Description	Current Land Use	Land Use Zoning
Styldrift 90 JQ	Mining, agricultural, informal settlements	Agricultural and Mining
Frischgewaagd 96 JQ Portion 15	Mining, agricultural, informal settlements	Agricultural and Mining
Elandsfontein 102 JQ Portion 2	Mining, agricultural, informal settlements	Agricultural and Mining and Quarrying

(c) Description of specific environmental features and infrastructure on the site.

No specific environmental features or infrastructure was found on site. Please refer to Section 1 (a) for a detailed description of the current environmental status quo.

(d) Environmental and current land use map.

(Show all environmental and current land use features)

An environmental and current land use map has been attached as Figure 13.



Figure 13: Current Land Use of the Surrounding areas to the Proposed Project

v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

Risks and potential impacts have been categorized according to the type of activity undertaken and the relation to each environmental variable. Specialist studies have been commissioned for the aspects of the environment (biophysical, social, and cultural) that may be affected by the proposed development. These specialists have identified impacts and risks posed by the proposed development on their area of expertise. Additional impacts were identified by the EAP based on their extensive knowledge and understanding of the surrounding environment and professional judgement.

Existing literature was utilized in identifying potential risks and evaluating the likelihood of the risks. Similar projects were researched to identify additional impacts and risks and compared to the context of the proposed development. Table 9 describes the activities relating to all phase of the proposed project.

Phase	Activities
Pre- Construction	Transport of materials and labour with trucks and buses as well as other
and Construction (8-	light vehicles using the existing access roads.
10 months)	Construction of conveyor and pedestrian/animal crossings.
	Site clearance and erection of fencing.
	Construction of the camp site and provision of sanitary infrastructure.
	Linking of conveyor to existing conveyor system.
	Vegetation will be removed on either side of the conveyor belt to act as a
	fire break, to slow or stop the progress of a bushfire or wildfire.
Operation	The conveyor will operate 24 hours cycle, seven days a week.
	Vehicles will travel on the proposed service access road in order to undertake
	monitoring and maintenance on an infrequent basis.
	Vegetation will be removed at regular intervals on either side of the conveyor
	belt to act as a fire break, to slow or stop the progress of a bushfire or wildfire.
Rehabilitation and	The surface infrastructure will be removed and the area re-vegetated.
Post Closure	Demolish and remove all infrastructure not required post-closure, this will
	include the cement base.
	Removal and rehabilitation of roads.
	Handling of potential contaminated soils.
	Establish vegetation on the disturbed area.
	Monitoring of rehabilitation success.

Table 9: Activities relating to all Phases of the Proposed Project

Pre-Construction and Construction

The construction phase of the project will entail the site establishment for the access roads, the camp site as well as surveying and pegging sites. Environmental impacts on the biophysical and socioeconomic environment which are anticipated to occur throughout the construction were identified as follows: Direct impacts associated with the construction phase:

- Potential positive impact associated with temporary employment opportunities;
- Potential increased noise levels during construction phase of the conveyor associated with the use of power tools, transformers Tractor-Loader-Backhoe (TLB)s, and Bobcats;
- Potential increase in dust and Particulate Matter (PM) 10 localised emissions.
- Potential visual impact as Chaneng and Mafenya Villages will experience close up and unobstructed views of the corridor which will have a significant intrusive impact on the landscape north and west of the villages;
- Loss of soil resource due to land clearing and infrastructure establishment;
- Disturbance of vegetation and faunal species;
- Potential disturbance of areas of archaeological importance, if found;
- Disturbance of original soil profiles and horizon sequences;
- Potential soil compaction and erosion in the surrounding areas;
- Disturbance of areas of Palaeontology importance.

The specialist studies confirm that aspects and impacts can be mitigated and managed to an acceptable level for the execution of the project.

Indirect impacts associated with the construction phase:

- Community complaints as a result of increased noise levels and visual impacts;
- Accidents because of increased traffic in the area;
- Movements of local villagers and their livestock will be negatively impacted on;
- Dust emissions associated with construction activities;
- Dust emissions associated with vehicle movement with respect to site preparation and driving to and from site;
- Potential soil contamination due to incidental spillage during storage;
- Potential soil contamination due to incidental spillages of hazardous waste during handling and transportation;
- Potential soil contamination due to incidental spillages of hazardous waste during storage;
- Potential soil contamination due to incorrect handling and disposal of waste materials;
- Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area;
- Potential contamination of groundwater due to incidental spillage of hazardous waste during transport and handling;
- Potential contamination of groundwater due to spillage of hazardous waste during storage;
- Potential contamination of groundwater due to incorrect handling and disposal of waste materials;
- Spread of invader weed plant species;
- Increase in carbon emissions and ambient air pollutants (NO₂ and SO₂) as a result of movement of vehicles and operation of machinery/equipment.

The specialist studies confirm that aspects and impacts can be mitigated and managed for the execution of the project.

Cumulative impacts:

Limited cumulative negative environmental impact is anticipated with the construction phase of the conveyor.

The specialist studies confirm that aspects and impacts can be mitigated and managed for the execution of the project.

					ENVIRC B	ONMENTA	L SIGNIFICANC	E		IMPACT MANAGEMENT ACTIONS (PROPOSED MI	IITIGATION		IMPAC	T MAN	AGEMEN		OME (ENVIRONMENT R MITIGATION)	AL SIGNIFICANCE
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TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	 Significance (Degree to which impact may cause irreplaceabl e loss of resources) 	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Socio - E	Economic Impacts																	
Direct	Temporary employment opportunities may arise during the construction period of the conveyor.	3	3	2	2	2	32	ML Maintain Current Management	Maximise local employment opportunities.	 Implement RBPlat's employment policies to ensure appropriate benefits of employment opportunities and associated indirect economic benefits for the surrounding communities; Preference should be given to the employment of local labour wherever possible, subject to skills availability. 	1 month to 1 year	4	3	3	4	4	80	H Improve Current Management
Indirect	Community complaints as a result of increased noise levels and visual impacts	2	2	2	3	3	36	ML Maintain Current Management	Minimise impacts on surrounding communities as a result of noise and visual intrusions.	 The area should be restored to pre-construction conditions after closure as far as feasible unless different end-land uses have been identified as part of the overall closure planning for the Styldrift No 1. Shaft operation. Construction and decommissioning activities to take place during the following periods 06h00 to 22h00, as far as possible; A complaints register will be kept on site. This register will capture all complaints received from the local communities. Complaints will be dealt with swiftly and timeously; The ore conveyor will be constructed with wind loops in order to strive to prevent the ore from being blown off by strong winds as well as to endeavour to prevent people riding on the ore conveyor. 	1 month to 1 year	1	2	2	2	2	20	L No Management Required
Direct	Movements of local villagers and their livestock may be negatively impacted on.	3	2	2	2	2	28	ML Maintain Current Management	Protect local livestock.	 Pedestrian / animal crossing will be constructed to allow for people and animals to cross the route of the ore conveyor. Migration routes of livestock will not be hindered during construction; 	1 month to 1 year	2	2	2	2	1	18	L No Management Required
Indirect	Accidents as a result of increased traffic in the area.	3	3	2	2	1	24	L No Management Required	Ensure the safety of	 Restriction of construction project transport speed on surrounding gravel roads to 20 km/h; Flag men will be used where practical to direct traffic around the area. 	1 month to 1 year	2	1	2	1	2	15	L No Management Required
Direct	Safety risk of local community members due to construction activities.	3	3	3	2	2	36	ML Maintain Current Management	local communities during construction activities.	 9. Project areas will be fenced off to restrict unauthorised access to the ore conveyor and relevant signage posted; 10. A cattle crossing will be constructed within the land classified as grazing land for the movement of local livestock. 	1 month to 1 year	2	2	2	2	2	24	L No Management Required
Noise In	pacts	1	1	1	1		-		-	11. Mashinany with law pains lovels which complian			1			[
Direct	during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats.	2	2	2	3	3	36	ML Maintain Current Management		 with the manufacturer's specifications to be used; 12. The Styldrift No.1 Shaft noise monitoring programme will be amended to include sensitive receptors in close proximity to the proposed conveyor; Noise monitoring will be conducted on 	1 month to 1 year	2	2	2	2	2	24	L No Management Required
Direct	Delivery and testing of equipment to site resulting in increased noise levels.	2	2	2	2	2	24	L No Management Required	Minimise noise emissions during construction.	 a quarterly basis; 13. Transfer station to be screened off from the residential area to the east and south; 14. The side of the Conveyor facing Mafenya to be screened of with IBR sheeting; 15. A noise management plan must be devised to minimise noise emissions during construction; A register will be kept at the construction project site office whereby all issues and concerns raised by the community will be recorded; 	1 month to 1 year	1	1	2	2	2	16	L No Management Required

					ENVIRO	ONMENTA BEFORE M	AL SIGNIFICANC	E		IMPACT MANAGEMENT ACTIONS (PROPOSED I	MITIGATION	l	IMPAC	TMAN	AGEME	NT OUTO AFTE	COME (ENVIRONMEN ⁻ ER MITIGATION)	TAL SIGNIFICANCE
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TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceabl e loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Topogra	aphy Impacts	1		-		-	T		1		1	1	1	-		T	1	
Direct	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	3	3	2	3	3	48	MH Maintain Current Management	Minimise change in landscape and sense of place.	 Keep disturbed areas to a minimum. No unnecessary vegetation removal will be conducted as part of the project; Camp sites will be screened; Effective waste management practices will be undertaken. The Styldrift No.1 Shaft Waste Management Plan will be enforced at the construction site; The ore conveyor site area must be cleared of all rubble and litter after construction, and kept neat and tidy during construction; Bare and compacted surfaces resulting from the construction activities of the proposed ore conveyor must be rehabilitated as soon as possible with indigenous vegetation that will be able to grow in the area 	1 month to 1 year	2	1	1	2	2	16	L No Management Required
Visual Ir	npacts	1		1		T	-			20 Viewel concete offersted by the establishment of		1	1	1				
Direct	Visual intrusion as a result of the movement of machinery and the erection of contractor camps.	3	3	2	3	3	48	MH Maintain Current Management		 Visual aspects affected by the establishment of the proposed ore conveyor will be mitigated and managed according to established construction activity management controls applied by RBPlat. These will include the use of materials able to camouflage the conveyor as far as feasible to the surrounding environment; Management measures should be in place at all times for litter and dust generated from the project activities relating to the construction phase of the ore conveyor; All lights used for illumination (except for lighting associated with security) should be faced inwards and shielded to avoid light escaping above the horizon 	1 month to 1 year	1	1	1	1	1	6	L No Management Required
Indirect	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	3	4	3	3	3	60	MH Maintain Current Management	To minimise visual disturbance and sense of place.	 23. The ore conveyor site area must be cleared of all rubble and litter after construction, and kept neat and tidy during construction; 24. The construction footprint demarcated at the onset on construction of the ore conveyor will be kept as small as possible; 25. The area should be restored to pre-ore conveyor conditions after closure, unless different end-land uses have been identified as part of the overall closure planning for the Styldrift Mine Complex operation; 26. Demolish and remove all infrastructure not required post-closure, this will include the cement base of the ore conveyor as well as the surface infrastructure. 	1 month to 1 year	2	2	2	2	2	24	L No Management Required
Direct	Change in sense of place as a result of the construction activities, camps and machinery.	3	3	2	4	2	48	MH Maintain Current Management		 27. Natural vegetation, wherever possible, must be retained within the ore conveyor construction site area, recognising that fire breaks will need to be constructed to protect the integrity of the ore conveyor; 28. Construction site will have screened from sensitive receptors and rubble removed from site on a daily basis. 	1 month to 1 year	1	2	2	2	1	15	L No Management Required

					ENVIR	ONMENTA BEFORE M	AL SIGNIFICANC MITIGATION	E		IMPACT MANAGEMENT ACTIONS (PROPOSED N	MITIGATION		IMPAC	T MAN	AGEME	NT OUT	COME (ENVIRONMENT ER MITIGATION)	AL SIGNIFICANCE
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TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	 Significance (Degree to which impact may cause irreplaceabl e loss of resources) 	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Air Qual	ity Impacts	1	1		1					20 Degular irrigation by water conscielly during	Γ		1	1				
Direct	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing.	3	2	2	3	4	49	MH Maintain Current Management	Minimise emissions to the atmosphere impacting on employees, local land users, and	 29. Regular irrigation by water especially during windy conditions at the site, access road and construction material and debris with just enough moisture to keep the dust down without creating significant runoff; 30. Should water not be available as a result of drought conditions then chemical suppressants need to be considered; 31. Reduction of speed on unpaved roads to reduce the entrainment of dust into the atmosphere. During grading activities, any exposed earth should be watered if it is going to be exposed for long periods of time; 32. Sufficient firefighting equipment should be made available during all phases of the project in accordance with the Mine Health and Safety Act (Act No. 29 of 1996). 	1 month to 1 year	2	2	2	2	2	24	L No Management Required
Direct	Dust emissions as a result of site preparation	1	2	4	3	2	35	ML Maintain Current Management	climate change.	33. If dust generating material such as soil, waste rock is hauled from the site, vehicles should be covered with a tarpaulin to reduce spillages; On windy days, or when fugitive dust is dispersed from the Site of Works, additional application of water to the affected areas should be applied.	1 month to 1 year	1	2	2	2	1	15	L No Management Required
Indirect	Increase in carbon emissions and ambient air pollutants (NO2 and SO2) as a result of movement of vehicles and operation of machinery/equipment.	3	3	2	2	2	32	ML Maintain Current Management		 34. Engine idle speeds during operating times should be reduced; 35. Where applicable, use a fuel sources with low sulphur content; 36. Ensure regular servicing and maintenance of all combustion engine operated machinery. 	1 month to 1 year	2	1	1	2	1	12	L No Management Required
Soil, Lar	nd Use and Land Capability	-			-	1		B.C.I			T		<u> </u>					
Direct	Loss of soil resources as a result of vehicle movement and oil spills that may cause soil compaction.	3	3	2	2	2	32	M∟ Maintain Current Management	Prevent soil contamination and	37. The activities of construction contractors or employees will be restricted to the planned areas. Instructions must be included in contracts that will restrict construction work and construction	1 month to	2	2	2	2	2	24	L No Management Required
Direct	Loss of soil resources as a result of soil striping and stockpiling.	3	3	3	3	3	54	MH Maintain Current Management	ensure rehabilitation of contamination.	workers to the clearly defined limits of the construction site. In addition, compliance to these instructions must be monitored.	1 year	2	2	2	2	2	24	L No Management Required

					ENVIF	RONMENT BEFORE	AL SIGNIFICANC MITIGATION	E		IMPACT MANAGEMENT ACTIONS (PROPOSED N	IITIGATION		IMPAC	T MAN	AGEME	NT OUTO AFTE	COME (ENVIRONMENT ER MITIGATION)	TAL SIGNIFICANCE
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TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	(Degree to which impact may cause irreplaceabl e loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Direct	Change in current soil hydrological properties and functionality of soil as a result of compaction and soil sterilisation.	3	3	3	3	3	54	MH Maintain Current Management		 38. Existing established roads should be used wherever possible to prevent spillages, no diesel or oil should be stored on site, other than what is required for work undertaken during the course of 1 day, unless authorised by the Environmental Control Officer (ECO) where such storage can be appropriately controlled; 39. Spill response procedures must be clearly defined and well known by all construction staff. Records must be kept of training done on each contractor's spill response procedure; 40. Topsoil should never be used as a filling material for roads; 41. Spillages of oil, grease and hydraulic fluids will be cleaned up by removing the affected soil and disposing it at an appropriate facility; 42. If soil is significantly contaminated then this soil will be considered as potentially hazardous and handled according to the waste management procedure, and the Norms and Standards for the Remediation of Contaminated Soil under the NEM: WA, or any other Act or Regulations promulgated at that time. 43. Following re-vegetation, the site should be monitored and maintained until an acceptable, self-sustaining vegetation cover has been achieved. If a self-sustaining vegetation cover has been achieved. If a self-sustaining vegetation and implemented 		2	2	2	2	2	24	L No Management Required

					ENVIRC B	ONMENTA	L SIGNIFICANCI	-		IMPACT MANAGEMENT ACTIONS (PROPOSED N	ITIGATION		IMPAC	T MAN	AGEME	NT OUTO AFTE	COME (ENVIRONMENT ER MITIGATION)	TAL SIGNIFICANCE
		Со	nsequ	uence	Like (Pro	elihood bability)	Significance			MEASURES)	_	Co	nsequ	ence	Like (Prob	lihood ability)		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	(Degree to which impact may cause irreplaceabl e loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Direct	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients	3	3	2	2	2	32	ML Maintain Current Management	Minimise loss of Soil resources	 44. Soil will be stripped only from all areas to be disturbed. Topsoil should be stripped appropriate to the depth to facilitate the laying of the foundations and civil works for the ore conveyor super-structure. 45. Topsoil and subsoil will be stockpiled on the existing Styldrift No.1 Shaft soil stockpile for use during rehabilitation; 46. The service road should be designed with a camber to avoid ponding and to encourage drainage to side drains; where necessary, culverts should be installed to permit free drainage of existing water courses. The side drains of the roads can be protected with sediment traps and/or gabions to reduce the erosive velocity of water during storm events and where necessary geo-membrane lining can be used; 47. Equipment movement on the soil stockpiles will be limited to avoid topsoil compaction; 48. Areas disturbed temporarily during the construction phase, such as laydown areas, should be rehabilitated directly after the completion of construction; 49. Should erosion become evident during construction, additional erosion control measures will be employed immediately to prevent sedimentation of surrounding watercourses; 50. Vegetation clearance should not be conducted earlier than required (maintain vegetation cover for as long as possible) in order to prevent the erosion (wind and water) of organic matter, clay and silt; 51. Using drainage control measures and culverts to manage the natural flow of surface runoff; 	1 month to 1 year	2	2	2	2	2	24	L No Management Required

					ENVIRO		AL SIGNIFICANC	E		IMPACT MANAGEMENT ACTIONS (PROPOSED I	MITIGATION		IMPAC	T MAN	AGEME	NT OUTO	COME (ENVIRONMENT	TAL SIGNIFICANCE
		Co	onseq	uence	Like	elihood bability)				MEASURES)		Co	nsequ	ence	Like (Prob	lihood		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceabl e loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Biodiver	rsity																	
Direct	Disturbance of vegetation and faunal species.	3	3	2	2	2	32	ML Maintain Current Management	Minimise loss of vegetation and floral	 52. A botanist will do a final walk down of the site, prior to site clearing to identify any threatened or protected species (TOPS) specified by the NEM: Biodiversity act (2004) for relocation prior to site clearance; 53. If herbicides need to be used to control the spread of invasive plants, only herbicides approved by the National Department of Agriculture should be used. 	1 month to 1 year	2	1	2	2	2	20	L No Management Required
Direct	Loss of vegetation as a result of site clearance.	3	3	2	2	2	32	ML Maintain Current Management	habitats	 54. No fires are allowed on the site, unless in areas demarked and managed for this purpose; 55. Areas of disturbance should not encroach within 100 m of any identified wetland or water course without appropriate mitigation and management. All RBPlat personnel and contractors appointed by RBPlat will be made aware of this commitment during induction. 	1 month to 1 year	2	1	2	2	2	20	L No Management Required
Direct	Loss of faunal habitat and ecological structure as a result of site clearing, alien invasive species, erosion, and general construction activities	2	2	3	3	3	42	MH Maintain Current Management	Protection of indigenous vegetation	 56. Collection of firewood will be prohibited except where provided for by mine management. All project personnel (including contractors) will be devised accordingly during induction; 57. No hunting activities will be practised by the construction workers. Any animal purposefully killed by an employee will result in disciplinary action; 58. All declared alien weeds will be removed and effectively controlled as part of the alien plant eradication and control programme; 59. In the event of a vehicle breakdown, maintenance of vehicles must take place with care and the recollection of spillage should be practiced near the surface area to prevent ingress of hydrocarbons into topsoil and subsequent habitat loss; 60. The occurrence of erosion is to be monitored on a regular basis during the construction phase of the project and remedial action taken immediately if noted. 	1 month to 1 year	1	1	2	3	3	24	L No Management Required
Direct	Habitat fragmentation as a result of construction activities of the conveyor leading to loss of floral diversity.	2	2	3	3	3	42	MH Maintain Current Management	Prevent impacts on floral diversity	 Migration paths will be maintained during construction. The linear are will not totally limit movement of animals between north and south. 	1 month to 1 year	2	1	2	2	2	20	L No Management Required
Indirect	Failure to initiate a rehabilitation plan and alien control plan during the construction phase may lead to further impacts during the operation phase.	2	2	2	3	3	36	ML Maintain Current Management	Ensure pre- construction ecology is restored as far as practical.	 62. All declared alien weeds will be removed and effectively controlled as part of the alien plant eradication and control programme; 63. A rehabilitation plan must be compiled for post construction activities; 64. Disturbed area will be concurrently rehabilitated during construction so as to limit the amount of rehabilitation work required post construction. 	1 month to 1 year	2	2	2	2	2	24	L No Management Required
Surface	and Ground Water			1						65 Should uncontrolled grasion be evident in grace						T	1	
Direct	Potential impact on sedimentation and pollution of the Bonwakgogo stream as a result of runoff during construction activities.	2	3	3	2	2	32	ML Maintain Current Management	Minimise impacts on local water resources as a result of sedimentation and pollution.	 60. Should allocation de evident in aleas affected by the ore conveyor project, erosion control measure will be implemented. Undue sedimentation of nearby streams must be prevented; 66. Clean and dirty water separation and compliance with Regulation 704 of the NWA will be upheld as necessary; 67. Runoff velocity will be controlled should sedimentation and erosion become evident 	1 month to 1 year	2	2	2	2	2	24	L No Management Required

				I	ENVIRC B	NMENTA	AL SIGNIFICANCE	E		IMPACT MANAGEMENT ACTIONS (PROPOSED N	IITIGATION	I	MPAC	T MAN	AGEMEI	NT OUTO AFTE	COME (ENVIRONMENT ER MITIGATION)	AL SIGNIFICANCE
		Co	onsequ	lence	Like (Pro	elihood bability)	Cinnificance			MEASURES)		Co	nseque	ence	Likel (Prob	lihood ability)		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceabl e loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Direct	Impact on the wetlands systems as a result of changes to the sociocultural service provisions	2	3	3	2	2	32	ML Maintain Current Management		 68. All stormwater drains and culverts in areas affected by the ore conveyor route will be kept clear of obstructions; 69. Provision of appropriate sanitation facilities during the construction and decommissioning phase (one toilet for 15 staff members). These should be maintained and cleaned on a regular basis. The appropriate sewage facilities will be located within the demarcated ore conveyor footprint construction area and not within with the 1:100-year flood line or 100 m (whichever is the greatest) of the Bonwakgogo Stream. 	1 month to 1 year	2	2	2	2	2	24	L No Management Required
Direct	Contamination of surface and groundwater due to incorrect handling and disposal of waste materials and oil leaks from equipment and machinery.	2	3	2	2	2	28	ML Maintain Current Management		 No soil, rubble or any other material may be deposited in or within 32 m of the water courses at any time in areas affected by the ore conveyor route; The contractor will implement controls to remediate oil/diesel leaks and spillages from hazardous waste in areas affected by the ore conveyor construction; Spill kits are to be made permanently available at areas of possible spillages of hazardous substances in areas affected by the ore conveyor route construction footprint; Remediation of spillages must be conducted within 24 hours, as far as practical, or appropriately managed to control residual impact on the external environment; No wastewater or waste will be disposed of into the surrounding environment at any time during the construction and operational phases of the ore conveyor project; Vehicle repairs / maintenance will not take place in the footprint area of the ore conveyor route, unless the repair / maintenance can only be undertaken in that area, and for which appropriate environment facilities; Drip trays will be placed underneath vehicles and machinery waiting for maintenance or repair; Prior to the start of a shift on a daily basis, vehicles must be checked for potential leaks and ground / soil pollution (hydrocarbon spillages); Environmental incidents posing a risk to the receiving environment must be reported within 24 hrs to the Project Manager; Oil and diesel will be stored in areas that are bunded to contain 1.25 times the volume of the largest tank where more than one tank is included in a bunded area; 	1 month to 1 year	1	2	2	2	2	20	L No Management Required

				E	ENVIRC B	NMENTA EFORE M	L SIGNIFICANC	E			IMPACT MANAGEMENT ACTIONS (PROPOSED I	MITIGATION		IMPAC	T MAN	AGEME	NT OUT	COME (ENVIRONMENT ER MITIGATION)	
		Co	nsequ	ience	Like (Prol	lihood					MEASURES)		Co	nseque	ence	Like (Prob	lihood		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceabl e loss of resources)	Significance Rating	Impact Management Objective		Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Indirect	Increased runoff due to topsoil removal and vegetation clearance leading to possible erosion and sedimentation of riparian resources	3	3	2	3	2	40	MH Maintain Current Management	Conserve water resources and prevent undue sedimentation.	8 8 8 8 8	 Minimise the areas that are to be stripped of vegetation; Adequate storm water management should be considered in the detailed design of the proposed infrastructure in order to minimize undue erosion; Erosion can also be limited by ensuring that mine vehicles and human movement is limited to project specific dedicated access ways; Stormwater culverts and clean water diversions will be designed and constructed to accommodate the 1:50 year storm event around the mining areas; Stormwater runoff will be directed towards natural watercourses; 	1 month to 1 year	2	2	2	2	2	24	L No Management Required
Indirect	Soil compaction and levelling as a result of construction activities and vehicle movement leading to loss of riparian habitat	4	3	3	2	3	50	MH Maintain Current Management	-	8	 The ore conveyor footprint areas will be free draining to ensure that the ore conveyor does not unduly affect the catchments yield; Vehicles will only move along designated areas. Driving in undisturbed areas is prohibited; Erosion can also be limited by ensuring that mine vehicles and human movement is limited to project specific dedicated access ways; 	1 month to 1 year	1	2	3	2	2	24	L No Management Required
Heritage	e Impacts																		
Direct	Possible disturbance of areas of Archaeological importance.	2	2	2	2	2	24	L No Management Required	Conserve heritage artefacts and buildings.	8	 Care should be taken that, when development commences, if any archaeological and/or historical sites are discovered, a qualified archaeologist be called in to investigate the occurrence 	1 month to 1 year	1	1	1	1	1	6	L No Management Required
Palaeon	tology Impacts												<u>1</u>				1		
Direct	Possible disturbance of areas of Palaeontology importance.	2	2	2	2	2	24	L No Management Required	Conserve Palaeontology artefacts.	8	 Construction workers will be made aware of the requirement to report paleontological discoveries during construction and decommissioning phases of the ore conveyor. This will be achieved during induction; Any palaeontological material is exposed during digging or excavating, SAHRA must be notified. All development activities must be stopped, and a palaeontologist should be called in to determine proper mitigation measures, especially for shallow caves. 	1 month to 1 year	1	1	1	1	1	6	L No Management Required
Vibratio	n Impacts																		
No impact	ts associated with vibration are exp / Impacts	ected	as no	blasting	activitie	s will take	place.												
No impact	ts anticipated on geology as a resul	It of the	e esta	olishmer	nt of the	conveyor													
Traffic In	mpacts					,													
Direct	Impact on traffic during the construction of the conveyor, resulting in the increased risk of accidents and traffic congestion.	2	2	2	2	3	30	ML Maintain Current Management	Minimise traffic disturbances	9 9 9	 Flag men will be used during construction activities to ensure the safety of all road users; Local communities will be notified on the planned construction and the traffic routes contractors will be utilising; Contractors will be informed on the sensitivity around fauna and flora specie in the area and the importance of keeping to existing routes. 	1 month to 1 year	1	2	2	2	2	20	L No Management Required
Climate	Impacts				T						A Plant and machinen/ will be maintained as that as		T	1					
Direct	Emissions of Green House Gases as a result of the use of plant, heavy moving machinery, generators etc.	2	2	2	1	2	18	L No Management Required	Reduce Green House Gas Emissions.	9	 Hant and machinery will be maintained so that no unnecessary emissions are expelled; Appropriate technology and machinery will be utilised for the job at hand; A Green House Gas Emissions assessment will be calculated as part of the initiative to reduce greenhouse gas emissions. 	Life of Operation	2	1	1	1	1	8	L No Management Required

				E	ENVIRC B	NMENTA	L SIGNIFICANC	E		IMPACT MANAGEMENT ACTIONS (PROPOSED M			MPAC	T MANA	GEMEN		OME (ENVIRONMENT	AL SIGNIFICANCE
		Со	nsequ	ience	Like (Prol	elihood bability)	Significance			MEASUREŜ)		Co	nseque	ence	Likeli (Proba	hood ability)		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	(Degree to which impact may cause irreplaceabl e loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Cumulative Impacts																		
Indirect	Increased generation of dust within the local area	2	3	2	3	2	35	ML Maintain Current Management	Minimise dust generation in the area			2	2	2	2	2	24	L No Management Required
Indirect	Reduced land availability for agricultural use	2	3	2	3	2	35	ML Maintain Current Management	To minimise cumulative loss of	97. Through the implementation of all the above- mentioned mitigation measures, the overall significance of the activity's impact can be lowered to LOW.	Life of Operation	2	2	2	2	2	24	L No Management Required
Indirect	Increased loss of indigenous vegetation and loss of soil resources.	2	3	2	3	2	35	ML Maintain Current Management	natural vegetation in the region.			2	2	2	2	2	24	L No Management Required
In terms o potential.	f the overall construction phase it is	1 I I I I I I I I I I I I I I I I I I I													diversity,			

The operational phase of the project relates to the running of the conveyor belt for the transportation of ore to the Maseve Platinum Mine, as well as the use of the service and maintenance road alongside the conveyor. *Adhoc* vegetation removal and control will be exercised to eliminate any fire risk. The impacts associated with the operational phase are as follows:

Direct impacts associated with the operational phase:

- Potential positive impact associated with possible permanent employment opportunities;
- Potential increased noise levels during operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt;
- Potential visual impact as Chaneng and Mafenya Villages will experience close up and unobstructed views of the corridor which will have a significant intrusive impact on the landscape east and west of the village;
- Impact on floral diversity because of increased alien species proliferation and ongoing edge effects from maintenance operations. The specialist studies confirm that aspects and impacts can be mitigated and managed for the execution of the project;
- Loss of faunal diversity and ecological integrity because of alien species proliferation, poaching, and collision of vehicles with animals;
- Generation of waste and incorrect disposal from construction material leading to disturbance of boundary natural vegetation;
- Scaring of the landscape because of the clearance of vegetation and preparation of the proposed conveyor;

The specialist studies confirm that aspects and impacts can be mitigated and managed for the execution of the project.

Indirect impacts associated with the operational phase:

- Community complaints because of increased noise levels and visual impacts;
- Dust emissions associated with operational activities.
- Potential soil contamination due to incidental spillage during storage;
- Potential soil contamination due to incidental spillages of hazardous waste during handling and transportation;
- Potential soil contamination due to incorrect handling and disposal of waste materials;
- The potential impact of increase soil erosion may occur because of surface water runoff
- Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area;
- Potential contamination of groundwater due to incidental spillage of hazardous waste during transport and handling;
- Potential contamination of groundwater due to spillage of hazardous waste during storage;
- Potential contamination of groundwater due to incorrect handling and disposal of waste materials;

• Visual impact due to dust generation as a result of the movement of vehicles and materials, to and from the site area.

Cumulative impacts:

Limited cumulative negative environmental impact is anticipated with the operational phase of the conveyor.

Regional economic benefits due to success and on-going operation of the Styldrift No.1 Shaft, as the conveyor is required for optimum operation of the Styldrift No.1 Shaft.

The project will contribute to the National and North West Provincial economy in terms of an increase in Gross Domestic Product (GDP) due to the R11.8 billion capital expenditure of the Styldrift No. 1 Shaft. Mining has a dominant role in the economy of the North West Province employing a quarter of the labour force and contributing about 55% of its GDP with significant multiplier effects in the service and trade sectors.

The GDP of the BPD could increase by approximately 4.32 %because of the RBPlat operations in the area, while that of the Province could benefit by approximately 1.35 %. Although the project will have a high positive impact on the economy for a minimum of 25 years, the dependence of the province on a single district (BPD) for at least 31 % of its economic activity necessitates greater diversification at a provincial level.

The summary of the impact assessment during the operation phase is provided in Table 11.

Table 11: Impact Assessment Table for the Operation Phase

					E	NVIRON	MENTAL SIGNIFICA	NCE		IMPACT MANAGEMENT ACTIONS (PROPOSED N		1	MPAC [®]	T MAI	NAGEMI	ENT OUT	COME (ENVIRONMI	ENTAL SIGNIFICANCE
		Со	nsequ	ience	Like	elihood			-	MEASURES)		Со	nsequ	ence	Likel (Prob	lihood		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Socio - I	Economic Impacts	-	-	-	T	-							- -		T			
Direct	Potential positive impact associated with possible permanent employment opportunities.	3	3	4	2	3	50	MH Maintain Current Management	Maximise local employment opportunities.	 Implement RBPlat's employment policies to ensure appropriate benefits of employment opportunities and associated indirect economic benefits for the surrounding communities; Preference should be given to the employment of local labour wherever possible, subject to skills availability. 	Life of Operation	3	3	4	3	3	60	MH Maintain Current Management
Direct	Potential increased noise levels during operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt.	2	2	2	3	3	36	ML Maintain Current Management	Minimise noise emissions originating from the conveyor.	 The ore conveyor will be constructed with wind loops in order to strive to prevent the ore from being blown off by strong winds as well as to endeavour to prevent people riding on the ore conveyor; Directly affected and adjacent landowners and land occupiers must be informed of the planned construction activities and a grievance lodging mechanism must be made available to the stakeholders; Site activities shall be concluded during daytime hours (07h00 to 17h30), to avoid night time noise disturbances and night time collisions with fauna. 	Life of Operation	2	2	2	2	2	24	L No Management Required
Indirect	Community complaints as a result of increased noise levels and visual impacts.	2	2	2	3	3	36	ML Maintain Current Management		 A complaints register will be kept by RBPlat. Complains on noise emissions from the conveyor will be dealt with effectively and timeously; Enclosure of electric motor and equipment with IBR sheeting. 	Life of Operation	2	2	2	2	2	24	L No Management Required
Indirect	Movements of local villagers and their livestock will be negatively impacted on.	2	2	2	2	2	24	L No Management Required	Ensure safety of local communities and their livestock.	 Project areas will be fenced off to restrict unauthorised access to the ore conveyor and relevant signage posted; The cattle crossing will be maintained to ensure the pathway between north and south is not obstructed; Restriction of project transport speed on surrounding gravel roads to 20 km/h. 	Life of Operation	1	2	2	1	1	10	L No Management Required
Noise In	npacts			_		-					-				-			
Direct	Potential increased noise levels during operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt.	2	2	2	3	3	36	ML Maintain Current Management	Minimise noise emissions originating from the conveyor.	 A register will be kept at the Styldrift No.1 Shaft whereby all issues and concerns raised by the community will be recorded. 	Life of Operation	1	1	2	2	2	16	L No Management Required
Air Qual	lity Impacts	1	-	-	-	-							-	1	1	1 1		
Direct	Potential dust emissions from the conveyor while transporting ore to the Maseve Platinum Mine.	3	3	2	4	4	64	MH Maintain Current Management	Minimise dust emissions.	 n air quality dust nuisance associated specifically with the construction and operation of the ore conveyor is found to be problematic, then RBPlat or the construction contractor, as appropriate, will devise appropriate dust suppression methods to reduce dust generated by the ore conveyor; The Styldrift No. 1 Shaft Air Quality Monitoring programme will take cognisance of the proposed conveyor and its impacts on sensitive receptors; Bare ground associated with the ore conveyor construction footprint must be rehabilitated as soon as practical with indigenous vegetation that will be able to grow in the area; Compacted ground associated with the construction of the ore conveyor will be ripped and scarified in order to loosen the growth and allow for vegetation establishment; Maintain a moisture content of 5% to lower the probability of wind erosion and maintain lower dust concentrations. 	Life of Operation	1	1	1	4	1	15	L No Management Required

					E	NVIRONI BEF	MENTAL SIGNIFICAN	NCE		IMPACT MANAGEMENT ACTIONS (PROPOSED M	ITIGATION	IN	PACT	MAN	IAGEME	ENT OUT AFT	COME (ENVIRONME ER MITIGATION)	ENTAL SIGNIFICANCE
		Con	Isequ	ence	Like (Prot	lihood ability)	o			MEASURES)		Con	seque	nce	Likel (Proba	ihood ability)	0	
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
										 Maintain ore sizes at 350 mm, as potential for erosion from larger sources on the conveyor route will be lower; Periodic independent audits of the conveyor system to ensure effective housekeeping along the conveyor (cleaning spillages, the conveyor roof is secure, and ore transported on the conveyor is shielded from potential wind erosion. Ensure that all transfer points and conveyor belts are covered, where practical, in order to prevent wind from re-entraining dust into the atmosphere during ore transfer. Maintain existing covers. 								
Visual In	npacts		-		1	-	1		-									
Direct	Scaring of the landscape as a result of the construction of the proposed conveyor/	2	2	2	2	2	24	L No Management Required	Reduce the visual	 Natural vegetation, wherever possible, must be retained within the ore conveyor construction site area, recognising that fire breaks will need to be constructed to protect the integrity of the ore 	1 month to 1 year	1	1	1	1	1	6	L No Management Required
indirect	Indirect visual impact due to dust generation as a result of the movement of vehicles and materials, to and from the site area.	1	2	2	3	3	30	ML Maintain Current Management	impact on surrounding sensitive receptors.	18. Illumination will only be installed at the transfer points. No illumination will be put in place along the length of the ore conveyor, unless determined to be required for security purposes.	1 month to 1 year	1	1	1	2	2	12	L No Management Required
Soil, Lan	d Use and Land Capability In	mpac	ts															
Direct	Potential soil contamination due to incidental spillage during storage	3	2	2	3	3	42	MH Maintain Current Management	Prevent soil contamination and ensure rehabilitation of contamination.	 Access roads should be designed with a camber to avoid ponding and to encourage drainage to side drains; where necessary, culverts should be installed to permit free drainage of existing water courses: 	Life of Operation	1	2	2	2	2	20	L No Management Required
Direct	Potential soil contamination due to incidental spillages of hazardous waste during handling and transportation	2	2	3	2	2	28	ML Maintain Current Management		 The side drains of the roads can be protected with sediment traps and/or gabions to reduce the erosive velocity of water during storm events and where necessary 	Life of Operation	1	2	3	2	2	24	L No Management Required
Direct	Soil erosion at edge of the conveyor site, Bonwakgogo Stream, along access road and contamination due to spillages of oil, fuel and chemicals during maintenance.	2	3	2	2	2	28	ML Maintain Current Management		 geo-membrane lining can be used; Losses of fuel and lubricants from the oil sumps and steering racks of vehicles and equipment should be contained using a drip tray with plastic sheeting filled with absorbent material; No waste material (domestic or industrial) will be 	Life of Operation	1	2	3	2	2	24	L No Management Required
Direct	The potential impact of increase soil erosion may occur as a result of surface water runoff	2	3	3	2	2	32	ML Maintain Current Management	Minimise loss of Soil resources.	 placed on the soil stockpiles. Should this occur immediate remediation will be required; 24. Spill response procedures must be clearly defined and well known by all construction staff. Records must be kept of training done on each contractor's spill response procedure; 25. Spillages of oil, grease and hydraulic fluids will be cleaned up by removing the affected soil and disposing it at an appropriate facility; 26. If soil is significantly contaminated then this soil will be considered as potentially hazardous and handled according to the waste management procedure, and the Norms and Standards for the 	Life of Operation	2	2	2	2	2	24	L No Management Required

