mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

FOR THE DEVELOPMENT OF A COAL DESTONING PLANT, DISCARD DISPOSAL FACILITY AND ASSOCIATED INFRASTRUCTURE AT THE NEW DENMARK COLLIERY, NEAR STANDERTON, MPUMALANGA

REVIEW PERIOD:

10 December 2015 – 19 April 2016

(107 Day Review Period)

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: Anglo American Coal South Africa (AACSA) New Denmark Colliery
TEL NO: +27 17 7490160

FAX NO: +27 71 7191105

POSTAL ADDRESS: Private Bag x2022, Standerton, Mpumalanga

PHYSICAL ADDRESS: Anglo Operations (Pty) Ltd, T/A Anglo American Coal South Africa, Farm Slagkraal 35, Is District, Standerton, 2430

FILE REFERENCE NUMBER SAMRAD: N/A (DMR Reference No. MP30/5/1/2/2/(74) MR)

AngloAmerican

srk consulting

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 un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2. OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The objective of the environmental impact assessment process is to, through a consultative process—

(a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;

(b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;

(c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;

(d) determine the—-

(i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and

(ii) degree to which these impacts—

(aa) can be reversed;

(bb) may cause irreplaceable loss of resources, and

(cc) can be avoided, managed or mitigated;

(e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;

(f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;

(g) identify suitable measures to manage, avoid or mitigate identified impacts; and

(h) identify residual risks that need to be managed and monitored.

ANGLO AMERICAN COAL SOUTH AFRICA (PTY) LTD

Environmental Impact Assessment and Environmental Management Programme for New Denmark Colliery- Authorities Review

DECEMBER 2015

SIGNATURE SHEET

SIGNED OFF BY:

Mr Alan Williams Anglo American Coal South Africa Project Studies Manager	
Mr PP De wet Anglo American Coal South Africa New Denmark Colliery Mine Manager	
Mr Kgadi Moreni Anglo American Coal South Africa New Denmark Colliery Environmental Superintendent	

COMPILED BY:

Ms Charissa Tomlin SRK Consulting (South Africa) Pty Ltd Project Coordinator/ Report Writer, Environmental Scientist	
Mrs Beth Candy SRK Consulting (South Africa) Pty Ltd Project Manager, Principal Environmental Scientist	

REVIEWED BY:

Ms Briony Liber SRK Consulting (South Africa) Pty Ltd Partner, Principal Consultant	

This EIA and EMP has been compiled in terms of the provisions of Appendix 3 and 4 of December 2014 Regulation R. 982 of the National Environmental Management Act (NEMA). These requirements are cross-referenced to the various sections in this report where these requirements are addressed in the table below.

Table 1: Structure of the EIA

EIA Regulation requirement	Section addressed	Page number
(a) Details of – (i) The EAP who prepared the report and; (ii) The expertise of the EAP, including a curriculum vitae	PART A -Section 3 (a)	1
(b) The location of the activity, including – (i) The 21 digit Surveyor General code of e\ach 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;	PART A -Section 3 (b)	2
(c) A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is – (i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) On land where the property has not been define, the coordinates within which the activity is to be undertaken;	PART A -Section 3 (c)	2
(d) A description of the scope of the proposed activity, including – (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;	PART A -Section 3 (d)	2
(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)	9
(f) A motivation for the need and desirability for the proposed development, including the need an desirability of the activity in the context of the preferred location;	PART A -Section 3 (f)	13
(g) A motivation for the preferred development footprint within the approved site	PART A -Section 3 (g)	14
(i) details of the development footprint alternatives considered;	PART A -Section 3 (g)(i)	14
(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 (g)(ii)	18
(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in	PART A -Section 3 (g)(iii)	23

EIA Regulation requirement		Section addressed	Page number
	which the issues were incorporated, or the reasons for not including them;		
(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 (g)(iv)	54
(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 – (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	PART A -Section 3 (g)(v)	62
(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 (g)(vi)	87
(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 (g)(vii)	87
(viii)	the possible mitigation measures that could be applied and level of residual risk	PART A -Section 3 (g)(viii)	91
(ix)	if no alternative development locations for the activity were investigated, the motivation for not considering such; and	PART A -Section 3 (g)(ix)	107
(x)	a concluding statement indicating the preferred alternative development location within the approved site;	PART A -Section 3 (g)(x)	107
(h)	**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 (h)	107
(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;		
(i)	**an assessment of each identified potentially significant impact and risk, including-**	PART A -Section 3 (i)	110
(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;		

EIA Regulation requirement	Section addressed	Page number
(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;		
(j) 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 (j)	138
(k) an environmental impact statement which contains-	PART A -Section 3 (k)	147
(i) a summary of the key findings of the environmental impact assessment:	PART A -Section 3 (k)(i)	147
(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	PART A -Section 3 (k)(ii)	149
(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	PART A -Section 3 (k)(iii)	150
(l) 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 (l)	150
(m) the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;	PART A -Section 3 (m)	150
(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)	150
(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)	151
(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)	152
(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)	153

EIA Regulation requirement	Section addressed	Page number
(r) an undertaking under oath or affirmation by the EAP in relation to:	PART A -Section 3 (r) and PART B – Section 2	153, 232
(i) the correctness of the information provided in the reports;		
(ii) the inclusion of comments and inputs from stakeholders and I&APs;		
(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 of negative environmental impacts;	PART A -Section 3 (s)	153
(t) an indication of any deviation from the approved seeping report, including the plan of study, including-	PART A -Section 3 (t)	154
(i) any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and	PART A -Section 3 (t)(i)	154
(ii) a motivation for the deviation;	PART A -Section 3 (t)(ii)	154
(u) any specific information that may be required by the competent authority; and	PART A -Section 3 (u)	155
(v) any other matters required in terms of section 24(4)(a) and (b) of the Act.	PART A -Section 3 (v)	156

Table 2: Structure of the EMP

EMPr Regulation requirement	Section addressed	Page number
(a) Details of – (i) The EAP who prepared the EMPr; and (ii) The expertise of the EAP to prepare an EMPr, including a curriculum vitae	PART B -Section 1 (a)	157
(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)	157
(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;	PART B -Section 1 (c)	157
(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)	157
(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)	173
(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)	195
(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;		
(ii) comply with any prescribed environmental management standards or practices;		
(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and		
(iv) 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 (n;	PART B- Section 1 (g)	225

EMPr Regulation requirement	**Section addressed**	**Page number**
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (n;	PART B- Section 1 (h)	225
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	PART B- Section 1 (i)	225
(j) the time periods within which the impact management actions contemplated in paragraph (n must be implemented;	PART B- Section 1 (j)	225
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (n;	PART B- Section 1 (k)	225
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	PART B- Section 1 (l)	228
(m) an environmental awareness plan describing the manner in which-	PART B- Section 1 (m)	228
(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and		
(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and		
(n) any specific information that may be required by the competent authority.	PART B – Section 1 (n)	231

PART A

SCOPE OF ASSSSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: Beth Candy
Tel No.: +27 11 441 1111
Fax No. : +27 11 880 8086
e-mail address: bcandy@srk.co.za

ii) Expertise of the EAP.

(1) **The qualifications of the EAP**
(with evidence).

SRK Consulting (South Africa) Pty Ltd (SRK) assigned Beth Candy, a principal environmental scientist as the lead environmental assessment practitioner and associated project team to undertake the necessary environmental authorisation process.

Beth Candy's qualifications include the following:

- Bachelor of Science in Geology;
- Bachelor of Science with Honours in Environmental Geology; and
- Master of Science in Environmental Science.

Beth is registered as a Professional Scientist of Nature (*Pr. Sci. Nat*) in Environmental Science with the South African Council for Natural Scientific Professions (SACNASP), SACNASP registration number 400299/06.

Refer to **Appendix 1** for the qualifications of the EAP.

(2) **Summary of the EAP's past experience**.
(In carrying out the Environmental Impact Assessment Procedure)

Beth Candy (*MSc (Env Sci), Pr. Nat. Sci*. is an environmental scientist with more than 13 years' experience in environmental impact assessments and environmental management. With a strong background in Geology (BSc Hons Geol) her core experience and expertise is in the mining industry sector, focusing on Risk Assessments, Environment Impact Assessments (EIA), Environmental Management Programmes (EMP), Water Use Licence Applications (WULA), due diligence and integrated regulatory processes. Her involvement in such projects varies from project management and co-ordination, to the compilation and review of technical and environmental documentations and reports. In the mining sector she has been involved in the authorisation of EIAs, EMPs and WULAs for both underground and opencast mining operations, as well as the associated activities such as ash facilities, waste disposal facilities, conveyors routes, access roads, dragline walkways, pollution control and other dams, stream diversions, undermining of wetlands, pipelines and oil and fuel storage facilities amongst others. Other experience includes industrial sector projects and construction projects.

Beth Candy has extensive experience with coal projects, particularly in the Mpumalanga area.

Curriculum Vitae with past experience is attached as **Appendix 2**.

b) Description of the property.

Table 3: Description of Property

Farm Name:	Portion 1 of the farm Racesbult 352 IS Portion 4, 6 and 9 of the farm Slagkraal 353 IS
Application area (Ha)	Total hectares for application area: 36.84 ha Portion 1 Racesbult 352 IS = 13.95 ha Portion 4 Slagkraal 353 IS = 18.12 ha Portion 6 Slagkraal 353 IS = 2.15 ha Portion 9 Slagkraal 353 IS = 8.88 ha
Magisterial district:	Gert Sibande District Municipality Lekwa Local Municipality
Distance and direction from nearest town	The nearest town is Standerton which is 30 km south in distance in a straight line with eMalahleni (Witbank) situated 98 km away.
21 digit Surveyor General Code for each farm portion	Portion 1 Racesbult 352 IS = T0IS00000000035200001 Portion 4 Slagkraal 353 IS = T0IS00000000035300004 Portion 6 Slagkraal 353 IS = T0IS00000000035300006 Portion 9 Slagkraal 353 IS = T0IS00000000035300009

c) Locality map

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

Refer to **Appendix 3** for the New Denmark De-stoning Plant Locality Map.

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

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.

Listed and specified activities

Refer to Table 4 for the listed activities triggered by the New Denmark Project and **Appendix 4** for the proposed infrastructure layout map with approximate co-ordinates.

Table 4: Listed activities triggered by the New Denmark Project

NAME OF ACTIVITY (All activities including activities not listed) ***(E.g. 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, etc…etc…etc.)***	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE (*GNR 983, GNR 984 or GNR 985)/ NOT LISTED***
De-Stoning Plant and associated infrastructure/ activities			
De-Stoning Plant	7 ha	X	GNR. 983 (12) (xii) GNR. 984 (21)
Offices		X	GNR. 983 (12) (x) (xii)
Workshops			
Change houses			
Pipelines (domestic and raw water)			
Roads			
Parking bays			
Waste collection area			
Sewage treatment plant			
Water management infrastructure		X	GNR. 983 (9, 10)
Plant complex		X	GNR. 983 (12) (xii)
Electricity supply			
Lighting			
Fencing			
Soil stockpiles			
Discard Disposal Facility and associated infrastructure/ activities			
Discard Disposal Facility	30 ha	X	GNR. 983 (12 (xii), 27)\ NEM:WA - GNR 921 Category B (7)(9)(10)
Discard transfer			
Water management infrastructure		X	GNR. 983 (9)
Access roads			
Conveyor			
Contractors workshops and offices			
Rehabilitation compaction and seeding			
Electricity supply			
Lighting			
Fencing			
Soil stockpiles			
Additional berms and surface water diversion		X	GNR. 983 (9)
Pollution Control Dam, Process Water Dam and associated infrastructure/activities			
Pollution Control Dams	5 ha	X	GNR. 983 (12 (iv) (xii), 13, 27)
Channels		X	GNR. 983 (9)

NAME OF ACTIVITY (All activities including activities not listed) ***(E.g. 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, etc…etc…etc.)***	**Aerial extent of the Activity Ha or m²**	**LISTED ACTIVITY Mark with an X where applicable or affected.**	**APPLICABLE LISTING NOTICE (*GNR 983, GNR 984 or GNR 985)/ NOT LISTED***
Pipelines			GNR. 983 (10)
Run of Mine/ Product Stockpiles and associated infrastructure/ activities			
Run of Mine Stockpiles	5 ha	X	GNR. 983 (12 (xii), 27)
Product Stockpiles		X	GNR. 983 (12 (xii), 27)
Conveyors			
Access Roads			
Fencing			
Stacker and reclaimer			
Topsoil stockpile			
Water management infrastructure		X	GNR. 983 (9)

(i) Description of the activities to be undertaken

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

Background to New Denmark Colliery

Anglo American Coal South Africa (AACSA) New Denmark Colliery (NDC) near Standerton in Mpumalanga Province is contracted to provide coal to the nearby Eskom Tutuka Power Station. NDC is an existing underground mine (established in 1983) and has the following departmental reference numbers:

- DMR Reference Number: MP30/5/1/2/2/ (74) MR
- DWS Reference Number: 16/2/7/C114/C074
- MDEDET Reference Number: 17/2/3 GS-167

NDC extracts coal from the Highveld coalfield No. 4 seam using a combination of bord and pillar and long wall mining methods. Variations in the coal seam thickness, result in large portions of stone and rock (known as floor and roof material) being mined along with the coal (primary product). Due to the geology in the area this has always been a feature of the coal that is produced by the mine. NDC does not currently have the facilities to remove the stone contamination that is being supplied to the power station.

Current mining process and existing infrastructure

Currently, raw coal is mined through either long wall or bord and pillar mining methods and undergoes primary crushing underground. The De-stoning Plant is proposed to be built on a brownfields site, consisting of transformed land, agriculture and degraded grassland and will link into the existing mine and Eskom infrastructure. The current stockyard system consists of a dual conveyor system for run of mine product, which discharges into a 12 000 ton silo. From the silo, coal is currently being conveyed into the crushing building which consists of four granulators which crush coal and discharges it onto conveyors for transportation to the ESKOM Feed Stockyard which supplies the power station.

Proposed additional plant and discard facility infrastructure

The proposed De-stoning Plant and associated discard disposal facility will tie into the current system via conveyor entry and exit locations. The de-stoning plant will handle a designed maximum 5.1 Mt/yr Run of Mine (ROM) feed capacity and has been proposed to be constructed in two phases (Phase 1 and Phase 2).

Phase 1 (Option 1D-C (IV), as seen in Figure 1, affords production of acceptable coal quality by removing stone contamination entrained in the coarse fractions. This option comprises of the following:

- ROM stockpile to dewater ROM coal surface moisture prior to processing in the de-stoning plant;
- Primary Dry Screening Plant to screen for the correct sizing for the plant;
- Drewboy Dense Medium Separation (DMS) plant to separate the coal from stone and rock. This section is complete with a degrit circuit to treat the emanating fines;
- Product stockpile to dewater the product coal's surface moisture post processing;
- Filtration Plant where the filter cake is delivered to the product stream; and
- Discard Silo to provide a surge capacity between the Plant and Discard Disposal Facility site.

Phase 2 (Option 1D-F), as seen in Figure 2, will include all above mentioned infrastructure in Phase 1, including the ROM stockpile, Dry Screening Plant, DMS Plant, Product stockpile and discard silo. Differences lie in the following:

- Dry Screening Plant will have double stage screening, primary cutting (30 mm) and secondary cutting (10 mm);
- Raw Fines Centrifuge Plant to dewater the fine material emanating from the dry screening plant; and
- Two DMS cyclone modules to treat the middling raw coal (-30 mm + 10 mm).

A single Discard Disposal Facility with a maximum approximate height of 30 m is proposed to accommodate waste rock and stone from the De-stoning Plant. This facility will utilize recommended liners to be confirmed through consultation with Department of Water and Sanitation (DWS). Discard from the plant will be transported via conveyor to the Discard Disposal Facility. Trucks will deposit discard on the Discard Disposal Facility, after which the discard will be compacted and capped. It is proposed that the discard will be rehabilitated using local plant vegetation material.

A pollution control dam and associated storm water management infrastructure will be built to avoid and manage pollution and contamination. Water from this dam will be pumped to a process water dam

for storage and to be used within the plant complex. The process water dam will also be built to accommodate excess water that may be required during the processing. Water from this dam will be pumped to the plant through a return water pipeline. Water runoff upstream of the plant and discard disposal facility will be diverted with the use of a combination of berms and channels.

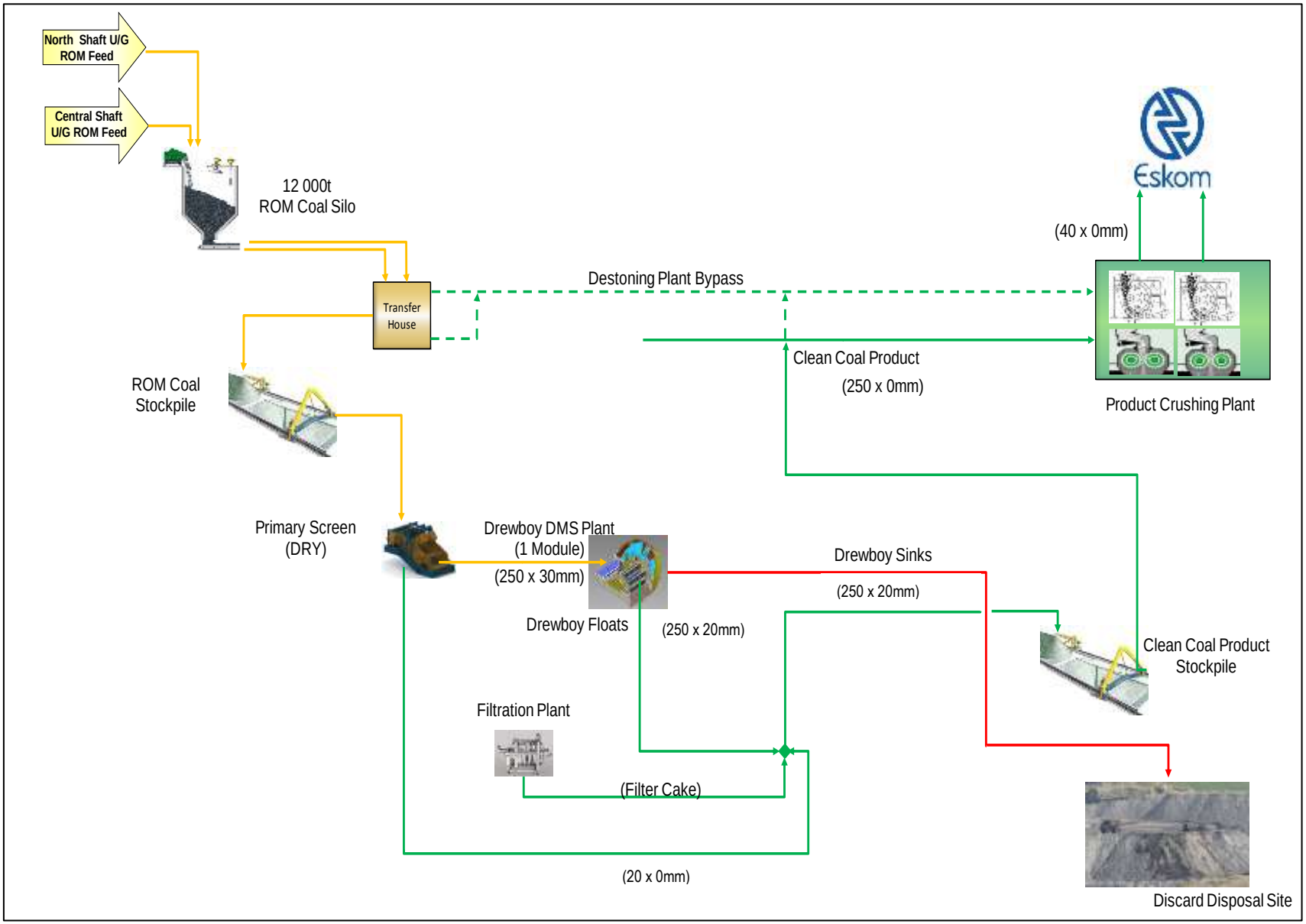

Figure 1: Phase 1 Plant Process Flow Diagram (DRA, Metallurgical Report- Option Selection Pre-Feasibility Study, February 2015)

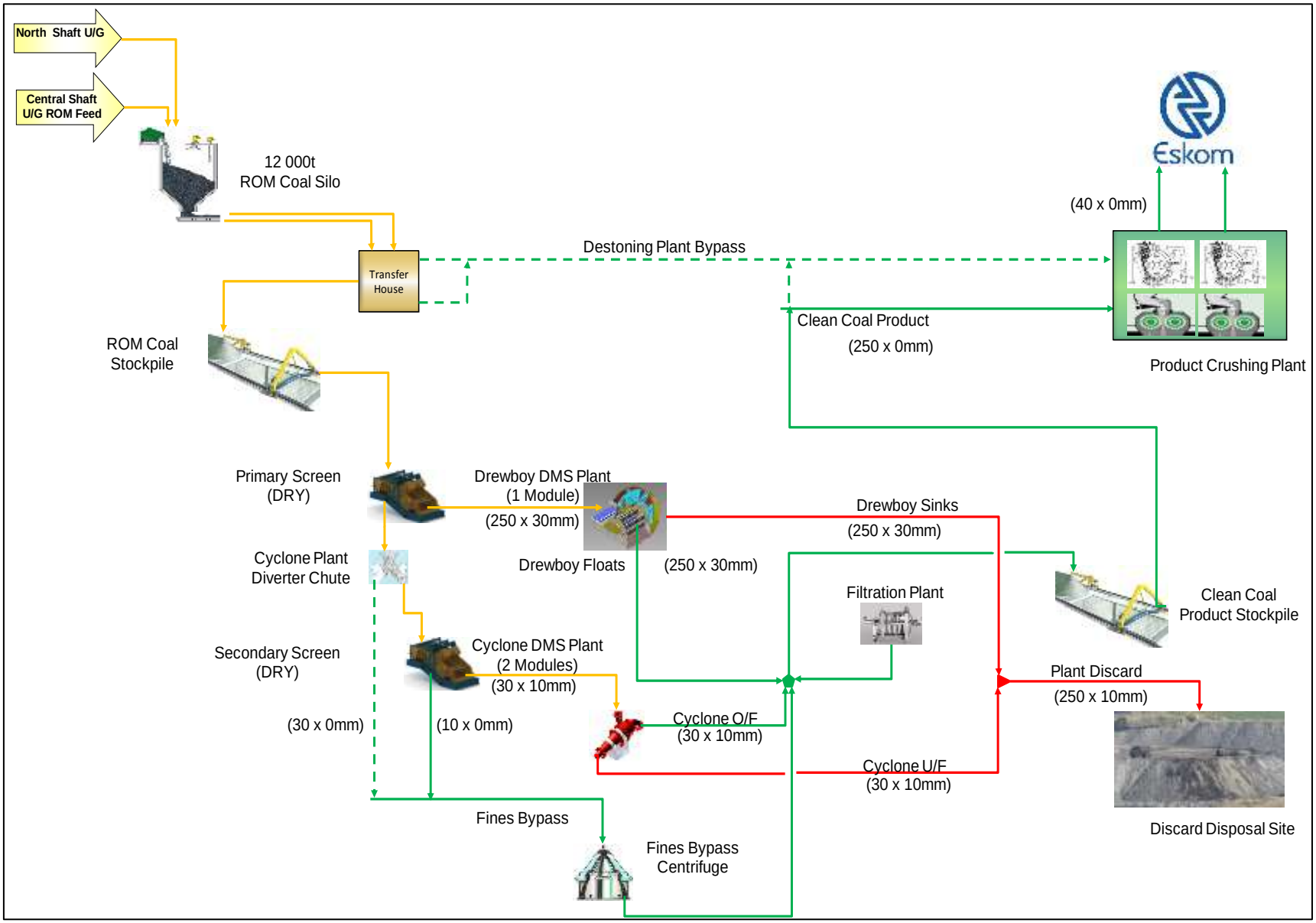

Figure 2: Phase 2 Plant Process Flow Diagram (DRA, Metallurgical Report- Option Selection Pre-Feasibility Study, February 2015)

e) Policy and Legislative Context

Table 5: Applicable legislation and guidelines for the New Denmark Colliery

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** *(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)*	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT** *(E.g In terms of the National Water Act:-Water Use Licence has/has not been applied for).*
The National Environmental Management Act (Act No. 107 of 1998)(NEMA) The National Environmental Management Act (Act 107 of 1998 as amended on the 8th of December 2014) (NEMA) and the associated listed activities identified under Regulations R.982, GN R.983, GN R. 984 and GN R. 985, is the key national legislation underpinning environmental authorisations in South Africa. The Department of Mineral Resources (DMR) is the competent authority for mining-related applications in terms of NEMA. The DMR, along with the Department of Environmental Affairs (DEA), will take into account various other legislation, including the National Environmental Management Waste Act (NEMWA), National Water Act (NWA) and National Environmental Management Air Quality Act (NEMAQA). The stakeholder engagement process will be undertaken in compliance to the requirements of the NEMA (as amended in December 2014) (NEMA), and the Public Participation Guidelines in terms of Section 24J of NEMA.	NEMA and associated regulations are directly relevant to this authorisation application. As NDC is an existing operation with an approved EMP, a Scoping Report (this report) and EIA/EMP amendment will be required for this authorisation and will be conducted as per the required regulations. The EIA/EMP amendment will be submitted to the competent authority which is the Mpumalanga DMR. (Refer to Table 1 above)	This EIA/EMP report covers NEMA, as per Regulation R.982.
The National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA) The NEM:WA was promulgated on 10 March 2009 to reform the law regulating	This project requires a waste licence. The waste licence application will form part of the environmental authorisation application required for the mining	This EIA/EMP report covers NEM:WA as per GNR 921.

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** *(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)*	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT** *(E.g In terms of the National Water Act:-Water Use Licence has/has not been applied for).*
waste management in South African in order to protect health and environment by providing reasonable measures for the prevention of pollution and ecological degradation. On the 3rd of July 2009, under section 19(1) of the NEM:WA, a list of waste management activities which have, or are likely to have a detrimental effect on the environment were published [Government Notice (GN) 718]. Subsequently, the NEM:WA Amendment Act published in June 2014 added a Schedule 3 waste categorisation which classifies mine residue stockpiles as hazardous waste. Additionally regulations regarding the Planning and Management of Residue Stockpiles and Deposits were published on 24 July 2015, resulting in the management of residue deposits and stockpiles now being regulated within the ambit of the National Environmental Management: Waste Act, 59 of 2008. This applies to residue stockpiles and residue deposits which includes, discard, slurry, tailings, slimes, waste rock, ash etc. or any other product derived from a mining operation which is stockpiled, stored or accumulated for potential reuse or disposal. Consequently a Waste Licence is required.	activities. This is for application the Discard Disposal facility will require a Waste Licence, the Run of Mine and Product Stockpiles were not included in the application as they are not considered waste according to the Acts definition As per GNR 921 Category B (7)(9)(10) listed activities will be triggered. Refer to Table 1 above.	
<u>The National Water Act (Act No. 36 of 1998) (NWA)</u> The NWA Government Notice No. 704, Section 21, recognises that water is a scarce and unevenly distributed national resource which must managed	An update or amendment to the approved Integrated Water Use Licence (IWUL) and Integrated Waste Water Management Plan (IWWMP) will be required for the new infrastructure.	The WULA and IWWMP covers the requirements of NWA and will be submitted to DWS as a separate application.

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** *(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)*	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT** *(E.g In terms of the National Water Act:-Water Use Licence has/has not been applied for).*
encompassing all aspects of water resources. In terms of Chapter 4 of the NWA, activities and processes associated with the NDC De-stoning Plant and associated infrastructure, are required to be licensed by the Department of Water and Sanitation (DWS). An Integrated Water Use Licence Application (IWULA) will be lodged with the DWS. Furthermore, an Integrated Water and Waste Management Plan (IWWMP) will be compiled in support of the IWULA. This application will be undertaken under the current legislation as the new draft legislation has not yet been promulgated.	The updated IWUL and IWWMP will be submitted to the DWS as a separate application.	
<u>The National Environmental Management: Biodiversity Act (Act No.10 of 2004) (NEM:BA)</u> The National Environmental Management: Biodiversity Act (Act No. 10 of 2004)(NEMBA) provides for the management and conservation of South Africa's biodiversity within the framework of NEMA, as well as the protection of species and ecosystems that warrant national protection and the sustainable use of indigenous biological resources. The New Denmark Colliery falls within the Mpumalanga Province, which has a provincial Biodiversity Sector Plan. This provides the conservation planning approach in the Mpumalanga Region.	NEM:BA was used to inform the activities triggered by Listing Notice 3 (R. 985) in the 2014 NEMA Regulations (see Table 4 in Section (d)(i)). The Mpumalanga Biodiversity Sector Plan provides land use recommendations which are considered in this application. Refer to Figure 3 the Mpumalanga Biodiversity Conservation Plan.	The New Denmark Project team has taken into consideration the Mpumalanga Critical Biodiversity Areas (CBA) during the alternatives analysis and design of the project.

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** *(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)*	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT** *(E.g In terms of the National Water Act:-Water Use Licence has/has not been applied for).*
The National Environmental Management: Air Quality Act (Act No. 39 of 2004) (NEM:AQA) The National Environmental Management Air Quality Act (NEM:AQA) came into effect in April 2010 and is applied in accordance with the principals stipulated in NEMA. The Act outlines norms and standards with regards to air quality management planning, monitoring, compliance and management measures in order to protect and enhance the quality of air and reduce risks to human health. NEM:AQA also promotes sustainable development. The New Denmark Colliery falls within the Highveld Priority Area in Mpumalanga, requiring specific air quality management measures outlined in NEM:AQA.	This legislation has been considered and this project will be incorporated into the mine wide air quality management plan. No Air Emissions Licence (AEL) is required for this project.	The New Denmark project team has taken into consideration air quality management measures during the design of the project.
The National Heritage Resources Act (Act No. 25 of 1999) The National Heritage Resources Act aims to promote good management of cultural heritage resources and encourages the nurturing and conservation of cultural legacy so that it may be bestowed to future generations. The Act requires all developers (including mines) to undertake cultural heritage studies for any development exceeding 0.5 ha. It also provides guidelines for impact assessment studies to be undertaken where cultural resources may be disturbed by development activities. The South African Heritage Resources	As part of the impact assessment process, an updated heritage assessment of the project area has been undertaken. This assessment will be uploaded on the SAHRA site along with the EIA/EMP and will require approval should any sites of cultural heritage significance be identified within the project footprint.	The placement of the infrastructure has been informed by identified historical features within the project area. The discard disposal facility location has been adjusted to avoid identified graves adjacent to the footprint.

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** *(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)*	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT** *(E.g In terms of the National Water Act:-Water Use Licence has/has not been applied for).*
Agency (SAHRA) will need to approve the heritage assessment undertaken as part of the impact assessment process. It is important to note that so far no areas of cultural heritage significance were found within the New Denmark De-stoning Project site.		
<u>Spatial Planning and Land Use Management Act (Act No. 16 of 2013)(SPLUMA)</u> The Spatial Planning and Land Use Management Act, 2013 (SPLUMA) is not yet promulgated, however is expected to come into operation by proclamation in the Government Gazette in mid-2015. SPLUMA is a framework act for all spatial planning and land use management legislation in South Africa. It seeks to promote consistency and uniformity in procedures and decision-making in this field. SPLUMA will also assist municipalities to address historical spatial imbalances and the integration of the principles of sustainable development into land use and planning regulatory tools and legislative instruments.	The re-zoning process is being undertaken from the current zoning plan, which includes rezoning from Agricultural to Industrial site. This is a separate application that has been submitted to the Lekwa Local Municipality by Korsman and Associates.	The site is currently zoned as agricultural and therefore a re-zoning process has been undertaken and report submitted to the local municipality to rezone to the applicable industrial zoning.

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).

As a result of South Africa's increased demand for energy, there is a need for Eskom to be more efficient in their power generation from their existing coal fired power stations. A method to improve efficiency is through processing coal to ensure that unwanted material (such as stone and shale) is removed from the energy generation process. In addition, the reduction of in situ surface moisture content from the coal supplied to Tutuka power station will increase the energy generation potential within the power station.

It has been identified and investigated by Eskom and AACSA that the need to meet this improved quality of coal can be achieved through a De-stoning Plant. Presently, raw coal from NDC is only crushed prior to being fed to Tutuka. Raw coal contains various quantities of stone and shale, which is hard and abrasive, and contains no heat value. This causes increased maintenance and shutdowns in the power station, and is a contributing cause of load, or power, losses to the national electricity grid. Consequently the needs for constructing such a plant include:

- Controlled and improved consistency and quality of coal being supplied to Tutuka Power Station;
- Meeting contractual agreements between ESKOM and AACSA with regards to quality and quantity of coal being provided for the power station; and
- Lowering the maintenance costs and reduced shutdowns within the power station.

g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved 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.

i) Details of the development footprint alternatives considered.

With reference to the site plan provided as Appendix 4 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;
(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;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

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

The current proposed Plant site and associated Discard Disposal Facility is located on a brownfields site close to existing NDC and Eskom infrastructure and therefore was the most cost effective and least disturbing option. The proposed site for the development is the only portion of land that the land owner, Eskom, has agreed to release for the Plant and Discard Disposal Facility.

Plant, ROM and Product Stockpile

The location and extent of the Plant, ROM Stockpile and Product Stockpile is influenced by the existing rail loop, conveyor route from the main New Denmark offices, silo and the existing access road. The location of the infrastructure was also guided by historical underground workings (long wall mining).

The following options were considered for the placement of the Plant, ROM Stockpile and Product Stockpile:

- Option 1: ROM Stockpile and Product Stockpile within the railway loop and Plant to the west of the railway loop (Preferred option); and
- Option 2: Plant within the railway loop and ROM Stockpile and Product Stockpile to the west of the railway loop.

Refer to **Appendix 5a** for a map illustrating the two site options for the Plant, ROM Stockpile and Product Stockpile.

Option 1 was chosen as the preferred option based on the reduced number of overpasses over the existing railway loop to transport discard, ROM and product.

The extent and layout of the Plant, ROM Stockpiles and Product Stockpiles has been revised since the Scoping Phase and based on findings from the feasibility study.

Discard Disposal Facility alternative site locations

The location of the Discard Disposal Facility was also considered however alternatives were ruled out due to engineering constraints as a result of underground mining operations, surrounding topography, location of sensitive environments, land ownership and the extent of the NDC mining rights area.

Three site alternatives were identified and investigated for the Discard Disposal Facility, which include:

- Option 1: Racesbult 352 IS, Portion 6 (Preferred site);
- Option 2: Uitkyk 549 IS, Portion 0; and
- Option 3: Racesbult 352 IS, Portion 2.

Option 1 was chosen as the preferred site on the basis of minimum impact and engineering criteria.

Refer to **Appendix 5b** for a map illustrating the three Discard Disposal Facility site options.

A high level screening exercise was performed for the proposed Discard Disposal Facility to inform which of the three potential sites is most suitable, from a biophysical and soci0-economic perspective. A site visit and visual assessment in conjunction with a review of specialist studies and spatial and project information enabled the identification of environmental and social sensitivities at each location.

It should be noted that this is a conceptual, high-level assessment of the potential locations, based on a desktop review of previous specialist studies.

Table 7 presents a conceptual representation of the environmental and social sensitivities as well as any fatal flaws associated with each site.

Identified sensitivities have been graded as “high”, “medium” or “low” based on the criteria in Table 6.

Table 6: Criteria for evaluating environmental and social sensitivities at each of the Discard Disposal Facility options

Sensitivity grading	Description and criteria
High	Substantial deterioration or harm to receptors; receiving environment has an inherent value to stakeholders; receptors of impact are of conservation importance; or identified threshold often exceeded.
Medium	Moderate/measurable deterioration or harm to receptors; receiving environment moderately sensitive; or identified threshold occasionally exceeded.
Low	Minor deterioration (nuisance or minor deterioration) or harm to receptors; change to receiving environment not measurable; or identified threshold never exceeded.

Table 7: Sensitivities associated with each of the three Discard Disposal Facility site options

Aspect	Option 1 (Racesbult 352 IS, Portion 6)	Option 2 (Uitkyk 549 IS, Portion 0)	Option 3 (Racesbult 352 IS, Portion 2)
Geology	Low	Low	Low
Topography	Low	Low	Low
Soils, land use land capability	Medium	High	High
Vegetation	Low	Medium	Medium
Fauna	Low	Low	Low
Surface water	Low	High	High
Wetlands	Low	High	High
Aquatic ecology	Low	Low	Low
Air quality	Medium	Medium	Medium
Noise	Medium	Medium	Medium
Archaeology and cultural heritage	Low	Cannot comment due to lack of information	Cannot comment due to lack of information
Groundwater	Cannot comment due to lack of information	Cannot comment due to lack of information	Cannot comment due to lack of information
Socio-economic	Medium	Medium	Medium

The above conceptual representation of the environmental and social sensitivities associated with the three potential Discard Disposal Facilities locations indicates that Option 1 is preferable. Sites/ options two and three are associated with significant environmental and social sensitivities including proximity to agricultural land, surface watercourses and wetlands. Thus, sites two and three are no longer considered for the construction of the Discard Disposal Facility.

(b) The type of activity to be undertaken

The NDC Project team, together with Eskom, embarked on a value engineering exercise investigate various possible treatment activities and associated technologies. These activity options were evaluated based on the requirements required to meet the power station's needs, what would be feasible and viable to implement and potential environmental and social implications. The treatment activities where assessed in four rounds to ensure that the best solution can be implemented.

In the first round of alternative activities, six options were assessed:

- Option 1A: Scalping screen only;
- Option 1B: Scalping screen and X-Ray sorting technology (XRT);
- Option 1C: Scalping screen and DMS (Wemco drum circuit);
- Option 2A: Scalping screen and Bradford breaker only;
- Option 2B: Scalping screen, Bradford breaker and XRT; and
- Option 2C: Scalping screen, Bradford Breaker and DMS (Cyclone circuit).

Subsequent to the six options above being evaluated, a seventh option was considered by the project engineers, which resulted in a treatment option comprising of a coarse and fine DMS wash plant being selected as a favourable option. This was known as Option 1D: Scalping screen and DMS Drewboy and Cyclone.

Following this option development, Eskom requested that the issue of total moisture be addressed and issued a scope change for further options analysis. Six alternative sub-options to Option 1D were developed and were evaluated on a metallurgical basis. These options are as followed:

- Option 1D-A: Base Case option complete with a product stockpile to handle all the DP product streams;
- Option 1D-B: Option 1D-A discarding the filter cake;
- Option 1D-C: Option 1D-A but excluding the DMS Cyclone plant (i.e. Drewboy DMS only);
- Option 1D-D: Option 1D-A with the incorporation of a centrifuge plant to dewater the raw fines (10mm) from the dry screening plant;
- Option 1D-E: Base Case option complete with a product stockpile to only handle the raw fines (-10mm) from the dry screening plant, and
- Option 1D-F: Option 1D-A with the incorporation of ROM stockpiles and raw fines centrifuge, but discarding of the filter cake.

Based on these investigations, Option 1D-F was deemed a favourable option to meet the requirements of the power station. However, the plant is to be designed on a modular basis, such that option 1D-C can be implemented as a phase 1 to meeting financing constraints.

A further five sub-options for 1D-C were investigated to meet the requirements of a modular design. The preferred activity options and associated technologies are:

- Option 1D-C (iv): Phase 1 implementation (Drewboy DMS treating +20mm raw coal complete with ROM and product stockpile.); and
- Option 1D-F: Phase 2 (design basis and full solution).

No environmental or social considerations formed part of this alternatives analysis.

(c) The design or layout of the activity

The following aspects were considered in selecting the preferred layout and extent of the project at the preferred site:

- Land ownership;
- The location of wetlands and floodlines;
- The location of graves;
- The location of existing infrastructure (conveyor, railway line, powerline);
- Topography of the area;
- Proximity of the activities to residential dwellings;
- Access to bulk service infrastructure (electricity and potable water); and
- Sensitive environments.

(d) The technology to be used in the activity

Refer to h (i)(b) above which refers to both type of activity and technology alternatives assessed. Option 1D-C (iv), which includes Phase 1 implementation (Drewboy DMS treating +20mm raw coal complete with ROM and product stockpile) and Option 1D-F, which includes a design basis and full solution (completed as Phase 2) were chosen as the preferred technologies.

Other specific technologies explored by the project engineers included:

- Bradford Breaker;
- X-ray Sorter;

- FGX Dry Jig;
- Drewboy Separator;
- Wemco Drum Separator; and
- DMS Cyclone.

Technology alternatives were also assessed, which were informed by the full project team and EAP, based on the following criteria:

- Installation and operating costs;
- Process and mechanical engineering constraints;
- Applicability to meet the power stations requirements; and
- Environmental and social impacts (noise, air quality, water consumption, proximity to stakeholders).

(e) The operational aspects of the activity

Alternative operational activities considered include:

- Operational hours/ shifts for the Plant and Discard Disposal Facility are being assessed; and
- Rehabilitation processes of the Discard Disposal Facility.

The financial aspects, viability and feasibility of all project related activities will be further assessed during the Feasibility study.

(f) Option of not implementing the activity

If this project were not to go ahead, the Power Station will continue to experience increased maintenance and as a result, load or power losses to the national electricity grid will be expected.

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.

This section provides details of the public participation process followed to date and focuses on:

- Introduction to the approach followed;
- Identification of Interested and Affected Parties(I&APs);
- Background to the public participation process;
- Public participation process undertaken during 2013-2014; and
- Public participation process undertaken for the current environmental authorisation process - 2015.

Approach

The public participation followed for this environmental authorisation is an integrated and comprehensive process with the purpose to provide interested and affected parties (I&APs) with sufficient and accessible information in an objective manner to assist them to:

During the scoping phase:

- Raise issues of concerns and make recommendations to be considered during the impact assessment phase;
- Provide comment on project alternatives and the proposed process of assessment;
- Verify that their issues were recorded and understood; and
- Contribute local knowledge to the process.

During the impact assessment phase

- Verify that their issues have been considered in the EIA and EMP; and
- Comment on the findings of the specialist studies and the EIA.

During the decision-making phase

- Advise I&APs of the outcome of the environmental authorisation (i.e. DMR decision), and the appeals process and procedure.

Identification of Interested and Affected Parties

The NEMA Regulations require identification of and consultation with I&APs. The term I&AP generically refers to persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. SRK Consulting started the I&AP identification process in 2013 by utilising existing databases from previous environmental authorisation processes and existing details were verified and incorporated into the stakeholder database developed for the proposed NDC Project.

SRK's recognises that I&APs are diverse in character and in their project interest. As a result, the following criteria were used to identify I&APs:

- ***Zone of influence***: physical location relative to the project site and potential impacts. Generally the closer stakeholders live to a project site the higher their interest and the potential impacts of the project;
- ***Stakeholder values***: the value stakeholders attach to the area that might be affected by the project. This includes aspects such as livelihoods, land use, ownership, heritage and sense of place; and
- ***Jurisdiction***: the mandate/influence of institutions over regulatory process and public opinion.

Additional to the above criteria, the following aspects refined the I&AP identification process:

- The institutional demarcation of Gert Sibande District Municipal and Lekwa Local Municipal boundaries with the focus on Ward 12 (NDC project area); and
- Directly affected landowners living adjacent to the project area influenced by the mining rights area of NDC.

A Register of I&APs in terms of the NEMA Regulations (GN R543) Section 24 exists. This register of I&APs was updated in 2015 in compliance with Section 42 of the EIA Regulations (GN R 982 of 2014). The required register with full contact details of registered I&APs will be submitted to the competent authority.

A comprehensive list of identified I&APs and the Register of I&APs are included in **Appendix 6a.**

Background to the public participation process followed

In May 2013, NDC announced their proposed process to establish a coal De-stoning Plant and associated infrastructure, to meet Eskom's requirement for improved quality coal. NDC commenced with the required environmental authorisation processes under NEMA (Act 107 of 1998), MPRDA (Act 28 of 2002) and NWA (Act36 of 1998) which included stakeholder participation throughout 2013 and 2014.

Originally, the submission of the draft Environmental Impact Report (EIR) to authorities and stakeholders, for comment, was scheduled for December 2014. However, due to new plant options being investigated, the submission of the EIR document was delayed. Subsequent to the delay, new National Environment Management Act (NEMA) EIA regulations were promulgated in December 2014 requiring environmental authorisations of mining projects environmental authorisations to take place under NEMA instead of NEMA and the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002). Due to the lapsing of the previous process as a result of the project delays, a new environmental authorisation process (this process) is now commencing, that aligns with the new NEMA regulations.

Public participation process undertaken during 2013-2014

Project announcement

- The project was announced on 2 May 2013 through distribution of Background Information Document (BID) and invitation letter to register as I&AP in English, isiZulu and Afrikaans;
- BID and letters placed in 3 public places (Standerton Library, Lekwa Local Municipality Main Reception and NDC Main Reception);
- Two site notices each in English, Afrikaans, isiZulu erected at various locations in the project area;
- Advertisements in English, isiZulu and Afrikaans were placed in the following two newspapers on 3 May 2013; Standerton Advertiser and the Standerton IBIS;
- BIDs, letters and I&AP registration forms were personally delivered to directly adjacent landowners, Ward 12 Councillor and the Siyathuthuka Community Property Association amongst others;

- Telephonic consultation was undertaken during June 2013 with adjacent landowners, district and local municipalities, government departments; non-governmental organisations, and community organisations; and
- SMS notification to I&APs on database and posting project announcement documentation on the SRK website.

Availability of the Scoping Report for public comment

- Availability of the draft Scoping Report (DSR) for a period of 40 days (12 August to 23 September 2013) was announced in a letter dated 2 May 2013 (in English, isiZulu and Afrikaans) distributed to I&APs on database;
- The DSR, letter and comment sheet were made available for public viewing and comment at the same three public places as above;
- Advertisements (same three languages as above) published in the Standerton Advertiser and the Standerton IBIS on 9 August 2013;
- Adjacent landowners and I&AP without email or postal addresses received SMS notification of the availability of the DSR for public comment;
- Posting the DSR, letter and comment sheet on the SRK website;
- An open house was hosted at the Thuthukani Village Community Hall on 27 August 2013 from 11h00-15h00. The DSR was summarised visually on posters and I&APs had the opportunity to interact with senior representatives from NDC and the SRK project team;
- On 27 August 2013 the DSR was presented at the Grootdraai Dam Water Management Forum quarterly meeting. This forum represents government, neighbouring mines as well as the district and local municipality;
- Availability of the final Scoping Report (FSR) for a period of 21 days (7 March to 2 April 2014) was announced in a letter dated 27February 2014 distributed to I&APs on database;
- The FSR, letter and comment sheet were made available for public viewing and comment at the same three public places as above;
- Adjacent landowners and I&AP without email or postal addresses received SMS notification of the availability of the FSR for public comment; and
- Posting the FSR, letter and comment sheet on the SRK website.

Public participation for the current environmental authorisation process - 2015

This process acknowledges and builds on the previous stakeholder engagement undertaken for this project. The fundamentals of this project have not changed since the previous engagement process except for the addition of Run of Mine (ROM) and product stockpiles. Therefore many of the comments and issues raised are still valid for this authorisation process and was included into the pre-announcement consultation.

SRK's approach to the identification of I&APs remained the same as during the previous process, ensuring the involvement of directly affected I&APs, such as the adjacent landowners.

Pre-announcement consultation

The purpose of the pre-announcement consultation was to:

- Inform all I&APs of the revised scope of the project (i.e. the addition of ROM and product stockpiles);
- Provide sufficient information and opportunity to stakeholder to comment on the revised scope; and
- Provide information on the new EIA authorisation process going forward.

The following activities formed part of the pre-announcement consultation:

- A letter, I&APs registration and comment form (in English, isiZulu and Afrikaans) dated 4 May 2015, providing information on the revised scope, the new EIA authorisation process and how stakeholders can become involved were distributed to all I&APs on the current NDC project database via email or post (See **Appendix 6b** for copies of the letters);
- The above documentation was personally delivered to directly affected and adjacent landowners, Ward 12 Councillor and the Siyathuthuka Community Property Association amongst others (See **Appendix 6c** for details of personal delivery);
- A focus group meeting was held on 29 April 2015 with the three directly adjacent landowners (See **Appendix 6d** for attendance register and meeting notes); and
- Telephonic consultation was undertaken during 15 May 2015 with key stakeholders, including the Ward Councillor, as well as district and local municipalities, to confirm receipt of the Scoping Report for public review and any comments to be forwarded to SRK.

Comments received from I&APs during the pre-announcement consultation are included in this EIA/EMP Report for Authorities Review.

Announcement of project and availability of the Scoping Report for public comment

- The project and the availability of the Scoping Report (SR) for a period of 30 days (15 May to 15 June 2015) was announced in a letter dated 14 May 2015 (in English, isiZulu and Afrikaans) and distributed to all I&APs on the database via email or post (See **Appendix 6e** for copies of the letters);
- Two site notices each in English, Afrikaans, isiZulu were erected at various locations in the project area and a table with the GPS coordinates and photographs is presented (**Appendix 6f**);
- The SR, letter and comment sheet were made available for public viewing and comment at the same three public places as during the previous process (Standerton Library, Lekwa Local Municipality and NDC Main Reception);
- Advertisements (same three languages as above) were published in the Standerton Advertiser and the Standerton IBIS on 15 May 2015. Proof of advertisements are included in **Appendix 6g**;
- Adjacent landowners and I&APs without e-mail or postal addresses received SMS notifications of the availability of the SR for public comment;

- The SR, letter and comment sheet were posted on the SRK website http://www.srk.co.za/en/za-new-denmark-colliery;
- On 26 May 2015, the SR was presented at the Grootdraai Dam Water Management Forum quarterly meeting. This forum represents government, neighbouring mines as well as the district and local municipality. The attendance list for this meeting is included as **Appendix 6h**;
- Comments from the Gert Sibande District Municipality on the Scoping Report are also attached (see **Appendix 6i**);
- During June 2015 all I&APs will be informed of the submission of the SR to the competent authority; and
- Once a decision on the SR is received from the competent authority, I&APs were informed by means of a letter via email or post.

Availability of the EIA/EMP

Stakeholder engagement during the Impact Assessment Phase involved a review of the findings of the impact assessment presented in the EIA/EMP Report available for Public Review for a period of 30 days, from the 16th October 2015 to the 16th November 2015. Stakeholders were notified using the following:

- Registered stakeholders have been informed by way of personal letters/ sms distributed by mail and e-mail in advance of the report being available (see **Appendix 6j** for letters sent to announce the availability of the EIA/EMP).
- Advertisements (same three languages) were published in the Standerton Advertiser and the Standerton IBIS on 16 October 2015. Proof of advertisements are included as **Appendix 6k;**
- The EIA/EMP was distributed to the same public places as the Scoping Report. Issue receipts from the delivery of the documents are attached as **Appendix 6l;**
- Adjacent landowners and I&APs without e-mail or postal addresses received SMS notifications of the availability of the EIA/EMP for Public Review;
- Directly affected landowners attended a focus group meeting on 12 November 2015 where the contents of the Report were presented and had the opportunity to comment. The EIA/EMP Report was presented at the Grootdraai Dam Water Management Forum on 25 November 2015. Attendance registers from these meeting are attached as **Appendix 6m** and Presentation attached as **Appendix 6n**.
- The EIA/EMP Report was also placed on the SRK website: http://www.srk.co.za/en/za-new-denmark-colliery

iii) Summary of issues raised by I&APs

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

All comments obtained from stakeholders during the Pre-assessment, Announcement/ Scoping and Impact Assessment Phases are captured in this EIA/EMP Report for Authorities Review and Comment. Table 8 provides a summary of the comments received from stakeholders to date.

Table 8: Summary of issues raised by I&APs during the stakeholder engagement process

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.**		**Date Comments Received**	**Issues raised**	**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	**X**				
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties	**X**				
Pieter Bosman	**X**	27 August 2013	Concern was expressed about the cumulative impacts dust from the Discard Disposal site and De-stoning Plant may have on the existing dust impact from the Eskom coal stockpile already having a significant impact on the quality of maize harvest, cattle grazing and human health in general.	An air quality specialist study has been undertaken by Airshed Planning Professionals. Findings from the specialist study attached as Appendix 7a. The air quality study has indicated that the main sources of dust are from windblown dust from exposed areas and vehicle entrainment from unpaved road surfaces. Dust suppression management measures have been included in the EMP and concurrent rehabilitation of the Discard Disposal Facility	Dust management measures have been provided in Table 14 below in PART A Section 3 (g)(viii).

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
				will be undertaken in order to minimise wind-blown dust.	
Pieter Bosman	**X**	24 June 2013	Concerns that the project will discharge dirty water into the river on his farm which will have negative impact on livestock and grazing in the area.	Groundwater and Surface water specialist studies have been undertaken, see attached as Appendix 7c and 7g. A water balance has been undertaken of the site to ensure that all the water management facilities have sufficient capacity to contain dirty water generated on site and ensure maximum re-use of water. This is aligned with the requirements stipulated in GNR 704 of the National Water Act, which indicates that all dirty water must be contained with a 2% or lower risk of spilling to the clean system in any one year. The water balance confirms that the De-stoning Plant will manage water in a closed circuit and that no contaminated water will be discharged to the environment. Engineering designs of the Discard Disposal Facility will also include a liner as recommended by the Geo-technical studies and as per legal requirements (NEM:WA norms and standards).	Refer to the Water balance described in PART B Section 1 (d)(vii) below.

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
Pieter Bosman & Gert van Der Merwe	**X**	24 June 2013 28 April 2015	Although NDC's liaison forum with adjacent landowners was applauded, the resolution of long standing issues between particular adjacent landowners were identified as damaging NDC's integrity in the community in general.	NDC established a management monitoring committee, where all issued raised by I&APs will be addressed and feedback will be provided to all affected parties. This forum meets on a quarterly basis. Adjacent landowners are requested to raise issues they require feedback on.	This comment will be addressed in existing NDC community engagement forums, which is separate from this authorisation process.
Pieter Bosman & Gert van Der Merwe	**X**	27 August 2013	Stakeholders requested information about the De-stoning process as well as the size of the Discard Facility.	The project description, in PART A, Section 3 (d)(i) outlines the De-stoning process and technical specifications. Alternatives to plant technology and design are included in this EIA/EMP report.	Refer to PART A, Section 3 (d)(i for details on the De-Stoning Plant and Discard Disposal Facility.
Pieter Bosman	**X**	27 August 2013	High agricultural potential land is being compromised by this project and how has the agricultural potential been considered in this process.	During site selection, existing farming practices were taken into consideration and avoided where possible (Refer to Figure 5 showing land use of the area). The land is currently owned by Eskom and leased out to Mr Bosman. A soils, land capability and land use specialist study has been undertaken by EarthScience Solutions. The Soils assessment has identified that based on the soil types and low rainfall in the project area, there is little to no arable land	Refer to Soils study attached as Appendix 7f and Specialist studies recommendations in Table 16 in PART A, Section 3 (j).

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				in the project footprint. The project area has been classified as predominantly low intensity grazing land or wilderness status.	
Gert van Der Merwe	**X**	27 August 2014	How will seepage from the Discard Disposal Facility into the groundwater be assessed?	A groundwater specialist study has been undertaken to assess the potential for seepage of the Discard Disposal Facility and a geochemical study to assess the potential risk of Acid Mine Drainage to the environment. The discard was assessed to be Type 3 waste. As per the NEM:WA Norms and Standards for Disposal of Waste to Landfill, the discard requires a liner consistent with a GLB+ system or a Class C barrier system outlined in PART B, Section 1 (d)(iii). The inclusion of a low permeability barrier system in the construction of the facility will limit seepage to groundwater. In addition, a groundwater monitoring network has been setup to detect any potential seepage.	Refer to PART B, Section 1 (d)(iii) in this report.
Pieter Bosman Gert van Der Merwe	**X**	27 August 2013 24 June 2013 28 April 2015	The Discard Disposal Facility will be in direct sight of residential dwellings of adjacent landowners.	NDC is located in a relatively flat with slight undulating terrain, with no steep slopes. The project is located in close proximity to Tutuka Power Station and its associated Discard Facility. As a result, the visual aesthetics of the area have already been transformed. Given	Refer to Table 14 below in PART A Section 3 (g)(viii).

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				that the Discard Disposal Facility is approximately 3 km from the nearest residential dwelling, it is unlikely to have a significant visual impact on the closest residential dwelling. In addition, the Discard Disposal Facility will be rehabilitated and revegetated concurrently during operations and upon closure as per the Rehabilitation and Closure Plan to reduce impacts on the adjacent dwelling by the Discard Disposal Facility.	
Pieter Bosman Linda Riekert (Simon Riekert adjacent land leasee)	**X**	28 April 2015	How will the dust from the Discard Disposal Facility be managed? The dust has a negative impact on grazing and the agricultural potential of the area immediately adjacent to the proposed project.	An air quality specialist study has been undertaken by Airshed Planning Professionals. Findings from the specialist study are attached as Appendix 7a. The air quality study has indicated that the main sources of dust are from windblown dust from exposed areas and vehicle entrainment from unpaved road surfaces. However, the maximum daily dust deposition from the proposed project (Figure 7) will be limited to the project footprint and should not impact on adjacent agricultural practices. Dust suppression management measures have been included in the EMP and concurrent	Refer to Appendix 7a for the detailed air quality report and Table 14 PART A Section 3 (g)(viii) for the air quality management measures.

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
				rehabilitation of the Discard Disposal Facility will be undertaken in order to minimise wind-blown dust.	
Pieter Bosman	**X**	28 April 2015	How will the exceedance of air quality minimum emissions standards be monitored and managed by NDC? How will I&APs have access to that data and management process?	An air quality specialist study has been undertaken by Airshed Planning Professionals. Findings from the specialist study are attached as Appendix 7a. The findings of the study indicated that no exceedances of the National Ambient Air Quality Standards (NAAQS) were predicted for annual PM_{10} and $PM_{2.5}$ and the predicted maximum daily dust deposition are illustrated in Figure 7. NDC have a current air quality management plan which includes monitoring standards and results. This plan will be updated and will include specific management measures for potential nuisance dust emanating from the Discard Disposal Facility, ROM Stockpile and Product Stockpile. These measures will include regular monitoring, dust suppression and rehabilitation of exposed areas. Dust fallout and PM_{10} will be monitored on a monthly basis and this information will be	Refer to Appendix 7a for the detailed air quality report and Table 24 in PART B, Section 1 (i)(h) for the environmental components to be monitored and the frequency of monitoring.

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
				available in an annual report, which upon request, can be made available to I&APs.	
Pieter Bosman	**X**	28 April 2015	There is a concern that two particular waterways are impacted by NDC operations (a tributary into the Leeuspruit is one, the other is unnamed). Water re-surfaces intermittently and needs to be investigated in the groundwater study to determine where the water is coming from.	The zone of influence for the groundwater study for the NDC De-Stoning Project focuses only on the project footprint and as a result, an investigation of the decant of water is outside the project scope of work. A recommendation has been made to NDC that the impacts associated with decant need to be investigated during an update of the mine wide groundwater study.	Not applicable.
Pieter Bosman	**X**	28 April 2015	How does the stormwater drainage from the ESKOM stockpile impact groundwater systems and how will it be investigated in the groundwater study?	Stormwater runoff from the ESKOM Stockpile is directed and contained in the Stockyard Dam. In addition, as modelled by the groundwater specialist, the groundwater flow from the ESKOM Stockyard area is away from the Project area. New groundwater monitoring boreholes were drilled for the NDC De-stoning Plant Project to determine the baseline groundwater conditions prior to the construction of the proposed infrastructure. The monitoring results indicated that the current groundwater qualities are within acceptable limits for drinking water and these	Refer to the detailed groundwater report attached as Appendix 7c.

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
				results are deemed representative of background qualities for the study area.	
Pieter Bosman	**X**	28 April 2015	Is there a possibility of Option 1 of the site selection be moved closer to Option 2, as the area closer to Option 2 is already disturbed and will have less of an impact on the adjacent property?	The Feasibility of moving the Discard Disposal Facility will be assessed in the Feasibility Study based on the mechanical and civil project findings. A wetland area has been identified on the southern corner of the portion of land recommended by the stakeholder.	Not applicable.
Pieter Bosman	**X**	28 April 2015	What are the environmental requirements for the product and run of mine stockpiles? What is the function of these stockpiles?	The Product and Run of Mine Stockpile require environmental authorisation for the construction, operation and closure phases. The relevant environmental authorisation processes has documented biophysical and social management measures for the construction, operation and closure of the stockpiles. The primary function and purpose of the stockpiles are to reduce moisture content in the coal.	Refer to PART A, Section 3 (d)(i) for details on the Pollution Control Dam and Process Water Dam.
Gert van Der Merwe	**X**	28 April 2015	What will the impact of dust from the product and run of mine stockpile be?	An air quality specialist study has been undertaken by Airshed Planning Professionals. Findings from the specialist study are attached as Appendix 7a. The maximum daily dust generated from the ROM and Product Stockpiles have been	Dust management measures have been provided in Table 14 below in PART A Section 3 (g)(viii).

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				modelled and are illustrated in Figure 7. The model indicates that the maximum dust deposition and that the extent of the dust emissions is likely to be short term and varying depending on the level of activity and meteorological conditions. NDC have a current air quality management plan which includes monitoring standards and results. This plan will be updated and will include specific management measures for potential nuisance dust emanating from the Discard Disposal Facility, ROM Stockpile and Product Stockpile. These measures will include regular monitoring, dust suppression and rehabilitation of exposed areas.	
Gert van Der Merwe	**X**	28 April 2015	Are there any graves close to the watercourses that could be impacted on by the project?	A heritage impact assessment has been undertaken of the proposed project area. This study identified a number of graves adjacent to the existing Tutuka conveyor route and the location of the Discard Disposal Facility was adjusted to avoid the graves. The heritage impact assessment did not identify any graves near to watercourses adjacent the project area.	Refer to Appendix 7d for Heritage Impact Assessment.
Linda Riekert (Simon Riekert	**X**	28 April 2015	How will cumulative impacts of ESKOM and NDC be investigated in	All specialist studies have modelled the current baseline conditions which take into	Refer to specialist studies attached as

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
adjacent land leasee)			the environmental authorisation process?	consideration the existing Eskom and NDC operations. The anticipated impacts associated with the De-stoning Plant Project have been modelled taking into consideration the baseline conditions.	Appendices 7a– 7d.
Linda Riekert (Simon Riekert adjacent land leasee)	**X**	28 April 2015	Explain where water required for the De-Stoning Plant will be sourced and how dirty water will be managed?	NDC currently receives potable water from the existing Eskom Water Treatment Plant and has an existing Water Use Licence which covers the current mining operations. The proposed De-Stoning Project will receive water from this same supply and the WUL is currently being updated to include the new water uses. Refer to Table 19 for all the new water uses being applied for. The De-Stoning Plant has been designed to minimise water usage by dewatering and filtering all products and recycling process water. A Pollution Control dam and associated stormwater management infrastructure (berms and channels) will be built to manage any potential pollution and contamination. Water from the Pollution Control Dam will then be	Refer to PART A, Section 3 (d)(i) for details on the Pollution Control Dam.

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
				pumped to a Process Water Dam for storage and to be used within the Plant Complex.	
Linda Riekert (Simon Riekert adjacent land leasee)	**X**	28 April 2015	What is the size of the project footprint?	The total area of the proposed project is approximately 47 ha. Refer to Table 4 with the infrastructure/ activities and associated footprint extent in hectares.	Refer to Table 4 in PART A, Section 3 (d).
Linda Riekert (Simon Riekert adjacent land leasee) Pieter Bosman	**X**	28 April 2015	What dust suppression methods will be implemented during the construction and operation of the stockpiles, conveyor belt and access roads? For instance, will the coal transported to Tutuka Power Station be wet to minimise dust fallout?	NDC has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the De-Stoning Project will be incorporated into the existing programme and dust suppression will be undertaken where required. Dust suppression on the access roads will include regular water spraying, maintenance of internal roads and limiting vehicle speed. The conveyor within the Plant complex will also be partially enclosed during operations to reduce potential dust. The coal will be transported to Tutuka Powerstation via the existing conveyor which is also partially enclosed. Moisture will be removed from the coal during the process, as well as on the product stockpile, and therefore will not be wet. An air assessment has been undertaken to	Refer to air quality assessment attached as Appendix 7a and Refer to Figure 7 in this report.

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				assess the potential dust impacts emanating from the proposed stockpiles. Due to the limited footprint of the stockpiles, as well as the location within the railway loop, the dust dispersion model that air quality impacts will be limited to the footprint area.	
Pieter Bosman	X	28 April 2015	Which access roads will be used during the construction phase?	There is an existing dirt road from the main mine complex that runs parallel to an existing conveyor to the site. No new access roads will be constructed since NDC is an existing operation. However gravel or sand roads are proposed to be built around the plant and discard disposal facilities to support its operation.	Refer to PART A, Section 3 (d)(iv)(1)(c).
Lettie Van Der Merwe	X	28 April 2015	The impact of mining negatively influences the value of land and sense of place. How will NDC manage these impacts?	The NDC De-Stoning Project does not include any new mining operations. The Project footprint is located within an area currently owned by Eskom and will cover a limited area. The Discard Disposal Facility will be rehabilitated concurrently to reduce visual impacts.	Management measures to reduce visual impact/ sense of place have been provided in Table 14 below in PART A Section 3 (g)(viii).
Linda Riekert (Simon Riekert adjacent land leasee)	X	28 April 2015	It is recommended that the technical terminology in the impact assessment documentation be simplified to ensure understanding by all stakeholders.	A non-technical summary document will be presented and made available during the stakeholder engagement process for the impact assessment phase.	Refer to the Stakeholder Engagement Process in PART A, Section 3 (g)(ii).

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
Gert and Lettie Van Der Merwe	**X**	12 November 2015	Concerns were raised with regards to existing and future cumulative impacts of dust from the existing Eskom stockpile, trucks to the stockpile and the new stockpiles and Discard Disposal Facility.	An air quality specialist study has been undertaken by Airshed Planning Professionals. Findings from the specialist study are attached as Appendix 7a. The maximum daily dust generated from the ROM and Product Stockpiles have been modelled and are illustrated in Figure 7. The model indicates that the maximum dust deposition and that the extent of the dust emissions is likely to be short term and varying depending on the level of activity and meteorological conditions. NDC have a current air quality management plan which includes existing monitoring standards and results. This plan will be updated and will include specific management measures for potential nuisance dust emanating from the Discard Disposal Facility, ROM Stockpile and Product Stockpile. These measures will include regular monitoring, dust suppression and rehabilitation of exposed areas. Air quality issues relating to the Eskom stockyards and trucking will be communicated	Refer to Appendix 7a for the Air Quality Study.

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				by the EAP and NDC with the Tutuka Environmental Manager.	
			Concerns were raised on the impact of dust fallout on agricultural potential.	An air quality specialist study has been undertaken by Airshed Planning Professionals. Findings from the specialist study are attached as Appendix 7a. The air quality study has indicated that the main sources of dust from the NDC De-stoning Project are from windblown dust from exposed areas and vehicle entrainment from unpaved road surfaces. However, the maximum daily dust deposition from the proposed project (Figure 7) will be limited to the project footprint and should not impact on adjacent agricultural practices. Dust suppression management measures have been included in the EMP and concurrent rehabilitation of the Discard Disposal Facility will be undertaken in order to minimise wind-blown dust. Further queries with regards to agricultural potential in the area can be directed to the Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA),	Refer to the Air Quality Study attached as Appendix 7a. Air Quality management measures have been provided in Table 14 below in PART A Section 3 (g)(viii).

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				Natural Resource Investigation Department. In addition, the local AgriSA can be contacted.	
			Requested for baseline air quality and noise monitoring to be undertaken prior to the construction phase of the proposed Project.	Baseline air quality and noise monitoring were undertaken as part of the air quality and noise specialist studies during the impact assessment phase. NDC's existing air quality and noise monitoring network will be expanded on to include monitoring of the new infrastructure prior to construction. The locations for the new monitoring points have been included in the specialist studies.	Refer to Appendix 7a and Appendix 7e for the air quality and noise specialist studies, respectively.
			Concerns were raised on the health impact on farm workers as a result of air pollution from current and future operations. Who is the responsible agency to enquire about health risks with regards to farm workers?	An air quality specialist study has been undertaken by Airshed Planning Professionals. Findings from the specialist study are attached as Appendix 7a. The main objective of this study was to determine the significance of the predicted impacts from fugitive emissions on the surrounding environment and on human health. The findings of the study show that the predicted PM_{10} impacts due to the current and	Refer to Appendix 7a for the air quality specialist study.

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				proposed New Denmark Colliery operations were predicted to be below the National Ambient Air Quality Standards at the mine boundary. The $PM_{2.5}$ impacts due to the current and proposed New Denmark Colliery operations were also predicted to be below the National Ambient Air Quality Standards at the mine boundary The total daily deposition due to the current and proposed New Denmark Colliery operations were predicted to be within the dust fallout regulations of 600 mg/m²/day at the mine boundary. Should further concerns be raised with regards to health, queries can be forwarded to the responsible agency for farm worker health, which has been identified as AgriSA.	
Municipal councillor	**X**				
Mr Mosia	**X**	20 May 2015	No comments received during telephonic consultation		
Municipality	**X**				

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
Lekwa Local Municipality	**X**	20 May 2015 26 May 2015	No comments received during telephonic consultation		
Gert Sibande District Municipality	**X**	20 May 2015 26 May 2015	No comments received during telephonic consultation		
		19 June 2015	Applicable legislation and guidelines used to compile the Public Review Report has given separate briefings on different legislative mandates and the stand of NDC with respect to those respective legislations except for NEM: Waste Act as part of the SEMAs. The exclusion of NEM:WA needs to be corrected.	The applicable legislation specific to waste licensing has been included in the Policy and Legislative Context Table 5 above. The NDC De-Stoning Plant Project requires a waste licence in terms of NEM: WA for the Discard Disposal Facility. The waste licence application has formed part of this environmental authorisation application required for the mining activities. The Run of Mine and Product Stockpiles were not included in the application as they are not considered waste according to the Acts definition. As per GNR 921 Category B (7)(9)(10), listed activities will be triggered.	Refer to Table 4 in PART A, Section 3 (d) for the listed activities triggered, as well as Table 5, PART A, Section 3 (e) for the legislative context.
			Queries on the timeframe of the outcome of the air quality specialist study, as well as the surface and ground water specialist studies.	All applicable specialist studies were completed by October 2015 and were made available in the EIA/ EMP for Public Review from 16^{h} October until 16th November 2015.	Refer to Appendices 7a-7g in this Report.

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				The specialist studies are also attached as Appendices 7a-7g in this EIA/EMP Report for Authorities Review.	
			The Mpumalanga Biodiversity Conservation Plan in the Scoping Report for Public Review needs to be updated to reflect the new Mpumalanga Biodiversity Sector Plan (MBSP). This should be used as the official reference for biodiversity priority areas to be taken into account in land-use planning and decision making in the Province. The MBSP also indicates shading that shows that the plant in situated within a Critical Biodiversity Area (CBA) which is optimal. Details (as indicated in the MBSP) of what is included as well as land use groups per land zones, which indicates the primary objective of the biodiversity category, should be indicated and the outcome of such land use i.e., it will compromise the biodiversity objective, should be reflected.	The Mpumalanga Biodiversity Sector Plan has been updated to reflect the most updated biodiversity priority areas. According to the MBSP (Figure 3), the project footprint is located near irreplaceable terrestrial Critical Biodiversity Area (CBA) and within Ecosystem Support Area local corridor. A biodiversity study was undertaken in June 2014 and based on the findings of the ecological assessment, it is the opinion of the ecologists that the proposed infrastructure on the aforementioned CBA and ESA portions will not affect the areas. Approximately 47% of the site has undergone transformation due to historic and on-going activities and a large portion has undergone severe ecological disturbance and overall habitat degradation. Therefore this habitat unit cannot be regarded as sensitive and does not provide ecologically important function. The grassland habitat is also considered largely	Refer to Table 14 below in PART A Section 3 (g)(viii).

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				modified especially closer to the transformed areas (alien and weed encroached areas). Management recommendations in order to minimise, mitigate or rehabilitate negative impacts associated with the project have been included in Table 14.	
			Dust monitoring reports should be submitted within defined timeframes.	NDC have a current air quality management plan which includes monitoring standards and results. This plan will be updated and will include specific management measures for potential nuisance dust emanating from the proposed De-Stoning Plant Project. These measures will include regular monitoring, dust suppression and rehabilitation of exposed areas. Dust fallout and PM_{10} will be monitored on a monthly basis and this information will be available in an annual report.	Refer to Table 24 in PART B, Section 1 (i)(h) for the environmental components to be monitored and the frequency of monitoring.
			The leak/spill detection procedure to be implemented during the construction and operational phase is to be clearly defined.	Anglo's existing leak/spill detection procedure will be implemented during construction and operations. This is documented in the EMP. Spill kits will be provided onsite for spill clearing and spills will be cleared and remediated immediately as per AACSA's leak	Refer to Table 14 below in PART A Section 3 (g)(viii).

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
				spill procedure.	
Organs of state (Responsible for Infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Department of Water and Sanitation	**X**	27 August 2013	How dust will impact on stormwater run-off from the De-stoning Plant.	An air quality assessment (Appendix 7a) and Surface water study (Appendix 7g) has been undertaken during the impact assessment phase by Airshed Planning Professionals and SRK, respectively. The Project is in close proximity (3 km) to the Tutuka Power Station, as well as other mining operations, metallurgical and biochemical industries located within the Local and District Municipality. There are existing sources of air emissions which include coal combustion from power generation, industrial emissions,	Refer to Specialist recommendations in Table 16 in PART A, Section 3 (j).

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				biomass burning and vehicle exhaust emissions. The surface water study has identified that an impact may arise from windblown dust settling in adjacent watercourses or surface areas with the resultant deterioration in water quality within the watercourse and run-off water. The air quality study has indicated that the main sources of dust are from windblown dust from exposed areas and vehicle entrainment from unpaved road surfaces, contributing to the existing ambient air quality. Therefore dust suppression will be implemented to minimise wind-blown dust leaving the site and all stormwater from the Plant and coal handling facilities will be contained in the Plant Pollution Control Dam.	
		8 June 2014	The Department of Water and Sanitation requested that a Section 21 (g) water use and associated civil designs be submitted for all dirty water storage facilities.	All water uses for the De-stoning Plant and associated activities have been included in the updated WUL application.	The water uses applied for in the updated WUL are included in Table 19 in PART B, Section 1 (d)(viii).
		8 June 2014	Any diesel or oil spillage occurring on site should be cleared immediately	Anglo's existing leak/spill detection procedure will be implemented during construction and	Refer to Table 14 below in PART A

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			by removing the spill together with the polluted soil and disposing of it at a permanent waste disposal site.	operations. This is documented in the EMP. Spill kits will be provided onsite for spill clearing and spills will be cleared and remediated immediately as per AACSA's leak spill procedure.	Section 3 (g)(viii).
		5 May 2015	What water uses will there be in this project?	NDC has an existing Water Use Licence which covers the current mining operations. The proposed De-Stoning Project will receive water from this same supply and the WUL is currently being updated to include the new water uses. Refer to Table 19 for all the new water uses being applied for.	Refer to Table 19 in PART B, Section 1 (d)(viii) for the new proposed water uses at NDC.
Tutuka Power Station (Mike van der Walt)	**X**	26 May 2015	What happens to the water that is removed from the coal and its' associated quality?	Water that is removed from the Run of Mine and product stockpiles will be pumped to the Process Water Dam for storage and re-use. As this water will be exposed to carbonaceous material, it is classified as dirty and therefore will be contained in the dirty water system. Once operational, the Process Water Dam will be monitored on a regular basis. A Pollution Control dam and associated stormwater management infrastructure (berms and channels) will also be built to manage any potential pollution and contamination.	Refer to PART A, Section 3 (d)(i) for details on the Pollution Control Dam and Process Water Dam.
			Will a new pollution control dam be constructed?	Three dirty water dams will be constructed, namely a Process Water Dam, Pollution	Refer to PART A, Section 3 (d)(i) for

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
				Control Dam and Return Water Dam. These dams will contain all dirty water generated within the NDC De-Stoning Project area.	details on the Pollution Control Dam and Process Water Dam.
Communities					
Dept. Land Affairs	**X**	27 August 2013	Stakeholders requested information about the de-stoning process as well as the size of the discard facility.	The project description, in PART A, Section 3 (d)(i) outlines the de-stoning process and technical specifications. Alternatives to plant technology and design are included in this EIA/EMP Report (PART A, Section 3 (g)(i)).	Refer to PART A, Section 3 (d)(i) for details on the De-Stoning Plant and Discard Disposal Facility and PART A, Section 3 (g)(i) for alternatives considered.
Traditional Leaders					
Dept. Environmental Affairs					
Other Competent Authorities affected					

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.**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET)	**X**	27 August 2013	Information requested regarding the characteristic of the discard, alternative uses and waste management authorisation applicability	A geochemical study was undertaken to assess the characteristic of the Discard Disposal Facility. The discard was assessed to be Type 3 waste. As per the NEM:WA Norms and Standards for Disposal of Waste to Landfill, the discard requires a liner consistent with a GLB+ system or a Class C barrier system outlined in PART B, Section 1 (d)(iii). No alternative uses for the discard have been identified. The Discard Disposal Facility is being licenced as per NEM:WA which is integrated in this authorisation process.	See Table 4 with actives applied for under NEM:WA. PART B, Section 1 (d)(iii) details the waste classification of the Discard Disposal Facility.
Department of Labour	**X**	27 August 2013	The Department of Labour have requested to be informed/ involved in the EIA process.	As a key stakeholder in the process, the Department has been invited to participate by commenting on the EIA/EMP report. Notice of the opportunity to comment has been communicated in the process.	Refer to the detailed public participation process followed for this environmental authorisation in PART A, Section 3 (g)(ii).
Mpumalanga Tourism and Parks Agency	**X**	28 March 2014	According to the Mpumalanga Biodiversity Sector Plan Map, the proposed positon of a portion of the project is within the irreplaceable and optimal Terrestrial Critical Biodiversity Area (CBA) and an Ecosystem Support Area (ESA)	A biodiversity study was undertaken in June 2014. Based on the findings of the ecological assessment, it is the opinion of the ecologists that the proposed infrastructure on the aforementioned CBA and ESA portions will not affect the areas.	The biodiversity specialist findings have been provided in PART A Section 3 (j). Also refer to the

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			wetland clusters. The Mpumalanga Tourism and Parks Agency lodged an appeal with DMR due to the CBA rating within the project area.	Approximately 47% of the site has undergone transformation due to historic and on-going activities and a large portion has undergone severe ecological disturbance and overall habitat degradation. Therefore this habitat unit cannot be regarded as sensitive and does not provide ecologically important function. The grassland habitat is also considered largely modified especially closer to the transformed areas (alien and weed encroached areas).	Biodiversity Specialist Report attached as Appendix 7b.
		17 September 2015	The appeal lodged in March 2014 has subsequently been withdrawn following the finding from the biodiversity assessment on condition that all negative impacts are avoided, minimised, mitigated or rehabilitated and all conditions of the EMP are adhered to.	The biodiversity study undertaken has identified potential impacts and provided management recommendations in order to minimise, mitigate or rehabilitate negative impacts associated with the project.	Refer to Table 16 for specialist recommendations and Appendix 6o for the MTPA Letter.
Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs	**X**	1 September 2015	A Water Use Licence (WUL) must be obtained before any development related to the De-Stoning Plant	NDC have a WUL for existing operations. An updated WULA was submitted in August 2014 to the Department of Water and Sanitation for the newly proposed activities. Due to the minor scope change, an additional WULA will be submitted towards the end of 2015.	Refer to PART B Section 1 (d)(viii).
			Dust liberation into the surrounding environment must be effectively controlled by means of using water	NDC will implement a dust monitoring programme to monitor dust impacts during construction, operation and closure phases of	Dust management measures have been described in Table

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			spraying.	the project. Dust suppression via means of water spraying will be implemented on service roads, the Discard Disposal Facility and other areas where required.	14 below in PART A Section 3 (g)(viii).
			A road management plan must be in place prior to commencement of construction and dust control must be prioritized.	The entrance to the Plant is via the existing NDC tarred road network. The mine has plans in place for the maintenance of internal mine roads. Dust suppression via means of water spraying will be implemented on these service roads.	Dust management measures have been described in Table 14 below in PART A Section 3 (g)(viii).
			The development of the site must have appropriate stormwater management as well as appropriate drainage systems.	Construction of storm water management infrastructure will commence prior to the construction of the De-Stoning Plant and associated infrastructure. Clean water will be diverted around the Plant and dirty water from the Plant will be diverted to the proposed Pollution Control Dam. All Pollution Control Dams have been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year.	Water management measures have been provided in Table 14 below in PART A Section 3 (g)(viii). The water management measures have also been incorporated into the IWWMP.
			Fauna and flora must be protected at all times and movement of vehicles must be controlled on site.	A biodiversity specialist has surveyed the marked out area for the De-Stoning Plant and has not identified any plants requiring permit	Biodiversity management measures have been

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
				applications prior to removal. There will be restricted site access and therefore no unauthorised vehicles will be allowed on site. Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour as to avoid any impacts of local fauna.	provided in Table 14 below in PART A Section 3 (g)(viii). Specialist recommendations for protection of biodiversity have also been provided in PART A Section 3 (j).
			Transportation and storing of hazardous substances must be in accordance with the relevant legislation and regulation.	A Waste Licence as per NEM:WA has been applied for as part of this environmental authorisation application. Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. Emergency action plans/ procedures will be drawn up to deal with spills on the road to minimise the impact on water quality. The applicable NEM:WA Norms and Standards have been taken into consideration for the design of any waste storage facility.	Management measures have been provided in Table 14 below in PART A Section 3 (g)(viii).

