



Gauteng Department of Agriculture and Rural Development (GDARD)

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, 2010 (Version 1)

List of all organs of state and State Departments where the draft report has been submitted, their full contact details and contact person

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2010.
 2. This application form is current as of 2 August 2010. 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 to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken. The draft reports must be submitted to the relevant State Departments and on the same day, two CD's of draft reports must also be submitted to the Competent Authority (GDARD) with a signed proof of such submission of draft report to the relevant State Departments.**
 4. 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.
 5. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
 6. An incomplete report shall be rejected.
 7. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
 8. 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.
 9. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
 10. 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.
-

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch
18th floor Glen Cairn Building
73 Market Street, Johannesburg

Admin Unit telephone number: (011) 355 1345
Department central telephone number: (011) 355 1900

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

(For official use only)

File Reference Number:						
Application Number:						
Date Received:						

*** Submission to State Departments (Number 3 above)**

Has a draft report for this application been submitted to 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 State Departments referred to above been attached to this report? Yes

if no, state reasons for not attaching the list.

N/A

SECTION A: ACTIVITY INFORMATION

1. ACTIVITY DESCRIPTION

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

Proposed formalisation of stormwater outlet channels in Kudube and the upgrade of the existing stormwater box culverts in Ramotse, Tshwane.

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

The application requires the issuing of a Water Use License by the Department of Water Affairs as per Section 21 (c) and (i) of the National Water Act , 1998 [Act 36 of 1998]

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

YES NO

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

YES 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 No. 107 of 1998 as amended.	National & Provincial	27 November 1998
<ul style="list-style-type: none"> The construction of (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse measured from the edge of the watercourse ,excluding where such construction will occur behind the development setback line.[GNR-544 	Gauteng Department of Agriculture and Rural Development (GDARD)	

<p>11(xi)].</p> <ul style="list-style-type: none"> • The infilling or depositing of any material of more than 5 cubic metres into, or the dredging excavation removal or moving of soil, sand shells, shell grit pebbles or rock from a (i) watercourse [GNR 544 18(i)]. • The construction of (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse, measuring from the edge of the watercourse excluding where such construction will occur behind the development setback line (b) in Gauteng (iii) in sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the act and as adopted by the competent authority [GNR-546 16(iv)(b)(iii)] 		
Guideline Documents 3,4 & 5 to EIA Regulations, 2006	DEAT	Gazetted for comment
National Water Act, 36 of 1998	Department of Water Affairs	1998
GDARD Requirements for Biodiversity Assessments	GDARD	August 2006
National Heritage Resources Act 1999 (Act 25 of 1999)	South African Heritage Resource Agency (SAHRA)	1999
Environmental Management Framework for Tshwane	Tshwane Metropolitan Municipality	Volume 1: June 2005 Volume 2 and 3: September 2005

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.

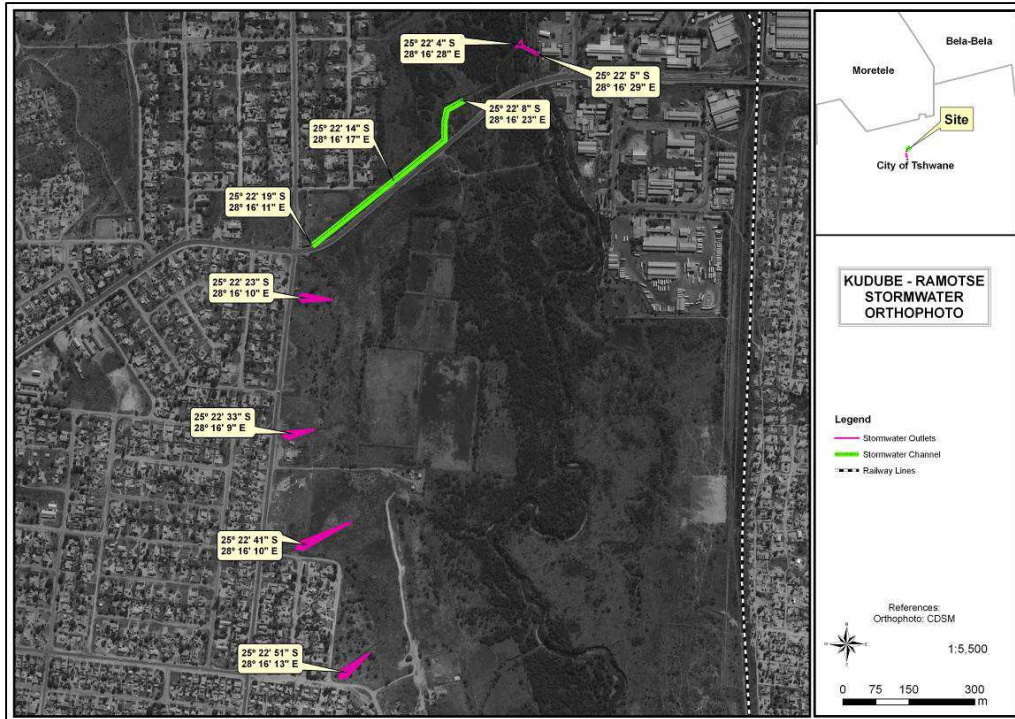
Note: After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent. Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, operational or other(provide details of "other")	Description
Project Background		
	Kudube, situated in northern Tshwane, is a fully developed residential township with limited infrastructure. The existing Strom Water network has insufficient capacity and thus the network needs to be re-assessed and upgraded. A feasibility study was undertaken and the SMP for Kudube was previously compiled to identify the possible major drainage routes to the Apies River. Networks 2 and 3 were identified as the major drainage routes of the corresponding catchments, which drains from the western watershed in an eastern direction to the Apies River. Alternatives were investigated in order to determine a proposal which would result in a formalised stormwater system what will assist with the overall	

drainage of stormwater networks in the catchment.