						EN		IENTAL SIGNIFICA	NCE		IMPACT MANAGEMENT ACTIONS (PROPOSED N	ITIGATION	IN	MPAC [®]	T MAN	NAGEMI	ENT OUT AF1	COME (ENVIRONMI FER MITIGATION)	ENTAL SIGNIFICANCE
		Cor	nsequ	ience		Likeli (Proba	hood ability)				MEASURES)		Cor	nsequ	ence	Likel (Proba	lihood abilitv)		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration		Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Direct	Soil contamination as a result of operational activities can be as a result of a number of activities (i.e. hazardous substance storage, incidental hydrocarbon leakages from construction vehicles).	3	2	3		3	2	40	MH Maintain Current Management	Prevent soil sterilisation and contamination.	 Remediation of Contaminated Soil under the Waste Act, or any other Act or Regulations promulgated at that time; 27. Weekly inspections of all surface water management infrastructure constructed from soil will be undertaken during periods of high rainfall and after major rain event; 28. any eroded areas were identified as a result of the monthly or weekly inspections of the surface water management infrastructure, these will be repaired as soon as possible or before the next inspection; 29. Following re-vegetation, the site should be monitored and maintained until an acceptable, self-sustaining vegetation cover has been achieved. If a self-sustaining vegetation cover has not established, a fertility analyses should be done on the relevant areas to be re-vegetated and fertiliser recommendations planned and implemented. 	Life of Operation	1	2	2	2	2	20	L No Management Required
Surface	and Groundwater Impacts	1	1	1	-										1		<u>г т</u>		
Direct	Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area	3	2	2		3	3	42	MH Maintain Current Management		 Erosion control measures will be implemented should it be evident that erosion has occurred; Establish vegetation around disturbed areas to prevent any erosion; Stormwater runoff will be handled on surface and directed towards natural watercourses. Clean and dirty stormwater runoff will be separated as per GN 704 in terms of the NWA; 	Life of Operation	1	2	2	2	2	20	L No Management Required
Direct	Potential contamination of groundwater due to incidental spillage of hazardous waste during transport and handling.	2	2	3		2	2	28	ML Maintain Current Management		 All stormwater drains and culverts in areas affected by the ore conveyor route will be kept clear of obstructions; Remediation of spillages must be conducted within 24 hours, as far as practical, or appropriately managed to control residual impact on the external environment. Should spills occur, these will be 	Life of Operation	1	2	3	2	2	24	L No Management Required
Direct	Potential contamination of groundwater due to spillage of hazardous waste during storage	2	3	2		2	2	28	ML Maintain Current Management	Minimise impacts to local water	contained and prevented from accessing local water courses;35. Rehabilitation measures will be monitored to ensure no undue erosion has occurred in areas.	Life of Operation	1	2	3	2	2	24	L No Management Required
Direct	Potential contamination of groundwater due to incorrect handling and disposal of waste materials	2	3	3		2	2	32	ML Maintain Current Management	resources.	 affected by the ore conveyor route, and disturbed areas have been appropriately re-vegetated, where determined to be necessary; 36. No soil, rubble or any other material may be deposited in or within 32 m of the water courses at any time in areas affected by the ore conveyor route; 37. No wastewater or waste will be disposed of into the surrounding environment at any time during the construction and operational phases of the ore conveyor project; 38. Incidents relating to the undue contamination of surface water with hydrocarbons and chemicals will be communicated to the Project Manager and Styldrift Management within 24 h and reported to DWS in accordance with a high significance and risk rating of the incident. 	Life of Operation	2	2	2	2	2	24	L No Management Required

						EN	VIRONI	MENTAL SIGNIFICA ORE MITIGATION	NCE		IMPACT MANAGEMENT ACTIONS (PROPOSED N	/IITIGATION	IN	IPACT	ENTAL SIGNIFICANCE				
		Co	nsequ	uence	e (I	Likeli Proba	hood ability)				MEASURES)		Cor	seque	ence	Like (Prob	lihood ability)		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration		Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Biodiver	rsity Impacts			-								-			1	1	1		
	Impact on floral diversity as a result of increased alien species proliferation and ongoing edge effects from maintenance operations.	3	3	2		2	2	32	ML Maintain Current Management		 39. Alien species will be eradicated within the footprint of the conveyor; 40. The existing roads will always be used wherever logically possible: 		1	2	2	2	2	20	L No Management Required
Direct	Continual disturbance of vegetation and fauna.	3	3	3		2	2	36	ML Maintain Current Management	Protection of floral and faunal habitats	 No vegetation may be harvested from the surrounding environment; Areas of disturbance should not encroach within 100 m of any identified wetland or water course without appropriate mitigation and management. All RBPlat personnel and contractors appointed by RBPlat will be made aware of this commitment during induction; No hunting activities will be practised by the construction workers. Any animal purposefully killed by an employee will result in disciplinary action. 	Life of Operation	2	2	2	2	2	24	L No Management Required
Direct	Generation of waste and incorrect disposal from construction material leading to disturbance of boundary natural vegetation.	2	2	3		2	2	28	ML Maintain Current Management	Resource impacts on natural habitats as a result of waste generation.	 If herbicides need to be used to control the spread of invasive plants, only herbicides approved by the National Department of Agriculture will be used; The Styldrift No. 1 Shaft Waste Management Procured will be enforced for all working at the conveyor. 	Life of Operation	1	1	2	2	2	16	L No Management Required
Direct	Loss of faunal habitat and ecological structure as a result of increased fires during operation and introduction of alien species, leading to transformation of the natural habitat	3	2	3		2	2	32	ML Maintain Current Management	Minimise the impact on the local faunal habitat and ecological structure.	 46. All declared alien weeds will be removed and effectively controlled as part of the alien plant eradication and control programme; 47. Fire breaks will be installed around the conveyor. 	Life of Operation	1	2	2	1	1	10	L No Management Required
Indirect	Loss of faunal diversity and ecological integrity as a result of alien species proliferation, poaching, and collision of vehicles with animals	3	3	2		2	2	32	ML Maintain Current Management	Minimise the loss of faunal diversity as a result of operational activities	 48. All soils compacted as a result of construction activities should be ripped and profiled. Special attention should be paid to alien and invasive plant control within these areas; 49. Hunting will be prohibited on site by all employees of RBPlat. 	Life of Operation	1	1	2	2	2	16	L No Management Required
Heritage	e Impacts	1	1								1		1	T	1	T			
Direct	Disturbance of areas of Archaeological importance	4	2	2	2	4	4	64	MH Maintain Current Management	Prevent destruction of Archaeological artefacts	50. Construction workers will be made aware of the requirement to report archaeological discoveries. This will be achieved during induction.	Life of Operation	2	2	2	2	2	24	L No Management Required

					E	NVIRON	MENTAL SIGNIFICA	NCE		INDACT MANAGEMENT ACTIONS (DOODOSED N		IN	IPACT		NAGEME			INTAL SIGNIFICANCE
		Cor	nsequ	ence	Like (Prot	⊔⊐⊡ lihood bability)				MEASURES)	IIIGATION	Con	seque	ence	Likel (Proba	ihood ability)		
TYPE OF IMPACT	POTENTIAL IMPACT DESCRIPTION IN TERMS OF ENVIRONMENTAL ASPECTS	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating	Impact Management Objective	Management and Mitigation Measures	Timeframe	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact	Significance (Degree to which impact may cause irreplaceable loss of resources)	Significance Rating
Palaeontology Impacts																		
Direct	Disturbance of areas of Palaeontology importance.	4	3	4	2	2	44	MH Maintain Current Management	Protection of Palaeontological findings	 Construction workers will be made aware of the requirement to report Palaeontology discoveries. This will be achieved during induction. 	Life of Operation	2	1	1	2	2	16	L No Management Required
Cumulat	ive Impacts																	
Indirect	Increased generation of dust within the local area	2	3	2	3	2	35	ML Maintain Current Management	To minimise air quality emissions and health impacts.			2	2	2	2	2	24	L No Management Required
Indirect	Reduced land availability for agricultural use	2	3	2	3	2	35	ML Maintain Current Management	To minimise cumulative loss of	52. Through the implementation of all the above- mentioned mitigation measures, the overall significance of the activity's impact can be lowered to LOW.	Life of Operation	2	2	2	2	2	24	L No Management Required
Indirect	Increased loss of indigenous vegetation and loss of soil resources.	2	3	2	3	2	35	ML Maintain Current Management	natural vegetation in the region.			2	2	2	2	2	24	L No Management Required
In terms of	of the overall operation phase it i	is ant	icipat	ed tha	at the s	ignifican	ce of the cumulativ	e impact will be MEDIUM	HIGH prior to mitigati	on								

The decommissioning and closure phase of the proposed project will result in the dismantling and removal of all infrastructure associated with the conveyor and subsequent rehabilitation of the entire footprint. The impacts envisaged from the decommissioning phase are similar to the construction phase. The construction phase EMPr and rehabilitation plan will be applicable during decommissioning of the conveyor.

Direct impacts associated with the decommissioning and closure phase:

- Decommissioning of the conveyor belt will be associated with the decommissioning of the No. 1 Shaft which will result in a large number of people being retrenched;
- Potential dust emissions associated with the decommissioning of the conveyor belt and associated infrastructure;
- Noise impacts during decommissioning activities.

Indirect impacts associated with the decommissioning and closure phase:

- Contamination of surface and groundwater due to incorrect handling and disposal of waste materials;
- Contamination of soil due to incorrect handling and disposal of waste materials;
- The potential impact of increased soil erosion may occur because of surface water runoff and insufficient rehabilitation.

Cumulative impacts:

Limited cumulative negative environmental impact is anticipated with the decommissioning and closure of the conveyor area.

vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

All the identified potential impacts were assessed according to the following Impact Assessment Methodology as described below. This methodology has been utilised for the assessment of environmental impacts where the consequence (severity of impact, spatial scope of impact and duration of impact) and likelihood (frequency of activity and frequency of impact) have been considered in parallel to provide an impact rating and hence an interpretation in terms of the level of environmental management required for each impact.

The first stage of any impact assessment is the identification of potential environmental activities^{2,} aspects³ and impacts which may occur during the commencement and implementation of a project. This is supported by the identification of receptors⁴ and resources⁵, which allows for an understanding of the impact pathway and an assessment of the sensitivity to change. Environmental impacts⁶ (social and biophysical) are then identified based on the potential interaction between the aspects and the receptors/resources.

The significance of the impact is then assessed by rating each variable numerically according to defined criteria as outlined in Table 12. The purpose of the rating is to develop a clear understanding of influences and processes associated with each impact. The severity⁷, spatial scope⁸ and duration⁹ of the impact together comprise the consequence of the impact and when summed can obtain a maximum value of 15. The frequency of the activity¹⁰ and the frequency of the impact¹¹ together comprise the likelihood of the impact occurring and can obtain a maximum value of 10. The values for likelihood and consequence of the impact are then read off a significance rating matrix table as shown in Table 12. This matrix thus provides a rating on a scale of 1 to 150 (low, medium low, medium high or high) based on the consequence and likelihood of an environmental impact occurring.

²An *activity* is a distinct process or task undertaken by an organisation for which a responsibility can be assigned. Activities also include facilities or pieces of infrastructure that are possessed by an organisation.

³An *environmental aspect* is an 'element of an organisations activities, products and services which can interact with the environment'. The interaction of an aspect with the environment may result in an impact.

⁴*Receptors* comprise, but are not limited to people or man-made structures.

⁵*Resources* include components of the biophysical environment.

⁶*Environmental impacts* are the consequences of these aspects on environmental resources or receptors of particular value or sensitivity, for example, disturbance due to noise and health effects due to poorer air quality. Receptors can comprise, but are not limited to, people or human-made systems, such as local residents, communities and social infrastructure, as well as components of the biophysical environment such as aquifers, flora and palaeontology. In the case where the impact is on human health or well-being, this should be stated. Similarly, where the receptor is not anthropogenic, then it should, where possible, be stipulated what the receptor is.

⁷Severity refers to the degree of change to the receptor status in terms of the reversibility of the impact; sensitivity of receptor to stressor; duration of impact (increasing or decreasing with time); controversy potential and precedent setting; threat to environmental and health standards.

⁸Spatial scope refers to the geographical scale of the impact.

⁹Duration refers to the length of time over which the stressor will cause a change in the resource or receptor.

¹⁰*Frequency of activity* refers to how often the proposed activity will take place.

¹¹*Frequency of impact* refers to the frequency with which a stressor (aspect) will impact on the receptor.
Natural and existing mitigation measures, including built-in engineering designs, are included in the premitigation assessment of significance. Measures such as demolishing of infrastructure, and reinstatement and rehabilitation of land, are considered post-mitigation.

Table 12: Criteria for Assessing Significance of Impacts

SEVERITY OF IMPACT Insignificant / non-harmful Small / potentially harmful Significant / slightly harmful Great / harmful Disastrous / extremely harmful	RATING 1 2 3 4 5	
SPATIAL SCOPE OF IMPACT Activity specific Project area specific (within the prospecting area boundary) Local area (within 5 km of the mine boundary) Regional (Municipal area)	RATING 1 2 3 4	CONSEQUENCE
DURATION OF IMPACT One day to one month One month to one year One year to ten years Life of operation Post closure / permanent	RATING 1 2 3 4 5	
FREQUENCY OF ACTIVITY / DURATION OF ASPECT Annually or less / low 6 monthly / temporary Monthly / infrequent Weekly / life of operation / regularly	RATING 1 2 3 4	
FREQUENCY OF IMPACT Almost never / almost impossible Very seldom / highly unlikely Infrequent / unlikely / seldom Often / regularly / likely / possible Daily / highly likely / definitely	RATING 1 2 3 4 5	

Co	Consequence														
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
2		4	6	8	10	12	14	16	18	20	22	24	26	28	30
3		6	9	12	15	18	21	24	27	30	33	36	39	42	45
4		8	12	16	20	24	28	32	36	40	44	48	52	56	60
5		10	15	20	25	30	35	40	45	50	55	60	65	70	75
6		12	18	24	30	36	42	48	54	60	66	72	78	84	90
7		14	21	28	35	42	49	56	63	70	77	84	91	98	105
8		16	24	32	40	48	56	64	72	80	88	96	104	112	120
9		18	27	36	45	54	63	72	81	90	99	108	117	126	135
10		20	30	40	50	60	70	80	90	100	110	120	1	140	150
	_		-												
			High			76 to	150	Impro	ove cur	rent ma	nageme	nt			
			Mediu	um Higl	n	40 to	75	Maint		ront mo	222	ant.			
			Mediu	um Low	1	26 to	39	wan	an cur	rent ma	nageme	FIIL			
			Low			1 to 2	5	No m	anager	ment rec	quired				
SI	GNI	FICAN	ICE = C	ONSE	QUEN	CE x LI	KELIHO	DOD							

vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

The impacts of the proposed site layout will be the same as those of the alternative sites that may be identified for the proposed project. The proposed site was identified based on the location of sensitive environments. Limited location alternatives could be considered as the conveyor belt must link into the existing conveyor belt at a 90-degree angle and destine at the Maseve Platinum Mine.

The proposed activities have medium to low significance impacts, which will be short term activities in nature. The probability of occurrence of an impact was determined and most of the activities can be controlled and impacts can be reduced or avoided.

Feasibility studies proved that hauling of ore to the Maseve Platinum Mine was technically and economically unviable. The transportation of ore via the proposed conveyor is a safer option than transporting the ore via road. The conveyor system is also a better option in terms of air quality due to reduced dust and exhaust emissions from transport vehicles.

The proposed conveyor extension from the existing Styldrift No. 1 Shaft to the Maseve Platinum Mine is required for the transportation of ore mined at the Styldrift No. 1 Shaft to the Maseve Platinum Mine for concentrator plant for processing. This conveyor was seen as more technically, environmentally and economically feasible compared to trucking of the ore via road. No rail network existing in the immediate surroundings, thus eliminating, this means of transport as an alternative. As the Maseve Platinum Mine has an existing concentrator plant, it is more feasible to transport the ore to Maseve, than construct an entire new concentrator plant at the Styldrift No 1. Shaft or BRPM, which may require a full EIA, due to the magnitude of impacts.

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

Please refer to Section v) and Table 10 and Table 11 which details the impact assessment and management measures that have been proposed to reduce the impact significance. A consolidated comments and response report can be found in Appendix D.

ix) Motivation where no alternative sites were considered.

Limited reasonable and feasible alternatives existed for the proposed conveyor belt. The conveyor belt is an extension of the existing Styldrift No. 1 Conveyor belt and therefore needs to tie into the existing belt at a 90-degree angle and destine at the Maseve Platinum Mine Processing Plant. An existing Mid Drive has been constructed on the existing Styldrift No. 1 conveyor belt, which has determined the tie-tin of the proposed extension. It is for this reason that no location alternatives can be considered.

Other alternatives have been taken cognisance of, for example, the use of road or rail, as well as the processing of the ore at Styldrift No.1 Shaft of BRPM. These options have been deemed economically and environmentally unfeasible. These alternatives would require a Full EIA and EMPr. As the full EIA/EMPr has been designed to cater for activities that have significant impacts on the receiving environment, and the impacts are not easily determined, it is concluded that the conveyor, which triggers a basic assessment, is the most viable option.

x) Statement motivating the alternative development location within the overall site. (Provide a statement motivating the final site layout that is proposed)

Please refer to Section ix) above, which gives a detailed description of the motivation for the proposed footprint.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. (Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

In order to identify the potential impacts associated with the proposed project activities, and to identify the potential impacts associated with the proposed project activities, the following steps were undertaken:

 The stakeholder consultant process is currently being undertaken in a manner to be interactive, providing the landowners and identified stakeholders with an opportunity to provide input into the project. This is considered a key focus as the local residents have capabilities of providing sitespecific information, which may not be available in desktop research material. Stakeholders were requested, as part of the notification letter, to provide their views on the project, and to state any potential concerns they may have. All comments and responses provide will be collated into the Comments and Responses Register, which will be attached to the final BAR, and will also be incorporated into the final impact assessment.

