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Department:
**Rural, Environment and Agricultural
Development**
North West Provincial Government
REPUBLIC OF SOUTH AFRICA



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(For official use only)

File Reference Number:

Application Number:

Date Received:

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. This report format is current as of **1 July 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. 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.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. 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.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. 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.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.

15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

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

YES	NO ✓
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If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

The existing Bospoort Water Treatment Works (WTW) is a 12Mℓ/d facility. In view of the regular and serious water shortages that Rustenburg Local Municipality (RLM) experiences during the early summer months before the rainy season has commenced, it is imperative that this plant be upgraded to provide additional water. The upgrade will consist of the following:

- Inlet works with coagulation utilizing lime, ferric chloride and polyelectrolyte as coagulates;
- Flocculation channel;
- Extension of the existing dissolved air flotation system;
- Addition of a new 24Mℓ/d rapid gravity sand filtration system;
- Demolition of existing vertical flow sedimentation tanks;
- Additional ozone contact capacity with ozone generator;
- New Liquid Oxygen (Lox) tank farm with a 30 m3 bulk storage tank;
- Expansion of the existing granular activated carbon (GAC) system and this will in future be operated as a biological granular activated carbon (BAC) system;
- The existing rapid gravity sand filters will be converted to granular activated carbon filters;
- Disinfection system consisting of UV radiation and chlorination;
- Additional clear water storage and high lift pump station capacity;
- A sludge management system consisting of mechanical dewatering of the DAF sludge as well as the spent wash water from the sand filters and the activated carbon filters, the latter being routed to existing sludge lagoons.

The extended plant will be constructed within the perimeter fence of the existing facility.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R.544, 545 and 546	Description of project activity
Example: <i>GN R.544 Item 11(3): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a</i>	<i>A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Crocodile river</i>

watercourse, excluding where such construction will occur behind the development setback line.	
EIA Regulations LN 1 of 2010: <ul style="list-style-type: none"> • Activity No. 28 - The expansion of existing facilities for any process or activity where such expansion will result in the need for a new, or amendment of, an existing permit or license in terms of national or provisional legislation governing the release of emissions or pollution, excluding where the facility, process or activity is included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008, in which case that Act will apply. 	<p>The existing Bospoort Water Treatment Works is a 12Mℓ/d plant that needs to be upgraded by 12Mℓ/d to a 24Mℓ/d WT plant. The upgrade will also necessitate a new application for a Waster Use License.</p>

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—

- (a) the property on which or location where it is proposed to undertake the activity;**
- (b) the type of activity to be undertaken;**
- (c) the design or layout of the activity;**
- (d) the technology to be used in the activity;**
- (e) the operational aspects of the activity; and**
- (f) the option of not implementing the activity.**

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) 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.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) **Site alternatives (Please see Appendix J1 for a) – e).**

Alternative 1 (preferred alternative)		
Description Farm Tweedepoort 283 JQ, Rustenburg Local Municipality, North West.	Lat (DDMMSS) 25° 33'42.04"	Long (DDMMSS) 27° 20'57.14"
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred)

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

Alternative S2 (if any)

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

Alternative S3 (if any)

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

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) **Lay-out alternatives**

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

e) No-go alternative

See attached Appendix J1.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

Alternative A1¹ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

All the upgrade activities fall inside the existing fenced footprint of the Bospoort WTW. The physical footprint size of the upgrade will be 1 250m ² .
m ²
m ²

¹ "Alternative A.." refer to activity, process, technology or other alternatives.

or, for linear activities:

Alternative:

Length of the activity:

Alternative A1 (preferred activity alternative)

	m
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Alternative A2 (if any)

	m
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Alternative A3 (if any)

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

Alternative:

Size of the site/servitude:

Alternative A1 (preferred activity alternative)

	m ²
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Alternative A2 (if any)

	m ²
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Alternative A3 (if any)

	m ²
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4. SITE ACCESS

Does ready access to the site exist?

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

	m
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Describe the type of access road planned:

The existing gravel road to the water treatment plant will be utilised.

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.

5. 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 accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- the accurate indication of the site in relation to closest protected environments or national parks (i.e. within 2.5 km)
- 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).

6. LAYOUT/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:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- 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
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas and ecological support area.

- protected areas (e.g Magaliesberg Protected Environment, Pilanesberg National Park etc.)

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. 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 report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 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.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES ✓	NO	Please explain
This activity is an upgrade and/or expansion of an existing facility or infrastructure in order to increase its capacity.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES ✓	NO	Please explain
The largest backlog when it comes to water services, including sanitation remains in the Rustenburg municipality (approximately 10 000 households), amongst other municipalities. (Bojanala Platinum District Municipality (IDP) - 2012-2017 Final Version). The upgrade of the Bospoort Water Treatment falls within the district's wide objectives relating to sustainable water services to provide basic water and sanitation infrastructure to all communities in order to eradicate the backlog.			
(b) Urban edge / Edge of Built environment for the area	YES ✓	NO	Please explain
This activity is an upgrade and/or expansion of an existing facility or infrastructure, therefore the Urban edge or edge of built environment of the area will remain the same. The WTW is currently outside the defined Urban Edge.			

<p>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</p>	<p>YES ✓</p>	<p>NO</p>	<p>Please explain</p>
<p>Rustenburg Local Municipality (RLM) is growing rapidly due to major mining operations in the area. The Rustenburg Water Services Trust (RWST) compiled a Master Plan for Rustenburg's water services. The document highlighted that the water consumption in Rustenburg was over-stated relative to its true theoretical requirements. Immediate actions which can be implemented to alleviate water shortages are the upgrading of the Bospoort Water Treatment Works (WTW) with an additional 12Mℓ/d treatment capacity.</p>			
<p>(d) Approved Structure Plan of the Municipality</p>	<p>YES ✓</p>	<p>NO</p>	<p>Please explain</p>
<p>The Rustenburg Water Services Trust is a municipal entity that was established to assist with water services in the Rustenburg Local Municipality's area. One of the main focus points of the Trust is to re-commission the Bospoort Dam Water Purification Works and to use that approximately 18Mℓ/day to reduce the dependency of RLM on external Rand Water supplies. (RUSTENBURG LOCAL MUNICIPALITY City Development Strategy (July 2006)). The Rustenburg Water Services Trust is the main applicant for this project, so the expansion and upgrade is within the approved structure plan of the municipality.</p>			

<p>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</p>	<p>YES ✓</p>	<p>NO</p>	<p>Please explain</p>
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The Bospoort WTW falls within the Aquatic Systems Management Zone of the RLM EMF (Chanzo, 2011). The Bospoort Dam is a small state-owned impoundment situated on the Hex River upstream of the Vaalkop Dam, northeast of Rustenburg in the Crocodile Catchment. The dam covers a surface area of 379 ha at full supply level. The dam is subject to a large amount of fishing effort. The Bospoort dam is used for irrigation and domestic water supply. The Bospoort Water Treatment Works (WTW) was constructed at the dam to treat the water for potable supply to town. Due to increase in deterioration of water quality, for a while the Bospoort WTW ceased to operate as a result of nuisance problems (taste and odour) caused by excessive proliferation of algal bloom. Possible contaminants are sewage treatment works upstream, agricultural run-offs, urban run-offs and re-circulation of nutrients from bottom sediments (Mogakabe and van Ginkel, 2008).

The EMF identifies constraints within this Management zone as inter alia non-compliance of sewage works, acidification (eg, from acid mine drainage), diffuse pollution from dense settlements, treated sewage effluents and Impoundments are all impacts observed on aquatic systems in RLM. The development guidelines in the EMF state that aquatic systems are very sensitive environments that need protection from any form of disturbance. The transition between the water in watercourses and land (riparian area) also form an important part of these areas as it contributes to their ecological function. No development is allowed in aquatic environments and any activity close to a watercourse or riparian zone of a water course requires must be in line with the National Water Act and the National Environmental Management Act. Furthermore, the objectives and targets for aquatic systems and water quality include:

- Integrated water resource management is practiced in the study area.
- The quality of riverine systems must be improved in order to ensure that the quality of water complies with the available water quality standards;
- Any activity to occur near or close to a water body must be in line with provisions of the National Water Act, 1998 (Act No. 36 of 1998); and
- Effective management of water resources and water quality needs to be established through the protection of watercourses and the rehabilitation of wetlands. Systems must be established to monitor water in catchments so that catchment-specific pollution sources can be identified and mitigated against.

The WTW upgrade is not deemed to be in contradiction to the dictates and recommendations of the EMF nor legislation; environmental authorisation is rather sought due to the listed activity relating to the need for an amendment to the existing Water Use License.

(f) Any other Plans (e.g. Guide Plan)	YES ✓	NO	Please explain
<p>The Rustenburg Water Services Trust also compiled a Master Plan for Rustenburg's water services. The Rustenburg Water Services Trust is a municipal entity that was established to assist with Water services in the Rustenburg Local Municipality's area. (RUSTENBURG LOCAL MUNICIPALITY City Development Strategy (July 2006)). The RLM instructed its Water Services Utility, the Rustenburg Water Services Trust (RWST) to urgently investigate the possibility to extend the existing 12 Mℓ/d Bospoort Water Treatment Works by at least another 12 Mℓ/d treatment capacity to 24 Mℓ/d. The RWST in turn appointed the Rustenburg Consulting Consortium to undertake a scoping investigation into the possibility to extend the plant and to prepare a MIG application for funding. This has been done and MIG funding has been approved for the project.</p> <p>The Rustenburg area is generally recognized as one of the fastest growing cities in South Africa, both from a population and economic growth perspective. Economic and population growth rates of Rustenburg have been well in excess of the National and North West Provincial average rates over the last decade. In response to these development challenges, the Rustenburg Local Municipality has developed its Integrated Development Plan and a number of sector plans such as the Strategic Environmental Assessment, Spatial Development Framework, Housing Strategy, LED Plan and others. The preparation of these plans also took place over the same timeframe where initiatives such as the Bojanala District Growth and Development Strategy, the North West Provincial Growth and Development strategy and the Accelerated Shared Growth and Investment Initiative for South Africa (ASGISA) took place. The Rustenburg LM has thus identified the need to prepare a City Development Strategy (CDS) which aims to integrate and streamline these plans to complement each other towards a common long term development vision. Review of the CDS confirms that the upgrade is in line with the strategy's goals as the central theme of the Sustainable City concept focuses on how a city affects the natural resources that sustain it and make it viable. The objective is to promote equity and efficiency, and to ensure that natural and other resources are dealt with appropriately during any social and economic development. Hence, the upgrade helps ensure equal access to services and mitigates the raw water shortages currently experienced in Rustenburg and its surrounds.</p>			
<p>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</p>	YES ✓	NO	Please explain
<p>It is highly unlikely that all areas earmarked for the respective land uses in the local Spatial Development Frameworks would be fully developed, it is necessary to quantify and contextualize the natural resource requirements in terms of water use and wastewater effluent. Hence, the functionality of the WTW is seen as a key component of achieving the development goals of the current SDF. The largest backlog when it comes to water services, includes safe drinking water in the Rustenburg municipality (approximately 10 000 households), amongst other municipalities. (Bojanala Platinum District Municipality (IDP) - 2012-2017 Final Version). The upgrade of the Bospoort Water Treatment Works falls within the district's wide objectives relating to sustainable water services to provide basic water and sanitation infrastructure to all communities in order to eradicate the backlog.</p>			

4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES ✓	NO	Please explain
<p>In view of the regular and serious water shortages that Rustenburg Local Municipality experiences during the early summer months before the rainy season has commenced, it is imperative that this plant be upgraded to provide additional water.</p> <p>The upgrading of the Bospoort WTW will ensure effective supply of water to the increasing water consumption of the Rustenburg LM.</p>			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO ✓	Please explain
<p>This application is for the approval to add to the capacity of the Bospoort Water Treatment Works, which is currently under-capacity and is struggling to cope with the increasing water demands of the Rustenburg area.</p>			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES ✓	NO	Please explain
<p>This application is for the approval to add to the capacity of the Bospoort Water Treatment Works, which is a key infrastructural requirement for the area for the municipality to be able to deliver effective services to the area.</p>			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES ✓	NO	Please explain
<p>The Rustenburg City Development Strategy (CDS) describes and meets the objectives of The South African Cities Network (SACN). The Rustenburg area is generally recognized as one of the fastest growing cities in South Africa, both from a population and economic growth perspective. Economic and population growth rates of Rustenburg have been well in excess of the National and North West Provincial average rates over the last decade. The Rustenburg LM has thus identified the need to prepare a City Development Strategy (CDS) which aims to integrate and streamline these plans to complement each other towards a common long term development vision. The envisioned Rustenburg City Development Strategy is thus seen by the Rustenburg LM as an instrument to present a platform of equal and competitive economic growth opportunities; address the spatial inefficiencies such as urban sprawl, low density and uneven distribution of infrastructure, and the development of roads, railways and other engineering infrastructure to create liveable residential and working environments. The CDS must thus instil confidence that RLM has a clear long term road map for the development of the city and identify a collaborative development framework for this long term development vision. The upgrading of the Bospoort WTW will be providing the municipality with additional water treatment infrastructure capacity, to provide all communities both in town and rural areas. The upgrade will also improve the quality of water delivered to all end-users within the district. The availability of safe and clean water is a national concern in order to combat diseases caused by lack of safe water.</p>			

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES ✓	NO	Please explain
This activity is an upgrade and/or expansion of an existing facility or infrastructure, the location of which has proved favourable to the purpose.			
9. Is the development the best practicable environmental option for this land/site?	YES ✓	NO	Please explain
Several other options have been considered for the upgrading and increased capacity of the WTW, and the current option was deemed most suitable following a due diligence study by the appointed consulting engineers. The details of the comparative options are included under the Alternatives Assessment in Appendix J1.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES ✓	NO	Please explain
The upgrade will improve the quality of water delivered to all end-users within the district. The availability of safe and clean water is seen as a major benefit of the proposed upgrade which will help combat diseases caused by lack of safe drinking water. The construction phase of the upgrade will be completed in accordance with an approved EMPr that will provide necessary mitigations to help prevent any negative impacts from the works on the local community.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES ✓	NO	Please explain
Water Treatment is an ongoing and essential aspect of municipal management and this activity is simply an upgrade and/or expansion of an existing facility or infrastructure. It does however, encourage forward planning of municipal infrastructure to ensure that they can effectively service growing communities.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO ✓	Please explain
The upgrade of the Bospoort WTW will improve the quality of water delivered to all end-users within the district. The availability of safe and clean water is seen as a major benefit of the proposed upgrade which will help combat diseases caused by lack of safe water. The construction phase of the upgrade will be completed in accordance with an approved EMPr that will provide necessary mitigations to help prevent any negative impacts from the works on the local community.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO ✓	Please explain
The WTW is currently located outside the delineated Urban Edge according to the SDF. The purpose of defining an urban edge is to prevent uncontrolled urban development which may lead to urban sprawl and increases pressure on limited resources. As this activity is an upgrade and/or expansion of an existing facility or infrastructure, the Urban edge will remain the same and will not be compromised.			

14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES ✓	NO	Please explain
Specifically, SIP 6 (Integrated municipal infrastructure project), which aims to develop national capacity to assist the 23 districts with the fewest resources (19 million people) to address all the maintenance backlogs and upgrades required in water, electricity and sanitation bulk infrastructure. (National Infrastructure Plan, 2012)			
15. What will the benefits be to society in general and to the local communities?	Please explain		
The upgrade will improve the quality of water delivered to all end-users within the district. Temporary employment opportunities will be provided during the construction process. The community will benefit from safe and functional water resources for their community. The availability of safe and clean water is a national concern in order to combat diseases caused by lack of safe water			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
No, the upgrading of the Bospoort WTW will ensure the capacity of the works keeps track of population growth and developmental needs of the community into the near future; thereby providing safe and functional water resources for all end-users within the district.			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
The largest backlog when it comes to water services, including safe drinking water remains in the Rustenburg municipality (approximately 10 000 households), amongst other municipalities. (Bojanala Platinum District Municipality (IDP) - 2012-2017 Final Version). The upgrade of the Bospoort Water Treatment falls within the district's wide objectives relating to sustainable water services to provide basic water and sanitation infrastructure to all communities in order to eradicate the backlog.			

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

- Objective (2)(a) promotes the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment. The principles outlined in section 2 of NEMA have remained the underpinning philosophy in compiling the Basic Assessment Report (BAR). In mitigating impact an appendix addressing impact assessment supports the BAR. A site inspection was undertaken in order to assess the surroundings and environment of the site, in lieu of the proposed upgrade. An EAP with the necessary expertise was appointed to carry out the assessment. Environmental Planning tools, i.e. IDP, SDF & EMF were consulted in order to help provide a more meaningful report.
- Objective (2)(b) requires the EAP to identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits, and promoting compliance with the principles of environmental management set out in section 2. The alternatives assessment & alternatives assessment, appendices to the BAR, address the issues identified in this objective.
- Objective (2)(c) requires that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them. An application for Environmental Authorisation (EA) as well as an a Water Use License (WUL) in combination with the technical design all help to ensure that the effects on the environment receive the necessary attention and an integrated approach is adopted with regards to the upgrade.
- Objective (2)(d) requires that adequate and appropriate opportunity for public participation in decisions that may affect the environment. All relevant Interested & Affected Parties (I&AP's) have been consulted with, with respect to the proposed upgrade as per the requirements stipulated in NEMA and relevant best practice guidelines. All comments & communication are recorded in a Comments & Response register that is included as an appendix to the BAR. Stakeholders were given a Background Information Document to provide a brief description of the project. A public meeting was held in order to allow the community and all stakeholders involved to voice their concerns regarding the proposed upgrade.
- Objective (2)(e) requires the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment. The BAR outlines all aspects of potential environmental impact that may occur as a result of the proposed upgrade in order to assist the relevant authority/s in making an informed decision on the application at hand.
- Objective (2)(f) requires the identification and employment of modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2. The impacts and mitigations identified in the impact assessment as well as any comments and concerns raised by I&AP's are transposed into an implementable plan in the EMPr.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

- All applicable legislation has been consulted and it is not expected that any additional specialist inputs are required. Principle 2.(1)(a) states that the principles of NEMA shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination. This project has been developed to ensure the socio-economic potential of the larger Rustenburg community is not hindered due to the lack of essential services that must support and track all development.
- Principle 2.(1)(b) requires that the NEMA principles must serve as the general framework within which environmental management and implementation plans must be formulated. The Basic Assessment process currently being undertaken along with its appendices, specifically the alternative assessment and impact assessment ensure that any approvals issued for the upgrade align with an integrated environmental management approach and are transposed into the project EMPr to ensure it's implemented accordingly.
- Principle 2.(2) required that environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably. This project aims to help meet the basic service provision needs in the area of adequate sanitation of the local community, and the upgrade is the best practicable environmental option as its reduces impact on the receiving environment while increases capacity of the WTW to meet current demand and make provision for future demand.
- Principle 2.(3) requires that development must be socially, environmentally and economically sustainable. The technology options adopted for the Bospoort WTW have been deemed the most feasible and practical for the application, while ensuring that the required water treatment standards are enforced.
- Principle (4)(a) states that sustainable development requires the consideration of all relevant factors including the following:
 - (i) that the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied. District wide drinking water shortages are necessitating the upgrade of the WTW. The upgrade is critical to ensure that current demand as well as future population growth are catered for.
 - (ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied. The proper functioning of the WTW will alleviate district wide drinking water shortages. As the upgrade will take place within the current fenced area of the WTW, limited impact will occur. Additional natural area will need to be cleared including the blasting of rocks and small rocky koppies to make space for the additional infrastructure.
 - (iii) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied. The upgrade falls within the current footprint of the existing works and no cultural heritage resources are being affected in the process. The project has nonetheless been registered on the SAHRA website (case nr. 6543) and the EMPr addresses the process to be followed should any artefacts been unearthed during construction.
 - (iv) that waste is avoided or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner. The predominant waste stream from the WTW is sludge that is managed in on-site sludge lagoons, according to a sludge management plan.

11. 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	Applicability to the project	Administering authority	Date
Government Notice No. R. 543, R. 544, R. 545, R. 546 and R. 547 in Government Gazette No. 33306 of 18 June 2010	The upgrade constitutes Activity 28 of Government Notice No. R. 544	DEA	18 June 2010 (promulgated on 02 August 2010)
National Water Act	A water use licence is required & is in process.	DWS	1998
National Environmental Management: Waste Act	To verify if water treatment sludge lagoons constitutes as waste activity and triggers a listed activity.	DEA	2008
National Environmental Management Act	The upgrade constitutes Activity 28 of Government Notice No. R. 544	DEA/DREAD	1998
Rustenburg Local Municipality SDF	To see if the upgrade falls within the Municipality's strategic plans.	Municipal Council	2010
Rustenburg Local Municipality EMF	Ensure the upgrade aligns with the Municipality's Environmental Framework.	Municipal Council	2010
DEA (2010), Public Participation 2010, Integrated Environmental Management Guideline Series 7	To ensure best practice is applied with regards to Public Participation on the project.	Department of Environmental Affairs, Pretoria, South Africa	2010
DEAT (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006. Integrated Environmental Management Guideline Series,	Provide guidance on assessing alternatives on the project.	Department of Environmental Affairs and Tourism (DEAT), Pretoria	2006
DEAT (2004) Criteria for determining Alternatives in EIA, Integrated Environmental Management, Information Series 11,	Provide guidance on assessing alternatives on the project.	Department of Environmental Affairs and Tourism (DEAT), Pretoria.	2004
DEAT (2002) Specialist Studies, Information Series 4.	Review guideline to assess whether or not specialist studies are required.	Department of Environmental Affairs and Tourism (DEAT), Pretoria.	2002
DEA&DP Guideline on Alternatives, EIA Guideline and Information Document Series.	Provide guidance on assessing alternatives on the project.	Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).	2010
National Heritage Resources	To ensure correct procedures	SAHRA Council	1999

Act, Act No.	are followed to remain compliant with the Act.		
Conservation of Agricultural Resources Act.	For reference, as the area surrounding is zoned as Agricultural.	Department of Agriculture	1983, as amended
Bojanala Platinum District Municipality (IDP)	Ensure that the project aligns with the District Municipality's IDP.	Municipal Council	2012-2017 Final Version
Rustenburg Local Municipality Intergrated Development Plan (Review)	Ensure that the project aligns with the Local Municipality's IDP under review.	Municipal Council	2014-2015
Rustenburg Local Municipality Intergrated Development Plan	Ensure that the project aligns with the current Local Municipal IDP.	Municipal Council	2012-2017
Rustenburg Spatial Development Framework (Review)	Ensure that the project aligns with the Local Municipality's IDP under review.	K2M Technologies (Pty)Ltd	2010

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

YES ✓	NO
20m ³	

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

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

The municipality is responsible for the collection of all domestic waste generated through door-to-door collection. However, in certain areas waste is collected by a private waste contractor (Millennium Waste, C&D Plastics), which was contracted by the municipality to help fulfil part of its service (Rustenburg IDP, 2012-17). Should none of these service providers operate at or near Bospoort, the construction contractor will be mandated to remove all solid waste to the registered Waterval landfill site.

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

A new licensed landfill Waterval Waste Disposal Site, has recently been completed and will be ready to receive construction waste from the project (**See Appendix J2**). The only other licensed landfill - Townlands landfill site - is in the process of closure. The application for closure is already submitted to the NW Dept. of Environment and is awaiting response. Monnakato, Hartbeesfontein and Phatsima communal sites are also in the process of closure.

Will the activity produce solid waste during its operational phase?

YES ✓	NO
20m ³	

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

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

The current sludge management process at BWPW is by means of sludge lagoons. While this was an acceptable way of dealing with the sludge emanating from a 12 Mℓ/d plant, it will not be a suitable process for sludge management of a 24 Mℓ/d plant and as such, more advanced sludge treatment processes will need to be employed. It is envisaged that mechanical sludge dewatering utilising belt presses or centrifuges will be introduced and the resultant thickened sludge (mainly DAF sludge) will be disposed of as solid waste. The liquors emanating from sludge management and sludge dewatering will either be returned to the existing sludge lagoons for further purification before being released to the river or it will be recycled through the plant if the quality is acceptable.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Waterval Waste Disposal Site.

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

It is recommended that the sludge is analysed in order to undertake a sludge classification as part of the WRC's Sludge Disposal Guidelines. The sludge may then be suitable for recycling within brick making and other industry.

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 NEM:WA?

YES	NO ✓
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If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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

YES	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. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

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

YES	NO ✓
-----	---------

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

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

m ³	
YES	NO

If YES, describe the type of effluent and the disposal mechanism/method

--

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:	<input type="text"/>	Cell:	<input type="text"/>
E-mail:	<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:

- Dewatering of sludge to form solid waste within the new process train;
- Implementation of Water Conservation and Water Demand Management (WC/WDM) initiatives to ensure a sustainable supply of water for the future and result in significant long-term financial savings for the municipality and the public;
- To manage impacts on the utilization and quality of both surface and ground water resources;
- To reduce the level of unaccounted for water in the district through appropriate demand management strategies;
- To contribute towards the financial sustainability of Water Services Authorities through appropriate cost recovery mechanisms;
- To introduce appropriate water use conservation and protection strategies. (Rustenburg & Bojanala IDP, 2012-17).
- Possibility of recycling sludge for brick making and other industry.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

YES	NO
	✓
YES	NO

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant must 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:

<input type="text"/>

d) Waste Licence/Registration

Will any aspect of the activity produce waste that will require a waste licence/registration in terms of the NEM:WA?

YES	NO
	✓

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?

YES	NO
✓	
YES	NO
✓	

If YES, is it controlled by any legislation of any sphere of government?

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:

<p>Noise will be generated during construction by the contractors and their machines and equipment. Low-level noise, consistent with normal residential activities will be generated during operation. No application for scoping and EIA is required. However, the noise generation of the activity is regulated under the Occupational Health and Safety Act (Act No 85 1993).</p>
--

13. 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 ✓	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:

745 M/litres	
YES ✓	NO

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

14. ENERGY EFFICIENCY

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

The design of the filters will be based on a more modern technology than the current 50+ year old sand filter system.

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

Generators will be used in the case of a power cut.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- 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 B and indicate the area, which is covered by each copy No. on the Site Plan.

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

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

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

YES	NO ✓
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If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	North West
District Municipality	Bojanala Platinum
Local Municipality	Rustenburg
Ward Number(s)	19
Farm name and number	Farm Tweedepoort 283 JQ, Rustenburg Local Municipality, North West.
Portion number	Portion 4
SG Code	TOJQ 0000000028300004

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Vacant/Unspecified according to the EMF.
--

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?

YES	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
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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
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2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input checked="" type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input checked="" type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

Any other unstable soil or geological feature

YES	NO ✓
YES ✓	NO

YES	NO
YES	NO

YES	NO
YES	NO

An area sensitive to erosion

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 alien infestation ^E ✓	Veld dominated by alien species ^E	Gardens ✓
Sport field	Cultivated land	Paved surface ✓	Building or other structure ✓	Bare soil ✓

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. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES ✓	NO	UNSURE
Non-Perennial River	YES	NO ✓	UNSURE
Permanent Wetland	YES	NO ✓	UNSURE
Seasonal Wetland	YES	NO ✓	UNSURE
Artificial Wetland	YES ✓	NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

The Hex River is a perennial watercourse within 32 metres from the WTW and an artificial reed bed system to
the north of the WTW which are the sludge lagoons. The Bospoort Dam is within 500 metres from the WTW.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that 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:

Natural area ✓	Dam or reservoir ✓	Polo fields
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland ✓
Light industrial	Sewage treatment plant ^A	Nature conservation area ✓
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge ✓
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

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

N/A

If any of the boxes marked with an "AN" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO ✓
Core area of a protected area?	YES	NO ✓
Buffer area of a protected area?	YES	NO ✓
Planned expansion area of an existing protected area?	YES	NO ✓
Existing offset area associated with a previous Environmental Authorisation?	YES	NO ✓

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. 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 Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

YES	NO ✓
Uncertain	

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

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

YES	NO ✓
-----	------

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

YES	NO ✓
-----	------

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

There has been a steady increase in the labour force participation rate between 1996 and 2010. This has been in line with the national labour force participation rate which has also indicated a steady increase. It is positive to see that the RLM unemployment rate has steadily decreased over the period from 1996 to 2010. In comparison with the national unemployment rate the RLM has done very good. (IDP Review 2014/15). The dominance of the mining sector in the local economy of the Rustenburg LM indicates that more than 50% of the employed economically active population were involved in the mining sector by 2007. The total number of people employed in this sector has also increased from 57212 in 2001 to 64861 by 2007. The most notable other sectors is the wholesale and retail trade sector which by 2007 accounted for 10.8% of the employed population (13962 people) and the community, social and personal services sector representing 12% of the employed population (15490 people). This information also indicates that the proportional contribution of the various economic sectors to employment have not dramatically changed between 2001 and 2007. A further important aspect to note is that, despite the large rural areas in the Rustenburg LM, the agricultural sector only accounted for 3.4% of the employed population by 2007. It also slightly decreased from 4.1% in 2007.

The spatial concentration of economic activities are concentrated mainly along the mining belt stretching from Marikana in the east through Rustenburg up to the Boschoek area in the north western parts of the municipality. The levels of economic activity in the north eastern and southern parts of the municipality are very insignificant compared to the rest of the municipal area. This area also coincides with the highest levels of accessibility to employment (in excess of 25 000 employment opportunities within a 30 minute driving time) in the central parts of the municipality. In contrast, the estimated number of employment opportunities within 30 minutes driving time in the north eastern and southern parts of the municipality is generally below 1000. This information implies that the economic strength of the municipality is not equally spread across the municipal area and is largely associated with the location of the mining activities in the central and northern parts of the municipal area. This aspect is further illustrated by the total estimated mining Gross Value Added distribution across the municipality. The spatial distribution of Gross Value Added emanating from the manufacturing and the wholesale and retail trade sectors is largely concentrated in Rustenburg and its immediate surrounding areas, with limited contribution to production in other larger centres such as Phokeng and the Boitekong area. In most parts of the municipality the contribution of the agricultural sector to GVA is very limited. The largest contribution of the agricultural sector is in the extreme southern parts where the agricultural GVA exceeds R5 million per annum in certain locations.

The estimated unemployment rates in the Rustenburg LM have decreased from 31.8% in 2001 to 28.2% in 2007. These figures are substantially lower than the comparative district unemployment rate which decreased from 40.8% to 33.7% over the same period. A further notable feature is the significant differences between the levels of unemployment between the male and female population. The unemployment rate of the male population in 2007 was 18.1%, compared to the 46.3% of the female population (more than double the unemployment rate of the male population) (SDF, 2010).

Economic profile of local municipality:

The Gross Value Added of the Rustenburg Local Municipality as measured in constant prices indicates that the total value of all products and services produced within the boundaries of the Rustenburg Local Municipality increased from approximately R6.3 billion in 1996 to nearly R12 billion in 2003. It is also clearly evident from these figures is that the Rustenburg Local Municipality has been the strongest growing local economy within the Bojanala Platinum District Municipality. The Rustenburg local economy is one of the few local economies in the country which is able to achieve the overall national target of obtaining a 6% per annum growth rate (RUSTENBURG LOCAL MUNICIPALITY City Development Strategy (July 2006)).

The comparative role of the various economic sectors as source of employment at the Rustenburg LM level, compared with the overall Bojanala Platinum DM figures indicates that although the mining sector is also the dominant sector at district level (33.6% of employed population in 2007), its dominance is less pronounced than in the Rustenburg LM area. The contribution of the other economic sectors is roughly similar to that of the Rustenburg LM, albeit at somewhat higher proportional levels. The most notable difference in structure between the local and district profiles is the substantially higher proportion of the district population (13.9%) involved in the manufacturing sector, compared to only 6.5% in Rustenburg LM (SDF, 2010).

Level of education:

The level of education between the various racial groups for 2001 and 2010 has increased, with less individuals that have no schooling to Grade 6. (IDP Review 2014/15).

It is generally recognized that the skills profile of a particular area has a significant influence on the economic performance and growth of that region. The education profile of the Rustenburg population older than 20 years of age indicates that, although significant progress has been made with the eradication of adult illiteracy (decreasing from proximately 12% to 6.7%), the majority of the adult population have only completed some form of secondary education as highest qualification (representing just over 40% of the total adult population). Although some progress has been made with the percentage of adults who have completed a certificate or diploma (6% by 2007) and those with degrees (2.2% of the 2007 population) this still represents a very low proportion of the adult municipal population.

The gender breakdown of the education profile indicates that there are no significant differences between the education profiles, although a slightly higher proportion of the male population has only completed primary education compared to the female population. In both categories, the percentage of the adult population with some form of tertiary qualification remains very low.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R125m		
What is the expected yearly income that will be generated by or as a result of the activity?	R0		
Will the activity contribute to service infrastructure?	<table border="1"> <tr> <td>YES ✓</td> <td>NO</td> </tr> </table>	YES ✓	NO
YES ✓	NO		
Is the activity a public amenity?	<table border="1"> <tr> <td>YES ✓</td> <td>NO</td> </tr> </table>	YES ✓	NO
YES ✓	NO		
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	80		
What is the expected value of the employment opportunities during the development and construction phase?	R10 mil		
What percentage of this will accrue to previously disadvantaged individuals?	50%		
How many permanent new employment opportunities will be created during the operational phase of the activity?	10		

What is the expected current value of the employment opportunities during the first 10 years?

R5mil
90%

What percentage of this will accrue to previously disadvantaged individuals?

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR) ✓	The WTW is surrounded by a CBA but the actual footprint is excluded.

- b) **Indicate and describe the habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	10
Near Natural (includes areas with low to moderate level of alien invasive plants)	%	10
Degraded (includes areas heavily invaded by alien plants)	%	20
Transformed	100%	60

(includes cultivation, dams, urban, plantation, roads, etc)		
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- c) Complete the table to indicate:
- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems		
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)		
	Endangered			
	Vulnerable			
	Least Threatened			
	✓	YES ✓	NO	UNSURE

- d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

General information

The WTW upgrade takes place within the existing footprint which is already largely transformed to open degraded grassland interspersed with occasional trees & shrubs, especially along the edge of the footprint. There is a cf. norite koppie adjacent to the WTW and rocky outcrops exist within the WTW footprint. The following plants of conservation concern were located within the treatment works which included *Aloe marlothii* (Mountain Aloe) and *Sclerocarya birrea* subsp. *caffra* (Marula Tree). The surrounding area is dominated by *Acacia* woodland and the following plant species remain within the transformed footprint of the WTW (landscaped areas); *Acacia sieberiana* (Paperbark Thorn), *Erythrina lysistemon* (Common Coral Tree), *Cussonia spicata* (Common Cabbage Tree), *Grewia flavescens* (Sand Paper Raisin), *Acacia nilotica* (Scented Acacia), *Flueggea virosa* (White-Berry Bush), *Dombeya rotundifolia* (Wild Pear), *Rhoicissus tridentata* (Bushman's Grape), *Heteropyxis natalensis* (Weeping Lavender Tree) & *Croton gratissimus* (Lavender Croton). The following alien plant species were present on the site including *Melia azedarach* (Syringa), *Lantana Camara* (Lantana), *Opuntia* sp. (Prickly Pear) and *Ricinus communis* (Castor Oil plant).

The WTW site is located below the Bospoort Dam wall and nearby the Hex River system, which is however more than a 100m away from the site. The information below provides context against the larger landscape within which the WTW is located.

Vegetation & landscape features

The footprint falls within the Savanna Biome and straddles two vegetation types namely the Marikana Thornveld (along the fringes closest to the dam) & Norite Koppie Bushveld (majority of the surface area of the works) according to Mucina & Rutherford (2006). The Marikana Thornveld vegetation is characterised by Open *Acacia karoo* woodland on the valleys, undulating plains and hills. Shrubs dominate the drainage lines, termitaria and rocky outcrops.

The Norite Koppie Bushveld is a low, semi-open to closed woodland up to 5m tall, consisting of dense deciduous shrubs and trees with very sparse undergrowth on shallow soils, with large areas not covered by vegetation. Tree and shrub layers are continuous. The stands of this unit are found on noritic outcrops and koppies, many appearing as inselbergs above the surrounding plains.

Conservation

The Marikana veld type is classified as “Vulnerable” due to irreversible loss of natural habitat, with the remaining natural habitat amounting to only 60% of original area of the original ecosystem (Rutherford et al. 2006). Less than 1% of the vegetation type is under some form of formal protection.

The Norite veld type is classified as “Least Threatened” according to remote sensing data, but ground truthing suggests that it is rather susceptible. None of the veld type is conserved in any statutory reserves but 4% is conserved in De Onderstepoort Nature Reserve. Between 10 & 20% of the veld type has been transformed mainly by mining as well as urban and built-up environments and cultivated areas.

Aquatic Ecosystem

The WTW falls within the Crocodile (West) and Marico Water Management Area (WMA), within the Elands sub-water management area, and is not classified as a fresh water priority area within the quarternary subcatchment. No listed National Freshwater Ecosystem Priority Area (NFEPA) wetlands are affected by the development.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Platinum Weekly	
Date published	03 October 2014	
Site notice position	Latitude	Longitude
	25°35'58"	27°17'50"
Date placed	07 October 2014	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Lebogang Mashumu	Magalies Water Board	(014) 597-4636 lebogangma@magalieswater.co.za
Kate Nkoe & Calvin Mohloiwa	Rustenburg Tourism Information & Development Centre	(014) 590-3320 vicrust@tourismnorthwest.co.za
Hardus Van Der Linde	Telkom	(012) 311-3636 vdlindh@telkom.co.za
Lungile Motsisi & David Tunnicliff	Eskom	motsisL@eskom.co.za tunnicDA@eskom.co.za
Mauritz Muller	RUSTENBURG AIRSTRIP	083 556-0073 rtbflyingclub@gmail.com
Chris Miny	Ward 15 Rustenburg Local Municipality Councilor	082 878-5964 chrisminy1@gmail.com

Ala Malan	Ward 17 Rustenburg Municipality Councilor	Local	082 950-3395 alamalan@telkomsa.net
B Mtyotywa	Ward 19 Rustenburg Municipality Councilor	Local	083 549-9101 bmtotywa@gmail.com
Lebogang Mashumu	Magalies Water Board		(014) 597-4636 lebogangma@magalieswater.co.za

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
None	None

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR 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 the Final BAR as Appendix E3.

Please see Appendix E3

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority / Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail
Rustenburg Local Municipality	Marks Rapoo (MM)	(014) 590-3531		munman@rustenburg.gov.za
	Onkgopoleng Nkele (PA to MM)	(014) 590-3531		munman@rustenburg.gov.za
	Cindy Mosiane (Office Admin)	(014) 590-3535		cmosiane@rustenburg.gov.za
	Amos Mahlulo (Town Planner)	072 189-9111 (014) 590-3081		amahlulo@rustenburg.gov.za
	Kenneth Nkadimeng (Water & Sanitation)	(014) 590-3521		knkadimeng@rustenburg.gov.za

	Wonder Simelane (Water & Sanitation)	(014) 590-3521		wsimelane@rustenburg.gov.za
	Lillian Sefike (ENVIRONMENTAL OFFICER)	(014) 590-3075		lsefike@rustenburg.gov.za
Bojanala District Municipality	Innocent Sirovha (MM)	(014) 590-4502		innocents@bojanala.gov.za
	Tsholofelo Dikgobe (Secretary to MM)	(014) 590-4502		tsholofelod@bojanala.gov.za
	Johanna Mosete (Community Deve't)	(014) 523-5000		johannam@bojanala.gov.za
	Selby Boitseng (Director-LED)	(014) 590-3528		selbyb@bojanala.gov.za
	Lerato Mongologe (Health inspector)	(014) 523-5068		leratom@bojanala.gov.za
	Nozi Masekwane (Environmental Health Manager)	(014) 523-5000		nozim@bojanala.gov.za
DREAD	Ouma Skosana (EIA Admin)	(018) 389-5156		oskosana@nwpg.gov.za
	Steven Mukhola	(018) 389-5959		smukhola@nwpg.gov.za
	Thembekile Makuwa (Case Officer)	(018) 299-6583		tmakuwa@nwpg.gov.za
DWS	Mr S Matsheka (Strategic Support)	082 806-8856 (018) 387-9511		matshekas@dwa.gov.za
	Mr L Bogopa (Water Sector Support)	082 802-4759 (018) 387-9564		bogopal@dwa.gov.za
	Ms W Ralekoa (Institutional Establishment)	082 875-4158 (018) 387-9517		ralekoaw@dwa.gov.za
	Lethabo Ramashala	082 908-3177		ramashalal@dwa.gov.za
	Sebenzile Ntshangase	082 896-8228 072 769-4018		ntshangases@dwa.gov.za
DEPARTMENT OF ROADS & TRANSPORT	George Madoda	(018) 388-1428		geomadoda@gmail.com

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

Please see appendix E4.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) 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. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Please see Appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

Please see Appendix E6.

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. 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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts 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. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Also see Appendix F.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
	Direct impacts:	There will be clearing and grubbing for the construction of the extension of the facility, but minimal.	Vegetation stockpiles must be used as mulch for the rehabilitation of exposed areas, i.e. filling erosion gullies and brush packing to stabilise topsoil. Ensure branches are placed perpendicular to the direction of the run-off.
	Indirect impacts:	Pollutants (hydrocarbons, sediment, concrete/cement) may enter the adjacent watercourse through surface water runoff.	Spills shall not be covered with sand or soil. It merely increases the disposal cost for a greater volume of hazardous waste. Do not mix concrete on open ground. Mix in a wheel barrow or mixing tray.
	Cumulative impacts:	Disturbed areas are vulnerable to degradation, including erosion, leading to a loss of biodiversity and ecosystem functions and processes.	If erosion is found to occur during the aforesaid monitoring, the Applicant shall immediately correct (the 'source') and repair (the 'symptom') the erosion using method(s) that are an improvement on the mitigations proposed in this EMP or on the unsuccessful mitigations originally used on site.
	Direct impacts:		

Activity	Impact summary	Significance	Proposed mitigation
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
Alternative 2			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
Alternative 3			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
No-go option			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

2. 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.

Alternative A (preferred alternative)

The upgrade poses an insignificant risk to the environment because the site already exists and will not exacerbate any risk that the current system poses.

Alternative B

Alternative C

No-go alternative (compulsory)

The No-Go option is not to be considered as the plant is rapidly reaching its capacity and needs to be upgraded to meet the potable water demands of the greater Rustenburg area.

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 ✓	NO
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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).

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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.

See **Appendix G.**

Is an EMPr attached?

YES ✓	NO
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The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information