Background Information Document (BID)

ENVIRONMENTAL IMPACT ASSESSMENT & INTEGRATED WATER USE LICENSE
PROPOSED DEVELOPMENT OF HEKPOORT WASTEWATER TREATMENT WORKS, MOGALE CITY LOCAL MUNICIPALITY, WEST RAND DISTRICT, GAUTENG PROVINCE
(GDARD REF. Gaut 001/16-17/0767)

May 2017

Dear Interested and Affected Party,

Notice is given in terms of the Environmental Impact Assessment (EIA) Regulations of 2014 scheduled in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) [NEMA] as amended, of the commencement of an Environmental Impact Assessment Process.

Mogale City Local Municipality (MCLM) proposes to development a Wastewater Treatment Works in the rural area of Hekpoort (Magalies River Catchment) in the West Rand District of the Gauteng Province. Before the project can be commissioned MCLM needs to obtain Environmental Authorisation in line with the EIA Regulations published in Government Notice R982 of 10 December 2014 and its listing notices GNR 983, 984 and 985 under NEMA.

Application is to be made to the authorising authority, Gauteng Department of Agriculture and Rural Development (GDARD) for the proposed activity. An EIA Study is to be undertaken in the form of a Basic Assessment (BA) Process for the project.

A Section 21 Water Use License Application (WULA) will also be lodged for associated water uses in terms of the National Water Act (Act 36/1998) [NWA] to Department of Water and Sanitation.

Naledzi Environmental Consultants CC has been appointed as the independent Environmental Assessment Practitioner to undertaken and manage the applications. An integrated approach will be followed to obtain the required authorisation and license.

1. APPLICANT

Mogale City Local Municipality: Water and Sanitation, c/o Commissioner and Market Street, P O Box 94, Krugersdorp, 1740
Attention: Ms. Elize Mare
Email: elize.mare@mogalecity.gov.za

2. PURPOSE OF THIS DOCUMENT

Invitation to register as an Interested and Affected Party (I&AP) and provide comments

Purpose of this Document

- Provide background information to landowners and interested and affected parties (I&AP's) on the proposed project;
- Provide you with an opportunity to receive information, comment and raise issues regarding the environmental authorisation process.

You can achieve it by:

- Registering as an I&AP during the public participation process
- Giving comments, raising concerns and or issues about the project
- **Completing the Comment & Response Sheet at the end of the BID, this allows I&APs to comment on the project. Send the form back to us either via fax, post, email or hand delivery on or before 1 June 2017. The contact details are provided.**

Public Participation Office and Comments:
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3. BACKGROUND INFORMATION DOCUMENT

This document provides interested and or affected parties (I&APs) with background information on the proposed project, its potential impacts, and the application, environmental assessment process, related public participation process including the integrated water use license application. It also outlines the manner in which I&APs can become involved in the project, receive information and raise issues that may be of interest and/or concern to them.

The development of the impact assessment process involves technical and scientific investigations related to the potential impacts of the proposed project. It is therefore essential that I&APs, through the public participation process, become actively involved in the project's environmental assessment process in order to share information and give input that will be useful in assisting the relevant authorities in decision-making as far as this project is concerned.

The **response sheet at the end** of this document allows I&APs to comment and provide their inputs on the proposed project.

The Public Participation Process for the project is being conducted in accordance with Chapter 6 of NEMA as amended and EIA Regulations of 2014 in support of the integrated EIA and WULA authorization process.

4. ROLES OF I&AP's

Communities, landowners, neighbours, government representatives, stakeholders such as community leaders, non-governmental organisations (NGO) are being invited to participate in the EIA process by means of published advertisements, site notices and written correspondence. I&APs are invited to assist in:

- Identifying issues of concern to be investigated, as well as possible impacts of the project on the natural & social environment;
- Suggesting alternative means in which to mitigate possible negative impacts and enhance positive impacts.

5. PROJECT BACKGROUND

The Hekpoort area currently has no wastewater treatment. Development in the area is being hampered by the lack of services.

The socio-economic activities of the local community consist of mainly small farm holdings and informal settlements with very limited development because of limited services being available. Some housing and settlement developments are planned in the area namely Vogalzang Village and Dr Sefularo Village for which a wastewater treatment solution is required.