- A detailed desktop study was undertaken to determine the environmental setting in which the project is located. Based on the desktop investigations, various resources were used to determine the significance and sensitivity of the various environmental considerations. The desktop investigation involved the use of:
 - o The SANBI Biodiversity Geographic Database Land Use Decision System;
 - The Department of Environmental Affairs (DEA) 2015 Landcover and Land Use Mapping Database;
 - Department of Water and Sanitation information documents such as the Internal Strategic Perspective Reports;
 - o Municipal Integrated Development Plans for RLM; and
 - o The Provincial Spatial Development Framework for the North West Province.

The rating of the identified impacts was undertaken in a quantitative manner as provided in Section (d) (impact rating). The ratings were undertaken in a manner to calculate the significance of each of the impacts. The identification of management and mitigation measures was done based on the significance of the impacts and measures included are considered sufficient, appropriate and practical to protect the environment.

j) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

Table 13: Assessment of each identified potentially significant impact and risk

Name of Activity	Potential Impact	Aspects Affected	Phase	Significance (if not mitigated)	Mitigation Type	Significance (if mitigated)
Construction Camp Site	Impact on floral diversity as a result of site clearance, anthropogenic activity, and possible uncontrolled fires.	Biodiversity	Construction	Medium Low	Construction and Rehabilitation Management Plan	Low
Data Collection and Assessment	None	N/A	Planning	N/A	N/A	N/A
Erection of Conveyor	Accidents as a result of increased traffic in the area.	Socio - Economic	Construction	Low	Transport management procedures.	Low
Erection of Conveyor	Safety risk of local community members due to construction activities.	Socio - Economic	Construction	Medium Low	Procedures for reporting on environmental complaints and community consultation processes. Safety management plans.	Low
Erection of Conveyor	Delivery and testing of equipment to site resulting in increased noise levels.	Noise	Construction	Low	Noise management and monitoring procedures.	Low
Erection of Conveyor	Change in sense of place as a result of the construction activities, camps and machinery	Visual	Construction	Medium High	Contractors management plan. Soil management, and rehabilitation plan.	Low
Erection of Conveyor	Scaring of the landscape as a result of the construction of the proposed conveyor.	Visual	Operation	Medium High	Contractors management plan. Soil management, and rehabilitation plan.	Low
Excavations	Movements of local villagers and their livestock may be negatively impacted on.	Socio - Economic	Construction and Operation	Medium Low	Procedures for reporting on environmental complaints and community consultation processes.	Low
Excavations	Air pollution through nuisance dust, PM 10 and PM2.5 as well as emissions from construction vehicles and machinery.	Air Quality	Construction	Medium Low	Dust control measures	Low
Excavations	Increase in ambient noise due to movement of construction vehicles and machinery	Noise	Construction	Low	Management and maintenance of construction vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers	Low
Excavations	Impact on the wetlands systems as a result of changes to the sociocultural service provisions	Surface water	Construction	Medium Low	Stormwater management controls	Low
Excavations	Possible disturbance of areas of Archaeological importance.	Heritage	Construction	Low	Education awareness and construction management plan.	Low
Excavations	Possible disturbance of areas of Palaeontology importance	Palaeontology	Construction	Low	Education awareness and construction management plan.	Low
Hydrocarbon storage area	Change in current soil hydrological properties and functionality of soil because of compaction and soil sterilisation.	Soil, Land use and Land Capability	Construction	Medium High	Soil management and Rehabilitation plan	Low
Hydrocarbon storage area	Contamination of surface and groundwater due to incorrect handling and disposal of waste materials and oil leaks from equipment and machinery.	Surface water	Construction and Operation	Medium Low	Stormwater management controls and waste management procedure.	Low

Name of Activity	Potential Impact	Aspects Affected	Phase	Significance (if not mitigated)	Mitigation Type	Significance (if mitigated)
Operation of Conveyor and maintenance road	Potential increased noise levels during construction and operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt	Noise	Construction and Operation	Medium Low	Control through noise management and monitoring.	Low
Operation of Conveyor and maintenance road	Potential dust emissions from the conveyor while transporting ore to the Maseve Platinum Mine	Air Quality	Construction	Medium Low	Speed control and limitation of the times when construction vehicles may be on the roads	Low
Operation of Conveyor and maintenance road	Failure to initiate a rehabilitation plan and alien control plan during the construction phase may lead to further impacts during the operation phase.	Biodiversity	Construction and Operation	Medium High	Construction, Rehabilitation Management Plan, and Alien Invasive Eradication Programme	Low
Planning for Construction	None	N/A	Planning	N/A	N/A	N/A
Site clearance and erection of fencing	Temporary employment opportunities may arise during the construction period of the conveyor.	Socio - Economic	Construction and Operation	Medium Low	Socio Economic management plan and local employment policies.	High
Site clearance and erection of fencing	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	Noise	Construction	Low	Rehabilitation of areas cleared of vegetation	Low
Site clearance and erection of fencing	Visual intrusion as a result of the movement of machinery and the erection of contractor camps.	Visual	Construction	Low	Contractors management plan. Soil management, and rehabilitation plan.	Low
Site clearance and erection of fencing	Loss of soil resources as a result of vehicle movement and oil spills that may cause soil compaction.	Soil, Land use and Land Capability	Construction and Operation	Medium Low	Soil management and Rehabilitation plan	Low
Site clearance and erection of fencing	Loss of soil resources as a result of soil striping and stockpiling.	Soil, Land use and Land Capability	Construction	Medium High	Soil management and Rehabilitation plan	Low
Site clearance and erection of fencing	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients	Soil, Land use and Land Capability	Construction and Operation	Medium Low	Construction and Rehabilitation Management Plan	Low
Site clearance and erection of fencing	Disturbance of vegetation and flora species.	Biodiversity	Construction and Operation	Medium High	Construction and Rehabilitation Management Plan	Low
Site clearance and erection of fencing	Loss of vegetation as a result of site clearance.	Biodiversity	Construction	Medium High	Construction and Rehabilitation Management Plan	Low
Site clearance and erection of fencing	Loss of faunal habitat and ecological structure as a result of site clearing, alien invasive species, erosion, and general construction activities	Biodiversity	Construction	Medium Low	Construction, Rehabilitation Management Plan, and Alien Invasive Eradication Programme	Low
Site clearance and erection of fencing	Habitat fragmentation because of construction and operation activities of the conveyor leading to loss of floral diversity.	Biodiversity	Construction	Medium High	Design of cattle crossing and maintenance management plan.	Low
Site clearance and erection of fencing	Potential impact on sedimentation and pollution of the Bonwakgogo stream as a result of runoff during construction activities.	Surface water	Construction	Medium Low	Stormwater management controls	Low

Name of Activity	Potential Impact	Aspects Affected	Phase	Significance (if not mitigated)	Mitigation Type	Significance (if mitigated)
Site clearance and erection of fencing	Increased runoff due to topsoil removal and vegetation clearance leading to possible erosion and sedimentation of riparian resources	Surface water	Construction and Operation	Medium High	Stormwater management controls, waste management procedure, and rehabilitation plan.	Low
Site clearance and erection of fencing	Soil compaction and levelling as a result of construction activities and vehicle movement leading to loss of riparian habitat	Surface water	Construction and Operation	Medium High	Stormwater management controls, waste management procedure, and rehabilitation plan.	Low
Survey Mapping	None	N/A	Planning	N/A	N/A	N/A
Transport of material to and from site	Community complaints as a result of increased noise levels and visual impacts	Socio - Economic	Construction and Operation	Medium Low	Procedures for reporting on environmental complaints and community consultation processes.	Low
Transport of material to and from site	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	Visual	Construction	Medium High	Contractors management plan. Soil management, and rehabilitation plan.	Low
Transport of material to and from site	Indirect visual impact due to dust generation as a result of the movement of vehicles and materials, to and from the site area.	Visual	Operation	Medium High	Dust management and erosion control.	Low
Transport of material to and from site	Increase in carbon emissions and ambient air pollutants (NO2 and SO2) as a result of movement of vehicles and operation of machinery/equipment.	Climate Change	Construction and Operation	Low	Traffic and Air Quality Management Plan.	Low
Transport of material to and from site	Impact on traffic during the construction of the conveyor, resulting in the increased risk of accidents and traffic congestion.	Traffic	Construction	Medium Low	Traffic and Air Quality Management Plan.	Low
Transport of material to and from site	Emissions of Green House Gases as a result of the use of plant, heavy moving machinery, generators etc.	Climate Change	Construction	Low	Green House Gas Emissions Assessment.	Low

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked Appendix

Please refer to Appendix E for a copy of the Impact Assessment.

k) Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form): -

The following specialists were conducted for the proposed extension to the Styldrift No. 1 Conveyor and incorporated into this Basic Assessment.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMEN DATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMEN DATIONS HAVE BEEN INCLUDED.
Heritage Assessment	No Stone Age, Iron Age or historical settlements, structures, features, assemblages or artefacts were recorded during the survey. No graveyards or individual graves were recorded. It is therefore recommended, from a cultural heritage perspective, that the construction of the proposed conveyor may proceed.	N/A	N/A
Wetland Assessment	Based on the findings of the freshwater resource assessment and the results of the risk assessment, it is the opinion of the ecologist that the proposed linear development poses minimal risk to the freshwater feature, provided that adherence to cogent, well-conceived and ecologically sensitive site development plans, and the mitigation measures provided in this report as well as general good construction practice, are strictly adhered to. It is the opinion of the specialist therefore that the proposed linear development, from a freshwater resource perspective, be considered favourably, with the proviso that strict adherence to mitigation measures is enforced, to ensure that the ecological integrity of the freshwater feature is not further compromised.	X	Table 11
Air Quality Assessment	 The following are recommended: Periodic independent audits of the conveyor system to ensure effective housekeeping along the conveyor (cleaning spillages, the conveyor roof is secure, and ore transported on the conveyor is shielded from potential wind erosion. Ensure that all transfer points and conveyor belts are covered, where practical, to prevent wind from re-entraining dust into the atmosphere during ore transfer. Maintain existing covers. The on-site monitoring network should be adjusted to accommodate the installation of the conveyor, thus, allowing for dust fallout to be monitored at strategic locations to verify whether fallout from the activity is low. 	X	Table 11

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMEN DATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMEN DATIONS HAVE BEEN INCLUDED.
	 Maintain a moisture content of 5% to lower the probability of wind erosion and maintain lower dust concentrations. Maintain ore sizes at 350 mm, as potential 		
	 for erosion from larger sources on the conveyor route will be lower. Stockpiling of ore near the conveyors, if undertaken, should be over a short term. The continuous erosion of open stockpiles may be a major source of dust if stockpile is placed over longer terms. 		
Noise Assessment	 The following three primary variables should be considered when designing acoustic screening measures for the control of sound and/or noise: The source – Reduction of noise at the source; The transmission path – Reduction of noise between the source and the receiver; The receiver – Reduction of the noise at the receiver. The acoustic screening measures for the project are provided for implementation. These are based on the best practicable methods, acoustic screening the JEC's Health and 	X	Table 11
Soil, Land Use and Land Capability Assessment	Safety Regulations. The proposed conveyor route project falls within an area where mining is already a major land use in association to livestock farming and human settlement. The land capability and soil quality of land affected by the surface footprint of the project will be slightly compromised but the proposed construction and operation of the conveyor but will not impact on crop production and will therefore not affect primary grain production. If soil management measures are followed as outlined in this report and the land be rehabilitated to the highest standard possible, livestock farming will be possible on the rehabilitated land. It is therefore of my opinion that the activity should be authorised. It follows that the recommendations and monitoring requirements as set out in this report should form part of the conditions of the environmental authorisation for the proposed project	X	Table 11

Copies of the Specialist Reports can be found in Appendix G to Appendix K.

I) Environmental Impact Statement

(i) Summary of the key findings of the environmental impact assessment;

The proposed construction of the extension of the Styldrift No 1 Shaft Conveyor may result in biophysical and social impacts. These relate mainly to the creation of temporary jobs, impacts on soils, natural biodiversity, noise and dust emissions to nearby sensitive receptors. Where negative impacts may arise, these can be mitigated to a LOW significance, as long as the EMPr is adhered to.

RBPlat will undertake measures to ensure that the identified impacts are taken cognisance of and the management measure implemented form the pre-construction to the decommissioning phase of the proposed project. The impact assessment of the envisaged impacts has shown that these impacts can be mitigated and managed to a LOW significance.

Land use will temporarily be altered during construction; however, provision will be made to ensure that migration routes either side of the conveyor are upheld, and movement will not be restricted.

The employees and contractors will undergo training and will be given strict instruction not to undertake activities that will affect the environment and that may have an impact on the surrounding communities. Waste generated from the site will be collected in proper receptacles and disposed of in registered waste disposal sites.

Key findings of the environmental impact assessment include:

- All the identified impacts will be localised, short term and will have a MEDIUM HIGH and MEDIUM LOW significance. The significance of potential environmental impacts can be reduced to LOW significance with implementation of mitigation measures and monitoring.
- Cumulative noise, visual and air quality (dust) impacts are deemed to not be significant (LOW) when proper mitigation measures are implemented.
- Vegetation loss is unavoidable during the construction phase of the project. This will however be limited to the footprint of the infrastructure (access road, camp, conveyor footprint).

(ii) Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers

Please refer to Appendix C for the locality map which includes the environmental sensitive areas. The only sensitive aspect within the immediate surroundings is the non-perennial stream located to the east of the proposed conveyor.

(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

The proposed activities have MEDIUM HIGH and MEDIUM LOW significance prior to mitigation and will be short term activities. The probability of occurrence of an impact was determined and most of these activities can be controlled and impacts can be reduced or avoided. The identified negative impacts can be controlled and avoided or minimised to an acceptable level. Mitigation measures will be used to manage and control any potential impact. The main impacts will include:

- Temporary employment opportunities may arise during the construction period of the conveyor;
- Community complaints because of increased noise levels and visual impacts;

- Movements of local villagers and their livestock may be negatively impacted on;
- Safety risk of local community members due to construction activities;
- Delivery and testing of equipment to site resulting in increased noise levels;
- Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint;
- Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing;
- Dust emissions as a result of site preparation;
- Increase in carbon emissions and ambient air pollutants (NO² and SO²) as a result of movement of vehicles and operation of machinery/equipment;
- Loss of soil resources as a result of soil striping and stockpiling;
- Impact on floral diversity as a result of site clearance, anthropogenic activity, and possible uncontrolled fires;
- Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients
- Loss of vegetation as a result of site clearance;
- Loss of faunal habitat and ecological structure as a result of site clearing, alien invasive species, erosion, and general construction activities;
- Habitat fragmentation as a result of construction activities of the conveyor leading to loss of floral diversity;
- Failure to initiate a rehabilitation plan and alien control plan during the construction phase may lead to further impacts during the operation phase.

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

The objectives of the EMPr will be to:

- Provide sufficient information to strategically plan the proposed project as to avoid unnecessary social and environmental impacts;
- Provide sufficient information and guidance to plan the activities in a manner that will reduce impacts (social, physical and biological) as far as is practically possible;
- Facilitates harmonious co-existence between the project and other land uses in the area;
- Ensure an approach that will provide the necessary confidence in terms of environmental compliance; and
- Provide a management plan that is effective and practical for implementation.

Through the implementation of the identified proposed mitigation measures, it is anticipated that the identified impacts can be managed and mitigated effectively. All the impacts were assessed to have significance ranging between MEDIUM HIGH and MEDIUM LOW without the implementation of

mitigation measures. All the identified impacts will have a reduced significance of LOW when the mitigation measures have been implemented.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The following conditions should be included in the Environmental Authorisation:

- The Air Quality Monitoring Programme should be amended to include monitoring during the construction and operational phases of the conveyor belt;
- Noise measurements must be conducted to test and verify any noise complaints, as and when the need arises;
- If any archaeological or palaeontological material or human burials are uncovered during the course of development, then work in the immediate area should be halted. Relocation of burial grounds and graves must be in accordance with the National Heritage Resources Act (Act 25 of 1999). The find would need to be reported to the heritage authorities and may require inspection by an archaeologist or palaeontologist as appropriate;
- No construction activities may be undertaken within the 1:100-year flood line of the Bonwakgogo stream. Construction activities must ensure that no runoff containing contaminants report to the Bonwakgogo stream;
- An ECO must be appointed to monitor the construction activities in terms of the EMPr and environmental authorisation;
- Rehabilitation must be conducted concurrently. Following construction of the conveyor all denuded areas not forming part of the operational footprint, must be rehabilitated within indigenous vegetation.
- An alien invasive plant management plan must be implemented to ensure the spread of alien invasive species is minimised / prevented.

Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

The following assumptions, uncertainties and gaps are applicable to this project:

- The Stakeholder Consultation is not yet complete. The Draft BAR will be updated once the 30day public review and comment period has lapsed. Comments from the stakeholders will be incorporated into the Final BAR to be submitted to the DMR;
- The assessments undertaken are based on conservative methodologies and these methods attempts to determine potential negative impacts that could occur on the affected environmental aspects. These impacts may however be of smaller magnitude than predicted, while benefits could be of a larger extent than predicted;
- The EIA has investigated the potential impact on key environmental media relating to the specific environmental setting for the site. A number of desktop assessment were undertaken and result thereof and are presented in this report;
- It is assumed that the EMPr compiled for this project will be adhered to during all phases of the project.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

(i) Reasons why the activity should be authorized or not.

It is the considered opinion of the EAP that the activity may be authorised. Following the impact assessment, the primary impacts will influence the natural biodiversity, soils, air quality and lad occupiers. These impacts can be mitigated to a LOW significance. The project will have a positive impact due to local employment during construction.

The management of the impacts identified in the impact assessment for all phases of the proposed project will be undertaken through a range of programmes and plans contained in the EMPr. In consideration of the programmes and plans contained within the EMPr, layouts and method statements compiled for the project, which is assumed will be effectively implemented, there will be significant reduction in the significance of potential impacts.

Should the project not be authorised, RBPlat will need to investigate other alternative means of transporting ore to Maseve Platinum Mine. This may take the form of trucking, which will negatively impact on the local communities due to carbon emissions and safety risks.

Considering all alternatives and impact mitigation, the proposed project will have a LOW negative biophysical and social impact, with the positive impacts of temporary job creation.

Based on the detailed EIA undertaken and the management measures proposed, the EAP is of the opinion that the proposed project can be granted Environmental Authorisation provided RBPlat adheres to the management and mitigation measures proposed.

(ii) Conditions that must be included in the authorisation

See Section n) of the BAR.

q) Period for which the Environmental Authorisation is required.

The proposed conveyor will be in operation throughout the Life of Mine of the Styldrift No1. Shaft. It is therefore recommended that the Environmental Authorisation is granted for a period of 30 years.

r) Undertaking

Confirmation that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the EMPr.

An undertaking by the EAP and the client is provided in Section 2 of the EMPr.

s) Financial Provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

The closure costs were calculated to be R 2 225 972.51 as shown in Table 14.

