# DOCUMENT APPROVAL RECORD

Report No.: JW215/13/D910-Rev 1

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<td>Olivia Bamford</td>
<td>October 2013</td>
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<td>Environmental Scientist</td>
<td>J.C Pretorius</td>
<td>June 2014</td>
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<tr>
<td>Approved</td>
<td>Senior Environmental Scientist</td>
<td>M van Zyl</td>
<td>June 2014</td>
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# RECORD OF REVISIONS AND ISSUES REGISTER

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PURPOSE OF THIS DOCUMENT

Delmas Coal (Pty) Ltd appointed Jones and Wagener (Pty) Ltd (J&W), an independent consulting company, to conduct an Environmental Impact Assessment (EIA) to evaluate the potential environmental and social impacts of the proposed project.

The project entails obtaining environmental authorisation for activities in terms of the provisions of the National Environment: Management Act (NEMA) for the upgrading and remediating of Delmas Coal’s discard dump and pollution control (PC) dams. A new mining area has also been obtained and thus the Delmas Coal Environmental Management Programme (EMPR), in terms of the provisions of the Mineral and Petroleum Resources Development Act (MPRDA), will need to be updated to include the new mining area and any new associated surface infrastructure. Additional activities entail the updating of the Integrated Water Use Licence Application and development of an Integrated Water and Waste Management Plan (IWWMP).

The Environmental Assessment Practitioner (EAP) is Mr Marius van Zyl of J&W.

For this project, the first phase of an EIA is the Scoping Phase. This is the phase during which the scope of the project is determined. During this phase public issues, concerns and suggestions are identified so that they can be evaluated by the EIA technical specialists during the next phase (the Impact Assessment Phase) of the EIA.

According to the EIA Regulations, Interested and Affected Parties (I&APs) must have the opportunity to comment on the proposed project and verify that all the issues raised during the Scoping Phase have been recorded. This is the main purpose of this Draft Scoping Report (DSR), which is available for comment for the period 29 August 2014 to 7 October 2014. Comments received will be considered in the Final Scoping Report (FSR), which will be submitted to the competent authority, the Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET) and the Department of Minerals (DMR) for approval to proceed with the EIA.

I&APs will also have an opportunity to comment on the findings of the EIA, which will be presented in a Draft Environmental Impact Report (DEIR). After public review, the DEIR will be updated and submitted to the MDEDET for a decision about the project. I&APs will be able to comment on the Final EIR in order to verify that their comments on the DEIR have been captured and addressed.

Summary of what the Draft Scoping Report Contains

This report contains the following for comment by stakeholders:

- The background and description to the proposed project, including alternatives;
- An overview of the EIA process, including the public participation process;
- A description of the existing environment in the project area;
- The potential environmental issues and impacts which have already been identified;
- The terms of reference for the specialist studies (Plan of Study for EIA); and
- A list of comments raised and responses to date (Issues Trail Report).

AN EIA CONSISTS OF SEVERAL PHASES

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<td>Detailed studies of potential impacts, positive and negative</td>
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YOUR COMMENT ON THE DRAFT SCOPING REPORT

The Draft Scoping Report is available for comment from 29, August 2014 to 7, October 2014 (40 days). This Draft Scoping Report has been distributed to the key commenting authorities, all key stakeholders, all those that have requested a copy and those registered on the stakeholder database.

Copies of the report are available at strategic public places in the project area (see below) and on the following website: www.jaws.co.za.

List of public places where the Draft Scoping Report is available:

<table>
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<tr>
<th>CONTACT PERSON</th>
<th>LOCATION</th>
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<td>Ms Lydia Mehlape</td>
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<td>013 665 1831</td>
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<tr>
<td>Ms Anna Potgieter</td>
<td>Leandra Public Library</td>
<td>017 683 1148</td>
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<tr>
<td>Ms Theodora Moloi</td>
<td>Devon Public Library</td>
<td>017 688 0028</td>
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<td>Isabel Knox</td>
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| Sibongile Bambisa/ Anelle Lötter | www.jaws.co.za | 012 667 4860 |

The report is also available electronically from the Public Participation Office at J&W.

You may comment on the Draft Scoping Report by:

- Completing the comment sheet enclosed with the report; and / or
- Writing a letter, or producing additional written submissions directly to the public participation office

DUE DATE FOR COMMENT ON THIS DRAFT SCOPING REPORT

7 October 2014

Name: Mr Marius van Zyl
Tel:  (011) 519 0200
Fax:  011 519 0201
E-mail: mail@jaws.co.za
SUMMARY OF THE DRAFT SCOPING REPORT

Overview of the Proposed Project

Delmas Coal (Pty) Ltd, a coal mining operation, is proposing to upgrade and remediate the discard dump and PC dams on the North Shaft section of the Colliery and extend their underground coal mining operations. Delmas Coal is located approximately 20 km to the south east of the town Delmas, in the Mpumalanga Province, and is one three subsidiaries of Kuyasa Mining (Pty) Ltd.

The aim of the project is to remediate and upgrade the facilities at the North Shaft but also to apply for authorisation in order to ensure that the facilities and operations are appropriately licensed according to national and local legislation. The main components of the project will be:

- Upgrading and possibly redesigning the two pollution control dams (PC dams);
- Remediating the existing coal discard dump to a standard the Department of Water Affairs (DWA) and other authorities are satisfied with; and
- Determining the extent and associated impacts of the new mining area.

In addition to the proposed upgrades, to the discard dump and the PC dams, and the application for the new mining areas, the existing Environmental Management Programme (EMPR), as required in terms of the provisions of the MPRDA, will be updated and amended. The existing Integrated Water Use Licence Application (IWULA) will be updated and supported by an Integrated Water and Waste Management Plan.

Purpose of this Report

This report addresses the requirements for Scoping Phase and the Plan of Study (PoS) for the Environmental Authorisation Process as outlined in the NEMA regulations and the MPRDA regulations. The aim of this Draft Scoping Report (DSR) is to:

- Provide information to the authorities as well as interested and affected parties (I&APs) on the proposed project;
- Provide information regarding alternatives that are being considered;
- Indicate how I&APs have been and are still being afforded the opportunity to contribute to the project, verify that the issues they raised to date have been listed in the DSR for consideration in the impact assessment phase of the environmental authorisation process;
- Describe the baseline receiving environment;
- Define the Terms of Reference (ToR) for specialist studies to be undertaken in the Impact Assessment Phase of the EIA; and
- Present the findings of the Scoping Phase in a manner that facilitates input by the I&APs and decision-making by the relevant authorities.

Process

As part of the project, the environmental authorisations and licences required to construct and operate the remediation and upgrading of Delmas Coal’s discard dump and PC dams, authorisations need to be obtained. In addition, approval needs to be obtained from the DMR for the amended EMPR. In order to do so, a Scoping and Environmental Impact Assessment Process (S&EIR) is being undertaken in line with the provisions of the National Environmental Management Act (NEMA), as amended. The S&EIR process and specialist studies to be undertaken will also support the applications for the required licences, approvals and environmental authorisations.
The EIA findings are used by Delmas Coal and authorities to obtain an objective view of the potential environmental, social and cultural impacts that could arise during the construction, operation and closure of the proposed remediation and upgrading of Delmas Coal's Discard Dump and PC Dams, and associated water management system, as well as the expansion of the underground mining operations. Measures for the avoidance or mitigation of negative impacts will be proposed and positive impacts will be enhanced. The outcome of the first phase of a S&EIR is the Scoping Report, which provides the basis for undertaking the Impact Assessment Phase of the project.

The process is summarised in the illustration below.

Potential Impacts Identified

The following potential impacts may result as a consequence of the proposed project.

- **Positive impacts:**
  - Potential short term job creation during construction phases to the upgrading of the two PC dams and associated works;
  - Insurance of the long term jobs of the employees currently working at Delmas Coal;
  - Improved surface water management;
  - Improved wetland habitat functionality;
  - Improved groundwater management; and
  - Improved dust and water management at the discard dump and coal processing plant.

- **Potential negative impacts:**
  - An increased negative impact on the water quality as a result of poor water management practices during construction and operation of the proposed PC Dam and Discard Dump improvements;
  - Disturbance of wetland habitat at the surface infrastructure of the refuge bays’ ventilation shafts;
  - Economic impact resulting from a loss of crop production due to construction activities and surface infrastructure of the refuge bays’ ventilation shafts;
  - Penetration of perched aquifer due to ventilation shaft drilling;
- Wetland destruction resulting from undermining;
- Impact on the Present Ecological State (PES) and Ecological Importance & Sensitivity (EIS) of the wetland / riparian and aquatic systems;
- Change in the conservation importance of the affected areas;
- Air emissions during construction and operation; and
- Possible noise generation during construction works.

In order to assess these potential impacts the following specialist studies are proposed to be undertaken as outlined in Section 8 of this report:

- Wetland delineation, wetland and aquatic assessment, including rehabilitation options;
- Air quality impact assessment;
- Hydrogeological assessment;
- Surface water impact assessment; and
- Geotechnical stability assessment.

**Way Forward**

This Scoping study has been undertaken with the aim of identifying potential positive and negative impacts on the environment and gathering issues, concerns and queries from I&APs. The Scoping report documents the process followed, the findings and recommendations of the Scoping Phase study, and the proposed Plan of Study for the EIA Phase to follow.

The way forward recommended by this study is as follows:

- Make the Draft Scoping Report available for public comment for a period of 40 calendar days;
- Update the Draft Scoping Report with comments received from I&APs;
- Make the updated Final Scoping Report available for public comment for a period of 21 calendar days;
- Submit the Final Scoping Report to the competent authority for permission to undertake the Impact Assessment Phase of the project;
- Upon approval of the Final Scoping Report, all I&APs are to be notified of the conditions of the MDEDET and the DMR for proceeding with the Impact Assessment Phase of the project;
- Execute the Plan of Study for Impact Assessment during the Impact Assessment Phase of the project.
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<tr>
<td>28 (1) g</td>
<td>Description of environmental issues and potential impacts, including cumulative impacts that have been identified</td>
</tr>
<tr>
<td>28 (1) h</td>
<td>Public participation process</td>
</tr>
<tr>
<td>28 (1) h (i)</td>
<td>Steps taken to notify I&amp;APs</td>
</tr>
<tr>
<td>28 (1) h (ii)</td>
<td>Proof of notice boards, advertisements and notices notifying potential IA's of the application</td>
</tr>
<tr>
<td>28 (1) h (iii)</td>
<td>Stakeholder database</td>
</tr>
<tr>
<td>28 (1) h (iv)</td>
<td>Issues and Response Report</td>
</tr>
<tr>
<td>28 (1) i</td>
<td>Description of the need and desirability of the proposed activity</td>
</tr>
<tr>
<td>28 (1) j</td>
<td>Description of the alternatives and the advantages and disadvantages that the proposed alternatives may have on the environment</td>
</tr>
<tr>
<td>28 (1) k</td>
<td>Copies of comments from stakeholders</td>
</tr>
<tr>
<td>28 (1) l</td>
<td>Minutes from I&amp;AP meetings</td>
</tr>
<tr>
<td>28 (1) m</td>
<td>Issues and Response Report</td>
</tr>
<tr>
<td>28 (1) n</td>
<td>Plan of Study for EIA</td>
</tr>
<tr>
<td>28 (1) n (i)</td>
<td>Description of the tasks proposed for the EIA phase, including specialist studies and the manner in which specialist studies will be undertaken</td>
</tr>
<tr>
<td>28 (1) n (ii)</td>
<td>Indication of the stages at which the competent authority will be consulted</td>
</tr>
<tr>
<td>28 (1) n (iii)</td>
<td>Description of the methodology to be used for assessing environmental issues and alternatives including the option of not proceeding with the activity</td>
</tr>
<tr>
<td>28 (1) n (iv)</td>
<td>Description of the public participation process to be conducted during the impact assessment phase</td>
</tr>
<tr>
<td>28 (o)</td>
<td>Any specific information required by the competent authority</td>
</tr>
<tr>
<td>28 (p)</td>
<td>Any other matters required in terms of Sections 24 (4)(a) and (b) of NEMA</td>
</tr>
</tbody>
</table>
MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT – SCOPING REPORT CHECKLIST