The following constraints were identified by the project engineers during their field investigations:

- Outlet into the wetland and the 1:50 year flood region, environmentally sensitive designs must be considered.
- Overall existing services and impact of upgrades.
- Environmental authorisation and water use license applications are required for the outlets in the flood regions.



The project will consist of 5 stormwater outlets and a stormwater channel. The outlets and stormwater channel are proposed at the following locations:

- Outlet 1: 25° 22' 4" S 28° 16' 28" E and 25° 22' 5" S 28° 16' 29" E (stormwater culverts to be upgraded)
- Outlet 2: 25° 22' 23" S 28° 16' 10" E
- Outlet 3: 25° 22' 23" S 28° 16' 9" E
- Outlet 4: 25° 22' 41" S 28° 16' 10" E
- Outlet 5: 25° 22' 51" S 28° 16' 13" E

And

Grass channel

- Start point: 25° 22' 19" S 28° 16' 11" E
- Midpoint: 25° 22' 14" S 28° 16' 17" E
- End point: 25° 22' 8" S 28° 16' 23" E

<p>1</p>	<p>Proposal : Preferred Alternative 1 (Macmat R, Grass lined and concrete channel combination)</p> <p>It is the preferred alternative because good vegetation cover is possible in a permeable canal and allows for the establishment of a fairly natural habitat. The currently eroding channels can be stabilized and sediment and litter entering the wetland will be decreased.</p> <p>All outlet positions should have a litter trap and sediment trap structure</p>	<p>The channel will be constructed with a Macmat R.</p> <ul style="list-style-type: none"> • The 3D erosion mat can be used to fit any shape of the channel and can withstand up to 4,0 m/s. • The Macmat R lining can also be used for hydraulic and erosion control around bends, with the addition of gabion boxes as anchoring beams. This is the preferred solution for all outlet channels; including the curving channel of Network 2 (Refer to Appendix I 1.) accommodating flow around the bent at this part is fairly high to ensure self cleaning. • Care should be taken during construction, to ensure the anchoring of the mats are done to manufacturers specification. • The final product will be the most environmentally friendly solution. It is environmentally the most preferred solution for all applications. <p>The stormwater outlets will be constructed with grass lined and concrete channel combination.</p> <ul style="list-style-type: none"> • In addition to the grass lined channel, a concrete bottom is provided to prevent erosion of the channel. • Due to flat slopes for daylighting bottom velocities it is important to promote a self cleaning systems. • It also prevents over vegetation and situation of the channel bottom to ensure continuous low flow conditions. • This is also considered not favourable for hydraulic control around bends. • This is the 2nd most preferable option from an environmental point of view.
 <p>Macmat R</p>		
<p>2</p>	<p>Alternative 2 (Armorflex lined channel)</p> <p>Depending on the length, dimensions and purpose it is generally not used for an outlet/daylight channel. This option is also not economically</p>	<p>The 2nd alternative is to construct Armorflex lined channels.</p> <ul style="list-style-type: none"> • The Armorflex lining is the most expensive of all alternatives and requires wider cross sections than the other options. • The construction for the Armorflex lining is labour intensive. • Depending on the length, dimensions and

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

	feasible.	<p>purpose it is generally not used for an outlet/daylight channel.</p> <ul style="list-style-type: none"> It is however ideal for hydraulic controls around bends and for use of larger/longer channels. The roughness coefficient is also advantageous for the lower flow velocities.
3	<p>Alternative 3 (Grass lined channel)</p> <p>It is however <u>not preferred</u> for hydraulic control or erosion protection.</p>	<p>The 3rd alternative is a Grass lined channel.</p> <ul style="list-style-type: none"> The channel can be constructed in the shortest time and can be considered rehabilitation of the existing scenario. Vegetation and siltation of the channel bottom are concerns that require frequent maintenance. This is also the least expensive alternative and is the most preferable option from an environmental point of view. It is however not preferred for hydraulic control or erosion protection.
4	<p>Alternative 4 (Concrete lined channel)</p> <p>Environmentally it is considered the <u>least favourable</u></p>	<p>The 4th alternative is a Concrete lined channel.</p> <ul style="list-style-type: none"> Similar to the Armorflex lining, a concrete lining can be used for erosion protection. It will result in high flow velocities which are not ideal for outlet channels and will require extensive outlet structures. Environmentally it is also considered the least favourable.

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

--

NOTE: The numbering in the above table must be consistently applied throughout the application report and process

4. PHYSICAL SIZE OF THE ACTIVITY ASK CHARISSA

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

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Size of the activity:

--

--

--

Ha/m²

or, for linear activities:

Proposed activity

Alternatives Proposal Alternative 1:

Alternative 2 (if any)

Alternative 3 (if any)

Alternative 4 (if any)

Length of the activity:

0.933

0.933

0.933

0.933

k/km

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

Proposed activity

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Size of the site/servitude:

--

N/A

--

Ha/m²

5. SITE ACCESS

Proposal

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:

The access to the site will be from the provincial road Lucas Mangope Drive.

Include the position of the access road on the site plan.

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:

The access to the site will be from the provincial road Lucas Mangope Drive.

Include the position of the access road on the site plan.

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:

The access to the site will be from the provincial road Lucas Mangope Drive.

Include the position of the access road on the site plan.

Alternative 3

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:

The access to the site will be from the provincial road Lucas Mangope Drive.

Include the position of the access road on the site plan.

Alternative 4

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:

The access to the site will be from the provincial road Lucas Mangope Drive.

Include the position of the access road on the site plan.

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

Section A 6-8 has been duplicated

0

 Number of times
(only complete when applicable)

6. SITE 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 as Appendix A to this document. The site or route plans must indicate the following:
- the scale of the plan, which must be at least a scale of 1:2000 (scale can not be larger than 1:2000 i.e. scale can not be 1:2500 but could where applicable be 1:1500)
 - ~~the property boundaries and numbers of all the properties within 50m of the site;~~
 - the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
 - the exact position of each element of the application 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, street lights, sewage pipelines, septic tanks, storm water infrastructure and telecommunication infrastructure;~~
 - ~~walls and fencing including details of the height and construction material;~~
 - servitudes indicating the purpose of the servitude;
 - sensitive environmental elements on and within 100m of the site or sites 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);
 - for gentle slopes the 1m contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
 - the positions from where photographs of the site were taken.

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

➤ ~~Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the 32m position from the bank to be clearly indicated)~~

7. SITE PHOTOGRAPHS *Refer Appendix B*

Color 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 *Refer Appendix C*

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)

Further:

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 the route times

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.~~

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

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:

The stormwater outlet channels and upgrade of the existing stormwater box culverts are proposed in Kudube and Ramotse, the infrastructure is proposed in the east of Kudube adjacent to, Units 1 and 2, on the remainder Portion 9 of the farm Leeuwkraal 92 JR.

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 (Proposal):
Stormwater outlets Kudube

Latitude (S): **Longitude (E):**

25.373056	28.269444
25.375833	28.269167
25.378056	28.269444
25.380833	28.270278
25.367778	28.274444
25.368056	28.274722

Upgrade Ramotse box culvert
Outlet channel Ramotse

In the case of linear activities:

Alternative: Grass Channel Kudube

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

Latitude (S): **Longitude (E):**

25.371944	28.269722
25.370556	28.271389
25.368889	28.273056

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

YES

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

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

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 X
-----------	---------	--------------------------	--------	-------	----------------------------	--------------------------------

5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

Shallow water table (less than 1.5m deep)	YES	NO X
Dolomite, sinkhole or doline areas	YES	NO X
Seasonally wet soils (often close to water bodies)	YES X	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO X
Dispersive soils (soils that dissolve in water)	YES	NO X
Soils with high clay content (clay fraction more than 40%)	YES X	NO
Any other unstable soil or geological feature	YES	NO X
An area sensitive to erosion	YES X	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) YES 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) YES 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) YES 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 3)? YES 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 % =	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =90	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =5	Building or other structure % =5	Bare soil % =

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 YES NO

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

If YES, specify and explain:

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.	YES	NO X
--	-----	-----------------

If YES, specify and explain:

Are there any special or sensitive habitats or other natural features present on the site?	YES X	NO
--	------------------	----

If YES, specify and explain:

The project site is along a wetland which is a very important natural feature. According to the Gauteng Conservation Plan Version 3 the site falls within an area indicated as Important and an Ecological Support Area. (Refer to Appendix I 2 for CPLAN Map)

Was a specialist consulted to assist with completing this section	YES X	NO
---	------------------	----

If yes complete specialist details

Name of the specialist:	Ina Venter		
Qualification(s) of the specialist:	Msc UP		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	083 370 0850	Cell:	083 370 0850
E-mail:	inaventer@spatial-ecological.co.za	Fax:	086 684 9917

Are any further specialist studies recommended by the specialist?	YES	NO X
---	-----	-----------------

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: _____

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

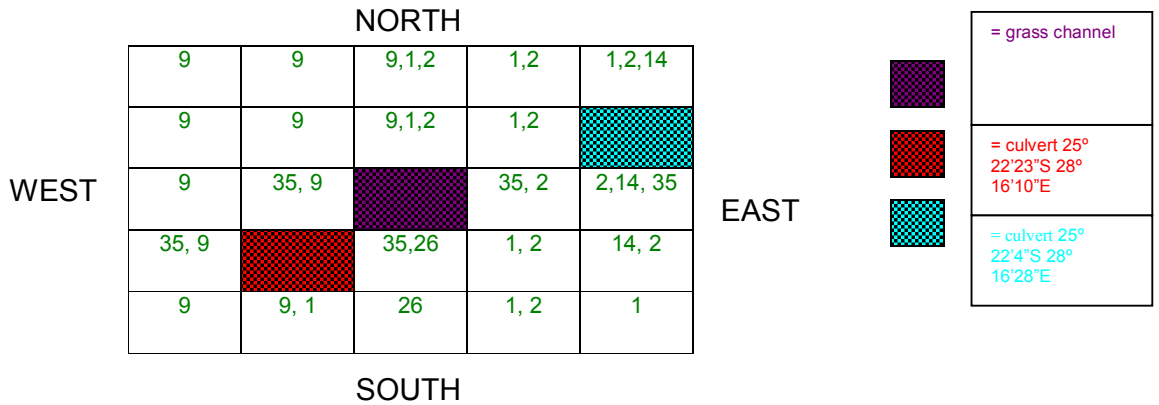
Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

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):	35. Municipal road			

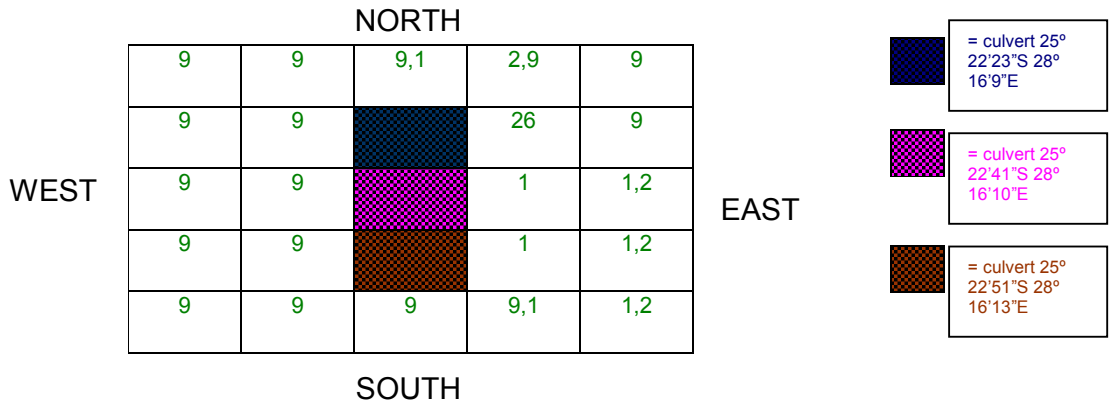
NOTE: Each block represents an area of 250m X250m

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

PORTION 1



PORTION 2



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

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

YES X	NO
-----------------	----

If yes indicate the type of reports below

A Wetland assessment report has been attached compiled by SPEC CC
Ecology and Biodiversity assessment report has been attached compiled by GD Bredenkamp and IL Rauenbach
A Heritage Impact Assessment report has been attached compiled by J Van Schalkwyk

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.

Kudube and Ramotse are located in the Gauteng Province, on the border of the North West province. It is part of the larger Hammanskraal area, and its location close to the N1 as well as the R101 makes access to the CBD easy for commuters. They form part of the City of Tshwane Metropolitan Municipality in the Gauteng province. The townships are one of the most underdeveloped places in the Tshwane area and the most widely spoken language is northern Sotho, it being the medium of instruction and school.



Figure 1: Small Tuck shops at the township and gravel roads.

The townships do not have a lot of infrastructure and consist of small businesses, tuck shops being the most dominant. These townships are very underdeveloped with high levels of unemployment and poverty. As some residents make use of informal toilets the stormwater ponds around these systems and the raw sewerage mixes with the stormwater which creates an unhygienic environment with obvious health risks to the residents and negative impacts on the receiving environment. The economic aspect is also alarming in that most people leave the area to go look for jobs elsewhere. While most of the elderly people stay at home and depend on pension funds for all their basic needs The stormwater channel and outlet channels will improve the drainage of water from the pipes to the Apies River and this will improve the receiving environment and drainage in that community.

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 categorised 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 resources authority;

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

- (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?

YES	NO X
-----	-----------------------

If YES, explain:

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:

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to construct stormwater channels. No features or sites of cultural significance that could be impacted on by the proposed development were identified. From a heritage point of view we therefore recommend that the proposed development can continue. As no heritage sites occur in the study area, there would be no impact resulting from the proposed development of the stormwater channel.

Refer Appendix G for Heritage Impact Assessment.

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

YES	NO X
YES	NO X

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

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

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The Environmental Assessment Practitioner must follow any relevant guidelines adopted by the competent authority in respect of public participation and must at least –

- 1(a) Fix a site notice at a conspicuous place, on the boundary of a property where it is intended to undertake the activity which states that an application will be submitted to the competent authority in terms of these regulations and which provides information on the proposed nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations on the application may be made;
- 1(b) inform landowners and occupiers of adjacent land of the applicant's intention to submit an application to the competent authority;
- 1(c) inform landowners and occupiers of land within 100 metres of the boundary of the property where it is proposed to undertake the activity and whom may be directly affected by the proposed activity of the applicant's intention to submit an application to the competent authority;
- 1(d) inform the ward councillor and any organisation that represents the community in the area of the applicant's intention to submit an application to the competent authority;
- 1(e) inform the municipality which has jurisdiction over the area in which the proposed activity will be undertaken of the applicant's intention to submit an application to the competent authority; and
- 1(f) inform any organ of state that may have jurisdiction over any aspect of the activity of the applicant's intention to submit an application to the competent authority; and
- 1(g) place an advertisement in one local newspaper and any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of these regulations.

2. 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 (GDARD).

Has any comment been received from the local authority?

YES	NO X
-----	----------------

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

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

The Local Authority is afforded the opportunity to comment on this Draft Basic Assessment Report.

3. 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?

YES	NO X
-----	----------------

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

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

No comments have been received during the initial Public Participation Process. The Ward Councillor will be provided with a copy of the Draft BAR and ILA will also meet with the Councillor to discuss the findings of the Draft BAR. The Ward Councillor will be requested to assist with the notification of affected stakeholders and to provide them with a summary of the findings of the Draft BAR.

4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular

nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees 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 inadequate.

The practitioner must record all comments and respond to each comment of the public / interested and affected party before the application 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.

5. 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 to those persons detailed in 1(b) to 1(f) above

Appendix 3 – Proof of newspaper advertisements

~~Appendix 4 – Communications to and from persons detailed in Point 2 and 3 above~~

~~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

Appendix 10 – Comments from I&APs on the application

Appendix 11 – Other

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 alternatives times
(complete only when appropriate)

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

1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

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

YES X	NO
10 000 m ³	

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

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

The construction waste will be carted away to a designated waste site

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

The construction waste will be carted away to a designated waste site

Will the activity produce solid waste during its operational phase?

YES X	NO
Unknown m ³	

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

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

The waste will be carted away to a designated waste site

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?

YES	NO
-----	----

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

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 X
-----	---------

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 X
-----	---------

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:

N/A

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 X
m ³	

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

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

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

YES	NO X
m ³	

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

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

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 X
-----	---------

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

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 waste water, 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 X
-----	-----------------------

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

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	NO m ³
-----	----------------------

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

YES	NO X
-----	-----------------------

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?

YES	NO X
-----	-----------------------

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

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

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

YES	NO
-----	----

N/A

2. WATER USE

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

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

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:

	liters
--	--------

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 X	NO
------------------------	----

If yes, list the permits required

The activity requires a water use license in terms of the National Water Act, 1998 as follows:
Section 21 (c) 'impeding or diverting the flow of water in a watercourse'
Section 21 (i) 'altering the bed, banks, course or characteristics of a watercourse'

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

YES	NO X
-----	-----------------------

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

YES	NO X
-----	-----------------------

3. POWER SUPPLY

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

N/A

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:

N/A

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

N/A

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2006, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

No comments have been received during the initial Public Participation Process. The Ward Councillor will be provided with a copy of the Draft BAR and ILA will also meet with the Councillor to discuss the findings of the Draft BAR. All state departments i.e DWA will be provided with a hard copy of this Draft BAR for comment.

Summary of response from the practitioner to the issues raised by the interested and affected parties (A full response must be provided in the Comments and Response Report that must be attached to this report):

No comments have been received during the initial Public Participation Process. The Ward Councillor will be provided with a copy of the Draft BAR and ILA will also meet with the Councillor to discuss the findings of the Draft BAR. The Ward Councillor will be requested to assist with the notification of affected stakeholders and to provide them with a summary of the findings of the Draft BAR. Comments will be received once the Draft Basic Assessment Report has been issued to the relevant authorities and stakeholders.

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

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

The Significance Assessment Methodology in accordance with the DEAT (2006) Guideline Document 5 (Assessment of Impacts) is being followed. The mentioned document states that the significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature, duration, intensity, extent and probability of identified impacts. Furthermore the significance of an impact is the product of a probability rating and a severity rating. A detailed description of the mentioned methodology follows:

SIGNIFICANCE

Significance is the product of *probability* and *severity*.

PROBABILITY (P)

Probability describes the likelihood of the impact actually occurring, and is rated as follows:

- **Improbable** - Low possibility of impact to occur due to design or history. **Rating: 2**
- **Probable** - Distinct possibility that impact will occur. **Rating: 3**
- **Highly probable** - Most likely that impact will occur. **Rating: 4**
- **Definite** - Impact will occur regardless of any prevention measures. **Rating: 5**

SEVERITY RATING (SR)

The **severity rating** is calculated from the *factors* allocated to **intensity** and **duration**. Intensity and duration factors are awarded to each impact, as described below.

INTENSITY FACTOR (I)

The **intensity factor** is awarded to each impact according to the following method:

- **Low intensity** - nature and/or man made functions not affected (minor process damage or human/ wildlife injury could occur). **Factor 1**
- **Medium intensity** - environment affected but natural and/or manmade functions and processes continue (Some process damage or human/ wildlife injury may have occurred). **Factor 2**
- **High intensity** - environment affected to the extent that natural and/or human-

made functions are altered to the extent that it will temporarily or permanently cease (Major process damage or human/wildlife injury could occur). **Factor 4**

DURATION (D)

Duration is assessed and a **factor** awarded in accordance with the following:

- **Short term** - ≤1 to 5 years **Factor 2**
- **Medium term** - 5 to 15 years **Factor 3**
- **Long term** - impact will only cease after the operational life of the activity has ended, either because of natural process or by human intervention **Factor 4**
- **Permanent** - mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient **Factor 4**

SEVERITY FACTOR (SF)

The **severity rating** is obtained from calculating a **severity factor**, and comparing the severity factor to the rating in the table below. For example:

The Severity factor = **Intensity factor X Duration factor**
 = 2 x 3
 = 6

A severity factor of six (6) equals a Severity Rating of Medium severity (Rating 3) as per Table 1.

TABLE I: SEVERITY RATINGS

RATING	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no significant impact	

SIGNIFICANCE RATING

A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating. The significance rating should influence the development project as described below:

- **Low significance (calculated Significance Rating 4 to 6)**
 - **Positive** and **negative impacts** of low significance should have no significant influence on the proposed development project.
- **Medium significance (calculated Significance Rating ≥ 7 to 12)**
 - **Positive impact:** Should weigh towards a decision to continue
 - **Negative impact:** Should be mitigated before project can be approved.
- **High significance (calculated Significance Rating ≥ 13 to 18)**
 - **Positive impact:** Should weigh towards a decision to continue, should be enhanced in final design.
 - **Negative impact:** Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least a low significance rating.

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

- **Very High significance (calculated Significance Rating ≥ 19 to 25)**
 - **Positive impact:**
Continue
 - **Negative impact:**
If mitigation cannot be implemented effectively, proposal should be terminated

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 (Preferred) Alternative 1: use of Macmat R, Grass lined channels and concrete lining combination)

Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
CONSTRUCTION PHASE			
ADVERSE IMPACTS			
BIOPHYSICAL ENVIRONMENT			
The accumulation of debris and rubbish (particularly plastic) will pollute the river.	20 Very High	<ul style="list-style-type: none"> • Include litter traps in the upgrading construction program concomitant with a regular refuse collection program. 	6 Low
Movement of people and vehicles may cause trampling and degradation of the wetland not directly by construction.	12 Medium	<ul style="list-style-type: none"> • Demarcate no-go areas for vehicles and construction workers. 	6 Low
Stockpile areas for construction material, generation and disposal of building waste and liquids and vehicle maintenance could impact on surface and ground water as well as the environment as a whole.	15 High	<ul style="list-style-type: none"> • No material may be dumped in the surrounding region. Written proof of disposal at a registered waste disposal site must be given to the applicant or site manager on every load of construction waste removed from the site • No waste material may be burnt on-site • Liquid waste to be stored in bunded area. Bunded area to have complete seal and a volume equal to 110% of the total volume of liquid stored in the area. No storage below 1:100 year flood or within 32 m buffer areas to be identified by ECO. • Liquid waste to be disposed of at a class HH site only • Solid construction waste not posing a pollution hazard should be used on site as a filling material. Should no filling material be required, this waste should be disposed along with domestic waste 	6 Low

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

<p>Generation of domestic waste and liquids could impact on surface and ground water as well as the environment as a whole.</p>	<p>15 High</p>	<ul style="list-style-type: none"> • Domestic waste generated on site during construction to be collected in waste skips. Waste skips to be fitted with lids to prevent littering • This skip must be placed at a centralized collection point and frequently removed by a licensed waste contractor and disposed of at a municipal waste site. 	<p>4 Low</p>
<p>Loss of vegetation cover in the area of construction of the stormwater channel and the outlet channels along the wetland.</p>	<p>15 High</p>	<ul style="list-style-type: none"> • The area is over grown by weeds and the impact is expected to be minimal. Prior to construction works commencing protected trees will be marked and fenced off. • 	<p>8 Medium</p>
<p>Sanitation (chemical toilet facilities) could contaminate and impact soil & water bodies</p>	<p>12 Medium</p>	<ul style="list-style-type: none"> • Adequate on-site chemical sanitation systems, at least one toilet for every 8 workers, must be provided within walking distance to all construction workers. Strict penalties in re-numeration must be applied for workers that use other surrounding open areas for this purpose. • Toilets must be located within the construction camp • Toilets shall be serviced once a week to prevent spillages • Under no circumstances may ablutions occur outside of the provided facilities • Adequate on-site chemical sanitation systems (one toilet for every 8 workers) must be provided. toilets must be placed outside the 1:100 year flood in positions identified by the ECO. • No washing or bathing in any natural water bodies shall be allowed 	<p>4 Low</p>
<p>Contamination risk to water bodies, during the rainy season (incl. groundwater pollution) due to spillages</p>	<p>15 High</p>	<ul style="list-style-type: none"> • It is recommended that if possible construction activities not take place 	<p>6 Low</p>

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

<p>of dangerous substances such as petrol/diesel, cement and oil from vehicle maintenance.</p>		<p>during the rainy season</p> <ul style="list-style-type: none"> • .All maintenance and washing of vehicles and other equipment should be carried out outside the riparian zone in order to minimize the potential for water pollution during construction. • Drip trays must be used in the event of servicing vehicles or other equipment to prevent spills onto soil in the case of emergency repairs outside the abounded workshop area. • Leaking equipment must be repaired immediately or removed from the site for repairs. • Potentially hazardous and non-degradable waste must be collected and removed to a registered waste site. • All spills on site must be reported to the ELO and ECO 	
<p>Possible fire danger from cooking at the site camp.</p>	<p>8 Medium</p>	<ul style="list-style-type: none"> • No open fires are to be allowed on the camp site. • Fires shall only be allowed in facilities or equipment specially constructed for this purpose 	<p>4 Low</p>
<p>Increased runoff flow and increase in resultant velocity of water entering the river which will increase erosion potential.</p>	<p>12 Medium</p>	<ul style="list-style-type: none"> • Attenuation structures need to be constructed to decrease the flow of runoff and to decrease the resultant velocities of water entering the river. • These attenuation structures must be constructed outside the riparian zone on relatively flat stable areas to minimise the potential of erosion. • Silt fences or hay bales need to be placed near the base of a slope in order to limit the amount of silt entering the watercourse and to reduce the velocity of runoff. 	<p>6 Low</p>
<p>Increased turbidity of the stormwater runoff which can result in erosion.</p>	<p>12 Medium</p>	<ul style="list-style-type: none"> • Ensure that the runoff is not directed over areas that have been cleared of 	<p>6 Low</p>

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

		vegetation, and that are vulnerable to erosion.	
Several species listed as alien invasive species are present on site.	10 Medium	<ul style="list-style-type: none"> No invasive species may be present within 20m of a wetland and must be removed Removal must take place in an appropriate manner. Implement rehabilitation Monitoring should be done by ECO and contractor. 	6 Low
SOCIO-ECONOMIC ENVIRONMENT			
Dust to be generated during construction activities, which could affect visibility of adjacent roads and also impact on adjacent properties	10 Medium	<ul style="list-style-type: none"> Dust controlling measures shall be implemented such as spraying of the construction site. The contractor shall ensure that bare soil or soil stockpiles are dampened at least once per day during dry and windy periods. 	6 Low
Noise associated with digging and construction vehicles and construction activities could be a nuisance to residents.	10 Medium	<ul style="list-style-type: none"> Residents and surrounding business owners should be notified well in advance of the construction schedule; Construction should be limited to working hours during the week 08:00 – 17:00 and between 08:00 – 13:00 on Saturdays; No construction activities to take place on Sundays and other religious holidays which may occur during the construction phase 	6 Low
Heavy construction vehicles pose danger to residents and also cause traffic obstruction.	10 Medium	<ul style="list-style-type: none"> A road safety programme should be implemented in order to inform all relevant parties of the possible risks of the construction site. Develop an information campaign regarding the hazards associated with increased heavy vehicle traffic, and precautionary measures to be taken by Construction Company. Ensure adequate and correct road signage in the construction affected areas. Red flags should be used to warn the public and construction vehicle 	6 Low

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

		<p>operators at least 100m before crossing points or access routes into the construction area</p> <ul style="list-style-type: none"> • Limit construction activities to daylight hours • Ensure that heavy vehicles carrying construction material (gravel, sand etc.) are properly covered with tarpaulin to prevent messing of construction material on to roads. • Tyres of construction vehicles should be sprayed with water before leaving the construction site, in order to prevent sand, gravel etc from littering the roads 	
Possible fire danger from cooking at the site camp.	8 Medium	<ul style="list-style-type: none"> • No open fires are to be allowed on the camp site. • Fires shall only be allowed in facilities or equipment specially constructed for this purpose 	4 Low
Crime may increase as a result of contract workers in the area	6 Low	<ul style="list-style-type: none"> • No building activities to be allowed after hours during weekdays, or over weekends. • Only a limited number of two night watchmen to be allowed to overnight on the property to ensure safety of equipment stored on site. • Transport to and from the site must be arranged by the contractor if workers are from near by communities. 	4 Low
BENEFICIAL IMPACTS			
SOCIO-ECONOMIC ENVIRONMENT			
Skills development and creation of job opportunities.	8 Medium		15 High
OPERATIONAL PHASE			
ADVERSE IMPACTS			
BIOPHYSICAL ENVIRONMENT			
The water velocity in the canal will definitely be higher than in the unchannelled system, and will likely be higher than in the channeled system as well. This will result in erosion downstream of the canal.	20 very high	<ul style="list-style-type: none"> • Ensure that sufficient energy breakers and erosion protection are present downstream of the canal to prevent erosion of the downstream system. 	6 Low
BENEFICIAL IMPACTS			
BIOPHYSICAL ENVIRONMENT			
Implementation of the Macmat R is a	15 High	<ul style="list-style-type: none"> • Macmat R should be done 	15 High

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

3D erosion measure which will be the most environmentally favorable solution.		to manufacturers specifications.	
Regular maintenance of stormwater infrastructure will manage and improve quality of run off.	9 Medium	<ul style="list-style-type: none"> The Municipality should ensure that debris is removed after a storm, alien invasive plants are removed regularly and regular checks are done to ensure that plants haven't washed away and if they have be planted again. 	12 Medium
Impacts related to Alternatives 2, 3 and 4 are similar to those of alternative 1 with exception to the following:			
Alternative 2: Armoflex lined channels. This alternative is not preferred because depending on the length, dimensions and purpose it is generally not used for an outlet/daylight channel. This option is also not economically feasible.			
Alternative 3: Grass lined channel. This alternative is not preferred for hydraulic control and erosion protection.			
Increased turbidity of the stormwater runoff which can result in erosion.	20 Very High	<ul style="list-style-type: none"> Ensure that the runoff is not directed over areas that have been cleared of vegetation, and that are vulnerable to erosion. 	8 Medium
Alternative 4: Concrete lined channel. This alternative is considered the least environmentally favorable.			
Increased turbidity of the stormwater runoff which can result in erosion.	25 very high	<ul style="list-style-type: none"> Ensure that the runoff is not directed over areas that have been cleared of vegetation, and that are vulnerable to erosion. 	12 Medium

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

Wetland assessment Refer Appendix G1
Biodiversity assessment Refer Appendix G2
Aquatic assessment Refer Appendix G3

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.

Due to the fact that the proposed development is the construction of a stormwater channel and several culverts it is anticipated that no decommissioning will take place in the foreseeable future.

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

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:

The cumulative impacts associated with the preferred proposal (Alternative 1) when considered together with other surrounding construction activities are as follows: Adverse Cumulative Impacts
--

- Noise
- Dust
- Contamination risk to water bodies;

With implementation of the mitigation measures as indicated in the impact tables above and included in the Environmental Management Plan (*Refer Appendix H*) these anticipated cumulative impacts can be successfully mitigated to a low significance with exception to loss of vegetation cover in the area of construction of the stormwater channel and the outlet channels along the wetland that can be mitigated to a level of medium significance.

However the upgrade of the storm water system will create a much healthier environment for residents to live in, and their properties will be protected from flood damage during the rainy season.

Beneficial Cumulative Impacts

- Maintenance of stormwater infrastructure, will contribute to decreasing water pollution and pollution of the environment in general, decreasing the risk of erosion and contribute to creating a more hygienic environment for residents to live in;

The cumulative impacts associated with the **Alternatives 2, 3** and **4** are the same as for **Alternative 1 (preferred alternative)** .

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

Preferred alternative consists Macmat R, Grass lined and concrete channel combination.

The benefits of the proposed alternative outweigh the impacts if impacts will be mitigated successfully by implementing the Environmental Management Plan.

The adverse impacts have been identified as follows; note that the significance rating indicated is upon/after implementation of mitigation measures (For details on the likelihood of impacts occurring and the anticipated duration of impacts refer to Appendix H)

- Stockpile areas for construction material, generation and disposal of building waste and liquids and vehicle maintenance could impact on ground and surface water and environment as a whole **(Low)**
- The accumulation of debris and rubbish (particularly plastic) will pollute the river. **(Low)**
- Movement of vehicles may cause trampling and degradation of the wetland not directly affected by construction **(Low)**
- Generation of domestic waste and liquid wastes could impact on surface and ground water as well as the environment as a whole. **(Low)**
- Loss of vegetation cover in the area of construction of the stormwater channel and the outlet channels along the wetland. **(Medium)**
- Contamination risk to water bodies, during the rainy season (incl. groundwater pollution) due to spillages of dangerous substances such as petrol/diesel, cement and oil. **(Low)**
- Sanitation (chemical toilet facilities) could contaminate and impact soil & water bodies **(Low)**
- Possible fire danger from cooking at the site camp. **(Low)**

<ul style="list-style-type: none"> • Increased runoff flow and increase in resultant velocity of water entering the river which will increase erosion potential. (Low) • Increased turbidity of the stormwater runoff which can result in erosion. (Low) • Several species listed as alien invasive species are present on site. (Low) • Dust to be generated during construction activities, which could affect visibility of adjacent roads and also impact on adjacent properties (Low) • Noise associated with digging and construction vehicles. (nuisance for residents) (Low) • Crime may increase as a result of contract workers in the area (Low) • Heavy construction vehicles pose danger to residents and also cause traffic obstruction. (Low) • The water velocity in the canal will definitely be higher than in the unchannelled system, and will likely be higher than in the channeled system as well. This will result in erosion downstream of the canal. (Low) <p><i>However with implementation of the mitigation measures as indicated in Section E the anticipated adverse impacts can be successfully mitigated to a degree of low significance.</i></p> <p>It is recommended that the attached EMP be included in a condition of the Environmental Authorisation to ensure that activities on site are managed and monitored.</p> <p><i>It is therefore recommended that the GDARD consider this proposal for approval.</i></p>
--

Alternative 2(Armoflex lined channels.)
Depending on the length dimensions and purpose its, its generally not used for an outlet/ daylight channel
Alternative 3 (grass lined channel)
Not preferred for hydraulic control and erosion protection.
Alternative 4 (concrete lined channel)
Environmentally it is considered the least favourable.

6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

<p>The preferred alternative is ALTERNATIVE 1 – Grass lined Channel and Concrete Channel Combination.</p> <p>In addition to the grass lined channel, a concrete bottom is provided to prevent erosion of the channel. Due to flat slopes for daylighting bottom velocities it is important to promote a self cleaning system. It also prevents over vegetation and siltation of the channel bottom to ensure continuous low flow conditions.</p> <p>Formalization of a stormwater management infrastructure is required in order to successfully accommodate adjoining drainage networks as proposed in the Master SMP.</p> <p>The following beneficial impacts are associated with the preferred proposal:</p> <ul style="list-style-type: none"> • Reduce current erosion and lower sedimentation loads; • A permeable canal will allow for movement of water onto the adjacent soil profile, it also allows for some stream flow augmentation and good vegetation cover is possible, a permeable canal can assist with flood attenuation; and • Reduction in litter through litter traps proposed at all outlets with the implementation of a regular maintenance and cleaning programs.
--

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

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.

The preferred alternative is ALTERNATIVE 1 – Grass lined Channel and Concrete Channel Combination. In addition to the grass lined channel, a concrete bottom is provided to prevent erosion of the channel. Due to flat slopes for daylighting bottom velocities it is important to promote a self cleaning system. It also prevents over vegetation and siltation of the channel bottom to ensure continuous low flow conditions.

However with implementation of the mitigation measures as indicated in Section E the anticipated adverse impacts can be successfully mitigated to a degree of low significance.

It is recommended that the attached EMP be included in a condition of the Environmental Authorisation to ensure that activities on site are managed and monitored.

7. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner).

YES X	NO
----------	----

If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

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:

- It is strongly recommended that a rehabilitation specialist be appointed for rehabilitation of the wetland.
- It is recommended that adherence to and implementation of the attached EMP be included as a condition to the Environmental Authorisation and that monthly environmental audits be conducted for submission to GDARD during the construction phase as well as a few times upon finalisation of wetland rehabilitation.
- The following mitigation measures for open space have been identified for the Municipality should they have the manpower and resources available to contribute to management of the open space area:
The Ecological Management Plan should:
 - Include an ongoing monitoring and eradication programme for all non-indigenous species, with specific emphasis on invasive and weedy species;
 - Ensure the persistence of all Red and Orange List species;
 - Include a monitoring programme for all Red and Orange List species;
 - Facilitate/augment natural ecological processes;
 - Provide for the habitat and life history needs of important pollinators;
 - Minimize artificial edge effects (e.g. water runoff from developed areas & application of chemicals);
 - Include management recommendations for neighbouring land, especially where correct management on adjacent land is crucial for the long-term persistence of sensitive species present on the development site;
 - Result in a report back to the Directorate of Nature Conservation on an annual basis; and
 - Investigate and advise on appropriate legislative tools (e.g. the NEMA: Protected

Areas Act 57 of 2003) for formally protecting the area (as well as adjacent land where it is crucial for the long-term persistence of sensitive species present on the development site).

Also refer to Environmental Management Plan (EMP) attached as Appendix H.

8. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

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
X

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

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)

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~~ (water use license still to be applied for)

Appendix G: Specialist reports

- Appendix G1: Wetland Assessment Report
- Appendix G2: Biodiversity Assessment Report
- Appendix G3: Aquatic Assessment Report
- Appendix G4: Feasibility Study Report
- Appendix G5: Heritage Assessment Report

Appendix H: EMPr

Appendix I: Other information

- Appendix I1: Kudube SMP Layout
- Appendix I2: C plan map

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; and