Table 14: Cost Estimate Expenditure

Main Description (if not applicable, indicate as N/A)	Units	Fill in Amount	DMR Master Rate	DMR Multiplication Factor	Weighing Factor 1	Amount	Comments
Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m³	17000	R14.67	1	1	R 249 390.00	Dismantling of the conveyor belt.
Rehabilitation of access roads	m²	6800	R36.62	1	1	R 249 016.00	Rehabilitation of the maintenance road
General surface rehabilitation, including grassing of all denuded areas	ha	4.4	R113 221.68	1	1	R 498 175.39	Rehabilitation of disturbed servitude.
Fencing	m	3400	R129.15	1	1	R 439 110.00	Dismantling of fencing
Maintenance and aftercare	ha	5	R15 067.54	1	1	R 75 337.70	
	3rd Part	ty Closure (P	re-Mature Closure)		Sub Total 1 (At Closure)	R 1 511 029.09	
						TOTAL	
					Weighting Factor 2		
					1.05	R 1 586 580.55	
Preliminary and General	12% of S	ub Total 1 if	f less than R100 mill			R 190 389.67	
	6% of Su	b Total 1 if ı					
Contingency	10 of Sub	Total 1				R 158 658.05	
						R 349 047.72	
						R 1 935 628.27	
VAT @ 15%						R 290 344.24	
						R 2 225 972.51	

(i) Explain how the aforesaid amount was derived.

The financial provision for the environmental rehabilitation and closure of the conveyor forms an integral part of the MPRDA. Sections 41 (1) and, 41 (2), 41 (3) and 45 which deals with the financial provision for rehabilitation and closure. During 2012, the DMR made updated rate available for the calculation of the closure costs, where contractor's costs are not available, these apply.

The liability for closure of the aspects associated with the proposed project will be determined using the approach advocated in the Department of Minerals and Energy (DME) now the DMR Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provisions Provided by a Mine (2005), the requirements stipulated in Appendix 5 of GNR 982 printed in terms of the NEMA., as well as GNR 1147 (Regulations Pertaining To The Financial Provision For Prospecting, Exploration, Mining or Production Operations) of the NEMA. The approach to calculating the closure quantum utilised in this assessment is summarised as follows:

- Step 1: Determine the Mineral Mined;
- Step 2A: Determine Primary Risk Class;
- Step 2B: Revision of Primary Risk Class;
- Step 3: Determine Environmental Sensitivity;
- Step 4: Determination of weighting factors.

With the determination of the quantum for closure, it must be assumed that the infrastructure had no salvage value (clean closure). The closure cost estimate (clean closure) was determined in accordance with the DMR guidelines.

(ii) Confirm that this amount can be provided for from operating expenditure.

(Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

The amount required to cover the proposed rehabilitation and closure is estimated to be R 2 225 972.51 (Including VAT). RBPlat will fund the rehabilitation.

The applicant hereby confirms that the amount is anticipated to be provided for in the Mining Work Programme. This financial liability will be included in RBPlat annual closure and liability assessment.

t) Specific Information required by the competent Authority

(i) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:

(1) Impact on the socio-economic conditions of any directly affected person.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix).

No specific report was generated for the purposes of the socio-economic conditions. Current land uses surrounding the proposed project footprint, such as grazing, may be temporarily impacted through the presence of the fenced footprint area. The project footprint will make provision for a cattle crossing,

thereby allowing the migration between both sides of the conveyor. Other potential socio-economic impacts will include:

- Nuisance noise due to on-site activities and earthworks;
- Poor access control resulting in impacts on cattle movement and grazing practises;
- Visual impact as a result of the vegetation clearance;
- Positive impact on temporary job opportunities.

Management and mitigation measures must be implemented to prevent environmental pollution which may impact on environmental resources utilised by communities, landowners and other stakeholders. Measures to manage the potential impacts on communities, individuals or competing land uses in close proximity include:

Noise due to construction activities and drilling:

- Directly affected and adjacent landowners and land occupiers must be informed of the planned construction activities and a grievance lodging mechanism must be made available to the stakeholders.
- Site activities shall be concluded during daytime hours (07h00 to 17h30), to avoid night time noise disturbances and night time collisions with fauna.

Poor access control resulting in impacts on cattle movement, breeding and grazing practices:

• Access will be made available for the crossing between both sides of the conveyor.

Visual Impact:

- Visual aspects affected by the establishment of the proposed ore conveyor will be mitigated and managed according to established construction activity management controls applied by RBPlat. These will include the use of materials able to camouflage the conveyor as far as feasible to the surrounding environment;
- Management measures should be in place at all times for litter and dust generated from the project activities relating to the construction phase of the ore conveyor;
- All lights used for illumination (except for lighting associated with security) should be faced inwards and shielded to avoid light escaping above the horizon. The ore conveyor site area must be cleared of all rubble and litter after construction, and kept neat and tidy during construction;
- The construction footprint demarcated at the onset on construction of the ore conveyor will be kept as small as possible;
- The area should be restored to pre-ore conveyor conditions after closure, unless different endland uses have been identified as part of the overall closure planning for the Styldrift Mine Complex operation;
- Demolish and remove all infrastructure not required post-closure, this will include the cement base of the ore conveyor as well as the surface infrastructure.
- Natural vegetation, wherever possible, must be retained within the ore conveyor construction site area, recognising that fire breaks will need to be constructed to protect the integrity of the ore conveyor;
- Construction site will be screened from sensitive receptors and rubble removed from site on a daily basis.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

A Heritage Impact Assessment was conducted as part of this Basic Assessment Process. The Heritage Impact Assessment concluded that no Stone Age, Iron Age or historical settlements, structures, features, assemblages or artefacts were recorded during the survey. No graveyards or individual graves were recorded. It is therefore recommended, from a cultural heritage perspective, that the construction of the proposed conveyor may proceed.

u) Other matters required in terms of sections 24(4)(a) and (b) of the Act

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as Appendix 4).

Not applicable.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1 Draft environmental management programme.

a) Details of the EAP

(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

Details of the EAP are included in Part A Section 1 (a)

b) Description of the Aspects of the Activity

(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1) (h) herein as required).

The EAP hereby confirms that the requirement to describe the aspects of the activity that are covered by the draft Environmental Management Programme is already included in Part A, Section (1)(h) of this report as required.

c) Composite Map

(Provide a map (Attached as an Appendix) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)

Please refer to Appendix F for the composite map. The composite map was created taking into consideration of the following:

- 1:100 Year flood lines of rivers;
- Sensitive landscapes (ridges etc.);
- Dolomitic areas (if any);
- Heritage Areas with 50 m buffer (if any);
- Protected areas;
- Critical Biodiversity Areas (CBAs); and
- Ecological Support Areas.

d) Description of Impact management objectives including management statements

(i) Determination of closure objectives.

(ensure that the closure objectives are informed by the type of environment described)

The rehabilitation plan was developed on the basis that the rehabilitated areas will be made safe, stable, non-polluting and will be able to support self-sustaining ecosystems, similar to surrounding natural ecosystems.

To ensure that the rehabilitation plan is aligned with the closure objective, high-level risk assessment of the proposed activities was undertaken to establish the potential risks associated with therewith.

The closure objectives are to:

- Eliminate any safety risks associated with the demolition of infrastructure;
- Remove and/or rehabilitate all pollution and pollution sources such as waste materials and spills;
- To establish rehabilitated areas to a state with no susceptibility to soil erosion which may result in loss of soil, pollution of water resources;
- Restore disturbed areas and re-vegetate these areas with plant species naturally occurring in the area to restore the ecological function of the affected areas as far as practicable;
- Rehabilitate the disturbed footprint to the agreed upon end land use; and
- Eliminate all alien invasive plant species from the disturbed areas.

(ii) Volumes and rate of water use required for the operation.

The rates and volumes of water to be used are not available at this stage. Water will only be used for domestic purposes and small amounts for construction activities. Water will be sourced from the existing Magalies water allocation to RBPlat.

(ii) Has a water use licence has been applied for?

No water use license application will be applied for as no water uses will be applicable for the proposed extension of the existing Styldrift No 1 Shaft conveyor.

(iv) Impacts to be mitigated in their respective phases

 Table 15: Environmental Management Programme for the Proposed Conveyor.

NAME OF ACTIVITY	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Data Collection and Assessment	Planning	N/A	Ensure all management measure and mitigations stipulated in this EMPr can be adhered to.	Compliance with this EMPr	Throughout Planning Phase
Survey Mapping	Planning	N/A	Communicate with the land occupiers on the proposed construction activities and planned footprint	Compliance with this EMPr	Throughout Planning Phase
Planning for Construction	Planning	N/A	Ensure all management measure and mitigations stipulated in this EMPr can be adhered to.	Compliance with this EMPr	Throughout Planning Phase
Construction Camp Site	Construction	1 ha	 Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats. Machinery with low noise levels which complies with the manufacturer's specifications to be used; The Styldrift No.1 Shaft noise monitoring programme will be amended to include sensitive receptors in close proximity to the proposed conveyor; Noise monitoring will be conducted on a quarterly basis; Transfer station to be screened off from the residential area to the east and south; The side of the Conveyor facing Mafenya to be screened of with IBR sheeting; A noise management plan must be devised to minimise noise emissions during construction; A register will be kept at the construction project site office whereby all issues and concerns raised by the community will be recorded. Visual intrusion as a result of the movement of machinery and the erection of contractor camps Keep disturbed areas to a minimum. No unnecessary vegetation removal will be conducted as part of the project; Camp sites will be screened; Effective waste management practices will be undertaken. The Styldrift No.1 Shaft Waste Management Plan will be enforced at the construction, and kept neat and tidy during construction; Bare and compacted surfaces resulting from the construction activities of the proposed ore conveyor must be rehabilitated as soon as possible with indigenous vegetation that will be able to grow in the area. Change in sense of place as a result of the construction activities, camps and machinery Keep disturbed areas to a minimum. No unnecessary vegetation removal will be conducted as part of the project; Bare and compacted surfaces resulting from the construction activities of the proposed ore conveyor must be rehabilitated as soon as possible with indigenous	Compliance with this EMPr. The implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have detrimental impact on the area's flora, in particular indigenous species and species that are of conservation importance. Contractors will adhere to Local Noise Regulations, SANS 10234, and National Dust Control Regulations (GNR 827)	Throughout Construction Phase

NAME OF ACTIVITY	PHASE	SIZE SCALE disturbar	AND of Ice	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Soil Stockpile	Construction	2 ha		 Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing. Regular irrigation by water especially during windy conditions at the site, access road and construction material and debris with just enough moisture to keep the dust down without creating significant runoff; Should water not be available as a result of drought conditions then chemical suppressants need to be considered; Reduction of speed on unpaved roads to reduce the entrainment of dust into the atmosphere. During grading activities, any exposed earth should be watered if it is going to be exposed for long periods of time; Sufficient firefighting equipment should be made available during all phases of the project in accordance with the Mine Health and Safety Act (Act No. 29 of 1996). Loss of soil resources as a result of soil striping and stockpiling The activities of construction contractors or employees will be restricted to the planned areas. Instructions must be included in contracts that will restrict construction work and construction workers to the clearly defined limits of the construction site. In addition, compliance to these instructions must be monitored. Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients Soil will be stripped only from all areas to be disturbed. Topsoil should be stripped appropriate to the depth to facilitate the laying of the foundations and civil works for the ore conveyor super-structure. Topsoil and subsoil will be stockpiled on the existing Styldrift No.1 Shaft soil stockpile for use during rehabilitation; The service road should be designed with a camber to avoid ponding and to encourage; Equipment movement on the soil stockpiles will be limited to avoid topsil compaction; Areas disturbed temporarily during the construction phase, such as laydown areas,	Compliance with this EMPr. The implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have detrimental impact on the area's flora, in particular indigenous species and species that are of conservation importance. Contractors will adhere to Local Noise Regulations, SANS 10234, and National Dust Control Regulations (GNR 827) Manage and Control of Soil Management Measures. Waste management procedure adherence. Abide to ambient air quality standards and implement dust control measures	Throughout Construction Phase

NAME OF ACTIVITY	PHASE	SIZE AND SCALE of	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Site clearance, erection of fencing and construction of maintenance road.	Construction	5 ha	 Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators, transformers, Tractor Loader Backhoes (TLBs) and Bobcats. Machinery with low noise levels which complies with the manufacturer's specifications to be used; The Styldrift No.1 Shaft noise monitoring programme will be amended to include sensitive receptors in close proximity to the proposed conveyor; Noise monitoring will be conducted on a quarterly basis; Transfer station to be screened off from the residential area to the east and south; The side of the Conveyor facing Mafenya to be screened of with IBR sheeting; A noise management plan must be devised to minimise noise emissions during construction; A register will be kept at the construction project site office whereby all issues and concerns raised by the community will be recorded. Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint Keep disturbed areas to a minimum. No unnecessary vegetation removal will be conducted as part of the project; Camp sites will be screened; Effective waste management practices will be undertaken. The Styldrift No.1 Shaft Waste Management Plan will be enforced at the construction asit; The ore conveyor site area must be cleared of all rubble and litter after construction, and kept neat and tidy during construction; Bare and compacted surfaces resulting from the construction activities of the proposed ore conveyor must be rehabilitated as soon as possible with indigenous vegetation that will be able to grow in the area Visual aspects affected by the econstruction pakes of the ore conveyor; Visual aspects affected by the econstruction phase of the ore conveyor; All lights used for illumination (except for lighting associated with security) s	Compliance with this EMPr. The implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have detrimental impact on the area's flora, indigenous species and species that are of conservation importance. Contractors will adhere to Local Noise Regulations, SANS 10234, and National Dust Control Regulations (GNR 827) Manage and Control of Soil Management Measures. Waste management procedure adherence.	Throughout Construction Phase

NAME OF ACTIVITY	PHASE	SIZE AN SCALE d disturbance	D MITIGATION MEASURES
			Change in current soil hydrological properties and functionality of soil as a result of compaction and
			soil sterilisation
			 Existing established roads should be used wherever possible to prevent spillages, no
			diesel or oil should be stored on site, other than what is required for work undertaken for 1
			day, unless authorised by the ECO where such storage can be appropriately controlled;
			 Spill response procedures must be clearly defined and well known by all construction staff. Records must be kept of training done on each contractor's spill response procedure;
			 Tonsoil should never be used as a filling material for roads:
			 Spillages of oil, grease and hydraulic fluids will be cleaned up by removing the affected soil
			and disposing it at an appropriate facility;
			If soil is significantly contaminated then this soil will be considered as potentially hazardous
			and handled according to the waste management procedure, and the Norms and
			Standards for the Remediation of Contaminated Soil under the Waste Act, or any other Act
			 Following re-vegetation, the site should be monitored and maintained until an acceptable
			self-sustaining vegetation cover has been achieved. If a self-sustaining vegetation cover
			has not established, a fertility analyses should be done on the relevant areas to be re-
			vegetated and fertiliser recommendations planned and implemented
			Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients
			 Soli will be supped only from all areas to be disturbed. Topsoli should be supped appropriate to the depth to facilitate the laving of the foundations and civil works for the ore.
			conveyor super-structure.
			Topsoil and subsoil will be stockpiled on the existing Styldrift No.1 Shaft soil stockpile for
			use during rehabilitation;
			 The service road should be designed with a camber to avoid ponding and to encourage
			drainage to side drains; where necessary, culverts should be installed to permit free drainage of existing water courses. The side drains of the roads can be protected with
			sediment traps and/or gabions to reduce the erosive velocity of water during storm events
Site clearance, erection of fencing and			and where necessary geo-membrane lining can be used;
construction of maintenance road.			 Equipment movement on the soil stockpiles will be limited to avoid topsoil compaction;
			Areas disturbed temporarily during the construction phase, such as laydown areas, should
			be rehabilitated directly after the completion of construction;
			 Should erosion become evident during construction, additional erosion control measures will be employed immediately to prevent sedimentation of surrounding watercourses;
			 Vegetation clearance should not be conducted earlier than required (maintain vegetation
			cover for as long as possible) in order to prevent the erosion (wind and water) of organic
			matter, clay and silt;
			Using drainage control measures and culverts to manage the natural flow of surface runoff;
			Disturbance and loss of vegetation and faunal species.
			 Interbicides need to be used to control the spread of invasive plants, only herbicides approved by the National Department of Agriculture should be used
			 No fires are allowed on the site, unless in areas demarked and managed for this purpose;
			Areas of disturbance should not encroach within 100 m of any identified wetland or water
			course without appropriate mitigation and management. All RBPlat personnel and
			contractors appointed by RBPlat will be made aware of this commitment during induction.
			Loss of faunal nabitat and ecological structure as a result of site clearing, allen invasive species, erosion, and general construction activities:
			Collection of firewood will be prohibited except where provided for by mine management.
			All project personnel (including contractors) will be devised accordingly during induction;
			No hunting activities will be practised by the construction workers. Any animal purposefully
			killed by an employee will result in disciplinary action;
			 All declared alien weeds will be removed and effectively controlled as part of the alien plant oradication and control programme;
			 In the event of a vehicle breakdown, maintenance of vehicles must take place with care
			and the recollection of spillage should be practiced near the surface area to prevent
			ingress of hydrocarbons into topsoil and subsequent habitat loss;
			The occurrence of erosion is to be monitored on a regular basis during the construction
			phase of the project and remedial action taken immediately if noted.
			Potential impact on sedimentation and pollution of the Bonwakgogo stream as a result of runoff during
			Should uncontrolled erosion be evident in areas affected by the ore conveyor project erosion
			control measure will be implemented. Undue sedimentation of nearby streams must be
			prevented;

COMPLIANCE WITH STANDARDS	TIME PERIOD FOR
Compliance with this EMPr. The implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have detrimental impact on the area's flora, in particular indigenous species and species that are of conservation importance. Contractors will adhere to Local Noise Regulations, SANS 10234, and National Dust Control Regulations (GNR 827) Manage and Control of Soil Management Measures. Waste management procedure adherence. Control through an alien invasive management procedure.	Throughout Construction Phase
implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have	Construction Phase

NAME OF ACTIVITY	PHASE	SIZE AND	MITIGATION MEASURES
		SCALE of	
		disturbance	
			Clean and dirty water separation and compliance with Regulation 704 of the NVVA will be upheld as necessary:
			 Runoff velocity will be controlled should sedimentation and erosion become evident;
			• All stormwater drains and culverts in areas affected by the ore conveyor route will be kept
			clear of obstructions;
			Provision of appropriate sanitation facilities during the construction and decommissioning
			phase (one tollet for 15 stall members). These should be maintained and cleaned on a regular basis. The appropriate sewage facilities will be located within the demarcated ore
			convevor footprint construction area and not within with the 1:100-year flood line or 100 m
			(whichever is the greatest) of the Bonwakgogo Stream.
			Accidents as a result of increased traffic in the area.
			Restriction of construction project transport speed on surrounding gravel roads to 20 km/h;
			Flag men will be used where practical to direct traffic around the area. Change in landscape as a result construction equipment, camp sites and clearing of the construction
			footprint.
			Keep disturbed areas to a minimum. No unnecessary vegetation removal will be conducted
			 Camp sites will be screened; Effective waste management practices will be undertaken. The
			Styldrift No.1 Shaft Waste Management Plan will be enforced at the construction site;
			kept neat and tidy during construction;
			Bare and compacted surfaces resulting from the construction activities of the proposed ore
			conveyor must be renabilitated as soon as possible with indigenous vegetation that will be able to grow in the area
			Dust emissions associated with movement of construction vehicles on cleared areas as well as bush
			clearing.
			• Regular irrigation by water especially during windy conditions at the site, access road and
			construction material and debris with just enough moisture to keep the dust down without
			 Should water not be available as a result of drought conditions then chemical suppressants
			need to be considered;
			• Reduction of speed on unpaved roads to reduce the entrainment of dust into the atmosphere.
			During grading activities, any exposed earth should be watered if it is going to be exposed
			Ior long periods of time; Sufficient firefighting equipment should be made available during all phases of the project in
			accordance with the Mine Health and Safety Act (Act No. 29 of 1996).
			Increase in carbon emissions and ambient air pollutants (NO2 and SO2) as a result of movement of
			vehicles and operation of machinery/equipment.
			Engine idle speeds during operating times should be reduced;
			 Where applicable, use a rule sources with low supplify content, Ensure regular servicing and maintenance of all combustion engine operated machinery.
			Increased runoff due to topsoil removal and vegetation clearance leading to possible erosion and
			sedimentation of riparian resources;
			Minimise the areas that are to be stripped of vegetation;
			Auequate storm water management should be considered in the detailed design of the proposed infrastructure in order to minimize undue erosion:
			 Erosion can also be limited by ensuring that mine vehicles and human movement is limited
			to project specific dedicated access ways;
			• Stormwater culverts and clean water diversions will be designed and constructed to
			accommodate the 1:50 year storm event around the mining areas;
			Possible disturbance of areas of Archaeological importance.
			Care should be taken that, when development commences, if any archaeological and/or
			historical sites are discovered, a qualified archaeologist be called in to investigate the
			Construction workers will be made aware of the requirement to report paleontological
			discoveries during construction and decommissioning phases of the ore convevor. This will
			be achieved during induction;
			• Any palaeontological material exposed during digging or excavating, SAHRA must be
			notified. All development activities must be stopped, and a palaeontologist should be called in to determine proper mitigation measures. especially for shallow caves.

COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
detrimental impact on the area's flora, in particular indigenous species and species that are of conservation importance.	
Contractors will adhere to Local Noise Regulations, SANS 10234, and National Dust Control Regulations (GNR 827) Manage and Control of Soil Management Measures. Waste management procedure adherence.	
	September 2018

NAME OF ACTIVITY	PHASE	SIZE SCALE disturban	AND of ce	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Hydrocarbon storage area	Construction	0.1 Ha		 Loss of soil resources as a result of vehicle movement and oil spills that may cause soil compaction. The activities of construction contractors or employees will be restricted to the planned areas. Instructions must be included in contracts that will restrict construction work and construction workers to the clearly defined limits of the construction site. In addition, compliance to these instructions must be monitored. Contamination of surface and groundwater due to incorrect handling and disposal of waste materials and oil leaks from equipment and machinery No soil, rubble or any other material may be deposited in or within 32 m of the water courses at any time in areas affected by the ore conveyor route; The contractor will implement controls to remediate oil/diesel leaks and spillages from hazardous waste in areas affected by the ore conveyor construction; Spill kits are to be made permanently available at areas of possible spillages of hazardous substances in areas affected by the ore conveyor route construction footprint; Remediation of spillages must be conducted within 24 hours, as far as practical, or appropriately managed to control residual impact on the external environment; No wastewater or waste will be disposed of into the surrounding environment at any time during the construction and operational phases of the ore conveyor project; Vehicle repairs / maintenance can only be undertaken in that area, and for which appropriate environmental protection measures can be applied. These measures may include drip trays and containment facilities; Drip trays will be placed underneath vehicles and machinery waiting for maintenance or repair; Prior to the start of a shift on a daily basis, vehicles must be checked for potential leaks and ground / soil pollution (hydrocarbon spillages;); Machinery will be kept maintained in line with manufacturers specifi	Compliance with this EMPr. The implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have detrimental impact on the area's flora, in particular indigenous species and species that are of conservation importance. Contractors will adhere to Local Noise Regulations, SANS 10234, and National Dust Control Regulations (GNR 827) Manage and Control of Soil Management Measures. Waste management procedure adherence.	Throughout Construction Phase
Excavations	Construction	2 ha		 Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats. Machinery with low noise levels which complies with the manufacturer's specifications to be used; The Styldrift No.1 Shaft noise monitoring programme will be amended to include sensitive receptors in proximity to the proposed conveyor; Noise monitoring will be conducted on a quarterly basis; Transfer station to be screened off from the residential area to the east and south; The side of the Conveyor facing Mafenya to be screened of with IBR sheeting; A noise management plan must be devised to minimise noise emissions during construction; A register will be kept at the construction project site office whereby all issues and concerns raised by the community will be recorded; 	Compliance with this EMPr. Spill Management Procedure and Noise monitoring	Throughout Construction Phase
Erection of Conveyor	Construction	2 ha		 Delivery and testing of equipment to site resulting in increased noise levels. Machinery with low noise levels which complies with the manufacturer's specifications to be used; The Styldrift No.1 Shaft noise monitoring programme will be amended to include sensitive receptors near the proposed conveyor; Noise monitoring will be conducted on a quarterly basis; Transfer station to be screened off from the residential area to the east and south; The side of the Conveyor facing Mafenya to be screened of with IBR sheeting; A noise management plan must be devised to minimise noise emissions during construction; A register will be kept at the construction project site office whereby all issues and concerns raised by the community will be recorded; Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint. Keep disturbed areas to a minimum. No unnecessary vegetation removal will be conducted as part of the project; Camp sites will be screened; Effective waste management practices will be undertaken. The Styldrift No.1 Shaft Waste Management Plan will be enforced at the construction site; 	Compliance with this EMPr. The implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have detrimental impact on the area's flora, in particular indigenous species and species that are of conservation importance. Contractors will adhere to Local Noise Regulations, SANS 10234, and National Dust Control Regulations (GNR 827) Manage and Control of Soil Management Measures. Waste management procedure adherence.	Throughout Construction Phase

NAME OF ACTIVITY	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			 The ore conveyor site area must be cleared of all rubble and litter after construction, and kept neat and tidy during construction; Bare and compacted surfaces resulting from the construction activities of the proposed ore conveyor must be rehabilitated as soon as possible with indigenous vegetation that will be able to grow in the area <u>Habitat fragmentation as a result of construction activities of the conveyor leading to loss of floral diversity.</u> Migration paths will be maintained during construction. The linear development will not totally limit movement of animals between north and south. <u>Soil compaction and levelling as a result of construction activities and vehicle movement leading to loss of riparian habitat</u> The ore conveyor footprint areas will be free draining to ensure that the ore conveyor does not unduly affect the catchments yield; Vehicles will only move along designated areas. Driving in undisturbed areas is prohibited; Erosion can also be limited by ensuring that mine vehicles and human movement is limited to project specific dedicated access ways: 		
Maintenance of Soil Stockpile	Operation	2 ha	 The potential impact of increase soil erosion may occur as a result of surface water runoff Access roads should be designed with a camber to avoid ponding and to encourage drainage to side drains; where necessary, culverts should be installed to permit free drainage of existing water courses; The side drains of the roads can be protected with sediment traps and/or gabions to reduce the erosive velocity of water during storm events and where necessary geo-membrane lining can be used; Losses of fuel and lubricants from the oil sumps and steering racks of vehicles and equipment should be contained using a drip tray with plastic sheeting filled with absorbent material; No waste material (domestic or industrial) will be placed on the soil stockpiles. Should this occur immediate remediation will be required; Spill response procedures must be clearly defined and well known by all construction staff. Records must be kept of training done on each contractor's spill response procedure; Spillages of oil, grease and hydraulic fluids will be cleaned up by removing the affected soil and disposing it at an appropriate facility; If soil is significantly contaminated then this soil will be considered as potentially hazardous and handled according to the waste management procedure, and the Norms and Standards for the Remediation of Contaminated Soil under the Waste Act, or any other Act or Regulations promulgated at that time; Weekly inspections of all surface water management infrastructure constructed from soil will be undertaken during periods of high rainfall and after major rain event; Should any eroded areas be identified as a result of the monthly or weekly inspections of the surface water management infrastructure, these will be repaired as soon as possible or before the next inspection. 	Compliance with this EMPr. The implementation of mitigation measures will ensure that the establishment of the site and associated infrastructure/equipment do not have detrimental impact on the area's flora, in particular indigenous species and species that are of conservation importance. National Dust Control Regulations (GNR 827), Manage and Control of Soil Management Measures. Waste management procedure adherence.	Throughout Operation Phase
Hydrocarbon storage area	Operation	0.1 Ha	 Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area Access roads should be designed with a camber to avoid ponding and to encourage drainage to side drains; where necessary, culverts should be installed to permit free drainage of existing water courses; The side drains of the roads can be protected with sediment traps and/or gabions to reduce the erosive velocity of water during storm events and where necessary geo-membrane lining can be used; Losses of fuel and lubricants from the oil sumps and steering racks of vehicles and equipment should be contained using a drip tray with plastic sheeting filled with absorbent material; No waste material (domestic or industrial) will be placed on the soil stockpiles. Should this occur immediate remediation will be required; Spill response procedures must be clearly defined and well known by all construction staff. Records must be kept of training done on each contractor's spill response procedure; Spillages of oil, grease and hydraulic fluids will be cleaned up by removing the affected soil and disposing it at an appropriate facility; If soil is significantly contaminated then this soil will be considered as potentially hazardous and handled according to the waste management procedure, and the Norms and Standards for the Remediation of Contaminated Soil under the Waste Act, or any other Act or Regulations promulgated at that time; 	Compliance to the NEM: WA as well as SANS 10234	Throughout Operation Phase

NAME OF ACTIVITY	PHASE	SIZE	AND	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR
		SCALE	of			IMPLEMENTATION
				 Weekly inspections of all surface water management infrastructure constructed from soil will be undertaken during periods of high rainfall and after major rain event; Should any eroded areas be identified as a result of the monthly or weekly inspections of the surface water management infrastructure, these will be repaired as soon as possible or before the next inspection. 		
Transport of material to and from site				 Itransfer points and physical operation of the conveyor belt. A register will be kept at the Styldrift No.1 Shaft whereby all issues and concerns raised by the community will be recorded. Potential soil contamination due to incidental spillages of hazardous waste during handling and Itransportation Access roads should be designed with a camber to avoid ponding and to encourage drainage to side drains; where necessary, culverts should be installed to permit free drainage of existing water courses; The side drains of the roads can be protected with sediment traps and/or gabions to reduce the erosive velocity of water during storm events and where necessary geo-membrane lining can be used; Losses of fuel and lubricants from the oil sumps and steering racks of vehicles and equipment should be contained using a drip tray with plastic sheeting filled with absorbent material; No waste material (domestic or industrial) will be placed on the soil stockpiles. Should this occur immediate remediation will be required; Spill response procedures must be clearly defined and well known by all construction staff. Records must be kept of training done on each contractor's spill response procedure; Spillages of oil, grease and hydraulic fluids will be cleaned up by removing the affected soil and disposing it at an appropriate facility; If soil is significantly contaminated then this soil will be considered as potentially hazardous and handled according to the waste management infrastructure constructed from soil will be undertaken during periods of high rainfall and affer major rain event; Weekly inspections of all surface water systems due to polluted storm water run-off from the convey area; Should any eroded areas be identified as a result of the monthy or weekly inspections of the surface water runoff will be exparted as per GN1704 in terms of the NWA; Impaed on floral div	10234, dust control regulations, and noise regulations.	Phase

NAME OF ACTIVITY	PHASE	SIZE SCALE	AND of	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
		disturband	ce			
				Loss of faunal diversity and ecological integrity as a result of alien species proliferation, poaching,		
				and collision of vehicles with animals		
				 All solis compacted as a result of construction activities should be hpped and promed. Special attention should be paid to alien and invasive plant control within these areas: 		
				 Hunting will be prohibited by all employees of RBPlat. 		
	Operation	5 ha		Potential dust emissions from the conveyor while transporting ore to the Maseve Platinum Mine.	Adherence to this EMPr will ensure that	Throughout Operation
				• If air quality dust nuisance associated specifically with the construction and operation of the	impacts associated with the operation of	Phase
				ore conveyor is found to be problematic, then RBPlat or the construction contractor, as	the conveyor are minimised to an acceptable level. Continual monitoring is	
				the ore conveyor:	required in terms of air quality, noise	
				The Styldrift No. 1 Shaft Air Quality Monitoring programme will take cognisance of the	and socio - economic issues.	
				proposed conveyor and its impacts on sensitive receptors;		
				 Bare ground associated with the ore conveyor construction footprint must be rehabilitated 		
				Compacted ground associated with the construction of the one conveyor will be ripped and		
				scarified in order to loosen the growth and allow for vegetation establishment;		
				Indirect visual impact due to dust generation as a result of the movement of vehicles and materials,		
				to and from the site are;		
				 Natural vegetation, wherever possible, must be retained within the ore conveyor construction aits area, recognizing that first breaks will need to be constructed to protect the 		
				integrity of the ore conveyor:		
				 Illumination will only be installed at the transfer points. No illumination will be put in place 		
				along the length of the ore conveyor, unless determined to be required for security		
				purposes.		
				Soli erosion at edge of the conveyor site, Bonwakgogo Stream, along access road and		
				Access roads should be designed with a camber to avoid ponding and to encourage		
Operation of Conveyor and maintenance road				drainage to side drains; where necessary, culverts should be installed to permit free		
				drainage of existing water courses;		
				The side drains of the roads can be protected with sediment traps and/or gabions to reduce the creative velocity of water during storm events and where personant are membrane		
				lining can be used:		
				 Losses of fuel and lubricants from the oil sumps and steering racks of vehicles and 		
				equipment should be contained using a drip tray with plastic sheeting filled with absorbent		
				material; No waste meterial (demostic or industrial) will be pleased on the sail stacknike. Should this		
				occur immediate remediation will be required.		
				 Spill response procedures must be clearly defined and well known by all construction staff. 		
				Records must be kept of training done on each contractor's spill response procedure;		
				 Spillages of oil, grease and hydraulic fluids will be cleaned up by removing the affected soil 		
				and disposing it at an appropriate facility;		
				and handled according to the waste management procedure, and the Norms and		
				Standards for the Remediation of Contaminated Soil under the Waste Act, or any other Act		
				or Regulations promulgated at that time;		
				 Weekly inspections of all surface water management infrastructure constructed from soil will be undertaken during periods of high rainfall and after major rain event; 		
				 Should any eroded areas be identified as a result of the monthly or weekly inspections of 		
				the surface water management infrastructure, these will be repaired as soon as possible or		
	0			before the next inspection;		T
	Operation	5 ha		Loss of faunal habitat and ecological structure as a result of increased fires during operation and introduction of alien species. Leading to transformation of the natural habitat	Alien Invasive Control Programme and monitoring of rehabilitation progress	I hroughout Operation
Maintenance of vegetation				All declared alien weeds will be removed and effectively controlled as part of the alien plant	monitoring of renabilitation progress.	
				eradication and control programme.		
	Decommissioning and	5 ha		Failure to initiate a rehabilitation plan and alien control plan during the construction phase may lead	Remedy through Rehabilitation	During
	Closure			<u>To turtner impacts during the operation phase.</u>	Measures and Conservation	Decommissioning
Maintenance of vegetation				eradication and control programme:	Management Measures	
				A rehabilitation plan must be compiled for post construction activities;		
				Disturbed area will be concurrently rehabilitated during construction so as to limit the		
				amount of rehabilitation work required post construction.		

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e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ();

Table 16: Impact Management

NAME OF ACTIVITY	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)	ASPECTS AFFECTED	PHASE In which impact is anticipated	MITIGATION TYPE	Standard to be achieved
Construction Camp Site	Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats.	Noise	Construction	Control through management and monitoring of noise and ECO inspections	Remain within the Noise Control Regulations for Rural areas
	Loss of soil resources because of vehicle movement and oil spills that may cause soil compaction.	Soils, Land Use and Land Capability	Construction	Control through management and monitoring of spillages. Where spillages occur, the soil must be stripped and disposed of as stipulated in the EMPr	Minimise oil spills and implement ECO inspections and spill management procedures.
	Visual intrusion as a result of the movement of machinery and the erection of contractor camps	Visual	Construction	Management through adherence to this EMPr and traffic control measures.	Vegetation clearance must be limited to demarcated areas only
	Change in sense of place as a result of the construction activities, camps and machinery	Visual	Construction	Management through adherence to this EMPr and traffic control measures.	Vegetation clearance must be limited to demarcated areas only
	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing	Air Quality	Construction	Dust control measures and ECO inspections.	Remain within the designated construction area. Ensure minimal clearance of vegetation.
	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients	Soils, Land Use and Land Capability	Construction	Erosion control measures. Adherence to this EMPr and ECO inspections	Prevent erosion. Should erosion occur, remediation measures will be implemented immediately.
Soil Stockpile	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing loss of habitat	Air Quality	Construction	Dust control measures and ECO inspections. Air Quality Monitoring	Air Quality Monitoring results remain within acceptable standards.
	Loss of soil resources as a result of soil striping and stockpiling	Soils, Land Use and Land Capability	Construction	Monitoring through rehabilitation and management of cleared areas	Retain topsoil integrity for the reuse in rehabilitation.
	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients	Soils, Land Use and Land Capability	Construction	Monitoring through rehabilitation and management of cleared area	Retain topsoil integrity for the reuse in rehabilitation.
Site clearance, erection of fencing and construction of maintenance road.	Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats	Noise	Construction	Noise Monitoring and reduction measures. Management and maintenance of construction vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers. Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication	Remain within the Noise Regulation Standards for Rural Areas
	Temporary employment opportunities may arise during the construction period of the conveyor.	Socio Economic	Construction	Adherence to the Social and Labour Plans and this EMPr	Maximum amount of local labour to be used, subject to skills availability.
	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	Visual	Construction	Management through adherence to this EMPr and traffic control measures.	Vegetation clearance must be limited to demarcated areas only.
	Movements of local villagers and their livestock may be negatively impacted on.	Socio Economic	Construction	ECO inspections and adherence to this EMPr.	Local livestock movement will not be hindered.
	Visual intrusion as a result of the movement of machinery and the erection of contractor camps.	Visual	Construction	Management through adherence to this EMPr and traffic control measures.	Vegetation clearance must be limited to demarcated areas only.
	Change in sense of place as a result of the construction activities, camps and machinery.	Visual	Construction	Management through adherence to this EMPr and traffic control measures.	Vegetation clearance must be limited to demarcated areas only.
	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing.	Air Quality	Construction	Dust control measures. Adherence to this EMPr.	Dust emissions remain within the National Dust Control Regulations thresholds.
	Change in current soil hydrological properties and functionality of soil as a result of compaction and soil sterilisation.	Soils, Land Use and Land Capability	Construction	Rehabilitation procedures and ECO inspection.	All impacted areas will be remediated during and after construction.
	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients.	Soils, Land Use and Land Capability	Construction	Erosion control measures and rehabilitation of cleared areas	Denuded areas will be kept to a minimum, and should erosion occur this will be mitigated immediately.
	Disturbance and loss of vegetation and faunal species.	Biodiversity	Construction	Rehabilitation of affected areas. Monitoring of rehabilitated areas to ensure success. Cleared Ares kept to a minimum.	Construction footprint kept as small as possible.

NAME OF ACTIVITY	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)	ASPECTS AFFECTED	PHASE In which impact is anticipated	MITIGATION TYPE	Standard to be achieved
	Loss of faunal habitat and ecological structure as a result of site clearing, alien invasive species, erosion, and general construction activities.	Biodiversity	Construction	Rehabilitation of affected areas. Monitoring of rehabilitated areas to ensure success. Cleared Ares kept to a minimum.	Construction footprint kept as small as possible.
	Potential impact on sedimentation and pollution of the Bonwakgogo stream as a result of runoff during construction activities.	Surface Water	Construction	Stormwater management measures, and adherence to this EMPr.	No contaminated runoff to the Bonwakgogo stream.
	Accidents as a result of increased traffic in the area.	Traffic	Construction	Traffic control measures, and adherence to this EMPr.	No accidents as a result of the construction phase.
	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	Visual	Construction	Management through adherence to this EMPr and traffic control measures.	Vegetation clearance must be limited to demarcated areas only.
	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing.	Air Quality	Construction	Dust control measures. Adherence to this EMPr.	Dust emissions remain within the National Dust Control Regulations thresholds.
	Increase in carbon emissions and ambient air pollutants (NO2 and SO2) as a result of movement of vehicles and operation of machinery/equipment.	Climate Change	Construction	Traffic control measures, and adherence to this EMPr. Green House Gas Emissions assessment.	Minimise impact to climate change through reducing GHG emissions.
	Increased runoff due to topsoil removal and vegetation clearance leading to possible erosion and sedimentation of riparian resources;	Surface Water	Construction	Stormwater management measures, and adherence to this EMPr.	No contaminated runoff to the Bonwakgogo stream.
	Possible disturbance of areas of Archaeological importance	Heritage	Construction	ECO inspections and construction management control.	No destruction/loss of heritage resources
Hydrocarbon storage area	Loss of soil resources as a result of vehicle movement and oil spills that may cause soil compaction.	Soils, Land Use and Land Capability	Construction	Spill management procedure and rehabilitation of compacted areas.	Comply with the EMPr. Where required, disposal of contaminated soils shall be undertaken in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM: WA)
	Contamination of surface and groundwater due to incorrect handling and disposal of waste materials and oil leaks from equipment and machinery	Surface and Ground Water	Construction	Stormwater management measures, and adherence to this EMPr.	No contaminated runoff to the Bonwakgogo stream.
Excavations	Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats.	Noise	Construction	Noise Monitoring and reduction measures. Management and maintenance of construction vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time.	Noise emissions remain within the National Nosie Control Regulations thresholds.
Erection of Conveyor	Delivery and testing of equipment to site resulting in increased noise levels	Noise	Construction	Noise Monitoring and reduction measures. Management and maintenance of construction vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time.	Noise emissions remain within the National Nosie Control Regulations thresholds.
	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	Visual	Construction	Management through adherence to this EMPr and traffic control measures.	Vegetation clearance must be limited to demarcated areas only
	Habitat fragmentation as a result of construction activities of the conveyor leading to loss of floral diversity	Biodiversity	Construction	Stakeholder engagement and adherence to this EMPr.	Local community livestock movement will not be hindered.
	Soil compaction and levelling as a result of construction activities and vehicle movement leading to loss of riparian habitat	Soils, Land Use and Land Capability	Construction	Rehabilitation procedures and ECO inspection.	All impacted areas will be remediated during and after construction.
Maintenance of Soil Stockpile	The potential impact of increase soil erosion may occur as a result of surface water runoff	Soils, Land Use and Land Capability	Operation	Soil management plan.	No unmitigated erosion to occur on the soil stockpiles.
Hydrocarbon storage area	Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area	Surface Water	Operation	Stormwater Management Procedures.	No contaminated runoff to the Bonwakgogo stream.
Transport of material to and from site	Potential increased noise levels during operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt	Noise	Operation	Noise Monitoring and reduction measures. Management and maintenance of maintenance vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time.	Noise emissions remain within the National Nosie Control Regulations thresholds.

NAME OF ACTIVITY	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)	ASPECTS AFFECTED	PHASE In which impact is anticipated	MITIGATION TYPE	Standard to be achieved
	Potential soil contamination due to incidental spillages of hazardous waste during handling and transportation	Soils, Land Use and Land Capability	Operation	Spill management procedure and adherence to this EMPr.	Comply with the EMPr. Where required, disposal of contaminated soils shall be undertaken in terms of the NEM: WA.
	Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area	Surface Water	Operation	Stormwater Management Procedures.	No contaminated runoff to the Bonwakgogo stream.
	Potential increased noise levels during operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt.	Socio-Economic	Operation	Noise Monitoring and reduction measures. Management and maintenance of maintenance vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time.	Noise emissions remain within the National Nosie Control Regulations thresholds.
	Impact on floral diversity as a result of increased alien species proliferation and ongoing edge effects from maintenance operations	Biodiversity	Operation	Alien Vegetation Control Programme.	Removal of alien vegetation in accordance to the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
	Loss of faunal diversity and ecological integrity as a result of alien species proliferation, poaching, and collision of vehicles with animals	Biodiversity	Operation	Alien Vegetation Control Programme.	Removal of alien vegetation in accordance to the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983), and NEM:BA.
Operation of Conveyor and maintenance road	Potential dust emissions from the conveyor while transporting ore to the Maseve Platinum Mine.	Socio-Economic	Operation	Dust control measures. Adherence to this EMPr.	Dust emissions remain within the National Dust Control Regulations thresholds.
	Indirect visual impact due to dust generation as a result of the movement of vehicles and materials, to and from the site are	Visual and Air Quality	Operation	Dust control measures. Adherence to this EMPr.	Dust emissions remain within the National Dust Control Regulations thresholds.
	Movements of local villagers and their livestock will be negatively impacted on.	Socio-Economic	Operation	ECO inspections and adherence to this EMPr	Local livestock movement will not be hindered.
	Soil erosion at edge of the conveyor site, Bonwakgogo Stream, along access road and contamination due to spillages of oil, fuel and chemicals during maintenance.	Soils, Land Use and Land Capability	Operation	Soil management plan.	No unmitigated erosion to occur within the operational footprint.
Maintenance of vegetation	Loss of faunal habitat and ecological structure as a result of increased fires during operation and introduction of alien species, leading to transformation of the natural habitat	Biodiversity	Operation	Rehabilitation monitoring and procedures.	Al disturbed areas will be rehabilitated.
Maintenance of vegetation	Failure to initiate a rehabilitation plan and alien control plan during the construction phase may lead to further impacts during the operation phase	Closure and Rehabilitation	Operation	Rehabilitation monitoring and procedures.	Al disturbed areas will be rehabilitated.

f) **Impact Management Actions**

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved)

Table 17: Impact management actions

NAME OF ACTIVITY	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)	MITIGATION TYPE	Period for Implementation	Compliance with standards
	Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats.	Control through management and monitoring of noise and ECO inspections	Construction	Remain within the Noise Control Regulations for Rural areas. Adhere to the EMPr and Environmental Authorisation.
	Loss of soil resources as a result of vehicle movement and oil spills that may cause soil compaction.	Control through spill management and soil management plans.	Construction	Minimise oil spills and implement ECO inspections and spill management procedures.
Construction Camp Site	Visual intrusion as a result of the movement of machinery and the erection of contractor camps	Management through adherence to this EMPr and traffic control measures.	Construction	Vegetation clearance must be limited to demarcated areas only
	Change in sense of place as a result of the construction activities, camps and machinery	Management through adherence to this EMPr and traffic control measures.	Construction	Vegetation clearance must be limited to demarcated areas only. Speed control and limitation of the times when construction vehicles may be on the roads
	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing	Dust control measures and ECO inspections.	Construction	Remain within the designated construction area. Ensure minimal clearance of vegetation.
	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients	Erosion control measures. Adherence to this EMPr and ECO inspections	Construction	Prevent erosion. Should erosion occur, remediation measures will be implemented immediately.
	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing loss of habitat	Dust control measures and ECO inspections. Air Quality Monitoring	Construction	Air Quality Monitoring results remain within acceptable standards.
Soil Stockpile	Loss of soil resources as a result of soil striping and stockpiling	Monitoring through rehabilitation and management of cleared areas	Construction	Retain topsoil integrity for the reuse in rehabilitation.
	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients	Monitoring through rehabilitation and management of cleared area	Construction	Retain topsoil integrity for the reuse in rehabilitation.
Site clearance,	Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats	Noise Monitoring and reduction measures. Management and maintenance of construction vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication	Construction	Remain within the Noise Regulation Standards for Rural Areas
and construction of maintenance road.	Temporary employment opportunities may arise during the construction period of the conveyor.	Adherence to the Social and Labour Plans and this EMPr	Construction	Maximum amount of local labour to be used, subject to skills availability.
	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint	Management through adherence to this EMPr and traffic control measures.	Construction	Vegetation clearance must be limited to demarcated areas only
	Movements of local villagers and their livestock may be negatively impacted on.	ECO inspections and adherence to this EMPr	Construction	Local livestock movement will not be hindered.

NAME OF ACTIVITY	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)	MITIGATION TYPE	Period for Implementation	
	Visual intrusion as a result of the movement of machinery and the erection of contractor camps	Management through adherence to this EMPr and traffic control measures.	Construction	Vegeta areas c
	Change in sense of place as a result of the construction activities, camps and machinery	Management through adherence to this EMPr and traffic control measures.	Construction	Vegeta areas c
	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing	Dust control measures. Adherence to this EMPr.	Construction	Dust er Regula
	Change in current soil hydrological properties and functionality of soil as a result of compaction and soil sterilisation	Rehabilitation procedures and ECO inspection.	Construction	All imp constru
	Erosion of and edge effects resulting in reduction of soil quality due to loss of soil nutrients	Erosion control measures and rehabilitation of cleared areas	Construction	Denude erosion
	Disturbance and loss of vegetation and faunal species	Rehabilitation of affected areas. Monitoring of rehabilitated areas to ensure success. Cleared areas kept to a minimum.	Construction	Constru
	Loss of faunal habitat and ecological structure as a result of site clearing, alien invasive species, erosion, and general construction activities	Rehabilitation of affected areas. Monitoring of rehabilitated areas to ensure success. Cleared areas kept to a minimum.	Construction	Constru
	Potential impact on sedimentation and pollution of the Bonwakgogo stream as a result of runoff during construction activities	Stormwater management measures, and adherence to this EMPr.	Construction	No con
	Accidents as a result of increased traffic in the area	Traffic control measures, and adherence to this EMPr.	Construction	No acc
	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint	Management through adherence to this EMPr and traffic control measures.	Construction	Vegeta areas c
	Dust emissions associated with movement of construction vehicles on cleared areas as well as bush clearing	Dust control measures. Adherence to this EMPr.	Construction	Dust ei Regula
	Increase in carbon emissions and ambient air pollutants (NO2 and SO2) as a result of movement of vehicles and operation of machinery/equipment.	Traffic control measures, and adherence to this EMPr. Green House Gas Emissions assessment.	Construction	Minimis GHG e
	Increased runoff due to topsoil removal and vegetation clearance leading to possible erosion and sedimentation of riparian resources;	Stormwater management measures, and adherence to this EMPr.	Construction	No con
	Possible disturbance of areas of Archaeological importance	ECO inspections and construction management control.	Construction	No des
Hydrocarbon storage area	Loss of soil resources as a result of vehicle movement and oil spills that may cause soil compaction.	Spill management procedure and rehabilitation of compacted areas.	Construction	Comply Where underta Manag WA)
	Contamination of surface and groundwater due to incorrect handling and disposal of waste materials and oil leaks from equipment and machinery	Stormwater management measures, and adherence to this EMPr.	Construction	No con

Compliance with standards

ation clearance must be limited to demarcated only

tion clearance must be limited to demarcated only

missions remain within the National Dust Control tions thresholds.

pacted areas will be remediated during and after uction.

ed areas will be kept to a minimum, and should n occur this will be mitigated immediately.

uction footprint kept as small as possible.

uction footprint kept as small as possible.

taminated runoff to the Bonwakgogo stream.

idents as a result of the construction phase.

ation clearance must be limited to demarcated only

missions remain within the National Dust Control tions thresholds.

se impact to climate change through reducing missions.

taminated runoff to the Bonwakgogo stream.

struction/loss of heritage resources

y with the EMPr.

required, disposal of contaminated soils shall be aken in terms of the National Environmental gement: Waste Act, 2008 (Act 59 of 2008) (NEM:

taminated runoff to the Bonwakgogo stream.

NAME OF ACTIVITY	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)	MITIGATION TYPE	Period for Implementation	
Excavations	Potential increased noise levels during the construction phase of the conveyor associated with the use of power tools, generators. transformers, Tractor Loader Backhoes (TLBs) and Bobcats.	Noise Monitoring and reduction measures. Management and maintenance of construction vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time.	Construction	Noise Contro
Erection of Conveyor	Delivery and testing of equipment to site resulting in increased noise levels	Noise Monitoring and reduction measures. Management and maintenance of construction vehicles. Management through the use of noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time.	Construction	Noise Contro
	Change in landscape as a result construction equipment, camp sites and clearing of the construction footprint.	Management through adherence to this EMPr and traffic control measures.	Construction	Vegeta areas c
	Habitat fragmentation as a result of construction activities of the conveyor leading to loss of floral diversity	Stakeholder engagement and adherence to this EMPr.	Construction	Local hindere
	Soil compaction and levelling as a result of construction activities and vehicle movement leading to loss of riparian habitat	Rehabilitation procedures and ECO inspection.	Construction	All imp constru
Maintenance of Soil Stockpile	The potential impact of increase soil erosion may occur as a result of surface water runoff	Soil management plan.	Operation	No unn
Hydrocarbon storage area	Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area	Stormwater Management Procedures.	Operation	No con
Transport of material to and from site	Potential increased noise levels during operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt	Noise Monitoring and reduction measures. Management and maintenance of maintenance vehicles. Management using noise dissipating technologies e.g. noise mufflers. Control through the limiting of the activities to the day time.	Operation	Noise Control
	Potential soil contamination due to incidental spillages of hazardous waste during handling and transportation	Spill management procedure and adherence to this EMPr.	Operation	Comply Where underta Manag WA)
	Potential contamination of surface water systems due to polluted storm water run-off from the conveyor area	Stormwater Management Procedures.	Operation	No con
	Potential increased noise levels during operational phase of the conveyor associated with the use of transfer points and physical operation of the conveyor belt.	Noise Monitoring and reduction measures. Management and maintenance of maintenance vehicles. Management using noise dissipating technologies e.g. noise mufflers Control through the limiting of the activities to the day time.	Operation	Noise Control
	Impact on floral diversity because of increased alien species proliferation and ongoing edge effects from maintenance operations	Alien Vegetation Control Programme.	Operation	Remov Consei No. 43
	Loss of faunal diversity and ecological integrity because of alien species proliferation, poaching, and collision of vehicles with animals	Alien Vegetation Control Programme.	Operation	Remov Consei No. 43

Compliance with standards

- emissions remain within the National Nosie I Regulations thresholds.
- emissions remain within the National Nosie I Regulations thresholds.
- ation clearance must be limited to demarcated only
- community livestock movement will not be ed.
- acted areas will be remediated during and after action.
- nitigated erosion to occur on the soil stockpiles.
- taminated runoff to the Bonwakgogo stream.
- emissions remain within the National Nosie I Regulations thresholds.
- y with the EMPr.
- e required, disposal of contaminated soils shall be aken in terms of the National Environmental gement: Waste Act, 2008 (Act 59 of 2008) (NEM:
- taminated runoff to the Bonwakgogo stream.
- emissions remain within the National Nosie I Regulations thresholds.
- val of alien vegetation in accordance to the ervation of Agricultural Resources Act, 1983 (Act 3 of 1983)
- val of alien vegetation in accordance to the rvation of Agricultural Resources Act, 1983 (Act of 1983) and NEM:BA.

	NAME OF ACTIVITY	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts)	MITIGATION TYPE	Period for Implementation	
Operation of Conveyor and maintenance r Maintenance o vegetation	Operation of	Potential dust emissions from the conveyor while transporting ore to the Maseve Platinum Mine.	Dust control measures. Adherence to this EMPr.	Operation	Dust er Regula
		Indirect visual impact due to dust generation because of the movement of vehicles and materials, to and from the site are	Dust control measures. Adherence to this EMPr.	Operation	Dust er Regulat
	maintenance road	Movements of local villagers and their livestock will be negatively impacted on.	ECO inspections and adherence to this EMPr	Operation	Local liv
		Soil erosion at edge of the conveyor site, Bonwakgogo Stream, along access road and contamination due to spillages of oil, fuel and chemicals during maintenance.	Soil management plan.	Operation	No unn footprin
	Maintenance of vegetation	Loss of faunal habitat and ecological structure because of increased fires during operation and introduction of alien species, leading to transformation of the natural habitat	Rehabilitation monitoring and procedures.	Operation	Al distu
	Maintenance of vegetation	Failure to initiate a rehabilitation plan and alien control plan during the construction phase may lead to further impacts during the operation phase	Rehabilitation monitoring and procedures.	Decommissioning	Al distu
Rehabilitation a demolishing of infrastructure	Rehabilitation and	Rehabilitation and removal of the conveyor area and equipment and vehicular movement. This will result in the generation of dust by movement of vehicles and due to blowing winds. Vehicles and machinery will also generate diesel or petrol fumes. Generated dust will migrate towards the predominant wind direction and may settle on surrounding properties including nearby vegetation.	Dust control measures and rehabilitation of areas stripped of vegetation	Decommissioning	Comply Environ Regulat Vehicle access
	demolishing of infrastructure	Noise will be generated during the removal of equipment and rehabilitation of the sites. This noise is not expected to exceed occupational noise limits and will be short lived.	Control and prohibit access of vehicles and machinery to areas outside of established access tracks Control through the clear delineation of the affected area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system. Control through the implementation of a soil management programme in terms of the correct tops oil removal, stockpiling and rehabilitation practices as discussed in the EMPr.	Decommissioning	Comply Areas. demarc

Compliance with standards

missions remain within the National Dust Control tions thresholds.

missions remain within the National Dust Control tions thresholds.

vestock movement will not be hindered.

nitigated erosion to occur within the operational nt.

urbed areas will be rehabilitated.

urbed areas will be rehabilitated.

y with the requirements of the National nmental Management Air Quality Act, 2004 Dust tion guidelines for rural communities.

e movement shall be limited to areas demarcated tracks Comply with the requirements of the EMPr

y with the Noise Regulation Standards for Rural Vehicle movement shall be limited to areas cated as access tracks. Adherence to this EMPr.

i) Financial Provision

(1) Determination of the amount of Financial Provision.

a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

The rehabilitation plan was developed on the basis that the rehabilitated areas will be made safe, stable, non-polluting and will be able to support self-sustaining ecosystems, similar to surrounding natural ecosystems.

To ensure that the rehabilitation plan is aligned with the closure objective, high-level risk assessment of the proposed activities was undertaken to establish the potential risks associated with therewith. The closure objectives have been aligned with the baseline biophysical, cultural and social conditions of the surrounding area. The closure objectives are to:

- Eliminate any safety risks associated with the demolition of infrastructure;
- Remove and/or rehabilitate all pollution and pollution sources such as waste materials and spills;
- To establish rehabilitated areas to a state with no susceptibility to soil erosion which may result in loss of soil, pollution of water resources;
- Restore disturbed areas and re-vegetate these areas with plant species naturally occurring in the area to restore the ecological function of the affected areas as far as practicable;
- Rehabilitate the disturbed footprint to the agreed upon end land use;
- Rehabilitate the disturbed footprint to represent the natural surrounding environmental and topography; and
- Eliminate all alien invasive plant species from the disturbed areas.

b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.

