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DRAFT BASIC ASSESSMENT REPORT

**The proposed upgrading of the
existing Bushkoppie WwTW
located within the Gauteng
Province.**

GDARD Reference No.: Gaut 002/19-20/E0028.

**Report No : 19043-46-Rep-001-BA BK &
WULA-Rev0**

Submitted on behalf of:

Johannesburg Water SOC Limited
17 Harrison street,
Marshalltown,
Johannesburg
2107



25 October 2019

19043



Directors : S. Pillay, N. Rajasakran



DOCUMENT CONTROL SHEET

Project Title : **Basic Assessment for the proposed upgrading of the existing Bushkoppie Waste Water Treatment Works (WwTW) located within the in the Gauteng province.**

Project No : **19043**

Document Ref. No : **19043-46-Rep-001-BK BA & WULA DBAR-Rev0**

DOCUMENT APPROVAL

ACTION	DESIGNATION	NAME	DATE	SIGNATURE
Prepared	Junior EAP	Jessica Morwasehla	25 September 2019	
Reviewed	Director	Nevin Rajasakran	27 September 2019	
Reviewed	Project Manager	Tebogo Mapinga	01 October 2019	
Approved	Civil Engineer	Neil Govender	01 October 2019	

EXECUTIVE SUMMARY

Johannesburg Water is proposing, as part of upgrading and refurbishment of the Bushkoppie WwTW to construct two new Primary Sedimentation Tanks (PSTs); construction of grit drying beds (GDB); the construction of new wash water pump station (WWPS) and associated infrastructure to assist the Works with the processing of the sewage inflow it receives. The project site is located within the existing Bushkoppie Wastewater Treatment Works which is situated on the Farm Misgund 322 IQ in the southern areas of Johannesburg, Gauteng Province. The site can be accessed via Stockwell Ave which is located on the western boundary of the study area. (refer to Figure 1).



Figure 1: Location of the Bushkoppie WwTW

The proposed upgrading of the facility will take place on a property that is approximately 562.5532 hectares in extent. It will also entail construction of the following infrastructure and facilities:

- Construction of two new 35m diameter Primary Sedimentation Tanks (PSTs): ~1995m²;
- Construction of a– New Blower Building for Module 2 Head of Works (HoW): ~63m²;
- Trash screen and bunded area: ~212m²
- Construction of grit drying beds (GDB): ~6106m²;
- The relocation of the lime silo to a new position: 75m²;
- Construction of a new Primary Sludge Pump Station: ~64m²
- Construction of new terrace including retaining walls for new PSTs: ~210m long with a maximum height of 4.5m;
- Construction of new wash water pump station (WWPS): ~195m²;
- Installation of a wash water storage tank: 75m² (240m³); and

- Associated ancillary works.

Description of the Study Area

The study area is located within the existing Bushkoppie Wastewater Treatment Works which is situated on the Farm Misgund 322 IQ in the southern areas of Johannesburg, Gauteng Province (refer to Table 1). It can be accessed through Stockwell Ave in Soweto, Johannesburg. The site is located south of the settlement of Eldorado Park in Soweto and east of the N1 national road, which falls within the jurisdiction of the City of Johannesburg Municipality. (refer to Figure 2).

Table 1: Description of the site

	Description
Farm Name	Farm Misgund 322 IQ
Farm Portion	Portion 2
SD Code	T0IQ0000000032200002
Extent of the Project site	~562.5532 ha
Development Footprint	~13148 m ²
Central Site Co-ordinates	26° 18'41.57" S 27° 55'50.95" E
Land Zoning	Urban Development Zone
Nearest Suburbs	Southern side of the site -Zakariyya Park. Northern side of the Eldorado and Pimville. Northeast side of Johannesburg South.

Listed Activities triggered by the development

The activities that are associated with the proposed project trigger activities listed in Government Notice No. R.983 and R985 (2014, as amended). As set out in Regulations 19 of the National Environmental Management Act (NEMA) Environmental Impact Assessment Regulations, 2014 (as amended, the proposed project is subjected to a Basic Assessment Process (Government Notice No. R.982). Johannesburg Water has therefore appointed Zitholele Consulting (Pty) Ltd as the independent Environmental Impact Assessment Practitioner to undertake the Basic Assessment Process for the proposed project.

Table 2: Detailed description of the listed activity associated with the project

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:
GN 327, 08 Dec 2014	Activity 34 (Listing Notice 1)	The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or license or an amendment or license in terms of national or provincial legislation governing the release of emissions, effluent or pollution. Exclusions are not applicable.
GN 324, 08 Dec 2014	Activity 12 (Listing Notice 3)	The clearance of an area of 300 square meters or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:
		purposes undertaken in accordance with a maintenance management plan.

Description of Propose Project Components

i. Pre-Construction and Construction Process for proposed development

The construction of the proposed development will be undertaken in the following steps:

- Undertaking and completion of proposed development concept;
- Undertaking Environmental Authorization application and environmental impact assessment process;
- Pre-Construction site work, such as geotechnical investigations;
- Undertaking of and compliance with pre-construction activities and conditions in terms of the Environmental Authorization;
- Site preparation (Vegetation clearance);
- Demolishing of the existing infrastructure;
- Civil work and construction: Casting of new foundations and plinths for the proposed development;
- Construction of the PSTs and associated infrastructures;
- Construction and/or installation of water supply, interconnecting pipework and storm water management infrastructure; and
- Testing and commissioning.

The construction phase for the proposed project will take approximately 1 years.

ii. Operational Activities

During the operational and maintenance phase of the project, the applicant will ensure that operation and maintenance activities are carried out by suitably qualified individuals as the activities are specialized. For the activities to be carried out during operational phase refer to project activities discussed above.

iii. Decommissioning Activities

Decommissioning of the proposed activities is neither envisioned nor feasible at this stage. Relevant legislation will be applied once the project has reached the decommissioning phase.

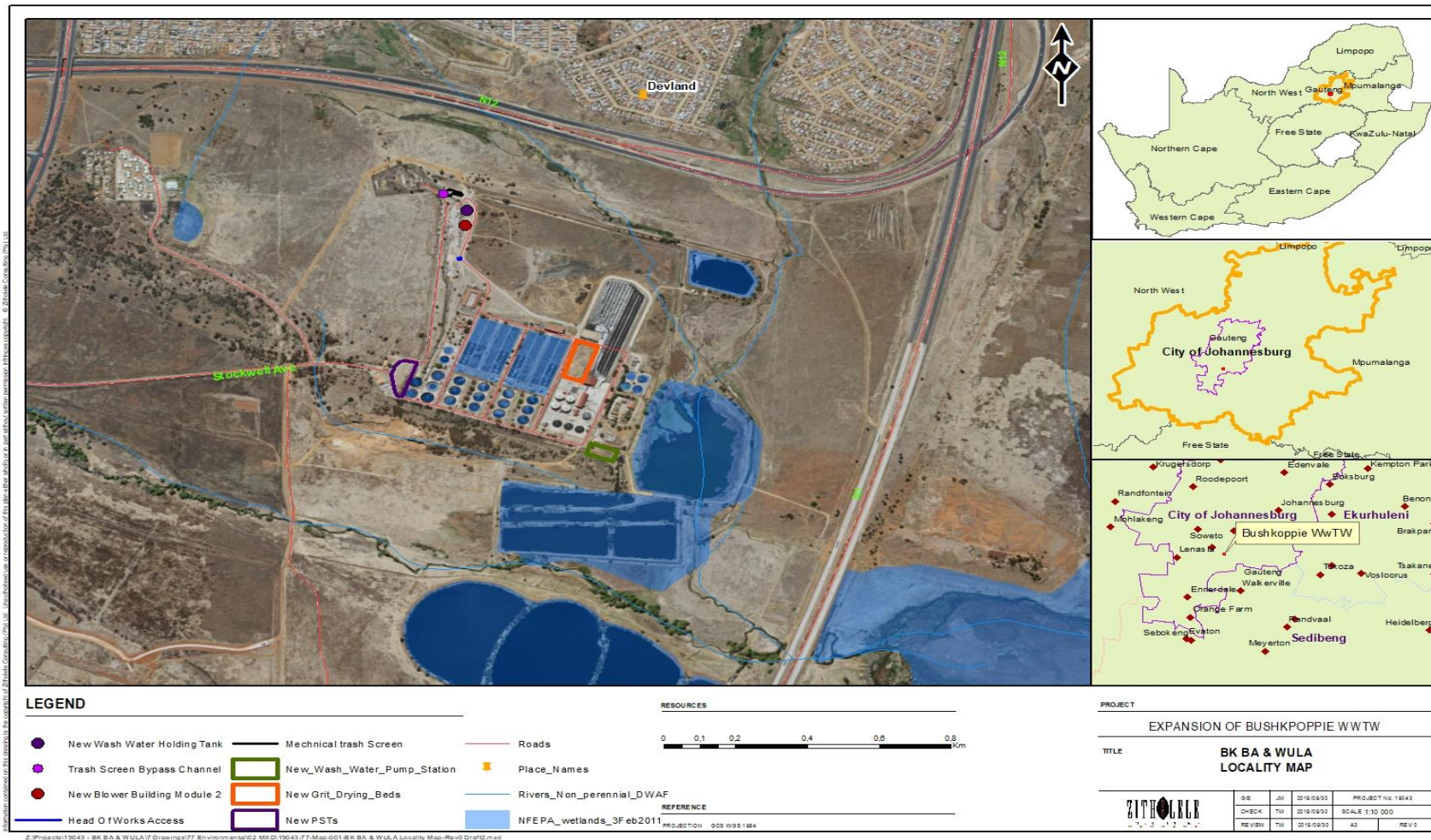


Figure 2: Location of the proposed new infrastructure

Need and Desirability

The Bushkoppie Wastewater Treatment Works is situated on the Farm Misgund 322-IQ within the jurisdiction of City of Johannesburg Municipality, Gauteng Province. Bushkoppie WwTW receives wastewater from the southern areas of Johannesburg via the South Eastern Outfall sewer and from the south western areas of Johannesburg, Soweto and parts of Roodepoort through the Bushkoppie Phase 1 and 2 outfall sewers. Due to the large volume of grit and solids in the incoming wastewater, there is a strain on the preliminary treatment resulting in many process units not performing as required. The proposed upgrade is required to improve process performance, effluent quality from the plant and assist with ongoing operations.

Details of the Environmental Assessment Practitioners

Johannesburg Water appointed Zitholele Consulting (Pty) Ltd. to undertake the regulatory Environmental Authorization (EA), and Water Use License Application (WULA) processes for the proposed project. These processes are being undertaken independently as separate processes. This document deals with the Environmental Impact Assessment process for the proposed Project.

Zitholele Consulting (Pty) Ltd. is an empowerment company formed to provide specialist consulting services primarily to the public sector in the fields of Water Engineering, Integrated Water Resource Management, Environmental and Waste Services, Communication (public participation and awareness creation) and Livelihoods and Economic Development. Zitholele Consulting (Pty) Ltd has no vested interest in the proposed project and hereby declares its independence as required in terms of the EIA Regulations. Table 3 provides the Environmental Assessment Practitioner (EAP) details.

Table 3: Details of the Environmental Assessment Practitioner

Name and Surname	Tebogo Mapinga
Highest Qualification	BSc (Zoology & Physiology)
Professional Registration	Pr.Sci.Nat. (115518)
Company Represented	Zitholele Consulting (Pty) Ltd.
Physical Address	Building 1, Maxwell Office Park, Magwa Crescent West, Waterfall City, Midrand
Postal Address	P O Box 6002, Halfway House, 1685
Contact Number	011 207 2060
Facsimile	086 674 6121
E-mail	tebogom@zitholele.co.za
Name and Surname	Jessica Morwasehla
Highest Qualification	BSc (Environmental and Resource Studies)
Company Represented	Zitholele Consulting (Pty) Ltd
Physical Address	Building 1, Maxwell Office Park, Magwa Crescent West, Waterfall City, Midrand
Postal Address	P O Box 6002, Halfway House, 1685
Contact Number	011 207 2060
Facsimile	086 674 6121
E-mail	jessicam@zitholele.co.za

Specialist Team

Specialists were appointed to undertake the relevant assessments to identify assess impacts and propose appropriate mitigation and management measures for the identified impacts. The specialist assessments, that were commissioned include:

- Wetland Delineation Assessment – Limosella Consulting
- Aquatic Fauna and Water Quality Assessment – Limnology
- Heritage and Paleontology Assessment - HCAC

Summary of Findings

Specialist assessments were conducted for the proposed Project and a summary of the findings have been included below:

Wetland Assessment:

No wetlands were recorded within the proposed development site. However, two wetland systems were recorded on the larger study area, within the 500m DWS regulated area outside the WwTW site. The southernmost wetland (Klip River) is classified as a Floodplain wetland and the wetland in the central and northern section is classified as an unchannelled valley bottom wetland which drains into the Klip River. This wetland has numerous impoundments, within and adjacent to, the wetlands. It is likely that these impoundments are hydrologically connected to the wetlands and thus has some impacts on the systems. These impoundments are artificial as confirmed by the absence of any impoundments on early historical imagery of 1951 of the area. These historical imageries further indicated the prolonged agricultural impacts on the watercourses. The proposed development site is however well buffered from the wetlands and the wetlands only encroaches into the 500 m buffer zone south of the proposed PSTs and associated infrastructures; and therefore, the impact significance is **MODERATE**.

Aquatic Fauna and Water Quality Assessment:

The proposed upgrade of the WWTW is welcomed in order to mitigate the risk of pollution events into a system already highly polluted. This is emulated by the water quality analysis completed for the site. The SASS PES using MERAI was calculated to E/F. No fish was observed at the sample points-this is possibly due to heavy sewage pollution into the system and altered water quality. Raised Ca and Mg concentrations in combination with increased salts shows the water to be in poor condition. Therefore, the significant impact is **HIGH-MODERATE** without mitigation measures. It must be clearly noted that any development on the study site will have an impact on the aquatic ecosystems and must be authorized in terms of Section 21 of the National Water Act (1998).

Heritage and Paleontology Assessment:

From a heritage perspective the study area is degraded and there is a **LOW** likelihood that any sites of significance will be impacted on by the proposed project. It is therefore recommended that the project is exempted from an HIA but that a chance find procedure and a paleontological protocol for finds should be included in the EMP. The significant impacts on heritage and paleontology will be low.

Recommendation

The EAP recommends that the proposed upgrading of the Bushkoppie Wastewater Treatment Works be authorized at the proposed location. All mitigation measures listed by the Heritage and Palaeontology, Aquatic Fauna and Wetland specialists in their specialist reports, and proposed in the Environmental Management Programme (EMPr) must be implemented.

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LIST OF ACRONYMS

BA	Basic Assessment
BAR	Basic Assessment Report
CA	Competent Authority
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GDARD	Gauteng Department of Agriculture and Rural Development
NEMA	National Environmental Management Act 107 of 1998 (as amended)
NEMWA	National Environmental Management Waste Act 59 of 2008
NWA	National Water Act 36 of 1998
OHS	Occupational Health and Safety Act 85 of 1993
PAIA	Promotion of Access to information Act 2 of 2000
PPP	Public Participation Process
PSTs	Primary Sedimentation Tanks
WUL	Water Use License
WwTW	Wastewater Treatment Works



Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. 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.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. 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 application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The

applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.

13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.
-

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the of the Environmental Affairs Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the of the Environmental Affairs Branch
Ground floor Diamond Building
11 Diagonal Street, Johannesburg

Administrative Unit telephone number: (011) 240 3377
Department central telephone number: (011) 240 2500

(For official use only)

NEAS Reference Number:						
File Reference Number:						
Application Number:						
Date Received:						

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

N/A

Is a closure plan applicable for this application and has it been included in this report?

No

if not, state reasons for not including the closure plan.

The proposed project is for an upgrading of the PSTs and associated infrastructure at Bushkoppie Water Waste treatment works

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity?

Yes

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person?

Yes

If no, state reasons for not attaching the list.

N/A

Have State Departments including the competent authority commented?

No

If no, why?

An opportunity for all State Departments to comment will be during the 30-day public review period of this Basic Assessment Report.

SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

Project title (must be the same name as per application form):

Proposed upgrading of the existing Bushkoppies WwTW on the Farm Misgund 322-IQ which falls within the Jurisdiction of the City of Johannesburg Gauteng Province.

Select the appropriate box

The application is for an upgrade of an existing development

The application is for a new development

Other, specify

Does the activity also require any authorisation other than NEMA EIA authorisation?

YES

If yes, describe the legislation and the Competent Authority administering such legislation

A Water Use License to be issued by the Department of Water and Sanitation in terms of the National Water Act.

If yes, have you applied for the authorisation(s)?

 NO

If yes, have you received approval(s)? (attach in appropriate appendix)

 NO

2. 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:

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
The Constitution of the Republic of South Africa (Act 106 of 1998)	The Judiciary	18 December 1996
NEMA Environmental Impact Assessment (EIA) Regulations 2014, as amended in April 2017 (published in Government Notice No. R.326)	Gauteng Department of Agriculture and Rural Development (GDARD)	4 December 2014, amended on the 07 April 2018
National Heritage Resources Act 25 of 1999	The South African Heritage Resource Agency (SAHRA)	28 April 1999
National Water Act of 1998	Department of Water and Sanitation (DWS)	20 August 1998
Applicable by-laws of the City of Johannesburg Metropolitan Municipality.	City of Johannesburg Metropolitan Municipality	

Description of compliance with the relevant legislation, policy or guideline:

Legislation, policy or guideline	Description of compliance
National Environmental Management Act 107 of 1998 (NEMA) and subsequent amendments to the Act.	The NEMA (as amended) is regarded as South Africa's environmental framework legislation which provides for environmental management and gives effect to section 24 of the Constitution. The Basic Assessment and Public Participation processes were undertaken in strict compliance with the NEMA, as amended.
The Constitution of the Republic of South Africa (Act 106 of 1998)	Section 24 of the Constitution of the Republic of South Africa provides for a comprehensive environmental right. Therefore, stakeholders and Interested and Affected Parties may exercise their right through providing comment during the PP process and raising issues of concern that are likely to infringe upon their environmental right. The Basic Assessment process recognises this right and the EAP has recorded, considered and responded to any and all issues of concern raised by the I&APs.
NEMA Environmental Impact Assessment (EIA) Regulations 2014 as amended (published in Government Notice No. R.326)	The Basic Assessment Process for the proposed project has been carried out in accordance with the Regulations 19 and 20 of the NEMA EIA Regulations, 2014.
National Water Act of 1998	A WULA will be undertaken when an Environmental Authorization has been granted by the Department of Agriculture and Rural Development.
National Heritage Resources Act 25 of 1999	Whilst studies undertaken in 2006 and 2016 reveals that, there are no significant heritage artefacts that would be impacted, however provisions in the NHRA relating to the protection and management of heritage resources applies to the proposed project.
Promotion of Access to Information Act 2 of 2000 (PAIA)	As per the NEMA EIA Regulations, 2014, as well as the principles/objectives of the PAIA, the Basic Assessment Report as well as all supporting documentation (e.g. specialist studies) will be made available to the public.
Occupational Health and Safety Act 85 of 1993	This is primarily intended to provide for the health and safety of persons at work and for the health and safety of persons in connection with the activities of persons at work. All work that is carried out for the implementation of the project activities as well as during each phase of the project lifecycle should be carried out in accordance with the provisions of the OHS Act.
Integrated Environmental Management Guideline Series (Guideline 5) Companion to the EIA Regulations 2010 published in Government Notice 805 (10 October 2012)	The aim of the guideline is to provide a detailed consideration of the practical implementation of the NEMA EIA Regulations. The guideline also provides guidance and clarity on the EA Process to be followed and interpretation of the listed activities. The guideline was used as a reference document to the applicability of the NEMA EIA Regulations, 2014 on the proposed project.
Integrated Environmental Management Guideline Series (Guideline 7) Public Participation in the EIA Process published in Government Notice 805 (10 October 2012)	The guideline is intended to provide information on the benefits of public participation, the minimum legal requirements for the Public Participation Process (PPP), the steps of the PPP, guidelines for planning a PPP and a description of the roles

	and responsibilities of the various role-players. The guideline was referred to, to facilitate an adequate understanding of the execution of the PPP.
Gauteng Provincial Environmental Management Framework (GPEMF)	The objective of the GPEMF is to guide sustainable land use management within the Gauteng Province.
Applicable by-laws of the City of Johannesburg Metropolitan Municipality.	A by-law is considered as piece of legislation that is specific to the municipal area of jurisdiction. By-laws are intended to regulate the affairs and the services it provides within the municipal boundaries. A by-law is passed by the Council of a municipality

3. ALTERNATIVES

Describe the proposal and 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. The determination of whether the 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.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not include the no go option into the alternative table below.**

Note: 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.

Please describe the process followed to reach (decide on) the list of alternatives below

During the preliminary phase of the project various design alternatives were taken into consideration and the preferred design alternative was selected that will be developed further during the detailed design phase of the project. Three design alternatives were evaluated for construction of the new PSTs. The three alternatives which were assessed by the Engineering team have been listed below:

1. Converting the existing Fermenters to PSTs;
2. Positioning the new PSTs west of the existing PST complex; and
3. Positioning the new PSTs south of the existing PST complex.

A description of each Option followed by the advantages and disadvantages of the various alternatives are presented in the Preliminary Design report (see Appendix I). A multi-criteria assessment was utilised as a selection tool to compare various design alternatives and assist in the selection of a Preferred Alternative.

Positioning the new PSTs west of the existing PST complex scored the highest for both the financial and non-financial criteria. Therefore, it was selected as the Preferred Design Alternatives.

No other alternatives were considered.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide	Description

	details of "other")	
1	Proposal	<p>Johannesburg Water is proposing, as part of upgrading of the Bushkoppie WwTW to construct two new Primary Sedimentation Tanks (PSTs); construction of grit drying beds (GDB); the construction of new wash water pump station (WWPS) and associated infrastructure to assist the Works with the processing of the sewage inflow it receives. The project site is located within the existing Bushkoppie Wastewater Treatment Works which is situated on the Farm Misgund 322 IQ in the southern areas of Johannesburg, Gauteng Province. The site can be accessed via Stockwell Ave which is located on the western boundary of the study area.</p> <p>The proposed upgrading of the facility will take place on a property that is approximately 48.48 hectares in extent. It will also entail construction of the following infrastructure and facilities:</p> <ul style="list-style-type: none"> • Construction of two new 35m diameter Primary Sedimentary Tanks (PSTs); • Construction of a Module 2 – New Blower Building; • Trash screen and bunded area • Construction of grit drying beds (GDB): ~30m x 120m; • The relocation of the lime tank to a new position • Construction of a new Wash Water Pump Station; • Construction of new terrace including retaining walls; • Construction of grit drying beds (GDB): ~30m x 120m; and • Construction of new wash water pump station (WWPS): ~ 36m x 11m. •
2	Alternative 1	
3	Alternative 2	
	Etc.	

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

<p><u>Site Alternatives</u></p> <p>The preferred site is located within the already existing Bushkoppie WwTW in Soweto which falls under the jurisdiction of City of Johannesburg, Gauteng Province. The site can be accessed via Stockwell Ave which is located on the western boundary of the study area. Therefore, site alternatives were not assessed as part of this application.</p> <p><u>Design Alternatives</u></p> <p>During the preliminary phase of the project various design alternatives were taken into consideration and the preferred design alternative was selected that will be developed further during the detailed design phase of the project. Three design alternatives were evaluated for construction of the new PSTs. The three alternatives which were assessed by the Engineering team have been listed below:</p> <ol style="list-style-type: none"> 1. Converting the existing Fermenters to PSTs; 2. Positioning the new PSTs west of the existing PST complex; and
--

3. Positioning the new PSTs south of the existing PST complex.

A description of each alternative followed by the advantages and disadvantages of the various alternatives are presented in the Preliminary Design report (see Appendix I). A multi-criteria assessment was utilised as a selection tool to compare various design alternatives and assist in the selection of a Preferred Alternative.

Positioning the new PSTs west of the existing PST complex scored the highest for both the financial and non-financial criteria. Therefore, it was selected as the Preferred Design Alternatives.

Technology Alternatives

No technology alternatives were assessed for the proposed project.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Proposed activity (**Total environmental (landscaping, parking, etc.) and the building footprint**)

Size of the activity:

- Two new 35m diameter Primary Sedimentation Tanks (PSTs): ~9995m²;
- Module 2 – New Blower Building for HoW: ~63m²;
- Trash screen and bunded area: ~212m²
- The relocation of the lime silo to a new position: 75m²;
- New Primary Sludge Pump Station: ~64m²
- New terrace including retaining walls for new PSTs: ~210m long with a maximum of 4.5m high;
- Grit drying beds (GDB): ~61064m²;
- New wash water pump station (WWPS): ~195m²;
- Wash water storage tank: 75m² (240m³); and
- Associated ancillary works.

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

or, for linear activities:

Proposed activity

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Length of the activity:-

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Proposed activity

Size of the site/servitude:

- Two new 35m diameter Primary Sedimentation Tanks (PSTs): ~9995m²;
- Module 2 – New Blower Building for HoW: ~63m²;
- Trash screen and bunded area: ~212m²
- The relocation of the lime silo to a new position: 75m²;
- New Primary Sludge Pump Station: ~64m²
- New terrace including retaining walls for new PSTs: ~210m long with a maximum of 4.5m high;
- Grit drying beds (GDB): ~61064m²;
- New wash water pump station (WWPS): ~195m²;
- Wash water storage tank: 75m² (240m³); and
- Associated ancillary works.

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Ha/m²

5. SITE ACCESS

Proposal

Does ready access to the site exist, or is access directly from an existing road?

YES	<input type="checkbox"/>
-----	--------------------------

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

m

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 1

~~Does ready access to the site exist, or is access directly from an existing road?~~

YES	NO
-----	----

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

m

~~Describe the type of access road planned:~~

~~Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).~~

Alternative 2

~~Does ready access to the site exist, or is access directly from an existing road?~~

YES	NO
-----	----

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

m

~~Describe the type of access road planned:~~

~~Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).~~

PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated Number of times

(only complete when applicable)

6. LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
 - A4 size for activities with development footprint of 10sqm to 5 hectares;
 - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
 - A2 size for activities with development footprint of >20 hectares to 50 hectares);
 - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
 - A0 = 1: 500
 - A1 = 1: 1000
 - A2 = 1: 2000
 - A3 = 1: 4000
 - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
 - Rivers and wetlands;

- the 1:100 and 1:50 year flood line;
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be 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 locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

7. SITE PHOTOGRAPHS

Colour photographs from the center 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 the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 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 to be attached in the appropriate Appendix.

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

Note: Complete Section B for the proposal and alternative(s) (if necessary)

Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of times the route

Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives times (complete only when appropriate)

Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route (complete only when appropriate for above)

Section B – Location/route Alternative No. (complete only when appropriate for above)

1. PROPERTY DESCRIPTION

Property description: (Including Physical Address and Farm name, portion etc.)	The proposed site is located on the west of the existing Bushkoppie WwTW and can be accessed through Stockwell Ave in Soweto, Johannesburg. The site is located south of the settlement of Eldorado Park in Soweto within the jurisdiction of the City of Johannesburg Municipality.
--	--

2. 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 decimal degrees. The degrees should have at

least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:

- 1. Project Proposal

Latitude (S):

Longitude (E):

26°18'41.57"	27°55'50.95" o
--------------	----------------

In the case of linear activities:

Alternative:

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

Latitude (S):

Longitude (E):

e	e
e	e
e	e

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

The 21-digit Surveyor General code of each cadastral land parcel

PROPOSAL	T	0	I	Q	0	0	0	0	0	0	0	0	0	0	3	2	2	0	0	0	0	2
ALT. 1																						
ALT. 2																						
etc.																						

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

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

4. LOCATION IN LANDSCAPE

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

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Undulating plain/low hills	River front
-----------	---------	--------------------------	--------	-------	----------------------------	-------------

5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

- a) Is the site located on any of the following?

- Shallow water table (less than 1.5m deep)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)

	NO
	NO
	NO
	NO
	NO

Soils with high clay content (clay fraction more than 40%)
 Any other unstable soil or geological feature
 An area sensitive to erosion

	NO
	NO
	NO

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s)

	NO
--	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):

Longitude (E):

°	°
---	---

c) are any caves located within a 300m radius of the site(s)

	NO
--	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):

Longitude (E):

°	°
---	---

d) are any sinkholes located within a 300m radius of the site(s)

	NO
--	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):

Longitude (E):

°	°
---	---

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

6. AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?

	NO
--	----

Please note: The Department may request specialist input/studies in respect of the above.

7. GROUNDCOVER

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

Indicate the types of groundcover present on the site and include the estimated percentage found on site

Natural veld - good condition % =	Natural veld with scattered aliens %=30%	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) %=	Building or other structure % =50%	Bare soil =10%

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site

	NO
--	----

If YES, specify and explain:

Not Applicable

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.

	NO
--	----

If YES, specify and explain:

Not Applicable

Are there any special or sensitive habitats or other natural features present on the site?

YES	
-----	--

If YES, specify and explain:

According to the Wetland Assessment conducted by Limosella Consulting, no wetlands were recorded within the proposed development site. However, two wetland systems were recorded on the larger study area, within the 500m DWS regulated area outside the WwTW site. The southernmost wetland (Klip River) is classified as a Floodplain wetland and the wetland in the central and northern section is classified as an unchannelled valley bottom wetland which drains into the Klip River. This wetland has numerous impoundments, within and adjacent to, the wetlands. It is likely that these impoundments are hydrologically connected to the wetlands and thus has some impacts on the systems. These impoundments are artificial as confirmed by the absence of any impoundments on early historical imagery of 1951 of the area. These historical imageries further indicated the prolonged agricultural impacts on the watercourses. The proposed development site is however well buffered from the wetlands and the wetlands only encroaches into the 500 m buffer zone south of the proposed PSTs and associated infrastructure.

The Wetland Assessment report is attached on **Appendix G1**.

Was a specialist consulted to assist with completing this section

Yes	
-----	--

If yes complete specialist details

Name of the specialist:	Limosella Consulting Pty Ltd		
Qualification(s) of the specialist:	Ecologist / Botanist (PrSciNat)		
Postal address:	11 Villa Marija, Marija Street 173, Wonderboom, Pretoria		
Postal code:	0182		
Telephone:		Cell:	0834545454
E-mail:	antoINETTE@limosella.co.za	Fax:	

Are any further specialist studies recommended by the specialist?

	NO
--	----

If YES, specify:

If YES, is such a report(s) attached?

YES	NO
-----	----

If YES list the specialist reports attached below

Signature of specialist:

Date: 10 September 2019

Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial ^{AN}	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport ^N	23. Train station or shunting yard ^N	24. Railway line ^N	25. Major road (4 lanes or more) ^N
26. Sewage treatment plant ^A	27. Landfill or waste treatment site ^A	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam ^A	34. Small Holdings	
Other land uses (describe):				

NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

NORTH						
	25	25	25	25		
	3	1	1	6	25	
WEST	1	3	26	6	25	EAST
	1	3	3	6	25	
	1	1	6	6	25	
SOUTH						

Note: More than one (1) Land-use may be indicated in a block

= Site

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an “A” and with an “N” respectively.

Have specialist reports been attached
If yes indicate the type of reports below

NO

9. SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

The site is located in Soweto, which fall within the Jurisdiction of City of Johannesburg Metropolitan Municipality and located in Ward 122. The City of Johannesburg Metropolitan Municipality has a resident population of approximately 4 434 827 million people and 1 434 856 million households. The municipality has an average annual population growth rate of 3.18%. The municipality is home to 76.4% Africans, 12.3% Whites, 5.6% Coloured and 4.9% Indians. The municipality has toilet facilities connected to sewerage system at 87.1% compared to the City of Tshwane at 76.6% and the City of Ekurhuleni at 85%.

The unemployment rate in the City of Johannesburg is at approximately 25% with youth unemployment rate at 31.5%. The City of Johannesburg has the fourth highest rate of youth unemployed in South Africa, City of Tshwane been fifth and City of Ekurhuleni been the second. According to Stats Sa, there are about 2.2 million economically active individuals (i.e. those who are employed or unemployed but looking for work) residing within the municipality.

10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as-
- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
 - (b) the construction of a bridge or similar structure exceeding 50m in length;
 - (c) any development or other activity which will change the character of a site-
 - (i) exceeding 5 000 m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resource authority;
 - (d) the re-zoning of a site exceeding 10 000 m² in extent; or
 - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

NO

If YES, explain:

N/A

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

According to HCAC, the proposed project is located in an existing WwTW that transformed the study area and it is therefore disturbed from a heritage point of view. The Palaeontological study indicated a low to moderate significance on the SAHRA palaeontological map. Due to the existing disturbance of the site it is not expected that surface indicators are still visible. Given the nature and relatively small scale of the development, potential impact on palaeontological heritage resources within the proposed development footprint is considered low.

The Heritage and Palaeontology assessment letter is attached on **Appendix G3**.

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

NO

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

NO

If yes, please attached the comments from SAHRA in the appropriate Appendix

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

1. LOCAL AUTHORITY PARTICIPATION

Local 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. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

YES

If yes, has any comments been received from the local authority?

YES

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

The Basic Assessment Report is currently under a 30-day public review period. No comments received to date; however, this section and comments and response report will be updated after the public review period.

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

N/A

2. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

NO

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

N/A

If "NO" briefly explain why no comments have been received

The Basic Assessment Report is currently under a 30-day public review period. No comments received to date; however, this section and comments and response report will be updated after the public review period.

3. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation process 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 and ratepayers associations. 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 flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

4. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I&APs

SECTION D: RESOURCE USE AND PROCESS DETAILS

Note: Section D is to be completed for the proposal and alternative(s) (if necessary)

Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for times
alternatives

(complete only when appropriate)

Section D Alternative (complete only when appropriate for
No. above)

1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

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

YES

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

Unknown at this stage.

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

The solid construction waste that cannot be used for filling and rehabilitation and other litter and waste generated during the construction phase will be removed from site and be disposed of safely and responsibly at a licensed landfill site.

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

The solid construction waste that cannot be used for filling and rehabilitation and other litter and waste generated during the construction phase will be removed from site and be disposed of safely and responsibly at a licensed landfill site.

Will the activity produce solid waste during its operational phase?

YES

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

Unknown at this stage.

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

The waste generated during the operation phase will be disposed of at licensed landfill.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

NO

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

The sludge waste generated during the operation phase will be dried up and turned into compost and taken for free by farmers.

Note: 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, 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? YES NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

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

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

The Bushkoppie Wastewater Treatment works uses the grit drying beds to dry the sludge and turn it into compost. The compost is then taken freely by individuals in the agricultural sector and used as fertilizers.

Liquid effluent (other than domestic sewage)

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? YES N/A

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)? YES NO

Will the activity produce any effluent that will be treated and/or disposed of on site? YES NO

If yes, what estimated quantity will be produced per month? YES N/A

If yes describe the nature of the effluent and how it will be disposed.

N/A

Note that if effluent is to be treated or disposed on site 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:	Cell:		
E-mail:	Fax:		

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

N/A

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system? YES NO

If yes, what estimated quantity will be produced per month? YES N/A

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)? YES N/A

Will the activity produce any effluent that will be treated and/or disposed of on site? YES NO

If yes describe how it will be treated and disposed off.

N/A

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

NO

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

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:

2. WATER USE

Indicate the source(s) of water that will be used for the activity

municipal from water board	Directly from water board	groundwater	river, dam or lake	stream, other	the activity will not use water
----------------------------------	---------------------------------	-------------	-----------------------	------------------	------------------------------------

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:

N/A

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

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

YES

If yes, list the permits required

The Water Use License is required in terms of section 21 (c) and (i) as stipulated in the National Water Act. The application process is currently being undertaken.

If yes, have you applied for the water use permit(s)?

YES

If yes, have you received approval(s)? (attached in appropriate appendix)

NO

3. POWER SUPPLY

Please indicate the source of power supply e.g. Municipality / Eskom / Renewable energy source

The works is currently being supplied with electricity by the City Power..

If power supply is not available, where will power be sourced from?

N/A

4. ENERGY EFFICIENCY

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

The following energy savings methods shall be investigated for possible implementation for the proposed development:

- Use of energy efficient lighting;
- Use of day light wherever possible in lieu of artificial lighting;
- Use of renewable solar powered lighting for external lighting;
- Switching off of all electrical appliances at night and times not in use;
- Use of high-efficient HVAC systems;
- Possibility of co-generation in co-operation with the supply authority;
- Use of solar water heating;
- Setting thermostats of water heaters at the most efficient level;
- Insulation of hot water pipes and hot water storage tanks;
- Use of low-flow shower heads;
- Use of high-efficient electric motors;
- Use of variable speed drives on electric motors;
- Use of appropriate conductor size to reduce distribution losses;
- Use of control methods to reduce maximum demand and exploit off peak electricity tariffs:
and
- Insulation of windows, walls, ceilings and roofs.

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

The use of renewable energy sources is encouraged for lighting the upgrading and operation of the plant.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, 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 as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

N/A. To be updated after the public review period.

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)

(A full response must be provided in the Comments and Response Report that must be attached to this report):

N/A. To be updated after the public review period.

2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilized in the rating of significance of impacts

Impact Assessment Methodology

The impacts will be ranked according to the methodology described below. Where possible, mitigation measures will be provided to manage impacts. In order to ensure uniformity, a standard impact assessment methodology will be utilised so that a wide range of impacts can be compared with each other. The impact assessment methodology makes provision for the assessment of impacts against the following criteria, as discussed below.

Nature of the impact

Each impact should be described in terms of the features and qualities of the impact. A detailed description of the impact will allow for contextualisation of the assessment.

Extent of the impact

Extent intends to assess the footprint of the impact. The larger the footprint, the higher the impact rating will be. The table below provides the descriptors and criteria for assessment.

Table 4 : Extent of the Impacts

Extent Descriptor	Definition	Rating
Site	Impact footprint remains within the boundary of the site.	1
Local	Impact footprint extends beyond the boundary of the site to the adjacent surrounding areas.	2
Regional	Impact footprint includes the greater surrounds and may include an entire municipal or provincial jurisdiction.	3

National	The scale of the impact is applicable to the Republic of South Africa.	4
Global	The impact has global implications.	5

Duration of the impact

The duration of the impact is the period of time that the impact will manifest on the receiving environment. Importantly, the concept of reversibility is reflected in the duration rating. The longer the impact endures, the less likely it is to be reversible. See Table 5 for the criteria for rating duration of impacts.

Table 5 : Duration of the Impacts

Duration Descriptor	Definition	Rating
Construction/Decommissioning phase only	The impact endures for only as long as the construction or the decommissioning period of the project activity. This implies that the impact is fully reversible.	1
Short term	The impact continues to manifest for a period of between 3 and 5 years beyond construction or decommissioning. The impact is still reversible.	2
Medium term	The impact continues between 6 and 15 years beyond the construction or decommissioning phase. The impact is still reversible with relevant and applicable mitigation and management actions.	3
Long term	The impact continues for a period in excess of 15 years beyond construction or decommissioning. The impact is only reversible with considerable effort in implementation of rigorous mitigation actions.	4
Permanent	The impact will continue indefinitely and is not reversible.	5

Potential intensity of the impact

The concept of the potential intensity of an impact is the acknowledgement at the outset of the project of the potential significance of the impact on the receiving environment. Potential intensity provides a measure for comparing significance across different specialist assessments. This is possible by aligning specialist ratings with the potential intensity rating provided here. This allows for better integration of specialist studies into the environmental impact assessment. See Table 6 and Table 7 below.

Table 6 : Negative Potential Impacts

Potential intensity descriptor	Definition of negative impact	Rating
High	Significant impact to human health linked to mortality/loss of a species/endemic habitat.	16
Moderate-High	Significant impact to faunal or floral populations/loss of livelihoods/individual economic loss.	8
Moderate	Reduction in environmental quality/loss of habitat/loss of heritage/loss of welfare amenity	4
Moderate-Low	Nuisance impact	2
Low	Negative change with no associated consequences.	1

Table 7 : Positive Potential Impacts

Potential intensity descriptor	Definition of positive impact	Rating
Moderate-High	Net improvement in human welfare	8
Moderate	Improved environmental quality/improved individual livelihoods	4
Moderate-Low	Economic development	2
Low	Positive change with no other consequences.	1

It must be noted that there is no HIGH rating for positive impacts under potential intensity, as it must be understood that no positive spinoff of an activity can possibly raises a similar significance rating to a negative impact that affects human health or causes the irreplaceable loss of a species.

Likelihood of the impact

This is the likelihood of the impact potential intensity manifesting. This is not the likelihood of the activity occurring. If an impact is unlikely to manifest, then the likelihood rating will reduce the overall significance. Table 8 provides the rating methodology for likelihood.

The rating for likelihood is provided in fractions in order to provide an indication of percentage probability, although it is noted that mathematical connotation cannot be implied to numbers utilised for ratings.

Table 8 : Likelihood of Impacts

Likelihood descriptor	Definition	Rating
Improbable	The possibility of the impact occurring is negligible and only under exceptional circumstances.	0.1
Unlikely	The possibility of the impact occurring is low with a less than 10% chance of occurring. The impact has not occurred before.	0.2
Probable	The impact has a 10% to 40% chance of occurring. Only likely to happen once in every 3 years or more.	0.5
Highly probable	It is most likely that the impact will occur and there is a 41% to 75% chance of occurrence.	0.75
Definite	More than a 75% chance of occurrence. The impact will occur regularly.	1

Cumulative Impacts

Cumulative impacts are reflected in the in the potential intensity of the rating system. In order to assess any impact on the environment, cumulative impacts must be considered in order to determine an accurate significance. Impacts cannot be assessed in isolation. An integrated approach requires that cumulative impacts be included in the assessment of individual impacts.

The nature of the impact should be described in such a way as to detail the potential cumulative impact of the activity.

Significance Assessment

The significance assessment assigns numbers to rate impacts in order to provide a more quantitative description of impacts for purposes of decision making. Significance is an expression of the risk of damage to the environment, should the proposed activity be authorised.

To allow for impacts to be described in a quantitative manner in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus, the total value of the impact is described as the function of significance, which takes cognisance of extent, duration, potential intensity and likelihood.

Impact Significance = (extent + duration + potential intensity) x likelihood

Table 9 : Significance Assessment

Score	Rating	Implications for Decision-making
<3	Low	Project can be authorised with low risk of environmental degradation
3-9	Moderate	Project can be authorised but with conditions and routine inspections. Mitigation measures must be implemented.
10-20	High	Project can be authorised but with strict conditions and high levels of compliance and enforcement. Monitoring and mitigation are essential.
21-26	Fatally flawed	Project cannot be authorised

An example of how this rating scale is applied is shown below in Table 13

Activity	Nature of Impact	Impact type	Extent	Duration	Potential	Likelihood	Rating	Mitigation	Interpretation
SO2 emissions	<u>Direct Impact:</u> SO2 emissions on air quality within an area of high priority air pollution.	Existing	3	4	16	1	23 - FLAW	With mitigation (FGD) the residual air quality impact will be reduced due to a lower probability of SO2 emission from the Power Station.	Ambient air quality is high impact for the area.
		Cumulative	2	4	16	0,2	4 - MOD		Air quality will remain high impact with the power station coming on-line
		Residual	5	4	16	0,5	13 - HIGH		With mitigation (FGD) the residual air quality impact will be reduced due to a lower probability of SO2 emission from the Power Station.

Notation of Impacts

In order to make the report easier to read the following notation format is used to highlight the

various components of the assessment:

- Extent- *in italics*
- Duration – in underline
- Potential intensity – IN CAPITALS
- Likelihood - in **bold**

Please note that the impact rating system may change slightly to accommodate ease of use. However, the basic principle of the rating system will remain the same.

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Proposal

Potential impacts	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
PRE-CONSTRUCTION PHASE				
Appointment of construction contractor	5- Moderate	<ul style="list-style-type: none"> Adopt a local employment policy to maximise the opportunities made available to the local labour force. 	5-Moderate	<ul style="list-style-type: none"> No improvement on the unemployment conditions in the area and livelihood of the surrounding communities.
CONSTRUCTION PHASE				
➤ ECOLOGY				
Loss of plant species of conservation concern due to site clearance.	1-Low	<ul style="list-style-type: none"> Ensure that vegetation clearing is only in the boundary of the proposed site. 	1-Low	<ul style="list-style-type: none"> Loss of vegetation outside the boundary of the proposed site.
Vegetation and habitat disturbance due to pollution and littering.	4-Moderate	<ul style="list-style-type: none"> The Contractor should employ personnel on site responsible for preventing and controlling of litter. Promote good housekeeping with daily clean-ups on site. Refresher training can be conducted to construction workers with regards to littering, ad hoc veld fires and dumping. No fires are allowed on site. 	1-Low	<ul style="list-style-type: none"> Loss of vegetation and habitat in the surrounding area.
Soil erosion and dust pollution due to site clearing and vehicle movements.	3-Moderate	<ul style="list-style-type: none"> Plant vegetation, such as herbs, pioneer species and small trees, as ground cover to prevent soil erosion. Mulch the soil by putting dead leaves and shredded wood on the soil to prevent the soil eroding. Dust suppression should be done everyday to prevent dust pollution. 	0-Low	<ul style="list-style-type: none"> Loss of topsoil and nutrients in the area. Dust will threaten the health of workers and the people in the surrounding area.
Soil contamination, vegetation loss and vegetation disturbance due to fuel and chemicals.	3-Moderate	<ul style="list-style-type: none"> Appropriate measures should be implemented in order to prevent potential soil pollution through fuel and oil leaks and spills and then compliance 	1-Low	<ul style="list-style-type: none"> Pollution of water resources and land. Loss of natural habitats for

		<ul style="list-style-type: none"> monitored by an appropriate person. Make sure construction vehicles are maintained and serviced to prevent oil and fuel leaks. Emergency on-site maintenance should be done over appropriate drip trays and all oil or fuel must be disposed of according to waste regulations. Drip trays must be placed under vehicles and equipment when not in use. 		the biodiversity occurring in the area.
Potential impact on vegetation and habitat disturbance due to the accidental introduction of alien species.	3-Moderate	<ul style="list-style-type: none"> The Contractor implements suitable methods during the construction phase to limit the introduction and spread of alien invasive plant species. Promote awareness of all personnel. The establishment of pioneer species should be considered with the natural cycle of rehabilitation of disturbed areas, which assists with erosion control, dust and establishment of more permanent species. This can be controlled during construction phase and thereafter more stringent measures should be implemented during the rehabilitation and post rehabilitation. 	1-Low	<ul style="list-style-type: none"> Loss of natural habitats for the biodiversity occurring in the area.
Impact on aquatic fauna	10-High	<ul style="list-style-type: none"> No further coliform pollution can be released into the system from the WwTW. Water entering the site is already contaminated by coliforms. Management of this is required as the service provided by the site is specifically the treatment of wastewater. Implementation of an early warning system to prevent incidences of flooding inundating machinery and decrease risk to human health. Allowance must be made for overtopping of the banks of the system during flooding events. 	5-Moderate	<ul style="list-style-type: none"> Loss of aquatic fauna due to pollution of the water courses around the area.
➤ WATER COURSES				
Change in water flow regime	11-High	<ul style="list-style-type: none"> Design of watercourse crossings should ensure no nett negative effect on local or regional hydrology Construction methods should be carefully reviewed to ensure the least impact to the watercourse is ensured. Effective stormwater management should be a 	4- Moderate	<ul style="list-style-type: none"> May lead to changes in water velocity and the benthic (bottom) structure of the stream/riverbed, e.g., coarse substrates such as gravels and boulders may

		<p>priority during the construction phase. This should be monitored as part of the EMP. High energy stormwater input into the watercourses should be prevented at all cost.</p> <ul style="list-style-type: none"> • Sediment control should be effective and not allow any release of sediment pollution downstream. This should be audited on a weekly basis to demonstrate compliance with upstream conditions. • Where necessary, corrective action should be determined by a team of specialists including engineers, hydrologists and ecologists 		<p>be covered by sand and silt, which affects the fish and invertebrates that live there.</p>
Changes in sediment entering and exiting the system	11-High	<ul style="list-style-type: none"> • Consider the various methods and equipment available and select whichever method(s) that will have the least impact on watercourses. • Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover. • Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas. • Runoff from the construction area must be managed to avoid erosion and pollution problems. • Implementation of best management practices • Maintain buffer zones to trap sediments • Monitoring should be done to ensure that sediment pollution is timeously dressed. 	4-Moderate	<ul style="list-style-type: none"> • Sediment deposits in rivers can alter the flow of water and reduce water depth.
Loss and disturbance of watercourse habitat and fringe vegetation.	4-Moderate	<ul style="list-style-type: none"> • No development or maintenance infrastructure is allowed within the delineated watercourse or associated buffer zones. • Demarcate the watercourse areas and buffer zones to limit disturbance, clearly mark these areas as no-go areas. • Monitor the establishment of alien invasive species within the areas affected by the construction and take immediate corrective action where invasive species are observed to establish. • Operational activities should not take place within 	3-Moderate	<ul style="list-style-type: none"> • Loss of aquatic habitat in watercourses in the area.

		<p>watercourses or buffer zones, nor should edge effects impact on these areas.</p> <ul style="list-style-type: none"> Operational activities should not impact on rehabilitated or naturally vegetated areas. 		
Changes in water quality due to foreign materials and increased nutrients.	7-Moderate	<ul style="list-style-type: none"> Provision of adequate sanitation facilities located outside of the watercourse or its associated buffer zone. Implementation of appropriate stormwater management around the excavation to prevent the ingress of run-off into the excavation and to prevent contaminated runoff into the watercourse. The development footprint must be fenced off from the watercourses and no related impacts may be allowed into the watercourse e.g. water runoff from cleaning of equipment, vehicle access etc. After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land shall be left in a condition as close as possible to that prior to use. Maintenance of construction vehicles / equipment should not take place within the watercourse or watercourse buffer. Ensure that no operational activities impact on the watercourse or buffer area. This includes edge effects. Control of waste discharges and do not allow dirty water from operational activities to enter the watercourse Treatment of pollution identified should be prioritized accordingly. 	5-Moderate	<ul style="list-style-type: none"> Loss of aquatic habitat in watercourses in the area.
➤ SOCIAL				
Increased employment opportunities and economic growth.	16-High (+)	<ul style="list-style-type: none"> Leverage this through procurement policies that favour local suppliers and businesses. 	16_High (+)	
Creation of temporary skilled and unskilled job opportunities directly on the project	16-High (+)	<ul style="list-style-type: none"> Leverage this through procurement policies that favour local labour. 	16-High (+)	<ul style="list-style-type: none"> Creating temporary skilled and unskilled job opportunities.
Termination of temporary	16-High (-)	<ul style="list-style-type: none"> N/A 	16-High (-)	<ul style="list-style-type: none"> Loss of temporary

employment				employment.
➤ HERITAGE				
Destruction of heritage resources	1-Low	<ul style="list-style-type: none"> Where artefacts of cultural significance or fossil material is found on-site, work must cease and reported to the site manager. It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist or palaeontologist for an assessment of the finds who will notify the SAHRA 	0-Low	<ul style="list-style-type: none"> Loss of Heritage resources.
➤ PALAEONTOLOGY				
Destruction of palaeontological resources	3-Moderate	<ul style="list-style-type: none"> Where artefacts of cultural significance or fossil material is found on-site, work must cease and reported to the site manager. It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist or palaeontologist for an assessment of the finds who will notify the SAHRA. 	2-Low	<ul style="list-style-type: none"> Loss of Paleontological resources.
OPERATION PHASE				
➤ ECOLOGY				
Disturbance of faunal species	3-Moderate	<ul style="list-style-type: none"> The disturbance of fauna should be minimized. Animals residing within the designated area shall not be unnecessarily disturbed. 	1-Low	<ul style="list-style-type: none"> Displacement of animals.
➤ WATER COURSE				
Altering the surface flow dynamics	4-Moderate	<ul style="list-style-type: none"> Design of watercourse crossings should ensure no nett negative effect on local or regional hydrology. Operational activities should not take place within watercourses or buffer zones, nor should edge 	2-Low	<ul style="list-style-type: none"> Decrease in the quality of water and alteration of the drainage pattern.

		<p>effects impact on these areas.</p> <ul style="list-style-type: none"> Operational activities should not impact on rehabilitated or naturally vegetated areas. Discharged storm water must be released in a controlled manner with a diffuse flow pattern and be accompanied by energy dissipating interventions to prevent erosion. 		
➤ SOCIAL				
Continuous treatment of sewage for the region	17-High (+)	Control this through maintenance and refurbishment of the plant.	18-High (+)	<ul style="list-style-type: none"> The Plant will not be able to contain the growing demand of sewage treatment in a developing country like South Africa.

Alternative 1 (REPEAT THIS TABLE FOR EACH ALTERNATIVE)

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

No-Go

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

Annexure G1: Wetland Assessment Report
Annexure G2: Aquatic Fauna and Water Quality Assessment Report
Annexure G3: Heritage Assessment Letter

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

No gaps have been identified during the assessment of this proposed development.

3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Proposal

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
The development is permanent and will not be decommissioned. Only the construction site at the end of the construction period will need decommissioning and rehabilitation.				

Alternative 1

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

Alternative 2

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

Due to the nature of the proposed development, decommissioning phase is not envisioned. As a result, impact assessments for the decommissioning activities are not considered in this assessment.

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

N/A

4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

Cumulative impacts include some changes in the hydrology of the rivers that could occur due to ineffective sediment control during the construction phase. Where mitigation measures are not implemented, there could be an increase in impacts on site and around the area. In case where there is infestation of alien plants, monitoring and rehabilitation should be implemented during construction and the operation phase. Implementation of the mitigation measures will ensure low cumulative impacts.

5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal 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.

Proposal

No Site Alternatives were identified as the proposed site is owned by the applicant. Specialist assessments were conducted for the proposed Project and a summary of the findings have been included below:

Wetland Assessment:

No wetlands were recorded within the proposed development site. However, two wetland systems were recorded on the larger study area, within the 500m DWS regulated area outside the WwTW site. The southernmost wetland (Klip River) is classified as a Floodplain wetland and the wetland in the central and northern section is classified as an unchannelled valley bottom wetland which drains into the Klip River. This wetland has numerous impoundments, within and adjacent to, the wetlands. It is likely that these impoundments are hydrologically connected to the wetlands and thus has some impacts on the systems. These impoundments are artificial as confirmed by the absence of any impoundments on early historical imagery of 1951 of the area. These historical imageries further indicated the prolonged agricultural impacts on the watercourses. The proposed development site is however well buffered from the wetlands and the wetlands only encroaches into the 500 m buffer zone south of the proposed PSTs and associated infrastructure; and therefore, the impact significance is **MODERATE**.

Aquatic Fauna and Water Quality Assessment:

The proposed upgrade of the WwTW is welcomed in order to mitigate the risk of pollution events into a system already highly polluted. This is emulated by the water quality analysis completed for the site. The SASS PES using MERAI was calculated to E/F. No fish was observed at the sample points-this is possibly due to heavy sewage pollution into the system and altered water quality. Raised Ca and Mg concentrations in combination with increased salts shows the water to be in poor condition. Therefore, the significant impact is **HIGH-MODERATE** without mitigation measures. It must be clearly noted that any development on the study site will have an impact on the aquatic ecosystems and must be authorised in terms of Section 21 of the National Water Act (1998).

Heritage and Palaeontology Assessment:

From a heritage perspective the study area is degraded and there is a **LOW** likelihood that any sites of significance will be impacted on by the proposed project. It is therefore recommended that the project is exempted from an HIA but that a chance find procedure and a paleontological protocol for finds should be included in the EMP.

Alternative 1

N/A

Alternative 2

N/A

No-go (compulsory)

This option assumes that a conservative approach would ensure that the environment is not impacted upon any more than is currently the case. It is important to state that this assessment is informed by the current condition of the area. Should the GDARD decline the application, the 'No-Go' option will be followed, and the status quo of the site will remain.

IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

The impacts have been identified and assessed during the BA process. Based on the impact assessment, impacts will be predominantly limited to the site and study area. The impacts will mostly occur during the construction phase, which will take approximately 1 year. All the impacts identified during the construction phase can be mitigated to acceptable level and most of the impacts indicated as **HIGH-MODERATE** significance before mitigation will be reduced to a **MODERATE-LOW** significance rating after the implementation of mitigation measures. The proposed expansion of the new PSTs and the associated infrastructures is therefore unlikely to significantly impact on the already existing WwTW and the surrounding environment.

For alternative:

N/A

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

Johannesburg Water is proposing to expand the existing WwTW by constructing two New PSTs and associated infrastructures on Farm Misgund 322 IQ in Soweto which fall within the jurisdiction of City of Johannesburg, Gauteng Province. The site can be accessed via Stockwell Ave which is located on the western boundary of the study area. The proposed development is approximately 1ha in extent. The proposed expansion is located on an already existing Wastewater Treatment Works.

Based on the outcome of the Specialist studies conducted, it can be concluded that the proposed expansion will not result in significant environmental impacts with implementation of mitigation measures and monitoring during the construction phase. There are no Heritage and Palaeontology resources present. In instances where these resources are spotted during the construction phase, all construction activities should cease, and the site manager must notify SAHRA of the objects identified on site. The aquatic assessment of the site indicated the site will be highly impacted and degraded by the proposed activities. The specialist study highlighted that the water systems will be impacted by sewage pollution and other chemical aspects, however, appropriate mitigations have been proposed.

No wetlands were recorded within the proposed development site. However, two wetland systems were recorded on the larger study area, within the 500m DWS regulated area outside the WwTW site. The biodiversity of these wetlands is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water in major rivers. The status of these wetland is likely to remain stable over the next 5 years.

All significant impacts can be managed through the implementation of mitigation measures proposed in this report and the EMPr. Monitoring and rehabilitation of the aquatic fauna and wetlands is recommended to reduce the impacts that could occur on site and the surrounding area.

SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

- Appointment of a skilled and qualified contractor;
- Consultation with and obtaining approvals of the development from the city council (municipality); and
- Use of GIS tool for mapping (using data from GDARD such as EMF, GAPA and GIDSv10, and other data), refer to attached maps in **Appendix A**.

6. RECOMMENDATION OF THE 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 as bound by professional ethical standards and the code of conduct of EAPASA).

YES	<input type="checkbox"/>
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If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

N/A

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:

The EAP recommends that the proposed expansion of the Bushkoppie Wastewater Treatment Works be authorised within the proposed project site. All mitigation measures listed by the Heritage and Palaeontology, Aquatic Fauna and Wetland specialist studies, and proposed in the Environmental Management Programme (EMPr) (refer to **Appendix H**) must be implemented.

7. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT (AS PER NOTICE 792 OF 2012, OR THE UPDATED VERSION OF THIS GUIDELINE)

Bushkoppie WwTW receives wastewater from the southern areas of Johannesburg via the South Eastern Outfall sewer and from the south western areas of Johannesburg, Soweto and parts of Roodepoort through the Bushkoppie Phase 1 and 2 outfall sewers. Due to the large volume of grit and solids in the incoming wastewater, there is a strain on the preliminary treatment resulting in many process units not performing as required. The proposed expansion is required to improve process performance, effluent quality from the plant and assist with ongoing operations.

THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED (CONSIDER WHEN THE ACITIVITY IS EXPECTED TO BE CONCLUDED)

The environmental authorization is required from December 2019 and the construction phase will take approximately 1 Year.

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) (must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above, then an EMP is to be attached to this report as an Appendix

EMPr attached

YES

SECTION F: APPENDICES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed.