



09 November 2012
DETECT Ref #: NWP/EIA/75/2011
SRK Ref #: 438209/FBA

Dear Stakeholder

FINAL BASIC ASSESSMENT REPORT: FOR EXISTING PRISON DAM UPGRADE, BY INCREASING THE HEIGHT AND LENGTH OF THE EXISTING DAM WALL, RUSTENBURG, NORTH WEST PROVINCE (NWP/EIA/75/2011)

This letter serves to inform you of the availability of the Final Basic Assessment Report (FBAR) for public review and comment.

DESCRIPTION OF PROPOSED ACTIVITIES:

The Prison dam is located within, and owned by the Rustenburg Local Municipality, in the North West Province. The dam is situated on the outskirts of the town and approximately 8,5km north east of the centre of the town. The Prison Dam has a storage capacity of 120 000 m³ and a dam wall height of 6m. The dam is registered as a category II dam with the Department of Water Affairs.

The residential area, Boitekong X15, located within the Rustenburg Local Municipality, and is located downstream of the Prison Dam. During the previous rainy season a number of houses were inundated by flood waters and the residents had to be evacuated to safer places. Remedial measures which include amongst others converting the Prison Dam to a flood attenuation dam, have been identified as a mitigation measure to protect people and property against further flooding

BASIC ASSESSMENT PROCESS:

SRK Consulting (Pty) Ltd has been appointed as the independent Environmental Assessment Practitioner in terms of Section 16(1) of GN R 543 printed in terms of the National Environmental Management Act [NEMA] (Act No 107 of 1998) to undertake the BA as mentioned above. The proposed upgrade of the existing prison dam, near Rustenburg, in North West Province requires an Environmental Authorization in terms of Section 24 of the National Environmental Management Act (Act No 107 of 1998). These activities are described in more detail within the Basic Assessment report.

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Environmental authorisation is required in terms of Notice 544, activity 55, of the National Environmental Management Act (Act No. 107 of 1998) and the National Water Act (NWA) (Act 36 of 1998) of the intent to carry out the following activities:

- **Existing prison dam upgrade, by increasing the height and length of the existing dam wall;**

Herewith find attached the Final Basic Assessment Report (BAR) and Environmental Management Plan (EMP) which will be made available to the public for a 21 day commenting period. The period will commence on the 09th of November 2012 and end on the 03rd of December.

PUBLIC COMMENT INVITED

A hard copy of the FBAR will be made available at the following locations:

Venue	Contact Person	Contact Number
Rustenburg Public Library	Mr Pieter Louw	(014) 590 3295
Boitekong Community Library	Miss. Dineo Utlwani	(014) 590 3882
SRK website	www.srk.co.za	(012) 361 9821

Please send your comments to the North West Department Economic Development, Environment, Conservation and Tourism.

Please note the application has been assigned to Mr. Livhuwani Kutame, Rustenburg Office, reachable at:

Tel: (014) 597 3597

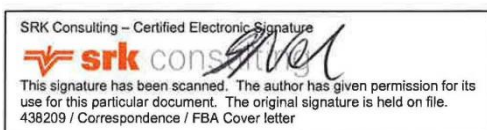
Fax: (014) 592 3553.

Please also copy SRK in any correspondence with the department.

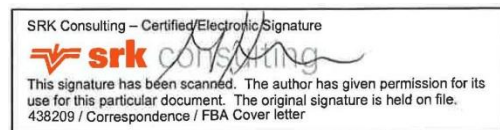
We would like to thank all that have participated in the Public Participation Process, and we appreciate your comments and ongoing involvement during the life cycle of the Prison Dam Upgrade Environmental Authorization process.

We encourage and look forward to your participation in this process.

Yours faithfully



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the DEDECT

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(For official use only)

File Reference Number:

Application Number:

Date Received:

NWP/EIA/75/2011

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? YES

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

The following specialists were consulted.

- **Wetland Specialist**
- **Dam Safety Specialist**
- **Heritage Impact Assessment Specialist**

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail¹:

Location of the Dam:

The Prison storage dam is located within Rustenburg Local Municipality, in the North West Province and is located on the outskirts and approximately 8,5km north east of the centre of the town. The Prison Dam was registered in terms of Dam Safety with the Department of Water Affairs on 7 April 2008. The dam is situated on the Dorpspruit, a perennial river in the North West Province. **Figure 3** illustrates the Aerial view of Prison Dam, the Dorpspruit and Boitekong x15 area.

Background information:

The Prison Dam is classed as a category 2 dam, with the Department of Water Affairs in terms of Dam Safety Risk. The dam currently has a storage capacity of 120 000 m³ and is owned by the Local Municipality of Rustenburg.

The residential area, Boitekong X15, is located downstream of the Prison Dam. During the December 2010 and January 2011 rainy season, a number of houses were inundated by flood waters and the residents had to be evacuated to safer places and have still not been able to return to their homes since there is a potential risk for flooding if remedial actions involving the dam are not undertaken (Refer to Appendix B, Photo 30-33). Remedial measures have been identified and the construction of these need to commence as soon as possible to reduce the risk of again flooding and damage to property and potential loss of life. Please refer to **Figure 5**, which indicate the location of the site with the proposed remedial measures.

Remedial measures identified to mitigate the future flooding of the residential area included;

- Existing Prison dam upgrade, (this Environmental Authorisation)

¹ Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

- The residential area, Boitekong X15, Phala Road crossing upgrade;
- Flood protection berms along the houses that are within a 1:100 year floodplain, of the residential area, Boitekong X15.

It was concluded during previous discussions with DEDECT that Environmental Authorisation (Letter attached in Appendix G), will not be required for the Phala Road upgrade and the construction of the flood protection berms since these activities do not fall within the listings for a Basic Assessment or a full Environmental Impact Assessment. The upgrade of the Prison Dam will however require an environmental authorisation at Basic assessment level.

The urgency to have mitigation measures in place before the rainy season to protect people and property have necessitated that the project be undertaken in a phased approach to allow for time to obtain the required authorisations. It is envisaged that the project will be implemented in phases with the first phase consisting of the construction of the berm and the upgrading of the road culverts and the second phase will be the upgrading of the dam.

Project description:

It is proposed to upgrade the existing Prison dam by :

- Increasing existing dam embankment height by 2.5m and length with a combination of compacted earth embankment and masonry wall; and
- Redesigning and modifying the existing spillway.

The spillway invert level will remain the same. The dam embankment will be raised by 2.5m, and the storage capacity will be increased to 200 000m³.

Regulatory Process

In terms of the National Environmental Management Act, 1998 (No.107 of 1998) [NEMA] and associated EIA Regulations published in 2010, an environmental authorisation must be obtained from the relevant decision-making authority, prior to the commencement of certain listed activities that may result in potential negative impacts on the environment.

The activity triggered in terms of NEMA: General Notice 544, activity 55:

The expansion of a dam where:

- i. The highest part of the dam wall, as measured from the outside 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

The upgrade of the Prison Dam will therefore require an environmental authorisation at Basic assessment (BA) level.

2. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

Please refer to Appendix A for the site layout plan indication the different alternatives.

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

There are no alternatives to the location, as this is the upgrade of an existing dam. The Prison storage dam is located on extension 1 number 272 of the farm Rustenbrug town and townarea, within Rustenburg Local Municipality, in the North West Province. The dam is situated on the Dorpspruit, a perennial river.

(b) the type of activity to be undertaken;

Remedial measures have been identified to mitigate the future flooding of the Boitekong x15 residential area. Alternative remedial measures which was identified included; the upgrade of Phala road within residential area, Boitekong X15 and; flood protection berms along the houses that are within a 1:100 year floodplain, of the residential area, Boitekong X15. Both these alternatives were also constructed, as a phase 1 to the project. If only these measures were to be implemented, the height of the berm would have been more than double the current height with other associated risks
It is however still necessary to upgrade the Prison Dam by increasing the embankment height to further prevent future disasters to the Boitekong X15 residential area.

(c) the design or layout of the activity;

The evacuation and relocation of all residents downstream, the Prison dam, with the associated demolition of all the damaged and affected, Boitekong X15 houses.

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

There is no alternative to the technology to be used in the activity.

(e) the operational aspects of the activity; and

There is no alternative to the operational aspects to be used in the activity.

(f) the option of not implementing the activity.

Safety of people and property will remain a risk. Effects of global warming and climate change may even increase the risk.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Paragraphs 3 – 13 below should be completed for each alternative.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

Latitude (S):

Longitude (E):

Alternative:

Alternative S1² (preferred or only site alternative)

Existing Prison dam wall

Alternative S2 (if any)

Alternative S3 (if any)

25°	37' 55.015"	27°	15' 38.544"
o	'	o	'

*** There are no alternatives positions, as this is the upgrade of an existing dam; the Prison storage dam. Prison dam will act as a flood attenuation dam for the residential area, Boitekong x15. The Prison Dam is registered as a category 2 dam, with the Department of Water Affairs. The dam currently has a storage capacity of 120 000 m³ and is owned by the Local Municipality of Rustenburg. The storage capacity will be raised to 200 000 m².

**In the case of linear activities:
NOT APPLICABLE**

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S2 (if any)

² "Alternative S.." refer to site alternatives.

- Starting point of the activity
- Middle/Additional point of the activity
- 3. End point of the activity

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- 4 End point of the activity

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment. **NOT APPLICABLE**

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative A1³ (preferred activity alternative)

1.2 Km
NOT APPLICABLE
NOT APPLICABLE

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

Alternative:

Length of the activity:

Alternative A1 (preferred activity alternative)

NOT APPLICABLE
NOT APPLICABLE
NOT APPLICABLE

Alternative A2 (if any)

Alternative A3 (if any)

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Size of the site/servitude:

³ "Alternative A.." refer to activity, process, technology or other alternatives.

Alternative A1 (preferred activity alternative)

NOT APPLICABLE

Alternative A2 (if any)

NOT APPLICABLE

Alternative A3 (if any)

NOT APPLICABLE

5. SITE ACCESS

Does ready access to the site exist?

YES

If NO, what is the distance over which a new access road will be built

NOT APPLICABLE

Describe the type of access road planned:

The Contractor shall obtain access to the site (a) on a public road (b) on an existing private road or track with the consent of the relevant owner or occupier of land and Access to, and along the construction right-of-way explicitly excludes access to land other than the access routes referred to above.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

<ul style="list-style-type: none"> What is the expected capital value of the activity on completion? 	R 15 000, 000.00
<ul style="list-style-type: none"> What is the expected yearly income that will be generated by or as a result of the activity? 	R 0
Activity will not generate income however will prevent loss of life and damage to property.	
<ul style="list-style-type: none"> Will the activity contribute to service infrastructure? 	YES
<ul style="list-style-type: none"> Is the activity a public amenity? 	YES
<ul style="list-style-type: none"> How many new employment opportunities will be created in the development phase of the activity? 	50
<ul style="list-style-type: none"> What is the expected value of the employment opportunities during the development phase? 	R 2.5 million
<ul style="list-style-type: none"> What percentage of this will accrue to previously disadvantaged individuals? 	Depends on the contractor being appointed. <50%
<ul style="list-style-type: none"> How many permanent new employment opportunities will be created during the operational phase of the activity? 	0
This is an existing dam.	
<ul style="list-style-type: none"> What is the expected current value of the employment opportunities during the first 10 years? 	±R4 000- 00 per month
Maintenance work only.	
<ul style="list-style-type: none"> What percentage of this will accrue to previously disadvantaged individuals? 	Depends on the contractor being appointed <50%

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

NEED:	
1.	Was the relevant provincial planning department involved in the application? YES
2.	Does the proposed land use fall within the relevant provincial planning framework? YES
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation: The residential area, Boitekong X15 located within the Rustenburg Local Municipality was developed within the floodline of the Dorpspruit. The floodline which was calculated at that

	time did not consider development in the catchment. During the December 2010 rainy season, a number of houses were inundated by flood waters and the residents had to be evacuated to safer places and has still not been able to return to their homes since there is a safety risk
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DESIRABILITY:			
1.	Does the proposed land use / development fit the surrounding area?	YES	
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation: N/A		
5.	Will the proposed land use / development impact on the sense of place?		NO
6.	Will the proposed land use / development set a precedent?		NO
7.	Will any person's rights be affected by the proposed land use / development?		NO
8.	Will the proposed land use / development compromise the "urban edge"?		NO
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation. N/A		

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES	
2.	Explain: Dams have the following benefits for society. <ul style="list-style-type: none"> To store water to compensate for fluctuations in river flow or in demand for water. To control flooding; Potentially could supply water for small scale agriculture Assist river navigation by providing regular flows and drowning rapids. Leisure activities such as boating. 		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES	
4.	Explain: The Prison Dam has the following benefits for the local communities. <ul style="list-style-type: none"> To store water to compensate for fluctuations in river flow or in demand for water. To control flooding for residents of Boitekong X15; Leisure activities such as boating. 		

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	Department of Agriculture, Forestry & Fisheries (DAFF)	1983
Development Facilitation Act (Act 67 of 1995)	Department of Environmental Affairs (DEA)	1995
Environmental Conservation Act (73 of 1989)	Department of Environmental Affairs and Forestry (DEAF)	1998
Local Government: Municipal Structures (Act 117 of 1998)	Rustenburg Local Municipality (RLM)	1998
Mine Health and Safety Act (29 of 1996)	Department Minerals and Resources (DMR)	
Mineral and Petroleum. Resources Development Act, (Act No 28 of 2002).	Department Minerals and Resources (DMR)	2002
National Environmental Management Act (Act 107 of 1998).	Department of Environmental Affairs (DEA)	1998
National Environmental Management: Air Quality Act (39 of 2004)	Department of Environmental Affairs (DEA)	2004
National Environmental Management: Biodiversity Act (10 of 2004);	Department of Environmental Affairs (DEA)	2004
National Environmental Management: Protected Areas Act,(Act 57 of 2003)	Department of Environmental Affairs (DEA)	2003
National Environmental Management: Waste Act (59 of 2008)	Department of Environmental Affairs (DEA)	2008
National Heritage Resources Act, 1999 (Act 25 of 1999)	South African Heritage Resource Agency (SAHRA)	1999
National Parks Act (Act 57 of 1976)	Department of Environmental Affairs (DEA)	1976
National Roads Act (Act No 7 of 1998)	South African National Roads Agency Limited (SANRAL)	1998
National Water Act 36 of 1998	Department of Water Affairs (DWA)	1998
North West Development Corporation Limited Act, 1995 (Act No 6 of 1995)	Department Economic Development, Environment, Conservation and Tourism North West Provincial Government (NW-DEDECT)	1995

Guidelines

- DEAT. 2002. Integrated Environmental Management, Information series 2: Scoping (Department of Environmental Affairs and Tourism (DEAT. 2002))
- DEAT. 2002. Integrated Environmental Management, Information series 3: Stakeholder Engagement (Department of Environmental Affairs and Tourism (DEAT. 2002))
- DEAT. 2002. Integrated Environmental Management, Information series 4: Specialist Studies (Department of Environmental Affairs and Tourism (DEAT. 2002))
- DEAT. 2002. Integrated Environmental Management, Information series 12: Environmental Management Plans (Department of Environmental Affairs and Tourism (DEAT. 2002)) +
- DEA (2010), Companion to the EIA Regulations 2010, Integrated Environmental Management Guideline Series 5, Department of Environmental Affairs.
- DEA (2010), Companion to the EIA Regulations 2010, Integrated Environmental Management Guideline Series 7, Department of Environmental Affairs.

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
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If yes, what estimated quantity will be produced per month?

Total of $\pm 100 \text{ m}^3$ Over ± 7 months construction period.

How will the construction solid waste be disposed of (describe)?

Large rubbish bins will be placed at strategic points in the construction area.
General refuse and rubbish will be removed from site on a weekly basis.
The Contractor shall not leave domestic waste uncontained, and temporary storage will be fenced to keep out people and animals.
No permanent domestic waste disposal will be allowed at the campsites.
The Contractor shall keep construction campsites clean and tidy at all times.

Where will the construction solid waste be disposed of (describe)?

Domestic or household waste; which includes paper, glass, plastics, cardboard and food products will be collected and transported off the site to the contractor to a registered general waste landfill site. Waste will be sorted according to type and recycled where feasible.

Will the activity produce solid waste during its operational phase?

NO

If yes, what estimated quantity will be produced per month?

0 m ³

How will the solid waste be disposed of (describe)?

Not applicable.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Not applicable.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.
Not Applicable.

Is the activity that is being applied for a solid waste handling or treatment facility?

NO

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Not Applicable.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

NO

Chemical Toilets will be provided for the construction team.

If yes, what estimated quantity will be produced per month?

0 m ³

Will the activity produce any effluent that will be treated and/or disposed of on site?

YES

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? YES NO

If yes, provide the particulars of the facility:

Facility name:

Contact person:

Postal address:

Postal code:

Telephone:

E-mail:

	Cell: <input type="text"/>
	Fax: <input type="text"/>

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere? YES NO

If yes, is it controlled by any legislation of any sphere of government? YES NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Heavy construction equipment vehicles, designed for executing construction, will be used during the construction phase, and motor vehicle emissions will therefore be produced in small quantities, especially by internal combustion engines.

These impacts will be mitigated through the contingency plans as identified in the planning phase, together with a commitment to sound environmental management from the client and contractor.

11(d) Generation of noise

Will the activity generate noise? YES NO

If yes, is it controlled by any legislation of any sphere of government? YES NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

Noise pollution will be restricted to the heavy construction equipment vehicles only, which will be used during the construction phase to execute the work. Therefore noise will be generating.

The site will be monitored on a continual basis during the upgrading phase. These impacts will then be mitigated through the contingency plans as identified in the planning phase, together with a commitment to sound environmental management from the client and contractor.

12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box (es)

municipal	water board	groundwater	river, stream, dam or lake X	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

2 Kilolitres over the whole construction period of ± 7 months.
--

Does the activity require a water use permit from the Department of Water Affairs?

	Yes
--	-----

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

<p>Service records of equipment and vehicles will at all times be up to date, in order to utilise less fuel.</p> <p>Traffic speed is to be maintained and the road surface along the haul road to be levelled.</p> <p>Utilization of energy during construction in a responsible manner will be brought to the contractor's attention through site inductions.</p> <p>Due to the equipment requirements of the Prison Dam, no other energy efficiency design measures could be taken to ensure that these are more energy efficient.</p>
--

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

<p>In the site office, fluorescent light bulbs will be used instead of incandescent light bulbs.</p>
--

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section?

YES	
-----	--

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

All specialist reports must be contained in Appendix D

All specialist reports contained in Appendix D

Property description/physical address:

Prison dam, falls within the Rustenburg Local Municipality in the North West Province and is located North east and approximately 8,5km north east of the centre of the town.
The inhabitants of Boitekong are mainly employees of Impala Platinum

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

The township development on various portions of the farm Paardekraal 279 JQ was approved in total in 1997

Including Extensions 9, 10 and 15.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Rustenburg Local Municipality, in the North West Province

Current land-use zoning:

Residential

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to , to this application.

Is a change of land-use or a consent use application required?
Must a building plan be submitted to the local authority?

	NO
	NO

Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 1:20	–	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 1:20	–	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	--------------	---	-------------	-------------	--------------	-------------	---------------------

Alternative S3 (if any):

Flat	1:50 1:20	–	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	--------------	---	-------------	-------------	--------------	-------------	---------------------

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

NB: Indicate by highlighting/ticking

- 2.1 Ridgeline
- 2.2 Plateau
- 2.3 Side slope of hill/mountain
- 2.4 Closed valley
- 2.5 Open valley
- 2.6 Plain
- 2.7 Undulating plain / low hills
- 2.8 Dune

2.9 Seafront

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	NO		
Dolomite, sinkhole or doline areas	NO		
Seasonally wet soils (often close to water bodies)	YES		
Unstable rocky slopes or steep slopes with loose soil	YES		
Dispersive soils (soils that dissolve in water)	NO		
Soils with high clay content (clay fraction more than 40%)	YES		
Any other unstable soil or geological feature	NO		
An area sensitive to erosion	YES		

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition ^E	Natural veld with scattered aliens^E	Natural veld with heavy infestation ^E	Natural veld with alien	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure		Bare soil

(It was not possible to confidently assess the changes in the vegetation on the floodplain as a consequence of the timing of the site visit as well as the fact that it had recently been burnt.)

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

NB: Indicate by highlighting/ticking

5.1 Natural area

5.2 Low density residential

- 5.3 Medium density residential
- 5.4 High density residential
- 5.5 Informal residentialA
- 5.6 Retail commercial & warehousing
- 5.7 Light industrial
- 5.8 Medium industrial AN
- 5.9 Heavy industrial AN
- 5.10 Power station
- 5.11 Office/consulting room
- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes damA
- 5.14 Quarry, sand or borrow pit
- 5.15 Dam or reservoir
- 5.16 Hospital/medical centre
- 5.17 School
- 5.18 Tertiary education facility
- 5.19 Church
- 5.20 Old age home
- 5.21 Sewage treatment plantA
- 5.22 Train station or shunting yard N
- 5.23 Railway line N
- 5.24 Major road (4 lanes or more) N
- 5.25 Airport N
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station H
- 5.31 Landfill or waste treatment site
- 5.32 Plantation

5.33 Agriculture

5.34 River, stream or wetland

- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge
- 5.37 Museum
- 5.38 Historical building
- 5.39 Protected Area
- 5.40 Graveyard

- 5.41 Archaeological site
- 5.42 Other land uses (specify)

If any of the features marked with an "N" are highlighted or ticked, how this impact will / be impacted upon by the proposed activity?

NOT APPLICABLE

If any of the features marked with an "An" are highlighted or ticked, how will this impact / be impacted upon by the proposed activity?

If YES, specify and explain:
If YES, specify:

NOT APPLICABLE

If any of the features marked with an "H" are highlighted or ticked, how this will impact / be impacted upon by the proposed activity.

If YES, specify and explain:
If YES, specify:

NOT APPLICABLE

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including

	NO
--	----

Archaeological or palaeontological sites, on or close (within 20m) to the site?

NO

If YES, explain:

Not applicable.

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

This is the upgrade of an existing dam wall. It should be kept in mind that archaeological deposits usually occur below ground level. There will be no excavations done beyond the existing site. Should archaeological artefacts or skeletal material somehow be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (cf. NHRA (Act No. 25 of 1999), Section 36 (6)).

Will any building or structure older than 60 years be affected in any way?

	NO
	NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

NOT APPLICABLE

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;

- (ii) disability; or
- (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any Gazette that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

The following authorities will be informed during the Public participation process:

- Department Economic Development, Environment, Conservation and Tourism North West Provincial Government (NW-DEDECT)
- Department of Minerals and Resources (DMR)
- Department of Water Affairs (DWA)
- South African Heritage Resource Agency (SAHRA)
- Department of Agriculture, Forestry & Fisheries (DAFF)
- Bojanala Platinum District Municipality (BPDM)
- Rustenburg Local Municipality (RLM)

List of authorities from whom comments have been received:

No comments have been received to date.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

YES NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

No feedback was received to date.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

No comments have been received to date.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

No comments have been received to date.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

RISK AND KEY ISSUES

Risks and key issues were identified through an internal process based on similar developments and environmental assessment. The risks and key issues identified include:

1. Impacts on the air quality
2. Biodiversity displacement and destruction;
3. Erosion,
4. Damage to existing structure,
5. Generation of construction waste;
6. Increased ambient noise levels;
7. Socio Economic Impact
8. Soils/Land Use/Land Capability
9. Contamination of ground and surface water;
10. Traffic;
11. Visual intrusion;

ENVIRONMENTAL ASPECTS ADDRESSED

In the event that a negative environmental impact is identified, it can be avoided, mitigated or off-set. The EMP attempts to identify and mitigate potential environmental impacts at the planning phase of the project. The mitigating measures that are proposed, take cognizance of the final design and impacts that may ensue from this development. The point of departure for this EMP is to take a pro-active route by addressing potential problems before they occur. This will limit corrective action needed during the construction and operational phases of the development. Additional mitigation will be included throughout the project phases, as necessary. The following phases were addressed for the development:

THE PLANNING AND DESIGN PHASE

Pro-active environmental measures minimize the chance of impacts taking place. There is still the risk of accidental impacts taking place, however by incorporating contingency plans such as this EMP; the necessary corrective action can be taken to further limit potential impacts.

THE CONSTRUCTION PHASE

The bulk of the impacts during this phase will have an immediate effect (e.g. noise, dust and water pollution). The site will be monitored on a continual basis during the upgrading phase. These impacts will then be mitigated through the contingency plans as identified in the planning phase, together with a commitment to sound environmental management from the client and contractor.

THE OPERATIONAL PHASE

Impacts during the operational phase of a development of this nature will be limited in number and low in intensity. By taking pro-active measures during the planning and upgrading phase, potential environmental impacts emanating during the operational phase will be minimised. This in turn will minimise the risk and reduce monitoring effort.

METHODOLOGY FOR THE ASSESSMENT OF IMPACTS

The anticipated impacts associated with the proposed development have been assessed according to the risk assessment matrix depicted in Figure 1-1. This matrix has been utilised for the assessment of environmental impacts where the consequence (severity of impact, spatial scope of impact and duration of impact) and likelihood (frequency of activity and frequency of impact) have been considered in parallel to provide a risk rating and hence an interpretation in terms of the level of environmental management required for each impact.

The first stage of impact assessment is the identification of aspects⁴, thus any activities⁵ and facilities that may have an impact on the surrounding environment. This is supported by the identification of receptors⁶ and resources⁷, which allows for an understanding of the impact pathway and an

⁴ **Environmental aspect:** an element of an organisation's activities, products or services which can interact with the environment

⁵ **Activity:** a distinct process or task undertaken by an organisation for which a responsibility can be assigned

⁶ **Receptors:** comprise, but are not limited to people or man-made structures

⁷ **Resources:** include components of the biophysical environment

assessment of the sensitivity to change. Environmental impacts⁸ (social and biophysical) are then identified based on the potential interaction between the aspects and the receptors/resources.

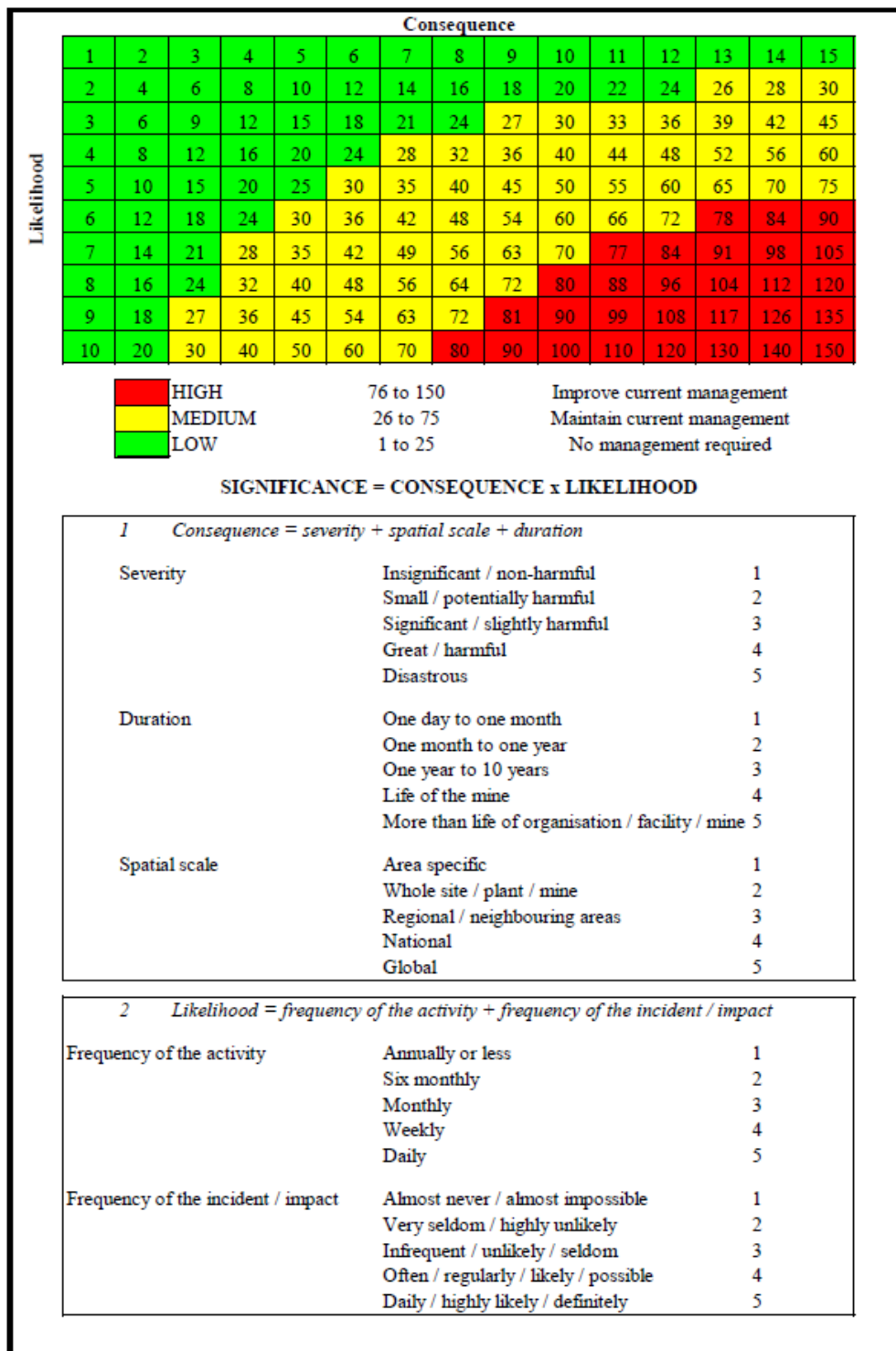


Figure 1-1: Risk Assessment Matrix

⁸ **Environmental impacts:** consequences of these aspects on environmental resources or receptors

The significance of the impact is then assessed by rating each variable numerically according to defined criteria as outlined in Figure 1-1. The severity⁹, duration¹⁰ and spatial scope¹¹ of the impact together comprise the consequence of the impact and when summed can obtain a maximum value of 15. The frequency of the activity¹² and the frequency of the incident/impact¹³ together comprise the likelihood of the impact occurring and can obtain a maximum value of 10. The values for likelihood and consequence of the impact are then read off a significance rating matrix as shown in Figure 1-1. This matrix thus provides a rating on a scale of 1 to 150 (low, medium or high) based on the consequence and likelihood of an environmental impact occurring. Natural and existing mitigation measures, including built-in engineering designs, are included in the pre-mitigation assessment of significance. Measures such as demolishing of infrastructure, and reinstatement and rehabilitation of land, are considered post-mitigation.

The Precautionary Principle is applied in line with the National Environmental Management Act, Act 107 of 1998, as amended, in instances of uncertainty or lack of information by increasing assigned ratings or adjusting final model outcomes. In certain instances where a variable or outcome requires rational adjustment due to model limitations the model outcomes are adjusted. Arguments and descriptions for such adjustments, as well as arguments for each specific impact assessments are presented in the text and encapsulated in the assessment summary table linked to each impact discussion.

Impact Assessment

For each identified impact, a table is provided to summarise the significance of the impact. Although these criteria attempt to quantify the significance of impacts, it is important to note that the assessment is generally a qualitative process and therefore the application of these criteria is open to interpretation. The assessment here is based on extensive experience in the specialist fields of expertise and the information provided. It is recognised that some of the impacts are integrated with others and so are the development phases within which they occur.

⁹ **Severity:** refers to the degree of change to the receptor status in terms of the reversibility of the impact; sensitivity of receptor to stressor; duration of impact (increasing or decreasing with time); controversy potential and precedent setting; threat to environmental and health standards

¹⁰ **Duration:** refers to the length of time over which the stressor will cause a change in the resource or receptor

¹¹ **Spatial scope:** refers to the geographical scale of the impact

¹² **Frequency of activity:** refers to how often the proposed activity will take place

¹³ **Frequency of impact:** refers to the frequency with which a stressor will impact on the receptor

1. Air Quality

Minimal impacts on air quality are expected due to very limited dust emissions associated with the construction activity. .

Impact:	1. Air Quality,				
Dust emissions associated with diamond core drilling operation itself Dust emissions associated with vehicle movement with respect to site preparation and driving to and from drill sites.					
Severity:	2	Spatial Scale:	3	Duration:	2
Consequence rating:	7				
Frequency of activity:	5	Frequency of Impact:	4		
Likelihood rating:	9				
Impact Rating:	16	Low	No management required		
Suggested Management:					
It is recommended that dust suppression measures be implemented.					

2. Biodiversity

The Prison Dam Upgrade will have no significant impact on species in the area and impacts are generally rated as low in significance. Mitigation measures are limited and include prohibiting hunting and minimizing disturbed areas.

Only existing tracks will be used as well as existing exploration made roads.

Impact:	2. Biodiversity,				
Disturbance of vegetation and flora.					
Severity:	2	Spatial Scale:	2	Duration:	2
Consequence rating:	6				
Frequency of activity:	2	Frequency of Impact:	5		
Likelihood rating:	7				
Impact Rating:	13	Low	No management required		
Suggested Management:					
Work and workers should be restricted to one area.					

3. Construction Waste

Part of the existing dam wall will be demolished, which will generate construction waste. The construction camp will require rehabilitation at the end of the contract. Some general refuse is also expected. Mitigation measures will be implemented, general refuse and rubbish must be removed from site on a weekly basis.

Impact:	3. Construction Waste,				
Construction waste may cause nuisance to the construction site if not disposed of appropriately.					
Severity:	2	Spatial Scale:	2	Duration:	2
Consequence rating:	6				
Frequency of activity:	5	Frequency of Impact:	3		
Likelihood rating:	8				
Impact Rating:	14	Low	No management required		
Suggested Management:					
Large rubbish bins are to be placed at strategic points in the construction area. General refuse and rubbish must be removed from site on a weekly basis. The Construction Site will require rehabilitation afterwards. The Construction Site will require rehabilitation afterwards, as per specified in the EMP.					

4. Damage to existing structure

This is an existing dam wall that will partially be demolished. There is a risk of the contractor damaging or removing structures not demarcated for demolition. If damage to the existing structure is not perceived and repaired before the next rainy season, there is a risk of again flooding and damage to property and potential loss of life.

Impact:	4. Damage to existing structure				
Severity:	3	Spatial Scale:	3	Duration:	5
Consequence rating:	11				
Frequency of activity:	3	Frequency of Impact:	3		
Likelihood rating:	6				
Impact Rating:	17	Low	No management required		
Suggested Management:					
The contractor will be fully liable for any damage or removal of structures not demarcated for demolition. No burning of the vegetation is allowed. Campfires should be made in a designated area					

5. Erosion

Erosion is expected to occur due to vegetation clearance, and the slope of the site.

Impact:	5. Erosion				
Due to vegetation clearance, and soil compaction erosion is expected in the construction site area.					
Severity:	4	Spatial Scale:	2	Duration:	2
Consequence rating:	8				
Frequency of activity:	5	Frequency of Impact:	3		
Likelihood rating:	8				
Impact Rating:	16	Low	No management required		
Suggested Management:					
<p>The Contractor shall only clear vegetation along the construction right-of-way, and the access routes defined in provisions</p> <p>Topsoil and subsoil to be protected as per the EMP.</p> <p>Rehabilitation plan to be implemented,</p> <p>Building levels should plan adequately for surface run-off,</p> <p>In the event of runnels or erosion occurring, the contractor must affect repairs timeously. Restorative repairs as per EMP.</p> <p>Surface water from upslope shall be contained and dispersed in erosion proof channels and allowed to discharge as per EMP.</p> <p>Steep cut and fill slopes in soft or erodible material will require erosion control measures and correct grassing methods, as per EMP.</p>					

6. Noise

Minimal noise impacts are expected on people and the environment.

Impact:	6. Noise				
Noise impacts during site establishment and decommissioning activities					
Severity:	2	Spatial Scale:	3	Duration:	2
Consequence rating:	7				
Frequency of activity:	5	Frequency of Impact:	4		
Likelihood rating:	9				
Impact Rating:	16	Low	No management required		
Suggested Management:					
<ul style="list-style-type: none"> Noise to be controlled by means of engineering control measures. 					

7. Socio Economic

The sub-contractors will be investing money in the local area, in terms of food and property rentals. Small business opportunities and improvement of skills of the local community do exist.

Impact:	7. Socio Economic				
Small business opportunities and improvement of skills of the local community.					
Severity:	2	Spatial Scale:	3	Duration:	2
Consequence rating:	7				
Frequency of activity:	3	Frequency of Impact:	3		
Likelihood rating:	6				
Impact Rating:	13	Low	Improve current management		
Suggested Management:					
Construction workers to be appointed from the local area.					

8. Soils/Land Use/Land Capability

The significance of the impact on soils, land use and land capability will remain unchanged. Once the construction vehicles are removed from site once the dam upgrade is completed and the area rehabilitated. It will therefore not result in a permanent change to soil, land use and land capability.

However, during site establishment, construction and rehabilitation soil resource will be lost from the landscape, albeit that stripping and stockpiling of the soils occurs during site establishment and drilling. As areas are rehabilitated, the secondary impacts on the community as a result of the loss of these soils are not currently considered significant. The risk rating associated with this impact is presented in the table below.

Impact:	8. Soils/Land Use/Land Capability				
Loss of soil resource due to land clearing and infrastructure establishment in areas Soil erosion at edge of drilling and contamination due to spillages of oil, fuel and chemicals.					
Severity:	2	Spatial Scale:	2	Duration:	2
Consequence rating:	6				
Frequency of activity:	1	Frequency of Impact:	2		
Likelihood rating:	3				
Impact Rating:	9	Low	No management required		
Suggested Management:					
<ul style="list-style-type: none"> • Topsoil to be stored in berms. • After the construction has been completed the compacted soils must be ripped & loosened to allow the growth of vegetation. • Footprint area will be free draining to ensure that the site area do not affect the catchments yield. Construction site area will be sealed to ensure that no surface water can enter it. 					

9. Surface and Groundwater

The impact on surface and groundwater are primarily related to the management of materials, wastes and spills from drilling operations and unauthorised disposal of contaminated substances.

Impact:	9. Surface and Groundwater,				
Contamination of Surface and ground water due to incorrect handling and disposal of waste materials, such as concrete and oil leaks from construction equipment.					
Severity:	4	Spatial Scale:	3	Duration:	2
Consequence rating:	9				
Frequency of activity:	3	Frequency of Impact:		4	
Likelihood rating:	7				
Impact Rating:	16	Low	No management required		
Suggested Management:					
<ul style="list-style-type: none"> • All areas disturbed during construction phase will be rehabilitated back to their pre-mining land capability, • Contaminated soils from oil spillages and general waste should be removed and disposed of appropriately, • Machinery to be kept in a bunded area, • Spill kits to be available on site. 					

10. Traffic

Although the expectation is that construction vehicles and drill rigs generally travel at low speeds, these vehicles sometimes have a tendency to travel at relatively high speeds leading to potential safety hazards.

Impact:	10. Traffic				
Probability of vehicular accidents resulting in injury and potential loss of lives Probability of pedestrian accidents resulting in injury and potential loss of lives					
Severity:	2	Spatial Scale:	3	Duration:	2
Consequence rating:	7				
Frequency of activity:	5	Frequency of Impact:		4	
Likelihood rating:	9				
Impact Rating:	16	Low	No management required		
Suggested Management:					
<ul style="list-style-type: none"> • The construction area will be fenced off, • Safety risk signage will be placed around the construction site, • Construction vehicles to drive at the speed limit, 					

11. Visual

The significance of visual impact associated with The Prison Dam Upgrade, will remain minimal, but construction vehicles will be visible from a distance away.

Impact:	11. Visual				
Construction equipment will be visible from a distance away.					
Severity:	2	Spatial Scale:	3	Duration:	2
Consequence rating:	7				
Frequency of activity:	1	Frequency of Impact:	2		
Likelihood rating:	3				
Impact Rating:	10	Low	No management required		
Suggested Management:					
• The anticipated construction site area will be kept to a minimum.					

12. Heritage

No impact on heritage due to the Prison Dam Upgrade, as no excavations will be done beyond the existing site. A letter was received from the office of the South African Heritage Resources Agency Officer, Archaeology, dated 10 July 2012, a copy of which is attached in Appendix E. The letter recommends contacting a suitably qualified specialist to provide a Phase 1 Archaeological Impact Assessment Report.

Attached in Appendix D, herewith find the Cultural Heritage Survey that was conducted by Mr Francois Coetzee, for the Proposed Upgrade of the Existing Prison Dam, Rustenburg Local Municipality, North West Province.

13. Topography

The significance of impact of the topography due to The Prison Dam Upgrade, will remain the as it was. Construction Vehicles are removed from site once construction is completed and will therefore not result in a permanent change to the topography after the operation phase.

A summary table is provided to summarise all the impacts.

Table 1 Summary of impact assessment

Impact	Impact Rating[1] Pre Mitigation	
1. Air Quality,	16	Low
2. Biodiversity,	13	Low
3. Construction Waste,	14	Low
4. Damage to existing structure	17	Low
5. Erosion	16	Low
6. Noise	16	Low
7. Socio Economic	13	Low
8. Soils/Land Use/Land Capability	9	Low
9. Surface and Groundwater,	16	Low
10. Traffic	16	Low
11. Visual	10	Low

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Statement

SRK concludes that all relevant environmental impacts have been addressed as part of the Basic Assessment. We thus recommended that the proposed construction be allowed to proceed, subject to strict implementation of all mitigation measures which have been included in the Environmental Management Plan.

The basic Assessment has identified some impacts, both positive and negative as a result of the proposed construction. The upgrading of the Prison Dam to an attenuation facility will result in a number of direct impacts to the surrounding community of which damage to existing structure, surface and groundwater contamination, erosion, air quality impacts, increased noise levels and increased traffic levels were the greatest concern.

There is a risk of the contractor damaging or removing structures not demarcated for demolition. The dam will be inspected by a qualified civil engineer, and an experienced contractor will be appointed. The contractor will be fully liable for any damage or removal of structures not demarcated for demolition.

Surface and Groundwater contamination may occur due to construction activities, if mitigation and management measures are not followed. The contamination can be harmful for neighbouring areas. However with the incorporation of mitigation measures this impact can be managed below acceptable standards. Stringent mitigation measures are provided to reduce this impact to acceptable levels.

Erosion may occur to the construction area due to the construction activities. However with the incorporation of mitigation measures this impact can be managed below acceptable standards. Stringent mitigation measures are provided to reduce this impact to acceptable levels.

Air Quality impact will only occur during the construction phase of the project. Dust generation and vehicle emissions may contribute to a decreased air quality impact within the surrounding communities. However with the incorporation of mitigation measures this impact can be managed below acceptable standards. Stringent mitigation measures are provided to reduce this impact to acceptable levels.

Noise levels in the surrounding communities will increase, resulting in nuisance noise being generated. This impact will only last during the construction phase, and only during normal working hours. No night activity will take place.

Traffic levels in the surrounding communities will increase, resulting in nuisance noise being generated. This impact will only last during the construction phase, and only during normal

working hours. No night activity will take place.

Alternative A (preferred alternative)

There are no alternatives to the location, as this is the upgrade of an existing dam. All negative impacts can be adequately mitigated to reach a low environmental impact and in turn have a low significance.

Alternative A is therefore recommended as this alternative will provide the surrounding communities with a number of positive social – economic impacts, and the environmental impacts, although they will be below standards after mitigation, will only last during the construction phase of the development.

Alternative B

Not applicable.

No-go alternative (compulsory)

As previously explained, the residential area, Boitekong X15, is located downstream of the Prison Dam. The residential area was developed and is now located within the 1: 10 year floodlines. During the rainy season of December 2010 and January 2011, a number of houses were flooded. By increasing the existing dam embankment height and length were one of the remedial measures which have been identified and the construction of this need to commence as soon as possible, to reduce the risk flooding and damage to property and potential loss of life.

Therefore the proposed Prison Dam upgrade is absolutely vital as it ensures a safe environment for the Boitekong X15 residents.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	
-----	--

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

[Redacted]

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

[Redacted]

Is an EMPr attached?

YES	
-----	--

The EMPr must be attached as Appendix F.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

**Appendix A1
Site Locality Map**

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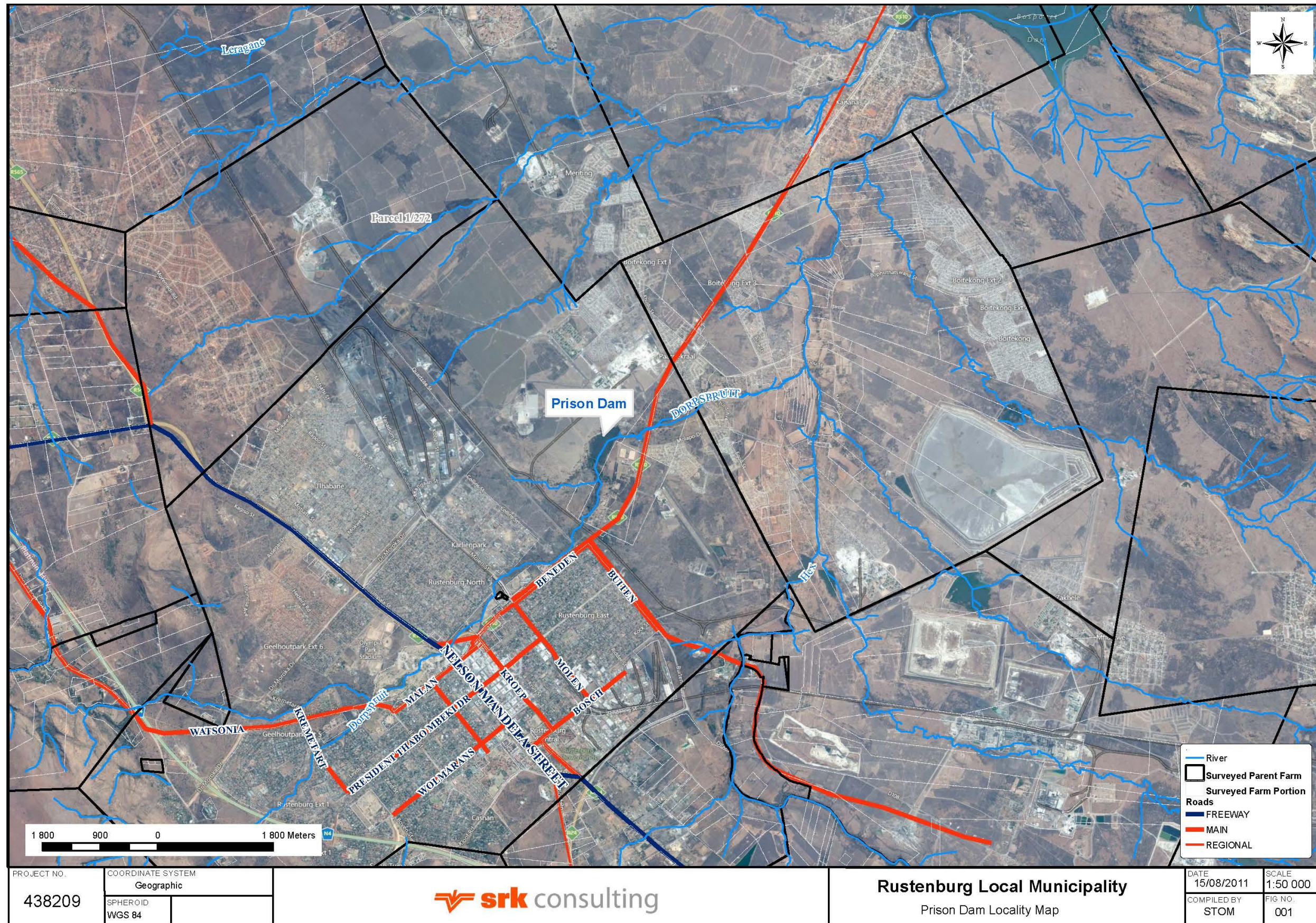


Figure 2: Prison Dam Locality Map (Appendix A1)



Figure 3: Aerial view of Prison Dam, the Dorpspruit and Boitekong x15 (Appendix A2)

Appendix B
Photographs (Prison Dam)



Figure 4 Photo orientation during Prison dam inspection (Appendix B)

Existing Prison Dam Upgrade Photo description:

The photos were taken during an inspection that was carried out on 29 September 2011 by SRK Consulting. The inspection comprised first driving to the inlet of the Dorpspruit into the dam, examining this, then driving along the western shore to the start of the embankment and inspecting this on foot to the spillway and along the eastern section of the wall close to and parallel to the Prison boundary.

Dorpspruit Inlet:

The Dorpspruit enters the dam at the southern end through what appears to be an opening in an old dam wall, Photos 1-5. It is assumed this was an original dam on the spruit which was either deliberately or accidentally broken through resulting in the forming of the Prison Dam.

For the current functioning of the dam this inlet configuration does not appear to have any significance. Under flood conditions the break in the wall will presumably erode and gradually enlarge the opening with no apparent adverse results.

Overlapping photos 6-10 show the view from the south west to the spillway and along the eastern side to the Dorpspruit. The spillway structure can barely be seen at the extreme left of Photo 7.

Dam Wall:

The wall can be divided into two sections; the first to the north of the main spillway structure and the second to the south since they have very different characteristics.

Dam Wall North:

Photos 11-14 illustrate this section of the wall as far as the auxiliary spillway structure. The wall itself has a rounded broad crest with flat well grassed side slopes with no indication of erosion or other defects. Towards the northern end of this section – Photo 13 – there is a fairly dense patch of trees and bush and thereafter the wall tapers out gradually into the natural topography.

The auxiliary spillway appears to be intact other than the wall on the north side which is badly cracked – Photo 15.

On the upstream side there is a mass of dense reed growth.

Beyond the structure there is a short length of dam wall which at the junction with the auxiliary spillway appears to be barely above this spillway level. Similarly the earth wall immediately to the north of this spillway appears to be below the appropriate level – Photo 16.

Dam Wall South:

Overlapping photos 17-20 show a view of the main spillway (hidden behind reeds) along the south wall. The spillway itself is approximately at the centre of Photo 18. Photos 21-24 were taken along the path on the crest of the dam wall south section.

This section is heavily overgrown with trees and shrubs and in parts is narrow with severely eroded zones on the upstream side and steep and high slopes on the downstream side. The vegetation on the wall and the

reefs along much of the wall prevent a thorough inspection, but when some view could be made – photos 22 and 24 – it appears no slope protection is in place and severe erosion has occurred resulting in some practically vertical slopes at full supply level.

Spillway:

Photos 25-29 show the spillway structure, the natural outlet channel and the stilling basin. The spillway itself, Photo 27, is at the left end of the wall shown in photos 25 and 26 and appears to be formed by the rocky outcrop, the existing training wall on the northern side – Photo 27) and the now demolished wall on the southern side. It is not clear whether any actual spillway structure existed on the rock, and has been destroyed, or if the rock itself formed the spillway. Little trace remains of the wall on the southern side. The wall on the northern side is badly cracked – Photo 28. The overall condition of the main wall and the supporting buttresses appears to be poor although there is little seepage through this wall. The hydraulic capacity of the spillway is currently sufficient to handle the RDD The SEF cannot be handled by the spillway

Photographs pre-construction and upgrading



Photo 01 (Dorpspruit Inlet)



Photo 02 (Dorpspruit Inlet)



Photo 03(Dorpspruit Inlet)



Photo 04 (Dorpspruit Inlet)



Photo 05(Dorpspruit Inlet)



Photo 06 (Overlapping photos 6-10 from the south west to the spillway)



Photo 07 (from the south west to the spillway)

Photo 08 (from the south west to the spillway)

(Overlapping photos 6-10 from the south west to the spillway)



Photo 09 (from the south west to the spillway)

Photo 10 (from the south west to the spillway)

(Overlapping photos 6-10 from the south west to the spillway)



Photo 11 (Dam Wall North)

Photo 12 (Dam Wall North)



Photo 13 (Dam Wall North)



Photo 14 (Dam Wall North)



Photo 15 (Auxiliary spillway)



Photo 16 (Earth wall immediately to the north)



Photo 17 (Dam Wall South)



Photo 18 (Dam Wall South)

(Overlapping photos 17-20)



Photo 19(Dam Wall South)

Photo 20(Dam Wall South)

(Overlapping photos 17-20)



Photo 21(crest of the dam wall south section) Photo 22 (crest of the dam wall south section)



Photo 23 (crest of the dam wall south section) Photo 24 (crest of the dam wall south section)



Photo 25 (Spillway)



Photo 26 (Spillway)



Photo 27 (The spillway itself)

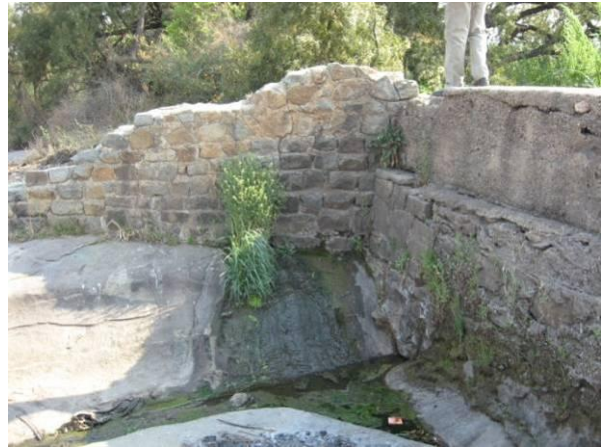


Photo 28 (Spillway wall on the northern side is badly cracked)



Photo 29 (Spillway)

Photographs of the Boitekong x 15 area.



Photo 30 Flooded house taken 2011 /02/02



Photo 31 Flooded house taken 2011 /02/02



Photo 32 Phala road crossing culvert



Photo 33 Flooded house taken 2011 /01 /18

Appendix C
Facility illustration(s)

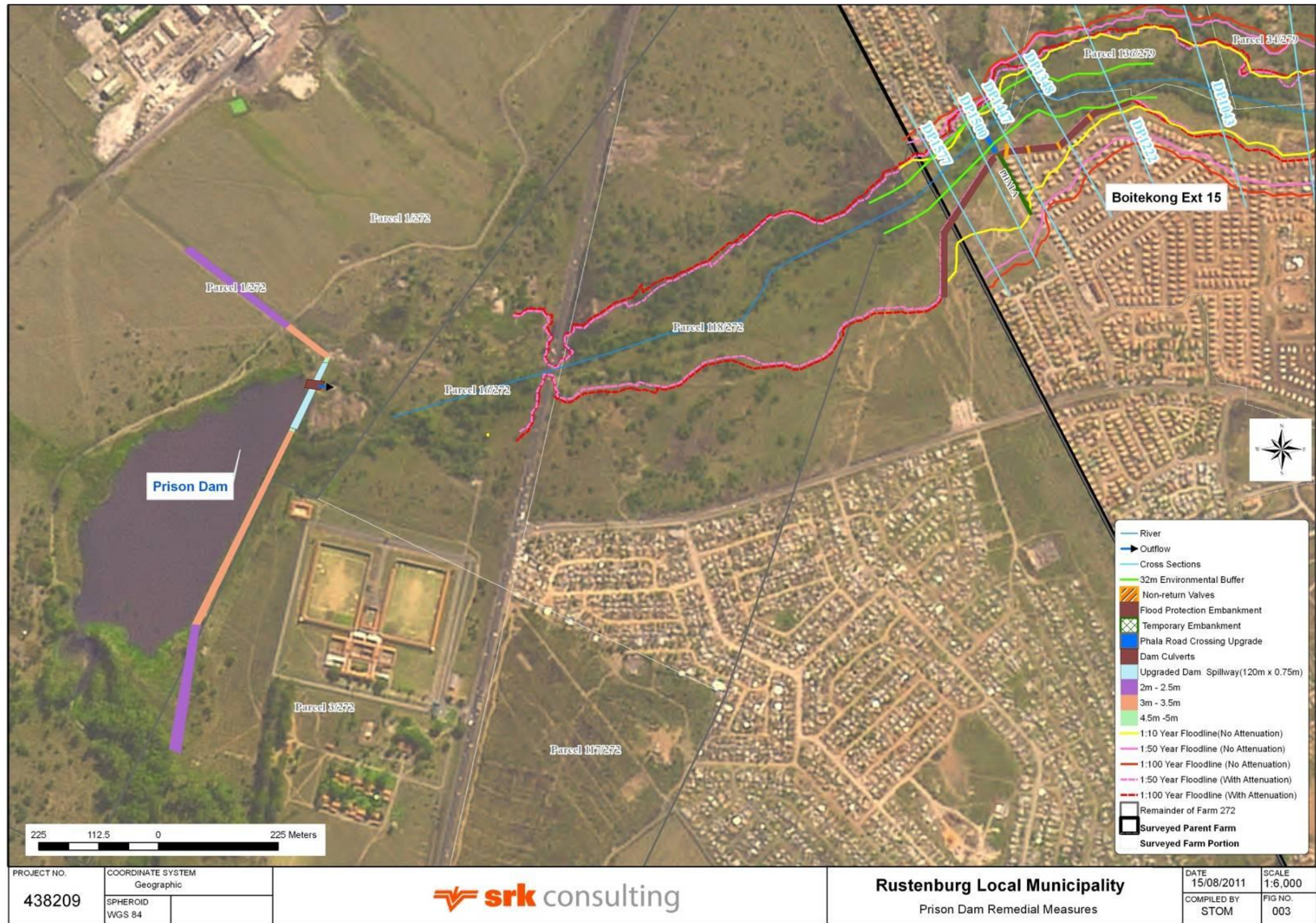


Figure 5: Proposed Remediation Measures (Appendix C)

Appendix D
Specialist reports

1. Wetland Specialist Report

2. Dam Safety Specialist Report

3. Cultural Heritage Survey Report

Appendix E
Comments and responses report

**Appendix F:
Environmental Management Programme (EMPr)**

Appendix G

DEDECT Letter RE: Approval of Culverts.

DEDECT Letter RE: Acknowledge of receiving Draft Basic Assessment.