The draft BAR and EMPr will be made available to all registered I&APs for a 30-day review and comment period. All comments received, and responses provided to the stakeholders will be incorporated into the final BAR and EMPr and will be collated into a Comments and Responses Register.

c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.

The nature of the conveyor has limited requirements for rehabilitation. A detailed management plan has been provided to address the potential impacts associated with these activities. The only rehabilitation that will specifically be required is dismantling of infrastructure and revegetation:

• All infrastructure will be dismantled from the conveyor. Materials will be salvaged and reused/recycled as far as feasible;
- It is recommended that a standard commercial fertiliser high I the standard elements is added to the soil before re-vegetation at a rate of 10-20 kg/ha, or as confirmed by a suitable specialist. The fertiliser should be added to the soil in a slow release granular form;
- A suitable qualified ecologist will be appointed to determine the appropriate veld grass mix for hand seeding;
- Revegetation will be conducted with the end land use in mind, as consulted with stakeholders;
- Revegetation efforts will be monitored every second month for a period of 6 months after initial seeding. An effective vegetation cover of 45% must be achieved. Re seeding will be undertaken if this cover has not been achieved 6 six months.
- Contaminated soil will be excavated and disposed of as hazardous waste. Contaminated land will be dealt with in terms of the NEM: WA;
- The areas will be levelled to represent the surrounding topography to prevent future pooling of water and allow water to return to the catchment.

d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The management plan is in such a manner as to ensure concurrent rehabilitation as far as feasible. The conveyor and maintenance road footprint will be the main areas that will require rehabilitation. Most of the impacts of the conveyor will be temporary in nature and of low significance. A detailed management plan has been provided to address potential impacts.

e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

The financial provision for the environmental rehabilitation and closure of the conveyor forms an integral part of the MPRDA. Sections 41 (1) and, 41 (2), 41 (3) and 45 which deals with the financial provision for rehabilitation and closure. During 2012, the DMR made updated rate available for the calculation of the closure costs, where contractor's costs are not available, these apply.

The liability for closure of the aspects associated with the proposed project will be determined using the approach advocated in the Department of Minerals and Energy (DME) now the DMR Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provisions Provided by a Mine (2005), the requirements stipulated in Appendix 5 of GNR 982 printed in terms of the NEMA., as well as GNR 1147 (Regulations Pertaining To The Financial Provision For Prospecting, Exploration, Mining or Production Operations) of the NEMA. The approach to calculating the closure quantum utilised in this assessment is summarised as follows:

- Step 1: Determine the Mineral Mined;
- Step 2A: Determine Primary Risk Class;
- Step 2B: Revision of Primary Risk Class;
- Step 3: Determine Environmental Sensitivity;
- Step 4: Determination of weighting factors.

With the determination of the quantum for closure, it must be assumed that the infrastructure had no salvage value (clean closure). The closure cost estimate (clean closure) was determined in

accordance with the DMR guidelines. The closure costs were calculated to be R 2 225 972.51as shown in Table 18.

Table 18: Cost Estimate Expenditure

Main Description (if not applicable, indicate as N/A)	Units	Fill in Amount	DMR Master Rate	DMR Multiplication Factor	Weighing Factor 1	Amount	Comments
Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m³	17000	R14.67	1	1	R 249 390.00	Dismantling of the conveyor belt.
Rehabilitation of access roads	m²	6800	R36.62	1	1	R 249 016.00	Rehabilitation of the maintenance road
General surface rehabilitation, including grassing of all denuded areas	ha	4.4	R113 221.68	1	1	R 498 175.39	Rehabilitation of disturbed servitude.
Fencing	m	3400	R129.15	1	1	R 439 110.00	Dismantling of fencing
Maintenance and aftercare	ha	5	R15 067.54	1	1	R 75 337.70	
	3rd Party Closure (Pre-Mature Closure)				Sub Total 1 (At Closure)	R 1 511 029.09	
						TOTAL	
					Weighting Factor 2		
					1.05	R 1 586 580.55	
Preliminary and General	12% of Sub Total 1 if less than R100 mill				R 190 389.67		
	6% of Sub Total 1 if more than R100 mill						
Contingency	10 of Sub	Total 1				R 158 658.05	
						R 349 047.72	
						R 1 935 628.27	
VAT @ 15%						R 290 344.24	
						R 2 225 972.51	

f) Confirm that the financial provision will be provided as determined.

The amount required to cover the rehabilitation and closure is estimated to be R 2 225 972.51 at this stage. Work will be carried out by the contractors and consultant and the costs are included in the estimate provided in Table 18.

RBPlat will fund the rehabilitation and hereby undertakes to fund the operations. The applicant hereby confirms that the amount is anticipated to be provided for in the Mining Work Programme. This financial liability will be included in RBPlat annual closure and liability assessment.

g) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

a. Monitoring of Impact Management Actions

Please refer to Table 19.

b. Monitoring and Reporting Frequency

Please refer to Table 19.

c. Responsible Persons (Roles and Responsibilities)

Generic roles that require to be defines for the project include:

- Project Developer;
- Environmental Control Officer;
- Health and Safety (HS) Manager; and
- Site Manager.

The typical requirements of each of the roles are provided in the following sections.

Project Developer

The Project Developer (RBPlat) is the 'owner' of the project and as such is responsible for ensuring that the conditions of the Environmental Authorisation and EMPr issued in terms of NEMA (should the project receive such authorisation) are fully complied with, as well as ensuring that any other necessary permits or licenses are obtained and complied with. It is expected that RBPlat will appoint the Environmental Control Officer, EHS Manager and Site Manager.

Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed to monitor the compliance of the proposed project with the conditions of Environmental Authorisation and EMPr (should such authorisation be granted by DMR) during the construction phase (and possibly the operational phase, depending on the requirements of DMR). The ECO must also monitor compliance of the proposed project with environmental legislation. The roles and responsibilities of the ECO should include the following:

• The ECO must undertake periodic environmental audits during the relevant phases of the proposed project in order to monitor and record environmental impacts and non-conformances. It is recommended that weekly or bi-weekly environmental inspections be undertaken by the ECO during the construction phase.

- Environmental compliance reports must be submitted by the ECO to the DMR on an annual basis or as stipulated by the DMR.
- The ECO must maintain a diary of site visits and audits, a copy of the Environmental Authorisation (should such authorisation be granted by DMR) and relevant permits for reference purposes, a non-conformance register, a public complaint register, and a copy of previous environmental audits undertaken.
- Prior to the commencement of construction, the ECO must meet on site with the Site Manager to confirm the construction procedure and designated construction areas;
- The ECO must provide guidance during the planning phase, to ensure that aspects for construction have been sustainably planned, taking into consideration the EMPr and Environmental Authorisation.

Environmental Manager

The Environmental Manager will be appointed to fulfil the roles of the Environmental Officer during the construction phase and the Environmental Manager during the operational phase. The responsibility of the EHS Manager include overseeing the implementation of the EMPr during the construction and operational phases, monitoring environmental impacts, record-keeping and updating of the EMPr as and when necessary. The EHS Manager is also responsible for monitoring compliance with the conditions of the Environmental Authorisation that may be issued to RBPlat.

The lead contractor and sub-contractors may have their own Environmental Officers or designate Environmental Officer functions to certain personnel.

During construction, the HS Manager will be responsible for the following:

- Meeting on site with the Site Manager prior to the commencement of construction activities to confirm the construction procedure required for the project.
- Daily or weekly monitoring of site activities during construction to ensure adherence to the specifications contained in the EMPr and Environmental Authorisation (should such authorisation be granted by DMR), using a monitoring checklist that is to be prepared at the start of the construction phase.

Site Manager

The site manager will be responsible for the following:

- Overall construction programme, project delivery and quality control for the construction of the facility.
- Overseeing compliance with the Health, Safety and Environmental Responsibilities specific to the project construction.
- Promoting total job safety and environmental awareness by employees, contractors and subcontractors and ensuring that all employees and contractors and sub-contractors are aware of the importance that the project proponent attaches to safety and the environment.
- Ensuring that each subcontractor employ an Environmental Officer (or have a designated Environmental Officer function) to monitor and report on the daily activities on-site during the construction period.
- Ensuring that safe, environmentally acceptable working methods and practices are implemented, and that sufficient plant and equipment is made available, is properly operated and maintained i to facilitate proper access and enable any operation to be carried out safely.

- Meeting on site with the HS Manager prior to the commencement of construction activities to confirm the construction procedure and designated activity zones.
- Ensuring that all appointed contractors and sub-contractors are aware of this EMPr and their responsibilities in relation to the programme.
- Ensuring that all appointed contractors and sub-contractors repair, at their own cost, any environmental damage because of a contravention of the specifications contained in the EMPr, to the satisfaction of the EHS Manager.

h) Time Period for Implementing Impact Management Actions

Please refer to Table 19.

i) Mechanism for Monitoring Compliance

Please refer to Table 19.

Table 19: Mechanisms from Monitoring

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITI (FOR THE EXECUTION OF MONITORING PROGRAMMES
Data Collection and Assessment Survey Mapping Planning for Construction Construction Camp Site Soil Stockpile Site clearance and erection of fencing Hydrocarbon storage area Mobile office Ablution Facility Excavations Transport of material to and from site Erection of Conveyor Operation of Conveyor and maintenance road Maintenance of vegetation	Soil Erosion	Management and monitoring of soil stockpiles. Soils must be stored properly and revegetated to prevent erosion and to enable re-use during rehabilitation. Stockpiles must be visually inspected daily to ensure that no erosion is taking place	ECO, Site Manager
	Loss of Indigenous Plant Species	Management and monitoring of construction activities to ensure that limited vegetation clearance takes place.	ECO, Site Manager
	Faunal Habitat Loss	Management and monitoring of construction activities to ensure that limited vegetation clearance takes place. Time construction activities to minimise faunal mortality. Poaching of fauna shall be prohibited. Uncontrolled fires shall not be permitted on site and persecution or hunting of fauna	ECO, Site Manager
	Proliferation of alien invasive species	Proliferation of alien invasive species Declared weeds and alien invasive species must be eradicated. Management of alien invasive plant shall be undertaken though throughout the project lifecycle.	
	Nuisance dust and air emissions generation.	luisance dust and air emissions eneration. During dry seasons, ensure that cleared (excavated) areas and unpaved surfaces are sprayed with water obtained from an approved source to minimise dust generation. The existing dust monitoring programme will be amended to account for	
		activities undertaken at the conveyor footprint.	
	Loss of arable land/land for grazing	Ensure proper rehabilitation measures are adhered to in order to return the soil quality to its natural state.	ECO, Site Manager
	Soil and groundwater contamination	Manage through the EMPr and develop a groundwater management programme.	ECO, Site Manager
	Visual Intrusion and loss of sense of place	Ensure that infrastructure is kept to its most "natural" state and keep a tidy visually ordered site.	ECO, Site Manager
		Rubble/litter/waste removal and disposal to be monitored throughout construction. Complaints about night lights should be investigated and documented in a register	
	Increased pressure on the road network	Speed control and limitation of the times when construction vehicles may be on the roads.	ECO, Site Manager
	Soil disturbance resulting in the spread of alien	Alien invasive vegetation monitoring and control through Alien Invasive Management Plan.	ECO, Site Manager, Bota Specialist.
	Nuisance Noise	Measure noise levels routinely to ensure the noise levels are being kept within the acceptable ISO standards.	ECO, Site Manager, Noise Specialis
	Health and safety of personnel	Routine safety checks, safety training and Inspections to be carried out during the construction and operation phase to enforce the use of Personnel Protective Equipment (PPE). This must also be included in the safety requirements of the Contract.	ECO, Site Manager
	Waste Management	Maintain a waste manifest book to record volumes of waste leaving the site, including recyclables.	ECO, Site Manager
		Keep safe disposal certificates on file on site for Hazardous waste. Way Bridge slips must be obtained for all other waste streams and kept on file on site.	
		Adherence to the waste management procedure.	

.ITIES PF THE IES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	Weekly Monitoring and Monthly Reporting
	Monthly monitoring and reporting. Monitoring will be required at all the construction and operational activities until such time that rehabilitation is completed, and sustainability of vegetation cover is achieved.
	Monthly monitoring and reporting. Monitoring will be required at all the construction and operational activities until such time that rehabilitation is completed, and sustainability of vegetation cover is achieved.
	Monthly monitoring and reporting Monitoring will be required at all the construction and operational activities until such time that rehabilitation is completed and sustainable.
Quality	Monthly monitoring and reporting
	Monitor report on an annual basis. Monitoring will be required until such time that rehabilitation is completed.
	Monthly monitoring and reporting on the compliance to the EMPr.
	Monthly monitoring and reporting on the compliance to the EMPr.
	Monthly monitoring and reporting
Botanical	Annual monitoring and reporting
cialist.	Monthly monitoring and reporting
	Routine inspection and Quarterly reporting
	Frequent inspections and reported on a monthly basis

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS	
	Stormwater Management	Visual monitoring based on sediment Clean water must be kept separate from contaminated water emanating from the project sites	ECO, Site Manager	Frequent inspections and reported on a monthly basis	
	Rehabilitation	Monitoring of the following: Basal Cover Arial Cover 	ECO, Site Manager	Rehabilitation will be undertaken throughout all t project phases. The final rehabilitation will undertaken when the construction activities ha been finalised.	
		Species diversity		The ECO shall inspect the affected areas 6 months after finalisation of rehabilitation to assess the success of the rehabilitation.	

j) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

Annual environmental audits must be undertaken to ensure compliance with the EMPr and Environmental Authorisation. The environmental audit reports must also include the financial provision updates as per the NEMA requirements. These reports must be submitted to the DMR.

k) Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

An Environmental Awareness and Risk Assessment Schedule has been developed and is outlined in Table 20. The purpose of this schedule is to ensure that onsite employees are not only trained, but that the principles are continuously re-enforced.

Frequency	Time allocation	Objective			
Induction (all staff and workers)	1-hour training on environmental awareness training as part of site induction	Develop an understanding of what is meant by the natural environmental and social environment and establish a common language as it relates to environmental, health, safety and community aspects.			
		Establish a basic knowledge of the environmental legal framework and consequences of non -compliance.			
		Clarify the content and required actions for the implementation of the EMPr.			
		Confirm the spatial extent of areas regarded as sensitive and clarify restrictions.			
		Provide a detailed understanding of the definition, the method for identification and required response to emergency incidents.			
Monthly Awareness Talks (all staff and workers)	30 minutes awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses and measures for the adaptation of mitigation and/or management practices.			
Risk Assessments (supervisor and workers involved in task)	Daily task-based risk assessment	Establish an understanding of the risks associated with a specific task and the required mitigation and management measures on a daily basis as part of daily toolbox talks.			

 Table 20: Environmental Training and Awareness Schedule

(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

As prescribed in Table 20, Task/Issue based Risk Assessments must be undertaken with all workers involved in the specific tasks in order to establish an understanding of the risks associated with a specific task and the required mitigation and management measures contained in this report.

Environmental Awareness Training Content- Induction Training: The following environmental awareness training will be provided to all staff and workers who will be involved in construction activities:

- Description of the approved activities and content of the EMPr;
- An overview of the applicable legislation and regulations as they relate to environmental, health, safety and the community;

Content and implementation of the approved EMPr specifically:

- Allocated roles and responsibilities;
- Management and mitigation measures; and
- Identification of risks and requirements adaptation.

Sensitive environments and features:

- Description of environmentally sensitive areas and features; and
- Prohibitions as it relates to activities in or in proximity to such areas.

Emergency Situations and Remediation:

- Methodology for the identification of areas where accidents and emergencies may occur, communities and individuals that may be affected;
- An overview of the response procedure;
- Equipment and resources;
- Designate of responsibilities;
- Communication, including communication with the potentially affected communities and responsible authorities; and
- Training schedule to ensure effective response.

<u>Development of procedures and checklists</u>: The following procedures will be developed, and all staff and workers will be adequately trained on the content and implementation thereof:

<u>Emergency Preparedness and Response</u>: The procedure will be developed to specifically include risk identification, preparedness, response measures and reporting. The procedure will specifically include spill and fire risk, preparedness and response measures. The appropriate emergency control centres (fire department, hospitals etc.) will be identified and the contact numbers obtained and made available on site. The procedure must be developed in consultation will potentially affected landowners.

In the even that risks are identified, which may affect adjacent landowners (or other persons), the procedure will include appropriate communication strategy to inform such persons and provide response measures to minimize the impact.

Incident Reporting Procedure: Incident reporting will be undertaken in accordance with an established incident reporting procedure to:

- Provide details of the responsible person, including any person who
 - o Is responsible for the incident;
 - o Owns any hazardous substance involved in the incident;
 - Was in control when the incident occurred.
- Provide details of the incident (time, date, location);
- Provide details of the cause of the incident;
- Identify aspects of the environment affected;
- The details of corrective action taken; and
- The identification of any potential residual or secondary risks that must be monitored and corrected or managed.

Environmental and Social Audit Checklist: An environmental audit checklist will be established to include the environmental and social mitigation and management measures as developed and

approved as part of the EMPr and Environmental Authorisation. Non-conformances will be identified, and corrective action taken where required.

I) Specific information required by the Competent Authority

(Among others, confirm that the financial provision will be reviewed annually).

No specific information was required by the Competent Authority.

2 UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports; \bigotimes
- b) the inclusion of comments and inputs from stakeholders and I&APs ; \bigotimes
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. parties are correctly reflected herein.

Signature of the environmental assessment practitioner:

SRK Consulting South Africa (Pty) Ltd

Name of company:

2018/09/12

Date:

-END-

Prepared by

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Andrew Caddick

Senior Environmental Scientist

Reviewed by

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Manda Hinsch

Partner

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Appendices

Appendix A: Environmental Assessment Practitioner Declaration of Interest

Appendix B: The Qualifications of the Environmental Assessment Practitioner

Appendix C: Location Map indicating Proposed Area

Appendix D: Public Participation Process

Appendix E: Impact Assessment

Appendix F: Composite Map

Appendix G:Heritage Assessment

Appendix H: Air Quality Assessment

Appendix I: Wetland Assessment

Appendix J: Noise Assessment

Appendix K: Soils, Land Use and Land Capability

Appendix L: Environmental Authorisation of the Existing Styldrift Conveyor Belt

Report Distribution Record

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Stakeholders / Commer	Stakeholders / Commenting Authorities						
Chief Directorate: Environmental Services	North West Department of Rural, Environmental and Agricultural Development		2(HC)	September 2018	M Hinsch		
Mr. Sebenzile Ntshangase	Departmer	nt Water and Sanitation	3(HC)	September 2018	M Hinsch		
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Ms M.F. Mokati	Bojanala Platinum District Municipality		5(HC)	September 2018	M Hinsch		
Ms N. Sithole	Rustenburg	g Local Municipality	6(HC)	September 2018	M Hinsch		
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Ms. Reotshepile Tlhapane	Royal Bafokeng Nation		13(HC)	September 2018	M Hinsch		
Client							
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