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Description</th>
<th>Reference in report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 49 (1)</td>
<td>A scoping report, in relation to a proposed mining operation, must:</td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Describe the methodology applied to conduct scoping;</td>
<td>Section 6</td>
</tr>
<tr>
<td>b.</td>
<td>Describe the existing status of the environment prior to the mining operation;</td>
<td>Section 4</td>
</tr>
<tr>
<td>c.</td>
<td>Identify and describe the anticipated environmental, social and cultural impacts, including cumulative effects, where applicable;</td>
<td>Section 7</td>
</tr>
<tr>
<td>d.</td>
<td>Identify and describe reasonable land use or development alternatives to the proposed operation, alternative means of carrying out the operation and the consequences of not proceeding with the proposed operation;</td>
<td>Section 5</td>
</tr>
<tr>
<td>e.</td>
<td>Describe the most appropriate procedure to plan and develop the proposed mining operation;</td>
<td>Section 3</td>
</tr>
<tr>
<td>f.</td>
<td>Describe the process of engagement of identified interested and affected persons, including their view and concerns; and</td>
<td>Section 6.2</td>
</tr>
<tr>
<td>g.</td>
<td>Describe the nature and extent of further investigations required in the environmental impact assessment report.</td>
<td>Section 8</td>
</tr>
</tbody>
</table>
KUYASA MINING

DELMAS COAL
ENVIRONMENTAL IMPACT ASSESSMENT

DRAFT SCOPING REPORT

REPORT NO: JW215/13/D910-Rev 1

1. INTRODUCTION

1.1 Background Information

Delmas Coal (Pty) Ltd (hereafter termed ‘Delmas Coal’), a subsidiary of Kuyasa Mining (Pty) Ltd (hereafter termed ‘Kuyasa’), is an existing mine located approximately 20 kilometres (km) south-east of the town of Delmas in Mpumalanga. The mine has been in operation since 1964. In 2002, the mine was sold to Kuyasa Mining by Ingwe Collieries Limited a subsidiary of BHP Billiton. Kuyasa Mining is a black empowered company.

The location of the mine is shown in Figure 1-1. Delmas Coal has potential coal reserves to mine until approximately 2044. Existing infrastructure of Delmas Coal is currently clustered into the following two operational areas:

- North Shaft, which includes an incline shaft, a coal washing, screening and processing plant, a discard dump, pollution control (PC) dams, Delmas Coal main offices, stores, workshops and a rail siding.

- South Shaft, which includes a vertical shaft used for personnel and equipment access to the underground workings. All coal mined in this area is transferred underground to the North Shaft area by conveyor, where it exits for washing and processing at the North Shaft plant.

The mine is in operation but the performance of its contaminated water management systems has come under scrutiny. In accordance with the approved Environmental Management Program (EMPR), water quality monitoring is being conducted in the Wilge River upstream and downstream of the Delmas Coal operations to determine any impacts on surface water. Findings have confirmed that seepage from the Discard Dump have influenced the water quality of the Wilge River, sampled downstream of the Delmas Coal operations. In addition to this, the two (2) unlined PC Dams periodically silt up and may discharge contaminated runoff into the natural environment.

In an effort to curb the continuation of these occurrences, Delmas Coal has embarked on a project to remediate and upgrade the Discard Dump, PC dams and related infrastructure, including the surface water drains from the coal processing plant discharging into the PC Dams. These proposed activities require authorisation though,
prior to the implementation and commencement thereof. The authorisations are required
in terms of the National Water Act (Act No. 36 of 1998) (NWA) and the National

Delmas Coal has also acquired mineral rights for an extensive area of 2 and 4 seam coal
to the west and south of the current underground workings around the South Shaft.
Delmas Coal intends to mine the newly acquired coal reserves thereby extending the life
of mine with an estimated 30 years. The proposed expansion of the operations requires
that the impacts thereof be assessed and that the existing EMPR be amended in terms
of the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)
1.2 **Regional Setting**

The regional location of the proposed project area is described in the section below.

1.2.1 **Municipal and Magisterial District**

The proposed project is situated within the Victor Khanye Local Municipality, within the Nkangala District Municipality of the Mpumalanga Province, South Africa.

1.3 **Project Team Details**

1.3.1 **Environmental Assessment Practitioner Details**

In terms of the National Environmental Management Act (NEMA) Environmental Impact Assessment (EIA) regulations, the proponent must appoint an Environmental Assessment Practitioner (EAP) to undertake the environmental impact assessment of an activity regulated in terms of the aforementioned Act. In this regard, Delmas Coal appointed J&W to undertake the EIA for the proposed remediation of Delmas Coal’s discard dump and PC dams, in accordance with the EIA Regulations promulgated in June 2010 in terms of the NEMA (Act 107 of 1998) which became effective on 2 August 2010. In addition, J&W will also be responsible for updating the existing EMPR, development of an Integrated Water and Waste Management Plan (IWWMP) and an amendment to the Integrated Water Use Licence Application (IWULA).

J&W was founded in 1966 by Winston Jones and Fritz Wagener. Their vision was to be specialist engineers, initially in industrial, structural and geotechnical engineering (based on their own expertise), but gradually extending into the fields of tailings and waste management, environmental science and engineering, and support infrastructure to the mining industry as the company developed.

From the outset the company actively strived to appoint, develop and promote young professionals of a high calibre and integrity. This resulted in a flat company structure, with a strong base of technical expertise reflected in numerous small teams of experts working together. As a result, the company is an acknowledged leader in a number of specialist fields with an impressive array of internationally known and acknowledged experts in our staff compliment.

Key areas in which we operate include the following:

- Geotechnical engineering;
- Structural engineering;
- Waste and Tailings;
- Environmental engineering and sciences; and
- Mining support infrastructure.

Environmental engineering and sciences has grown within the company over the last decade, initially in the field of EMPRs and small EIAs, developing into significant investigations on brownfields sites, quantifying and assessing contamination, and implementing remedial projects. Over the years we have worked with most types of wastes, including DNAPLs and POPs, cyanide, mercury and a range of other problem contaminants. We are currently active in the field of EMPRs, EIAs, Integrated Water Use Licences, Waste Classifications and Waste Management Licences.
J&W has no vested interest in the proposed project and hereby declares its independence as required by the EIA Regulations.

The details of the EAP representatives are listed below.

Name: Marius van Zyl, Johannes Cornelius (JC) Pretorius and Olivia Bamford

Company Represented: Jones and Wagener (Pty) Ltd.

Address: P O Box 1434, Rivonia, 2128

Telephone: (011) 519 0200

Fax: 011 519 0201

E-mail: mail@jaws.co.za

1.3.1.1. Expertise of the EAP

Table 1-1 below summarises the expertise of the main J&W team members.

<table>
<thead>
<tr>
<th>Name</th>
<th>Highest Qualifications</th>
<th>Experience</th>
<th>Professional Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marius van Zyl</td>
<td>BSc Honours Biochemistry</td>
<td>27 years</td>
<td>Pr.Sci.Nat</td>
</tr>
<tr>
<td></td>
<td>BSc Honours Environmental Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JC Pretorius</td>
<td>BSc Honours Environmental Management</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>Olivia Bamford</td>
<td>BSc Honours Environment, Ecology and Conservation. (Env. Sci)</td>
<td>&lt;1 year</td>
<td>-</td>
</tr>
<tr>
<td>Anelle Lotter</td>
<td>National Diploma in Journalism</td>
<td>20 Years</td>
<td>Member of the International Association of Public Participation (IAP2)</td>
</tr>
</tbody>
</table>

1.4 Applicant Details

In the section below, the details of the applicant are listed. This is the institution that will be legally responsible for the Remediation and Upgrading of Delmas Coal’s Discard Dump, PC Dams and new mining areas. The environmental authorisations and licenses to remediate and upgrade Delmas Coal’s Discard dump and PC Dams will be in the name of this legal institution:

Name: Mr Mpumelelo Saliwa

Company Represented: Delmas Coal (Pty) Ltd.

Address: Private Bag X0002, Delmas, 2210

Phone: 013 665 7000

Fax: 013 665 7016

1.4.1 Competent Authority Details
For the Environmental Authorisation as per the NEMA, the competent authority is the Mpumalanga Department Economic Development, Environment and Tourism (MDEDET).

For the EMPR as per the MPRDA, the competent authority is the Department of Mineral Resources (DMR).

The Department of Water Affairs (DWA) is a commenting authority on the EIA and the EMPR, but is the Competent Authority for the approval of the Integrated Waste and Water Management Plan (IWWMP), as well as the issuing of the water use license based on the updated IWULA.

1.5 Context of this Report

This report is the Draft Scoping Report (DSR), a key component of the environmental authorisation (EA) process for the proposed remediation and upgrade of Delmas Coal’s Discard Dump, PC Dams and associated infrastructure and expansion of the mining operations near Delmas in the Mpumalanga Province.

1.6 Objectives of this Report

This report addresses the requirements for Scoping and the Plan of Study (PoS) for the EIA as outlined in the NEMA regulations and the MPRDA regulations. The aim of this DSR is to:

- Provide information to the authorities as well as interested and affected parties on the proposed project;
- Provide information regarding alternatives that are being considered;
- Indicate how interested and affected parties have been and are still being afforded the opportunity to contribute to the project, verify that the issues they raised to date have been considered, and comment on the findings of the impact assessments;
- Describe the baseline receiving environment;
- Define the Terms of Reference (ToR) for specialist studies to be undertaken in the Impact Assessment Phase of the EIA; and
- Present the findings of the Scoping Phase in a manner that facilitates decision-making by the relevant authorities.

1.7 Project Progress

The project is currently in the Scoping Phase where the following has been completed:

- Pre-application consultation with relevant stakeholders and authorities (MDEDET and DWA);
- Completion and submission of the relevant application documentation;
- Placement of announcement advertisements;
- Compilation and distribution of a Background Information Document (BID);
- Compilation of a DSR; and
- Placing the DSR on public review (current).

Further information on the process being followed, see Section 6 of this report.
2. LEGAL REQUIREMENTS

2.1 Introduction

Environmental legislation in South Africa was promulgated with the aim of, at the very least, minimising and at the most preventing environmental degradation. The following Acts and Regulations are applicable to the proposed project:

2.2 Applicable Legislation

2.2.1 The Constitution of the Republic of South Africa (Act 108 of 1996)

Section 24 of the Constitution states that: Everyone has the right
(a) to an environment that is not harmful to their health or well-being; and
(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-
   o prevent pollution and ecological degradation;
   o promote conservation; and
   o secure ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development.

The current environmental laws in South Africa concentrate on protecting, promoting, and fulfilling the Nation’s social, economic and environmental rights; while encouraging public participation, implementing cultural and traditional knowledge and benefiting previously disadvantaged communities.

2.2.2 National Environmental Management Act (No 107 of 1998)

The EIA for this proposed project will be conducted in terms of the EIA Regulations that were promulgated in terms of Section 24 (5) of the NEMA, as amended.

The NEMA can be regarded as the most important piece of general environmental legislation. It provides a framework for environmental law reform and covers three areas, namely:

- Land, planning and development;
- Natural and cultural resources, use and conservation; and
- Pollution control and waste management.

The act is based on the concept of sustainable development. The objective of the NEMA is to provide for co-operative environmental governance through a series of principles relating to:

- The procedures for state decision-making on the environment; and
- The institutions of state which make those decisions.

The NEMA principles serve as:

- A general framework for environmental planning;
- Guidelines according to which the state must exercise its environmental functions; and
A guide to the interpretation of NEMA itself and of any other acts relating to the environment.

2.2.2.1. What are the NEMA principles?

Some of the most important principles contained in NEMA are that:

- Environmental management must put people and their needs first;
- Development must be socially, environmentally and economically sustainable;
- There should be equal access to environmental resources, benefits and services to meet basic human needs;
- Government should promote public participation when making decisions about the environment;
- Communities must be given environmental education;
- Workers have the right to refuse to do work that is harmful to their health or to the environment;
- Decisions must be taken in an open and transparent manner and there must be access to information;
- The role of youth and women in environmental management must be recognised;
- The person or company who pollutes the environment must pay to clean it up;
- The environment is held in trust by the state for the benefit of all South Africans; and
- The utmost caution should be used when permission for new developments is granted.

2.2.2.2. Environmental Impact Assessment Regulations: 543-546 of 18 June 2010

A full EIA is applicable to all projects likely to have significant environmental impacts due to their nature or extent, activities associated with potentially high levels of environmental degradation, or activities for which the impacts cannot be easily predicted. In comparison a Basic Assessment (BA) is required for projects with less significant impacts or impacts that can easily be mitigated. The difference between the processes relates to the nature of the proposed development in terms of its potential impact on the environment, and this is reflected in the level of detail that information is collected in as well as the level of interaction with I&APs.

Due to activities 5 and 19, in terms of Government Notice Regulation (GNR) 545 being triggered – see Table 2-2, a full Environmental Impact Assessment comprising both Scoping and Impact Assessment, is necessary for the proposed project. The various activities triggered by the NEMA are tabulated below.

Table 2-1: Activities requiring a Basic Assessment.

<table>
<thead>
<tr>
<th>Activity No</th>
<th>Description of Activity as per GNR 544</th>
<th>Activity or Infrastructure Triggering the Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity No: 11</td>
<td>The construction of: (i) canals; (ii) channels; (iii) bridges</td>
<td>The reconstruction of the pollution control dams and the pump station may be closer than 32 metres from a wetland, which is part of a watercourse. Some new canals for the conveyance of impacted mine water may also be constructed closer than 32 metres from a wetland.</td>
</tr>
<tr>
<td>Activity No</td>
<td>Description of Activity as per GNR 544</td>
<td>Activity or Infrastructure Triggering the Activity</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>(iv)</td>
<td>dams</td>
<td></td>
</tr>
<tr>
<td>(v)</td>
<td>weirs</td>
<td></td>
</tr>
<tr>
<td>(vi)</td>
<td>bulk storm water outlet structures</td>
<td></td>
</tr>
<tr>
<td>(vii)</td>
<td>marinas</td>
<td></td>
</tr>
<tr>
<td>(viii)</td>
<td>jetties exceeding 50 square metres in size;</td>
<td></td>
</tr>
<tr>
<td>(ix)</td>
<td>slipways exceeding 50 square metres in size;</td>
<td></td>
</tr>
<tr>
<td>(x)</td>
<td>buildings exceeding 50 square metres in size; or</td>
<td></td>
</tr>
<tr>
<td>(xi)</td>
<td>infrastructure or structures covering 50 square metres or more</td>
<td></td>
</tr>
</tbody>
</table>

where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.

**Activity No: 18**

The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from

(i) a watercourse;  
(ii) the sea;  
(iii) the seashore;  
(iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving

(i) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or

(ii) occurs behind the development setback line.

During the rehabilitation of the existing pollution control dams and the possible reconstruction of one of them, more than 5 cubic metres of soil may be excavated or deposited within a wetland, which is part of a watercourse. In addition, nine refuge bay boreholes will be drilled, some of these may be in wetlands, which is part of a watercourse.

**Activity No: 22**

The construction of a road, outside urban areas,

(i) where a reserve wider than 13.5 metres or  
(ii) where no reserve exists where the road is wider than 8 metres,  
(iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010

During rehabilitation and upgrading of the existing discard dump and pollution control dams, construction roads wider than 8 metres may be required to ensure earthmoving equipment maneuverability.

**Activity No: 39**

The expansion of

(i) canals;

Existing surface water canals may have to be expanded during the rehabilitation and upgrading of the discard dump, pollution control
<table>
<thead>
<tr>
<th>Activity No</th>
<th>Description of Activity as per GNR 544</th>
<th>Activity or Infrastructure Triggering the Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(ii) channels</td>
<td>dams and surface water management systems. This may occur closer than 32 metres from a watercourse.</td>
</tr>
<tr>
<td></td>
<td>(iii) bridges;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iv) weirs;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(v) bulk storm water outlet structures;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(vi) marinas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion will occur behind the development setback line</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) channels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iii) bridges;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iv) weirs;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(v) bulk storm water outlet structures;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(vi) marinas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion will occur behind the development setback line</td>
<td></td>
</tr>
<tr>
<td>Activity No: 47</td>
<td>The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre</td>
<td>During the upgrade of the discard dump and pollution control dams, the width of existing roads in the area may have to be increased by more than 6 metres to accommodate earthmoving equipment.</td>
</tr>
<tr>
<td></td>
<td>(i) where the existing reserve is wider than 13.5 metres; or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) where no reserve exists, where the existing road is wider than 8 meters excluding widening or lengthening inside urban areas</td>
<td></td>
</tr>
<tr>
<td>Activity No: 55</td>
<td>The expansion of a dam where:</td>
<td>Following an assessment of the existing dams, which may have a dam wall height of 5 metres or more, it may be decided to increase the height of one of the existing dams by more than 2.5 metres.</td>
</tr>
<tr>
<td></td>
<td>(i) the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, was originally 5 metres or higher and where the height of the wall is increased by 2.5 metres or more; or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) where the high-water mark of the dam will be increased with 10 hectares or more</td>
<td></td>
</tr>
</tbody>
</table>
Table 2-2: Activities requiring a Scoping and Environmental Impact Assessment Process

<table>
<thead>
<tr>
<th>Activity No</th>
<th>Description of Activity as per GNR 545</th>
<th>Activity or Infrastructure Triggering the Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.</td>
<td>The existing discard dump and pollution control dams of Delmas Coal is to be remediated and upgraded. The remediated and upgraded discard dump and pollution control dam(s) require a Section 21(g) water use license for the disposal of waste in terms of the provisions of the National Water Act. As Section 21(g) controls the release of pollution and effluent, Activity 5 of GNR 545 is triggered. An IWULA was submitted in 2011 to the DWA, but this application is still under consideration.</td>
</tr>
<tr>
<td>19</td>
<td>The construction of a dam where the highest part of the dam, as measured from the outside to of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.</td>
<td>The highest level of the pollution control dam wall may be equal or in excess of 5 metres when measured on the down slope side after being upgraded/reconstructed.</td>
</tr>
</tbody>
</table>

Table 2-3: Activities triggered in terms of Government Notice Regulation R546 of 18 June 2010 for a Basic Assessment

<table>
<thead>
<tr>
<th>Activity No</th>
<th>Description of Activity as per GNR 546</th>
<th>Activity or Infrastructure Triggering the Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for: (1) purposes of agriculture or afforestation inside areas identified in spatial instruments adopted by the competent authority for agriculture or afforestation purposes; (2) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be excluded from this list; (3) the undertaking of a linear activity falling below the thresholds in Notice 544 of 2010.</td>
<td>For the reconstruction of the pollution control dam and potentially new slurry ponds, an area of more than 5 hectares, containing indigenous vegetation, may have to be cleared. A construction camp and lay-down area may also be required.</td>
</tr>
</tbody>
</table>

2.2.3 National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act guides the management of water in South Africa as a common resource. The Act aims to regulate the use of water and activities which may impact on water resources through the categorisation of 'listed water uses' encompassing water...
extraction, flow attenuation within catchments as well as the potential contamination of water resources, where Department of Water Affairs (DWA) is the administering body in this regard. Should the proposed activities associated with the proposed project impact on water resources e.g. cross through rivers, the applicant would be responsible to obtain a water use license from the DWA. In the case of Delmas Coal, an amendment to the IWULA submitted in 2011 to the Department of Water Affairs will be required as the intended upgrading of the discard dump and the reconstruction of the two pollution control dams may trigger new water uses due to the potential disturbances in areas adjacent to wetlands and wetlands. In addition, the new mining area may potentially also trigger new water uses.

2.2.4 National Environmental Management: Waste Act (Act 59 of 2008)

A new era of an integrated waste management system in South Africa through the NEM:WA has been established. The NEM:WA came into effect in July 2009. Provisions have been made in the form of legislative and regulatory tools to facilitate and ensure implementation of the Act by all spheres of government. To this end, the Minister of the Department of Water and Environmental Affairs (DWEA) published a Waste Management Activity List in July 2009 which has clear thresholds on waste activities that need authorisation and licencing prior to commencement. The published Waste Management Activity List effectively replaces Schedule 1 of the NEMA and all waste related activities listed in EIA lists (GNR 544 and 546).

All waste-related activities listed in terms of section 24(2) of the NEMA have been repealed at the same time that the Minister published the new list of waste management activities in order to align the NEM:WA and the EIA regulations and to avoid the necessity to submit two applications for the same activity.

In terms of Section 4 of the NEM:WA, the act was not applicable to residue deposits and stockpiles, but with the promulgation of the NEM:WA Amendment Act (South Africa, 2014a) and the NEMA Amendment Act (South Africa, 2014b) the Minister of Environmental Affairs may make regulations pertaining to the management and control of residue stockpiles and residue deposits, such as the Delmas Coal stockpile. The Minister of Minerals will be the licensing authority for residue stockpiles and deposits. As the amendment acts become effective on 2 September 2014, a licence for the coal discard dump under the provisions of the NEM:WA may have to be applied for.

2.2.5 The National Heritage Resources Act (No. 25 of 1999)

The National Heritage Resources Act, 1999 (Act No. 25 of 1999) legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist’s recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA). Should the proposed activities impact on heritage resources, application to SAHRA would be required to obtain the necessary permits. The requirements of the National Heritage Resources Act have thus been addressed as an element of the EIA process, specifically by the inclusion of a Heritage Assessment.

2.2.6 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa’s biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed. Should protected
species and ecosystems be impacted on by the proposed upgrade or mining extension, this Act may be applicable and the necessary measures should be taken for implementation.

2.2.7 Protected species – Provincial Ordinances

Provincial ordinances were developed to protect particular plant species within specific provinces. The protection of these species is enforced through permitting requirements associated with provincial lists of protected species. Permits are administered by the provincial departments responsible for environmental affairs.

2.2.8 Mine Health and Safety Act

This Act makes provisions that address the health and safety of persons working at the mine. The Act addresses amongst others the:

- Safety requirements for the operation of plant machinery;
- Protection of persons other than persons at work against hazards to health and safety, arising out of or in connection with the activities of persons at work;
- Establishment of an advisory council for occupational health and safety; and
- Provision for matters connected therewith.

The law states that any person undertaking upgrades or developments for use at work or on any premises shall ensure as far as is reasonably practicable that nothing about the manner in which it is erected or installed makes it unsafe or creates a risk to health when properly used.

2.2.9 Information Series

The Department of Environmental Affairs (DEA) Information Series of 2002 and 2006 comprise 23 information documents. The documents were drafted as sources of information about concepts and approaches to Integrated Environmental Management (IEM). The IEM is a key instrument of NEMA and provides the overarching framework for the integration of environmental assessment and management principles into environmental decision-making. The aim of the information series is to provide general guidance on techniques, tools and processes for environmental assessment and management.

2.2.10 Mineral and Petroleum Resources Development Act (Act 28 of 2002)

The Mineral and Petroleum Resources Development Act (MDRDA) is the central Act governing mining in South Africa. The MPRDA repealed the Minerals Act, 50 of 1991 when it came into effect on 1 May 2004. The preamble to the MPRDA affirms the State’s obligation to protect the environment for the benefit of present and future generations, to ensure ecologically sustainable development of mineral and petroleum resources and to promote economic and social development. Broadly speaking, the MPRDA seeks to fulfil the obligation of the State to protect the environment and to ensure ecologically sustainable development through a system requiring a person who wishes to conduct mining operations to prepare and have approved an Environmental Management Plan (EMP or EMPR) and to manage the environmental impacts of its mining operations in accordance with the provisions contained in such an EMPR. The legislative bases relating to the management of the environmental impact of mining operations are set out in Chapter 4 (sections 39 to 47) of the MPRDA. The formal and substantive requirements with respect to the management of the environmental impacts of mining operations
(particularly with respect to EMPRs) are fleshed out in Part III of Chapter 2 of the Mineral and Petroleum Resources Development Regulations (MPRDR) promulgated in terms of Government Notice Regulation (GNR) 527 of 23 April 2004. These regulations are also applicable to Delmas Coal and as the mine has obtained additional mining rights, the existing EMPR will require amendment, updating and improvement.

3. PROJECT DESCRIPTION

3.1 Project Location and Properties

Delmas Coal is located approximately 20 km south-east of the town of Delmas. Delmas Coal is located on portions 16, 25 and 29 of the Farm Haverklip 265 IR, Mpumalanga. The proposed remediation and upgrading of the Discard Dump, PC Dams and associated infrastructure will not extend beyond the portions listed above. The farm portions listed in TABLE 3.1 below are portions on which Delmas Coal intends extending their underground mining operations. Underground mining is by bord and pillar method.
Table 3-1: Farm portions affected by proposed new underground coal mining by Delmas Coal

<table>
<thead>
<tr>
<th>Farm Name</th>
<th>Portion Number(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matjesgoedkuil 266 IR</td>
<td>2; 11</td>
</tr>
<tr>
<td>Enkeldebosch 301 IR</td>
<td>4; 8; 9; 10; 11; Re</td>
</tr>
<tr>
<td>Steenkoolspruit 302 IR</td>
<td>6</td>
</tr>
<tr>
<td>Holspruit 303 IR</td>
<td>1;Re</td>
</tr>
<tr>
<td>Rietfontein 313 IR</td>
<td>13; 14; 15</td>
</tr>
</tbody>
</table>

3.2 Background

Delmas Coal mine was opened in 1964 and was one of the first mines in South Africa to have their EMPR approved by government several years later. The mineral rights for Delmas Coal were originally owned by Ingwe Coal Corporation Limited, a wholly owned subsidiary of BHP Billiton (South Africa) Limited. BHP Billiton established a Black Economic Empowerment (BEE) deal with Kuyasa in 2002. Kuyasa was formed of Ingwe management in 1995.

3.3 Need and Desirability

South Africa is primarily reliant on electricity generation from coal-fired power stations. Renewable and alternative energy sources, including nuclear energy cannot yet meet the demands of the country’s electricity needs. Coal mining is therefore crucial to South Africa for the supply of coal to meet the energy needs of our developing economy. Delmas Coal’s provision of coal to Eskom plays a role in sustaining the energy needs of the country and contributes to the economy positively. In addition, Kuyasa Mining intends to construct and operate a 600 MW mouth of mine power plant, which will obtain low grade coal from Delmas Coal.

The use of fossil fuels for electricity generation is a major contributor to greenhouse gas emissions and is an unsustainable practice in the long run. Coupled with that coal mining in general impacts heavily on the natural and social environment. Therefore it is essential that coal mining must be conducted as efficiently and sustainably as possible in order to reduce its environmental impact as part of the value chain of fossil fuel usage for electricity generation.

It was identified that Delmas Coal are encountering issues of seepage from the Discard Dumps and siltation of the PC Dams that may allow for overflow of impacted mine water into the nearby Wilge River. The proposed upgrading and remediation of the Discard Dump, PC Dams and associated infrastructure will address the water management issues of the mine. The proposed project will therefore ensure that the mine will reduce its current effects on the receiving environment. In addition to the water management issues, air quality also needs to be addressed at the mine in order to improve the ambient air quality around the mine.

The proposed underground mining extension will allow for continued coal supply to the ever increasing power needs of the country.

The upgrades and remediation to Delmas Coal and additional mining will have the following benefits:

• Increased storage capacity for the plant to store future discard in a sustainable manner and reduce possible contamination;
• The PC Dam upgrades/reconstruction will prevent contaminated run-off overflowing to the surrounding environment;
• The upgraded PC Dam will contribute to improved surface water management;
• Interventions at the coal processing plant and progressive capping of the discard dump will improve the ambient air quality in the vicinity of the North Shaft of the mine;
• The new underground mining will extend the life of mine and therefore extend the duration of employment for current employees, which amounts to approximately 600 people.

3.4 Existing Infrastructure / Operations

The existing infrastructure at Delmas Coal is clustered on two areas namely North and South Shaft.

The following infrastructure is utilised at the North Shaft Complex:
• Offices;
• Change house;
• Kitchen;
• Conference Centre;
• Stores
• Workshop and assembly area;
• Diesel Tanks;
• General and hazardous waste storage area;
• Three brick plant dams for storage of raw water;
• North Shaft Tank;
• Plant (raw water) Reservoir;
• Sewage water conservancy tanks and French Drains;
• North Shaft Borehole;
• Two unlined PC Dams;
• Surface water management berms and V-drains, with silt traps;
• ROM and Product Stockpiles;
• Railway line and load out area; and
• Discard Dump and Slurry Ponds.

The Discard Dump, PC Dams, slurry ponds and surface water management systems are the focus of the proposed project. Currently they operate as follows:

The coal discard is collected at the coal processing plant and transported to the Discard Dump where it is required to be placed on a 1:5 slope and compacted. The slurry from the coal washing plant, when it is in operation, is stored in slurry facilities on the eastern end of the Discard Dump.
The PC Dams, which form a part of the contaminated water management system, are situated in close proximity to the Wilge River. The Primary (top) PC Dam is a return water dam designed to capture all contaminated water runoff from Delmas Coal’s North Shaft Complex, and from the Discard Facility. The Secondary (bottom) PC Dam is an evaporation dam designed to contain and evaporate any overflow from the top PC Dam up gradient thereof. The PC dams are often found to be silted up and the capacity of the dams is reduced, which needs to be addressed as part of the remediation design. If water from the bottom PC dam overflows, the water will enter the nearby Wilge River and may be adversely impacted. Groundwater seepage is also believed to occur from the PC Dams as the dams are not lined. **Figure 3-1** below indicates the positions of the Discard Dumps, stockpiles and PC Dams in relation to the Wilge River.
The South shaft complex comprises of:
- Offices;
- A change house;
- A kitchen
- Sewage treatment works;
- General and hazardous waste storage area;
- An assembly area and workshop;
- Diesel storage tanks;
- South Shaft Dam;
- South Shaft Tank; and
- South Shaft borehole.

3.5 Components of the Project

The project will include the following:
- A survey of the site and compilation of a site plan;
- Design of the proposed upgrades and remediation measures to the existing Discard Dump and pollution control facilities including:
  - Alternative pollution control facilities,
  - Alternative discard and/or slurry storage area (if necessary)
- Construction and operation of the proposed upgrades; and
- Decommissioning.

In addition, the new mining areas will also be develop by bord and pillar method. In terms of mine safety requirements, underground refuge bays needs to be developed. These bays needs to be linked to surface by boreholes through which emergency supplies and air can be supplied. It is planned that nine such boreholes will be drilled and maintained. Once the mine is taken out of operation, these boreholes will have to be sealed.

3.6 Major Activities of the Overall Project

There are five main phases within the proposed project, namely:
- Planning / Definition Phase;
- Construction Phase;
- Rehabilitation Phase;
- Operational and Maintenance Phase; and
- Decommissioning / Closure Phase.

Each of these phases is outlined below.

3.6.1 Planning / Definition Phase
During this phase, the proposed project is conceptualised and the potential ways to remediate and upgrade the Discard Dump and PC dams are evaluated. This includes the conceptual designs. In addition, a plant wide clean and impacted surface water plan, which is to be integrated with that Discard Dump and PC Dams, will also be developed and evaluated. **Section 5** evaluates the potential alternatives and from the evaluation it appears that the most feasible alternative option is to remediate and upgrade the current facility.

3.6.2 Construction Phase

Once the authorisation is received the construction of proposed project will commence. The Discard Dump will be remediated and PC Dams will be upgraded or possibly reconstructed. Neither the PC Dams, nor the Discard Dumps will cease to be utilised during construction as both are crucial to the operation of the mine. In addition, upgrades to the surface water management systems will also be constructed. Construction will be so designed, possibly in a phased approach, to allow for ongoing use of these facilities.

3.6.3 Construction Rehabilitation Phase

Rehabilitation of any surrounding areas impacted by construction must occur after construction.

3.6.4 Operational and Maintenance Phase

During operations and maintenance, the mine will collect surface runoff from the mine area and store it in the newly upgraded PC Dams. Coal discard will be stored on the newly remediated discard facility. Maintenance may include dredging of the PC dams should they become silted up. Ensuring the discard is stored at the recommended slopes and heights will ensure reduced erosion and subsequent deposition of material in the downstream mine facilities and water resources. The mine also has to maintain the refuge bay boreholes, therefore access to these are required.

3.6.5 Decommissioning / Closure Phase

Decommissioning and closure of the PC Dams and Discard Dumps will occur with the decommissioning of the mine in accordance with the EMPR and any other closure plans pertaining to mine infrastructure and facilities.

3.7 Overall Project Schedule

The estimated overall project schedule is as follows:

- Project concept and technical review: 2014
- Authorisation (EIA, WULA, EMPR and IWWMP): 2015
- Construction (phased): 2015 - 2016
- Operations: 2016 onwards
4. RECEIVING ENVIRONMENT

4.1 Introduction

This section provides a general description of the environment in which the proposed project will be located. The purpose of this section is to provide a perspective of the local environment within which the proposed infrastructure will exist and operate, with a view to identify sensitive issues/areas, such as wetlands or other ecological aspects, which need to be considered when conducting the impact assessment and designing the various components of the project.

4.2 Bio-physical Environment

4.2.1 Climate

4.2.1.1 Rainfall

Delmas Coal is situated in Mpumalanga province for which the mean annual rainfall is 736mm. The mine is located in the quaternary catchment B20E. The closest rainfall station with a long and reliable record is the station 0477309, named 'Delmas – Pol'. The rainfall record for this station extends from 1 January 1908 to 31 December 1999 (92 calendar years).

The mean annual precipitation (MAP) at Delmas Coal is: 680.7mm. The mean monthly rainfall depths are contained in Table 4-1 in millimetres.

**Table 4-1:** Mean monthly rainfall depths for weather station 'Delmas – Pol'

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>120.2</td>
<td>92.7</td>
<td>84.6</td>
<td>41.0</td>
<td>19.0</td>
<td>6.5</td>
<td>6.4</td>
<td>8.7</td>
<td>22.8</td>
<td>68.4</td>
<td>102.2</td>
<td>108.2</td>
</tr>
</tbody>
</table>

4.2.1.2 Evaporation

The closest evaporation station to Delmas Coal is the B2E001 station (Bronkhorstspruit dam). The mean annual evaporation (MAE) is 1532 mm (S-Pan). The monthly division of this MAE is given below in Table 4-2.

**Table 4-2:** Monthly evaporation at evaporation station B2E001

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>168.5</td>
<td>140.5</td>
<td>138.6</td>
<td>106.6</td>
<td>89.8</td>
<td>72.9</td>
<td>79.8</td>
<td>105.7</td>
<td>137.0</td>
<td>165.1</td>
<td>155.8</td>
<td>171.6</td>
</tr>
</tbody>
</table>

4.2.1.3 Wind

The original EMPR done in 1997 for Delmas Coal recorded the mean monthly wind direction as north-westerly and the mean monthly wind speed as 4.25m/s. However as there is no meteorological station for the area, the nearby Kendal Power Station data was used for the Proposed KiPower plant (with permission from Eskom) and is likewise applicable to Delmas Coal as it is north of the mine. Calm conditions with wind speeds below 1 m/s occurred 5.5 % of the time. Daytime conditions showed winds dominated by west-north-westerly, north-westerly and easterly directions. Night-time conditions
were characterised by winds from the east, west-north-west and north. In the summer months wind from the east and east-south-east dominated. In autumn, the dominant wind directions are east and west-north-west. In spring, wind flow was predominant from the west-north-westerly and the north and an increase in wind speeds were evident. The wind roses for the region are shown below in Figure 4-1.

**Figure 4-1:** Wind rose for the region
(Source: Airshed Planning Professionals, Air quality assessment for the proposed KiPower project)

4.2.1.4. Temperature

The original EMPR documented mean monthly temperatures of 19.3°C in the summer months (October to March) and 11.9°C in the winter months (April to September). Once again more recent data was obtained from Kendal Power Station where the temperature trends for the year 2006 are presented in Figure 4-2.
4.2.2 Air Quality

A comprehensive emissions inventory has recently been completed for the Mpumalanga Highveld region as part of the Highveld Priority Area (HPA) baseline study. Comprehensive dispersion modelling was done for the area using the CALPUFF model (DEA 2011). Results of this dispersion study predicts that the ambient air quality standards are to be exceeded for more than the allowed 1% of any one year. Pollutants that are measured include CO, NO₂, SO₂ and PM10. Delmas town appears to be a hot spot because of the contribution of domestic fires in the residential areas to air pollution (DEA, 2011).

As part of the Delmas Coal EMPR, air quality monitoring is taking place and results of which should be presented in quarterly environmental audits. Dust suppression at the plant area has been deemed inadequate on several audit occasions. The dust could also pose a health threat in addition to causing soil and surface water impacts.

4.2.3 Geology

Delmas Coal falls within the Highveld Coalfields. The coal seams that are being mined, are found within the Vryheid formation of the Karoo sequence. The Karoo sediments were deposited on shales, sandstone and dolomites of the Transvaal Supergroup. The Karoo sediments consist of the Dwyka formation at the base followed by the Vryheid Formation (NSS, 2011).

The number 2 and number 4 coal seams are mined as a part of the economic reserve. A dolomitic aquifer was identified by the original geohydrological consultant, but it was found to be north of the mining area and only used by local farmers. The aquifer dips, further south and remains untouched by the mining activities (NSS, 2011).

4.2.3.1 Sills

An olivine bearing (B4) dolerite sill is located above the No. 5 Seam of some the mined out areas of Delmas Coal. The sill is on average between 8-26m thick and reaches a thickness of between 30-40m thick on the farm Enkeldebosch 301IR. The sill is impermeable to groundwater. The north shaft discard dumps are built on top of the sill. (NSS, 2011).
4.2.4 Topography and Drainage

Delmas Coal is situated on a relatively flat and undulating topography typical of the region. It gives rise to some marshy areas and depressions, as well as perennial streams. The surface across the extent of the site, especially from North Shaft to South Shaft, varies in elevation drastically. The elevations of the land are from 1540 - 1640mamsl. The lowest point of the area is where the Wilge River runs through the landscape and between the two shafts – see Figure 4-3.

4.2.5 Soils

Delmas Coal falls on soils with high clay content in the south and soils with a plinthic catena in the northern parts. The clayey soils of the South are predominantly black and red structured soils. The plinthic catena has characteristically yellow, red and greyish soils with a medium base status. A land-type survey undertaken for the 2011 IWULA indicated that Delmas Coal falls in Bb4 and Ea20 land-types (NSS 2011). The Ea20 soils are shallow to moderately deep (not deeper than 1000mm). These Ea20 soils are black, calcareous and non-calcareous clay soils of the Arcadia form in association with shallow (<500mm) dark coloured, weakly structured loam and clay on structured clay of the Swartland form (NSS 2011). The Bb4 landscapes are moderately deep to deep (>500mm) and are associated with loam soils (NSS 2011).
4.2.6 Surface Water and Wetlands

Delmas Coal is situated within the Olifants Catchment Water Management Area. The area falls within the B2 sub-drainage region, the largest sub-catchment of the Limpopo Basin. The quaternary catchment area is B20E and Water Management area (WMA) 4.

The mean annual run-off sub-catchment for the Wilge River, on which the mine is located, was calculated to be 19.52x10⁶ m³.

The perennial flow of the Wilge River is sustained by networks of wetlands that drain into the river. The presence of dolerites, as mentioned above, is often indicative of wetlands because of how the dolerites act as an impermeable barrier to the water table. The water collects on dolerite extrusions and form water-logged soils that are the basis of wetlands in the rainy seasons. Because of the basic geology, and the history of wetlands in the area, wetlands can be assumed to be present on or near the proposed underground mining areas and South Shaft. Desktop studies have indicated that there are wetlands encircling the PC Dams and the discard dump at North Shaft. The findings of a desktop study around North shaft are indicated in Figure 4-4.

Wetlands are sensitive areas that would be negatively impacted by construction. A delineation of wetlands in the vicinity of the proposed project would be required to negate or mitigate impacts.
Figure 4.4

Job No: D910-04

DESKTOP WETLAND DELINEATION
4.2.7 Water quality

The Department of Water Affairs intends declaring the Wilge River catchment as a Class 2 river system in order to seek to protect Mpumalanga’s water resources. This means that no new impacts will be tolerated within this catchment. This is required to protect the surface water supply and quality catchment Interim receiving water quality objectives (RWQO) have been set for the Wilge River catchment. Delmas Coal falls within the Management unit (MU) 22 for the RWQOs. These MU 22 RWQO’s are indicated in Table 4-3 below.

**Table 4-3: Interim Receiving Water Quality Objectives for the Wilge River MU22**

<table>
<thead>
<tr>
<th>Water Quality Variable</th>
<th>Units</th>
<th>MU 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductivity</td>
<td>mS/m</td>
<td>40</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td>6.5-8.4</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>%sat</td>
<td>70</td>
</tr>
<tr>
<td>Suspended Solids</td>
<td>mg/l</td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>NTU</td>
<td></td>
</tr>
<tr>
<td>Alkalinity</td>
<td>mg/l</td>
<td>120</td>
</tr>
<tr>
<td>Boron</td>
<td>mg/l</td>
<td>0.5</td>
</tr>
<tr>
<td>Calcium</td>
<td>mg/l</td>
<td>25</td>
</tr>
<tr>
<td>Chloride</td>
<td>mg/l</td>
<td>20</td>
</tr>
<tr>
<td>Fluoride</td>
<td>mg/l</td>
<td>0.5</td>
</tr>
<tr>
<td>Magnesium</td>
<td>mg/l</td>
<td>20</td>
</tr>
<tr>
<td>Potassium</td>
<td>mg/l</td>
<td>10</td>
</tr>
<tr>
<td>Sodium</td>
<td>mg/l</td>
<td>20</td>
</tr>
<tr>
<td>Sulphate</td>
<td>mg/l</td>
<td>60</td>
</tr>
<tr>
<td>Total dissolved solids</td>
<td>Meq(^{0.5})</td>
<td>280</td>
</tr>
<tr>
<td>Iron</td>
<td>mg/l</td>
<td>1.0</td>
</tr>
<tr>
<td>Manganese</td>
<td>mg/l</td>
<td>0.18</td>
</tr>
<tr>
<td>Aluminium</td>
<td>mg/l</td>
<td>0.02</td>
</tr>
<tr>
<td>Chromium VI</td>
<td>mg/l</td>
<td>0.05</td>
</tr>
<tr>
<td>Ammonia</td>
<td>mgN/l</td>
<td>0.007</td>
</tr>
<tr>
<td>Nitrate</td>
<td>mgN/l</td>
<td>6</td>
</tr>
<tr>
<td>Phosphate</td>
<td>mgP/l</td>
<td>0.05</td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>mgP/l</td>
<td>0.25</td>
</tr>
</tbody>
</table>
4.2.8 Groundwater Occurrence and Use

The Geohydrological evaluations for the 1997 Delmas Coal EMPR were performed by Jasper Muller & Associates. The average depth of the water tables is 12.98 metres below the surface within the boundary of Delmas Coal. Groundwater abstraction by local farmers from the underlying dolomitic aquifer causes the deeper water levels observed in the northern part of the area.

Delmas Coal’s Groundwater zone is influenced by what is referred to as a shallow Karoo type aquifer. Locally, these aquifers can be extremely complex due to the nature of depositional and structural characteristics of the host rock in which the groundwater occurs and moves.

Aquifer thickness, for the Delmas Coal area, was defined as stretching from the surface to the floor of the No. 2 Coal Seam (including both the unsaturated and saturated zones). Although the thickness of the aquifer(s) varies considerably over the mine lease area. The unsaturated zone has an average thickness of 12.98m, while the saturated zone has an average thickness of 71.05m.

4.2.9 Land Use and Agricultural Potential (Land Capability)

No pre-mining land capability studies were conducted or collected prior to the start of the mining operations. The reason for this, stated in the EMPR, was that no opencast mining or total extraction mining were planned thus no impact was scheduled to reduce land capability within the mining boundary. The current land capability will remain unchanged, as the proposed project will take place on existing mine land.

4.2.10 Terrestrial Faunal Biodiversity

Delmas Coal is situated within the Grassland biome and approximately one-third of all mammal species found in South Africa occur in this biome (SOER, 2004). In the past the ungulate fauna of the grasslands occurred in abundance. However due to mining very little natural fauna remains on the proposed project site. Within the mining site there is limited habitat for animal life with only the vegetation surrounding the PC dams, offices, and buildings housing some common garden birdlife. Due to the developed nature of the site, no threatened or endangered fauna is anticipated.

4.2.11 Terrestrial Floral Biodiversity

The region is dominated by the Grassland Biome. This biome is species rich and contains many threatened flora and fauna. Delmas Coal is situated within the Eastern Highveld Grassland which is characterised by short dense grassland dominated by the usual Highveld grass composition including *Aristida, Digitaria, Eragrostis, Themeda*, and *Tristachya*.

The regional vegetation of the area is, however, poorly conserved and has a national conservation status of Endangered. This is because the vegetation is severely under...
pressure from mining and cultivation, although there are no serious alien invasions reported. (Mucina & Rutherford, 2006; NBI, 2004).

The Discard Dump does not support vegetation, however, the PC Dams sustain large reed beds.

4.3 Socio-Economic Environment

4.3.1 Social Setting

Mpumalanga has a land surface area of approximate 79,511.5 km², which represents approximately 6.5% of South Africa’s total land surface. The province is home to approximately 3,643,435 people, with a population growth of approximately 7.6% over the 6-year period between 2001 and 2007. The population in Mpumalanga accounts for 7.5% of South Africa’s total population as of 2007. The province appears to be largely rural in nature, which is evident in the fairly low population density of 45.8 persons per km².

Regional studies sparked by the proposed KiPower Power station have indicated that the Delmas area has a high unemployment level. The skills levels are generally low which may be attributed partially to Delmas having a fairly young population. Well over a third of the population (42.0%) were below the age of 15 when studies were done in 2007.

4.3.2 Infrastructure

Although the overall number of households in the Delmas area who make use of electricity for lighting has increased between 2001 and 2007, large segments of the population still make use of coal for cooking and heating purposes.

According to the Delmas IDP (2009/10), water in the area is mostly supplied from boreholes. Numerous developments in the area, including residential and industrial developments, have placed an enormous demand on the water supply, so much so that the demand for water now exceeds the supply. Currently the Rand Water supply is used to augment the water supply to Delmas.

Two sewer plants serve the Delmas area, one within Delmas itself with a capacity of 5 ML/day and the other in Botleng with a capacity of 4 ML/day. Both these plants are over capacity, with the Delmas plant receiving up to 8 ML/day and the Botleng plant receiving approximately 6 ML/day.

The Delmas Local Municipal area has two police stations, one in Delmas and one in Sundra. It has one hospital and several clinics, general practitioner practises and non-governmental organisations that operate in the healthcare sector.
5. ALTERNATIVES CONSIDERED

5.1 Introduction

In terms of the NEMA and MPRDA Regulations consideration must be given to alternatives. Alternatives are different approaches and ways of meeting the need, purpose and objectives of a proposed activity. Alternatives may include location or site alternatives, activity alternatives, processes or technology alternatives, temporary alternatives, etc. It is mandatory that the no-go alternative or option is also considered, as it provides the baseline against which the impacts of other alternatives can be compared. The objective of presenting, evaluating and motivating the feasible alternatives during the Impact Assessment Phase, is to identify the preferred option.

For this project the alternatives are outlined below.

5.2 Project Alternatives

The aim of the project is to obtain the required authorisations to remediate and upgrade the current discard facility, PC Dams and associated infrastructure in order to curb and control the current release of contaminated water into the natural water resources and also to obtain authorisation for the extension of the underground mining area.

5.2.1 PC Dam alternatives

The alternatives relating to the PC Dam remediation makes for three options as listed below.

- Leaving the current PC Dams in the same location, using the top PC Dam as a silt trap and reconstructing the bottom PC Dam to create a deeper, lined facility;
- Relocating the bottom PC Dam west, towards the discard dump (away from the Wilge River), by excavating an entirely new, lined, facility; and
- Continuing of the current PC Dam operations. (no-go alternative).

5.2.2 Discard Dump alternatives

The alternatives relating to the Discard Dump remediation/upgrading are:

- Keeping the Discard Dump in its current location, upgrading the surrounding groundwater drains and surface water infrastructure and remediating the Discard Dump to the slopes committed to in the EMPR, assuming that the airspace above the slurry facilities will not be utilised for the deposition of discard;
- Utilising the airspace above the slurry dams by allowing discard material to be placed on top of it, upgrading the surrounding groundwater drains and surface water infrastructure and rehabilitating the Discard Dump to the slopes committed to in the EMPR. This option would maximise the life of the facility within the existing footprint but would require the development of a new slurry handling facility.
- Depending on the findings of the stability assessment, relocating the Discard Dump and/or the slurry dams to an alternative site in close proximity to the operations, upgrading the surrounding groundwater drains and surface water infrastructure and remediating the Discard Dump to the slopes committed to in the EMPR; and
- Continuing of the current discard dump operations. (no-go alternative).
5.2.3 Mining alternatives

The mining method is largely determined by the geology, depth of the coal deposit and the nature of the coal seams. The two (2) options to be considered in terms of the mining method are either open cast or underground mining but the depth of the coal seams are too great to warrant the use of open cast mining. Therefore only underground mining will be conducted and assessed. It is envisaged that coal from the proposed new workings will be conveyed underground and all current shafts and surface infrastructure will be utilised. Therefore the option of constructing new shafts and surface infrastructure is not being explored as an option.

A number of surface sites for refuge boreholes/shafts will be investigated during the impact assessment as well. These boreholes/shafts will connect underground refuge bays/chambers with the surface in case of an emergency.

The no-mining option will also be assessed.

5.2.4 Land use alternatives

The Discard Dump, slurry dams and PC Dams may be relocated to alternative sites from their current positions and will be assessed as alternatives in terms of the possible changes in land use. Much of the land where the refuge boreholes are to be located is classified as a critical biodiversity area (CBA) and is characterised by farming activities. The presence of wetlands and watercourses would be determined and site selection would be conducted very thoroughly to address any potential impacts on these areas.

5.3 No-Go Alternative

The land use, where the proposed mining will occur, is agriculture and where the PC Dams and Discard Dump are located it is mining. The no-go option will result in the continuation of such land uses in all of the proposed developments if the status quo is maintained and none of the proposed activities are undertaken.

Similarly, if the status quo is maintained, there will be no change to the socio-economic composition of the area and no importation or transfer of skills will occur. The current employment levels will be maintained in the short term but these employment levels is expected to decline when mine has reached the end of the current life of mine. The current public infrastructure and services for the area will remain as it is currently with no view to expand or develop it.

From a bio-physical perspective, the surface and groundwater surrounding Delmas Coal may be affected negatively as a result of the possible release of contaminated water into the surrounding natural resources and watercourses should the upgrading of the PC Dams and Discard Dump not be conducted. The no-mining alternative would have no new or additional impact on the bio-physical environment in the short, medium and long term and the status quo would be maintained.

If the mining expansion project were not to proceed; revenue, economic activity, skills development and new employment opportunities would not be created, existing jobs may not be prolonged, the coal reserves would remain locked up, and an accelerated decline in economic growth may result in the region. There are no foreseeable significant environmental impacts resulting from the no-go alternative that will outweigh the economic and environmental benefits that would be generated by the proposed project.
5.4 Conclusions and Recommendations for Alternatives

In conclusion, it is recommended that the proposed mining, upgrading and remediation project continues in order to improve the water management systems and extend the life of mine at Delmas Coal. The proposed project will benefit the surrounding environment, the community of Delmas and indirectly the downstream water users.

6. PROCESS FOLLOWED TO DATE (SCOPING)

6.1 Technical Process

For the Scoping Phase of this EIA, the following technical process has been followed:

6.1.1 Consultation with client

On notification and receipt of the appointment letter from Delmas Coal, a project inception meeting was held between Delmas Coal and the Jones and Wagener Project Team. During this project kick-off meeting the following was discussed:

- Project Scope and Requirements;
- Project Schedule; and
- Identification of key stakeholders and role players.

6.1.2 Screening

Various feasible and reasonable alternatives were identified to take into this EIA based on biophysical, technical, social, economic and cultural constraints. The alternatives were screened based on the aforementioned criteria by the EAP before inclusion in this report.

6.1.3 Consultation with authorities, application forms and landowner notification

The MDEDET EIA application form (Appendix A) for the proposed project was submitted to the MDEDET on 16 September 2013. A letter for extension of the MDEDET registered project was submitted to MDEDET on 25 March 2014. As a point of departure existing I&AP databases developed through previous projects in the area were used for initial project notification and ground-truthed by the Jones and Wagener team to identify additional I&APs. The list of potentially affected landowners is attached as Appendix B of this report. During the Scoping Phase the list of landowners were confirmed and landowner notification forms (Appendix B) were signed.

6.1.4 Draft Scoping Report and Plan of Study for EIA

The Draft Scoping Report (DSR) has been prepared with information and issues identified during the Scoping Phase activities. The Plan of Study (PoS) for the EIA and the Terms of Reference (ToR) for the envisaged specialist studies are included in Section 8 of this report. The DSR and PoS for the EIA will be updated based on comments from key commenting authorities, public review and comments obtained from I&APs. The Final Scoping Report and the PoS for the EIA will then be submitted for acceptance and approval by MDEDET.
6.2 Public Participation Process

6.2.1 Introduction

Public participation is an essential and legislative requirement for the environmental authorisation process for which Delmas Coal has applied. The principles that demand communication with society at large are best embodied in the principles of the National Environmental Management Act (Act 107 of 1998, Chapter 1), South Africa’s overarching environmental law. In addition, Section 24 (5), Regulation 54-57 of GNR 543 under the National Environmental Management Act, guides the public participation process that is required for an Environmental Impact Assessment (EIA) process. The public participation process followed for the EIA process integrates the requirements for public participation for the following applications for the proposed rehabilitation of the Discard Dump facility and the reconstruction of the PC Dams:

- Environmental authorisation in accordance with the National Environmental Management Act, (Act No. 107 of 1998) (NEMA) EIA regulations of 2010;
- Amendment of the IWULA in terms of the provisions of the National Water Act (Act 36 of 1998) (NWA);
- An Integrated Water and Waste Management Plan (IWWMP) is to be developed in support of the IWULA, and
- Amendment of the existing Environmental Management Programme (EMPR) in terms of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002), as amended.

6.2.2 Objectives of public participation in an environmental authorisation process

The objectives of public participation in environmental authorisation process are to provide sufficient and accessible information to I&APs in an objective manner so as to:

**During Scoping:**
- Assist the Interested & Affected Parties (I&APs) with identifying issues of concern, and providing suggestions for enhanced benefits and alternatives;
- Provide I&APs with an opportunity to raise issues of concern and suggest project alternatives; and
- Verify that their issues have been considered and to help define the scope of the technical studies to be undertaken during the Impact Assessment Phase.

**During Impact Assessment:**
- Verify that their issues have been considered either by the Specialist Studies, or elsewhere; and
- Comment on the findings of the EIA including the measures that have been proposed to enhance positive impacts and reduce or avoid negative ones.

The key objective of public participation is to ensure transparency throughout the process and to promote informed decision making.

6.2.3 Approach

The following approach was undertaken for the Scoping Phase:
The public participation process for the applications has been designed to satisfy the requirements laid down in the applicable legislation and guidelines. This section of the report highlights the key elements of the public participation process to date.

6.2.4 Methodology

The following activities were undertaken to facilitate involvement from I&APs during the scoping phase:

6.2.4.1. Application forms and notification letters:

An EIA application was submitted to the Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET) on 15 September 2013. The application form was acknowledged by MDEDET on 25 September 2013 with the following reference number: 17/2/3N-300. Subsequently, a letter for extension of the project was submitted to MDEDET on 14 March 2014 and the extension was granted until 14 September 2014.

6.2.4.2. Identification of stakeholders

The identification of stakeholders is ongoing and is refined throughout the process. The identification of key stakeholders and community representatives (land owners and occupiers) for this project is important as their contributions are valued. Various stakeholders were identified as part of the EIA process, this included the following:

- Affected and surrounding land owners,
- Organs of State (national, provincial and local);
- Local business and interests;
- Media;
- Non-governmental Organisation (NGOs); and
- Community Based Organisations (CBOs).

According to the NEMA EIA Regulations under Section 24(5) of NEMA, a register of I&APs (Regulation 55 of GNR 543) must be kept by the public participation practitioner. Such a register has been compiled and is being kept updated with the details of I&APs throughout the process, refer to Appendix B-1 for the I&AP database.

6.2.4.3. Announcement of opportunity to become involved

The opportunity to participate in the environmental authorisation processes was announced in November 2013 as follows:

- Distribution of a letter of invitation to become involved, addressed to individuals and organisations, accompanied by a Background Information Document (BID) containing details of the environmental authorisation process, the proposed project and a registration sheet (See Appendix B-2 for a copy of the documents). The BID was also published on the Jones & Wagener website. The BIDs were hand delivered to people residing near Delmas Coal Mine – including residents of the Sub-highway community.
A media advertisement, (Appendix B-3) describing the proposed project and the listed activities which will be triggered by the proposed project, was placed in the Streeknuus newspaper on 15 November 2013.

Notice Boards (Appendix B-4) were placed in conspicuous places within the vicinity of Delmas Coal Mine (North Shaft). Placement of notice boards was conducted on 7 November 2013 to invite stakeholder participation, refer to Appendix B-4 for proof of placement of notice boards.

6.2.4.4. Obtaining comment and contributions

The following opportunities are available during the Scoping phase for contribution from I&APs:

- Completing and returning the registration/comment sheets on which space was provided for comment; and
- Providing comment telephonically or by email to the public participation office.

Issues which have been raised thus far have been considered and will be carried forward into the Impact Assessment phase.

6.2.4.5. Comments and Response Report and acknowledgements

Issues and comments raised during the Scoping phase have been recorded and addressed in a Comments and Response Report and appended to the Draft Scoping Report (Appendix B-5). The report will be updated to include additional I&AP contributions that may be received as the Scoping phase proceeds, and as the findings of the EIA become available. The contributions made by I&APs will be acknowledged in writing.

6.2.4.6. Draft Scoping Report (DSR)

The purpose of the public participation process in Scoping is to enable I&APs to verify that their contributions have been captured, understood and correctly interpreted, and to raise further issues. At the end of Scoping, the issues identified by the I&APs and by the environmental technical specialists, will be used to define the Terms of Reference (ToR) for the Specialist Studies that will be conducted during the Impact Assessment Phase. The availability of the Draft Scoping Report was announced in a letter (post and email) sent out in August 2014, and addressed personally to all individuals and organisations on the stakeholder database.

The Draft Scoping Report, including the Comments and Response Report Version 1, is being distributed for comment from 29, August 2014 to 7, October 2014 as follows:

- Left in public venues within the vicinity of the project area. (These are listed in Table 6-1 below);
- Placed on the J&W website;
- Mailed (CD copies) to key stakeholders;
- Mailed to I&APs who requested the report in CD format; and
- Copies will be made available to stakeholders on request.
I&APs can comment on the report in various ways, such as completing the comment sheet accompanying the report, and submitting individual comments in writing, telephonically or by email.

Table 6-1: Public places where the Draft Scoping Report is available

<table>
<thead>
<tr>
<th>Contact person</th>
<th>LOCATION</th>
<th>CONTACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms Lydia Mehlape</td>
<td>Delmas Public Library</td>
<td>013 665 1831</td>
</tr>
<tr>
<td>Receptionist</td>
<td>Delmas Coal Reception</td>
<td>013 665-7000</td>
</tr>
<tr>
<td></td>
<td><strong>Printed Copies</strong></td>
<td></td>
</tr>
<tr>
<td>Sibongile Bambisa/ Anelle Lötter</td>
<td><a href="http://www.jaws.co.za">www.jaws.co.za</a></td>
<td>012 667 4860</td>
</tr>
<tr>
<td></td>
<td>Phone and request a CD copy</td>
<td>012 667 - 4860</td>
</tr>
<tr>
<td></td>
<td><strong>Electronic Copies</strong></td>
<td></td>
</tr>
</tbody>
</table>

6.2.4.7. Final Scoping Report (FSR)

The Final Scoping Report will be updated with additional issues raised by I&APs and may contain new information. The document will be distributed to the competent authority and commenting authorities and key I&APs, and to those individuals who specifically request a copy. I&APs will be notified of the availability of the report for their review. The Final Scoping Report will be available for public review for 21 days.

In the Impact Assessment Phase of the EIA specialist studies will be conducted to assess the potential positive and negative impacts of the proposed project, and to recommend appropriate measures to enhance positive impacts and avoid or reduce negative ones. I&APs will be kept informed of progress with these studies.

6.2.5 Public participation during the Impact Assessment

Public participation during the Impact Assessment Phase of the EIA will mainly involve a review of the findings of the EIA, presented in a Draft Environmental Impact Report (EIR), the Draft Environmental Management Programme (EMPr) and the volumes of specialist studies. I&APs will be informed in advance regarding the availability of these reports, how to access them, dates and venues for review of the report.

The public participation for this phase will consist of the following proposed steps:

- Announcement of the availability and public review of the draft Environmental Impact Report;
- Announcement of the availability of the final Environmental Impact Report; and
- Notification of the authorities’ decision with regards to Environmental Authorisation.

6.2.5.1. Announcing the availability of the Draft Reports

Once the specialist assessments have been conducted the draft reports as mentioned above would be ready for public review. A letter will be circulated to all registered I&APs, informing them of progress made with the study and that the draft reports are available for comment. The report will be distributed to public places.

6.2.5.2. Public review of the Draft Reports

The EIA Guidelines specify that stakeholders must have the opportunity to verify that their issues have been captured and assessed before the relevant reports will be approved. The findings of the specialist assessments will be integrated into the draft reports. The reports will be written in a way accessible to stakeholders in terms of
language level and general coherence. The draft reports will have a comprehensive project description, motivation, and description of alternatives considered and also the findings of the assessment and recommended mitigation measures. It will further include the Comments and Response Report, which will list every issue raised, with an indication of where the issue was dealt with in the draft reports. The findings of the assessment and recommended mitigation measures will also be incorporated into the draft reports.

6.2.5.3. **Announcing the availability of the Final Reports**

After comments from I&APs have been incorporated, all stakeholders on the database will receive a personalised letter to report on where we are in the process, to thank those who commented to date and to inform them that the final reports have been submitted to the lead authority for consideration. They will also be provided the opportunity to comment on the final reports.

6.2.5.4. **Announce authorities’ decision on the Environmental Authorisations**

The decision of the authorities on whether the Environmental Authorisations were granted or not will be communicated to stakeholders as specified in the conditions. It is anticipated that the decisions will be communicated through the following methods:

- Personalised letters to individuals and organisations on the mailing list; and
- Advert in local or regional newspapers.

7. **ISSUES IDENTIFIED**

The proposed project is anticipated to impact on a range of biophysical and socio-economic aspects of the environment. The main purpose of the EIA process is to evaluate the significance of these potential impacts and to determine how they can be minimised or mitigated.

It should be noted that a comprehensive Environmental Management Programme (EMPr) will be developed and implemented to regulate and minimise the impacts during the construction and operational phases. The potential environmental impacts identified during the Scoping Phase, which will be investigated further in the EIA phase of the project are summarised in **Table 7-1** below.

**Table 7-1: Potential Environmental Impacts to be investigated in the EIA Phase.**

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>POTENTIAL ENVIRONMENTAL IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography and Land Use</td>
<td>Visual Environment</td>
</tr>
<tr>
<td></td>
<td>• As infrastructure will only be upgraded and remediated, there is no additional impact on the visual environment, predicted. The mining that is proposed will be underground and has minimal impacts to the visual environment.</td>
</tr>
<tr>
<td>Soil and Land Capability</td>
<td>Soil and Land Capability</td>
</tr>
<tr>
<td></td>
<td>• Erosion, if soils are exposed to the elements or discard dump slopes are too steep.</td>
</tr>
<tr>
<td>Surface Water, Groundwater and Wetlands</td>
<td>Groundwater</td>
</tr>
<tr>
<td></td>
<td>• A positive impact on groundwater with the upgrading of the discard dump is anticipated.</td>
</tr>
</tbody>
</table>
## Potential Environmental Impact

<table>
<thead>
<tr>
<th>Element</th>
<th><strong>Potential Environmental Impact</strong></th>
</tr>
</thead>
</table>
| **Surface Water and Wetlands** | - Underground mining may contaminate the groundwater if it comes into contact with the workings.  
- Penetration of perched aquifer due to ventilation shaft drilling;  
- Wetland destruction resulting from undermining;  
- Impact on the Present Ecological State (PES) and Ecological Importance & Sensitivity (EIS) of the wetland / riparian and aquatic systems;  
- Change in the conservation importance of the affected areas due to surface infrastructure construction;  
- Improved surface water quality and improved wetland habitat functionality;  
- Improved groundwater water management through improved infrastructure;  
- During construction, if runoff is not properly managed while the PC dams are under construction, there is a potential for carboniferous contamination that may decant into the environment.  
- Wetlands surrounding the discard dump and PC facilities may be impacted during construction. Wetlands will need to be delineated so that impacts can be identified and mitigated.  
- Additional surface infrastructure such as refuge bay boreholes may disturb wetlands if they are constructed in or near watercourses. |
| **Infrastructure** | **Construction Camp**  
- The construction camp, although temporary, may negatively impact several environmental elements as a result of:  
  - Hydro-carbon storage and handling on site;  
  - Handling, storage, and management of dangerous goods on site i.e. paints, cleaning solvents etc.  
  - Vegetation clearing and site establishment;  |
| **Flora** | **Vegetation Clearing**  
- If the PC Dam and discard are relocated there will be vegetation clearing taking place and thus potential impacts on the terrestrial ecology of the affected areas  
- Uncontrolled movement of construction vehicles may result in unnecessary impacts to the environment through vegetation and habitat destruction. |
| **Cultural and Historical Resources** | **No cultural and historical resources have been identified on the mine property and as such no impacts are expected**  
**The proposed mining will be underground and should have no impact on any cultural or heritage resources.** |
| **Socio-Economic Environment** | **Traffic**  
- During the construction phase, increased vehicle traffic should be expected. Without management, such increased traffic loads may negatively impact existing traffic flow.  
- Unmanaged construction vehicles may decrease road safety to other road users.  
**Noise**  
- Potentially increased traffic levels due to an influx of workers to the area, may impact on the ambient noise levels of the area. However the area on which the proposed project may take place, is currently a coal mine that may already affecting the ambient noise levels as per the EMPR.  
**Employment and Community Related Impacts**  
- The news of employment opportunities in construction may result in an influx of workers to the area, thereby impacting existing community networks and perceptions of safety and crime levels. |
8. PLAN OF STUDY FOR SCOPING AND EIA

8.1 Technical Process

8.1.1 Prepare Specialist Investigations

The scoping phase investigations have reviewed some potential environmental impacts associated with the proposed development. From the assessment, which was informed by authorities input, I&APs and various professionals, a shortlist of some potentially significant environmental impacts were identified for specialist investigations during the Impact Assessment phase. Information from these studies will be integrated into the Draft Environmental Impact Report (DEIR). The specialist investigations to be conducted during the EIA-phase of this project will consist of the following studies:

- Wetland delineation, wetland assessment and aquatic assessment, including rehabilitation options;
- Air quality impact assessment (for the discard dump specifically);
- Surface water impact assessment;
- Geotechnical investigation;
- Geohydrological investigation and groundwater model; and
- Stability assessment (supplied by the Delmas Coal)

The findings from these investigations will be reflected in the EIA Report. The proposed Terms of Reference (ToR) for each of these specialist studies is indicated below.

8.1.2 Specialist Studies: Terms of Reference (ToR)

8.1.2.1. ToR: Air Quality Assessment

An air quality impact assessment will be conducted for the project. The objectives of this study will be:

- To assess impacts on the air quality during the construction and operational phases of the project;
- Quantify emissions from the construction operations and operational phase using US-EPA emission factors based on the process description and information available. The dispersion model (i.e. AERMOD) will be applied;
• Simulate ambient air pollutant concentrations for short-term impacts (i.e. highest hourly average), with extrapolations to long-term exposures (i.e. annual averages);
• Comparison emissions with ambient air quality guidelines/standards/goals and dose-response thresholds;
• Provide mitigation measures to prevent and/or mitigate any environmental impacts that may occur due to the proposed project; and
• Compile an air quality impact assessment report in which alternatives are prioritised based on the findings of the study.

8.1.2.2. ToR: Geotechnical Investigation

A Geotechnical Investigation is required to be conducted for the alternative sites/corridors. The following is required:
• Review of existing and available geological and geotechnical information;
• A site visit to verify all aerial photographs and to investigate the depth and properties of regolith which will be judged by assessing natural exposure (dongas) and with the aid of hand augering where applicable;
• A map will be compiled of each alternative site/corridor, indicating features observed;
• Identify and assess significance of potential geotechnical constraints to the proposed development on all alternatives;
• Propose mitigation measures that could reduce or eliminate the identified constraints; and
• A short report will be compiled, in which alternatives are prioritised based on the findings of the study.

8.1.2.3. ToR: Groundwater Investigation

A groundwater investigation will be conducted for the project. The objectives of this study will be:
• Detailed description of the topography, geological and hydrogeological setting of the proposed routes;
• Characterization of the groundwater regime in a regional geological and geohydrological context with a general geological and geohydrological description, indicating the overall characteristics of the geological settings and aquifer parameters, and identification of immediate groundwater users;
• Detailed description of the aquifer parameters, such as the lateral extent of aquifers, hydraulic parameters, recharge, groundwater elevations, groundwater yields and groundwater qualities;
• Determination of pre-project groundwater quality;
• Description of the effect of the project on the groundwater regime i.e. aquifers, streams, high recharge areas and surrounding groundwater users and water quality for the construction operation and post closure phases;
• Description of groundwater management measures related to project phases;
• Groundwater monitoring protocols and a report containing groundwater monitoring data and analysis;
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- A groundwater model illustrating the above mentioned analysis;
- Provide a groundwater level contour map of the area; and
- A report with the findings and recommendations in which the alternatives will be prioritized based on the results of the study.

8.1.2.4. ToR: Surface Water Impact Assessment

A surface water investigation will be conducted for the project. The objectives of this study will be as follows:
- Review existing information available;
- An aerial photographic study to assess the extent of water bodies;
- A field visit to ground truth and verify information;
- The surface water bodies will be clearly demarcated;
- Identify impacts associated with the proposed development on surface water and provide mitigation measures for the identified impacts;
- A map will be compiled of each of the alternative corridors, indicating the features observed; and
- A report will be compiled, in which the alternatives will be prioritized based on the results of the study.

8.1.2.5. ToR: Wetland Delineation

A wetland delineation investigation will be conducted for the project. The objectives of this study will be:
- Review existing information available;
- An aerial photographic study to assess the accessibility, vegetation cover, drainage lines, slope aspects and percentage outcrop of each of the three routes;
- A field visit to delineate the wetlands according to the Department of Water Affairs (DWA) methodology;
- The wetlands will be clearly demarcated with provision of co-ordinates or demarcation of polygons;
- Identify impacts associated with the proposed development on the wetlands and provide mitigation measures for the identified impacts;
- A map will be compiled of each of the alternative routes, indicating the features observed; and
- A report will be compiled, in which the alternatives will be prioritized based on the results of the study.

8.2 Impact Assessment Methodology

In order to ensure uniformity, a standard impact assessment methodology has been utilised so that a wide range of impacts can be compared. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:
- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe impacts for each of the aforementioned assessment criteria. A summary of each of the qualitative descriptors along with the equivalent quantitative rating scale for each of the aforementioned criteria is given in Table 8-1.

Table 8-1: Quantitative rating and equivalent descriptors for the impact assessment criteria.

<table>
<thead>
<tr>
<th>RATING</th>
<th>SIGNIFICANCE</th>
<th>EXTENT SCALE</th>
<th>TEMPORAL SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VERY LOW</td>
<td>Isolated corridor / proposed corridor</td>
<td>Incidental</td>
</tr>
<tr>
<td>2</td>
<td>LOW</td>
<td>Study area</td>
<td>Short-term</td>
</tr>
<tr>
<td>3</td>
<td>MODERATE</td>
<td>Local</td>
<td>Medium-term</td>
</tr>
<tr>
<td>4</td>
<td>HIGH</td>
<td>Regional / Provincial</td>
<td>Long-term</td>
</tr>
<tr>
<td>5</td>
<td>VERY HIGH</td>
<td>Global / National</td>
<td>Permanent</td>
</tr>
</tbody>
</table>

A more detailed description of each of the assessment criteria is given in the following sections.

8.2.1 Significance Assessment

Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these since their importance in the rating scale is very relative. For example, the magnitude (i.e. the size) of area affected by atmospheric pollution may be extremely large (1000 km²) but the significance of this effect is dependent on the concentration or level of pollution. If the concentration is great, the significance of the impact would be HIGH or VERY HIGH, but if it is diluted it would be VERY LOW or LOW. Similarly, if 60 ha of a grassland type are destroyed the impact would be VERY HIGH if only 100 ha of that grassland type were known. The impact would be VERY LOW if the grassland type was common. A more detailed description of the impact significance rating scale is given in Table 8-2 below.

Table 8-2: Description of the significance rating scale.

<table>
<thead>
<tr>
<th>RATING</th>
<th>SIGNIFICANCE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>VERY HIGH</td>
<td>Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.</td>
</tr>
<tr>
<td>4</td>
<td>HIGH</td>
<td>Impact is of substantial order within the bounds of impacts, which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.</td>
</tr>
<tr>
<td>3</td>
<td>MODERATE</td>
<td>Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both</td>
</tr>
</tbody>
</table>
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feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.

2 LOW Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.

1 VERY LOW Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity is needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.

0 NO IMPACT There is no impact at all - not even a very low impact on a party or system.

8.2.2 Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale. The spatial assessment scale is described in more detail in Table 8-3.

Table 8-3: Description of the significance rating scale.

<table>
<thead>
<tr>
<th>RATING</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Global/National</td>
</tr>
<tr>
<td>4</td>
<td>Regional/Provincial</td>
</tr>
<tr>
<td>3</td>
<td>Local</td>
</tr>
<tr>
<td>2</td>
<td>Study Area</td>
</tr>
<tr>
<td>1</td>
<td>Isolated Sites / proposed site</td>
</tr>
</tbody>
</table>

8.2.3 Duration Scale

In order to accurately describe the impact it is necessary to understand the duration and persistence of an impact in the environment. The temporal scale is rated according to criteria set out in Table 8-4.

Table 8-4: Description of the temporal rating scale.

<table>
<thead>
<tr>
<th>RATING</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Incidental</td>
</tr>
<tr>
<td>2</td>
<td>Short-term</td>
</tr>
<tr>
<td>3</td>
<td>Medium term</td>
</tr>
<tr>
<td>4</td>
<td>Long term</td>
</tr>
<tr>
<td>5</td>
<td>Permanent</td>
</tr>
</tbody>
</table>

8.2.4 Degree of Probability

The probability or likelihood of an impact occurring will be described as shown in Table 8-5 below.
Table 8-5: Description of the degree of probability of an impact accruing.

<table>
<thead>
<tr>
<th>RATING</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Practically impossible</td>
</tr>
<tr>
<td>2</td>
<td>Unlikely</td>
</tr>
<tr>
<td>3</td>
<td>Could happen</td>
</tr>
<tr>
<td>4</td>
<td>Very Likely</td>
</tr>
<tr>
<td>5</td>
<td>It’s going to happen / has occurred</td>
</tr>
</tbody>
</table>

8.2.5 Degree of Certainty

As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard “degree of certainty” scale is used as discussed in Table 8-6. The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 8-6: Description of the degree of certainty rating scale.

<table>
<thead>
<tr>
<th>RATING</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definite</td>
<td>More than 90% sure of a particular fact.</td>
</tr>
<tr>
<td>Probable</td>
<td>Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.</td>
</tr>
<tr>
<td>Possible</td>
<td>Between 40 and 70% sure of a particular fact, or of the likelihood of an impact occurring.</td>
</tr>
<tr>
<td>Unsure</td>
<td>Less than 40% sure of a particular fact or the likelihood of an impact occurring.</td>
</tr>
<tr>
<td>Can’t know</td>
<td>The consultant believes an assessment is not possible even with additional research.</td>
</tr>
</tbody>
</table>

8.2.6 Quantitative Description of Impacts

To allow for impacts to be described in a quantitative manner in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and temporal scale as described below:

$$ Impact\ Risk = (SIGNIFICANCE + Spatial + Temporal) \times Probability $$

An example of how this rating scale is applied is shown below:

Table 8-7: Example of Rating Scale.

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>SIGNIFICANCE</th>
<th>SPATIAL SCALE</th>
<th>TEMPORAL SCALE</th>
<th>PROBABILITY</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact to air</td>
<td>LOW</td>
<td>Local</td>
<td>Medium Term</td>
<td>Could Happen</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Note: The significance, spatial and temporal scales are added to give a total of 8, that is divided by 3 to give a criteria rating of 2.67. The probability (3) is divided by 5 to give a probability rating of 0.6. The criteria rating of 2.67 is then multiplied by the probability rating (0.6) to give the final rating of 1.6.

The impact risk is classified according to 5 classes as described in the table below.
Table 8-8: Impact Risk Classes.

<table>
<thead>
<tr>
<th>RATING</th>
<th>IMPACT CLASS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 – 1.0</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>1.1 – 2.0</td>
<td>2</td>
<td>Low</td>
</tr>
<tr>
<td>2.1 – 3.0</td>
<td>3</td>
<td>Moderate</td>
</tr>
<tr>
<td>3.1 – 4.0</td>
<td>4</td>
<td>High</td>
</tr>
<tr>
<td>4.1 – 5.0</td>
<td>5</td>
<td>Very High</td>
</tr>
</tbody>
</table>

Therefore with reference to the example used for air quality above, an impact rating of 1.6 will fall in the Impact Class 2, which will be considered to be a low impact.
9. KNOWLEDGE GAPS

In accordance with Section 30(m) of R543 of the NEMA EIA Regulations, the knowledge gaps, adequacy of predictive methods, underlying assumptions and uncertainties encountered in compiling the required information have been identified and discussed in this section of the Draft Scoping Report.

At present, several gaps in the information available regarding the project have been identified. The following information will be gathered to supplement out-dated or insufficient information:

- Conceptual designs of the proposed upgrades and remediation;
- The effect of the upgrades and remediation on the air quality, groundwater and surface water pollution reduction.

10. CONCLUSION AND WAY FORWARD

The Scoping Report has been compiled in order to give an introduction to the proposed upgrading, remediating and mining project. This Scoping Report forms part of the legal requirements of the MPRDA and the NEMA. It provides a baseline overview of the receiving environment and possible impacts on the physical, biological and social environment that may result from the proposed project.

The objective of the scoping report is to give authorities and I&APs, an overview of the planned activities, and their potential environmental impacts. Following from Scoping, the EIA process will commence, which will include public participation where I&APs and authorities can comment and raise issues which will need to be addressed in the EIA/EMP. The EMP will include management plans to avoid negative impacts and to enhance positive impacts.

In conclusion, it is recommended that the proposed upgrading and remediation proposed for Delmas Coal continues. The proposed upgrades and remediation of the discard dump and PC dams will benefit not only the mines operation, but also and primarily the surrounding water users and the receiving environment regardless of the locations of the upgraded infrastructure.

The proposed project will:

- Better control discard areas on the mine;
- Reduce contamination of surface water; and
- Reduce contamination of ground water.

In addition the continued running of the mine and supply of coal, assists Eskom (Majuba power station, by railway line) in meeting the country’s energy demands with minimized effects on the surrounding environment.
11. REFERENCES

Natural Scientific Services, 2009. Delmas Colliery EMPR amendment, Biodiversity assessment and Wetland delineation


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23 July 2014