In the interim MCLM will be installing a Package Plant to receive sewage from the Dr Sefularo Development. But the Department of Water and Sanitation (DWS) considers the package plant a temporary solution that cannot make the required discharge effluent quality limits for the Magalies River Catchment.

The Magalies River is within the Crocodile (West) and Marico Water Management Area in catchment A21F. It meanders through the Hekpoort landscape, north of the proposed project site and flows into the Hartebeespoort Dam. It is a listed water resource where special limits for effluent discharge into the river system (Ortho-Phosphates as Phosphorous) is applicable in terms of the NWA.

MCLM requires a long term permanent solution for sewage treatment for the Hekpoort region in the form of an established wastewater treatment works which can receive sewage from emerging settlement/housing developments and treat effluent to the required effluent limits set by the NWA 36 of 1998. Hence the proposal for the Hekpoort Wastewater Treatment Works (WWTW).

Due to the sensitivity of the catchment area the proposed Hekpoort WWTW will not discharge treated effluent into the Magalies River via the Doring Spruit. (Refer to point 6 for project locality) DWS ordered that the facility discharge through land application and comply with the general effluent limits set by NWA. The general limits apply as there is no direct discharge into a river system.

Discharge from the WWTW will be used to irrigate a proposed park and nursery to be established by the Mogale City Local Municipality opposite to the WWTW.

6. PROJECT LOCATION

The proposed Hekpoort WWTW will be developed on Portion 244 of the farm Hartebeestfontein 472JQ. It will be a medium scale plant. The sludge management, park area and nursery will be created on Portion 38 of the farm Hartebeestfontein 472JQ. The WWTW will discharge its treated effluent to land through spray irrigation of the proposed park area. The development will be located within the jurisdiction of Mogale City Local Municipality of the West Rand District in Gauteng Province. Please refer to Figure 1 and 2 for the locality map.

TOPOGRAPHICAL MAP

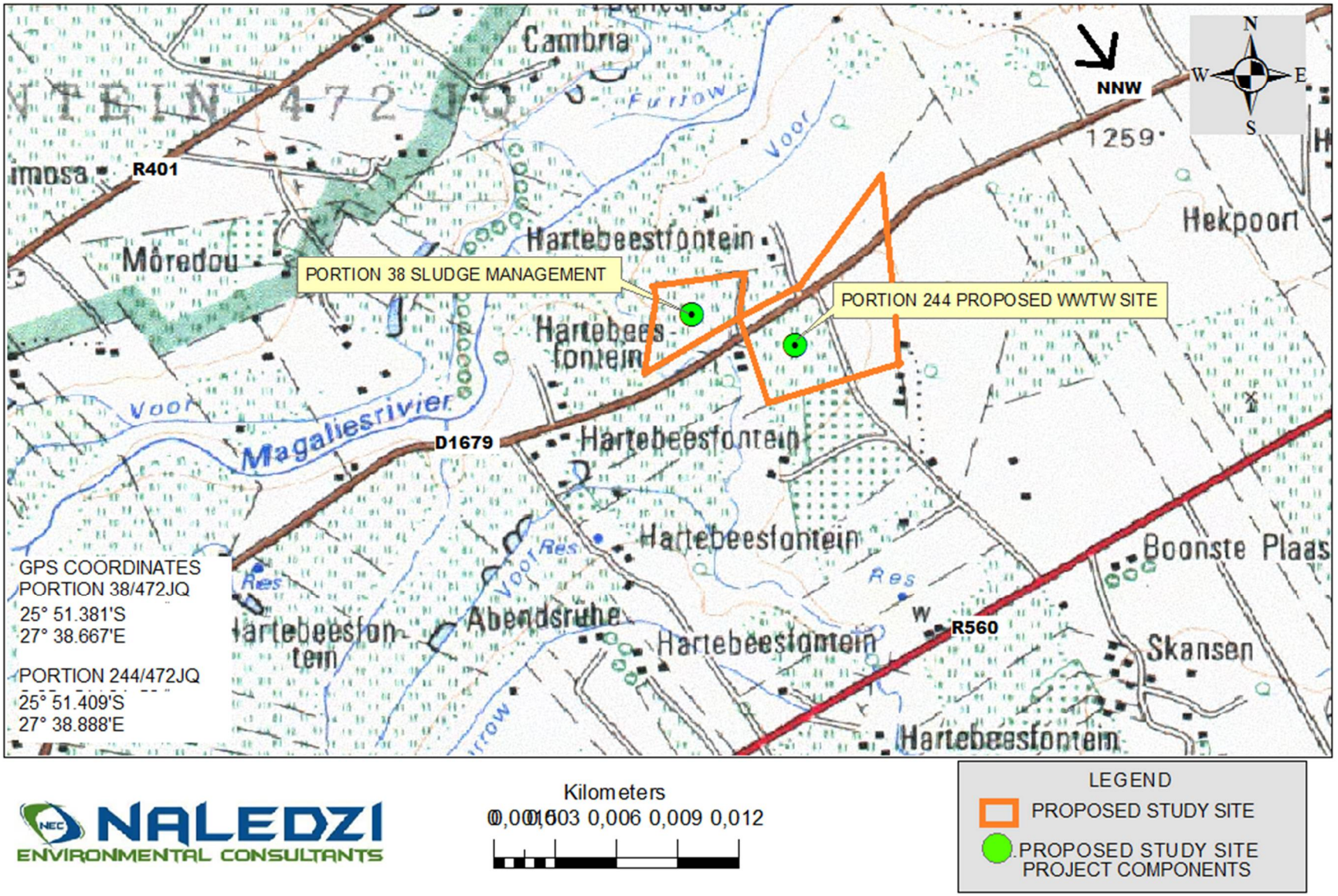

Figure 1: Topographical Locality Map of the proposed Hekpoort Wastewater Treatment Works components

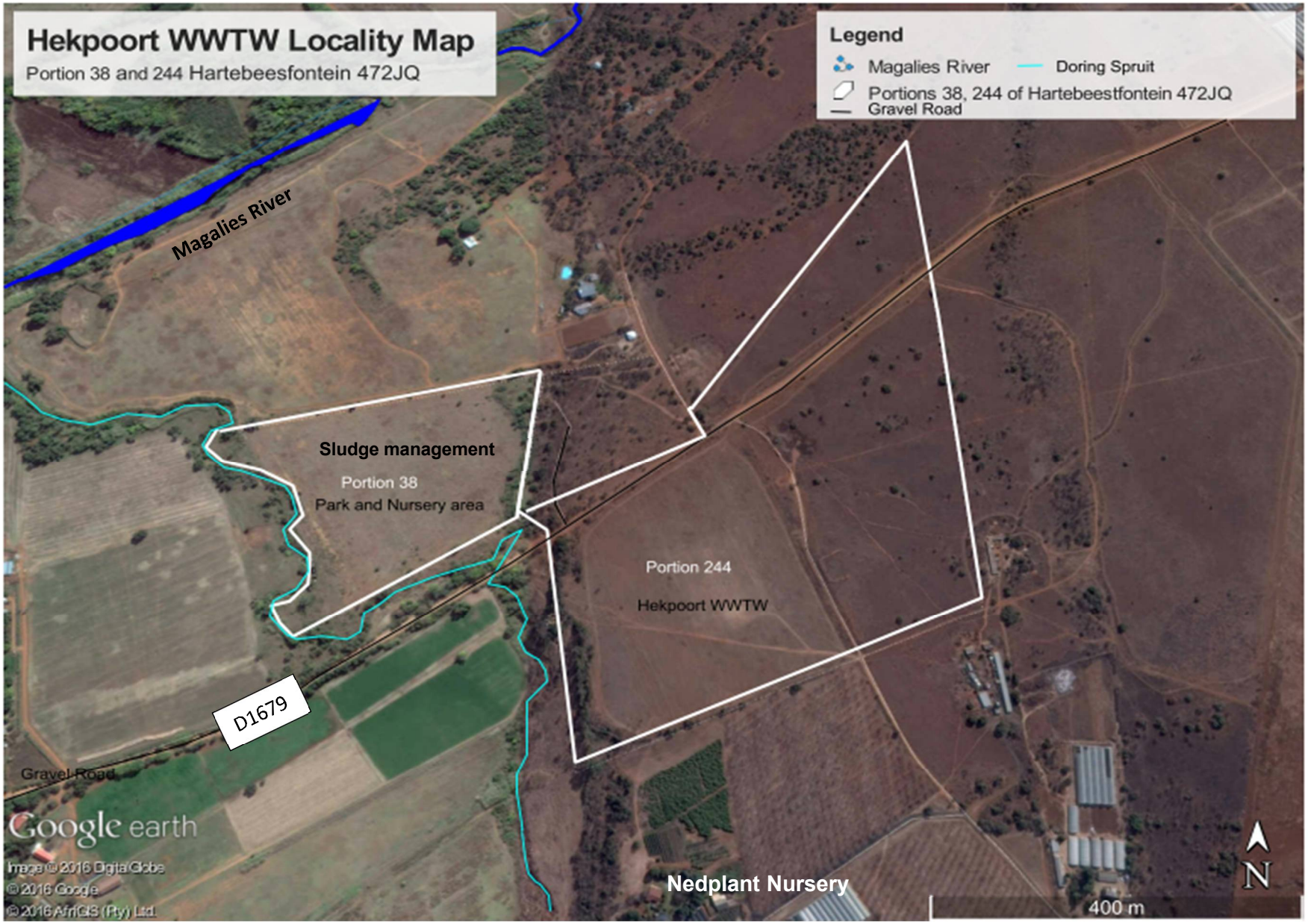

Figure 2: Positioning of the proposed Hekpoort Wastewater Treatment Works on Portions 244 and 38/472JQ (courtesy of Google Earth)

The study site is located 4km north east of Hekpoort between the R560 Hekpoort/Hartbeespoort Road and D401. It is accessed from the D1676 gravel road. The farm falls within the Hartebeestfontein Conservancy.

As per Figure 2, the WWTW will be located south of the D1679 gravel road. The sludge management will be north of the D1679 road. The project site respective farm portions are 23.4654 Hectares (ptn 244) and 7. 4233 hectares (ptn 38) in extent.

The study area is also located within an important bird and biodiversity area as per the SANBI Important Bird Biodiversity Areas map for 2015. This is owed to its proximity to the Magaliesberg mountain range. This important bird area unit has a partially protection status.

The geographical co-ordinates of the development site are tabled below.

Table 1: GPS Coordinates Hekpoort WWTW

Latitude/Longitude	Degrees	Minutes	Seconds
South	25°	51' 24	52"
East	27°	38' 53	30"

Table 2: GPS Coordinates Sludge Management & Park Area

Latitude/Longitude	Degrees	Minutes	Seconds
South	25°	51' 22	89"
East	27°	38' 40	04"

The study site is surrounded by rural-agricultural activities, agricultural smallholdings, plots of natural veld and scattered tourism accommodation facilities.

The Doring Spruit forms the western boundary of the study site. A 100m riparian buffer zone will be upheld from the Doring Spruit as per the minimum requirements of the GDARD.

7. PROJECT DESCRIPTION

The proposed Hekpoort Wastewater Treatment Works (WWTW) will be a medium scale plant. The design capacity of the plant would be 3 Megalitres/day (3000m^3/day).

Table 3: Peak Wet Weather Flow Capacity

No	Design Capacity	Multiplying Peak Factor	Peak Wet Weather Flow
1	3000m^3/day	2.5	7500m^3/day
Daily throughput capacity at 3Ml/day			7500 m^3/day

The peak wet weather flow for the plant inlet works, when operating at full capacity of 3 Megalitres per day, will equate to a daily throughput capacity of 7500 m^3 / day.

This maximum daily flow is not the design capacity but ultimate peak flow which can be expected. Only the inlet works will be designed for this capacity not the process units within the plant.

The proposed WWTW will utilise an Activated Sludge Process (ASP). The biological treatment system will comprise the following components:

- Inlet works consisting of mechanical screen and degritting system;
- Flow measurement chamber
- Race track type biological reactor
- 'Dortmund' type clarifier
- Sludge lagoons
- Sludge recycling
- To be constructed wetlands / reed beds
- Disinfection chambers (chlorine)

The majority of the flow to enter the works will be pumped via transferring pump stations and a sewer outfall line (**not part of this EIA study**) to the works.

The works would include a 'make-shift' drop off point outside the boundaries of the WWTW for tankers wishing to transfer sewage to the works.

Flow arriving at the plant would mainly be domestic in nature.

Discharge of effluent

The treated effluent discharge from the WWTW will not be discharged into a watercourse. The treated effluent will be pumped into an irrigation dam from where it will be used to spray-irrigate a proposed park and nursery area to be established in proximity of the WWTW.

The land application of wastewater will assist in further removing nutrients from the treated effluent (nitrogen and phosphorus) from the wastewater as appose to conventional disposal.

Total area required for WWTW and associated infrastructure

The proposed **wastewater treatment plant** footprint area will be approximately **2 Hectares**.

The proposed park area to be spray-irrigated will be approximately 7 Hectares.

The proposed Hekpoort WWTW will be similar in design and capacity as the Magaliesburg WWTW.

Services requirements:

Electricity: The WWTW will require a substantial electricity supply for its operation. The design of the plant will target to reduce energy usage per unit of

wastewater treated. It is anticipated that electricity will be sourced from Eskom.

Water: Water will be required for construction purposes. Potable water will mostly be required during the operational phase for drinking and ablutions and preparation of meals by staff.

Access: Access to the proposed WWTW will be obtained from the D1676 gravel road.

8. Project Objective

The main objective of developing the proposed Hekpoort WWTW will be to:

- provide a reliable treatment works with the required capacity to meet the future demand,;
- can be operated and maintained cost effectively and;
- design with target to reduce energy usage per unit of wastewater treated;
- Produce effluent which adheres to the relevant standards of the National Water Act, 36 of 1998 imposed by DWS.

Objective of land application of wastewater:

- Optimally utilize treated effluent water where conventional discharge is prohibited into the stream;
- The wastewater recharges the groundwater table and increases base flow in streams;
- Natural treatment of wastewater takes place in soil; other plants and biota further remove some nutrients from the already treated wastewater.

9. Potential Impacts

The study site is located in an area characterised by agriculture and small holdings. The farm portions under application are zoned for township establishment.

The study site is vacant and comprises old cultivated fields planted with pasture grasses in its western section and good quality natural Acacia grassland in its eastern portion. Several clusters of trees are present on site.

The Doring Spruit forms the western boundary of the study site. It is non-perennial in nature, only having water in high rainfall events. The spruit flows north into the Magalies River. The catchment area is considered sensitive and effluent discharge is prohibited by order of DWS. Mixed alien and indigenous vegetation is associated with the Doring Spruit.

The Doring Spruit and Magalies River is considered an important ecological support area in terms of the Gauteng Conservation Plan of 2012. A 100m riparian bufferzone will be upheld from the Doring Spruit.

There are a number of environmental impacts that need to be addressed as part of the EIA process, which include:

- Visual impact: Development may have an impact on the sense of place
- Air Quality Impact: Potential foul odours due to improper sludge handling process during operation, dust generated during the construction of the plant, sludge management;
- Impact on groundwater: Spray-Irrigated effluent will percolate into groundwater and recharge the groundwater system. Potential impact on groundwater quality of down-gradient groundwater users may take place. Nitrate and chloride concentrations in wastewater may potentially impact on the groundwater quality;
- Impact on surface water River/Spruit): No in stream discharge will take place. The probability of water quality impairment is low as nutrients will be filtered out by the landscape prior to coming in contact with base flow in streams via the groundwater system.
- Potential impact on Heritage and Cultural Resources (potential graves/grave yards)
- Impact on Fauna and Flora; loss of vegetation during construction due to removal& clearing, loss of fauna habitat;
- Socio-economic impact; By servicing the area it may provide the opportunity for further potential development and more socio-economic activities;
- Traffic impact: potential increased road usage on D1676;

The listed impacts are not exhaustive and are potential impacts requiring in-depth investigation. Significance of listed impacts will be determined during the EIA Study and management solutions will be developed.

The construction and operation of the proposed WWTW will be undertaken in accordance with an auditable EMPr as approved by GDARD and in compliance with all applicable legislation.

During 2013 the project site was under investigation by Mogale City Local Municipality for a proposed township establishment on Portions 38, 198 and 244

of Hartebeestfontein 472JQ. Only portion 198 is still being considered for this township proposal. Several specialist investigations were undertaken for the project area in 2013 to describe the baseline environment and potential impacts from development. These specialist investigations will be used to inform the environmental reports to be produced for the proposed Hekpoort WWTW.

The available specialist studies include:

- Heritage Impact Assessment
- Avifaunal -, Floral -, Herpetofauna-, mammal species Impact Assessments;
- Riparian Delineation Report
- 100 year floodline determination

Additional specialist investigations to be commissioned for the project include:

- A Geohydrological Study which includes a Hydrocensus of boreholes within a 1km radius of both the proposed WWTW location and sludge management section;
- Stormwater management plan

10. Legislative Requirements

The proposal is subject to compliance with two pieces of legislation:

A. National Environmental Management Act, 1998 (Act 107/1998);
B. National Water Act, 1998 (Act 36 of 1998)

The applicability of the acts are as follows:

A. APPLICATION FOR ENVIRONMENTAL AUTHORISATION

In terms of EIA Regulations published in Government Notice R982, R983, R984 and R985 of 4 December 2014 under Section 24 (5) of the National Environmental Management Act No. 107 of 1998 (NEMA) the proposed project is subject to an Application for Environmental Authorisation. Government Notice R983, R984 and R985 schedules listed activities which require environmental authorisation. The proposed project triggers listed activities under GNR 983. GNR 983 lists activities which are subject to a Basic Assessment process.

Activities triggered by the proposal under *GNR 983, Listing Notice 1* include:

Activity 25 "The development and related operation of infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic meters but less than 15 000 cubic metres"

Activity 27 "The clearance of an area of 1 Hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity or (ii) maintenance purposes undertaken in accordance with maintenance management plan"

MCLM is required to undertake an EIA process and submit a Basic Assessment Report (BAR) and Environmental Management Programme (EMPr), which describe the potential environmental impacts of the proposed project, how such impacts will be managed and how the disturbed area will be managed. All reporting is to be submitted to GDARD for review and decision making.

B. WATER USE LICENSE APPLICATION - IN TERMS OF THE NATIONAL WATER ACT 36/1998

A Water Use License Application (**WULA)** under the provisions of the National Water Act No. 36 of 1998 (NWA) is required for the WWTW. WULA will be applied for and submitted to the Department of Water and Sanitation: Gauteng Province under Crocodile (West)- and Marico Water Management Area.

Water use is defined in terms of Section 21 of the NWA. There are 11 water uses, which must be authorised. MCLM will be engaging in a controlled activity by land application of treated wastewater and disposing of waste.

Water uses that will be relevant to the proposed Hekpoort WWTW are:

- Section 21 (e): Engaging in a controlled activities, identified as such in Section 37(1)(a): Irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork;
- Section 21 (g) – Disposing of waste in a manner which may detrimentally impact on a water resource;(sludge lagoons & irrigation dam)

The following are the key competent authorities with respect to this application:

AUTHORITY	LEGISLATION	COMPETENCE
Gauteng Department of Agriculture and Rural Development (GDARD)	EIA Regulations 2014 under Section 24 of NEMA (GNR. 982) Regulations 21-24, 40-44; EIA Regulations	Decision making authority for activities which require environmental authorisations in Gauteng Province
Department of Water and Sanitation (DWS) Crocodile (WEST) &Marico Management Area	Section 21 water use - National Water Act, 1998 (Act No. 36 of 1998)	Decision making authority on matters related to water

10.1 Basic Assessment Procedure

The process involves 3 phases:

Phase 1: Information gathering & Public Participation;
Phase 2: Basic Assessment Report (BAR) & EMPr
Phase 3: Decision Making.

The BA procedure is described in Regulation 19 of the NEMA EIA Regulations 2014. Diagramme included on page 6.

The aim is to form an initial assessment of potential impacts of the proposal. The potential impacts are identified on the basis of baseline site investigations, desktop analysis and use of Global Information Systems by specialists to assess the site, as well as information gathering from the public and I&Aps. The impacts are then assessed, ranked and recorded in a BAR, which contains the findings of the site investigations, assessment of impacts posed by the project. The BAR will be distributed to all I&Aps, stakeholders for comment for a period of 30 calendar days.

Phase 1 – Present project info to I&Aps and elicit comments (WE ARE HERE)

This is annouced to &AP's by means of:

- advertisement in local newspapers;
- place site notices on site;
- Identify and notify in writing any I&AP's, stakeholders, organs of state of the project;
- make the BID and invitation letters to participate in the Basic Assessment process available I&Aps and allow a 30 day registration period on the BID;
- Conduct focus group meeting and a public meeting to discuss the project with I&APs (THESE DETAILS WILL BE COMMUNICATED)

All issues raised, whether telephonically, by e-mail, post, at public meetings will be captured in the Issues and Response Report (IRR) which forms part of the Basic Assessment Report.

Phase 2 - BAR

Conduct a Basic Assessment Investigation and specialist studies to inform the BAR. The BAR will be prepared, which will contain:

- a preliminary description of the proposed project;
- the potential impacts posed by the project (positive as well as negative);
- detailed specialist studies assessing the significance of the anticipated impacts of the proposed development;
- a record of all comments and concerns raised by I&AP's
- proposed mitigatory measures to be implemented by the applicant in order to curb the anticipated negative impacts

The BAR will be made available for public comment for 30 consecutive calendar days. All registered I&AP's will be notified about the availability of the BAR by letter and advertisements which will be placed in local newspapers.

The application for environmental authorisation together with the BAR will be submitted to GDARD as the BAR goes out for public review.

After the comment period, the BAR will be finalised and public comments will be incorporated. The BAR will then be submitted to GDARD within 90 days from application submission.

Phase 3 – Decision Making

After submission of BAR, the competant authority (CA) has 107 days to review and reach a decision on the application. The CA will notify the applicant of the decision and an environmental authorisation or refusal will be issued to the applicant.

Public review of the environmental authorisation: I&Aps will be notified of the deicsion within 14 days of issue. The environmental authorisation will be made available for public review for a period of 20 consecutive calendar days. (appeal period on decision).

10.2 Water Use Licence Procedure

The Water Use License (WUL) Procedure is undertaken in terms of the "Regulations for Procedural Requirements for WULA's and Appeals 2017 (Government Notice 267) [WULA Regulations] and submitted as conteplated in Regulation 11 of the WULA Regulations of 2017.

This procedure is integrated with the EIA process. It comprises 5 steps:

Step 1: Pre-Application Meeting with DWS on site
Step 2: WULA submission to DWS
Step 3: Site Inspection by DWS
Step 4: Water Use Techical Report & Pre submission consultation with DWS
Step 5: Submit Water Use Technical Report to DWS & Decision Making

The processing of a WULA, from application submission to decision making by DWS takes 300 days.

A pre-application site visit already took place with the DWS on 24 October 2016 at which the department stated their requirements for the WULA.

From this point forward, the WULA will be submitted to DWS. DWS will within 10 days of receipt of the application accept / reject the application.

A site inspection must be arranged within DWS and concluded within 30 days from application acceptance. This has already been completed as per Step 1. A desk-top study of available information and site investigations will be undertaken as part of the EIA Process.

A Water Use Technical Report will be submitted to DWS within a 105 days from receiving the department's information requirements for the project. DWS will evaluate the technical report to confirm if it meets formal requirements, thereafter either accept / reject the technical report. If the technical report is accepted, DWS will conduct a technical assessment for the application. Evaluation will be concluded in 139 days.

The WULA will be finalised in 144 days from acceptance of the technical report, after which DWS will issue an Water Use License.

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11. Time Schedule for Basic Assessment Process

Task	Time Frame
BID Registration period (30 days)	May – June 2017
Public Meeting	June/July 2017
Specialist Study (30 days)	June 2017
Application submission	End June 2017
Draft BAR	July 2017
Commenting period on BAR (30 days)	July 2017- August 2017
Submit Final BAR to GDARD	End August 2017
EA Granted	December 2017

Please note the above tabled dates are predicted dates which may vary based on information availablity on the project to complete tasks. The BA Procedure is regulated at 197 days. Should shedules change these will be communicated to I&APs through project correspondence.

12. Notices where the project is being announced:

Advertisements have been published in the following newspapers/advertorials:

- Krugersdrop News – 3 May 2017
- Berg & Cradle Newspaper– May 2017 issue

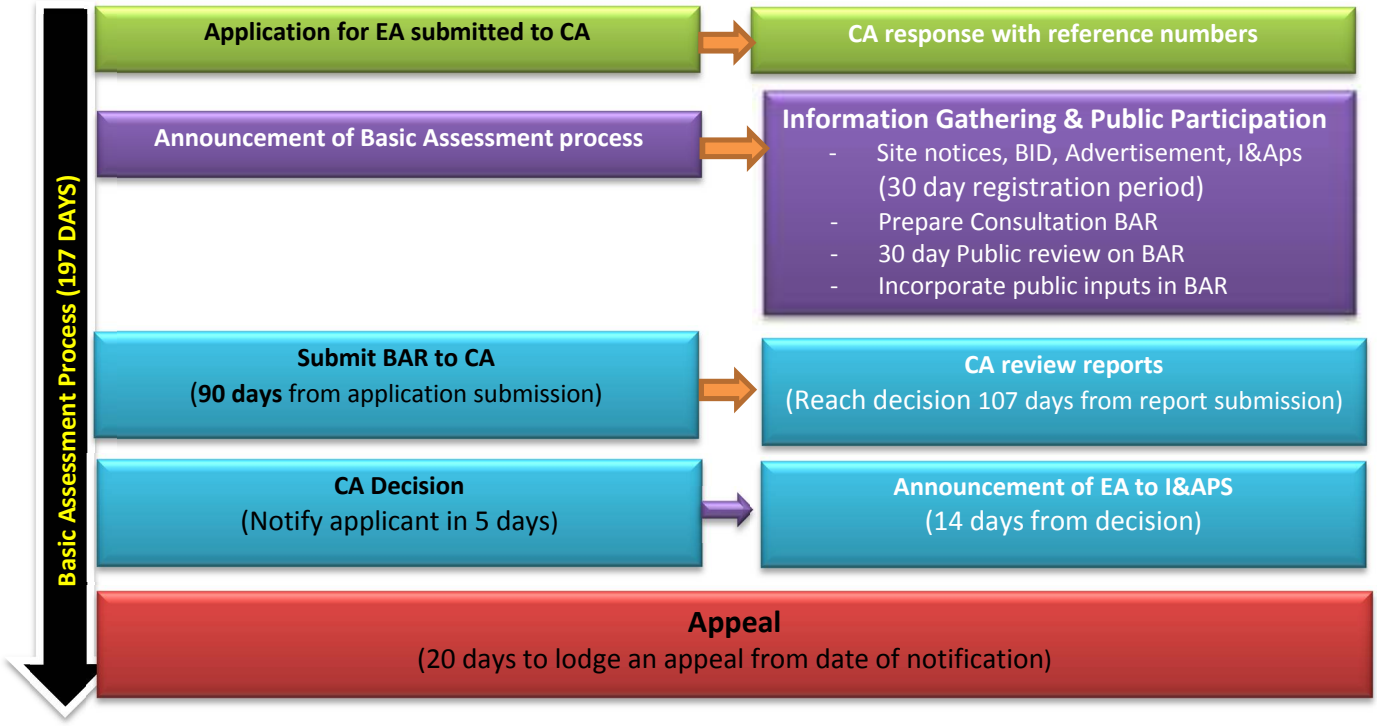
Site notices have been posted in the local area of Hekpoort at publicly frequented areas, onsite and along access roads leading the the study site.

This BID document is also distributed to pre-identified landowners, I&APs, stakeholders and organs of state via email, fax or post as well as hand delivered where necessary.

13. Refresher as to how you can participate

- By responding (by phone,fax or e-mail) to our invitation for your participation,
- By returning the attached Registration and Comment Form to the address provided for the environmental consultant either by fax,e-mail or post **on or before 1 June 2017**;
- By telephonically contacting us if you have any queries, comment or issues
- Attending future public information sessions
- By reviewing and commenting on the BAR & EMPR within the stipulated timeframes.

Diagramme of Basic Assessment Procedure



BASIC ASSESSMENT (BA) PROCESS, WATER USE LICENSE (WULA) APPLICATION FOR THE PROPOSED DEVELOPMENT OF THE HEKPOORT WASTEWATER TREATMENT WORKS ON PORTION 244 & 38 OF HARTEBEESTFONTEIN 472JQ, MOGALE CITY LOCAL MUNICIPALITY, GAUTENG PROVINCE

GDARD Ref: Gaut 001/16-17/0767

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TITLE (Prof/Mr/Mrs)		**FIRST NAME**	
SURNAME			
CAPACITY (eg. Director/Secretary)			
ORGINASATION			
POSTAL ADDRESS		**POSTAL CODE**	
TEL NO:		**CELL NO:**	
FAX NO:		**EMAIL ADDRESS:**	
COMMENTS/ISSUES / CONCERNS (Please use separate sheet, if required)			

Please add the following of my colleagues/friends/neighbours on your mailing list:

Name:	**Organisation:**	
Contact details		
Address:		
Tel:	**Fax:**	**Cell:**
Email:		