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			Any diesel or oil spillage occurring on site should be cleared immediately by removing the spill together with the contaminated soil and disposing it at a waste disposal site.	AACSA has an existing leak/spill detection plan which will be implemented for all possible areas of leaks/spills. Spill kits will be provided on site for spill clearing. Spills will be cleared and remediated immediately as per the Leak/Spill Procedure.	Spills management measures have been provided in Table 14 below in PART A Section 3 (g)(viii).
			Groundwater must be protected from contamination and its flow direction must not be disturbed.	A groundwater specialist study has been undertaken to model the potential impact on groundwater by the NDC De-Stoning Plant Project. The findings of the study indicate that the Project will not have an impact on the groundwater flow direction, however may potentially have an impact on groundwater quality. As a result, a suitable liner has been designed to prevent seepage. A detailed Geochemical assessment has been undertaken to inform the suitability of the liner, along with a Geohydrological model. A leak/spill detection plan will also be devised and implemented for all possible areas of leaks/spillages.	Specialist recommendations for geochemistry have been provided in PART A Section 3 (j). Detail on the potential of Acid Mine Drainage has been described in PART B Section 1 (d)(iii), (iv), (v) & (vi).
			Pollution Control Dams must be designed in accordance to the	The Pollution Control Dams have been designed as per the set requirements of the	Water management measures have been

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.		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
			requirements of the DMR	NWA, GN 704.	provided in Table 14 below in PART A Section 3 (g)(viii).
			According to MTPA's comments the proposed position of a portion of the project falls within the irreplaceable and optimal Terrestrial Critical Biodiversity Area (CBA) and Ecosystem Support Area (ESA), therefore alternative site must be considered based on this.	A biodiversity study was undertaken in June 2014. Based on the findings of the ecological assessment, it is the opinion of the ecologists that the proposed infrastructure on the aforementioned CBA and ESA portions will not affect the areas. Approximately 47% of the site has undergone transformation due to historic and on-going activities and a large portion has undergone severe ecological disturbance and overall habitat degradation. Therefore this habitat unit cannot be regarded as sensitive and does not provide ecologically important function. The grassland habitat is also considered largely modified especially closer to the transformed areas (alien and weed encroached areas).	The biodiversity specialist findings have been provided in PART A Section 3 (j). Also refer to the Biodiversity Specialist Report attached as Appendix 7b.
			Should any site of historical value be discovered, the South African Heritage Resource Agency (SAHRA) must be notified immediately.	A Heritage Impact Assessment (HIA) was undertaken in August 2013. The specialist study identified graves within the Discard Disposal Facility footprint. As a result, the project scope was updated to avoid the identified graves. The access to these graves will not be restricted.	The heritage specialist findings have been provided in PART A Section 3 (j). Also refer to the

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.**	**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
			No other sites of cultural significance were found within the proposed project footprint. The HIA will be submitted to SAHRA in alignment with the EIA timeframes.	Heritage Impact Assessment attached as Appendix 7d.
		Comments from interested and affected parties must be addressed to their satisfaction.	Stakeholders have been provided with an opportunity to comment on the project during pre-announcement, announcement/scoping and the impact assessment phase. Comments from interested and affected parties have been incorporated into this document and comments received on this report (EIA/EMP for Public comment) will be incorporated and addressed in the EIA/EMP for Authority Review.	PART A Section 3 (g)(ii) & (iii) details the Public Participation Process followed, as well as the comments received from stakeholders with the associated EAP's response.
OTHER AFFECTED PARTIES				
INTERESTED PARTIES				

Refer to **Appendix 6** for records of all stakeholder engagement that has been undertaken to date.

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

(1) Baseline Environment

(a) Type of environment affected by the proposed activity.
(its current geographical, physical, biological, socio- economic, and cultural character).

Baseline data were obtained from various published sources and from previous baseline studies conducted for the 2005 NDC EIA and EMPR and the amended NDC EMP in 2010. These data have been collected over a number of years (from approximately 2005 to present). The information supplied in this section has been reviewed and updated for the EIA report and was further informed by the specialist baseline assessments.

The NDC mining right area is relatively flat with slight undulating terrain and no steep slopes. The highest elevation is 1627 amsl at the northern extent with a southward decline in elevation to an approximate lowest point (1600 amsl). The mine boundary area is located in the Grootdraai Dam Catchment and straddles the C11K, C11H and C12E quaternary catchment areas. The relevant water management area is the Upper Vaal Water management area. This area falls under three sub-catchments, namely the Leeuspruit (62% of mining rights area), the Rietspruit (20% of mining rights area) and the Blesbokspruit (18% of mining rights area) sub-catchments. The Leeuspruit discharges into the Grootdraai Dam and the Blesbokspruit joins the Vaal River upstream of the dam. The Rietspruit discharges into the Vaal River downstream of the Grootdraai Dam. There is one stream adjacent to the De-stoning Plant area, which is a tributary of the Leeuspruit. Other watercourses have been impacted by ongoing mining and farming activities in the area.

NDC falls within the Gert Sibande District Municipality, one of three districts in the Mpumalanga Province and is located in the south east portion of the province with capital of the district located in Ermelo. The district is classified as 61% rural and 39% urban with a population of 943 125 people and the unemployment rate of 21%. The NDC project area is situated within the Lekwa Local Municipality in the southern portion of the district (15% of district area). The predominant languages spoken in the municipality are IsiZulu, SiSwati and Afrikaans. The Vaal River is the principal water resource in this municipality and feeds the Grootdraai Dam. Agriculture is the dominate land use in the municipality with the key local economic contributors being farming, mining and power generation. These existing activities, along with road traffic, affect the ambient noise in the area and therefore the project area can be classified as “Suburban with little traffic” as per SANS 10103 guidelines, with typical daytime and night-time ambient noise levels of 50 dBA and 40, respectively. The closest residential area to the proposed site located approximately 3.5 km.

Regarding air quality in the area, NDC falls within the Highveld Priority Area. This area is regularly monitored and modelled for exceedances in accordance with the Highveld Priority Area Management Plan via two nodes located in Lekwa Municipality. Due to the close proximity (3 km) of the proposed project area to the Tutuka Power Station and other mining operations, existing sources of air emissions include coal combustion power generation, mineral extraction, metallurgical and petrochemical industries, biomass burning and vehicle exhaust emissions.

NDC is situated within the Mpumalanga Highveld region, characterised by a temperate climate with warm hot summers and cool winters. Average maximum and minimum summer temperatures can reach 26.8°C and 13.8°C, respectively. The mean annual rainfall is approximately 695 mm and wind blows predominantly from the east to the west. These climatic factors influence the biodiversity in the area. According to the Mpumalanga Biodiversity Sector Plan (Figure 3), the project footprint is located near irreplaceable terrestrial Critical Biodiversity Area (CBA) and within Ecosystem Support Area local corridor. A biodiversity assessment has since been undertaken of the area and based on the findings of the ecological assessment, it is the opinion of the specialist that this land is already highly transformed (Figure 4).

There are three main habitats identified within the proposed project footprint, namely transformed habitat, grassland habitat and wetland habitat. Approximately 35% of the project footprint is currently utilised for commercial agriculture (Maize cultivation), 4.5% has been transformed by mining and 8% of the total area has been transformed by alien and invasive weed encroachment and alien tree stands. As a result of the transformation, it is unlikely that Red Data List (RDL) or sensitive faunal species will utilise the site for habitation or foraging purposes permanently. Five (5) RDL faunal species were found to have a 60% or greater probability of being present on the subject property. The five RDL species identified are the African Marsh Harrier (*Circus ranivorus*), Peregrine Falcon (*Falco peregrinus minor*), African Grass Owl (*Tyto capensis*), Bald Ibis (*Geronticus calvus*) and the Lesser Flamingo (*Phoeniconaias minor*).

A large portion of the site is comprised of degraded grassland habitat, containing isolated records of *Hypoxis hemerocallidea* and *Crinum bulbispernum* orange listed floral species. Both these species are considered “declining” according to the PRECIS Red Data List. The medicinal species *Hypoxis hemerocallidea* is also located within this habitat and is considered as a declining species. A valley bottom wetland feature is located just beyond the south-eastern portion of the project footprint, forming part of a tributary of the Leeuspruit River. This wetland has been transformed due to overutilization of veld and livestock, however still performs an important ecological function for avifauna, faunal and floral species and acts as an ecological corridor.

30000 32000 34000 36000 38000 40000

-2958000 -2960000 -2962000 -2964000

VILLIERSSCHRIK 338 IS

UITKYK 339 IS

UITKYK 549 IS

SLAGKRAAL 550 IS

SLAGKRAAL 353 IS

RACESBULT 352 IS

PRETORIUS VLEY 374 IS

R38

N

Legend

Primary road

Railway road

Farm Boundaries

Infrastructure

Existing conveyor belt

Existing overhead powerlines

Proposed infrastructure

Discard Dump

Plant Area

Pollution Control Dam

Process Water Dam

Product Stockpile

Run of Mine Stockpile

MBSP Terrestrial Assessment

Subcategory

PA National Parks & Nature Reserves

PA Protected Environment: Natural

PA Protected Environment: Modified

CBA Irreplaceable

CBA Optimal

ESA Landscape corridor

ESA Local corridor

ESA Species Specific

ESA Protected Area buffer

Other Natural Areas

Moderately modified- Old lands

Heavily modified

0 500 1,000 2,000 Metres

Data Source:	
Scale: 1:35,000	
Projection: TM	Datum: HH94
Central Meridian/Zone: LO 29	
Date: 23/06/2015	Compiled by: LOUA
Project No: 434719	Fig No: 3

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NEW DENMARK DESTONING PLANT

MBCP TERRESTRIAL BIODIVERSITY

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Revision: A Date: 25 08 2015

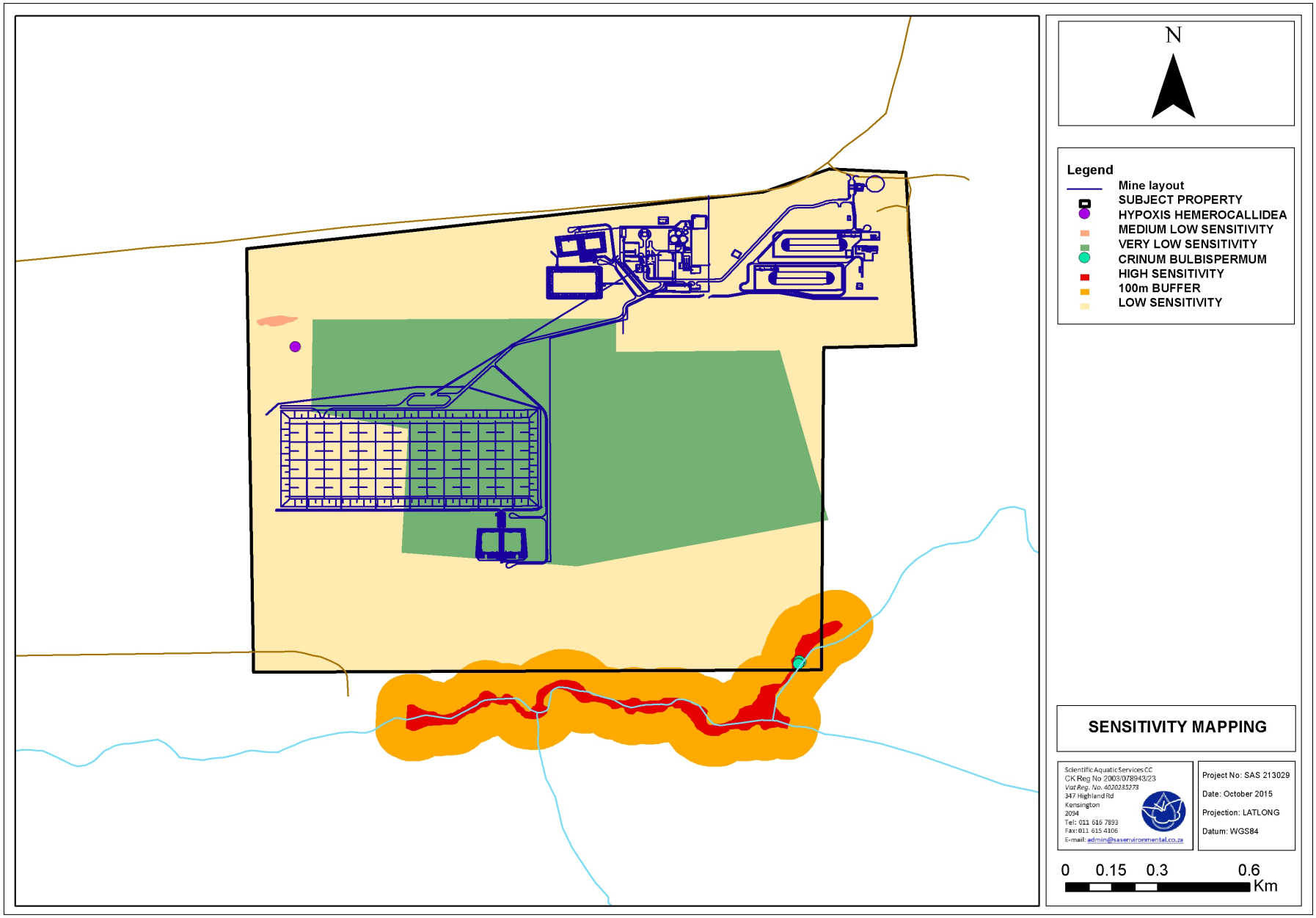

Figure 4: Biodiversity sensitivities identified by the Biodiversity Specialist

The NDC mining rights area occurs within the Vryheid Formation of the Ecca Group within the Karoo Sequence. The coal-bearing Ecca Group ranges in thickness from 125 -360 m and is comprised of an upper shale-like stage, the Volksrust Shale Formation, the mainly sandy coal measure stage, the Vryheid Formation, and a locally developed lower silt to shale stage, the Pietermaritzburg Shale Formation. Four coal seams have been identified in the area, namely seems No 3; No 4 Upper; No 4 Lower; and No 5, all developed within the Vryheid Formation of the Ecca Group. The No. 4 coal seam is the only economically viable coal mining horizon that is mined at NDC and lies at a depth of approximately 200 m below surface, with an average seam width of 1.85 m and ranges between 1.0 and 2.80 m.

Three different dolerite sills are present in the NDC lease area; two of the sills are generally in excess of 100 m above the No 4 seam with one sill located under the seam with occasional intrusions. Two types of dolerite dykes have been identified at NDC with both being porphyritic in texture and are considered to not have intruded into the dolerite sill. There are other linear features as identified from surveys that could be representative of the presence of dykes. No major faults have been identified with the exception of a 6.0m fault intersected at the North Shaft.

The complex geomorphology combined with climate and topography results in a diverse range of soil groups. The soils are for the most part highly structures, clay rich materials that are typically associated with soils derived from more basic rock. The land capability rating is variable, comprising of moderate to poor grazing potential and wilderness land. Commercial farming and mining activities have a large influence on the natural grassland areas and have diminished occurrence in the area.

There are two groundwater aquifers present in the mining rights area. The upper aquifer, normally accessed for agriculture, lies within the weathered zone, which extends up to 15 m below the surface. The shallow depth of this aquifer is partly attributed to the presence of a thick dolerite sill over large portions of the mining rights area. The second aquifer is usually associated with fractures within the arenaceous sediments such as sandstone and grit. Groundwater may be intersected at any level within these sediments.

(b) Description of the current land uses.

As NDC is an existing operating mine, a substantial amount of construction and transformation has already been undertaken within the project area. Existing infrastructure include a Crusher Plant, Eskom operated coal stockpiles, high voltage power lines, conveyer belt and the railway line. A portion of the proposed site is currently under maize agriculture with a small portion of degraded grassland which is currently under cattle grazing.

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

Environmental features:

As described in the baseline and the current land use sections above, the proposed site area does not contain any major sensitive features. However adjacent to the proposed site there are the following features:

- Watercourse and associated wetlands;
- Heritage (graves);
- Flora and fauna species; and
- Degraded and transformed grassland.

Existing infrastructure in the area

Roads

The main Bethal - Standerton road flanks the eastern border of the mine lease area and the main Standerton - Secunda road passes close to the western border of the mine lease area. Whilst these are not directly located in the proposed site they are important major roads in the surrounding area.

Within the proposed plant site, there are existing dirt roads associated with the NDC Primary Crushing Plant. Currently, there are no formalised roads on the Discard Disposal Facility sites.

There is an existing dirt road from the main mine complex that runs parallel to an existing conveyor to the site. No new access roads will be constructed since NDC is an existing operation. However gravel or sand roads are proposed to be built around the plant and discard disposal facilities to support its operation.

Railway lines

The mine is linked with Standerton via an Eskom dedicated rail connection, however the proposed development will not utilise rail infrastructure as coal is conveyed from the mine to the plant. The Standerton line loops around the plant site and is directly adjacent to the Discard Disposal Facility and pollution control and process water dams. The line is operated by Eskom. The railway loop is illustrated in the infrastructure layout map attached as **Appendix 4.**

Electricity Supply

The site is dissected by a national powerline and is adjacent to the proposed Discard Disposal Facility.

The current power supply to NDC is from an existing sub-station and is currently not confirmed if it is sufficient to handle the requirements of the proposed project and therefore additional power requirement are being investigated.

Water management infrastructure

There is an existing dirty water facility located to the north of the Eskom stockpile, called the stockyard dam. This stockyard dam is located in a different catchment area and therefore additional water storage facilities are required specifically for the plant and discard dump.

Water supply

The mine currently receives potable water from the existing Eskom water treatment plant.

The proposed project will received from the same supply. The De-stoning Plant has been designed to minimise water usage by dewatering and filtering all products and recycling process water.

Non mineral waste disposal

Wastes that would be generated at the proposed coal De-stoning Plant will be stored on site in designated, bunded areas.

Waste management facilities are located at the central shaft, Okhozini shaft and north shaft complexes. These facilities are not in close proximity to the project site resulting in the need for additional waste infrastructure at the site.

All waste will be managed in line with existing waste management procedures of NDC.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

Refer to Figure 5 for the Land Use/Capability map for the NDC De-stoning Plant area.

33000 33500 34000 34500 35000 35500

-2959000 -2959500 -2960000 -2960500 -2961000

N

Legend

Primary road

Railway road

Farm Boundaries

Infrastructure

Existing conveyor belt

Existing overhead powerlines

Proposed infrastructure

Discard Dump

Plant Area

Pollution Control Dam

Process Water Dam

Product Stockpile

Run of Mine Stockpile

Land capability

Grazing

Waterway

Wet based soils

Wilderness

0 125 250 500 Metres

Data Source:	
Scale: 1:10,000	
Projection: TM	Datum: HH94
Central Meridian/Zone: LO 29	
Date: 23/04/2015	Compiled by: LOUA
Project No: 434719	Fig No: 5

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NEW DENMARK DESTONING PLANT

LAND CAPABILITY MAP

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Revision: A Date: 24 08 2015

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).

The environmental impact assessment has been undertaken according to SRK's impact assessment methodology which follows internationally recognised and accepted impact assessment principles and is compliant with MPRDA regulations. The following section contains the method used to define and evaluate the impacts and explains the principles and approach to SRK's impact assessment methodology.

Generally, impact assessment is divided into three parts:

- Issue identification - each specialist will be asked to evaluate the 'aspects' arising from the project description and ensure that all issues in their area of expertise have been identified;
- Impact definition - positive and negative impacts associated with these issues (and any others not included) then need to be defined – the definition statement should include the activity (source of impact), aspect and receptor as well as whether the impact is direct, indirect or cumulative. Fatal flaws should also be identified at this stage.
- Impact evaluation – this is not a purely objective and quantitative exercise. It has a subjective element, often using judgement and values as much as science-based criteria and standards. The need therefore exists to clearly explain how impacts have been interpreted so that others can see the weight attached to different factors and can understand the rationale of the assessment.

In order to understand the impact evaluation, the sensitivity of the receiving environment, the effect on the receiving environment and the significance of the impacts need to be clearly described. These characteristics are summarised in Table 9.

Table 9: Characteristics to be used in impact description

Characteristics used to describe consequence	Sub-components	Terms used to describe the characteristic
Type		Biophysical, social or economic
Nature		Direct or indirect, cumulative etc.
Status		Positive (a benefit), negative (a cost) or neutral
Phase of project		During pre-construction (if applicable e.g. resettlement), construction, operation, decommissioning/post closure
Timing		Immediate, delayed

Characteristics used to describe consequence	Sub-components	Terms used to describe the characteristic
Magnitude	**Sensitivity of the receiving environment/ receptors**	High, medium or low sensitivity Low capacity to accommodate the change (impact)/ tolerant of the proposed change
	Severity/ intensity (degree of change measured against thresholds and/or professional judgment)	Gravity/ seriousness of the impact Intensity/ influence/ power/ strength
	Level of stakeholder concern	High, medium or low levels of concern All or some stakeholders are concerned about the change
Spatial extent or population affected The area/population affected by the impact The boundaries at local and regional extents will be different for biophysical and social impacts.		Area/ volume covered, distribution, population Site/Local (social impacts should distinguish between site and local), regional, national or international
Duration (and reversibility) Length of time over which an impact occurs and potential for recovery of the endpoint from the impact		Short term, long term Intermittent, continuous Reversible/ irreversibility Temporary, permanent

Management recommendations

Specialists will be asked to recommend practicable management measures in as much detail as possible, using the mitigation hierarchy, namely avoid, minimise, mitigate and finally offset.

Impact significance rating

The impact significance rating process serves two purposes: firstly, it helps to highlight the critical impacts requiring consideration in the management and approval process; secondly, it serves to show the primary impact characteristics, as defined above, used to evaluate impact significance.

The impact significance rating system is presented in Table 10 and involves three parts:

- Part A: Define impact consequence using the three primary impact characteristics of magnitude, spatial scale/population and duration;
- Part B: Use the matrix to determine a rating for impact consequence based on the definitions identified in Part A;
- Part C: Use the matrix to determine the impact significance rating, which is a function of the impact consequence rating (from Part B) and the probability of occurrence; and
- Part D: Define the Confidence level.

Table 10: Method for rating the significance of impacts

PART A: DEFINING CONSEQUENCE IN TERMS OF MAGNITUDE, DURATION AND SPATIAL SCALE ***Use these definitions to define the consequence in Part B***		
Impact characteristics	**Definition**	**Criteria**
MAGNITUDE	Major	Substantial deterioration or harm to receptors; receiving environment has an inherent value to stakeholders; receptors of impact are of conservation importance; or identified threshold often exceeded
	Moderate	Moderate/measurable deterioration or harm to receptors; receiving environment moderately sensitive; or identified threshold occasionally exceeded
	Minor	Minor deterioration (nuisance or minor deterioration) or harm to receptors; change to receiving environment not measurable; or identified threshold never exceeded
	Minor+	Minor improvement; change not measurable; or threshold never exceeded
	Moderate+	Moderate improvement; within or better than the threshold; or no observed reaction
	Major+	Substantial improvement; within or better than the threshold; or favourable publicity
SPATIAL SCALE OR POPULATION	Site or local	Site specific or confined to the immediate project area
	Regional	May be defined in various ways, e.g. cadastral, catchment, topographic
	National/ International	Nationally or beyond
DURATION	Short term	Up to 18 months.
	Medium term	18 months to 5 years
	Long term	Longer than 5 years

PART B: DETERMINING CONSEQUENCE RATING ***Rate consequence based on definition of magnitude, spatial extent and duration***					
			SPATIAL SCALE/ POPULATION		
			Site or Local	**Regional**	**National/ international**
MAGNITUDE					
Minor	**DURATION**	**Long term**	Medium	Medium	High
		Medium term	Low	Low	Medium
		Short term	Low	Low	Medium
Moderate	**DURATION**	**Long term**	Medium	High	High
		Medium term	Medium	Medium	High
		Short term	Low	Medium	Medium
Major	**DURATION**	**Long term**	High	High	High
		Medium term	Medium	Medium	High
		Short term	Medium	Medium	High

PART C: DETERMINING SIGNIFICANCE RATING *Rate significance based on consequence and probability*				
		CONSEQUENCE		
		Low	**Medium**	**High**
PROBABILITY (of exposure to impacts)	**Definite**	Medium	Medium	High
	Possible	Low	Medium	High
	Unlikely	Low	Low	Medium

Using the matrix, the significance of each described impact is initially rated. This rating assumes the management measures inherent in the Project design are in place.

Table 11 describes high level potential impacts for the NDC De-Stoning Plant Project and associated activities. These impacts have been rated prior to any mitigation measures being put in place and these impacts will be confirmed through investigations in the impact assessment phase.

Table 11: Potential impacts from the NDC De-stoning Plant Project

Activity	Phase	Potential Impact	Significance rating
De-stoning Plant and associated infrastructure/ activities	Construction	***Loss of utilisable soil resource as a result of construction activities.*** The De-Stoning Plant is to be located between the existing conveyor from the main NDC offices and the railway line, therefore limited to no access is available to allow for grazing and cultivation practices. As a result, the site is currently not being utilised and therefore no stakeholder comments have been received regarding the impacts from the De-Stoning Plant on soils and land use for the footprint area. Surface disturbance including clearing, stripping and compacting of soils to prepare contractor laydown areas and foundations for the Plant may potentially result in utilisable soils being removed from the Plant foorprint area during construction. It is anticipated that approximately 10 ha of soil will be lost, potentially impacting the current land use practice of low to moderate intensity livestock grazing and commercial cultivation. This will have a moderate negative impact based on the confined, localised proposed footprint and the compact nature of the infrastructure for relative size of the Plant. The impact on soils is long term and definite as it is expected to continue througout the construction phase into operations.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)
		Contamination of soils due to spillage from De-stoning Plant during construction. During the construction phase, there is the potential for contamination of soils by dirty water (from increased dust), chemical and hydrocarbons as a result of spills from contractor vehicles and heavy machinery on unprotected soils. However, given the confined footprint of the De-Stoning Plant area, as well as the restrictions of vehicle movement on site due to the Plant being located between the existing conveyor and railway line, contamination is possible and likely to be localised and short term. Currently the footprint area is not being utilised and no sensitive receptors have been identified.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
		Loss of biodiversity during construction activities. Based on the Mpumalanga Biodiversity Sector Plan, the Project is located within irreplaceble and optimal terrestrial Cristical Biodiversity Area (CBA) and Ecological Support Area (ESA) cluster. This concern was also raised by the Mpumlanga Tourism and Parks Agency during the public participation process in 2014. Subsequently, a biodiversity specialist study has been undertaken of the site. It is the opinion of the Ecologist who undertook the specialist study, that the classification of the land as “irreplaceble and optimal CBA and ESA” is not applicable to the site. This is due to the land being highly transformed from historic and ongoing activities. Follwing the findings from the specialist study, the Mpumlanga Tourism and Parks Agency have withdrawn their appeal with regards to the CBA.	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Unlikely **Significance:** Low (-)

Activity	Phase	Potential Impact	Significance rating
		Vegetation within the majority of the Plant area has also been disturbed as a result of historic agricultural activities, grazing of livestock and alien proliferation. The floral habitat within this habitat unit is therefore largely transformed and will most likely have a low significance rating. Access to the site by fauna is also restricted as a result of the existing conveyor and railway line and therefore the impact on fauna will be low. The only potential impact the De-stoning Plant may have on biodiversity will be from site clearing, removal of vegetation and movement of construction vehicles, resulting in the loss of the remaining floral and faunal habitat during construction. However, this impact is considered minor and unlikely due to the transformed nature of the site. In addition, the biodiversity specialist has already surveyed the marked out area for the De-Stoning Plant prior to clearing and has identified that no plants require permit applications prior to removal.	
		Contamination of stormwater and surface quality during construction. The NDC De-stoning Plant Project is located within the upper Vaal River catchment, which is considered a stressed water resource in terms of both the quantity of water in the system and the quality of the water. Any impact on the quantity or quality of water in the system has the potential to affect the quality and assurance of supply to the community and agriculture. During the construction phase, topsoil will be stripped for civil works in the form of earthworks and terracing will be undertaken as part of preparation of the Plant area. These construction activities may result in erosion of soils during rainfall events, as well as an increase in generation of dust, potentially resulting in elevated suspended solids in the runoff water. This may cause elevated suspended solids in the downstream watercourses, as well as sedimentation. This concern was raised by the Department of Water and Sanitation during the public participation process in 2013. Contamination may also occur from hydrocarbon spillages from fuel storage, servicing areas and construction equipment, with resultant elevated hydrocarbon concentrations in runoff water and downstream watercourses. Given that the De-Stoning Plant is not directly adjacent to any watercourses and the footprint cleared for the construction of the Plant is limited, the impact is anticipated to be low and site specific.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

Activity	Phase	Potential Impact	Significance rating
		Increased nuisance dust affecting adjacent landowners and mine employees during construction. NDC falls within the Highveld Priority Area and is in close proximity (3 km) to the Tutuka Power Station, as well as other mining operations, metallurgical and biochemical industries. There are existing sources of air emissions within the Local and District Municipality which include coal combustion from power generation, industrial emissions, biomass burning and vehicle exhaust emissions. Based on current monitoring at NDC, the predominant wind direction is from the north-westerly and easterly sector and therefore concerns were expressed about the increase in ambient dust levels from the Plant contributing to the cumulative dust impacts from existing mining and industrial activities. Potential dust impacts from the De-stoning Plant during construction may arise from land clearing, material loading, material hauling, stockpiling, grading, bulldozing and compaction. This will result in an increase in nuisance dust and aesthetic impacts associated with fugitive dust emissions. On-site dustfall may also represent a nuisance to mine employees. However, the extent of the dust emissions is likely to be short term and varying depending on the level of activity and metereological conditions. Dust impacts will also be site specific as clearing activities will be limited to the immediate footprint of the De-Stoning Plant and will only be during the construction phase. Given that the closest residential dwelling is approximately 3 km to the south-west of the De-stoning Plant and the modelled wind speed is generally low (average value of 2.70 m/s), the impact is considered low.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance**: Low (-)
		Increase in ambient noise for adjacent landowners during construction activities. Agriculture is the dominate land use in the area, with the key local economic contributors being farming, mining and power generation. These existing activities, along with road traffic, affect the current ambient noise in the area. Therefore the project area can be classified as “Suburban with little traffic” as per SANS 10103 guidelines, with typical daytime and night-time ambient noise levels of 50 dBA and 40, respectively. During construction, audible noises from diesel engines of trucks, dozers, loaders and other earth moving equipment will be generated. However, due to the construction activities being restricted to daylight hours, the small footprint of the Plant area and the proximity to the nearest receptor (approximately 3 km away from residential dwelling), construction noise will be of a lower intensity and therefore low signifcance. This was supported by the findings of the noise model predicted for the construction phase. In addition, no stakeholders have raised concerns or comments on the potential noise impacts from construction of the De-Stoning Plant.	**Magnitude:** Minor **Duration:** Short term **Scale**: Site Specific **Consequence:** Low **Probability:** Definite **Significance:** Low (-)

Activity	Phase	Potential Impact	Significance rating
		Improved economic and job opportunities. NDC is situated within the Gert Sibande District Municipality, which can be classified as 61% rural and 39% urban, with an unemployment rate of 21%. A stable workforce, representing every aspect of South Africa's demographics is currently under employment at the NDC existing mining operations. The mine employs approximately 900 permanent employees and utilises on average approximately 711 contractors. The construction of the De-Stoning Plant will allow for continued and efficient coal supply to Eskom's Tutuka power station, ensuring both temporary and permanent jobs at NDC and increasing opportunities for local employment in the Lekwa Local Municipality and Gert Sibande District Municipality. It is anticipated that this will be a medium positive impact, as a large number of new temporary jobs will be created, however will only be required for the short term construction phase. During the construction phase tender process, local emplyoment will be promoted as stipulated in the SLP.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Regional **Consequence:** Medium **Probability:** Definite **Significance:** Medium (+)
	Operations	***Contamination of soil resources during operations*** The De-Stoning Plant is located between the existing conveyor and railway line, which restricts access to the site. In addition, the De-Stoning Plant area will be fenced off. It anticipated that during the operation of the De-stoning Plant and conveying discard from the Plant to the Discard Disposal Facility, there is the potential of spillage of carbonaceous material and contamination of soils in the Plant footprint area. Contamination by dirty water run-off and/or spillage of hydrocarbons and/or chemicals is also expected from operation vehicles and machinery, as well as dust and emissions from the process. The impact of the De-Stoning Plant operation on the soil resource will have a negative medium signficance. Although the magnitude will be minor, the impact will last for the life of the operation (long term) and will be permanent to irreversible if not rehabilitated.	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
		Contamination of stormwater and surface quality during operations. The NDC De-stoning Plant Project is located within the upper Vaal River catchment, which is considered a stressed water resource in terms of both the quantity of water in the system and the quality of the water. Any impact on the quantity or quality of water in the system has the potential to affect the quality. These impacts were raised by adjacent landowners, who expressed concern that the Project will discharge dirty water into the adjacent watercourse which will have a negative impact on grazing and livestock.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

Activity	Phase	Potential Impact	Significance rating
		During operations, it is anticipated that the handling and movement of coal at the De-Stoning Plant will potentially generate significant amounts of dust, loose coal and sediment on the ground. This will be exposed to rainfall and wind within the plant area and any surface water that comes into contact with it will be considered contaminated. Sediment washed by storm water runoff into the pollution control facilities can also significantly reduce the storage capacity of these facilities. In addition, water used for washing the coal in the De-Stoning Plant will be contaminated and will have potential to impact should the water seep or spill to the catchment. Impacts may arise from the wind-blown dust settling in adjacent watercourses, pans or surface areas, with resultant deterioration in water quality within the pan or watercourse and runoff water. Contaminated storm water runoff and discharge in the form of uncontained process water spillages or plant wash down water from the De-Stoning Plant area into the tributary of the Leeuspruit and the Leeuspruit further downstream, will result in an increase in suspended solids, siltation of carbonaceous materials, increase in salinity, particularly sulphate, and potential decrease in pH in the watercourses. This is likely to have a moderate impact due to the chemical characterics of the carbonaceous material potentially entering the watercourse (approximately 1 km away). However, this impact will be short term from run-off only during storm events and of low signficance, as run-off will be restricted by the existing railway line located downslope of the Plant area.	
		Loss of groundwater resource due to contamination during operations. There are two groundwater aquifers present in the mining rights area. The upper aquifer, normally accessed for agriculture, lies within the weathered zone, which extends up to 15 m below the surface. The second aquifer is usually associated with fractures within the arenaceous sediments such as sandstone and grit. Stakeholders have raised concerns with regards to groundwater protection from contamination from the De-Stoning Plant operations, as this may impact on groundwater resources for users. As a result of the comments raised, a groundwater study was undertaken to idenitify groundwater users within the vicinity of the plant. The study indicated that six boreholes were identified within a 1.5 km radius from the De-Stoning Plant (refer to Figure 6) and are predominantly used for livestock watering and domestic purposes. During operations, it is anticipated that deterioration of groundwater quality may occur from the infiltration from contaminants including hydrocarbons, chemicals and carbonaceous material affecting surface water from the Plant into the adjacent aquifers. However, these impacts will only occur within the Plant footprint. As one of the six boreholes is located within a 1 km buffer of the Plant, the impact has been	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)

Activity	Phase	Potential Impact	Significance rating
		rated as moderate pre-mitigation.	
		Increased nuisance dust affecting adjacent landowners and mine employees during operations. Based on current monitoring at NDC, the predominant wind direction is from the north-westerly and easterly sector and therefore concerns were expressed about the increase in ambient dust levels from the operations of the Plant contributing to the cumulative dust impacts from existing mining and industrial activities. Potential dust impacts from the De-stoning Plant during operations will include material handling, crushing and screening and wind erosion. This will result in an increase in nuisance dust and aesthetic impacts associated with fugitive dust emissions. On-site dustfall may also represent a nuisance to mine employees. An air quality specialist study was undertaken which modelled the maximum daily dust deposition expected during the operation of the Plant (refer to Figure 7). This model indicated that the closest residential dwellings fall outside the maximum daily dust deposition plume. The extent of the dust emissions is also likely to be short term and varying depending on the level of activity and metereological conditions. Dust impacts will also be site specific as operational activities will be limited to the immediate footprint of the De-Stoning Plant. Given that the closest residential dwelling is approximately 3 km to the south-west of the De-stoning Plant and the modelled wind speed is generally low (average value of 2.70 m/s), the impact is considered of low significance.	**Magnitude:** Moderate **Duration:** Short term **Scale:**Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
		Increase in ambient noise on adjacent residential dwellings during operations. Agriculture is the dominant land use in the municipality with the key local economic contributors being farming, mining and power generation. These existing activities, along with road traffic, affect the ambient noise in the area and therefore the project area can be classified as “Suburban with little traffic” as per SANS 10103 guidelines, with typical daytime and night-time ambient noise levels of 50 dBA and 40, respectively. A noise study has been undertaken in order to model the predicted noise impacts of the De-Stoning Plant on adjacent residential dwellings. The model has taken into consideration the increase in ambient noise level relative to the existing background and included the delineation of 3 dB (low impact recommended planning limit) and 5 dB (moderate impact) noise impact footprints calculated relative to the background ambient noise profile. A noise impact of 3 dB is acceptable in terms of noise regulations and SANS 10103 criteria. The noise model indicates that a noise footprint representing an increase of 5 dB above the	**Magnitude:** Major **Duration:** Long term **Scale:** Local **Consequence:** High **Probability:** Definite **Significance:** High (-)

Activity	Phase	Potential Impact	Significance rating
		current ambient levels at night-time extends to a distance of up to 3.3 km in certain directions from the De-Stoning Plant (refer to Figure 8). Two residential dwellings located to the North of the Plant have been identified within the 5 dB increase above ambient noise contour. During the operations phase, it is aniticipated that noise will be generated at the Plant from primary and secondary vibrating screens, vibrating feeders, feed bins, Drewboy DMS plant modules, cyclone and centifuges and product transport. As a result, noise from the De-stoning Plant operations will impact on the current ambient noise levels, resulting in a high impact due to the exceedance of noise standards and 24 hours a day operation.	
		Improved economic and job opportunities. NDC is situated within the Gert Sibande District Municipality, which can be classified as 61% rural and 39% urban, with an unemployment rate of 21%. A stable workforce, representing every aspect of South Africa's demographics is currently under employment at the NDC existing mining operations. The mine employs approximately 900 permanent employees and utilises on average approximately 711 contractors. The operations of the De-Stoning Plant will allow for continued and efficient coal supply to Eskom's Tutuka power station, ensuring permanent jobs at NDC and increasing opportunities for local employment in the Lekwa Local Municipality and Gert Sibande District Municipality. It is anticipated that this will be a medium positive impact, as approximately 100 highly skilled permanent jobs will be created.	**Magnitude:** Minor **Duration:** Long term **Scale:** Regional **Consequence:** Medium **Probability:** Definite **Significance:** Medium (+)
	Closure	**Contamination of surface water and groundwater quality impacting on water resources during closure** The NDC De-stoning Plant Project is located within the upper Vaal River catchment, which is considered a stressed water resource in terms of both the quantity of water in the system and the quality of the water. Any impact on the quantity or quality of water in the system has the potential to affect the quality. These impacts were raised by adjacent landowners, who expressed concern that the Project will discharge dirty water into the adjacent watercourse which will have a negative impact on grazing and livestock. There are two groundwater aquifers present in the mining rights area. The upper aquifer, normally accessed for agriculture, lies within the weathered zone, which extends up to 15 m below the surface. The second aquifer is usually associated with fractures within the arenaceous sediments such as sandstone and grit. Stakeholders have raised concerns with regards to groundwater protection from contamination from the De-Stoning Plant, as this may impact on groundwater resources for users. Impacts resulting from general rehabilitation and decommissioning works will be similar to	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)

Activity	Phase	Potential Impact	Significance rating
		those during the construction phase, with rehabilitation earthworks and movement of construction equipment on the site. Impacts may arise from erosion of soils during rainfall events, with elevated suspended solids in the runoff water. Resultant elevated suspended solids in the watercourses, as well as sedimentation. Hydrocarbon spillages from fuel storage, servicing areas or construction equipment itself, with resultant elevated hydrocarbon concentrations in runoff water and watercourses. Contaminated soils below the Plant area may have a long term impact in terms of leaching contaminants to the ground and surface water systems. These impacts are expected to be relatively small, with the resultant impact post decommissioning being positive in comparison with the operational phase.	
		Increased nuisance dust affecting adjacent landowners during closure Based on current monitoring at NDC, the predominant wind direction is from the north-westerly and easterly sector and therefore concerns were expressed about the increase in ambient dust levels from the Plant contributing to the cumulative dust impacts from existing mining and industrial activities. Potential dust impacts from the De-stoning Plant during decommissioning and closure will include demolition, land clearing, grading, bulldozing and compaction. This will result in an increase in nuisance dust and aesthetic impacts associated with fugitive dust emissions. However, the extent of the dust emissions is likely to be short term and varying depending on the level of activity and metereological conditions. Dust impacts will also be site specific as clearing activities will be limited to the immediate footprint of the De-Stoning Plant and will only be during the construction phase. Given that the closest residential dwelling is approximately 3 km to the south-west of the De-stoning Plant and the modelled wind speed is generally low (average value of 2.70 m/s), the impact is considered low.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
		Increase in ambient noise on adjacent landowners during closure During the decommissioning and closure phase, audible noises from diesel engines of trucks, dozers, loaders and other earth moving equipment will be generated. However, due to the closure activities being restricted to daylight hours, the small footprint of the Plant area and the proximity to the nearest receptor (approximately 3 km away from residential dwelling), closure noise will be of a lower intensity and therefore low significance. This was supported by the findings of the noise study which indicates that the noise in the decommissioning phase will be of a similar nature, but at a lower intensity and shorter duration compared to noise in the construction phase. Decommissioining noise will not be audible at the nearest receptors.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

Activity	Phase	Potential Impact	Significance rating
		Sustainability of livelihoods at mine closure NDC falls within the Gert Sibande District Municipality, one of three districts in the Mpumalanga Province and is located in the south east portion of the province with capital of the district located in Ermelo. The district is classified as 61% rural and 39% urban with a population of 943 125 people and the unemployment rate of 21%. The NDC project area is situated within the Lekwa Local Municipality in the southern portion of the district (15% of district area). It is anticipated that there will be a negative impact on local communities as a result of job losses upon mine closure and associated De-stoning Plant decommissioning. Approximately 900 permanent employees from the mining operations, 711 contractors and 100 permanent employees from the De-Stoning Plant operations will be impacted on by the decommissioning of the Mine and associated Plant. A majortiy of the employees are sourced, where possible, from the Lekwa Local Municipalities and Gert Sibande District Municipality, therefore the loss of employment will have an impact on a regional scale and will contribute towards the increased rate of unemployment in the area if unmanaged.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Regional **Consequence:** High **Probability:** Definite **Significance:** High (-)
Discard Disposal Facility and associated infrastructure/ activities (return water dam)	Construction	***Loss of arable, agricultural land during construction*** The Discard Disposal Facility will be constructed on land currently owned by Eskom, which is being leased out to adjacent farmers. A concern was raised that high agricultural land is being comprimised by the Discard Disposal Facility. A soils, land use and land capability study was undertaken to determine the potential land capability of the site. The study indicated that there is little to no arable land potential soils associated with the Discard Disposal Facility area. Although some soil depths are reflective of a arable status (>750mm), the growth potential (nutrient status and soil water capabilities) and ability of these soils to return a cropping yield equal to or better than the national average is lacking. The land capability should not be mis-interpreted as the land use. It is anticipated that there will be a loss of arable and grazing land due to the construction of the Discard Disposal Facility. Approximately 30 ha of usable soil will be affected by construction activities. Communities directly adjacent to the Discard Disposal Facility area are dependent on subsistence agriculture for grazing. However, this impact will be moderate as the land can be classified as low intensity grazing land or wilderness status and will be long term as this impact will be definite.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)
		Loss of soil resource as a result of construction activities. Surface disturbance including clearing, stripping and compacting of soils to prepare contractor laydown areas and foundations may potentially result in utilisable soils being removed from the Discard Disposal Facility foorprint area during construction. It is anticipated	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite

Activity	Phase	Potential Impact	Significance rating
		that approximately 30 ha of soil will be lost, potentially impacting the current land use practice of low to moderate intensity livestock grazing and commercial cultivation by the adajcent landowner (2.5 km away). This will have a moderate negative impact based on the confined, localised proposed footprint and the compact nature of the infrastructure for relative size of the Discard Disposal Facility. The loss of soils is long term and definite as it is expected to continue througout the construction phase into operations.	**Significance:** Medium (-)
		Loss of biodiversity during construction activites. Based on the Mpumalanga Biodiversity Sector Plan, the Project is located within irreplaceble and optimal terrestrial Cristical Biodiversity Area (CBA) and Ecological Support Area (ESA) cluster. This concern was also raised by the Mpumlanaga Tourism and Parks Agency during the public participation process in 2014. Subsequently, a biodiversity specialist study has been undertaken of the site. It is the opinion of the Ecologist who undertook the specialist study, that the classification of the land as irreplaceble and optimal CBA and ESA is not applicable to the site. This is due to the land being highly transformed from historic and ongoing activities. Vegetation within the majority of the Discard Disposal Facility area has been disturbed as a result of historic agricultural activities, grazing of livestock and alien proliferation. The floral habitat within this habitat unit is therefore largely transformed, however will still have a medium impact significance due to the size of the footprint of the Facility. The only potential impact the Discard Disposal Facility may have on biodiversity will be from site clearing, removal of vegetation and movement of construction vehicles, resulting in the loss of remaining floral and faunal habitat and therefore biodiversity during construction. This impact is considered moderate and long term. In addition, the biodiversity specialist has already surveyed the marked out area for the Discard Disposal Facility prior to clearing and has identified that no plants require permit applications prior to removal.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
		Contamination of stormwater and surface quality during construction. During the construction phase, topsoil will be stripped for civil works in the form of earthworks and terracing will be undertaken as part of preparation of the Discard Disposal Facility area. These construction activities may result in erosion of soils during rainfall events, as well as an increase in generation of dust, potentially resulting in elevated suspended solids in the runoff water. This may cause elevated suspended solids in the downstream watercourses, as well as sedimentation. This concern was raised by the Department of Water and Sanitation during the public participation process in 2013. Contamination may also occur from hydrocarbon spillages from fuel storage, servicing areas and construction equipment, with resultant elevated hydrocarbon concentrations in runoff	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Definite **Significance:** Medium (-)

Activity	Phase	Potential Impact	Significance rating
		water and downstream watercourses. Gived that the Discard Disposal Facility is less than 1 km away from the nearest tributary and the site will be cleared from vegetation during the construction, the impact is anticipated to be of medium significance due to the increased erosion potential.	
		Increased nuisance dust affecting adjacent landowners during construction. Based on current monitoring at NDC, the predominant wind direction is from the north-westerly and easterly sector and therefore concerns were expressed about the increase in ambient dust levels from the Discard Disposal Facility contributing to the cumulative dust impacts from existing mining and industrial activities. Potential dust impacts from the Discard Disposal Facility during construction will include land clearing, material loading, material hauling, stockpiling, grading, bulldozing and compaction. This will result in an increase in nuisance dust and aesthetic impacts associated with fugitive dust emissions. The extent of the dust emissions is likely to be short term and varying depending on the level of activity and metereological conditions. Dust impacts will also be site specific as clearing activities will be limited to the immediate footprint of the Discard Disposal Facility and will only be during the construction phase. Given that the closest residential dwelling is approximately 2 km to the west of the Discard Disposal Facility and the wind blows in a westerly direction, the impact is considered of medium significance.	**Magnitude:** Major **Duration:** Short term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)
		Increase in ambient noise on adjacent landowners during construction. During construction, audible noises from diesel engines of trucks, dozers, loaders and other earth moving equipment will be generated. The construction activities will be restricted to daylight hours and therefore a minor impact is anticipated, however due to the large footprint of the Discard Disposal Facility and the proximity to the nearest receptor (approximately 2 km away), construction noise will be of a medium signifcance. This was supported by the findings of the noise model predicted for the construction phase. In addition, no stakeholders have raised concerns or comments on the potential noise impacts from construction, which indicated that the closest receptor is outside the 3 dB noise contour (low impact with recommended planning limit).	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Definite **Significance:** Medium (-)
	Operations	***Contamination of storm and surface water quality impacting on watercourses during operations.*** During operations, the Discard Disposal Facility will be exposed to rainfall and wind and runoff and seepage water from the Discard Disposal Facility will be contaminated with elevated salinity, particularly sulphate. Concerns were raised that dirty water from the Discard	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite **Significance:** High (-)

Activity	Phase	Potential Impact	Significance rating
		Disposal Facility would be discharged into the watercourses. The movement and handling of coal discard at the Discard Disposal Facility will also potentially generate dust, which could migrate by wind onto the adjacent areas. Sediment then washed by storm water runoff into the pollution control facilities may potentially reduce the storage capacity of these facilities. Impacts may arise from wind-blown dust settling in adjacent watercourses and surface areas, with resultant deterioration in water quality within the adjacent natural watercourse. Contaminated storm water runoff and seepage discharging from the Discard Disposal Facility into the tributary of the Leeuspruit and the Leeuspruit further downstream, will result in an increase in suspended solids, siltation of carbonaceous materials, increase in salinity (sulphate) and potential decrease in pH in downstream watercourses. The identified potential surface water related impacts associated with the proposed Discard Disposal Facility is high in the absence of appropriate management measures, due to the close proximity of the Discard Disposal Facility (<1 km to the closest edge) in relation to the tributary, as well as the carbonaceous nature of the Discard Disposal Facility creating a potential for acid generation. This may potentially impact on adjacent landowners surface water uses for livestock and grazing.	
		Loss of groundwater resource due to contamination during operations. The potential impact of seepage water into shallow weathered aquifer from the Discard Disposal Facility is considered to be high. Potential contaminants may impact on the groundwater usage, which includes domestic and agricultural use. Concerns have been raised by stakeholders regarding these impacts from the Discard Disposal Facility. A geochemical analysis was undertaken to investigate the chemical characterics of the discard, as well as the leachate potential. Based on the findings from the specialist study, the potential risk of acid mine drainage occurring from the Discard Disposal Facility can be considered to be low due to neutralization of acidity by carbonate or basic silicate minerals. There is however potential that during oxidation and the subsequent in situ neutralization, salinity will be generated. As the salinity is controlled by equilibrium reactions after neutralization, the resultant salinity has the potential to change the quality of both surface and groundwater affected by seepage. As a result, this impact has been considered of high significance.	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite **Significance:** High (-)
		Increased nuisance dust affecting adjacent landowners during operations. Based on current monitoring at NDC, the predominant wind direction is from the north-westerly and easterly sector and therefore concerns were expressed about the increase in ambient dust levels from the Discard Disposal Facility contributing to the cumulative dust	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite

Activity	Phase	Potential Impact	Significance rating
		impacts from existing mining and industrial activities. Potential dust impacts from the Discard Disposal Facility during operations will result from material handling, material loading, wind erosion. This will result in an increase in nuisance dust and aesthetic impacts associated with fugitive dust emissions. The extent of the dust emissions is likely to be long term throughout the operation phase as the Discard Disposal Facility will be expanded on for the life of the Plant and the walls of the Discard Disposal Facility will be exposed, generating wind-blown dust. Given that the closest residential dwelling is approximately 2 km to the west of the Discard Disposal Facility and the wind blows in a westerly direction, the impact is considered of high significance.	**Significance:** High (-)
		Increase in ambient noise on adjacent landowners during operations. A noise study has been undertaken in order to model the predicted noise impacts of the Discard Disposal Facility on adjacent residential dwellings. The model has taken into consideration the increase in ambient noise level relative to the existing background and included the delineation of 3 dB (low impact recommended planning limit) and 5 dB (moderate impact) noise impact footprints calculated relative to the background ambient noise profile. A noise impact of an increase in 3 dB above the ambient noise contour is acceptable in terms of noise regulations and SANS 10103 criteria. The noise model indicated that the closest receptor is outside the 3 dB increase above ambient noise contour (low impact with recommended planning limit). The current daytime and night-time noise levels are 50 dBA and 40 dBA, respectively. In addition, no stakeholders have raised concerns or comments on the potential noise impacts from operations. However, during the operations phase, it is aniticipated that noise will be generated at the Discard Disposal Facility from vehicle movement on site, dumping and bulldozing. As a result, noise from the Discard Disposal Facility operations will impact on the existing ambient noise levels, resulting in a moderate impact from operating 24 hours a day. The noise impact at any location will depend on wind direction, as wind causes diffraction of soundwaves in such a way that noise levels are reduced at locations upwind and intensified at locations downwind relative to the source of noise. Given that the closest residential dwelling is approximately 2 km down wind (to the west) of the Discard Disposal Facility, the impact is of medium significance.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Definite **Significance:** Medium (-)
		Disturbance to sense of place. NDC is located in a relatively flat with slight undulating terrain, with no steep slopes. The project is located in close proximity to Tutuka Power Station and its associated Discard Facility. As a result, the visual aesthetics of the area have already been highly transformed.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite

Activity	Phase	Potential Impact	Significance rating
		However, concerns were raised that the Discard Disposal Facility will be in direct sight of residential dwellings of adjacent landowners. The maximum height of the Discard Disposal Facility at the end of operation is anticipated to be 30 m. Given that the Discard Disposal Facility is approximately 2 km from the nearest residential dwelling, it is likely to have a moderate visual impact on the closest residential dwelling. The impact will be definite and long term as the Discard Disposal Facility will become a permanent feature to the landscape and therefore will have a medium significance.	**Significance:** Medium (-)
	Closure	***Contamination of surface water and groundwater quality impacting on watercourses during closure.*** Impacts resulting from general rehabilitation and decommissioning works will be similar to those during the construction phase, with rehabilitation earthworks and movement of demolition equipment on the site. Impacts may arise from erosion of soils during rainfall events, with elevated suspended solids in the runoff water. Resultant elevated suspended solids in the watercourses, as well as sedimentation. Hydrocarbon spillages from fuel storage, servicing areas or construction equipment itself, with resultant elevated hydrocarbon concentrations in runoff water and water resources. Contaminated soils below the Discard Disposal Facility area may have a long term impact in terms of leaching contaminants to the ground and surface water systems and as a result, the impact has a high significance rating.	**Magnitude:** Major **Duration:** Long term **Scale:** Regional **Consequence:** High **Probability:** Definite **Significance:** High (-)
		Increased nuisance dust affecting adjacent landowners during closure. Based on current monitoring at NDC, the predominant wind direction is from the north-westerly and easterly sector and therefore concerns were expressed about the increase in ambient dust levels from the Discard Disposal Facility contributing to the cumulative dust impacts from existing mining and industrial activities. Potential dust impacts from the Discard Disposal Facility during decommissioning and closure will arise from demolition, land clearing, grading, bulldozing and compaction. This will result in an increase in nuisance dust and aesthetic impacts associated with fugitive dust emissions. The extent of the dust emissions is likely to be long term due to the Discard Disposal Facility becoming a permanent feature of the landscape. Dust impacts will also be site specific as clearing and demolition activities will be limited to the immediate footprint of the Discard Disposal Facility. Given that the closest residential dwelling is approximately 2 km to the west	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)

Activity	Phase	Potential Impact	Significance rating
		of the Discard Disposal Facility, the significance of the impact is considered medium.	
		Increase in ambient noise on adjacent landowners during closure. During the decommissioning and closure phase, audible noises from diesel engines of trucks, dozers, loaders and other earth moving equipment will be generated. However, due to the closure activities being restricted to daylight hours and the proximity to the nearest receptor (approximately 2 km away from residential dwelling), closure noise will be of a lower intensity and therefore minor magnitude. This was supported by the findings of the noise model predicted for the closure phase. In addition, no stakeholders have raised concerns or comments on the potential noise impacts, which indicated that the closest receptor is outside the increased 3 dB noise contour (low impact with recommended planning limit) to ambient noise levels.	**Magnitude:** Minor **Duration:** Short term **Scale:**Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
Pollution Control Dam and Process Water Dam (channels and pipelines)	Construction	Impacts during the construction phase are anticipated to be similar of that to the De-Stoning Plant above.	
	Operations	***Contamination of soil resources during operations*** Refer to the contamination of soil resources impact for the De-Stoning Plant above for a description on the potential impact.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
		Contamination of surface water and groundwater resources due to spillages or seepage during operations The Pollution Control and Process Water Dams are located directly adjacent to the proposed De-Stoning Plant. Comments were raised on the potential contamination of water resources as a result of seepage during operations. As a result of the comments raised, a groundwater study was undertaken to idenitify groundwater users within the vicinity of the Dam areas. The study indicated that six boreholes were identified within a 1.5 km radius and are predominantly used for livestock watering and domestic purposes. During operations, the water in the pollution control dams and Process Water Dam will be of poor quality, with potential to impact on the downstream water resources, primarily in terms of increased salinity (particularly sulphate) and potentially reduced pH if there are spillages or leaks from the dams. Impacts may also arise from inadequate sizing or lining system on the dams and poor maintenance resulting in loss of storage capacity due to sediment build-up in the dams. As one of the six boreholes is located within a 1 km buffer from the proposed dams (refer to Figure 6), the impact is of medium significance pre-mitigation.	**Magnitude:** Major **Duration:** Short term **Scale:** Regional **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)

Activity	Phase	Potential Impact	Significance rating
	Closure	***Contamination of surface water and groundwater resources due to spillages or seepage during closure*** Impacts resulting from general rehabilitation and decommissioning works will be similar to those during the construction phase, with rehabilitation earthworks and movement of demolition equipment on the site. Impacts may arise from erosion of soils during rainfall events, with elevated suspended solids in the runoff water. Resultant elevated suspended solids in the watercourses, as well as sedimentation. Hydrocarbon spillages from fuel storage, servicing areas or construction equipment itself, with resultant elevated hydrocarbon concentrations in runoff water and water resources. Contaminated soils below the Pollution Control Dam and Process Water Dam area may have a long term impact in terms of leaching contaminants to the ground and surface water systems. However, as this project will be limited to a footprint of 5 ha and is not in close proximity to the adjacent tributary of the Leeuspruit, the impact has a medium significance rating.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Local **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
Run of Mine/ Product Stockpile and associated infrastructure/activities	Construction	***Loss of soil resource as a result of construction activities*** Refer to the loss of soil resources impact for the De-Stoning Plant above for a description on the potential impact. Surface disturbance during construction of the Stockpiles will be limited to a small footprint of 5 ha, which is smaller than the De-Stoning Plant area and therefore has a minor magnitude. However, the duration of the impact will be long term as this will be a permanent loss prior to any management measures. This impact has been rated as having a medium significance.	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
		Increased nuisance dust affecting adjacent landowners during construction The ROM and Product Stockpiles are within the existing railway line loop and adjacent to the existing Eskom Product Stockpile (to the East of the proposed De-Stoning Plant area). Potential dust impacts from the Stockpiles during construction will result from land clearing, material loading, material hauling, stockpiling, grading, bulldozing and compaction. This will result in an increase in nuisance dust and aesthetic impacts associated with fugitive dust emissions. Due to the proximity of the Stockpiles to the De-stoning Plant, the impact is likely to be similar, however this will have low significance in comparison to the Plant due to the minimised area to be cleared.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
		Increase in ambient noise on adjacent landowners during construction	**Magnitude:** Minor **Duration:** Short term

Activity	Phase	Potential Impact	Significance rating
		Refer to the increase in ambient noise impact for the De-Stoning Plant above for a description on the potential impact.	**Scale:** Site specific **Consequence:**Low **Probability:** Possible **Significance:** Low (-)
	Operations	***Contamination of surface water and groundwater quality during operations*** During operations, the ROM and Product Stockpile will be exposed to rainfall and wind and runoff and seepage water from the Stockpiles will be contaminated with elevated salinity, particularly sulphate. The movement and handling of ROM and product at the Stockpiles will also potentially generate dust, which could migrate by wind onto the adjacent areas. Impacts from wind-blown dust settling in adjacent watercourses and surface areas, will result in deterioration in water quality within the adjacent natural watercourse. Contaminated storm water runoff and seepage discharging from the Stockpiles into the tributary of the Leeuspruit and the Leeuspruit further downstream, will result in an increase in suspended solids, siltation of carbonaceous materials, increase in salinity (sulphate) and potential decrease in pH in downstream watercourses. The identified potential surface water related impacts associated with the proposed Stockpiles is high in the absence of appropriate management measures, due to the carbonaceous nature of the Stockpiles creating a potential for acid generation. This may impact on adjacent landowners surface water uses for livestock and grazing. However, this impact will be site specific and not regional as runoff from the Stockpiles will be restricted by the existing railway line located downslope of the Stockpile area. The potential impact of seepage water into shallow weathered aquifer from the Stockpiles is also considered to be high. Potential contaminants may impact on the groundwater usage, which includes domestic and agricultural use. A geochemical analysis was undertaken to investigate the chemical characterics of the coal extracted from the NDC underground workings. Based on the findings from the specialist study, the potential risk of acid mine drainage occurring from the Stockpiles can be considered to be low due to neutralization of acidity by carbonate or basic silicate minerals. There is however potential that during oxidation and the subsequent in situ neutralization, salinity will be generated. As the salinity is controlled by equilibrium reactions after neutralization, the resultant salinity has the potential to change the quality of both surface and groundwater affected by seepage. As a result, this impact has been considered of high significance.	**Magnitude**: Major **Duration:** Long term **Scale:** Site specific **Consequence**: High **Probability:** Definite **Significance:** High (-)
		Increased nuisance dust affecting adjacent landowners during operations Refer to the the increased nuisance dust impact for the De-Stoning Plant above for a	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific

Activity	Phase	Potential Impact	Significance rating
		description on the potential impact. Surface disturbance during construction of the Stockpiles will be limited to a small footprint of 5 ha, which is smaller than the De-Stoning Plant area and therefore has a low significance. The extent of the dust emissions is likely to be short term and varying depending on the level of activity and metereological conditions.	**Consequence:** Low **Probability:** Possible **Significance:** Low (-)
	Closure	***Contamination of surface water and groundwater resources due to spillages or seepage during closure*** Impacts resulting from general rehabilitation and decommissioning works will be similar to those during the construction phase, with rehabilitation earthworks and movement of demolition equipment on the site. Impacts may arise from erosion of soils during rainfall events, with elevated suspended solids in the runoff water. Resultant elevated suspended solids in the watercourses, as well as sedimentation. Hydrocarbon spillages from fuel storage, servicing areas or construction equipment itself, with resultant elevated hydrocarbon concentrations in runoff water and watercourses. Contaminated soils and remaining carbanceous material from the Stockpile areas may have a long term impact in terms of leaching contaminants to the ground and surface water systems. As a result, the impact has a high significance rating.	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite **Significance:** High (-)
		Increased nuisance dust affecting adjacent landowners during closure Refer to the the increased nuisance dust impact for the De-Stoning Plant above for a description on the potential impact. Surface disturbance during the closure phase of the Stockpiles will be limited to a small footprint of 5 ha, which is smaller than the De-Stoning Plant area and therefore has a low significance. The extent of the dust emissions is likely to be short term and varying depending on the level of activity and metereological conditions.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

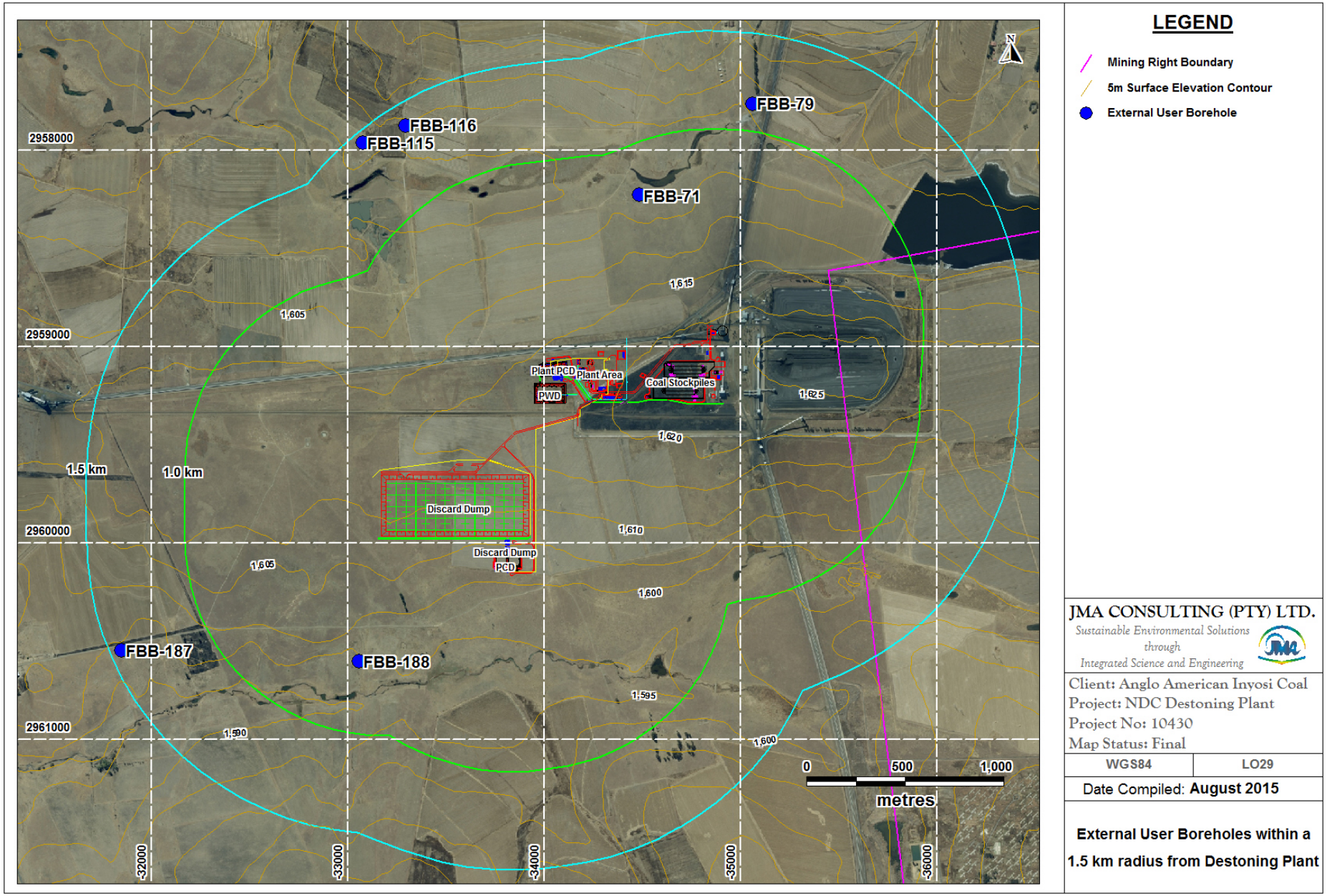

Figure 6: External User Boreholes within a distance of 1.5 km from the proposed De-stoning Plant (JMA Groundwater Report -2015)

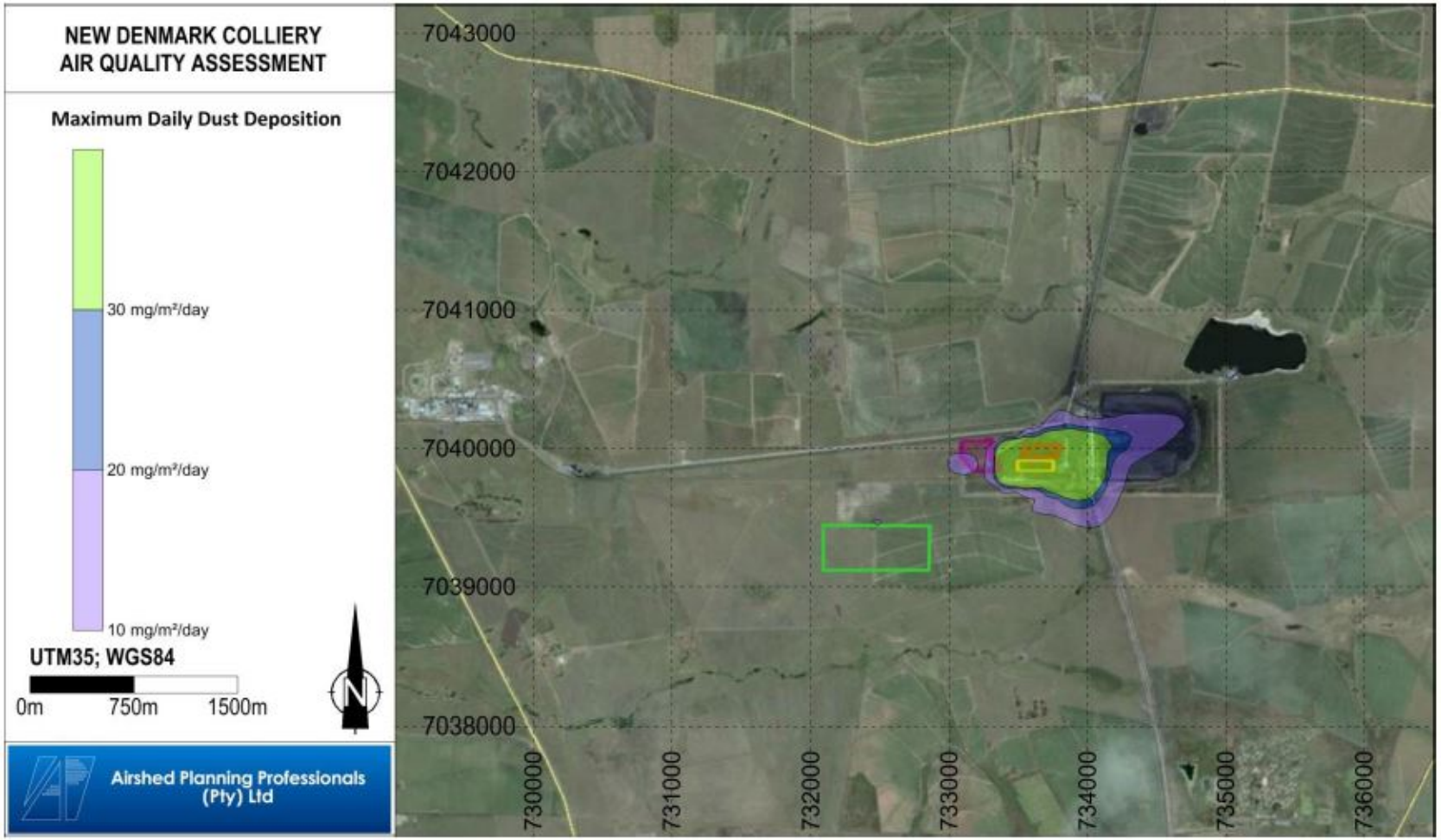

Figure 7: Maximum daily dust deposition due to the proposed operations at New Denmark Colliery (Airshed Air Quality Report – 2015)

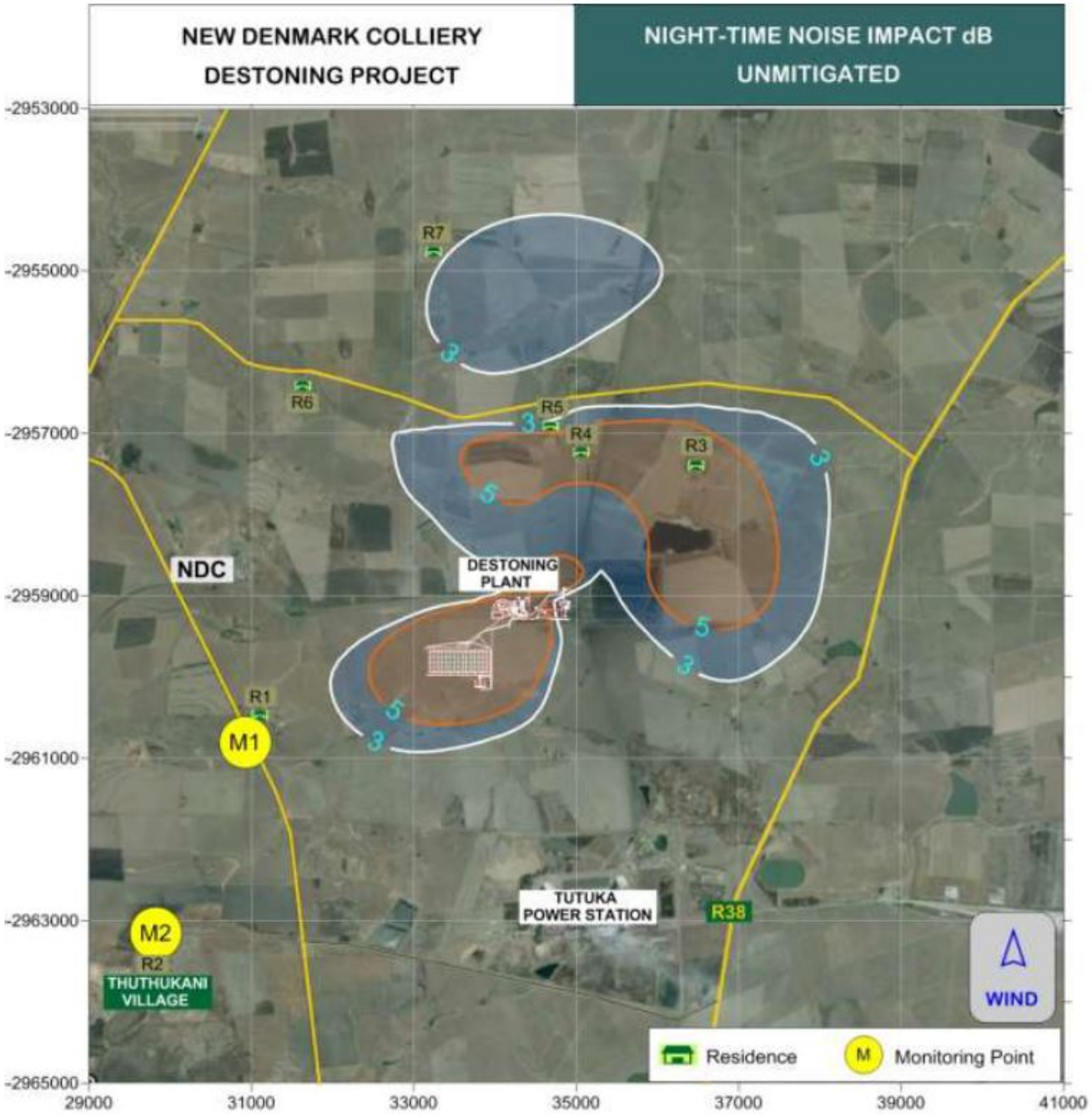

Figure 8: De-stoning Plant unmitigated night time noise impact in dB (Acoustic Consulting Noise Report- 2015)

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).

The methodology to determine the ranking of the nature, significance, consequence, extent, duration and probability of potential impacts is detailed above in PART A, Section 3 (g)(v).

The site layout was revised based on consultation with stakeholders and findings of the specialist studies. Comments documented in Table 8 above were communicated to the design team and taken into consideration during the alternatives assessment and design process.

In addition, the potential impacts identified through the various specialist studies were used to inform decision-making on the preferred infrastructure site options. The layout options where potential impacts may have been avoided or minimised were considered favourable.

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)

Table 12 and Table 13 outline the alternative site layouts for the Discard Disposal Facility, as well as the Plant, ROM and Product Stockpiles, respectively. The advantages/ disadvantages and impacts associated with alternatives were investigated. Stakeholders were consulted on the different site alternatives. Details on the public participation process followed have been included in PART A, Section 3(g)(ii) above.

Table 12: Alternative site locations for the Discard Disposal Facility and their advantages, disadvantages and impacts

Site		
Option 1 - Racesbult 325 Ism Portion 6) **(Preferred option)**	**Advantages**	**Positive Impacts**
	Close proximity to Tutuka Power Station and Eskom stockyard	• Reduced dust and noise impacts as a result of no additional transportation of ore required • The site is a brownfields site and is already impacted on • Limited additional infrastructure required
	Directly adjacent to existing conveyor belt that supplies coal to the Tutuka Power Station	• No new infrastructure will be required for the transportation of coal
	The site is situated within already transformed land	• Minimal loss of soil resources and plant diversity • Minimal loss of livelihoods for surrounding communities and adjacent landowners
	The site is located within the Mining Right Area	• No new mining right applications are required
	The site is located within Eskom owned land and no purchase of land is required along with displacement of landowners	• Reduced socio-economic impacts as there will be limited economic and physical displacement
	The site is located outside the 1:100 year floodline and outside any delineated wetlands	• Minimal impact on watercourse hydrology • Meets the requirements of the National Water Act • Minimal impact or disturbance to wetlands outside the project footprint
	Disadvantages	**Negative Impacts**
	The Discard Disposal Facility area is currently used for grazing and agriculture	• Limited loss of arable, agricultural land • The loss of livelihoods (23.47 ha)
	Close proximity (2.5 km) to adjacent land owners residential dwelling	• Potential increase in nuisance dust and noise, as well as impact on water quality
Option 2 (Uitkyk 549 IS farm, Portion 0)	**Advantages**	**Positive Impacts**
	The area has relatively flat topography and therefore limited cut and fill is required for the construction of the Discard Disposal Facility	• Reduced dust and noise impacts as a result of minimised transportation of material during the construction phase
	Close proximity to existing New Denmark silo and Conveyor route, resulting in limited additional infrastructure required	• Reduced dust and noise impacts as a result of no additional transportation of ore required
	Disadvantages	**Negative Impacts**
	The land is not owned by Eskom, it is owned by V D M Agri Trust and therefore new land would need to be purchased for the project	• Potential for economic and physical displacement. • Increased expenses to the current Project cost
	The area has been undermined via long wall mining (total extraction) and there is a potential risk of subsidence due to historical underground mining works	• Subsidence will impact on the integrity of the liner and this may potentially impact on groundwater resources due to the contamination from the Discard Disposal Facility as a result of seepage

Site		
Option 3 (Racesbult 352 IS, Portion 2)	**Advantages**	**Positive Impacts**
	Close proximity to the conveyor route, New Denmark silo and Eskom stockyard and therefore limited additional infrastructure required	• Reduced dust and noise impacts as a result of no additional transportation of ore required
	Located within Eskom owned land and therefore no purchase of land is required along with displacement of landowners	• Reduced socio-economic impacts as there will be limited economic and physical displacement
	Disadvantages	**Negative Impacts**
	Current grazing and agricultural practices taking place	• Loss of arable, agricultural land impacting on current livelihoods of current landowners
	The site is situated outside the mining right area and therefore additional licenses will be required	• Increased timeframes and costing of the Project as a result of the need for additional licences
	Close proximity to stakeholders	• Potential increase in nuisance dust and noise, as well as impact on water quality

Table 13: Alternative site locations for the Plant, ROM and Product Stockpile and their advantages, disadvantages and impacts

Site		
Option 1 (Preferred option)	**Advantages**	**Positive Impacts**
	Reduced railway crosses	• Improved construction and operational costs • Decreased impacts of nuisance dust and noise during transportation of material
	Site located in the mining right area and therefore no additional licenses will be required.	• No new mining right applications are required • No impact on timeframes and costing of the Project as a result no additional licences being required
	The site is located within Eskom owned land and therefore no purchase of land is required along with displacement of landowners	• Reduced socio-economic impacts as there will be limited economic and physical displacement
	Distance to closest adjacent landowners residential dwelling is greater than 5 km	• Minimal impact from nuisance dust and noise
	The site is located outside the 1:100 year floodline and outside any delineated wetlands	• Minimal impact on watercourse hydrology • Meets the requirements of the National Water Act • Minimal impact or disturbance to wetlands outside the project footprint
	The site is situated within already transformed land	• Minimal loss of soil resources and plant diversity • Minimal loss of livelihoods for surrounding communities and adjacent landowners
	Close proximity to the Discard Disposal Facility	• Minimal impact from nuisance dust and noise • Improved construction and operational costs
	Disadvantages	**Negative Impacts**
	The Plant is adjacent to historic underground mining works	• Subsidence may potentially impact on groundwater resources due to

Site		
	(<500 m) resulting possible risk of subsidence in adjacent areas to the Plant due to historical underground mining works	the contamination from the Plant as a result of seepage
Option 2 (previous layout as per Scoping Report)	**Advantages**	**Positive Impacts**
	Site located in the mining right area and therefore no additional licenses will be required.	• No impact on timeframes and costing of the Project as a result no additional licences being required.
	The site is located within Eskom owned land	• No purchase of land is required along with displacement of landowners
	Distance to closest adjacent landowners residential dwelling is greater than 5 km	• Minimal impact from nuisance dust and noise
	The site is located outside the 1:100 year floodline and outside any delineated wetlands	• Minimal impact on watercourse hydrology • Meets the requirements of the National Water Act • Minimal impact or disturbance to wetlands outside the project footprint
	The site is situated within already transformed land	• Minimal loss of soil resources and plant diversity • Minimal loss of livelihoods for surrounding communities and adjacent landowners
	Disadvantages	**Negative Impacts**
	Large number of railway crossings	• Increased construction and operational costs
	Further distance to the Discard Disposal Facility	• Increased impacts of nuisance dust and noise during transportation of discard • Increased construction and operational costs due to transportation
	The ROM and Product Stockpiles are adjacent to historic underground mining works (< 500 m) and possible risk of subsidence in adjacent areas to the ROM and Product Stockpiles due to historical underground mining works	• Subsidence will impact on the integrity of the liner and this may potentially impact on groundwater resources due to the contamination from the Stockpiles as a result of seepage

viii) The possible mitigation measures that could be applied and the level of risk.

(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).

The comments raised by stakeholders are included in Table 8. These comments have been taken into consideration and have informed the management measures outlined in Table 14.

Table 14: Management measures for potential impacts identified for the NDC De-stoning Plant Project

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
De-stoning Plant and associated infrastructure/ activities	Construction	Loss of soil resource as a result of construction activities	No comment for De-stoning Plant.	• Only the immediate area of the footprint will be cleared. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Compacted soils will be ripped and profiled. • Construction of water management infrastructure will commence prior to construction of the De-stoning Plant to prevent soil erosion.
		Contamination of soils due to spillage from De-stoning Plant	Any diesel or oil spillage occurring on site should be cleared immediately by removing the spill together with the polluted soil and disposing of it at a permanent waste disposal site.	• Use of the existing mine leak/spill detection plan will be implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure. • Construction vehicle movement on site over unprotected or sensitive areas will be restricted. The De-stoning Plant area will be fenced off during construction activities. • Regular servicing of all vehicles will be undertaken in designated construction areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil.
		Loss of biodiversity during construction activities	Concerns were raised with regards to the location of the project within the terrestrial Critical Biodiversity Area (CBA) and Ecosystems Support Area (ESA) wetland cluster. The Mpumalanga Biodiversity Sector Plan	• Only the immediate area of the footprint will be cleared. • The mine will remove any alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
			(MBSP) also indicates shading that shows that the plant in situated within a Critical Biodiversity Area (CBA) which is optimal. Fauna and flora must be protected at all times and movement of vehicles must be controlled on site.	
		Contamination of stormwater and surface quality during construction	How dust will impact on stormwater run-off from the De-stoning Plant. A Water Use Licence (WUL) must be obtained before any development related to the De-stoning Plant. The development of the site must have appropriate stormwater management as well as appropriate drainage systems.	• Construction of water management infrastructure will commence prior to construction of the De-stoning Plant. • Storm water containment will be planned and constructed for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. • If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction area should be reviewed.
		Increased nuisance dust affecting adjacent	Concern was expressed about the cumulative impacts dust from the De-	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
		landowners and mine employees during construction	stoning Plant may have on the existing dust impact from the Eskom coal stockpile already having a significant impact on the quality of maize harvest, cattle grazing and human health in general. Dust liberation into the surrounding environment must be effectively controlled by means of using water spraying. A road management plan must be in place prior to commencement of construction and dust control must be prioritized.	incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).
		Increase in ambient noise for adjacent landowners during construction activities	A requested for baseline noise monitoring to be undertaken prior to the construction phase of the proposed Project.	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.
		Improved economic and job opportunities	The Department of Labour have requested to be informed/ involved in the EIA process.	• The mine will facilitate the recruitment of local labour where possible during the construction phase. • New Denmark Colliery has an updated Social and Labour Plan (SLP).

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
	Operations	Contamination of soil resources during operations	No comment.	• Use of the existing mine leak/spill detection plan will be implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure. • Vehicle movement on site over unprotected or sensitive areas will be restricted. • Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil.
		Contamination of stormwater and surface quality during operations	How dust will impact on stormwater run-off from the De-stoning Plant. Transportation and storing of hazardous substances must be in accordance with relevant legislation and regulation. Concerns that the project will discharge dirty water into the river on his farm which will have negative impact on livestock and grazing in the area.	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • Clean water will be diverted around the plant and dirty water from the plant will be diverted to the proposed Pollution Control Dam. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • An inspection and maintenance plan will be implemented to ensure that the De-stoning Plant operates within specifications. • Storm water containment is planned for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. • The mine's emergency action plan/ procedures will be drawn up to deal

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
				with spills on the road to minimise the impact on water quality. • Regular clearing will be undertaken of all access ways and conveyor routes, as well as drains and stormwater facilities. • Regular servicing of all vehicles in designated operational areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel.
		Loss of groundwater resource due to contamination during operations	Groundwater must be protected from contamination and its flow direction must not be disturbed.	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed to prevent seepage will be installed in the Construction Phase. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.
		Increased nuisance dust affecting adjacent landowners during operations	Concern was expressed about the cumulative impacts dust from the De-stoning Plant may have on the existing dust impact from the Eskom coal stockpile already having a significant impact on the quality of maize harvest, cattle grazing and human health in general. How will the exceedance of air quality minimum emissions standards be monitored and managed by NDC?	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The conveyors within the plant complex will be partially enclosed during operations to reduce dust. • The De-Stoning Plant will be completely enclosed during operations, resulting in reduced nuisance dust.
		Increase in ambient noise for adjacent	No comment.	• A noise monitoring programme will be implemented. • The plant will be completely enclosed during operations which will reduce noise.

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
		landowners during operations		• Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of operations vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.
		Improved economic and job opportunities	The Department of Labour have requested to be informed/ involved in the EIA process.	• New Denmark Colliery will facilitate the recruitment of local labour where necessary. • New Denmark Colliery has an updated Social and Labour Plan (SLP).
	Closure	Contamination of surface water and groundwater quality impacting on watercourses during closure	Concerns that the project will discharge dirty water into the river on his farm which will have negative impact on livestock and grazing in the area. How will seepage from the Discard Disposal Facility into the groundwater be assessed?	• The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan. • The mine will undertake rehabilitation and vegetation of the De-stoning Plant. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water monitoring until it can be demonstrated that potential for the generation of pollutants is low. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages.
		Increased nuisance dust affecting adjacent landowners during closure	Concern was expressed about the cumulative impacts dust from the Discard Disposal Facility may have on the existing dust impact from the Eskom coal stockpile already having a significant impact on the quality of maize harvest, cattle grazing and human health in general.	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented. • Rehabilitation and vegetation of the De-stoning Plant will be undertaken as per the Rehabilitation and Closure Action Plan. • Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.
		Increase in	No comment.	• The mine will maintain a noise complaints register and capture the

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
		ambient noise on adjacent landowners during closure		complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Demolition activities will be limited to confined daylights. • Demolition vehicles and machinery will be serviced at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.
		Sustainability of livelihoods at mine closure	No comment.	• The mine will undertake a Closure assessment to investigate the impact of mine closure at least 5 years in advance of the event to estimate short term, medium term and long terms impacts of mine closure. The Closure assessment will include an assessment of the socio-economic aspects.
Discard Disposal Facility and associated infrastructure/ activities (return water dam)	Construction	Loss of arable, agricultural land during construction	High agricultural potential land is being compromised by this project and how has the agricultural potential been considered in this process.	• Only the immediate footprint of the area will be cleared.
		Loss of soil resource as a result of construction activities	No comment.	• Only the immediate footprint of the area will be cleared. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Construction of water management infrastructure will commence prior to construction of the De-stoning Plant to prevent soil erosion. • Compacted soils will be ripped and profiled. • A Contractors Management Plan will include a soils management standard for the Discard Disposal Facility prior to the commencement of construction.
		Contamination of surface water during	No comment.	• Construction of water management infrastructure will commence prior to construction of the Discard Disposal Facility. • Storm water containment will be planned and constructed for the

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
		construction		Discard Disposal Facility as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. • If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction area should be reviewed.
		Loss of biodiversity during construction activites	Concerns were raised with regards to the location of the project within the terrestrial Critical Biodiversity Area (CBA) and Ecosystems Support Area (ESA) wetland cluster.	• The mine will ensure the removal of the alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will make use of an existing awareness campaign as per the existing awareness plan to educate employees on awareness, respect and responsibility towards the environment.
		Increased nuisance dust affecting adjacent landowners during	Concern was expressed about the cumulative impacts dust from the Discard Disposal Facility	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
		construction	may have on the existing dust impact from the Eskom coal stockpile already having a significant impact on the quality of maize harvest, cattle grazing and human health in general.	undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.
		Increase in ambient noise on adjacent landowners during construction	No comment.	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.
	Operations	Contamination of storm and surface water quality impacting on watercourses during operations	Concerns that the project will discharge dirty water into the river on his farm which will have negative impact on livestock and grazing in the area.	• Clean water will be diverted around the Discard Disposal Facility and dirty water from the Discard Disposal Facility will be diverted to the proposed Return Water Dam. • The Return Water Dam has been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • The mine will undertake regular surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • A leak/spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
				hydrocarbons into topsoil. • Damage from erosion will be repaired. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants.
		Loss of groundwater resource due to contamination during operations	How will seepage from the Discard Disposal Facility into the groundwater be assessed?	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner will be designed and installed during the Construction Phase to prevent seepage. • Levelling and compacting of discard will be undertaken during deposition to reduce airflow in the Discard Disposal Facility. • The Discard Disposal Facility will operate within the approved design parameters. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.
		Increased nuisance dust affecting adjacent landowners during operations	Concern was expressed about the cumulative impacts dust from the Discard Disposal Facility may have on the existing dust impact from the Eskom coal stockpile already having a significant impact on the quality of maize harvest, cattle grazing and human health in general. How will the dust from the Discard Disposal Facility be managed? The dust has a negative impact on grazing and the agricultural potential of the area immediately adjacent to the proposed project.	• The discard will be transported from the plant to the Discard Disposal Facility via conveyor. This will reduce the generation of dust during transportation and handling of discard. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads and Discard Disposal Facility when required, to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • Concurrent rehabilitation of the Discard Disposal Facility will be undertaken during operations, including hydroseeding and grassing. • If required, soil used to concurrently rehabilitate the Discard Disposal Facility will be ameliorated to enhance oxidation and growth capability. • Newly seeded/planted areas will be protected against compaction and erosion by restricting vehicle access to the site. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
		Increase in ambient noise on adjacent landowners during operations	No comment.	• The mine's noise monitoring programme will be implemented prior to operational activities and will be ongoing throughout the operational phase. • Monitoring locations and procedures will be reviewed prior to each annual noise survey. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Operations vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.
		Disturbance to sense of place	The Discard Disposal Facility will be in direct site of residential dwellings of adjacent landowners.	• The mine will undertake concurrent rehabilitation and vegetation of Discard Disposal Facility during operations as per the Rehabilitation and Closure Plan. • Reseeding of indigenous grasses will be implemented in all impacted areas.
	Closure	Contamination of surface water and groundwater quality impacting on water resources during closure	Concerns that the project will discharge dirty water into the river on his farm which will have negative impact on livestock and grazing in the area. How will seepage from the Discard Disposal Facility into the groundwater be assessed?	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and constructed to prevent seepage. • The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan. • The mine will complete rehabilitation and vegetation of the Discard Disposal Facility. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water and groundwater monitoring until it can be demonstrated that potential for the generation of pollutants is low.
		Increased nuisance dust affecting adjacent landowners during closure	Concern was expressed about the cumulative impacts dust from the Discard Disposal Facility may have on the existing dust impact from the Eskom coal stockpile already having	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will undertake concurrent rehabilitation of the Discard Disposal Facility during the closure phase as per the mine's Rehabilitation and Closure Action Plan.

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
			a significant impact on the quality of maize harvest, cattle grazing and human health in general.	• Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.
		Increase in ambient noise on adjacent landowners during closure	No comment.	• The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • The mine will limit demolition activities will to confined daylights. • The mine will service demolition vehicles and machinery at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.
Pollution Control Dam and Process Water Dam (channels and pipelines)	Construction	Construction impacts and management measures will be similar to that of the aforementioned De-stoning Plant. Refer to section above.		
	Operations	Contamination of soils due to spillage from pipelines, channels or dams during operations	Any diesel or oil spillage occurring on site should be cleared immediately by removing the spill together with the polluted soil and disposing of it at a permanent waste disposal site.	• The mine will implement regular monitoring of the pipeline route, as all as downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect.
		Contamination of surface water and groundwater resources due to spillages or seepage during operations	The Department of Water and Sanitation requested that a Section 21 (g) water use and associated civil designs be submitted for all dirty water storage facilities.	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect. • The Dams have been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
				implemented. • Storm water containment is planned for the Dams as per the Stormwater Management Plan in the IWWMP.
	Closure	Contamination of surface water and groundwater resources due to spillages or seepage during closure	The Department of Water and Sanitation requested that a Section 21 (g) water use and associated civil designs be submitted for all dirty water storage facilities.	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage.
Run of Mine/ Product Stockpile and associated infrastructure/activities	Construction	Loss of soil resource as a result of construction activities	No comment.	• Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Compacted soils will be ripped and profiled. • Construction of water management infrastructure will commence prior to construction of the ROM and Product stockpiles to prevent soil erosion.
		Increased nuisance dust affecting adjacent landowners during construction	No comment.	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • The mine will maintain internal roads in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.
		Increase in	No comment.	• A noise monitoring programme will be implemented prior to

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
		ambient noise on adjacent landowners during construction		construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.
	Operations	Contamination of storm and surface water quality during operations	What happens to the water that is removed from the coal and its' associated quality?	• Clean water will be diverted around the stockpiles and dirty water from the stockpiles will be diverted to the proposed Pollution Control Dam. • The mine will undertake regular surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • Storm water containment will be implemented for the Stockpiles as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants.
		Loss of groundwater resource due to contamination during operations	No comment.	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and installed during the Construction Phase to prevent seepage. Prior to the installation of the liner, the site will be suitably prepared and compacted. • The mine will undertake regular groundwater monitoring from existing monitoring boreholes to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.
		Increased nuisance dust affecting adjacent landowners during operations	What will the impact of dust from the product and run of mine stockpile be? Concerns were raised with regards to existing and future cumulative impacts of dust from the existing	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.

Activity	Phase	Potential Impact	Stakeholder Comment	Mitigation measures
			Eskom stockpile, trucks to the stockpile and the new stockpiles.	
	Closure	Contamination of surface water and groundwater reosurce sdue to spillages or seepgae during closure	No comment.	• The removal of material will be in accordance with the mine's Rehabilitation and Closure Action Plan. • All ROM and Product material will be removed from site. • The mine will rehabilitate and vegetate the stockpile footprint. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect the vegetation establishment. • The mine will undertake post-closure surface water monitoring until it can be demonstrated that potential for the generation of pollutants is low.
		Increased nuisance dust affecting adjacent landowners during closure	No comment.	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will rehabilitate and vegetate the stockpile footprint as per the mine's Rehabilitation and Closure Action Plan. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.

ix) Motivation where no alternative sites were considered.

Alternatives have been considered for this project, as listed above in PART A, Section 3 (g)(i) above.

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

The current proposed De-stoning Plant Project site is located on a brownfields site close to existing NDC and Eskom infrastructure, and therefore was the most cost effective and least disturbing option. The proposed site for the development is the only portion of land that the land owner (Eskom) has agreed to release for the De-stoning Plant and Discard Disposal Facility. Another limiting factor of alternative locations for the Plant footprint is the locality of an existing rail loop line which is soon to be upgraded by Eskom. The location of the Discard Disposal Facility was also considered but alternatives were ruled out due to engineering constraints as a result of underground mining operations, surrounding topography, location of sensitive environments, land ownership and the extent of the NDC mining rights area.

The advantages and disadvantages for each alternative is detailed in Table 12 and Table 13 above, PART A, Section 3 (g)(vii).

***h)* 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.)

A summary of all the anticipated impacts and risks, as well as significance for the proposed Project during the life of the project have been included in Table 11, PART A, Section 3 (g)(vi) above. Mitigation measures associated with each impact and risk are included in Table 14, PART A, Section 3 (g)(viii).

Impacts and risks were identified using a standardised method that forms part of methodology that the EAP utilised (PART A, Section 3 (g)(vi)) for the EIA and EMP. This process involved:

- Observations based on the site visits;
- Input from the specialist surveys, baseline assessments and recommendations;
- Input from public participation;
- Input from the desktop analysis of relevant sector plans and available land use planning tools;
- Consultation and discussions with the engineering project team; and
- Application of previous knowledge and experience by the EAP for these types of projects in Mpumalanga Highveld region.

Additionally, the EAP has provided inputs into the AACSA design processes and continued to do so during the EIA process. This included the identification and discussion of project risks from various disciplines involved in the project. Environmental and social risks have been incorporated into this process throughout the duration of the EIA process. Currently this process has resulted in a positive influence on the design and proposed layout based on environmental and social risks.

The first stage of risk and impact assessment was the identification of environmental activities, aspects and impacts. This was supported by the identification of receptors and resources, which allows for an understanding of the impact pathway and an assessment of the sensitivity to change. The definitions used in the impact assessment are given below:

- An activity is a distinct process or task undertaken by an organization for which a responsibility can be assigned. Activities also include facilities or pieces of infrastructure that are possessed by an organisation;
- An environmental aspect is an 'element of an organizations activities, products and services which can interact with the environment. The interaction of an aspect with the environment may result in an impact;
- Environmental risks and 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;
  - Receptors comprise, but are not limited to people or man-made structures;
  - Resources include components of the biophysical environment;
- Frequency of activity refers to how often the proposed activity will take place;
- Frequency of impact refers to the frequency with which a stressor (aspect) will impact on the receptor;
- Severity 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;
- Spatial scope refers to the geographical scale of the impact; and
- Duration refers to the length of time over which the stressor will cause a change in the resource or receptor.

The significance of the impact was then assessed by rating each variable according to defined criteria. The purpose of the rating was to develop a clear understanding of influences and processes associated with each impact. The severity, spatial scope and duration of the impact together comprise the consequence of the impact. The frequency of the activity and the frequency of the impact together comprise the likelihood of the impact occurring. The likelihood and consequence of the impact were

then read off a significance rating matrix to determine the significance of the impact and whether mitigation is necessary.

The assessment of significance was undertaken twice. Initial significance was based only on natural and existing mitigation measures (including built-in engineering designs). The subsequent assessment took into account the recommended management measures required to mitigate the impacts. Measures such as demolishing infrastructure, and reinstatement and rehabilitation of land, were considered post-mitigation.

The model outcome of the impacts was then assessed in terms of impact certainty and consideration of available information. The Precautionary Principle was applied in line with South Africa's National Environmental Management Act (No. 108 of 1997) in instances of uncertainty or lack of information by increasing assigned ratings or adjusting final model outcomes. In certain instances where a variable or outcome required rational adjustment due to model limitations, the model outcomes were adjusted.

i) 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).

The potential impacts, aspects affected and significance of the impacts pre-mitigation arising from the NDC De-stoning Plant Project are detailed in Table 15 below. The relevant management measures and significance rating of the impacts if mitigated are also described.

ACTIVITY whether listed or not listed. **(E.g. 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, etc…etc…etc.)**.	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated **(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)**	**SIGNIFICANCE** if not mitigated	**MITIGATION TYPE** **(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)** **E.g.** **Modify through alternative method.** **Control through noise control** **Control through management and monitoring through rehabilitation..**	**SIGNIFICANCE** if mitigated

Table 15: Potential impacts of the De-stoning Plant Project, associated mitigation measures and significance of the impacts pre and post mitigation

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
De-stoning Plant and associated infrastructure/ activities	Loss of soil resource as a result of construction activities	Soils	Construction	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)	• Only the immediate area of the footprint will be cleared. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Compacted soils will be ripped and profiled. • Construction of water management infrastructure will commence prior to construction of the De-stoning Plant to prevent soil erosion.	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Unlikely **Significance:** Low (-)
	Contamination of soils due to spillage	Soils	Construction	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• Use of the existing mine leak/spill detection plan will be implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					• Construction vehicle movement on site over unprotected or sensitive areas will be restricted. The De-stoning Plant area will be fenced off during construction activities. • Regular servicing of all vehicles will be undertaken in designated construction areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil.	
	Loss of biodiversity during construction activities	Biodiveristy	Construction	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Unlikely **Significance:** Low (-)	• Only the immediate area of the footprint will be cleared. • The mine will remove any alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Unlikely **Significance:** Low (-)
	Contamination of stormwater and surface quality during construction	Surface water	Construction	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• Construction of water management infrastructure will commence prior to construction of the De-stoning Plant. • Storm water containment will be planned and constructed for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. • If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction area should be reviewed.	

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	Increased nuisance dust affecting adjacent landowners during construction	Air quality	Construction	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance**: Low (-)	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance**: Low (-)
	Increase in ambient noise for adjacent landowners during construction activities	Noise	Construction	**Magnitude:** Minor **Duration:** Short term **Scale**: Site Specific **Consequence:** Low **Probability:** Definite **Significance:** Low (-)	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine	**Magnitude:** Minor **Duration:** Short term **Scale**: Site Specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	
	Improved economic and job opportunities	Socio-economic	Construction	**Magnitude:** Moderate **Duration:** Short term **Scale:** Regional **Consequence:** Medium **Probability:** Definite **Significance:** Medium (+)	• The mine will facilitate the recruitment of local labour where possible during the construction phase. • New Denmark Colliery has an updated Social and Labour Plan (SLP).	**Magnitude:** Moderate **Duration:** Short term **Scale:** Regional **Consequence:** Medium **Probability:** Definite **Significance:** Medium (+)
	Contamination of soil resources during operations	Soils	Operations	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)	• Use of the existing mine leak/spill detection plan will be implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure. • Vehicle movement on site over unprotected or sensitive areas will be restricted. • Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Unlikely **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					hydrocarbons into topsoil.	
	Contamination of stormwater and surface quality during operations	Surface water	Operations	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • Clean water will be diverted around the plant and dirty water from the plant will be diverted to the proposed Pollution Control Dam. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					source of the pollutants will be identified and the applicable remediation measures will be implemented. • An inspection and maintenance plan will be implemented to ensure that the De-stoning Plant operates within specifications. • Storm water containment is planned for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. • The mine's emergency action plan/ procedures will be drawn up to deal with spills on the road to minimise the impact on water quality. • Regular clearing will be undertaken of all access ways and conveyor routes, as well as drains and stormwater facilities. • Regular servicing of all vehicles in designated operational areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel.	
	Loss of groundwater resource due to contamination	Groundwater	Operations	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	during operations			**Probability:** Possible **Significance:** Medium (-)	to prevent seepage will be installed in the Construction Phase. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	**Probability:** Unlikely **Significance:** Low (-)
	Increased nuisance dust affecting adjacent landowners during operations	Air quality	Operations	**Magnitude:** Moderate **Duration:** Short term **Scale:**Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a	**Magnitude:** Minor **Duration:** Short term **Scale:**Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					speed of 40 kilometers per hour (kph). • The conveyors within the plant complex will be partially enclosed during operations to reduce dust. • The De-Stoning Plant will be completely enclosed during operations, resulting in reduced nuisance dust.	
	Increase in ambient noise for adjacent landowners during operations	Noise	Operations	**Magnitude:** Major **Duration:** Long term **Scale:** Local **Consequence:** High **Probability:** Definite **Significance:** High (-)	• A noise monitoring programme will be implemented. • The plant will be completely enclosed during operations which will reduce noise. • Operations vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of operations vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Local **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
	Improved economic and job opportunities	Socio-economic	Operations	**Magnitude:** Minor **Duration:** Long term **Scale:** Regional **Consequence:** Medium **Probability:** Definite	• New Denmark Colliery will facilitate the recruitment of local labour where necessary. • New Denmark Colliery has an updated Social and Labour Plan	**Magnitude:** Minor **Duration:** Long term **Scale:** Regional **Consequence:** Medium **Probability:** Definite

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
				Significance: Medium (+)	(SLP).	**Significance:** Medium (+)
	Contamination of surface water and groundwater quality impacting on water resources during closure	Surface water and Groundwater	Closure	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)	• The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan. • The mine will undertake rehabilitation and vegetation of the De-stoning Plant. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water monitoring until it can be demonstrated that potential for the generation of pollutants is low. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
	Increased nuisance dust affecting adjacent landowners during closure	Air quality	Closure	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented. • Rehabilitation and vegetation of the De-stoning Plant will be undertaken as per the Rehabilitation and Closure Action Plan. • Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	
	Increase in ambient noise on adjacent landowners during closure	Noise	Closure	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Demolition activities will be limited to confined daylights. • Demolition vehicles and machinery will be serviced at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
	Sustainability of livelihoods at mine closure	Socio-economic	Closure	**Magnitude:** Moderate **Duration:** Long term **Scale:** Regional **Consequence:** High **Probability:** Definite **Significance:** High (-)	• The mine will undertake a Closure assessment to investigate the impact of mine closure at least 5 years in advance of the event to estimate short term, medium term and long terms impacts of mine closure. The Closure assessment will include an assessment of the socio-economic aspects.	**Magnitude:** Minor **Duration:** Long term **Scale:** Regional **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)
Discard Disposal Facility and associated infrastructure/ activities	Loss of arable, agricultural land during	Land Capability	Construction	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific	• Only the immediate footprint of the area will be cleared.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
(return water dam)	construction			**Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)		**Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
	Loss of soil resource as a result of construction activities	Soils	Construction	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)	• Only the immediate footprint of the area will be cleared. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Construction of water management infrastructure will commence prior to construction of the Discard Disposal Facility to prevent soil erosion. • Compacted soils will be ripped and profiled. • A Contractors Management Plan will include a soils management standard for the Discard Disposal Facility prior to the commencement of construction.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
	Contamination of stormwater and	Surface water	Construction	**Magnitude:** Moderate **Duration:** Short term	• Construction of water management infrastructure will commence prior to	**Magnitude:** Minor **Duration:** Short term

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	surface quality during construction			**Scale:** Site specific **Consequence:** Low **Probability:** Definite **Significance:** Medium (-)	construction of the Discard Disposal Facility. • Storm water containment will be planned and constructed for the Discard Disposal Facility as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of	**Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					hydrocarbons into topsoil. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. • If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction area should be reviewed.	
	Loss of biodiversity during construction activites	Biodiversity	Construction	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)	• The mine will ensure the removal of the alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will make use of an existing awareness campaign as per the existing awareness plan to educate employees on awareness, respect and responsibility towards the environment.	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)
	Increased nuisance dust affecting adjacent landowners during construction	Air quality	Construction	**Magnitude:** Major **Duration:** Short term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	
	Increase in ambient noise on adjacent landowners during construction	Noise	Construction	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Definite **Significance:** Medium (-)	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	
	Contamination of storm and surface water quality impacting on watercourses during operations	Surface water	Operations	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite **Significance:** High (-)	• Clean water will be diverted around the Discard Disposal Facility and dirty water from the Discard Disposal Facility will be diverted to the proposed Return Water Dam. • The Return Water Dam has been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • The mine will undertake regular surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • A leak/spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil. • Damage from erosion will be repaired. • Mine employees and contractors will	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					be trained on how to deal with incidents involving hydrocarbons and other potential contaminants.	
	Loss of groundwater resource due to contamination during operations	Groundwater	Operations	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite **Significance:** High (-)	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner will be designed and installed during the Construction Phase to prevent seepage. • Levelling and compacting of discard will be undertaken during deposition to reduce airflow in the Discard Disposal Facility. • The Discard Disposal Facility will operate within the approved design parameters. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
	Increased nuisance dust affecting adjacent landowners during operations	Air quality	Operations	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite **Significance:** High (-)	• The discard will be transported from the plant to the Discard Disposal Facility via conveyor. This will reduce the generation of dust during transportation and handling of discard. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads and Discard Disposal Facility when required, to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • Concurrent rehabilitation of the Discard Disposal Facility will be undertaken during operations, including hydroseeding and grassing. • If required, soil used to concurrently rehabilitate the Discard Disposal Facility will be ameliorated to enhance oxidation and growth capability. • Newly seeded/planted areas will be protected against compaction and erosion by restricting vehicle access to the site. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	
	Increase in ambient noise on adjacent landowners during operations	Noise	Operations	**Magnitude:** Moderate **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Definite	• The mine's noise monitoring programme will be implemented prior to operational activities and will be ongoing throughout the operational phase.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
				Significance: Medium (-)	• Monitoring locations and procedures will be reviewed prior to each annual noise survey. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Operations vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	**Significance:** Low (-)
	Disturbance to sense of place	Visual	Operations	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)	• The mine will undertake concurrent rehabilitation and vegetation of Discard Disposal Facility during operations as per the Rehabilitation and Closure Plan. • Reseeding of indigenous grasses will be implemented in all impacted areas.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)
	Contamination of surface water and groundwater quality impacting on watercourses during closure	Surface water	Closure	**Magnitude:** Major **Duration:** Long term **Scale:** Regional **Consequence:** High **Probability:** Definite **Significance:** High (-)	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and constructed to prevent seepage. • The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan.	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					• The mine will complete rehabilitation and vegetation of the Discard Disposal Facility. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water and groundwater monitoring until it can be demonstrated that potential for the generation of pollutants is low.	
	Increased nuisance dust affecting adjacent landowners during closure	Air quality	Closure	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Definite **Significance:** Medium (-)	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will undertake concurrent rehabilitation of the Discard Disposal Facility during the closure phase as per the mine's Rehabilitation and Closure Action Plan. • Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Posisble **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	Increase in ambient noise on adjacent landowners during closure	Noise	Closure	**Magnitude:** Minor **Duration:** Short term **Scale:**Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • The mine will limit demolition activities will to confined daylights. • The mine will service demolition vehicles and machinery at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	**Magnitude:** Minor **Duration:** Short term **Scale:**Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
Pollution Control Dam and Process Water Dam (channels and pipelines)	Construction impacts and management measures will be similar to that of the aforementioned De-stoning Plant. Refer to section above.					
	Contamination of soils due to spillage from pipelines, channels or dams during operations	Soils	Operations	**Magnitude:** Moderate **Duration:** Long term **Scale:** Site specific **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)	• The mine will implement regular monitoring of the pipeline route, as all as downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
	Contamination of surface water and groundwater resources due to	Surface and Groundwater	Operations	**Magnitude:** Major **Duration:** Short term **Scale:** Regional **Consequence:** Medium	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Local **Consequence:** Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	spillages or seepage during operations			**Probability:** Possible **Significance:** Medium (-)	• A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect. • The Dams have been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • Storm water containment is planned for the Dams as per the Stormwater Management Plan in the IWWMP.	**Probability:** Possible **Significance:** Low (-)
	Contamination of surface water and groundwater resources due to spillages or seepage during closure	Surface and Groundwater	Closure	**Magnitude:** Major **Duration:** Short term **Scale:** Local **Consequence:** Medium **Probability:** Possible **Significance:** Medium (-)	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage.	**Magnitude:** Moderate **Duration:** Short term **Scale:** Local **Consequence:** Low **Probability:** Possible **Significance:** Low (-)
Run of Mine/ Product Stockpile and associated infrastructure/activities	Loss of soil resource as a result of construction	Soils	Construction	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium	• Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles:	**Magnitude:** Minor **Duration:** Long term **Scale:** Site specific **Consequence:** Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	activities			**Probability:** Possible **Significance:** Medium (-)	○ Usable soil will be stripped and stored with as little compaction as possible; ○ Stockpile areas will have their soil stripped to conserve the seed bank; ○ Single handing will be practiced where possible; ○ Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and ○ Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Compacted soils will be ripped and profiled. • Construction of water management infrastructure will commence prior to construction of the ROM and Product stockpiles to prevent soil erosion.	**Probability:** Unlikely **Significance:** Low (-)
	Increased nuisance dust affecting adjacent landowners during construction	Air quality	Construction	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					• The mine will maintain internal roads in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	
	Increase in ambient noise on adjacent landowners during construction	Noise	Construction	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:**Low **Probability:** Possible **Significance:** Low (-)	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Unlikely **Significance:** Low (-)
	Contamination of surface water and groundwater quality during operations	Surface water and groundwater	Operations	**Magnitude**: Major **Duration:** Long term **Scale:** Site specific **Consequence**: High **Probability:** Definite	• Clean water will be diverted around the stockpiles and dirty water from the stockpiles will be diverted to the proposed Pollution Control Dam. • The mine will undertake regular	**Magnitude**: Moderate **Duration:** Short term **Scale:** Local **Consequence**: Low **Probability:** Possible

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
				Significance: High (-)	surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • Storm water containment will be implemented for the Stockpiles as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and installed during the Construction Phase to prevent seepage. Prior to the installation of the liner, the site will be suitably prepared and compacted. • The mine will undertake regular groundwater monitoring from existing monitoring boreholes to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	**Significance:** Low (-)
	Increased nuisance dust affecting adjacent	Air quality	Operations	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
	landowners during operations			**Consequence:** Low **Probability:** Possible **Significance:** Low (-)	applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	**Consequence:** Low **Probability:** Unlikely **Significance:** Low (-)
	Contamination of surface water and groundwater resources due to spillages or seepgae during closure	Surface and groundwater	Closure	**Magnitude:** Major **Duration:** Long term **Scale:** Site specific **Consequence:** High **Probability:** Definite **Significance:** High (-)	• The removal of material will be in accordance with the mine's Rehabilitation and Closure Action Plan. • All ROM and Product material will be removed from site. • The mine will rehabilitate and vegetate the stockpile footprint. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect the vegetation establishment. • The mine will undertake post-closure surface water and groundwater monitoring until it can be demonstrated that potential for the generation of pollutants is low.	**Magnitude**: Moderate **Duration:** Short term **Scale:** Local **Consequence**: Low **Probability:** Possible **Significance:** Low (-)
	Increased nuisance dust affecting adjacent landowners during closure	Air quality	Closure	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Possible **Significance:** Low (-)	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will rehabilitate and	**Magnitude:** Minor **Duration:** Short term **Scale:** Site specific **Consequence:** Low **Probability:** Unlikely **Significance:** Low (-)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE if not mitigated	MITIGATION TYPE	SIGNIFICANCE if mitigated
					vegetate the stockpile footprint as per the mine's Rehabilitation and Closure Action Plan. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out	

The full impact assessment has been included in Table 15 above and therefore a supporting impact assessment has not been attached as a separate appendix.

j) 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):-

All specialist studies undertaken for the EIA/EMP have provided recommended management commitments to minimise or mitigate the potential impacts identified for the proposed NDC De-Stoning Plant Project activities. These recommendations have been provided in Table 16.

Most of these management recommendations have been incorporated into the EMP, however management measures that are not applicable or feasible have been excluded by the EAP.

Table 16: Summary of specialist studies undertaken and recommendations proposed for the NDC De-Stoning Plant Project

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Air Quality – Airshed Planning Professional (Pty) Ltd	Debris handling – Wet suppression	X	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Truck transport and road dust entrainment - Wet suppression or chemical stabilization of unpaved roads, haul trucks to be restricted to specified haul roads, reduction of unnecessary traffic and strict speed control	X	
	Materials storage, handling and transfer operations - Wet suppression where feasible	X	
	Earthmoving operations - Wet suppression where feasible	X	
	Open areas (wind-blown emissions) - reduction of frequency of disturbance, early re-vegetation and stabilisation (chemical, rock cladding or vegetative) of disturbed soil.	X	
	Control techniques required for materials handling are: • Source extent reduction- mass transfer reduction; • Source improvement - drop height reduction, wind sheltering and moisture retention; and • Surface treatment - wet suppression and air atomising suppression.	X	
	Measures to reduce emissions from unpaved roads: • Measures aimed at reducing the extent of unpaved roads, e.g. paving, traffic control measures aimed at reducing the entrainment of material by restricting traffic volumes and reducing vehicle speeds; and	X	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	• Measures aimed at binding the surface material or enhancing moisture retention, such as wet suppression and chemical stabilization.		
	Enclosure of crushing operations is very effective in reducing dust- chemical suppressants or water sprays on the primary crusher and dry dust extraction units with wet scrubbers on the secondary and tertiary crushers and screens will assist in the reduction of the cumulative dust impacts	**X**	
	Dust control measures for open areas can consist of wet suppression, chemical suppressants, vegetation and wind breaks	**X**	
	Long-term Control Measures – • Vegetation cover retards erosion by binding the soil with a root network; and • Sheltering the soil surface and by trapping material already eroded.	**X**	
Biodiversity – Scientific Aquatic Services	It is recommended that this sensitivity map be considered during all phases of the development, to aid in the conservation of floral habitat within the subject property	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	All development footprint areas should remain as small as possible and should not encroach onto surrounding the sensitive wetland area. It must be ensured that these areas are off-limits to construction vehicles and personnel.	**X**	
	Ensure that as far as possible all infrastructures are placed outside of wetland and associated buffer zones.	**X**	
	Keep all demarcated sensitive zones outside of the construction area off limits during the construction and rehabilitation phases of the development	**X**	
	Limit the footprint area of the construction activities to what is absolutely essential in order to minimise environmental damage. Construction vehicles must use existing roads where possible	**X**	
	Appropriate sanitary facilities must be provided during the construction phase and all waste removed to an appropriate waste facility	**X**	
	Should any other RDL or other protected plant species be encountered within the subject property in the future, the following should be ensured: • Effective relocation of individuals to suitable offset areas • All rescue and relocation plans should be overseen by a suitably qualified specialist	**X**	The specialists study has identified that no protected plant species requiring permits are in the project footprint
	Education and awareness campaigns on RDL faunal species and their habitat are	**X**	Refer to Refer to Table 21 and

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	recommended to help increase awareness, respect and responsibility towards the environment for all staff and contractors		Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Limit the footprint area of the construction activities to what is absolutely essential in order to minimise environmental damage	**X**	
	No trapping or hunting of fauna is to take place	**X**	
	Ensure that migratory connectivity is maintained where appropriate, especially in the sensitive faunal habitat unit areas.		The study area is highly transformed and no sensitive areas have been identified within the project footprint therefore this is not applicable.
	All development footprint areas should remain as small as possible and should not encroach onto surrounding more sensitive wetland and associated buffer zones. It must be ensured that these areas are off-limits to construction vehicles and personnel.	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	In the event of a 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	**X**	
	It must be ensured that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage. All vehicles must be regularly inspected for leaks. Re-fuelling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil	**X**	
	All spills should be immediately cleaned up and treated accordingly	**X**	
	Proliferation of alien and invasive species is expected within any disturbed areas. These species should be eradicated and controlled to prevent their spread beyond the subject property. Alien plant seed dispersal within the top layers of the soil within footprint areas, that will have an impact on future rehabilitation, has to be controlled	**X**	
	Removal of the alien and weed species encountered on the property must take place in order to comply with existing legislation (amendments to the regulations under the Conservation of Agricultural Resources Act, 1983 and Section 28 of the National Environmental Management Act, 1998). Removal of species should take place throughout the construction, operational, closure/decommissioning and rehabilitation/	**X**	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	maintenance phases		
	Species specific and area specific eradication recommendations: • Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used • Footprint areas should be kept as small as possible when removing alien plant species • No vehicles should be allowed to drive through designated sensitive wetland and riparian areas during the eradication of alien and weed species	**X**	
	All soils compacted as a result of construction activities falling outside of subject property areas should be ripped and profiled. Special attention should be paid to alien and invasive control within these areas. Alien and invasive vegetation control should take place throughout all construction and rehabilitation phases to prevent loss of floral habitat	**X**	
	Monitor all systems for erosion and incision	**X**	
	Informal fires within the footprint and surrounding area should be prohibited during all construction phases	**X**	
	Upon rehabilitation, reseeding of indigenous grasses should be implemented in all impacted areas and strategic planting of grassland species should take place to re-establish microclimates and niche habitats	**X**	
	As much vegetation growth as possible should be promoted within the subject property in order to protect soils. In this regard special mention is made of the need to use indigenous vegetation species where hydroseeding, wetland and rehabilitation planting (where applicable) are to be implemented	**X**	
Groundwater – JMA Consulting	Maintain the ROM and Product material footprint as a properly prepared and compacted footprint at well-defined slope. This will optimize lateral drainage of percolated water and minimize infiltration into the subsurface.	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Maintain footprint, leachate control and storm water management around the ROM and Product Stockpile and monitor groundwater quality.	**X**	
	Levelling and compacting of the discard during deposition to reduce airflow in the Discard Disposal Facility.	**X**	
	Operate the Discard Disposal Facility within the approved design parameters.	**X**	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	Assess storage capacity requirements at closure and decide which facilities will remain Post Closure for water management.		
Heritage – Archaetnos Culture & Cultural	For site no 1 (historical farm yard) the recommendation is to leave it in situ since it lies to the south of the river where no direct impact is expected. The structures can then rather deteriorate via natural processes		None of the identified sites are within the project footprint and therefore the project will have no direct impact on the sites. As a result, no manage measures are required. A chance find procedure will be implemented to manage historical sites that may be identified during clearing activities as part of the construction phase.
	For site no 2 (historical farm yard) the recommendation is similar. If possible it should be left as it is to deteriorate through natural processes.		
	Site 3 is a grave site, however there will be no direct impact on the graves. It should be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.		
Noise - Acusolv	A noise survey should be carried out after commissioning of the De-Stoning Plant	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Measure noise levels at reference points in the area most likely to be effected, verified and revised on basis of a scoping assessment carried out prior to commencement of mining	**X**	
	Measure the A-weighted equivalent continuous noise level LAeq in a sequence of 10-minute intervals (LAeq, 10 min), covering a period of preferably 24 hours, but at least the night-time period from 22:00 to 06:00		Noise will be monitored and reported on annually. Random readings will be taken if noise complaints are received.
	Process the data and determine the increase in ambient level caused by NDC operations, including the Destoning Plant	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Assess the noise impact of NDC and the De-Stoning Plant and present the findings in a report. If applicable, make recommendations for steps required to mitigate excessive noise	**X**	
	On account of the findings of the survey, review the necessity for additional commissioning surveys and the procedures to follow	**X**	
	Monitoring locations and procedures for annual surveys must be revised prior to each survey and taking the findings of previous surveys into account	**X**	
	Equipment, calibration and measurement procedures must comply with the	**X**	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	requirements laid down in SANS 10103		
Soils and Land capability – Earth Science Solutions	Limiting the area of impact to as small a footprint as possible, inclusive of waste management facilities, resource stockpiles and the length of servitudes, access and haulage ways and conveyor systems wherever possible.	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Construction of the facility and associated infrastructure over the less sensitive soil groups (reduce impact over wetlands and soils sensitive to erosion and/or compaction).		This has been design out and therefore is not included in the EMP
	An awareness of the length of time that the resource will need to be stored and managed.		This is not applicable as the soil stockpiled will be used for concurrent rehabilitation of the Discard Disposal Facility during operation
	The development and inclusion of soil management as part of the general housekeeping operations, and the independent auditing of this management.	**X**	This will be included in the contractor management plan Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Concurrent rehabilitation of all affected sites that are not required for the operation – rehabilitation of temporary structures and footprint areas used during the feasibility investigation (geotechnical pits, trenching etc.) and the construction phase.	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	When possible, effective soil stripping during the less windy months when the soils are less susceptible to erosion.		This mitigation measure is not feasible as soil stripping will be undertaken as per the construction timeframes
	Separation of the utilisable soils and ferricrete base materials from each other and from the soft overburden.		This is not applicable for this type of project.
	Effective cladding of the berms and soil, ferricrete stockpiles/heaps with vegetation or large rock fragments, and the minimising of the height of storage facilities to 15m and	**X**	Refer to Table 21 and Table 22 in the Environmental

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	soil berms to 1,5m wherever possible.		Management Programme - PART B, Section 1 (e) and (f).
	Restriction of vehicle movement over unprotected or sensitive areas, this will reduce compaction.	X	
	Soil amelioration (cultivation) to enhance the oxygenation and growing capability (germination) of natural regeneration and/or seed within the stockpiled soils (maintain the soils viability during storage) and areas of concurrent rehabilitation.	X	
	The area must be fenced, and all animals kept off the area until the vegetation is self-sustaining.	X	
	Newly seeded/planted areas must be protected against compaction and erosion (Vetiver hedges etc.).	X	
	Traffic should be limited were possible while the vegetation is establishing itself.	X	
	Plants should be watered and weeded as required on a regular and managed basis were possible and practical.	X	
	Replace unhealthy or dead plant material.	X	
	Fertilise, hydro seeded and grassed areas soon after germination	X	
	Repair any damage caused by erosion.	X	
	Minimisation of the area that can potentially be impacted (eroded, compacted, sterilized or de-nutrified).	X	
	Timeous replacement of the soils so as to minimise/reduce the area of affect and disturbance.	X	
	Effective soil cover and adequate protection from wind (dust) and dirty water contamination – vegetate and/or rock cladding.	X	
	Regular servicing of all vehicles in well-constructed and bunded areas.	X	
	Regular cleaning and maintenance of all access ways, conveyor routes and service pipelines, drains and storm water control facilities.	X	
	Containment and management of spillage.	X	
	Soil replacement and the preparation of a seed bed to facilitate and accelerate the re-vegetation program and to limit potential erosion on all areas that become available for rehabilitation (temporary servitudes).	X	
	Soil amelioration (rehabilitated and stockpiled) to enhance the growth capability of	X	Inspection of vegetation growth

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	the soils and sustain the soils ability to retain oxygen and nutrients, thus sustaining vegetative material during the storage stage. Monitoring should always be carried out at the same time of the year and at least six weeks after the last application of fertilizer.		will be undertaken thought closure.
Surface Water – SRK Consulting	Construction activities should be timed to take place in the dry season, as far as is practicable.		This mitigation measure is not feasible as the construction timeframes is approximately 18 months and therefore overlaps with the rainy season.
	The footprint of disturbed areas should be minimised.	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	"No-go" zones should be delineated for construction plant personnel – particularly in close proximity and within the catchment areas of the pans.	**X**	
	Appropriate storm water management measures should be implemented, including the temporary diversion of upstream run-off from the construction and laydown areas.	**X**	
	Surface water management measures, such as storm water canals and sediment traps should be constructed first to ensure that runoff and dirty water spills are contained.	**X**	This will be implemented as per the IWWMP
	Servicing of construction vehicles should take place only in dedicated areas that are equipped with drip trays.	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Bunded containment and settlement facilities should be provided for hazardous materials, such as fuel and oil.	**X**	
	Erosion protection measures should be implemented at steep areas.	**X**	
	A waste management plan should be developed for the construction phase	**X**	
	An appropriate sewage management strategy should be implemented during the construction phase.	**X**	This will be implemented as per the IWWMP
	If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction areas should be reviewed.	**X**	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	The aerial extent of the disturbed and potentially contaminated areas should be kept to a minimum.	**X**	

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	Upslope runoff should be diverted around construction activities.	X	
	Runoff from the upslope catchment should be diverted around the De-Stoning Plant and associated infrastructure. The clean water diversion systems should be designed to accommodate the peak flow expected for at least a 1:100 year event.	X	This will be implemented as per the IWWMP
	The entire plant should be located within the dedicated dirty water area, which will drain to the Plant PCD.	X	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	No carbonaceous material should be kept outside of the dirty water area.	X	
	All dirty water containment facilities should be designed to have a risk of spill of 2% or less (1:50 year recurrence interval) in any one year.	X	
	All pipeline routes should be inspected regularly to enable early detection of leaks.	X	
	All storm water from the plant area and coal handling facilities should be collected in the Plant PCD.	X	
	An inspection and maintenance plan should be implemented on the storm water system to ensure that all oil skimming and sediment handling facilities are maintained and that storm water canals and pipelines remain unblocked and free flowing – monthly inspections should be carried out.	X	
	The De-Stoning Plant should source process water from the pollution control dams first, so as to maximise the reuse of water on site, and minimise the risk of spill.	X	This will be implemented as per the IWWMP
	A surface water quality monitoring programme should be implemented to detect any impacts.	X	Refer to Table 21 and Table 22 in the Environmental Management Programme - PART B, Section 1 (e) and (f).
	Dust suppression by means of spraying with water (sourced from the Process Water Dam) should be implemented to minimise wind-blown dust leaving the site.	X	

Specialist Reports are attached as **Appendices 7a – 7g.**

k) Environmental impact statement

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

The impact assessment confirmed that the proposed activities (without mitigation) are expected to have impacts of high significance rating in relation to groundwater, surface water, air quality (dust generation), noise and socio-economic conditions.
The key impacts that relate to the De-stoning Plant project, and are rated as having a high significance, are included in Table 17.

Table 17: Summary of impacts and significant ratings pre and post implementation of management commitments

Activity	Potential Impact	Aspects Affected	Phase	Significance If Not Mitigated	Significance If Mitigated
De-stoning Plant and associated infrastructure/ activities	Increase in ambient noise for adjacent landowners during operations	Noise	Operations	High (-)	Medium (-)
	Sustainability of livelihoods at mine closure	Socio-economic	Closure	High (-)	Medium (-)
Discard Disposal Facility and associated infrastructure/ activities (return water dam)	Contamination of storm and surface water quality impacting on watercourses during operations	Surface water	Operations	High (-)	Low (-)
	Loss of groundwater resource due to contamination during operations	Groundwater	Operations	High (-)	Low (-)
	Increased nuisance dust affecting adjacent landowners during operation	Air quality	Operations	High (-)	Low (-)
	Contamination of surface water and groundwater quality impacting on water resources during closure	Surface water	Closure	High (-)	Medium (-)
Run of Mine/ Product Stockpile and associated infrastructure /activities	Contamination of storm and surface water and groundwater quality during operations	Surface water and groundwater	Operations	High (-)	Low (-)
	Contamination of surface water and groundwater resources due to spillages or seepgae during closure	Surface water and groundwater	Closure	High (-)	Low (-)

Groundwater

There are two groundwater aquifers present in the mining rights area. The upper aquifer, normally accessed for agriculture, lies within the weathered zone, which extends up to 15 m below the surface. The second aquifer is usually associated with fractures within the arenaceous sediments such as sandstone and grit.
The potential impact of seepage water into shallow weathered aquifer from the Discard Disposal Facility and ROM and Product Stockpiles is considered to be high. Potential contaminants may impact on the groundwater usage, which includes domestic and agricultural use.

A suitable liner has been designed for both the Discard Disposal Facility and ROM/Product Stockpiles to prevent seepage into the groundwater. As a result, seepage from the lined facilities has been prevented resulting in an anticipated low impact. Rehabilitation and capping of the facility will also be undertaken after closure to reduce potential seepages.

Surface water

The De-stoning Plant Project is located within the Grootdraai Dam Catchment, specifically within the C11K quaternary catchment and also forms part of the Upper Vaal Water Management Area. The watercourse which is located in close proximity to the proposed project is an unnamed tributary of the Leeuspruit which discharges into the Grootdraai Dam. The identified potential surface water related environmental impacts associated with the proposed activities is high in the absence of appropriate management measures, due to the close proximity of the Discard Disposal Facility (<1 km to the closest edge) in relation to the tributary, as well as the carbonaceous nature of the Discard Disposal Facility creating a potential for acid generation.

These identified impacts can be largely mitigated by the construction of stormwater management infrastructure, reducing the significance to low. The proposed mitigation measures have been incorporated into the EMP for the project. The plan includes applicable best practices and requirements related to inspection, maintenance, monitoring and management of incidents.

Air quality

The Discard Disposal Facility falls within the Highveld Priority area. This area is regularly monitored and modelled for exceedances in accordance with the Highveld Priority Area Management Plan. Air quality within the project area is influenced by various sources, including Tutuka Powerstation (3km from site) and other mining operations.

Operational activities at the Discard Disposal Facility are likely to have a high long term nuisance dust impact in the project area on adjacent communities pre-mitigation. The closest sensitive receptor is a residential dwelling approximately 2.5 km from the Discard Disposal Facility. However, management commitments including concurrent rehabilitation and dust suppression will reduce this impact to a medium significance.

Noise

Agriculture is the dominate land use in the municipality with the key local economic contributors being farming, mining and power generation. These existing activities,

along with road traffic, affect the ambient noise in the area and therefore the project area can be classified as “Suburban with little traffic” as per SANS 10103 guidelines, with typical daytime and night-time ambient noise levels of 50 dBA and 40, respectively. As a result, noise anticipated from the De-stoning Plant operations may impact on the existing ambient noise levels, resulting in a high impact. The projects management commitment is to completely enclose the Plant with conventional steel cladding with which will reduce noise levels resulting in a reduced medium impact.

Socio-economic

In terms of the zones of influence, immediate focus areas (defined as regional for the purposes of the impact assessment) identified for the NDC De-stoning Plant Project are local communities, adjacent landowners/ leases and adjacent dwellings located within the Lekwa Local Municipality, under the jurisdiction of the Gert Sibande District Municipality. The district is classified as 61% rural and 39% urban with an unemployment rate of 21%.

Once the NDC coal reserves have been depleted, the mine will close and as a result the De-stoning Plant will be decommissioned. This may result in loss of employment from the De-stoning Plant, which includes employees from surrounding communities. This will have a high impact on sustainability of livelihoods in the project area.

In order to minimise the impact, five years prior to closure, a Closure assessment will be undertaken to assess and mitigate the impacts associated Mine Closure. As part of the Closure assessment, a socio-economic aspect will be included to assess the impacts associated with the anticipated employment reduction. This strategy is likely to decrease the impact to a medium significance, as there is a potential for reallocation of resources and opportunity for spin off industries.

(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 .Attach as ***Appendix***

A map with all NDC De-Stoning Plant project activities and associated infrastructure has been attached as **Appendix 8**. All environmental and social buffers have been included to identify project area sensitivities, including watercourse and heritage buffers.

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

All alternatives have been assessed along with the advantages and disadvantages of the various alternative options and preferred site layout options. These positive and negative implications have been described in Table 12 and Table 13 above in PART A, Section 3 (d)(vii).

l) 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 purpose of the EMP Report (EMPr) is to provide relevant management measures to conduct activities with due care and diligence, as well as avoid/ limit any adverse impacts of the mining operation. The EMPr is compiled to help control impacts that may occur to meet acceptable standards, both as a legal and social responsibility to the environment within which the activities take place.

The objective of the EMPr is to create management structures that address the comments of stakeholders with regards to the development, establishes a method of monitoring and auditing environmental management practices during all phases of the activity and ensures that safety recommendations are complied with. Additionally, the EMPr provides a method to ensure performance and compliance with all the relevant regulatory authority provisions and guidelines while monitoring of the commitments allows for continual feedback and opportunities to improve.

m) Final proposed alternatives.

(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment)

Proposed alternatives are detailed above in PART A, Section 3 (g)(i) and the advantages and disadvantages of the alternatives and preferred option have been described in PART A, Section 3 (g)(vii). The preferred infrastructure option is attached as **Appendix 4.**

The EAP's approach to assess, minimise and avoid impacts is outlined in PART A, Section 3(h) above.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which have not formed part of the EMPr that must be made conditions of the Environmental Authorisation

The following should form part of the conditions of the environmental authorisation to ensure compliance with the EMP:

- To ensure compliance with and implementation of the EMP by:
- Appointing a suitably qualified individual to oversee implementation of the EMP during all phases of the project; and
- Appointing a suitably qualified Environmental Control Officer/Superintendent to undertake audits on a regular basis.

- Ensuring that all staff, contractors and sub-contractors are aware of and understand the requirements of the EMP and environmental issues in relation to their individual areas of work by:

- Developing an induction and training program covering the EMP, environmental awareness, dealing with environmental incidents and waste management; and
- Advising staff commissioned during pre-construction and construction, including sub-contractors, of EMP requirements through the induction program as well as on notice boards at the contractor's camps during construction and notice boards during operation. These notice boards should cover the EMP, environmental awareness, dealing with emergencies and waste management.

- Managing all environmental incidents and emergencies relating to all activities in accordance with the EMP and to identify root causes of incidents and to implement prevention plans by implementing the mine's existing Environmental Emergency Preparedness and Response Procedure and the non-conformance and compiling the corrective action procedure for NDC. This is to be implemented in emergency situations such as oil or fuel leaks and spills, fires, sewage spillage. The Emergency Preparedness and Response Procedure must include requirements to contact the Environmental Coordinator following an emergency or incident.

o) Description of any assumptions, uncertainties and gaps in knowledge.
(Which relate to the assessment and mitigation measures proposed)

The following assumptions and limitations have been identified with regards to the environmental baseline, impacts and mitigation measures:

- All the technical data, project description and information provided by the proponent to the EAP and specialists are accurate and up-to-date. The EAP and specialists have identified all possible impacts based on the information provided and these have been assessed and rated accordingly;
- All specialist modelling undertaken for this authorisation process is predictive modelling and therefore will need to be updated once quantitative data becomes available during the construction and operation phase;
- The public participation process has been sufficiently effective in identifying the critical issues that needed to be addressed through specialist investigations and/or by the EAP. Specialist input has thus been appropriately scoped to investigate the critical issues;
- The public participation process has sought to involve key stakeholders and individual landowners. It is assumed that where participation has been sought from the organizational representative/s, that these parties have the authority to comment on behalf of their organisation;
- The public participation process provided ample opportunity for stakeholders to express any issues and concerns. It has thus been effective in identifying critical issues that the specialist investigations and/or EAP needed to address;
- All comments received from the authorities are informed and considered;
- AACSA and its contractors will implement the management measures contained in the EMP;
- A monitoring and evaluation system, including auditing, will be established, in line with this EMP, to track the implementation of this specific EMP to ensure that management measures are effective to avoid, minimise and mitigate impacts; and that corrective action is being undertaken to address shortcomings and/or non-performances;

- AACSA will adopt a process of continual improvement when managing and/or mitigating negative environmental impacts arising from the project. The EMP will be used as the basis of environmental management and will be improved and refined regularly; and
- The monitoring required of the project will determine the validity and accuracy of the predictions made. Any exceedances of parameters or complaints from stakeholders will be investigated and remedied by the mine when required to do so.

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.

No fatal flaws in the project have been identified thus far through the EIA process. However, several environmental and social impacts are envisaged from construction phase through to post-closure, which require careful mitigation and monitoring. It is the opinion of the EAP that all major impacts have been identified and have been assigned appropriate management measures. All HIGH negative impacts with mitigation, are reduced to a MEDIUM or LOW significance, and can be managed accordingly.

It is recommended by the EAP that the proposed NDC De-stoning Plant is allowed to proceed on the assumption that the environmental and social management commitments are adhered to, the project description remains as per the description provided in this document and the positive social impacts associated with the project are considered. The NDC De-stoning Project will ensure new employment opportunities associated with the new proposed activities and will allow continuation of the supply of coal to Tutuka Power Station.

ii) Conditions that must be included in the authorisation

(1) Specific conditions to be included into the compilation and approval of EMPr

Potential impacts identified should be monitored during all phases of the NDC De-stoning Project. Monitoring will form an important aspect of the mine's operations. Management measures will be amended to address the impacts if analysis of monitoring trends indicates this may be necessary. Monitoring of the operations, in accordance with their operating plans and protocols will also form an important activity to ensure their long-term sustainability.

Through NDC's internal auditing and reporting processes and annual performance assessment reporting (as per the requirements of the December 2014 NEMA EIA Regulations) and other legislated reporting, AACSA should continue to examine its existing management commitments for the life of mine with a view to continually improve and reduce negative impacts and enhance positive impacts where achievable.

(2) Rehabilitation requirements

A Rehabilitation Action Plan has been compiled as part of this authorisation. AACSA should continue to examine the management commitments included in the Rehabilitation Action Plan with a view to continually improve and reduce negative impacts and enhance positive impacts where achievable. Rehabilitation requirements for all proposed infrastructure throughout the operations and closure phases have been outlined in PART B, Section 1 (i)(1)(c) below.

q) Period for which the Environmental Authorisation is required.

The environmental authorisation is proposed to be required for the following periods:

- Construction = 25 months (mid 2016- 2018);
- Operation = 22 years (2018-2040);
- Closure = 5 years; and
- Post-Closure = 2 years.

If any of the above mentioned timeframes change, the Department will be notified of such change.

r) Undertaking

Confirm 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 Environmental Management Programme report.

The EAP undertakes that the information provided in this report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties have been correctly recorded in the report. Refer to PART B, Section 2 for the EAP's signed undertaking.

s) Financial Provision

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

The amount required to rehabilitate the environment for the NDC De-Stoning Plant and associated infrastructure is R 25 881 468.00. This value is informed by the environmental sensitivity, nature of terrain/ accessibility and proximity to urban areas. A detailed breakdown of the costing is included in PART B, Section 1 (i) and the methodology used to calculate the financial provision is included in PART A, Section 3 (s)(i) below.

i) Explain how the aforesaid amount was derived.

Calculating the quantum is supported by a Guideline used by the DMR (Guideline Document for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine, Department of Minerals and Energy, 2005). The approach to calculating the closure quantum as specified in the DMR Guideline which was utilised in this assessment is as summarised as follows:

- Step 1: Determine the Mineral Mined. In the first step the mineral mined has been identified in the tables provided in the DMR guideline (Table B.12) as "Coal."
- Step 2A: Determine Primary Risk Class. The "Primary Risk Class" has been determined from Table B.12 of the DMR Guideline as "A (High Risk)".

- Step 2B: Revision of Primary Risk Class. The Primary Risk Class can be revised on the basis of saleable by-products if required. However, this is not applicable at the Destoning Plant.
- Step 3: Determine Environmental Sensitivity. The "Environmental Sensitivity" has been determined by reference to Table B.4 of the DMR Guideline as "Medium".
- Step 4.4 determination of weighting factors: Weighting Factor 1: The nature of the terrain where the operation is located is flat. Weighting Factor 2: The proximity of the operation to an urban centre. In this instance the Destoning plant project is considered peri-urban.

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).*

In terms of Section 41, Regulations 53 and 54 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), NDC is required to make financial provision for the interim and final rehabilitation activities on the site. This provision is reviewed annually for adequacy and amended to compensate for new activities and/or inflation. During the annual review, confirmation will be provided that this amount can be provided for from operating expenditure.

AACSA New Denmark Colliery, will provide for the closure liability associated with the De-stoning Plant Project either through a contribution to a Trust Fund or the purchase of a Bank Guarantee or a combination of the two methods as allowed by Regulation 527 of the MPRDA.

t) Deviations from the approved scoping report and plan of study.

i) Deviations from the methodology used in determining the significance of potential environmental impacts and risks.
(Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made, and a brief description of the extent of the deviation).

The methodology to rate the impacts and risks, as well as the proposed new activities detailed in this EIA/EMP report have not deviated from those described in the Scoping Report. However, the layout of the Plant, ROM and Product Stockpiles has been updated and amended in this report.

This layout was updated based on findings from the engineering design team during the Feasibility study. The original Plant, ROM and Product Stockpile layout included the Plant within the railway loop and ROM Stockpile and Product Stockpile to the west of the railway loop. The layout has now been updated to the ROM Stockpile and Product Stockpile located within the railway loop and Plant to the west of the railway loop. The advantages and disadvantages of the new preferred option is outlined in PART A Section 3 (g)(vii).

ii) Motivation for the deviation.

The change in location and extent of the Plant, ROM Stockpiles and Product Stockpiles was influenced by the existing rail loop, conveyor route from the main New Denmark offices, silo and

the existing access road. The updated layout of the infrastructure was also guided by historical underground workings (long wall mining). Refer to **Appendix 5a** for a map illustrating the previous layout option (Option 2) and updated layout option (Option 1) for the Plant, ROM Stockpile and Product Stockpile.

Option 1 was chosen as the preferred option based on the reduced number of overpasses over the existing railway loop to transport discard, ROM and product.

u) Other 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 Appendix 2.19.1 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The De-stoning Project falls within the existing NDC mining area, located within the Lekwa Local Municipality, under the jurisdiction of the Gert Sibande District Municipality. Construction and operations of the De-stoning Plant and associated activities will provide increased opportunities for employment, where applicable. This will improve economic and job opportunities within a local and regional context. Employment associated with the De-stoning Plant will be in line with NDC's existing Social and Labour Plan.

It is expected that NDC will commence with decommissioning activities in approximately 2040. This will be when the mine obtains closure from the authorities but may include a period where there is no activity on the site other than monitoring prior to Closure being obtained.

Once the NDC coal reserves have been depleted, the mine will close and as a result the De-stoning Plant will be decommissioned. This may result in loss of employment from the De-stoning Plant, which includes employees from surrounding communities. This will have an impact on sustainability of livelihoods in the project area. Management measures associated with the sustainability of livelihoods at mine closure is included in Table 14 in PART A, Section 3(g)(viii).

(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.
(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 (HIA) was undertaken in August 2013 to inform the potential impacts of the project on cultural heritage resources. During the survey, three sites of cultural

heritage significance were located within a 2 km radius from the project footprint and area of impact. These sites included two historical farm yards (south of the river) and a grave site, however are not directly impacted on by the project footprint. Additionally, no cultural heritage sites of significance were identified or raised during the stakeholder engagement process. As a result, no management measures are required. However, a "chance find procedure" is included in the EMP to address the impact of any unforeseen cultural heritage sites that may be identified during the construction phase.

v) 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**).*

Based on the information available, discussions with stakeholders, discussions with the applicant and discussions with authorities, the EAP has not identified any other authorisation processes currently being undertaken within or adjacent to the site.

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).

The details and expertise of the EAP are detailed in PART A, section 3(a)(i) and PART A, section 3(a)(ii) above, respectively.

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 details of the aspects of the activity are described above in PART A, Section 3(b)(i).

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)*

Refer to **Appendix 8** for the New Denmark De-stoning Plant Layout with all sensitivities identified and buffers.

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 in 2.4 herein)

According to Regulation 61 of the MPRDA, closure objectives for a mine should form part of the environmental management programme, and must:

- Identify the key objectives for mine closure to guide the project design, development and management of environmental impacts;
- Provide broad future land use objectives(s) for the site; and
- Provide proposed closure costs.

The objectives used for the New Denmark Colliery have been applied to the proposed NDC Closure Plan.

Closure objectives for NDC were based on the EAP's extensive experience with coal related EIAs, appropriate and site specific management objectives were determined and suggested for each activity. These objectives and outcomes meet regulatory requirements, applicable standards, management requirements outlined in sector plans and tools and Anglo American policy and standards. The EAP has also employed the mitigation hierarchy

where ever possible to ensure that risks and impacts are minimized. Additionally the management objectives and outcomes were discussed with closure requirements in mind.

Management objectives for each activity took into consideration the biophysical and social environment and features identified in the impact assessment process and were developed with closure in mind. The EAP also incorporated management measures identified through the stakeholder engagement process.

Closure management objectives and outcomes were designed in a way that is auditable, logical and site specific and will include pragmatic undertakings for the applicant and realistic timeframes.

The EAP has also been involved with this project since concept phase and has discussed various risk management options with the client throughout.

ii) **The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity.**

The sources that could potentially impact on the water resource and the potential mechanism of impact are indicated in Table 18.

Table 18: Potential pollution sources of the proposed de-stoning plant and associated infrastructure

Potential pollution source	Description	Potential mechanism of impact
Construction Areas	New infrastructure construction areas	Surface water contamination during construction activities due to sediment containing run-off
Construction and coal discard transport vehicles and machinery	Hydraulic fluids and oil spillages	Increase in hydrocarbon concentrations
	Servicing of construction vehicles and/or machinery	
Pollution control dams and associated silt traps	Lined facilities	Seepage to aquifers if liner integrity is compromised. Spillage will be captured in dirty water management system and could result in an impact if not contained, i.e., storage capacity is exceeded.
Coal discard facility	Lined facility with leachate collection system.	Seepage to aquifers if liner integrity or seepage collection is compromised. Runoff of dirty water to clean water system if not contained or PCD spills.
Dirty water conveyance system	Concrete lined canals	Seepage to aquifers if integrity is compromised. Potential spillage into watercourses if design capacity is breached due to lack of maintenance, i.e., silting.

Table 14 in PART A, Section 3 (g)(viii) describes each project specific activity, along with identified potential impacts associated with each project phase and applicable management measures, in order to ensure that risks and impacts are avoided or minimised. These management measures address the potential for environmental damage, pollution and treatment of water.

NDC's IWWMP has also been updated in August 2014 to include water and waste management associated with the De-stoning Plant Project. Included in the IWWMP is the Stormwater Management Plan which includes all water related management measures.

iii) **Potential risk of Acid Mine Drainage**.

(Indicate whether or not the mining can result in acid mine drainage).

Acid Mine Drainage (AMD) refers to a low pH, metal –laden, sulfate rich drainage originating from a mining area. AMD occurs when water flows over exposed sulfide minerals which oxidise in the presence of water and oxygen, causing the water to become acidic, which then dissolves resident metals.

The potential risks of AMD to the environment include the following:

- Contamination of surface and groundwater – acidic water and associated metals increase the potential impact of contact water to aquatic life and to the wider food chain. Increased acidity also reduces the ability of surface and groundwater to buffer against further chemical changes.
- Corrosion of infrastructure - acidic water has the potential to result in corrosion to infrastructure, and if engineering methods are not included where there is possible contact between acidic water and infrastructure, corrosion may impact on the structural integrity.

Based on the geochemical characterisation of the roof, coal and floor material that will constitute the discard, the discard from the Coal Destoning Plant (CDP) is expected to be potentially non-acid generating (non-PAG) both in the short and the long term. Static tests indicated that the discard will be neutral in the short term. Kinetic tests, incorporating pyrite oxidation rates and neutralisation consumption rates, indicated that the discard will be neutral to slightly alkaline in the long term. Therefore, the potential risk of acid mine drainage occurring from the discard disposal facility can be considered to be low due to neutralization of acidity by carbonate or basic silicate minerals. There is however, potential that during oxidation and the subsequent in situ neutralization, salinity will be generated. As the salinity is controlled by equilibrium reactions after neutralization, the resultant salinity has the potential to change the quality of both surface and groundwater affected by seepage.

iv) **Steps taken to investigate, assess, and evaluate the impact of acid mine drainage.**

As there are potential impacts as well as new legal requirements associated Mine Residue Deposits (MRDs) such as discard disposal facilities, it was necessary to characterise the discard from the perspective of Acid Rock Drainage and Metal Leaching (ARD/ML), classify the discard in terms of SANS 10234 and assess the discard in terms of the National Norms and Standards for the Assessment of Waste for Landfill Disposal (No. R. 635) with the classification and assessment both being requirements of the Waste Classification and Management Regulations (No.R.634).

NEM:WA Schedule 3 pre-classifies the discard as hazardous in terms of SANS 10234 unless it is demonstrated that the discard is non-hazardous in accordance with the Waste Classification and Management Regulations (No. R.634). This implies that the discard needed to be assessed against the N&S (No. R. 635 and No. R.636) and classification of the discard as hazardous or non-hazardous can be undertaken in the event that the draft October 2014 regulations to delist are promulgated.

The steps taken to investigate, to assess and to evaluate the impact of acid mine drainage included the following:

- Review of the background site and project information;
- Identification of the materials that will constitute the discard, that is, the floor, coal and roof materials;
- Determination of the form and extend of each of the materials that will constitute the discard material;
- Collection of the roof, coal and floor material considered representative of the discard following recommendations on sample numbers, size, mass, description and handling;
- Laboratory analysis and interpretation of static tests to determine the composition of the collected samples;
- Laboratory analysis and interpretation of kinetic tests based on static results for the samples; and
- Prediction of drainage chemistry as a function of time for the discard material.

The waste assessment adopted the classification approach of the National Environmental Management: Waste Act, 2008 (Act No 59 of 2008). This included the National Norms and Standards for the Assessment of Waste for Landfill Disposal (No. R. 635) and the National Norms and Standards for Disposal of Waste to Landfill (No. R. 636).

The Waste Classification and Management Regulation requirements were adopted as follows:

- The Total Concentrations (TC) and Leachable Concentration (LC) were determined, using prescribed methodology and then compared to threshold limits for both total and leachable concentrations, that is, Total Concentrations Threshold (TCT) and Leachable Concentration Thresholds (LCT) respectively. Total concentration refers to the total

concentration of a particular element or chemical substance in waste expressed as mg/kg. Leachable concentration refers to the leached concentration of a particular element or chemical substance in waste expressed as mg/l; and

- The exceedance of the different threshold values was used to determine the waste type and level of engineering associated with the landfill into which the waste may be disposed.

v) **Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage.**

The discard was assessed to be Type 3 waste; TC ≤ TCT1 and LCT0 < LC ≤ LCT1. As per the N&S for Disposal of Waste to Landfill, the discard requires a liner consistent with a GLB+ system or a Class C barrier system illustrated in Figure 9.

Levelling and compression or compacting of the discard during deposition will assist in reducing airflow in the discard disposal facility, which in turn will limit salt generation through the oxidation and subsequent neutralisation of pyrite associated with the discard. This has significant benefits in terms of increased shear strength, a reduced potential to rut, and lower moisture susceptibility. Typically a 95% Mod AASHTO density should be the target for compaction, with this best achieved using mechanical vibratory rollers. The final densities will however, be dependent on the final design of the discard facility and the inherent geotechnical characteristics of the material placed in the facility.

Taking into consideration the DEA liner recommendations included in Figure 9 below, the Project Team is investigating alternative designs around the use of geosynthetics. This will include the use of alternative Geosynthetics Clay Liners (GCL).

The inclusion of a low permeability barrier system in the construction of the facility will limit seepage to groundwater. However, runoff and seepage generated from rainfall will be collected in engineered toe trenches around the facility and will be discharged to a storage facility, which also includes an appropriate barrier system.

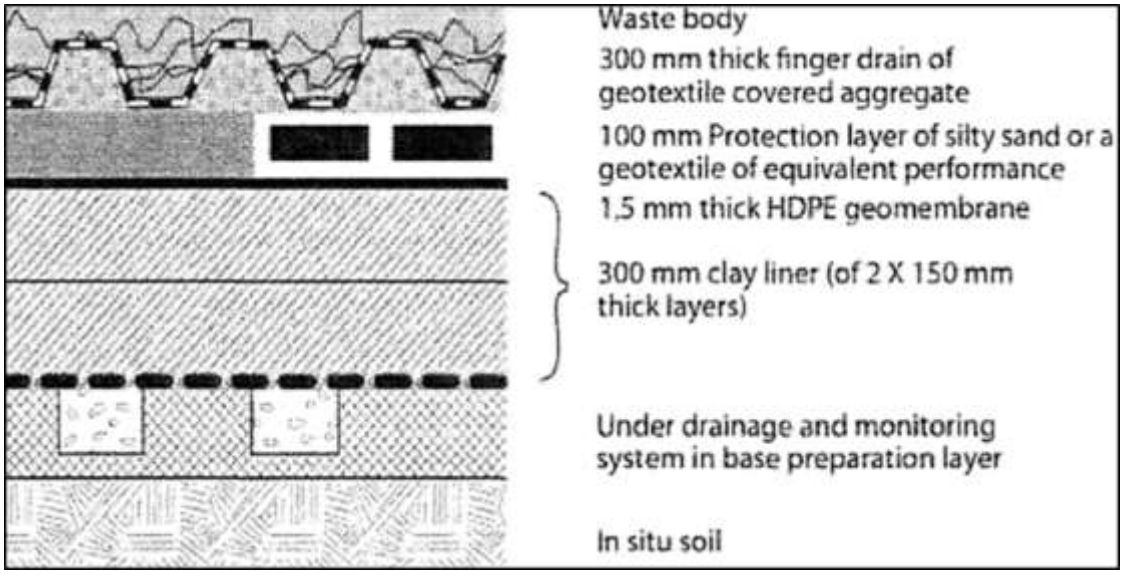

Figure 9: Illustration of a GLB+ or Class C landfill requirements (DEA: GN 36784, 23 August 2013)

vi) **Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage.**

The inclusion of a low permeability barrier and appropriate seepage collection and storage facility will mitigate operational and closure impact s to an acceptable level. As it is expected that these management measures will effectively mitigate operational impacts, there is unlikely to be any cumulative impact associated with the generation of contact water from the dump as a result of the geochemical characteristics of the discard placed in the facility.

There is the potential that there may be the generation of saline seepage after the capacity of the discard facility is reached. This seepage will require containment in the aforementioned storage facilities. There are inherent risks associated with the storage in surface facilities if the potential to utilise the stored contact water is low. The primary risks relate to spillage from overflow when the design capacity of the storage facility is exceeded during rainfall events and the health and safety risk of drowning associated with inadvertent exposure to the dam. If these are not managed at closure, these risks may remain as residual risk and could result in residual impacts.

The risks can be managed through the inclusion of low permeability covers compliant with regulatory requirements in the closure design. The intention of these covers is to maximise runoff and evapotranspiration, while limiting infiltration. Once the covers are installed, the phreatic surface will reduce to a point at which there is no significant drainage from the dump. Once the drainage has stopped, the water storage facilities can be decommissioned.

vii) **Volumes and rate of water use required for the mining, trenching or bulk sampling operation.**

The Mine water balance has been updated in September 2015 to include water uses required for the De-stoning Plant and associated activities (refer to Figure 10). Details of the water balance can be found in the Surface Water specialist study attached as **Appendix 7g**.

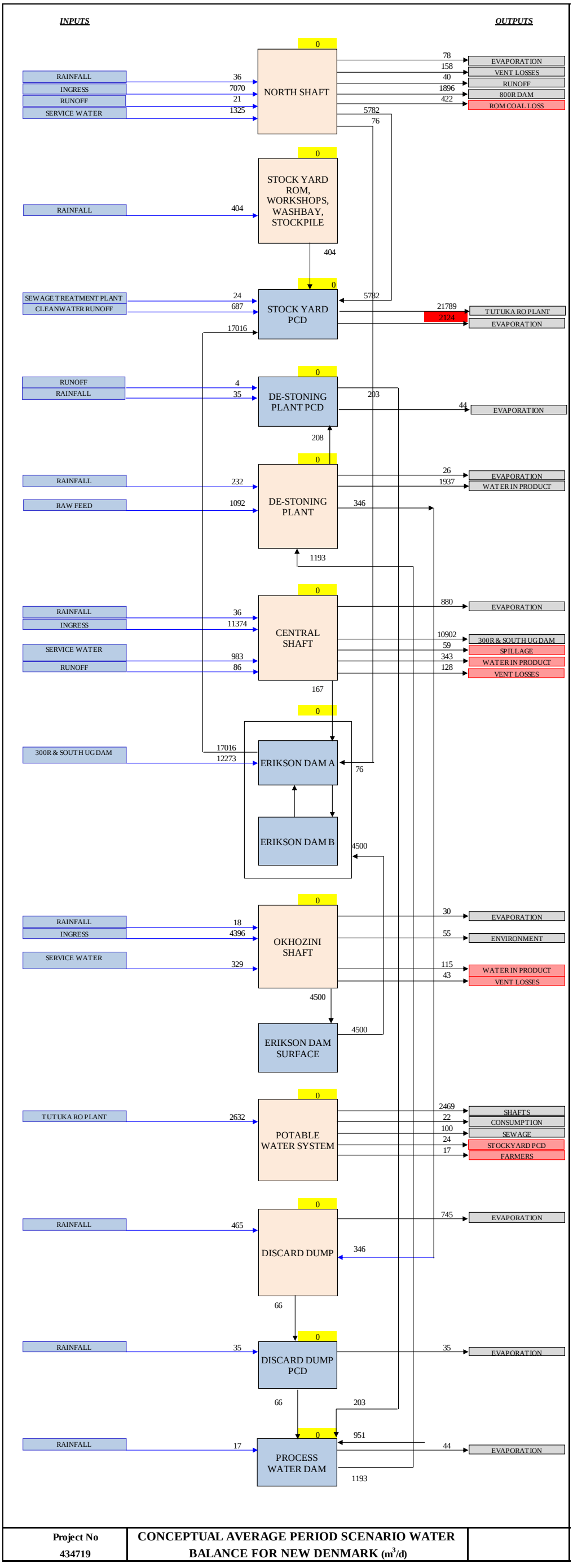

Figure 10: New Denmark Water Balance

viii) **Has a water use licence has been applied for?**

NDC has an existing Water Use Licence (No: 08/C11K/CFGIJ/1273) which covers the current NDC mining operations. Subsequently, the WUL was updated in August 2014 to include water uses for the proposed De-stoning Plant and associated activities. Table 19 presents the water uses have been applied for.

Table 19: New water uses being applied for as part of the proposed De-stoning Plant and associated activities

Section	Water Uses	Farm Name and Portion	Name of Watercourse
21(b): Storage of water	Storage of water in a 1000m^3 Fire Water Tank	Racesbult 352 IS Portion 1	N/A
21(b): Storage of water	Storage of potable water in a 45m^3 Braithwaite Tank	Racesbult 352 IS Portion 1	N/A
21(c) & 21(i): Impeding or diverting the flow of water in a watercourse and altering the bed, banks, course or characteristics of a watercourse	Discard Disposal Facility Pollution Control Dam located within 500 m of a watercourse	Slagkraal 353 IS Portion 4	To be located within 500m from an unnamed tributary of the Leeuspruit
21(c) & 21(i): Impeding or diverting the flow of water in a watercourse and altering the bed, banks, course or characteristics of a watercourse	Section of the 4m wide gravel access road at the Discard Disposal Facility Pollution Control Dam	Slagkraal 353 IS Portion 4 and 6	To be located within 500m from an unnamed tributary of the Leeuspruit
21(c) & 21(i): Impeding or diverting the flow of water in a watercourse and altering the bed, banks, course or characteristics of a watercourse	Section of return water pipeline at the Discard Disposal Facility Pollution Control Dam	Slagkraal 353 IS Portion 4	To be located within 500m from an unnamed tributary of the Leeuspruit
21(g): Disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource	Sewage Treatment Plant	Racesbult 352 IS Portion 1	N/A
21(g): Disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource	Plant Discard Stockpile	Racesbult 352 IS Portion 1	N/A
21(g): Disposing of waste or water containing waste in a manner which may	Discard Disposal Facility (Main)	Slagkraal 353 IS Portion 4, 6 and 9 & Racesbult 352 IS	N/A

Section	Water Uses	Farm Name and Portion	Name of Watercourse
detrimentally impact on a water resource		Portion 1	
21(g): Disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource	Discard Disposal Facility Pollution Control Dam	Slagkraal 353 IS Portion 4	N/A
21(g): Disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource	Plant Pollution Control Dam	Slagkraal 353 IS Portion 9	N/A
21(g): Disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource	Process Water Dam	Slagkraal 353 IS Portion 9	N/A

A new WUL is required for the ROM and Product Stockpiles. This will be applied for in line with the EIA/EMP and will be made available for public comment during the impact assessment phase.

ix) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity

Table 20 describes the activities associated with the De-Stoning Plant and other related infrastructure that require rehabilitation or remediation. The management measures do not take into consideration preventative designs or avoidance solutions, and only describe the management commitments and recommendations to remedy/ rehabilitate impacts once they have occurred. The table also describes the rehabilitation/ remediation compliance with the applicable standards and time period for implementation.

ACTIVITIES	**PHASE**	**SIZE AND SCALE of disturbance**	**MITIGATION MEASURES**	**COMPLIANCE WITH STANDARDS**	**TIME PERIOD FOR IMPLEMENTATION**
(as listed in 2.11.1)	of operation in which activity will take place. State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	(volumes, tonnages and hectares or m^2)	(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.

Table 20: Measures to rehabilitate the potential impacts on the environment

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES (remedy the cause of pollution or degradation and migration of pollutant)	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION

De-Stoning Plant and associated infrastructure/activities	Construction	7 ha	• Soil for the purpose of rehabilitation will be stripped from cleared area.
			• Soils will be stockpiled and stored using the following principles:
			  ○ Usable soil will be stripped and stored with as little compaction as possible;
			  ○ Stockpile areas will have their soil stripped to conserve the seed bank;
			  ○ Single handing will be practiced where possible;
			  ○ Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and
			  ○ Usable soil will be respread with as little compaction as possible.
			• Land to which soil has been applied will be revegetated.
			• Spills will be cleared and remediated immediately as per the AACSA's Leak/Spill Procedure.
			• Dust suppression will be undertaken where required.
			• Ensure a high level of maintenance of construction vehicles, including intake and exhaust mufflers.
				• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331).
				• Anglo American Policies and Guidelines to manage and remediate spills.
				• GNR 893 Minimum Emission Standards.
				• Anglo Air Quality Performance Standards.
				• Highveld Priority Area Air Quality Management Plan.
				• Compliance with SANS 10103 Acceptable Ambient Levels.
					Throughout the Construction Phase

	Operation		• An inspection and maintenance plan for water management will be implemented to ensure that the De-stoning Plant operates within specifications. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons	• GN Regulation 704 Use of Water for Mining and Related Activities. • Anglo American Policies and Guidelines to manage and remediate spills. • GNR 893 Minimum Emission Standards.	Throughout the Operations Phase

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES (remedy the cause of pollution or degradation and migration of pollutant)	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			and other potential contaminants. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • Dust suppression will be undertaken where required. • Regular maintenance and servicing of equipment to reduce noise levels.	• Anglo Air Quality Performance Standards. • Highveld Priority Area Air Quality Management Plan. • Compliance with SANS 10103 Acceptable Ambient Levels.	
	Closure		• Rehabilitation and vegetation of the De-stoning Plant. • A leak/spill detection plan should be devised and implemented for all possible areas of leaks/spillages. • Demolition activities will be limited to confined daylights. • Demolition vehicles and machinery will be serviced at regular intervals to minimise noise generation.	• Anglo American Closure Toolbox. • Compliance with SANS 10103 Acceptable Ambient Levels.	Throughout the Closure Phase
Discard Disposal Facility and associated infrastructure/ activities (return water dam)	Construction	30 ha	• Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331). • GNR 893 Minimum Emission Standards. • Anglo Air Quality Performance Standards. • Highveld Priority Area Air Quality Management Plan. • Compliance with SANS 10103 Acceptable Ambient Levels.	Throughout the Construction Phase

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES (remedy the cause of pollution or degradation and migration of pollutant)	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			will be revegetated. • Dust suppression will be undertaken where required. • Ensure a high level of maintenance of construction vehicles, including intake and exhaust mufflers.		
	Operation		• A leak/spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • Dust suppression via means of water spraying will be implemented on the service roads and Discard Disposal Facility when required, to reduce potential dust. • Concurrent rehabilitation of the Discard Disposal Facility will be undertaken during operations. • Ensure a high level of maintenance of vehicles, including intake and exhaust mufflers.	• Anglo American Policies and Guidelines to manage and remediate spills. • GNR 893 Minimum Emission Standards. • Anglo Air Quality Performance Standards. • Highveld Priority Area Air Quality Management Plan. • Compliance with SANS 10103 Acceptable Ambient Levels.	Throughout the Operations Phase.
	Closure		• Completion of rehabilitation and vegetation of the Discard Disposal Facility. • Inspection of vegetation establishment. • A leak/spill detection plan should be devised and implemented for all possible areas of leaks/spillages. • Demolition vehicles and machinery will be serviced at regular intervals to minimise noise generation.	• Anglo American Closure Toolbox. • Anglo American Policies and Guidelines to manage and remediate spills. • Compliance with SANS 10103 Acceptable Ambient Levels.	Throughout the Closure Phase
Pollution Control Dam and Process Water Dam (channels and pipelines)	Construction	5 ha	• Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331).	Throughout the Construction Phase

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES (remedy the cause of pollution or degradation and migration of pollutant)	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			as possible; ○ Stockpile areas will have their soil stripped to conserve the seed bank; ○ Single handing will be practiced where possible; ○ Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and ○ Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Spills will be cleared and remediated immediately as per the AACSA's Leak/Spill Procedure. • Dust suppression will be undertaken where required. • Ensure a high level of maintenance of construction vehicles, including intake and exhaust mufflers.	• Anglo American Policies and Guidelines to manage and remediate spills. • GNR 893 Minimum Emission Standards. • Anglo Air Quality Performance Standards. • Highveld Priority Area Air Quality Management Plan. • Compliance with SANS 10103 Acceptable Ambient Levels.	
	Operation		• A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated with immediate effect.	• Anglo American Policies and Guidelines to manage and remediate spills.	Throughout the Operations Phase.
	Closure		• A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within	• Anglo American Policies and Guidelines to manage and remediate spills.	Throughout the Closure Phase.

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES (remedy the cause of pollution or degradation and migration of pollutant)	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			specifications. • Any detected spills/leaks will be remediated with immediate effect.		
Run of Mine/ Product Stockpile and associated infrastructure/activities	Construction	5 ha	• A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Dust suppression will be undertaken where required.	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331). • GNR 893 Minimum Emission Standards. • Anglo Air Quality Performance Standards. • Highveld Priority Area Air Quality Management Plan.	Throughout the Construction Phase.
	Operation		• Operations vehicles will be serviced at regular intervals to minimise noise generation. • Ensure a high level of maintenance of construction vehicles, including intake and exhaust mufflers. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons	• Compliance with SANS 10103 Acceptable Ambient Levels. • Anglo American Policies and Guidelines to manage and remediate spills.	Throughout the Operations Phase.

ACTIVITIES	PHASE	SIZE AND SCALE of disturbance	MITIGATION MEASURES (remedy the cause of pollution or degradation and migration of pollutant)	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			and other potential contaminants. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages.		
	Closure		• Dust suppression will be undertaken where required. • Rehabilitation and vegetation of the stockpile footprint. • Inspection of vegetation establishment.	• GNR 893 Minimum Emission Standards. • Anglo Air Quality Performance Standards. • Highveld Priority Area Air Quality Management Plan. • Anglo American Closure Toolbox.	Throughout the Closure Phase.

e) Impact Management Outcomes

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

Table 20 describes the activities associated with the De-Stoning Plant Project and the potential impacts anticipated throughout the Construction, Operations and Closure Phases of the Project. The relevant management measures to mitigate, modify, remedy or control the impacts have also been described, along with the standard to be achieved, which includes the management objective and performance criteria.

ACTIVITY whether listed or not listed.	**POTENTIAL IMPACT**	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated	**MITIGATION TYPE**	**STANDARD TO BE ACHIEVED**
(E.g. 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, etc…etc…etc.).	**(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**		**(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)**	**(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)** **E.g.** • **Modify through alternative method.** • **Control through noise control** • **Control through management and monitoring** • **Remedy through rehabilitation..**	**(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.**

Table 21: The potential impacts for the De-Stoning Plant Project with associated management measures and standards to be achieved

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
De-stoning Plant and associated infrastructure/ activities	Loss of soil resource as a result of construction activities	Soils	Construction	• Only the immediate area of the footprint will be cleared. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: ○ Usable soil will be stripped and stored with as little compaction as possible; ○ Stockpile areas will have their soil stripped to conserve the seed bank; ○ Single handing will be practiced where possible; ○ Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and ○ Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Compacted soils will be ripped and profiled. • Construction of water management infrastructure will commence prior to construction of the De-stoning Plant to prevent soil erosion.	• Prevent the loss of valuable soil for use in rehabilitation by: ○ Pre-stripping all usable soil ○ Minimising erosion by early vegetation • Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331). • A Stormwater Management Plan.
	Contamination of soils due to spillage	Soils	Construction	• Use of the existing mine leak/spill detection plan will be implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure. • Construction vehicle movement on site over unprotected or sensitive areas will be restricted. The De-stoning Plant area will be fenced off during construction activities. • Regular servicing of all vehicles will be undertaken in designated construction areas. Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil.	• To prevent soil contamination by implementation of: ○ Inspection and maintenance Plan; ○ Leak/Spill Procedure' ○ Emergency Preparedness Plan; ○ Waste Management; and ○ GN704 Audit Report.
	Loss of biodiversity during construction	Biodiversity	Construction	• Only the immediate area of the footprint will be cleared. • The mine will remove any alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area	• To demonstrate active stewardship of land and biodiversity by: ○ Identifying and

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	activities			will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).	removing relevant species if necessary; and ○ Implementing the Biodiversity Action Plan.
	Contamination of stormwater and surface quality during construction	Surface water	Construction	• Construction of water management infrastructure will commence prior to construction of the De-stoning Plant. • Storm water containment will be planned and constructed for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water	• To avoid or where not possible minimise and remediate pollution of water by: ○ Implementing a Leak/Spill Procedure; ○ Compiling monitoring report; ○ Implementing the Stormwater Management Plan; and ○ Responding to complaints and implementing a grievance mechanism.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				management around the construction area should be reviewed.	
	Increased nuisance dust affecting adjacent landowners during construction	Air quality	Construction	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).	• To minimise the entrapment potential of dust. • To keep PM_{10} (and in the future, $PM_{2.5}$) and dust fallout levels at key receptor sites around the project area within guideline levels. As the guidelines vary depending on the priority area and year, the South African Air Quality Information System (http://www.saaqis.org.za/) will be consulted for the most recent guidelines. • These aforementioned standards will be achieved by: o Developing a dust monitoring programme; and o Providing evidence of dust suppression.
	Increase in ambient noise for adjacent landowners during construction activities	Noise	Construction	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	• To minimise noise impacts on sensitive receptors by: o Developing a complaints register to record complaints

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				• Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	regarding noise. • To maintain noise levels at the standards for suburban areas (SANS 10103) as far as practicable.
	Improved economic and job opportunities	Socio-economic	Construction	• The mine will facilitate the recruitment of local labour where possible during the construction phase. • New Denmark Colliery has an updated Social and Labour Plan (SLP).	• To enhance benefits from the development of the Project; • To maximize opportunities for local residents; • To facilitate employment of local labour on the Mine; and • To avoid creating unrealistic expectations. • These standards will be achieved by the implementation of the SLP.
	Contamination of soil resources during operations	Soils	Operations	• Use of the existing mine leak/spill detection plan will be implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure. • Vehicle movement on site over unprotected or sensitive areas will be restricted. • Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil.	• To prevent soil contamination by implementation of: ○ Inspection and maintenance Plan; ○ Leak/Spill Procedure' ○ Emergency Preparedness Plan; ○ Waste Management; and ○ GN704 Audit Report.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	Contamination of stormwater and surface quality during operations	Surface water	Operations	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • Clean water will be diverted around the plant and dirty water from the plant will be diverted to the proposed Pollution Control Dam. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • An inspection and maintenance plan will be implemented to ensure that the De-stoning Plant operates within specifications. • Storm water containment is planned for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. • The mine's emergency action plan/ procedures will be	• To avoid or where not possible, minimise and remedy pollution of water during operation: ○ Implementing a Leak/Spill Procedure; ○ Compiling monitoring report; ○ Implementing the Stormwater Management Plan; and ○ Responding to complaints and implementing a grievance mechanism.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				drawn up to deal with spills on the road to minimise the impact on water quality. • Regular clearing will be undertaken of all access ways and conveyor routes, as well as drains and stormwater facilities. • Regular servicing of all vehicles in designated operational areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel.	
	Loss of groundwater resource due to contamination during operations	Groundwater	Operations	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed to prevent seepage will be installed in the Construction Phase. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	• No dirty water spillage to the catchment thereby preventing contamination of waterbodies downstream by: o Developing a groundwater monitoring programme and model; and o Responding to complaints and implementing a grievance mechanism with regards to groundwater.
	Increased nuisance dust affecting adjacent landowners during operations	Air quality	Operations	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road	• To minimise the entrapment potential of dust. • To keep PM_{10} (and in the future, $PM_{2.5}$) and dust fallout levels at key receptor sites around the project area within guideline

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The conveyors within the plant complex will be partially enclosed during operations to reduce dust. The De-Stoning Plant will be completely enclosed during operations, resulting in reduced nuisance dust.	levels. As the guidelines vary depending on the priority area and year, it is recommended that the South African Air Quality Information System (http://www.saaqis.org.za/) be consulted for the most recent guidelines. • These aforementioned standards will be achieved by: o Developing a dust monitoring programme; and o Providing evidence of dust suppression.
	Increase in ambient noise for adjacent landowners during operations	Noise	Operations	• A noise monitoring programme will be implemented. • The plant will be completely enclosed during operations which will reduce noise. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of operations vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	• To minimise noise impacts on sensitive receptors by: o Developing a complaints register to record complaints regarding noise. • To maintain noise levels at the standards for suburban areas (SANS 10103) as far as practicable.
	Improved economic and	Socio-economic	Operations	• New Denmark Colliery will facilitate the recruitment of local labour where necessary.	• To enhance benefits from the development

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	job opportunities			• New Denmark Colliery has an updated Social and Labour Plan (SLP).	of the Project; • To maximize opportunities for local residents; • To facilitate employment of local labour on the Mine; and • To avoid creating unrealistic expectations. • These standards will be achieved by the implementation of the SLP.
	Contmaination of surface water and groundwater quality impacting on water resources during closure	Surface water	Closure	• The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan. • The mine will undertake rehabilitation and vegetation of the De-stoning Plant. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water monitoring until it can be demonstrated that potential for the generation of pollutants is low. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages.	• To avoid or where not possible, minimise and remedy pollution of water during closure by: ○ Implementing a Leak/Spill Procedure; ○ Compiling monitoring report; ○ Implementing the Stormwater Management Plan; ○ Implementing a Rehabilitation and Closure Plan; and ○ Responding to complaints and implementing a grievance mechanism. • To minimise contamination of

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
					groundwater resources. • To avoid or where not possible, minimise and remedy of pollution of water during decommissioning and closure. • These standards will be achieved by: o Developing a groundwater monitoring programme and model; and o Implementing a Rehabilitation and Closure Plan.
	Increased nuisance dust affecting adjacent landowners during closure	Air quality	Closure	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented. • Rehabilitation and vegetation of the De-stoning Plant will be undertaken as per the Rehabilitation and Closure Action Plan. • Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	• To minimise the entrapment potential of dust. • To keep PM_{10} (and in the future, $PM_{2.5}$) and dust fallout levels at key receptor sites around the project area within guideline levels. As the guidelines vary depending on the priority area and year, it is recommended that the South African Air Quality Information System (http://www.saaqis.org.za/) be consulted for the most recent guidelines.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
					• These aforementioned standards will be achieved by: o Developing a dust monitoring programme; and o Providing evidence of dust suppression
	Increase in ambient noise on adjacent landowners during closure	Noise	Closure	• The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Demolition activities will be limited to confined daylights. • Demolition vehicles and machinery will be serviced at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	• To minimise noise impacts on sensitive receptors by: o Developing a complaints register to record complaints regarding noise. • To maintain noise levels at the standards for suburban areas (SANS 10103) as far as practicable.
	Sustainability of livelihoods at mine closure	Socio-economic	Closure	• The mine will undertake a Closure assessment to investigate the impact of mine closure at least 5 years in advance of the event to estimate short term, medium term and long terms impacts of mine closure. The Closure assessment will include an assessment of the socio-economic aspects.	• To ensure that retrenched employees can pursue alternative livelihoods by: o Developing a Closure Plan.
Discard Disposal Facility and associated infrastructure/ activities (return water dam)	Loss of arable, agricultural land during construction	Land Capability	Construction	• Only the immediate footprint of the area will be cleared.	As per the De-Stoning Plant above.
	Loss of soil resource as a result of construction	Soils	Construction	• Only the immediate footprint of the area will be cleared. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	activities			principles: ○ Usable soil will be stripped and stored with as little compaction as possible; ○ Stockpile areas will have their soil stripped to conserve the seed bank; ○ Single handing will be practiced where possible; ○ Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and ○ Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Construction of water management infrastructure will commence prior to construction of the De-stoning Plant to prevent soil erosion. • Compacted soils will be ripped and profiled. • A Contractors Management Plan will include a soils management standard for the Discard Disposal Facility prior to the commencement of construction.	
	Contamination of stormwater and surface quality during construction	Surface water	Construction	• Construction of water management infrastructure will commence prior to construction of the Discard Disposal Facility. • Storm water containment will be planned and constructed for the Discard Disposal Facility as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. • If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction area should be reviewed.	
	Loss of biodiversity during construction activites	Biodiversity	Construction	• The mine will ensure the removal of the alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will make use of an existing awareness campaign as per the existing awareness plan to educate employees on awareness, respect and responsibility towards the environment.	As per the De-Stoning Plant above.
	Increased nuisance dust affecting adjacent landowners during construction	Air quality	Construction	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network.	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				• Maintenance of internal roads will be in accordance with the existing mine road management plan. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	
	Increase in ambient noise on adjacent landowners during construction	Noise	Construction	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	As per the De-Stoning Plant above.
	Contamination of storm and surface water quality impacting on watercourses during operations	Surface water	Operations	• Clean water will be diverted around the Discard Disposal Facility and dirty water from the Discard Disposal Facility will be diverted to the proposed Return Water Dam. • The Return Water Dam has been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • The mine will undertake regular surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • A leak/spill detection procedure will be devised and implemented for all possible areas of leak/spillage.	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				• Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil. • Damage from erosion will be repaired. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants.	
	Loss of groundwater resource due to contamination during operations	Groundwater	Operations	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner will be designed and installed during the Construction Phase to prevent seepage. • Levelling and compacting of discard will be undertaken during deposition to reduce airflow in the Discard Disposal Facility. • The Discard Disposal Facility will operate within the approved design parameters. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	As per the De-Stoning Plant above.
	Increased nuisance dust affecting adjacent landowners during operations	Air quality	Operations	• The discard will be transported from the plant to the Discard Disposal Facility via conveyor. This will reduce the generation of dust during transportation and handling of discard. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads and Discard Disposal Facility when required, to reduce potential dust. • The mine will make use of the existing tarred road network.	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				• Maintenance of internal roads will be in accordance with the existing mine road management plan. • Concurrent rehabilitation of the Discard Disposal Facility will be undertaken during operations, including hydroseeding and grassing. • If required, soil used to concurrently rehabilitate the Discard Disposal Facility will be ameliorated to enhance oxidation and growth capability. • Newly seeded/planted areas will be protected against compaction and erosion by restricting vehicle access to the site. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	
	Increase in ambient noise on adjacent landowners during operations	Noise	Operations	• The mine's noise monitoring programme will be implemented prior to operational activities and will be ongoing throughout the operational phase. • Monitoring locations and procedures will be reviewed prior to each annual noise survey. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Operations vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	As per the De-Stoning Plant above.
	Disturbance to sense of place	Visual	Operations	• The mine will undertake concurrent rehabilitation and vegetation of Discard Disposal Facility during operations as per the Rehabilitation and Closure Plan. • Reseeding of indigenous grasses will be implemented in all impacted areas.	• To minimise the visual impact of the Discard Disposal Facility by: o Implementing the Discard

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
					Rehabilitation and Maintenance Plan.
	Contamination of surface water and groundwater quality impacting on water resources during closure	Surface water and groundwater	Closure	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and constructed to prevent seepage. • The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan. • The mine will complete rehabilitation and vegetation of the Discard Disposal Facility. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water and groundwater monitoring until it can be demonstrated that potential for the generation of pollutants is low.	As per the De-Stoning Plant above.
	Increased nuisance dust affecting adjacent landowners during closure	Air quality	Closure	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will undertake concurrent rehabilitation of the Discard Disposal Facility during the closure phase as per the mine's Rehabilitation and Closure Action Plan. • Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	As per the De-Stoning Plant above.
	Increase in ambient noise on adjacent landowners during closure	Noise	Closure	• The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				• The mine will limit demolition activities will to confined daylights. • The mine will service demolition vehicles and machinery at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	
Pollution Control Dam and Process Water Dam (channels and pipelines)	Construction impacts are similar to those for the De-Stoning Plant. Refer to the management commitments and standards to be achieved above.				
	Contamination of soils due to spillage from pipelines, channels or dams during operations	Soils	Operations	• The mine will implement regular monitoring of the pipeline route, as all as downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect.	As per the De-Stoning Plant above.
	Contamination of surface water and groundwater resources due to spillages or seepage during operations	Surface water	Operations	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect. • The Dams have been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				• Storm water containment is planned for the Dams as per the Stormwater Management Plan in the IWWMP.	
	Contamination of surface water and groundwater resources due to spillages or seepage during closure	Surface Water	Closure	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage.	As per the De-Stoning Plant above.
Run of Mine/ Product Stockpile and associated infrastructure/activities	Loss of soil resource as a result of construction activities	Soils	Construction	• Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Compacted soils will be ripped and profiled. Construction of water management infrastructure will commence prior to construction of the ROM and Product stockpiles to prevent soil erosion.	As per the De-Stoning Plant above.
	Increased nuisance dust affecting adjacent landowners during construction	Air quality	Construction	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				network. • The mine will maintain internal roads in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	
	Increase in ambient noise on adjacent landowners during construction	Noise	Construction	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	As per the De-Stoning Plant above.
	Contamination of surface water and groundwater quality during operations	Surface water and groundwater	Operations	• Clean water will be diverted around the stockpiles and dirty water from the stockpiles will be diverted to the proposed Pollution Control Dam. • The mine will undertake regular surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • Storm water containment will be implemented for the Stockpiles as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. • A leak/spill detection plan will be devised and	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
				implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and installed during the Construction Phase to prevent seepage. Prior to the installation of the liner, the site will be suitably prepared and compacted. • The mine will undertake regular groundwater monitoring from existing monitoring boreholes to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	
	Increased nuisance dust affecting adjacent landowners during operations	Air quality	Operations	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	As per the De-Stoning Plant above.
	Contamination of surface water and groundwater resources due to spillages or seepgae during closure	Surface water	Closure	• The removal of material will be in accordance with the mine's Rehabilitation and Closure Action Plan. • All ROM and Product material will be removed from site. • The mine will rehabilitate and vegetate the stockpile footprint. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect the vegetation establishment. • The mine will undertake post-closure surface water and groundwater monitoring until it can be demonstrated that potential for the generation of pollutants is low.	As per the De-Stoning Plant above.
	Increased nuisance dust affecting adjacent landowners	Air quality	Closure	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required.	As per the De-Stoning Plant above.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	during closure			• The mine will rehabilitate and vegetate the stockpile footprint as per the mine's Rehabilitation and Closure Action Plan. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	

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 22 details the potential impacts associated with the Project activities, relevant management measures and the time period for implementation of the described measures. The environmental standards to which the management measures must comply have also been described.

ACTIVITY whether listed or not listed. **(E.g. 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, etc…etc…etc.)**.	**POTENTIAL IMPACT** **(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**	**MITIGATION TYPE** **(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc)** **E.g.** • **Modify through alternative method.** • **Control through noise control** • **Control through management and monitoring** **Remedy through rehabilitation..**	**TIME PERIOD FOR IMPLEMENTATION** Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)

Table 22: Potential impacts of the NDC De-Stoning Plant Project with associated management measures with time period for implementation and applicable standards

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS

De-stoning Plant and associated infrastructure/ activities	Loss of soil resource as a result of construction activities	• Only the immediate area of the footprint will be cleared.
		• Soil for the purpose of rehabilitation will be stripped from cleared area.
		• Soils will be stockpiled and stored using the following principles:
		  ○ Usable soil will be stripped and stored with as little compaction as possible;
		  ○ Stockpile areas will have their soil stripped to conserve the seed bank;
		  ○ Single handing will be practiced where possible;
		  ○ Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and
		  ○ Usable soil will be respread with as little compaction as possible.
		• Land to which soil has been applied will be revegetated.
		• Compacted soils will be ripped and profiled.
		• Construction of water management infrastructure will commence prior to construction of the De-stoning Plant to prevent soil erosion.
			Throughout the Construction Phase	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331).
				• Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.
				• GN Regulation 704 Use of Water for Mining and Related Activities.

	Contamination of soils due to spillage	• Use of the existing mine leak/spill detection plan will be implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure. • Construction vehicle movement on site over unprotected or sensitive areas will be restricted. The De-stoning Plant area will be fenced off during construction activities. • Regular servicing of all vehicles will be undertaken in designated construction areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil.	Throughout the Construction Phase	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331). • Anglo American Policies and Guidelines to manage and remediate spills.
	Loss of biodiversity during construction activities	• Only the immediate area of the footprint will be cleared. • The mine will remove any alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area	Throughout the Construction Phase	• Mpumalanga Biodiversity Conservation Plan Handbook. • Conservation of

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).		Agricultural Resources Act, 1983 and Section 28 of the National Environmental Management Act, 1998).
	Contamination of stormwater and surface quality during construction	• Construction of water management infrastructure will commence prior to construction of the De-stoning Plant. • Storm water containment will be planned and constructed for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. • If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction area should be	Throughout the Construction Phase	• GNR 408 Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		reviewed.		
	Increased nuisance dust affecting adjacent landowners during construction	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph).	Throughout the Construction Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan
	Increase in ambient noise for adjacent landowners during construction activities	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	Throughout the Construction Phase	• Compliance with SANS 10103 Acceptable Ambient Levels.
	Improved economic and job opportunities	• The mine will facilitate the recruitment of local labour where possible during the construction phase. • New Denmark Colliery has an updated Social and Labour Plan (SLP).	Throughout the Construction Phase	• Social and Labour Plan.
	Contamination of soil	• Use of the existing mine leak/spill detection plan will be	Throughout the	• Manage soils in line with

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	resources during operations	implemented for all possible areas of leaks/spillages. • Spill kits will be provided for on site for spill clearing. • Spills will be cleared and remediated immediately as per the mine's Leak/Spill Procedure. • Vehicle movement on site over unprotected or sensitive areas will be restricted. • Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil.	Operations Phase	the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331). • Anglo American Policies and Guidelines to manage and remediate spills.
	Contamination of stormwater and surface quality during operations	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • Clean water will be diverted around the plant and dirty water from the plant will be diverted to the proposed Pollution Control Dam. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	Throughout the Operations Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• An inspection and maintenance plan will be implemented to ensure that the De-stoning Plant operates within specifications. • Storm water containment is planned for the De-stoning Plant as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. • The mine's emergency action plan/ procedures will be drawn up to deal with spills on the road to minimise the impact on water quality. • Regular clearing will be undertaken of all access ways and conveyor routes, as well as drains and stormwater facilities. • Regular servicing of all vehicles in designated operational areas equipped with drip-trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel.		
	Loss of groundwater resource due to contamination during operations	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed to prevent seepage will be installed in the Construction Phase. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	Throughout the Operations Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Anglo American Policies and Guidelines to manage and remediate spills. • Government Notice (GN) R636 of August 2013: National norms and standards for disposal of waste to landfill, in terms of NEM:WA.
	Increased nuisance dust affecting adjacent landowners during operations	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be	Throughout the Operations Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The conveyors within the plant complex will be partially enclosed during operations to reduce dust. • The De-Stoning Plant will be completely enclosed during operations, resulting in reduced nuisance dust.		
	Increase in ambient noise for adjacent landowners during operations	• A noise monitoring programme will be implemented. • The plant will be completely enclosed during operations which will reduce noise. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of operations vehicles, including intake and exhaust mufflers will be ensured. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	Throughout the Operations Phase	• Compliance with SANS 10103 Acceptable Ambient Levels.
	Improved economic and job opportunities	• New Denmark Colliery will facilitate the recruitment of local labour where necessary. • New Denmark Colliery has an updated Social and Labour Plan (SLP).	Throughout the Operations Phase	• Social and Labour Plan
	Contamination of surface water and groundwater quality impacting on water	• The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan. • The mine will undertake rehabilitation and vegetation of	Throughout the Closure Phase	• GNR 408 Regulation 704 Use of Water for Mining and Related Activities • GNR 408 Regulation 704

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	resources during closure	the De-stoning Plant. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water monitoring until it can be demonstrated that potential for the generation of pollutants is low. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages.		Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.
	Increased nuisance dust affecting adjacent landowners during closure	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented. • Rehabilitation and vegetation of the De-stoning Plant will be undertaken as per the Rehabilitation and Closure Action Plan. • Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	Throughout the Closure Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan
	Increase in ambient noise on adjacent landowners during closure	• The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Demolition activities will be limited to confined daylights. • Demolition vehicles and machinery will be serviced at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.	Throughout the Closure Phase	• Compliance with SANS 10103 Acceptable Ambient Levels.
	Sustainability of livelihoods at mine closure	• The mine will undertake a Closure assessment to investigate the impact of mine closure at least 5 years in advance of the event to estimate short term, medium	Throughout the Closure Phase	• Anglo American Closure Toolbox • Social and Labour Plan

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		term and long terms impacts of mine closure. The Closure assessment will include an assessment of the socio-economic aspects.		
Discard Disposal Facility and associated infrastructure/ activities (return water dam)	Loss of arable, agricultural land during construction	• Only the immediate footprint of the area will be cleared.	Throughout the Closure Phase	
	Loss of soil resource as a result of construction activities	• Only the immediate footprint of the area will be cleared. • Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Construction of water management infrastructure will commence prior to construction of the De-stoning Plant to prevent soil erosion. • Compacted soils will be ripped and profiled. • A Contractors Management Plan will include a soils management standard for the Discard Disposal Facility prior to the commencement of construction.	Throughout the Construction Phase	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331). • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines. • GN Regulation 704 Use of Water for Mining and Related Activities.
	Contamination of stormwater and surface quality during construction	• Construction of water management infrastructure will commence prior to construction of the Discard Disposal Facility. • Storm water containment will be planned and constructed for the Discard Disposal Facility as per the Stormwater Management Plan in the IWWMP. • Upslope runoff will be diverted around the construction activities. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the	Throughout the Construction Phase	• GNR 408 Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • All appropriate sanitary facilities will be provided during construction and all waste to be removed to an appropriate waste facility. • Regular servicing of all vehicles in designated construction areas equipped with drip trays. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil. • Bunded containment and settlement facilities will be provided for hazardous material such as oils and fuel. • If erosion is evident or the water quality monitoring indicates an increase in suspended solids, water management around the construction area should be reviewed.		
	Loss of biodiversity during construction activites	• The mine will ensure the removal of the alien and weed species encountered on the property. • Informal fires within the footprint and surrounding area will be prohibited during the construction phase. • Site access will be restricted, the site will be fenced off and therefore no unauthorised vehicles will be allowed. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will make use of an existing awareness campaign as per the existing awareness plan to educate employees on awareness, respect and responsibility towards the environment.	Throughout the Construction Phase	• Mpumalanga Biodiversity Conservation Plan Handbook. • Conservation of Agricultural Resources Act, 1983 and Section 28 of the National Environmental Management Act, 1998).
	Increased nuisance dust affecting adjacent landowners during	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable	Throughout the Construction Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	construction	to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • Vehicles are to remain on the service road and will be limited to a speed of 40 kilometers per hour (kph). • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.		Performance Standards
	Increase in ambient noise on adjacent landowners during construction	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	Throughout the Construction Phase	• Highveld Priority Area Air Quality Management Plan Compliance with SANS 10103 Acceptable Ambient Levels.
	Contamination of storm and surface water quality impacting on watercourses during operations	• Clean water will be diverted around the Discard Disposal Facility and dirty water from the Discard Disposal Facility will be diverted to the proposed Return Water Dam. • The Return Water Dam has been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • The mine will undertake regular surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the	Throughout the Operations Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines. • Government Notice (GN) R636 of August 2013:

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • A leak/spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • Regular servicing of all vehicles will be undertaken in designated operational areas. • Re-fuelling will take place on sealed surfaces to prevent ingress of hydrocarbons into topsoil. • Damage from erosion will be repaired. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants.		National norms and standards for disposal of waste to landfill, in terms of NEM:WA.
	Loss of groundwater resource due to contamination during operations	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner will be designed and installed during the Construction Phase to prevent seepage. • Levelling and compacting of discard will be undertaken during deposition to reduce airflow in the Discard Disposal Facility. • The Discard Disposal Facility will operate within the approved design parameters. • Regular groundwater monitoring from existing monitoring boreholes will be undertaken to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.	Throughout the Operations Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Anglo American Policies and Guidelines to manage and remediate spills. • Government Notice (GN) R636 of August 2013: National norms and standards for disposal of waste to landfill, in terms of NEM:WA.
	Increased nuisance dust affecting adjacent landowners during operations	• The discard will be transported from the plant to the Discard Disposal Facility via conveyor. This will reduce the generation of dust during transportation and handling of discard. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads and Discard Disposal	Throughout the Operations Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		Facility when required, to reduce potential dust. • The mine will make use of the existing tarred road network. • Maintenance of internal roads will be in accordance with the existing mine road management plan. • Concurrent rehabilitation of the Discard Disposal Facility will be undertaken during operations, including hydroseeding and grassing. • If required, soil used to concurrently rehabilitate the Discard Disposal Facility will be ameliorated to enhance oxidation and growth capability. • Newly seeded/planted areas will be protected against compaction and erosion by restricting vehicle access to the site. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.		
	Increase in ambient noise on adjacent landowners during operations	• The mine's noise monitoring programme will be implemented prior to operational activities and will be ongoing throughout the operational phase. • Monitoring locations and procedures will be reviewed prior to each annual noise survey. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Operations vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	Throughout the Operations Phase	Compliance with SANS 10103 Acceptable Ambient Levels.
	Disturbance to sense of place during operations	• The mine will undertake concurrent rehabilitation and vegetation of Discard Disposal Facility during operations as per the Rehabilitation and Closure Plan. • Reseeding of indigenous grasses will be implemented in	Throughout the Operations Phase	

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		all impacted areas.		
	Contamination of surface water and groundwater quality impacting on watercourses during closure	• A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and constructed to prevent seepage. • The demolition and removal of infrastructure will be in accordance with the mine's Rehabilitation and Closure Action Plan. • The mine will complete rehabilitation and vegetation of the Discard Disposal Facility. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will undertake post-closure surface water and groundwater monitoring until it can be demonstrated that potential for the generation of pollutants is low.	Throughout the Closure Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines. • GN Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.
	Increased nuisance dust affecting adjacent landowners during closure	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will undertake concurrent rehabilitation of the Discard Disposal Facility during the closure phase as per the mine's Rehabilitation and Closure Action Plan. • Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	Throughout the Closure Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan
	Increase in ambient noise on adjacent landowners during closure	• The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • The mine will limit demolition activities will to confined daylights.	Throughout the Closure Phase	• Compliance with SANS 10103 Acceptable Ambient Levels.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• The mine will service demolition vehicles and machinery at regular intervals to minimise noise generation. • Equipment will be withdrawn for maintenance if changes in noise emission characteristics are noticeable.		
Pollution Control Dam and Process Water Dam (channels and pipelines)	Impacts during construction are similar to those for the De-Stoning Plant. Refer to De-Stoning Plant above.			
	Contamination of soils due to spillage from pipelines, channels or dams during operations	• The mine will implement regular monitoring of the pipeline route, as all as downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect.	Throughout the Operations Phase	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331). • Anglo American Policies and Guidelines to manage and remediate spills.
	Contamination of surface water and groundwater resources due to spillages or seepage during operations	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and implemented for all possible areas of leak/spillage. • An inspection and maintenance plan will be implemented to ensure the Dams and pipelines operate within specifications. • Any detected spills/leaks will be remediated as per the mine's leak/spill procedure with immediate effect. • The Dams have been designed to accommodate a 1:50 year flood event therefore the risk of spillage is less than 2% for any 1 year. • Regular surface water monitoring will be undertaken to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • Storm water containment is planned for the Dams as per the Stormwater Management Plan in the IWWMP.	Throughout the Operations Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.
	Contamination of surface water and groundwater resources	• The mine will implement regular monitoring downstream of all pipeline watercourses to detect any impacts. • A leak/ spill detection procedure will be devised and	Throughout the Closure Phase	• GN Regulation 704 Use of Water for Mining and Related Activities.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	due to spillages or seepage during closure	implemented for all possible areas of leak/spillage.		• Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines. • GN Regulation 704 Use of Water for Mining and Related Activities. • Anglo American Policies and Guidelines to manage and remediate spills.
Run of Mine/ Product Stockpile and associated infrastructure/activities	Loss of soil resource as a result of construction activities	• Soil for the purpose of rehabilitation will be stripped from cleared area. • Soils will be stockpiled and stored using the following principles: o Usable soil will be stripped and stored with as little compaction as possible; o Stockpile areas will have their soil stripped to conserve the seed bank; o Single handing will be practiced where possible; o Stockpiles that are likely to remain undisturbed for 12 months or more will be revegetated; and o Usable soil will be respread with as little compaction as possible. • Land to which soil has been applied will be revegetated. • Compacted soils will be ripped and profiled. • Construction of water management infrastructure will commence prior to construction of the ROM and Product stockpiles to prevent soil erosion.	Throughout the Construction Phase	• Manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331).
	Increased nuisance dust affecting adjacent landowners during construction	• Only the immediate footprint of the area will be cleared. • The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • Dust suppression via means of water spraying will be implemented on the service roads to reduce potential dust. • The mine will make use of the existing tarred road	Throughout the Construction Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		network. • The mine will maintain internal roads in accordance with the existing mine road management plan. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.		
	Increase in ambient noise on adjacent landowners during construction	• A noise monitoring programme will be implemented prior to construction. • The mine will maintain a noise complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out. • Construction vehicles will be serviced at regular intervals to minimise noise generation. • A high level of maintenance of construction vehicles, including intake and exhaust mufflers will be ensured. • Equipment for maintenance will be withdrawn if changes in noise emissions characteristics are noticeable.	Throughout the Operations Phase	• Compliance with SANS 10103 Acceptable Ambient Levels.
	Contamination of surface water and groundwater quality during operations	• Clean water will be diverted around the stockpiles and dirty water from the stockpiles will be diverted to the proposed Pollution Control Dam. • The mine will undertake regular surface water monitoring to identify any potential contamination of adjacent watercourses. Should pollution be identified within the watercourse, the source of the pollutants will be identified and the applicable remediation measures will be implemented. • Storm water containment will be implemented for the Stockpiles as per the Stormwater Management Plan in the IWWMP. • Mine employees and contractors will be trained on how to deal with incidents involving hydrocarbons and other potential contaminants. • A leak/spill detection plan will be devised and implemented for all possible areas of leaks/spillages. • A suitable liner has been designed and installed during	Throughout the Operations Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines. • GN Regulation 704 Use of Water for Mining and Related Activities. • Anglo American Policies and Guidelines to manage and remediate spills.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		the Construction Phase to prevent seepage. Prior to the installation of the liner, the site will be suitably prepared and compacted. • The mine will undertake regular groundwater monitoring from existing monitoring boreholes to identify any potential contamination of groundwater resources. Should pollution be identified within the groundwater resources, the source of the pollutants will be identified and the applicable remediation measures will be implemented.		
	Increased nuisance dust affecting adjacent landowners during operations	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out.	Throughout the Operations Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan
	Contamination of surface water and groundwater resources due to spillages or seepgae during closure	• The removal of material will be in accordance with the mine's Rehabilitation and Closure Action Plan. • All ROM and Product material will be removed from site. • The mine will rehabilitate and vegetate the stockpile footprint. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation. • The mine will inspect the vegetation establishment. • The mine will undertake post-closure surface water and groundwater monitoring until it can be demonstrated that potential for the generation of pollutants is low.	Throughout the Closure Phase	• GN Regulation 704 Use of Water for Mining and Related Activities. • Water management as per Department of Water and Forestry (DWAF) Best Practice guidelines.
	Increased nuisance dust affecting adjacent landowners during closure	• The mine has an existing dust monitoring programme to assess the dust impacts. The dust monitoring applicable to the Project will be incorporated into the existing programme and dust suppression will be undertaken where required. • The mine will rehabilitate and vegetate the stockpile footprint as per the mine's Rehabilitation and Closure Action Plan. Upon rehabilitation, the mine will reseed indigenous grasses and remove alien vegetation.	Throughout the Closure Phase	• GNR 893 Minimum Emission Standards • Anglo Air Quality Performance Standards • Highveld Priority Area Air Quality Management Plan

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
		• The mine will inspect vegetation establishment. • The mine will maintain a dust complaints register and capture the complaints in the existing grievance mechanism. The grievance will be investigated by the applicable mine representative in order for the complaint to be resolved and closed out		

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 Regulation 22 (2) (d) as described in 2.4 herein.

Although closure is not imminent, New Denmark Colliery has embarked on a closure planning process in line with corporate closure requirements. The process followed is to develop a closure plan for the mine lease area as a whole. As the De-stoning Plant and associated infrastructure falls within the larger New Denmark area, it is appropriate that the final land use vision and closure objectives developed for the colliery as a whole be adopted for the project. Using available baseline and operational information, as well as identifying the opportunities and constraints imposed by the colliery on the environment and the environment on the colliery, the following post closure land use vision has been developed for the colliery:

- To progressively reinstate a post-mining landscape that improves local spatial development patterns and maximises socio-economic opportunities, by supporting sustainable agricultural production, while maintaining essential ecosystem services.

Given that the De-stoning Plant is a small component of the colliery, the above post closure land use vision has been modified to reflect a post closure land use objective consistent with the context of the project and the land capability mosaic associated with the site where the project is to be developed. The post closure land use objective for the Destoning Plant is therefore:

- To reinstate the areas where infrastructure is removed through decommissioning activities to an overall land capability commensurate with that of the immediate periphery of the project, focusing on implementing rehabilitation activities that makes socio-economic post closure utilisation of areas rehabilitated, possible.

To assist with achieving the post closure land use objective, sub objectives have been developed for implementation at closure of the De-stoning Plant. These are in line with the closure objectives of the colliery and the sub objectives for the project are:

- Compliance with local legislation, regulations and guidelines (such as National Environmental Management Act, Mineral Petroleum Development Resources Act and the National Water Act);
- Establishment of an agreed post closure land use in consultation with stakeholders taking consideration of the limitation imposed by the biophysical environment; and

- Implementation of closure actions to limit the residual risk to a level acceptable to New Denmark Colliery and affected stakeholders.

The closure objective and sub objectives are largely developed to manage residual and latent risks and establish post closure land uses aligned with the pre-mining land capability, established during the baseline investigation. The current status quo relating to pre-mining land capability is that the area influenced by the De-stoning Plant is limited in terms of the land capability classes present (as defined by the Chamber of Mines Guideline, 1991), with the area dominated by friable soils with a land capability rated as good grazing potential. The area immediately under the De-stoning Plant has been rated as wilderness. Areas of wet base soils (wetland land capability as per the Chamber of Mine classification) are located to the south and east of the infrastructure, but these areas will not be significantly directly influenced by the construction of infrastructure. The baseline investigation also indicated that although some soil depths are reflective of a arable status (>750mm), the growth potential (nutrient status and soil water capabilities) and ability of these soils to return a cropping yield equal to or better than the national average is lacking. This is due mainly to the poor rainfall as well as the structured nature of the soils. These soils would therefore not be considered arable as per the Chamber of Mines Classification, without anthropogenic inputs such as irrigation and fertilisers. This is observed in the pre-mining land use, where some areas of the site are utilised for maize cultivation.

Given that the majority of the area influenced by the De-stoning Plant is good grazing potential, the post closure land use objectives will be implemented in a manner whereby rehabilitation activities are undertaken to develop post closure land capabilities that will support grazing activities once New Denmark Colliery has relinquished responsibility for the management of the footprint after a closure certificate has been issued.

Besides being aligned with the baseline land capability of the area, the above post closure land use objective is aligned with the baseline vegetation conditions, which will be influenced by the construction of project infrastructure. The areas influenced are described as degraded grassland habitats used for grazing and adjacent maize lands.

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

During the stakeholder engagement process for the Impact Assessment Phase, the objectives outlined in PART B, Section 1 (i)(1)(a) above will be introduced and discussed.

Stakeholder engagement during the Impact Assessment Phase will involve the availability of the EIA/EMP and meetings with stakeholders to provide information on the following:

- The project description (final site layout, all alternatives investigated) and the surrounding baseline environment;
- Findings from the specialist studies undertaken;
- Potential biophysical and socio-economic impacts during construction, operations, closure and post-closure phases of the project;
- Management/ mitigation measures developed to address the potential impacts;
- The closure objectives, plan and financial provision; and
- Details on how stakeholders can comment on the EIA/EMP.

(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 new proposed infrastructure and activities for NDC (see **Appendix 4)** are expected to require rehabilitation and closure at the end of the life of the operation:

- De-stoning Plant and associated infrastructure – 4.50 ha;
- Discard Facility and associated infrastructure - 23.47 ha;
- Pollution Control Dam and associated infrastructure - 3.13 ha;
- Process Water Dam and associated infrastructure - 1.67 ha; and
- Stockpiles and associated infrastructure - 4.07 ha.

Assumptions

This plan has been developed based on available information including environmental data. However, although baseline information is available, there is the expectation that further information will be collected during the operational period. Given that further information may become available, it is necessary to make a number of assumptions about general conditions, and closure and rehabilitation of the facilities at the site to develop the proposed closure actions. As additional information is collected during operations, these assumptions will be reviewed and revised as appropriate.

The assumptions used to create this plan are as follows:

- The closure period will commence once all of the ore at the Life of Mine (LOM) stockpiles has been processed and all of the product has been removed from the Product Stockpile. Prior to this period, facilities that are no longer needed to support processing will be closed;
- Vegetation establishment will be in line with the rehabilitation program for the larger New Denmark Colliery and will be implemented to be consistent with the New Denmark Colliery Biodiversity Action Plan (BAP);

- Closure water quality compliance criteria will be governed by the pending unissued Water Use Licence (WUL);
- Water management infrastructure developed for the operational phase will be redundant at the end of the life of the project and will therefore be demolished;
- Buildings and structures that are not retained for post-closure use, sold or used by another party will require demolition;
- All non-hazardous waste generated during decommissioning will be suitable for placement in the nearest municipal general waste dump;
- Hazardous waste will require disposal at a commercial waste management facility;
- Roads not required for post closure activities will be rehabilitated;
- Conditions in the WUL will inform the exact nature of the covers required on the Discard Disposal Facility. For purposes of this plan, it has been assumed that a low permeability cover and a growth medium cover supporting vegetation will be required in the final closure design, with the purpose of this cover to limit the generation of saline seepage from the Discard Disposal Facility.

Rehabilitation Action Plan

The actions that NDC intends on undertaking at the end of the life of project are described below. These actions are designed to comply with the requirements of this rehabilitation plans objectives.

Infrastructure

All infrastructure for which there is no approved third party post closure use will be decommissioned and the footprints reclaimed for the establishment of pre-construction land capability. Infrastructure where there is a third party use will be legally transferred to the relevant parties.

Where practicable, equipment and materials with value will be sold and removed from the site. All other equipment will be demolished and disposed of off-site. Equipment with scrap or salvage value will be removed from the site and stored in a temporary area designated for this purpose during the closure period.

A soil contamination investigation will be conducted on completion of demolition activities, particularly in excavations remaining open following decommissioning. The purpose of this is to identify areas of possible contamination and design and implement appropriate remedial measures to ensure that the soil closure criteria are obtained.

Excavations remaining after demolition, foundation and slab removal, as well as those where contamination remediation has been undertaken, will be filled with soil to a depth required to establish the post closure land capability.

Closure actions will include:

- All power and water services to be disconnected and certified as safe prior to commencement of any demolition works;
- Salvageable equipment will be removed and transported offsite prior to the commencement of demolition;
- All fittings, fixtures and equipment within buildings will be dismantled and removed to a designated temporary disposal yard;
- Conveyor belting will be removed from the superstructure prior to demolition of the structures. This will include removal of supporting plinths along the alignment of the conveyor belt;
- All tanks, pipes and sumps to be flushed or emptied prior to removal to ensure no residue remains;
- All above ground electrical, water and other service infrastructure and equipment to be removed and disposed of as general waste or if they have a salvage value removed to a designated temporary salvage yard;
- Electrical, water and other services that are more than 700 mm below ground surface will remain, all others at a shallower depth will be excavated and disposed of;
- Concrete slabs and footings will be broken and disposed of as general waste; and
- Clean-up carbonaceous veneer and dispose of onto the proposed discard dump.

Roads and Parking Areas

The access and servitude roads and the parking area will be closed. Closure actions will include:

- Removal of all signage, fencing, shade structures, traffic barriers, etc.;
- All surfaces to be ripped and any berms along the roads to be graded back over the surface;
- All concrete lined drainage channels and sumps to be broken up and removed;
- All potentially contaminated soils are to be identified and demarcated for later remediation;
- All areas treated with saline dust suppression water, bituminous products or other hydrocarbon based sealants need to be treated as “sealed” roads with the upper surface ripped and removed to designated contaminant disposal areas; and
- Following ripping, vegetation to be established on the surface.

Process and Return Water dam

The Process Water Dam will be removed once the stockpiles and plant infrastructure has been removed and vegetation established. The Return Water Dam and associated drainage infrastructure will remain until the low permeability cover has become established on the Discard Disposal Facility and drain-down from the facility has reduced to insignificant quantities. Although the timing of the closure and rehabilitation of the two dams will be different, the rehabilitation activities are similar in that both facilities will be reclaimed and the areas shaped to form stable landforms congruent with the surrounding landscape. Closure actions for the dams will include:

- The demolition of all concrete structures;
- The removal of any silt that accumulated in the dam;
- All liners are to be removed. These will require testing to determine whether there are secondary precipitated adhering to the liner surface, which may render these liners as hazardous. Liners to be disposed of in commercial facilities as either general or hazardous waste depending on the outcomes of the testing;
- Test soils in basement to ensure that there is no residual contamination associated with leakage, and if necessary, manage soils in line with the requirements of the National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 37603 No 331);
- Backfilling excavations with material removed during construction which will be located adjacent to the PCD; and
- Profile footprint to be free draining with no low points to accumulated water.

Footprints

Following demolition of infrastructure at the plant, the removal of infrastructure below stockpiles, the footprints of the rehabilitated dams and the road surfaces prepared by ripping, the remaining footprints will be returned to a land use as far as reasonably and practically possible similar to that which existed prior to construction. This will be achieved by implementing the following closure actions:

- Footprints to be regraded to a topography consistent with the surrounds to control storm water runoff and erosion;
- Deep ripping with a tine of at least 500 mm;
- Placement of soil stockpiled prior to construction. As the post closure land use is envisaged to be grazing, the thickness of soil replaced must as a minimum be 500 mm across the footprints where soils will be replaced;

- Given that there may be the degradation of soils in stockpiles, there may be the need to add soil ameliorants depending on the outcome of the soil fertility analyses, after placement;
- Footprints to be ploughed parallel to the contours after soils and ameliorants placed to mitigate compaction which may have occurred during soil placement; and
- Vegetation to be established as per the Biodiversity Action Plan for NDC as a whole.

Discard Disposal Facility

Although there is a low potential that acidity will be produced from the dump or metals leached in significant concentrations, there is the potential that salinity may be elevated above acceptable levels in the seepage. The effects on groundwater will be limited as a result of the inclusion of a barrier system in the design of the Discard Disposal Facility. However, unless infiltration is limited at closure, there is the potential that rainfall infiltrating the facility will continually generate contact water requiring management. This could be achieved by retaining the return water dam, however, there are inherent post closure risks associated with the retention of the dam. The closure design of the Discard Disposal Facility therefore needs to include low permeability covers to limit infiltration.

As there is the potential risk that humans or animals accessing the Discard Disposal Facility after closure may damage the covers placed on the facility, thereby limiting the covers potential to minimize infiltration, the closure of the Discard Disposal Facility will not be to a specific post closure land capability. However, the specific objective for the facility will be to implement closure activities which will result in a stable landform capable of supporting a vegetation community analogous with surrounding grasslands, where the generation of contact water is limited by the incorporation of appropriate covers in the closure design. Closure actions will include:

- Slopes steeper than the design of 23°, will be reshaped to 23° on condition that the extended footprint remains within the permitted boundary. Where footprint constraints limit the potential to form the design slope, alternatives closure designs will be investigated;
- The final design and engineering of the cover will be determined based on operational monitoring data from the facility. However, it is likely that the cover will include one or more layers of low permeability material such as compacted clay or laterite, as well as a drainage layer;
- Growth medium consisting of recovered soils will be placed to form an average of 300 mm of cover on the dump; and
- Vegetation will be established as per the NDC Biodiversity Action Plan.

Relinquishment

The above action plan is designed to achieve the closure objective of returning the post closure land capability to one capable of supporting closure activities associated with grazing, where legal obligations are adhered to and residual or latent risks are acceptable to stakeholders. This will be achieved by removing the infrastructure from the landscape through demolition activities of infrastructure (plant, roads, conveyors etc.) and the rehabilitation of remaining footprints (dams and stockpiles etc.). All that will remain in the landscape will be the rehabilitated Discard Disposal Facility. Residual or latent risks associated with this facility are considered by the EAP to be low, however, as with any infrastructure remaining on surface, residual or latent risks may be associated with the structure. The risks that the EAP can currently identify are:

- Climatic changes which may accelerate erosion on covers, potentially allowing rainfall infiltration and the continued generation of saline contact water as seepage; and
- Human or animal damage to covers potentially allowing rainfall infiltration and the continued generation of saline contact water as seepage.

Following the implementation of the Action Plan, it is necessary to have measurable criteria against which to assess the effectiveness of the plan and its implementation. These criteria will assist in identifying when the standard of closure achieved is sufficient to relinquish responsibility for the area. The site specific relinquishment criteria for the De-stoning Plant are listed below. Once it can be demonstrated through the collection of monitoring data, that the relinquishment criteria have been achieved, NDC can then confirm that rehabilitation and closure objectives for the project have been met.

- Groundwater and Surface Water - Compliance with the WUL;
- Air quality- Compliance with the standards as per the National Environmental Management: Air Quality (Act 39 of 2004);
- Soil quality - Soil quality as assessed against the Norms and Standards to support Chapter 8 of NEM:WA;
- Land productivity - Land capability and productivity similar to that which existed prior to mining;
- Erosion - Implementation or construction of erosion control measures;
- Safety / stability - The site is safe for use by humans and animals, including in the foreseeable future in compliance with Occupational Health and Safety Act 85 of 1993 and relevant Regulations; and
- Vegetation - Establishment of self-sustaining vegetation population which stabilizes soils and is not invasive to the region.

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

The rehabilitation actions that NDC intends on undertaking at the end of the life of project are designed to comply with the requirements of the closure objectives.

Using available baseline and operational information, as well as identifying the opportunities and constraints imposed by the colliery on the environment and vice versa, the following post closure land use vision has been developed for the colliery. To progressively reinstate a post-mining landscape that improves local spatial development patterns and maximises socio-economic opportunities, by supporting sustainable agricultural production, while maintaining essential ecosystem services.

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

Calculating the quantum is supported by a Guideline used by the DMR (Guideline Document for the Evaluation of the Quantum of Closure Related Financial Provision Provided by a Mine, Department of Minerals and Energy, 2005). The approach to calculating the closure quantum as specified in the DMR Guideline which was utilised in this assessment has been summarised in PART A, Section 3 (g)(iv)(s)(i) above.

The financial provision is detailed in Table 23.

Table 23: Financial Provision for New Denmark Colliery

YEAR OF ASSESSMENT	**2015**
RISK CLASS	**High risk (A)**
ENVIRONMENTAL SENSITIVITY	**Medium**
NATURE OF TERRAIN/ACCESSIBILITY (WF 1)	**Flat**
PROXIMITY TO URBAN AREA (WF 2)	**Peri Urban**

	Main Description	Units	Amount	DMR Master Rate	DMR Multiplication Factor	Weighing Factor 1	Amount
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m^3	14 687	12.91	1.00	1.00	R 189 611.75
2 (A)	Demolition of steel buildings and structures	m^2		179.89	1.00	1.00	R 0.00
2(B)	Demolition of reinforced concrete buildings and structures	m^2	17 360	265.11	1.00	1.00	R 4 602 309.60
3	Rehabilitation of access roads	m^2		32.19	1.00	1.00	R 0.00
4(a)	Demolition and rehabilitation of electrified railway lines	m		312.45	1.00	1.00	R 0.00
4(b)	Demolition and rehabilitation of non-electrified railway lines	m		170.43	1.00	1.00	R 0.00
5	Demolition of housing and facilities	m^2		359.79	1.00	1.00	R 0.00
6	Opencast rehabilitation including final voids and ramps	ha		188 604	0.52	1.00	R 0.00
7	Sealing of shafts, adits and inclines	m^2		96.57	1.00	1.00	R 0.00
8(a)	Rehabilitation of overburdens and spoils	ha		125 736	1.00	1.00	R 0.00

	Main Description	Units	Amount	DMR Master Rate	DMR Multiplication Factor	Weighing Factor 1	Amount
8(b)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt producing waste)	ha	1.9	156 602	1.00	1.00	R 303 807.28
8(c)	Rehabilitation of processing waste deposits and evaporation ponds (acid, metal rich waste)	ha	25	454 846	0.80	1.00	R 9 246 099.93
9	Rehabilitation of subsided areas	ha		105 285	1.00	1.00	R 0.00
10	General surface rehabilitation, including grassing of all denuded areas	ha	17.6	99 603.98	1.00	1.00	R 1 755 022.13
11	River diversions	ha		99 603.98	1.00	1.00	R 0.00
12	Fencing	m		113.62	1.00	1.00	R 0.00
13	Water management	ha	42.1	37 872.23	0.67	1.00	R 1 068 008.25
14	2 to 3 years of maintenance and aftercare	ha	42.1	13 255.28	1.00	1.00	R 558 047.29
					Sub Total 1 (At Closure)		**R 17 722 906.23**
					Weighting Factor 2		
					1.05		R 18 609 051.54
1	Preliminary and General	12% of Sub Total 1 if less than R100 mill 6% of Sub Total 1 if more than R100 mill					R 2 233 086.18
2	Contingency	10% of Sub Total 1					R 1 860 905.15
						Sub Total 2	**R 4 093 991.34**
						Sub Total 3	**R 22 703 042.88**
	VAT @ 14%						R 3 178 426.00
						Grand Total - Sub Total 3	**R 25 881 468.88**

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

The provision is reviewed annually for adequacy and amended to compensate for new activities and/or inflation. During the annual review, confirmation will be provided that this amount can be provided for from operating expenditure.

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

g) *Monitoring of Impact Management Actions*
h) *Monitoring and reporting frequency*
i) *Responsible persons*
j) *Time period for implementing impact management actions*
k) *Mechanism for monitoring compliance*

(g) Monitoring of Impact Management Actions

NDC has an ongoing monitoring programme for existing operations to ensure environmental requirements stipulated in existing EMPs are complied with. NDC will include monitoring for all impacts from new activities proposed for the De-stoning Plant and associated infrastructure into the existing monitoring programme. The following impacts and environmental components are being monitored:

- Topography (surface movement/ subsidence);
- Surface water;
- Groundwater;
- Terrestrial ecology;
- Air quality; and
- Noise.

(h) Monitoring and reporting frequency

The monitoring of impacts and reporting frequency will be different for the various environmental aspects. Table 24 details the environmental aspects to be monitored, the component of the aspect and the frequency of data collection and reporting.

Table 24: Environmental components to be monitored and frequency of monitoring

Aspect	Component	Data collection frequency	Reporting frequency
Topography	Surface movement (subsidence)	N/A	Annual reporting
Surface water	Water quality	Monthly sampling	Quarterly reporting
	Water quantity		
Groundwater	Water quality	Quarterly monitoring	Quarterly reporting
	Water quantity		
	Borehole depths	Annually	Annual reporting
Terrestrial ecology (sensitive landscapes)	Biomonitoring in wetlands and tributaries.	Annually	Annual reporting
Air quality	Dust fallout, PM_{10}	Monthly sampling	Annual reporting
Noise	Decibel readings of machinery and vehicles	Random readings will be taken	Annual reporting
	Updating of baseline noise information	Random readings will be taken	Every two years, or when complaint is received

(i) Responsible persons

NDC's Environmental Co-ordinator will be responsible for ensuring that all necessary environmental monitoring required for the De-stoning Plant is undertaken as per the monitoring programmes.

(j) Time period for implementing impact management actions

Impact management actions will be undertaken throughout each phase of the project, which includes construction, operation and closure. The time period for implementation has been included in Table 22 PART B, Section 1 (f) above.

(k) Mechanism for monitoring compliance

The mechanism for monitoring compliance is described in Table 25.

Table 25: NDC Mechanisms for monitoring compliance

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
• De-stoning Plant and associated infrastructure/ activities • Discard Disposal Facility and associated infrastructure/ activities (return water dam) • Pollution Control Dam and Process Water Dam (channels and pipelines) • Run of Mine/ Product Stockpile and associated infrastructure/activities	Contamination of stormwater and surface quality during construction, operations and closure	A grab surface water sample will be required from watercourses and water management facilities within the Project footprint as per the monitoring network.	The Environmental Co-ordinator at the Mine will be responsible for sourcing the necessary specialist to undertake the water monitoring.	• Surface water (quality and quantity) will be sampled monthly and a monitoring report will be generated on a quarterly basis. • Impacts will be managed immediately should water monitoring detect contamination or a change in water quantity during all phases of the Project.
	Loss of groundwater resource due to contamination during operations and closure	Pump tests from the boreholes will be required and undertaken in accordance with the NDC borehole network.	The Environmental Co-ordinator at the Mine will be responsible for sourcing the necessary specialist to undertake the water monitoring.	• Groundwater quality and quantity will be monitored on a quarterly basis and reports will be compiled accordingly. • Borehole depth will also be monitored on an annual basis and reported on annually. • Impacts will be managed immediately should groundwater monitoring detect contamination or a change in water quantity or depth in monitoring boreholes during all phases of the Project.
	Increased nuisance dust affecting adjacent landowners and mine employees during construction, operations and closure	Gravimetric analysis will be required for all dust buckets.	The Environmental Co-ordinator at the Mine will be responsible for sourcing the necessary specialist to undertake the air quality monitoring.	• Dust fallout and PM_{10} will be monitored on a monthly basis. • An annual report will be generated to illustrate the findings. • Air quality impacts will be managed immediately should monitoring detect an increase in nuisance dust. • Management actions will be applicable for all phases of the Project.
	Increase in ambient noise for adjacent landowners during construction, operations and closure.	Noise readings undertaken with a hand held monitoring device will be required.	The Ventilation Occupational Hygiene Superintendent at the Mine will be responsible for sourcing the necessary specialist to undertake the noise monitoring.	• Baseline noise levels will be monitored and updated from random readings, and will be reported on every two years, or when a complaint has been received. • Decibel readings of machinery and vehicles will also be undertaken and an annual report will be generated to illustrate the findings.

(l) Indicate the frequency of the submission of the performance assessment report.

The EMP performance assessment must be undertaken annually or as required by the Minister, by an external auditor and a report must be compiled and submitted.

Operational internal environmental inspections will need to be done once a week by the mine's Environmental personnel. An internal peer audit is done at least once a year by Anglo American Environmental Services. This involves environmental personnel from other mines coming to audit the mine on the Environmental Management Systems (EMS) and other environmental parameters.

(m) 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.

NDC will update their existing environmental awareness plan describing the manner in which the mine intends informing its employees of any environmental risks which may result from their work and the manner in which the risk must be dealt with to avoid pollution or degradation of the environment.

As per other AACSA current operations, NDC has an Environmental Management System (EMS) during operation phase.

Environmental conditions are included in any operational contracts, thereby making contractors aware of the potential environmental risks associated with the project and the necessity to prevent accidental spillages by the implementation of good housekeeping practices.

The following principles will apply to the Environmental Awareness Plan (safety, health and environmental (SHE) training):

- All personnel are as a minimum, undergo general SHE induction and awareness training;
- An Environmental Management Systems (EMS) coordinator has been appointed;
- The EMS coordinator will identify the SHE training requirements for all AACSA personnel and contractors. The training requirements are recorded in a training needs matrix indicating particular training that must be undertaken by identified personnel and contractors. The training matrix is administered by the Environmental Co-ordinator;
- Development of Training Programme; and

- General Awareness Training.

Personnel

All employees, current, new and contractors are to undergo induction, a part of which is environmental awareness training. At the end of this training, personnel are required to complete the awareness test and the level of awareness assessed by the Training Department. Re-testing or induction may be required.

All personnel performing tasks which can cause significant or major environmental impacts shall be competent on the basis of training, education and/or experience. This applies to, but is not limited to, supervisor level and above – i.e. operators, artisans.

Type

Awareness training will include the potential consequences of departure from specified operating procedures as well as significant environmental impacts, actual or potential, of their work activities.

Training is appropriate to the activity of individual employees.
Monthly environmental topics are generated to raise awareness of employees on environmental issues.

Evaluation

Evaluation of awareness and competency training are carried out through questionnaires or post-training tests conducted during training sessions and are also done through questioning of employees during audits.

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

Prior to the commencement of construction, NDC will update their existing Emergency Preparedness and Response Plan (EPRP) for the proposed NDC De-stoning Plant Project. The EPRP provides guidance on emergency procedures and should be updated for the operational phase following detailed engineering design of the project. The operational EPRP needs to provide comprehensive and site-specific measures and information for successful response to, and management of, emergencies arising from either internal or external factors. The EPRP applies to emergencies within the NDC project area, and as such encompasses incidents affecting the facilities,

infrastructure and operations. It further pertains to transportation of goods, raw material and finished products to and from the NDC mining area. The scope of the EPRP also extends to natural disasters, as well as to manmade and third party events with potential to impact on health and safety within the mine area. It furthermore covers emergencies arising from all mine phases, namely the construction, operation, closure and post-closure.

The EPRP will be subject to annual review and updating with records being retained of key changes, and those responsible for changes. A protocol for distribution and accessibility of components of the plan will need to be developed should aspects of the plan require confidentiality, such as for security reasons.

A description of the ongoing monitoring and management measures to be implemented, to provide the early warning systems necessary to avoid environmental emergencies.

Sound environmental management is a priority for NDC. A key component of implementing strong environmental practice will be the development of an environmental management system, which includes the EPRP and Occupational Health and Safety Plan (OHSP). In the event of an environmental emergency, these plans link to each other with actions commencing in terms of the relevant individual business unit emergency preparedness plans and procedures and escalating upwards to the corporate level.

Standard operating procedures (SoPs) should be developed for the following potential risk sources: accidents involving mine vehicles resulting in human injuries, accidental leaks and chemical and/or hydrocarbon spills. These SoPs should be reviewed annually to:

- Determine their effectiveness;
- Injuries or fatalities during all mining phases;
- Fires and/or explosions due to the lack of hydrocarbon management;
- Failure of the overburden facility;
- Subsidence of land;
- Flooding of the mine; and
- Failure of water management measures could result in pollution of the Grootdraai Dam.

Training will be an important activity supporting the implementation of a management system in the form of induction training on general environmental management and job specific training such as control and clean-up of hydrocarbon spills. The objective of an environmental training

program should be to develop a culture of environmental awareness, accountability, responsibility and prevention. Personnel at all levels should have sufficient knowledge and authority to proactively identify and prevent a situation that could potentially result in an environmental or safety emergency.

In addition, figures of the site layout with emergency response information for key areas will be made available to all personnel. Furthermore, a generic description of the dangers associated with being exposed to hazardous chemicals or materials will be developed as well as a description on the procedures to be implemented to help control hazardous substance releases.

Emergency response procedures will be developed for:

- Flammable and combustible materials;
- Corrosive materials;
- Oxidizing materials;
- Reactive materials;
- Biological and infectious materials; and
- Gaseous releases.

Environmental and social emergency planning and response requires the involvement of local communities, authorities and other external stakeholders in the EPRP. At present there is likely to be a very limited level of resources and capacity within the local communities and amongst local authorities in the greater project area to deal with emergency response.

(n) Specific information required by the Competent Authority

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

In terms of Section 41, Regulations 53 and 54 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), NDC is required to make financial provision for the interim and final rehabilitation activities on the site. This provision is reviewed annually for adequacy and amended to compensate for new activities and/or inflation. During the annual review, confirmation will be provided that this amount can be provided for from operating expenditure.

AACSA New Denmark Colliery, will provide for the closure liability associated with the Destoning Plant project either through a contribution to a Trust Fund or the purchase of a Bank Guarantee or a combination of the two methods as allowed by Regulation 527 of the MPRDA.

2) UNDERTAKING

The EAP herewith confirms

a) the correctness of the information provided in the reports ☒

b) the inclusion of comments and inputs from stakeholders and I&APs ; ☒

c) the inclusion of inputs and recommendations from the specialist reports where relevant; ☒ and

d) the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed; ☒

-END-

Undertaking from Anglo American Coal South Africa

I P.P DE WET the undersigned and duly authorised by Anglo American Coal South Africa (Pty) Ltd hereby undertake to give effect to every undertaking contained in this document, and accept full responsibility therefor.

Signed at NEW DENMARK COLLIERY on this 02 day of DECEMBER.

Witnesses:

1. P. JANKER

Signature

2. K. TRUEMAN

2/12/15.

Signature

Prepared by

Charissa Tomlin *Cand. Sci. Nat*
Environmental Scientist

Beth Candy *Pr.Sci.Nat*
Principal Environmental Scientist

Reviewed by

Briony Liber *CEAPSA*
Partner and Principal Environmental Consultant

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.

APPENDIX 1 – QUALIFICATIONS OF THE EAP

APPENDIX 2 – CURRICULUM VITAE OF THE EAP

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APPENDIX 4 – INFRASTRUCTURE LAYOUT MAP

APPENDIX 5 - ALTERNATIVES

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APPENDIX 7f – SOILS AND LAND CAPABILITY REPORT

APPENDIX 7g – SURFACE WATER REPORT

APPENDIX 8 – NDC MAP OF SENSITIVITIES

SRK Report Distribution Record

Report No.	434719/ EIA/EMP- Authorities Review
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Name/Title	Company	Copy	Date	Authorised by
Ms Ntombikhona Dlamini	Mpumalanga Department of Mineral Resources (DMR)	1-2	10/12/2015	Briony Liber
Mr Bishop Malatsi	Department of Water and Sanitation (DWS)	3	10/12/2015	Briony Liber
Ms Thabile Mahlaku	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDALEA)	4	10/12/2015	Briony Liber
Mr Frans Krige	Mpumalanga Tourism and Parks Agency	5	10/12/2015	Briony Liber
Mr Linda Tshabalala	Lekwa Local Municipality	6	10/12/2015	Briony Liber
CA Habile	Gert Sibande District Municipality	7	10/12/2015	Briony Liber
Kgadi Moremi	New Denmark Colliery	8-9	10/12/2015	Briony Liber
SRK Library	SRK Consulting	10	10/12/2015	Briony Liber
Enviro Department	SRK Consulting	11	10/12/2015	Briony Liber

Approval Signature: