

Proposed development of a second access road on the Remainder Portion 71 and part of Portion 22 of the Farm Nietgedacht 535JQ (Johannesburg) to service an approved filling station site

GAUT 002/20 - 21/E2762

Executive Summary

Introduction

BGH Ferndale (PTY) LTD proposes to develop a local access road (second access) on the remainder of Portion 71 and Portion 22 of the Farm Nietgedacht 535JQ to service the approved filling station site. The property lies within the City of Johannesburg. In terms of requirements of the GDRT, a filling station that lies at an intersection of two provincial roads must provide for two access roads. The approved filling station site located on Portion 108 of the Farm Nietgedacht 535JQ (that is to be consolidated as P179 Nietgedacht) currently has access off the R114, whereas access off the K33 is not provided for.

GDARD BA Application

This application seeks to construct a second access road to a filling station. The site lies immediately west of the Cedar Road / K33 (Lanseria) Intersection. This intersection carries traffic from Dieplsoot in the East, Lanseria in the north, Fourways in the south and areas under going Medium High Density residential development in the west.

The development will include the clearance of an area of approximately 0.5ha of indigenous vegetation to provide fill upon which the road will be constructed. This fill will extend an area of 150m by 10m. Two storm water attenuation structures and associated infrastructure will also be constructed in this footprint to allow for the management of storm water run off.

The development footprint is located outside of a 32m buffer that surrounds the wetland seep area south east of the site.

No watercourses occur on the site that will be affected by the development. The road will however traverse a portion of land that is regarded to be a storm water run-off area. This water historically used to run across the site. The construction of the K33 will in future direct this flow via various pipes and culverts away, and south wards, from the site.

A variety of specialist assessments were used to evaluate the potential impact of the development on the site and surrounding areas.

These included -

- **Geotechnical Report** to investigate the underlying soils & geology;
- **Ecological Assessment** to evaluate the impact of clearing the site on the fauna and flora of the study site and area;

- **Wetland Assessment** to locate the presence of likely water courses (including wetlands) on the site as well as to assess the impact of the development on the functioning of the wetland that occurs off site;
- **Design Report and Traffic Impact Assessment** to determine the impact on the road network surrounding the site, evaluate requirements for access;
- **Storm Water Management Plan** compiled by a professional engineer to determine the storm water run off peak and how the relevant run-off can be accommodated to ensure that post-development run off is the same as pre-development run off.
- **Heritage Impact Assessment** compiled by a professional scientist to determine if any cultural historic features occur on site or in the surrounding area that may be impacted upon.

The site geology is stable and no dolomite occurs on site. Normal mitigation measures can be used to eliminate any risks to the future structures. The area is NOT dolomitic and there are no caves, excavations or similar features that could potentially offer a risk to the site or the development.

The vegetation on site has historically been transformed and formed part of a landscaped garden, no Red Data faunal and/or floral species were recorded on site nor expected to use the site. Only one (1) Orange Listed plant species, i.e. *Hypoxis hemerocallidea*, was recorded on site. A population of these plants will be protected by the layout as this area falls outside of the development footprint of Proposed Development (Figure 11). The Alternative (Figure 12) partially will affect this population as the embankment to support the road will extend across this area that provides a storm water run off area.

The vegetation on site is nevertheless indigenous although not reflective of Egoli Granite Grassland and therefore does not comprise a threatened ecosystem. No ridges, hillocks, dams, pans, wetlands, water courses or other natural areas occur on the development site.

Two species are listed by the DEA Screening tool as potentially occurring on site. A terrestrial ecologist has confirmed that the historic and current level of transformation, especially as a result of the current construction of the K33 Provincial Road, has significantly altered the habitat conditions. Consequently the likelihood of these species occurring on site is Low to None.

A wetland assessment recorded no water courses or wetlands on the development site.

The watercourses (including the seep) were difficult to accurately delineate due to years of cultivation and grazing, as well as the development of houses, roads, storm water drainage systems and other structures in the area. The artificial wet area north of the seep is described more accurately as a storm water outflow area and is not a natural wetland or watercourse. The outflow area is badly infested with Spanish reed (*Arundo donax*). The natural seep is also badly degraded and transformed by years of livestock grazing in and through the wetland, including years of ploughing and low-level cultivation. There are no aquatic plants present in the demarcated seep area.

The wetland assessment discussed the fact that the wet area and even the seep area were fed by excess storm water run-off that was artificially channelled into them by the drains and culverts along the R114 / K32. In other words, the seep would be much smaller and drier under natural conditions. This area is not a 'high sensitivity' area in reality (although watercourses are by default considered sensitive) and that no buffer is required around the storm water outflow area.

A Phase 1 Heritage Impact Assessment found that no cultural historic features occur on the site that may be impacted upon by the development. SAHRA has yet to officially comment on the application that has been lodged.

Recently the envisaged re-alignment and development of the K33 (Cedar Road) was approved and this will undoubtedly spur on development activity in the area and surrounding areas. This development is likely to soon lead to expansion of Fourways toward the Lanseria International Airport, and visa versa. This development rationale and plan is partly the reason for the application and the motivation for why a filling station on this site makes social, economic and environmental sense. The design philosophy and construction strategies to be used in providing a second access road to the approved filling station site is meant to present a development that can be considered to be a sustainable development that does not impact negatively nor degrade the environment.

Public Participation

No public participation process has been conducted to date and this draft report provides the initial detail of the application that has been circulated to relevant land owners, potential IAP'

This section will be updated and completed once the PPP has been completed.

The Final BA Report will then be made available to all registered IAP's.

Alternative Assessment

This process included the evaluation of potentially feasible development options to guide the application.

Four alternatives were initially considered to provide the second access road. These included -

Option 1 - Construction of two retaining walls to contain fill along with a culvert.

Fill material will be used to construct a road base platform that extends 151m and width of approximately 10m (approximate volume of 7900m³). This will make up the elevation difference of approximately 9.96m at a grade of 7.05%.

A retaining wall will be constructed along both embankments to contain the fill material.

Armco barriers will be used to ensure that vehicles safely access the roadway.

Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters.

Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33.

Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

Option 2 - Construction of one retaining wall to protect the boundary of P91 along with a culvert and embankment.

This alternative makes use of the same orientation and route design as the proposal however the road design varies in that it includes only the partial use of a retaining wall to prevent encroachment of the embankment into the neighbouring property. The remainder of the access road is to be graded toward the natural ground at a slope of 1:2 so that there is not a large elevation difference between the future ground and existing ground surface post construction. This option has a greater development footprint and potential risk on historical wetlands areas.

Armco barriers will be used to ensure that vehicles safely access the roadway. Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno-matresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

The road will be a standard JRA design spec single carriageway surfaced road.

Option 3 - The construction of a bridge design along the same alignment of Option 1.

This layout proposes an extended length of access so as to reduce the grade along the access road. Retaining walls are to be present along the entire length of access so as to prevent the embankments from encroaching into the neighbouring property. The area under the roadbed is to be filled with imported material.

Armco barriers will be used to ensure that vehicles safely access the roadway. Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

The road will be a standard JRA design spec single carriageway surfaced road.

This option was rejected owing to the high cost and lack of functionality offered by the design and construction.

Option 4 - Construction of a longer road that crosses over Portion 91.

This layout proposes an extended length of access so as to reduce the grade along the access road. Retaining walls are to be present along the entire length of access so as to prevent the embankments from encroaching into the neighbouring property. The area under the roadbed is to be filled with imported material.

Armco barriers will be used to ensure that vehicles safely access the roadway. Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

The road will be a standard JRA design spec single carriageway surfaced road.

This option was rejected as it would impact directly on a watercourse and also because Portion 91 is not owned by the applicant.

The BA report thus considers two feasible alternatives that include Option 1 and Option 2.

Impact Summary

The proposed development includes the construction of a second access road on Remainder Portion 71 and part of Portion 22 of the Farm Nietgedacht 535JQ (Johannesburg) to service an approved filling station site. Four layout options were considered in the initial design of the access road with two such options being excluded, firstly as Option 3 (Bridge design) was considered too expensive and secondly as Option 4 (Portion 91) includes land not under the ownership of the applicant and also as GDRT/CoJ did not support the engineering design.

Consequently Option 1 (Proposal) and Option 2 (Alternative 1) were assessed.

Option 1 includes the use of two retaining walls to include the fill along with a storm water culvert. The road is proposed over a distance of 150m with width of 10m. The retaining walls are designed so as to prevent the road impacting directly on Portion 91 and secondly to prevent the development footprint extending into and over a population of Orange Listed Plants. This is considered the preferred option and offers a more sustainable development approach.

Option 2 (Alternative Layout) will make use of only 1 retaining wall along the boundary with Portion 91. The earth embankment proposed in the north east of the site would thus impact directly on the Orange Listed Plant population, and is thus considered to be the less preferred, and less sustainable, option.

Both the Proposal and Alternative would further impact on the environment by means of various socio-economic and well as bio-physical impacts which significance is considered to be moderate to low. This is because the study area in the site is located in a rapidly transforming area from a rural-agricultural setting to a more urbanized setting partly due to the rapid expansion and upgrade of two provincial roads that bisect where the site is located. The K33 is a new alignment of Cedar Road and includes dual carriageway road that is currently being constructed. The R114 is currently being upgraded. The local access road (this project) integrates well with these two roads and has the "in principle support" of GDRT. The original purpose of this application is because the GDRT requires that filling stations that lie within an intersection of two provincial roads requires access from both. The construction of the K33 immediately east of the project site thus necessitated that access be provided off the K33.

The proposed local access road, that will be designed to meet the requirements of GDRT/JRA, is therefore unlikely to degrade the environment nor lead to significant pollution of the environment. The development footprint for the proposal does not impact on watercourses, wetlands, endangered ecosystems nor red data or orange listed plants. The proposed mitigation measures included in the EMPr are likely to offer feasible and implementable mitigation measures that can be used minimize the extent, duration, intensity and probability (or likelihood) of the impact on the environment and thus offers a sustainable approach to providing access to the approved filing station site.

Please refer Section E5 – Impact Statement for each of the feasible alternatives, including the No Go, for a comparative assessment of the relevant alternatives.

In conclusion

The preferred alternative (**Proposal - Figure 11**) offers a sustainable development option for the site and this proposed layout should, in our professional opinion, be supported as it will not give rise to the ecological nor socio-economic degradation of the environment should the proposed mitigation measures, as included in the Environmental Management Plan be complied with.



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

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

DEPARTMENTAL DETAILS

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

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

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

(For official use only)

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

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

None

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

N/A

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

The site will be developed and maintained for posterity and is not likely to be closed in the remaining 60 - 100 years.

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

Yes

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

Yes

If no, state reasons for not attaching the list.

N/A

Have State Departments including the competent authority commented?

Yes

If no, why?

Comments from relevant State Departments have been included into the Final BA Report.

na

SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

The proposed development of a second access road on the remainder of Portion 71 and part of Portion 22 of the Farm Nietgedacht 535JQ (Johannesburg) to service the approved filling station site

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 NO

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

A Water Use License Application process has been started with DWS in terms of Section 21(c) and (i) of the National Water Act.

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

YES	NO
YES	NO

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

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 Water Act No. 36 of 1998	National Department of Water Affairs	October 1998
National Heritage Resources Act No. 25 of 1998	South African Heritage and Resources Authority	August 1998
National Environmental Management Act (107 of 1998) as Amended and EIA Regulations	National Department of Environmental Affairs	Dec 2014
GDARD Biodiversity Assessment Guidelines	Gauteng Department of Agriculture & Rural Development	2014
GDARD Red Data Plant Policy	Gauteng Department of Agriculture & Rural Development	2014
GDARD Ridges Policy	Gauteng Department of Agriculture & Rural Development	2014
Gauteng Information Data Series V3.3	Gauteng Department of	2011

	Agriculture & Rural Development	
Noise Control Regulations	Gauteng Department of Agriculture & Rural Development	August 1999

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

Legislation, policy of guideline	Description of compliance
NEMA EIA Regulations (2014) as amended	Compiled a Basic Assessment Report and lodged an Application for Environmental Authorisation

3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

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

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

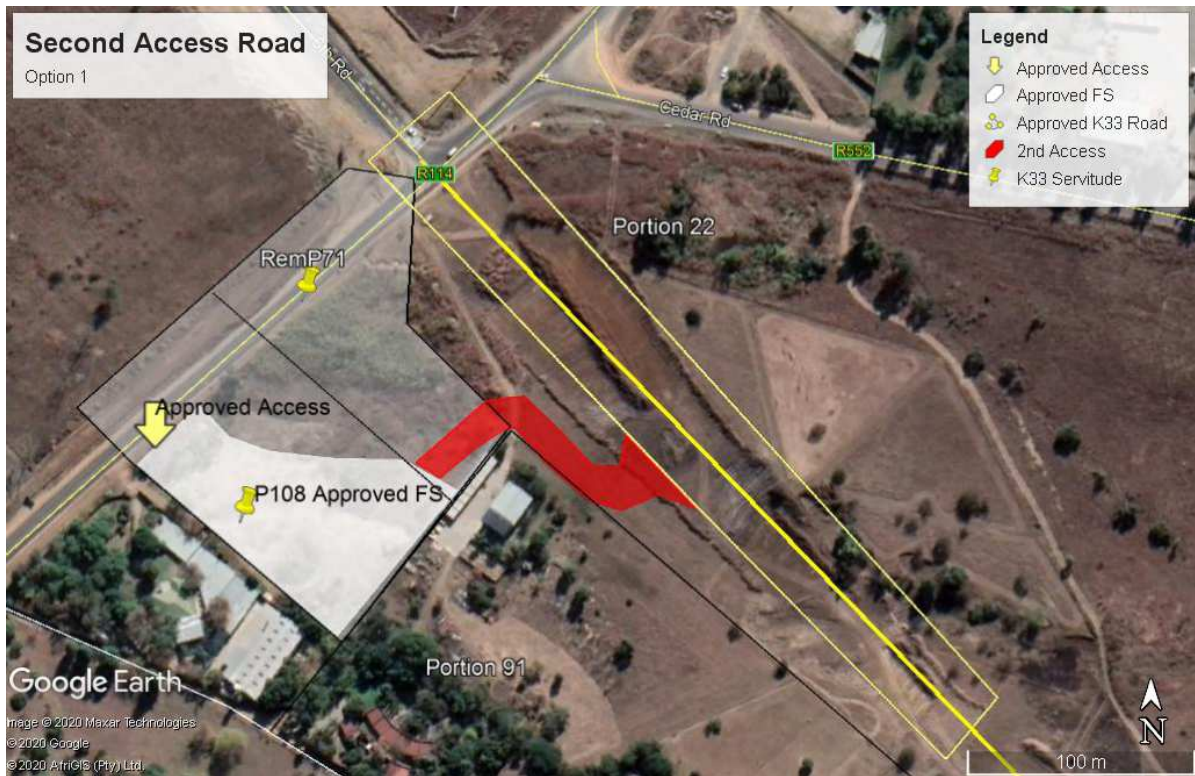
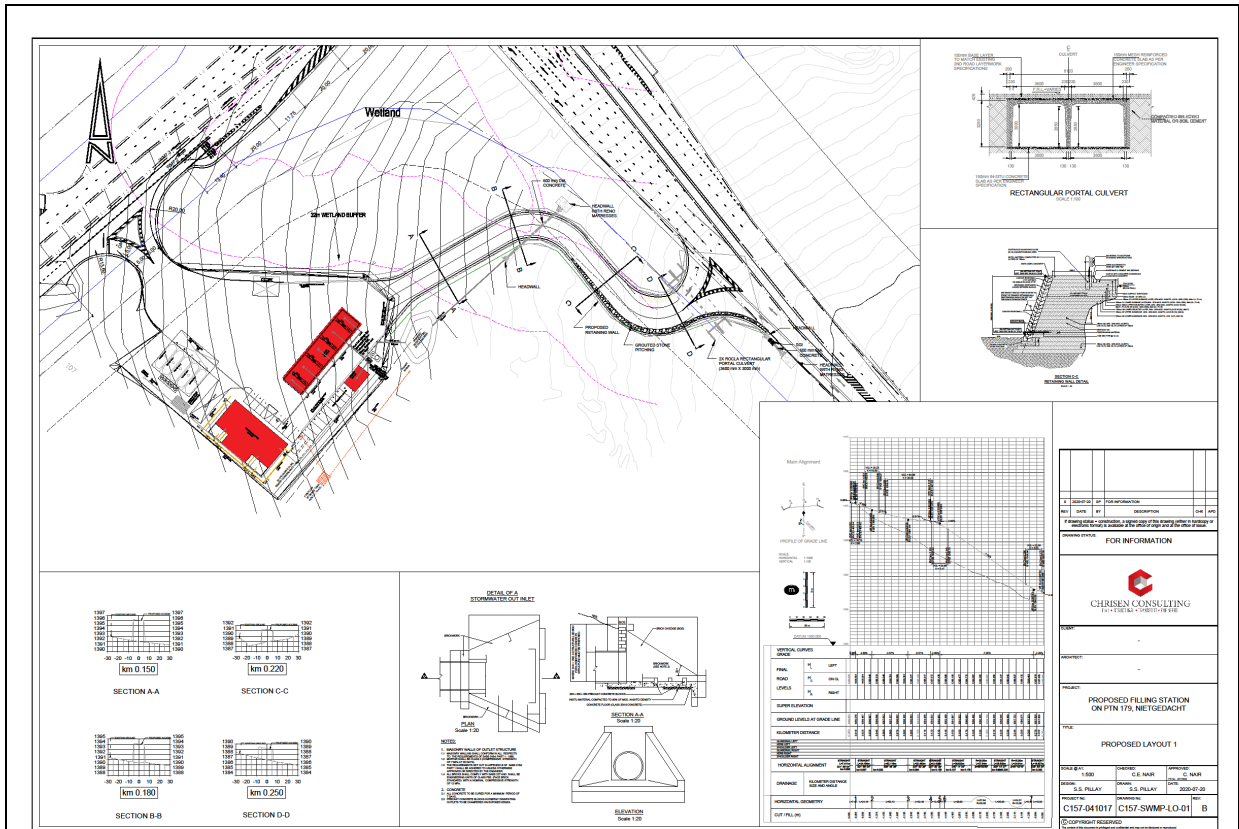
Please describe the process followed to reach (decide on) the list of alternatives below

The proposed access road development included the examination of 4 alternative options to provide a second access to the approved filling station site. The GDRT has prescribed that all sites located on an intersection of a provincial road are required to have a second access (or additional access). Currently the approved filling station site at Portion 108 Nietgedacht 535JQ only has access off the R114. The envisaged second access is to be provided off the recently constructed K33 (Cedar Road).

Proposal

The proposed development includes the construction of two retaining walls to enclose the fill material. Fill material will be used to construct a road base platform that extends 151m and width of approximately 10m (approximate volume of 7900m³). This will make up the elevation difference of approximately 9.96m at a grade of 7.05%. A retaining wall will be constructed along both embankments to contain the fill material. Armco barriers will be used to ensure that vehicles safely access the roadway. Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

The road will be a standard JRA design spec single carriageway surfaced road.



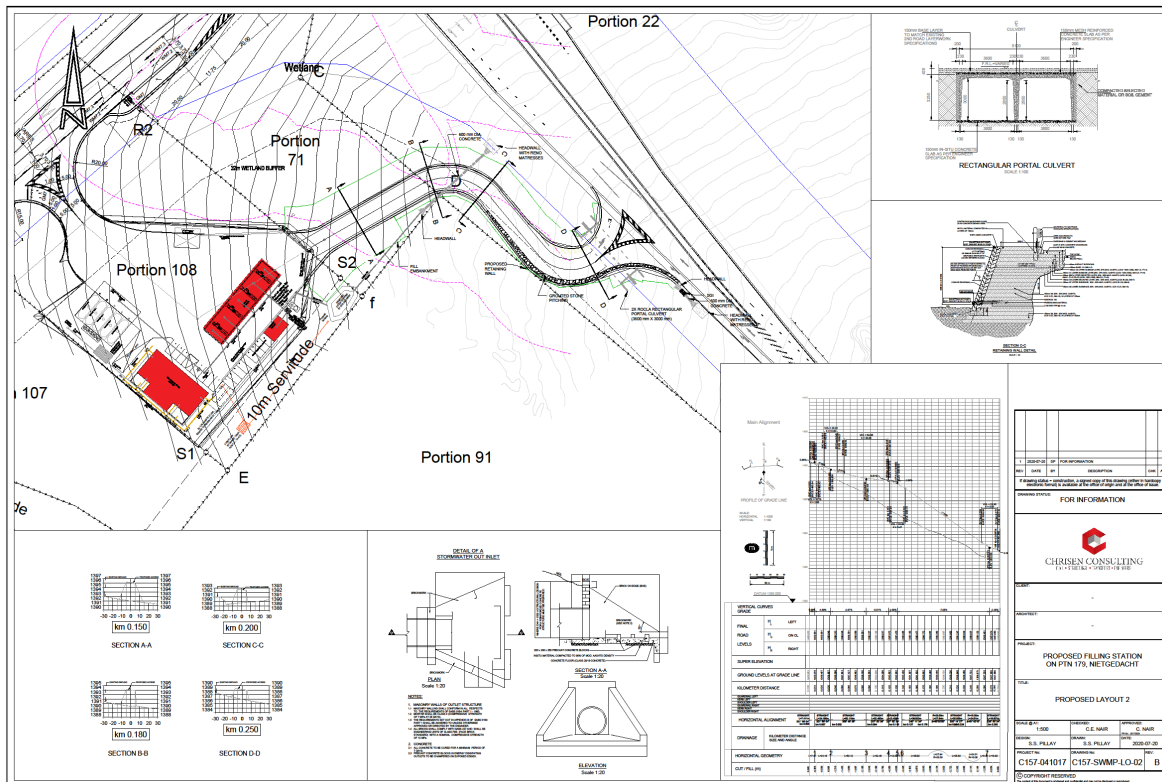
Alternative 1

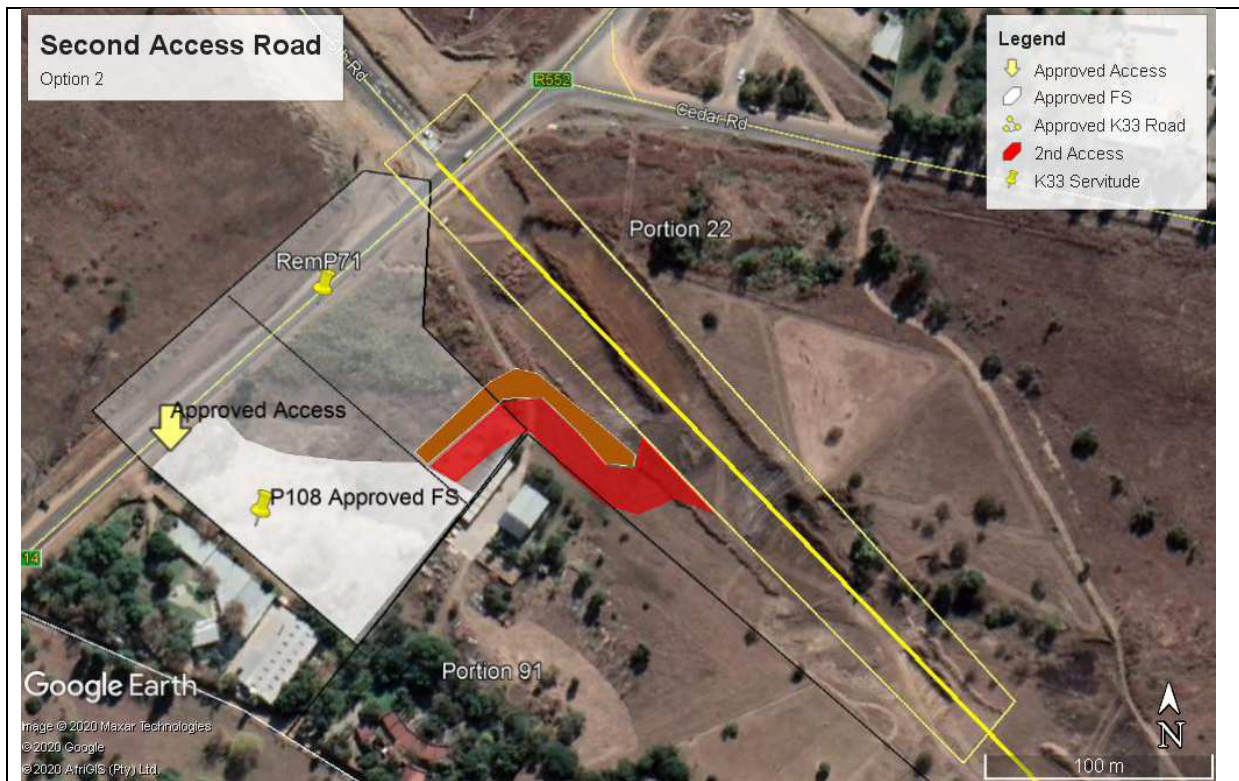
This alternative makes use of the same orientation and route design as the proposal however the road design varies in that it includes only the partial use of a retaining wall to prevent encroachment of the embankment into the neighbouring property. The remainder of the access road is to be graded toward the natural ground at a slope of 1:2 so that there is not a large elevation difference between the future ground and existing ground surface post

construction. This option has a greater development footprint and potential risk on historical wetlands areas.

Armco barriers will be used to ensure that vehicles safely access the roadway. Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno-matresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

The road will be a standard JRA design spec single carriageway surfaced road.





Alternative 2

This layout proposes a road bridge for the entire length of the proposed access road. No embankments or retaining wall are necessary as the road is to be fully supported by the bridge.

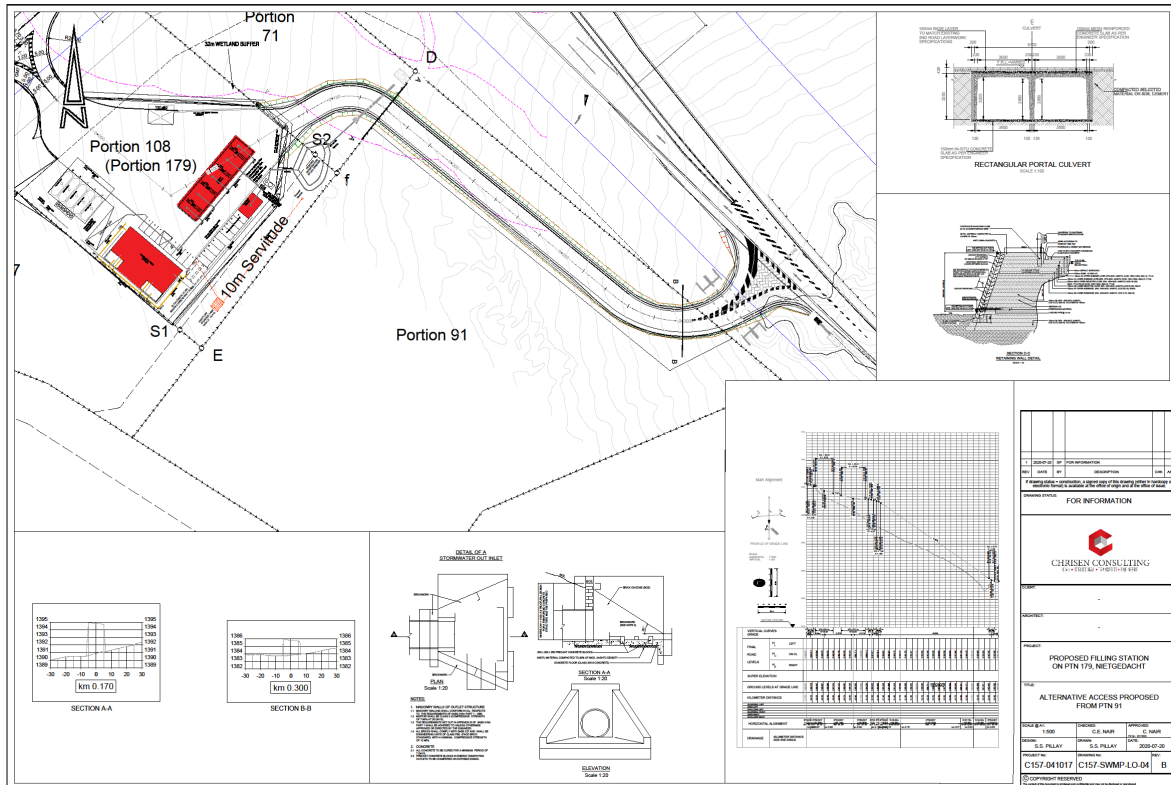
Armco barriers will be used to ensure that vehicles safely access the roadway. Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

The road will be a standard JRA design spec single carriageway surfaced road.

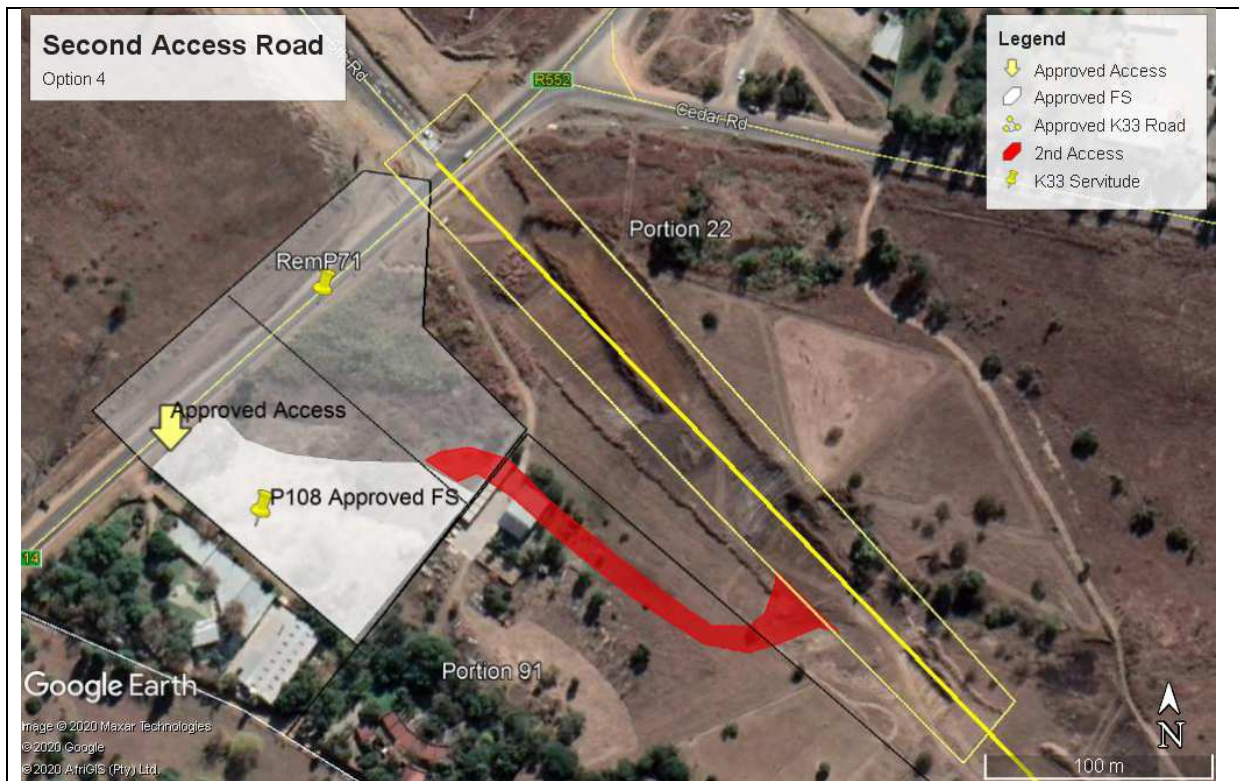
This layout was rejected as the proposed bridge design would be prohibitively costly and make the entire project unfeasible. Furthermore, the watercourse that historically existed has been excavated and removed by the construction of the K33 Provincial Road and hence the natural storm water flow has been altered and transformed.

Armco barriers will be used to ensure that vehicles safely access the roadway. Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.

The road will be a standard JRA design spec single carriageway surfaced road.



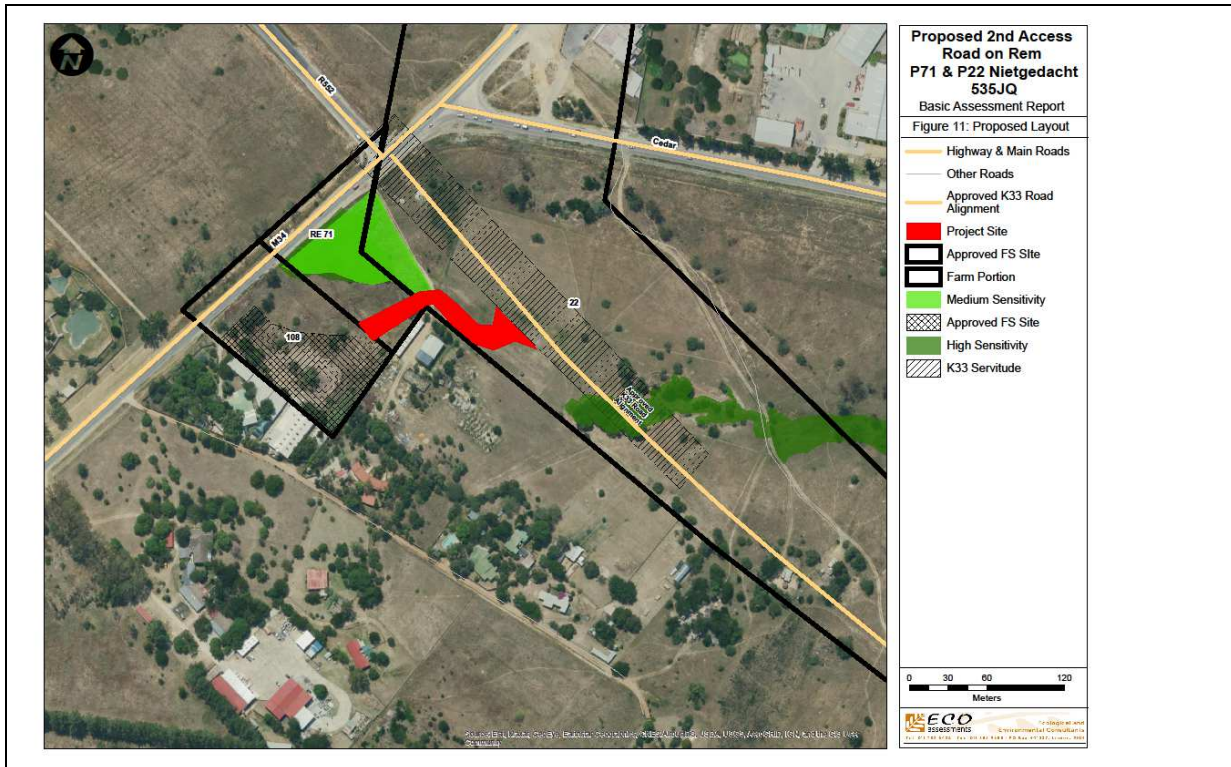
This alternative was rejected as the road would impact directly on the adjoining property (Portion 91) as well as affect a wetland and water course located immediately south off the site. This alternative was also rejected by JRA as the road does not meet engineering standards.



Please refer to the above as well as **Section E5 – Impact Statement** for each alternative, including the No Go, for a comparative assessment of the relevant alternatives.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other")	Description
1	Proposal (Layout - Figure 13)	<p>A retaining wall will be constructed along both embankments to contain the fill material. Armco barriers will be used to ensure that vehicles safely access the roadway.</p> <p>Fill material will be used to construct a road base platform that extends 151m and width of approximately 10m (approximate volume of 7900m³). This will make up the elevation difference of approximately 9.96m at a grade of 7.05%.</p> <p>Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.</p> <p>The road will be a standard JRA design spec single carriageway surfaced road.</p>



2	Alternative 1 (Layout Figure 12)	<p>This alternative makes use of the same orientation and route design as the proposal however the road design varies in that it includes only the <u>partial use of a retaining wall to prevent encroachment</u> of the embankment into the neighbouring property.</p> <p>The remainder of the access road is to be graded toward the natural ground at a slope of 1:2 so that there is not a large elevation difference between the future ground and existing ground surface post construction. This will result in a larger development footprint than the proposal as the road embankment for the fill will extend over indigenous grassland and areas that include storm water run off areas.</p> <p>Armco barriers will be used to ensure that vehicles safely access the roadway.</p> <p>Drainage of storm water along the road will include a network of grid inlets, catchpits and reticulation network.</p> <p>Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno-matresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system.</p> <p>The road will be a standard JRA design spec single carriageway surfaced road.</p>
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In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

N/A

4. PHYSICAL SIZE OF THE ACTIVITY

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

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

Size of the activity:

4510m²

Alternatives:

Alternative 1 (if any)
Alternative 2 (if any)

4800m ²
NA
Ha/ m ²

or, for linear activities:

Proposed activity

Alternatives:

Alternative 1 (if any)
Alternative 2 (if any)

Length of the activity:

N/A
N/A
N/A
m/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:

21.0Ha
21.0Ha
-
Ha/m ²

5. SITE ACCESS

Proposal

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

YES	NO
	0m

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

Describe the type of access road planned:

The local road will connect directly with the K33 that is currently under construction east and adjacent of the site

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

Alternative 1

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

YES	NO
	0m

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

Describe the type of access road planned:

The local road will connect directly with the K33 that is currently under construction east and adjacent of the site

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

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

Section A 6-8 has been duplicated

1

Number of times

(only complete when applicable)

6. LAYOUT OR ROUTE PLAN [Refer to Appendix 1]

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

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
 - A4 size for activities with development footprint of 10sqm to 5 hectares;
 - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
 - A2 size for activities with development footprint of >20 hectares to 50 hectares);
 - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
 - A0 = 1: 500
 - A1 = 1: 1000
 - A2 = 1: 2000
 - A3 = 1: 4000
 - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;

- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
 - Rivers and wetlands;
 - the 1:100 and 1:50 year flood line;
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

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

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

7. SITE PHOTOGRAPHS [Refer to Appendix 2]

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

8. FACILITY ILLUSTRATION [Refer to Appendix 3]

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

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

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

Instructions for completion of Section B for linear activities

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

Section B has been duplicated for sections of 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.

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

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

1. PROPERTY DESCRIPTION

Property description:

(Including Physical Address and Farm name, portion etc.)

Remainder of Portion 71 and part of Portion 22 of the Farm Nietgedacht 535JQ

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:

Latitude (S):	Longitude (E):

In the case of linear activities:

Alternative:

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

Latitude (S):	Longitude (E):
25° 58' 36.61"	27° 56' 53.96"
25° 58' 36.28"	27° 56' 52.32"
25° 58' 36.71"	27° 56' 50.47"

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

Addendum of route alternatives attached

The 21 digit Surveyor General code of each cadastral land parcel

PROPOSAL	T	O	J	Q	0	0	0	0	0	0	0	0	0	0	0	5	3	5	0	0	0	7	1
----------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

	T	O	J	Q	0	0	0	0	0	0	0	0	0	5	3	5	0	0	0	2	2
ALT.1	T	O	J	Q	0	0	0	0	0	0	0	0	0	5	3	5	0	0	0	7	1
	T	O	J	Q	0	0	0	0	0	0	0	0	0	5	3	5	0	0	0	2	2
etc.																					

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

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

4. LOCATION IN LANDSCAPE

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

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

5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

Shallow water table (less than 1.5m deep)

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO

Dolomite, sinkhole or doline areas

Seasonally wet soils (often close to water bodies)

Unstable rocky slopes or steep slopes with loose soil

Dispersive soils (soils that dissolve in water)

Soils with high clay content (clay fraction more than 40%)

Any other unstable soil or geological feature

An area sensitive to erosion

(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 4)?

YES	NO
-----	----

CPLAN v3.3 shows the site with a Low Agricultural Potential. No agricultural activities currently occur or are proposed to occur on site.

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 % = 50	Natural veld with heavy alien infestation % = 20	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % =	Bare soil % = 30

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
-----	----

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
-----	----

If YES, specify and explain:

--

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

YES	NO
-----	----

If YES, specify and explain:

A specialist ecological investigation found that the vegetation structure and composition had been historically altered within the previous 10 years and no longer comprises an ecosystem representative of Egoli Granite Grassland. Areas adjacent to the site include the presence of the Orange Listed Plant *Hypoxis hemerocallidea*.

A water course lies south east of the site that drains eastward toward the Klein Jukskei River that flows into the Jukskei River.

Ecologist

Was a specialist consulted to assist with completing this section

YES	NO
-----	----

If yes complete specialist details

Name of the specialist:

Christa Custers

Qualification(s) of the specialist:

MSc Botany / Ecology

Postal address:

P O Box 441037 LINDEN

Postal code:

2104

Telephone:

011 782 3428

Cell:

082 851 1038

E-mail:

christa@ecoassessments.co.za

Fax:

011 888 9588

Are any further specialist studies recommended by the specialist?

YES	NO
-----	----

If YES, specify:

--

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

YES	NO
-----	----

If YES list the specialist reports attached below

--

Signature of specialist: _____

Date: _____

Wetland Specialist

Was a specialist consulted to assist with completing this section

YES	NO
-----	----

If yes complete specialist details

Name of the specialist:

Johannes Maree (Pr. Sci. Nat 400077/91)
FLORI Scientific Services

Qualification(s) of the specialist:

MSc MBA

Postal address:

PO BOX 7222 MODIMOLLE

Postal code:

0510

Telephone:

N/A

Cell:

082 564 1211

E-mail:

Johannes@flori.co.za

Fax:

N/A

Are any further specialist studies recommended by the specialist?

YES	NO
-----	----

If YES, specify:

--

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

YES	NO
-----	----

If YES list the specialist reports attached below

--

Signature of specialist: _____ Date: _____

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

8. LAND USE CHARACTER OF SURROUNDING AREA

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

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

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

	NORTH					
	7	34	25,34	12,15	15	
	1,34	1,34	25,7	25,7	7,15,1	
WEST	15	17	25,34	25,15,34	34,1	EAST
	1,15	1,15	15,34	25,34	34,1	
	15	1	1	25,1	25,1	
	SOUTH					

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** **NO**
 If yes indicate the type of reports below

Specialist studies are included in this report as Appendix G G1 Design Report G2 Geotech Report G3 Wetland Delineation & Assessment G4 Ecological Assessment G5 Heritage Impact Assessment G6 Traffic Impact Assessment G7 Storm Water Management Plan
--

9. SOCIO-ECONOMIC CONTEXT

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

The site is located within Region A Ward 96 of the City of Johannesburg Metroplotan Municipality that falls within Gauteng. Region A is home to more than 250 000 residents, most of whom are concentrated in Midrand. The western part of the region is scarcely populated, though some 56 000 people reside in the township of Diepsloot alone.

The western part of the region consists of many agricultural holdings and farms, though there has been an increase in business and industrial nodes, as well as formal and informal residential areas.

Areas such as Fourways Gardens, Bloubosrand, Cedar Lakes and Dainfern contain affluent developments, mainly on single stands and at a low density. On the other hand, more than 70 percent of the population of Diepsloot lives in informal housing. Other informally settled areas include Riverbend and Zevenfontein.

Industrial developments are concentrated along Hans Strijdom Drive in Kya Sands, while major commercial activity takes place in Fourways to the south.

Rapidly growing Midrand is the main focus area in the eastern part of the region, with development originally confined along the old main road between Johannesburg and Pretoria, the K101.

The building of the Ben Schoeman highway between the two cities greatly improved accessibility to the region and resulted in an explosion of growth along the N1 corridor. Grand Central airport caters to Midrand and the surrounding areas.

The region also contains bird sanctuaries and the Diepsloot Nature Reserve, though this has yet to be fully utilised.

Unemployment levels in that settlement stand at over 50 percent and more than 70 percent of the residents live below the poverty line. In the Midrand area, approximately 70 percent of residents earn less than R2 500 a month, while 34 percent earn no income at all.

The population in the region is relatively young, with some 24 percent being between the ages of 20 and 29. While the formal residential areas are home to prosperous and well-educated residents, most of the people living in the townships and informal settlements are poor, with low levels of school education.

The voting population in Ward 96 totals approximately 19 929 people (Census 2016). The demographic comprises the following –

Black African – 74%
White – 20%
Coloured – 1%
Indian/Asian - 3%
and other – 2%

The median age is 28 with 18 to 64 year olds comprising 74% of the population.

54.6% of the 21 333 households in the Ward are informal dwellings (shacks).

Approximately 80% of people obtain water from a regional or local service provider.

Approximately 42% of people have access to flush or chemical toilets whilst 4.1% have access to no toilet.

Refuse disposal includes 84.8% that make use of a local authority or private company.

Approximately 60.2% of the population is employed with 68% obtaining employment in the formal sector. The average annual income is R30 000.00.

Approximately 74.2% of the population has completed Grade 9 or higher, whilst 44.9% of people have completed Matric or higher.

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;
- (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
-----	----

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:

A specialist cultural historian was appointed to survey the site and verify the status and significance of any cultural historic features. The survey recorded NO cultural historic features and indicated no concern with the proposed development of the site (refer to **Appendix G5**).

Will any building or structure older than 60 years be affected in any way?
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
YES	NO

If yes, please attach the comments from SAHRA in the appropriate Appendix (**not applicable**).

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

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

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.

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

YES	NO
-----	----

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

YES	NO
-----	----

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

The Local Authority & Ward Councillor was provided with a Background Information Document and informed of the project in writing.

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

Comments (if any) will be included in the Final BA 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
-----	----

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

To be updated and finalized in the Final BA Report

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

N/A

4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

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

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

5. APPENDICES FOR PUBLIC PARTICIPATION [NOTE - DRAFT REPORT to be updated and FINALIZED in the FINAL BA Report]

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

Appendix 1 – Proof of site notice

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

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

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

Appendix 6 - Comments and Responses Report

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

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

Appendix 9 – Copy of the register of I&APs

SECTION D: RESOURCE USE AND PROCESS DETAILS

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

Instructions for completion of Section D for alternatives

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

Section D has been duplicated for alternatives times

(complete only when appropriate)

Section D Alternative No.	1	(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	NO
10m ³	

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

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

Construction waste will be separated on site and temporarily stored in the contractor yard in the appropriate waste skips. Waste will be removed on a weekly process by a registered waste contractor.

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

Waste will either be removed to a recycle centre (glass, paper, plastic and metal) by a registered contractor or to a registered waste landfill site closest to the site.

Will the activity produce solid waste during its operational phase?

YES	NO
0m ³	

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

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

Not Applicable

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)?

N/A

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

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

YES	NO
-----	----

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

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

YES	NO
-----	----

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

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

The architectural Guidelines of the proposed development will require separation of waste at source and to adopt the principles of Reduce, Re-use and Recycle. Relevant waste skips will be used in which to temporarily store relevant waste streams on site.

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
0m 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)?

YES	NO
-----	----

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

YES	NO
-----	----

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

0m³

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

Not Applicable

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
-----	----

If yes, provide the particulars of the facility:

Facility name:

Contact person:

Postal address:

Postal code:

Telephone:

E-mail:

Cell:

Fax:

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

None

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

YES	NO
-----	----

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

NA

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
-----	----

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

YES	NO
-----	----

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

None

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
-----	----

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

YES	NO
-----	----

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

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

N/A

2. WATER USE

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

<input checked="" type="checkbox"/> Municipal	<input type="checkbox"/> Directly from water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> the activity will not use water
---	--	--------------------------------------	---	--------------------------------	--

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

0liters

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	NO
-----	----

If yes, list the permits required

None

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

YES	NO
-----	----

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

YES	NO
-----	----

3. POWER SUPPLY

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

None Required

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

N/A

4. ENERGY EFFICIENCY

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

The energy savings for the preferred alternative is as follows:

- None.

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

Not Applicable

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

None to Date

(This section will be updated and Finalized in the Final BA Report)

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

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

None to Date

(This section will be updated and Finalized in the Final BA Report)

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

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

As a means of determining the significance of the various impacts that can occur or may be associated with the proposed development, a series of assessment criteria were used for each impact. These criteria include an examination of the nature, intensity and probability of the impact occurring, and assessing whether the impact will be positive or negative for the natural, social as well as biophysical environments at, and surrounding the site.

The assessment of impact has been done according to a synthesis of the following assessment criteria in terms of the **EIA Regulations Guideline Document, April 1998**:

- Nature of the impact: This is an appraisal of the type of effect the activity would have on the affected environment. This description include what is being affected and how.
- Extent: The extent indicate whether the impact will be local extending only as far as the activity, will be limited to the site and its immediate surroundings, will have an impact on the region or will have an impact on a national scale or across international borders;
- Duration: This indicates whether the lifetime of the impact will be:
 - short term (0 – 5 years);
 - medium term (5 – 15 years);
 - long term where the impact will cease after operational life of the activity either because of natural process or by human intervention; or
 - permanent where 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.
- Intensity: The significance will establish whether the impact is destructive is indicated as:
 - Low, where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected;
 - Medium, where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and
 - High, where natural, cultural or social functions or processes are altered to the extent that it will permanently cease.
- Probability: This describe the likelihood of the impact actually occurring indicated as:
 - Improbable, where the possibility of the impact to materialize is very low either because of design or historic experience;
 - Probable, where there is a distinct possibility that the impact will occur;
 - Highly probable, where it is most likely that the impact will occur; or
 - Definite, where the impact will occur regardless of any prevention measures.
- Significance: The significance if the impact is indicated per Construction Phase (C) and Operational Phase (O).
 - Low, where it will not have an influence on the decision;
 - Medium, where it should have an influence on the decision unless it is mitigated; or
 - High, where it would influence the decision regardless of any possible mitigation.

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.

#1 PROPOSAL: CONSTRUCTION OF ROAD WITH DUAL RETAINING WALLS & CULVERT

– see FIGURE 11

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p>Impacts on Soils and Geology of the area:</p> <p>A specialist assessment of the geology and soil on site was compiled by an engineering geologist (refer to Appendix G2),</p> <p>From the 1:250 000 Geological Map 2526 Rustenburg, the base rocks comprise Swazian Era granites, granite gneiss, homogeneous and porphyritic granodiorite.</p> <p>The soils encountered on site comprise silty clayey sand (transported material) and gravelly silty sand with ferricrete nodules underlain by hardpan ferricrete to the northern side of the property and soft rock granite to southern side of the property.</p> <p>The soil profiles present on site can be summarised as follows:</p> <ul style="list-style-type: none"> • 0.0 – 0.4 m Topsoil • 0.4 – 0.6 to 1.3 m Transported • 0.6 – 0.9 to 2.5 m Residual to soft rock granite/hardpan ferricrete <p>No groundwater water seepage was encountered in any of the test pits, however the presence of the ferricrete nodules is a good indicator that groundwater seepage can be present during a rainy period.</p> <p>Construction material The residual material from TP5 was tested for use as construction material. With a CBR value of 23, compacted to 95 % Mod AASHTO, this material classifies as a G8 and is not suitable as a structural fill material. This material can only be used as a general fill material.</p> <p>Foundation conditions Foundations on the residual granite at a depth of 1.8m can be designed for a bearing capacity of 250 kPa. The estimated maximum bearing capacity is 300kPa on the hardpan ferricrete layer at 1.2m below natural ground level. Residual granite is characterised by a collapsible structure therefore compaction of the base material after excavation should be done to eliminate collapse and differential settlement. Precautions must be taken to protect the foundations from moisture ingress.</p> <p>Excavatability The excavatability of the material encountered on site is soft to intermediate in the transported material and hard once the hardpan ferricrete and soft rock granite is</p>				

<p>Groundwater Levels and Flow: Groundwater level depths were deduced from the DWAF GRA2 Mean Water Level Depth Map (2005). According to the maps, the average groundwater depth ranges from 11 to 15 mbgl (Appendix A – Figure 9).</p> <p>Groundwater Recharge: Groundwater recharge was determined from the Vegter Map and DWAF GRA2 Project Recharge Depth Map (Appendix A - Figure 10). The groundwater recharge is estimated to range between 37 and 50 mm/a which accounts for 5 to 7% of the Mean Annual Precipitation.</p> <p>Groundwater Users: Groundwater users in the immediate vicinity (1km radius) of the proposed site were identified during the hydrocensus. The users are dependent on groundwater as their only source of water supply. This aquifer is therefore identified as a Sole Aquifer System for the community. Based on this information, it is assumed that groundwater will be the only water source at the proposed filling station.</p> <p>Groundwater Chemistry: The Hydrogeological map of Johannesburg indicates Electrical Conductivity values below 70 mS/m and pH values that are neutral (6.5 to 7.5).</p> <p>The basic groundwater direction determined from the hydrocensus boreholes is towards the east. It must however be noted that some of the water levels are not measured on rest water level due to some boreholes being used for water supply.</p> <p>The effective catchment data is as follows:</p> <ul style="list-style-type: none"> • Effective catchment area is 20.1 km² • Population is 19 733 therefore creating a Basic Human Need of 0.18 Mm³/a • Recharge is 0.83 Mm³/a • Baseflow is 0.5 Mm³/a • Current Abstraction is 0.04 Mm³/a • The Groundwater Allocation is therefore calculated as 0.15 Mm³/a • Current Abstraction is less than the Groundwater Allocation • Stress index is low and falls under Category A (Unstressed) • The underlying dyke is usually resistive and non-penetrable. Naturally this rock will prevent contaminated water from seeping into the groundwater apart from the baked contact zone with the host rock. <p>Nature of Construction Impact: Construction impacts are not likely to affect the underlying aquifer except in the event of improper construction activities.</p> <p>These may include the illegal discharge of waste or water containing waste onto the site or into the surrounding environment, the inadequate use of ablution facilities or the illegal discharge of materials that could contaminate the site (chemicals, paints, solvents or solids).</p> <p>The low number of staff and limited extent of the development footprint suggest that this impact will be unlikely and/or the impact will be of a low magnitude or extent.</p> <table border="1" data-bbox="120 1430 524 1453"> <tr> <td>Construction Impact</td> <td>Rank</td> </tr> </table>	Construction Impact	Rank	<p>C. Medium (-ve)</p>	<p>To minimize the pollution risk of the above-mentioned threats, the following management plan should be implemented:</p> <p>Domestic waste should be placed in a water tight container and disposed of off-site on a regular basis.</p> <p>Drip trays must be used to contain impacts caused by leaking vehicles.</p> <p>Appropriate facilities must be used to store, handle and manage fuels, solvents and organic materials stored on site.</p>	<p>C. Low</p>	<p>Low</p>
Construction Impact	Rank					

Operation Impact	Rank																								
Extent	Local																								
Intensity	Medium																								
Duration	Long term																								
Probability	Definite																								
Impacts on the Land Value of the Development Property																									
<p>The site is currently located within a peri-urban area that is rapidly undergoing transformation. Currently the predominant land use remains plots of rural residential land use upon which several businesses typically are operated. A few more formalized business activities occur within the area and close to the intersection of the Dieplsoot Road and Cedar Road. The site lies near to Fourways, Lanseria, Cosmo City and Dieplsoot, each of which are currently expanding.</p> <p>The current construction of the dual carriage way Cedar Road (P33) will no doubt create demand for land at this intersection.</p> <p><u>Nature of Impact at Construction Level:</u> The proposed development properties consist of agricultural land which is susceptible to informal settlement, dumping and crime. Construction activities, in the short term, may lead to lower property values owing to increased levels of dust, pollution, risk of crime and noise.</p> <table border="1"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Long term</td> </tr> <tr> <td>Probability</td> <td>Definite</td> </tr> </tbody> </table> <p><u>Nature of Impact at Operational Level:</u> The proposed development will enhance the current state of the property. Developing the land would diminish the possibility of it being subjected to informal settlement / dumping ground. The access road will offer convenient access to the approved Filling Station site located on Portion 108 Nietgedacht 535JQ. This will significantly increase the value of this property,</p> <table border="1"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Long term</td> </tr> <tr> <td>Probability</td> <td>Definite</td> </tr> </tbody> </table>		Construction Impact	Rank	Extent	Local	Intensity	Low	Duration	Long term	Probability	Definite	Operation Impact	Rank	Extent	Local	Intensity	Low	Duration	Long term	Probability	Definite	C. Medium (+ ve)	No mitigation measures are proposed.	C. Medium	Low
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		O. High (+ ve)	No mitigation measures are proposed	O. High	Low																				

Impacts on Traffic

The following conclusions and recommendations can be made based on the findings of a Traffic Impact Assessment report (**Appendix G6**) that was compiled for the filling station and proposed second access road:

The study site was previously registered as Portion 71 and Portion 108 of the Farm Nietgedacht 535-JQ and has been consolidated to Portion 179 of the Farm Nietgedacht 535- JQ for the purpose of the proposed Filling Station. An In-Principle Access application and Traffic Impact Assessment was undertaken by CHRISEN for the proposed Filling Station on Portion 179 of the Farm Nietgedacht 535-JQ during December 2018 and subsequently approved by the Gauteng Department of Roads and Transport (GDRT) and Johannesburg Road Agency (JRA). Furthermore, a Section 7 report as per the requirements of the Gauteng Transport Infrastructure Act (GTIA), 2001 was undertaken to address the planned and approved K52 and K33 route in relation to the application site.

The Traffic Impact Assessment was approved for a Marginal Access (left-in, left-out configuration) off R114 (the planned K33) at approximately 145,0 m from the intersection of R114 and 6th Road. Portion 179 of the Farm Nietgedacht 535-JQ has an extent of 10611,705 m2 and is to comprise of the following:

- Convenience store with canopy: 130 m2

Access to the proposed Filling Station will be taken off R114 (future K52) and future K33 provincial road, as soon as it has been constructed. The proposed accesses are to be designed according to the Gauteng Department of Roads and Transport Guidelines for Access to Filling Stations (BB2 Manual).

It is proposed that the access to the proposed Filling Station be taken off R114 (K52) at approximately 145,0 m south of the intersection of R114 and 6th Road and be designed as follows:

- Left-in, Left-out access configuration (marginal access)
- A kerbed island should be provided at the access separating the left-in, left-out manoeuvre.
- A kerbed median should be provided to separate northbound and southbound traffic
- The access should accommodate a SU+T vehicle (14,0 m)

It is proposed that the access to the proposed Filling Station be taken off the planned K33 provincial route at approximately 145,0 m east of the intersection of R1114(future K52) and K33 provincial road, as soon as the road has been constructed. The access will be designed as follows:

- Left-in, Left-out access configuration (marginal access)
- A kerbed island should be provided at the access separating the left-in, left-out manoeuvre.
- A kerbed median should be provided to separate northbound and southbound traffic

<ul style="list-style-type: none"> · The access should accommodate a SU+T vehicle (14,0 m) · It is proposed that a right of way servitude be provided for the future alternative access to Portion 179 Nietgedacht 535-JQ. <p>A 6% interceptor rate will be applied, based on current information received from surrounding filling station sites. It is important to note that a Filling Station is an interceptor and not a generator of traffic. Therefore, most of the site traffic will be intercepted from the adjacent roads past the site and only a minimal new traffic can be expected from the surrounding road network as new or primary trips.</p> <p>The proposed Filling Station development is expected to generate approximately 200 and 536 trips during the AM and PM peak periods respectively.</p> <ul style="list-style-type: none"> · The proposed development will generate approximately 2290 trips during the entire weekday · The proposed Filling Station development on Portion 179 of the Farm Nietgedacht 535-JQ is not expected to have any negative impacts on the immediate or surrounding road network. <p>The proposed Filling Station is not regarded as a trip generator, but rather as an interceptor of traffic. It is proposed that a 2,0 m wide paved sidewalk be provided along the site frontage boundary of Portion 179, Nietgedacht 535-JQ which will ease and formalise the movement of pedestrians between the site access and public transport facilities. The site is to be provided with the minimum number of parking bays in accordance with the City of Johannesburg Town planning Scheme. The parking bays will be 90 degrees, having dimensions of 5,0 m long by 2,5 m wide and a minimum aisle width of 7,5 m. This is in line with the DOT (1995) parking standards. According to the BB2 guidelines, the proposed filling station should not have more than 15 parking bays.</p> <p>A vehicle manoeuvring assessment was undertaken for the development site using the Auto-TURN software. The results of a heavy vehicle (fuel tanker truck) simulation indicated that the site will be able to accommodate the truck at the ingress / egress and circulation within the site.</p> <p>It is therefore recommended that the proposed new Filling Station development on Portion 179 of the Farm Nietgedacht 535-JQ be approved from a traffic engineering point of view.</p> <p><u>Nature of Impact at Construction Level:</u> The approved filling station site is currently under construction although this has only included site clearance. The K33 is currently under construction. Access to the site is largely confined by the construction activities along the R114 that is also currently being upgraded. The K33 will only become operational toward mid 2021.</p> <p>Construction activities are likely to contribute to road congestion and traffic delays on the R114 and K33 in the short term. Construction vehicles are likely to use the K33 to access the site. Adequate warning signs and road safety measures must therefore be provided to ensure for the safety of road users during the construction phase.</p>	<p>C. Low (- ve)</p>	<p>Ensure the roads are constructed to meet the requirements of the GDRT/JRA.</p> <p>The developer will be required to provide adequate road warning signs and implement appropriate measures to ensure that road users along the R114 and K33 remain safe from traffic accidents.</p> <p>Delivery times to the site must not occur during peak traffic times.</p>	<p>C. Low</p>	<p>Low</p>
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Construction Impact	Rank														
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Construction Impact	Rank														
Extent	Local														
Intensity	Low														
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Probability	Probable														

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Construction Impact	Rank																							
Extent	Local																							
Intensity	Low																							
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Intensity	Medium																							
Duration	Long																							
Probability	Definite																							
<p>Damage to Cultural Historic Features:</p> <p>A specialist cultural historic assessment (Appendix G5) located no archaeological sites or materials or cultural historic features on the site.</p> <p>In terms of Section 34 of the NHRA this feature’s potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and it is therefore of no heritage significance, however sites like these might contain unmarked graves and if impacted on these areas must be monitored during construction.</p> <p>No archaeological sites or material was recorded during the survey and based on the SAHRIS Paleontological Sensitivity Map, the area is of insignificance paleontological sensitivity. Therefore, no further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.</p> <p>In terms of Section 36 of the Act no grave sites were identified in the study area although numerous graves have been recorded on the larger property. If any additional graves are identified they should ideally be preserved <i>in-situ</i> or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The study area is surrounded by industrial and residential developments and road infrastructure developments and the proposed road development will not impact negatively on significant cultural</p>																								

Impacts on the Aesthetic Quality / Visual Character of the site & area:

The surrounding areas generally comprise a mix of rural residential land use and business. Cedar Road and the existing Diepsloot/Krugersdorp R114 both carry high volumes of traffic, especially at peak times, and this has changed the general character of the area to be more business related, and less rural.

The soon to be upgraded K52 (north and south as well as east and west) will undoubtedly change the character of the area to become more urbanized and developed. This is likely to include medium to high density residential land use, businesses, light industrial and other land uses (e.g. retail).

Similarly the current construction and imminent operation of the new K33 (Cedar Road) will vastly alter the current rural nature and character of the site and thus lead to a more urban form.

Nature of Impact at construction Level:

Adjacent land owners could possibly complain about their views being obstructed by the proposed development. Soil heaps could cause unsightly views as construction continues.

Construction Impact	Rank
Extent	Local
Intensity	Low
Duration	Short term
Probability	Probability

Nature of Impact at Operational Level:

The impact would be of a positive nature and support the current development of the K33 Road. However, the site will operate 24 hours for 7 days and thus pose concerns with light pollution or visual intrusion, especially for surrounding properties.

Construction Impact	Rank
Extent	Local
Intensity	Medium to Low
Duration	Long term
Probability	Definite

C. Medium (- ve)

Construction activities must be screened from adjacent land owners with shade cloth or something of similar nature where views of such owners are likely to be disturbed during the construction period.

Dust suppression techniques should be implemented especially on windy days.

Remove rubble and construction rubbish offsite as soon as possible.

C. Low

Low

O. Medium (-ve)

A landscape management plan should be implemented as soon as possible.

Down lighting must be used wherever possible to prevent lighting impacting the adjacent land owners.

The buildings, structures and services on the site must be adequately serviced and maintained to ensure they retain the original quality and character of the site.

O. Medium (-ve)

Low

The area generally has a high incidence of motor vehicle accidents owing to the high volume of traffic on the roads and the poor condition of the road surface. The configuration of the road ways further complicates turning events and this, along with high speed, contributes frequently to fatal accidents.

The K52 is soon to be upgraded in an attempt to reduce these impacts and this will significantly improve safety on the roads.

Owing to the high number of vehicles using the roads, a high number of pedestrians and other people occur in the area and this reduces the security of people, businesses and properties in the area.

Nature of Impact at Construction Level:

Construction activities may attract undesirable characters. Misuse and lack of skill in handling tools could result in accidents. Similarly construction of the fill and the excavation of trenches for the retention walls may give rise to increased opportunities for fall risk, side wall collapse and/or accidents.

Operation Impact	Rank
Extent	Local
Intensity	Low
Duration	Permanent
Probability	Probable

C. Medium (- ve)

Building rubble and excavation could pose safety risks and the rubble should be removed on a regular basis. Excavated areas should be clearly demarcated to prevent injuries.

All domestic waste generated by the contractor's activities at the contractor's camp must be stored in either refuse bins (i.e. steel or plastic 210L drums) or in a waste skip.

The burning of waste on site shall be prohibited.

The personnel must be adequately trained and informed in the tasks that they are expected to perform.

All security personal must have radio/cell phone contact with their offices, SA Police Service and the local fire department.

The movement of construction workers through the residential areas or to adjacent properties should be restricted wherever possible.

Adequate fencing should be erected around the construction camps and construction sites.

Adequate ablution facilities must be provided to construction workers during the construction period.

The personnel must be adequately trained and informed in the tasks that they are expected to perform.

Biodegradable waste should be removed on a regular basis to prevent the attraction of vermin that could pose a health risk.

All security personal must have radio/cell phone contact with their offices, SA Police Service and the local fire department. All staff must be inducted and drills done on

C. Low

Low

<p><u>Nature of Impact at Operational Level:</u> The access road is not likely to present operational Health & Safety impacts. However high speed accidents or the failure to abide by road traffic laws may give rise to road users having accidents whilst using the access road. This could include vehicles crashing through the Armco barriers or pedestrians crossing a busy dual carriage way road and being involved in accidents.</p> <table border="1" data-bbox="120 352 477 507"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Short term</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table>	Operation Impact	Rank	Extent	Local	Intensity	Low	Duration	Short term	Probability	Probable	O. Medium (- ve)	<p>how to handle security threats.</p> <p>Adequate warning signs must be erected at key points along the access road to forewarn the public of the risks of accidents. These must follow requirements as set by the JRA.</p>	O. Low	Low
Operation Impact	Rank													
Extent	Local													
Intensity	Low													
Duration	Short term													
Probability	Probable													
<p><u>Impacts Associated with Noise and Vibration</u></p> <p>The area generally has a low ambient noise impact as it largely comprises rural residential land uses. However the high volume of cars and trucks that use the roads in peak and sometimes off peak times, means that vehicle noise and vibration impacts are apparent.</p> <p><u>Nature of Impact at Construction Level:</u> Due to the increase in traffic and use of construction machinery the noise levels will increase for the duration of the construction phase. The construction phase will require the use of blasting and heavy impact construction that is likely to give rise to vibration impacts. However the site is distant from adjacent properties and separated by a provincial road. The construction of the road may require compaction that could impact on buildings or structures within 500m of the site.</p> <table border="1" data-bbox="120 887 477 1042"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Short Term</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table> <p><u>Nature of Impact at Operational Level:</u> It can be expected that there will be a Moderate to Low increase in noise levels from motorists and consumers. A certain level of noise can be expected due to normal operational procedures. Due to the fact that the sites are located along heavily used urban roads, the overall noise is likely to be masked by this back</p>	Construction Impact	Rank	Extent	Local	Intensity	Low	Duration	Short Term	Probability	Probable	C. Medium (- ve)	<p>Limit construction time to the following hours: 06:00 to 18:00 during the week; 07:00 to 13:00 on Saturdays and no construction activities on Sundays or public holidays.</p> <p>Where necessary, noise mufflers should be used.</p> <p>Construction workers should abide by the local “by-laws” regarding noise.</p> <p>Should blasting be required due to hard rock occurrence, covered blasting should be used (unless otherwise authorized). All affected adjacent parties must be informed beforehand.</p> <p>All applicable industry standards, as well as SANS requirements, will be enforced and adhered to during construction and operation of the site.</p> <p>The level of noise will be within the acceptable noise levels, therefore no mitigation measures are recommended.</p> <p>Filling station workers should abide by the local “by-laws” regarding noise.</p> <p>Comply to relevant By Laws to control nuisance noise.</p>	C. Low	Low
Construction Impact	Rank													
Extent	Local													
Intensity	Low													
Duration	Short Term													
Probability	Probable													
	O. Low (- ve)		O. None	Low										

ground noise.

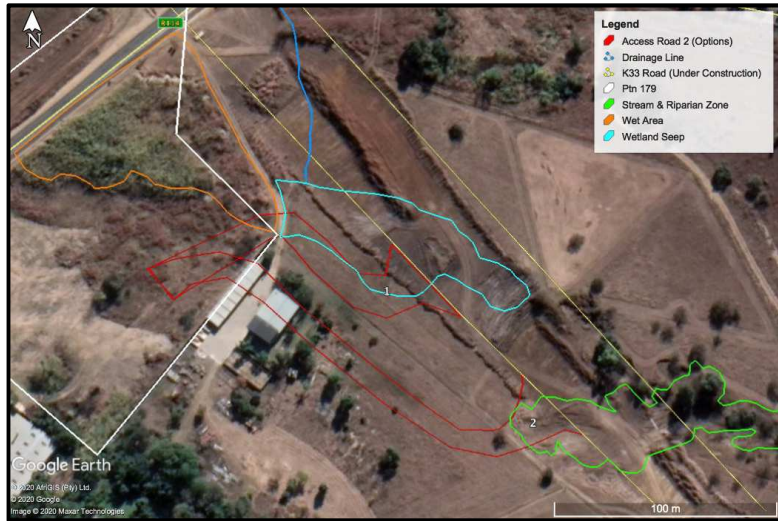
Operation Impact	Rank
Extent	Local
Intensity	Low
Duration	Permanent
Probability	Highly probably

Impacts on Aquatic Ecosystems, Wetlands and Water Courses

A specialist wetland assessment has been compiled to evaluate the potential impact of the development on the site (**Appendix G3**).

Numerous negative impacts on the watercourses within the study site and the surrounding area exist. Historical cultivation of lands in the area and along the main streams and through wetlands was probably the biggest impact over the years, until recently. Presently the rapid growth of urbanisation and associated infrastructure such as roads, buildings, etc. is having further (and even greater) negative impact on the water environment. There are no pristine wetlands (or other watercourses) in the study site or surrounding area. There are also no pristine grasslands in the study area. The method of stormwater channelling and discharge (although necessary and important) has also had a negative impact on the flow and seasonality of the watercourses.

There are no existing natural watercourses within the demarcated area of Access road option 1. A small stream and riparian zone is located immediately south of where Option 1 links in with the K33. The construction of the K33 has significantly affected (and largely removed) all the watercourses that previously were found to occur east of the site.



The wetland seep (#1 above) that historically occurred in the study area has been

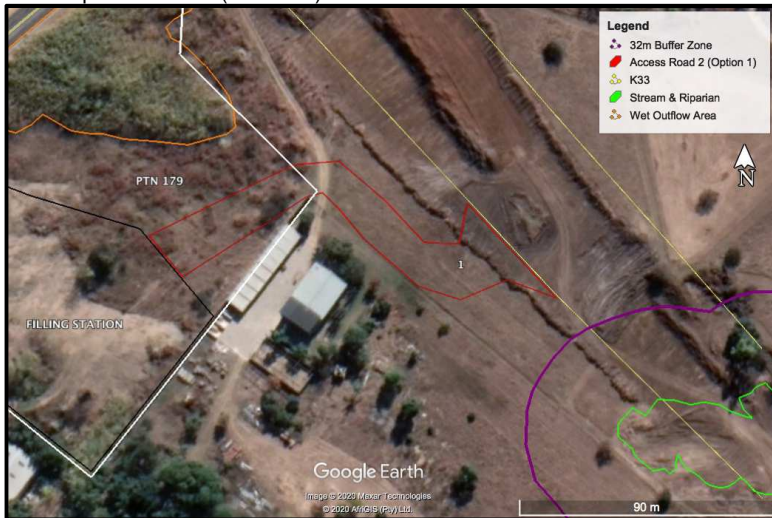
totally destroyed by road construction activities and alignments for the K33. Therefore there are no watercourses, including wetlands or drainage lines, present in the study area. Downslope of the site occurs a stream and riparian area (#2) that will not directly be affected by the development.

No Red Data Aquatic fauna or flora were observed or are likely to occur on site.

The PES rating of the seep cannot be rated as the seep has been excavated by the K33 construction.

The EIA rating of the combined watercourses in the area (that is the water environment) is Category D (Low).

The proposed development of Option 1 (Proposed Layout) is not likely to impact directly on the 32m buffer of the stream and riparian area of the watercourse downslope of the road (#2 above).



Nature of Impact at Construction Level:

The project is small and will have little negative impacts on the remaining watercourses in the area. The biggest potential negative impacts will take place during the construction phase of the short, narrow access road. These will be quickly neutralised after the construction phase.

There are no obvious positive impacts arising from the proposed project. The main remaining watercourse in the area is a small, semi-perennial stream situated approximately 80m south of the study site.

The project and construction phase will have no impact on this watercourse.

Project related potential negative impacts include:

- Diversion of stormwater run-off during construction phase;
- Obstruction of surface water flow into watercourses;

C: Medium (- ve)

Impacts associated with the larger project -

- i. Impacts arising from the proposed access road from off of the K33 are low.
- ii. Any temporary storage, lay-down areas or accommodation facilities to be setup in existing built-up areas or disturbed areas only.
- iii. Ensure small footprint during construction phase.
- iv. Previously proposed buffer areas (no-go zones) around the small semi-perennial stream south of the study site must be implemented and strictly controlled.
- v. An Erosion Plan to be implemented and monitored during construction phase as the erosion potential is

C: Low

Low

- Destruction of delineated wetlands, stream and riparian zone.
- Increased flow velocity of surface water run-off causing erosion and potential siltation in the small stream south of the project site (study site);
- General negative impacts arising from an increase in vehicles and people in the area.

Construction Impact	Rank
Extent	Local
Intensity	Moderate
Duration	Long
Probability	Probable

Nature of Impact at Operational Level:

The operational impact will largely include the influence storm water flows will have on the functionality of the stream and riparian area downslope of the site. The retention wall option allows more room for the watercourse affected by the K33 to recover and offers a more normalized storm water run off route. This will assist storm water to be directed toward the watercourse south east of the site and thereby retain the normal hydrology in this channel.

Operation Impact	Rank
Extent	Local
Intensity	Medium
Duration	Long
Probability	Possible

O: Low (+ ve)

moderate. Need to illuminated possible (although low potential) erosion and gully formation south of site towards small stream. This also to illuminate low potential of siltation of small stream.

vi. All hazardous materials must be stored appropriately to prevent these contaminants from entering the water environment;

vii. All excess materials brought onto site for construction to be removed after construction.

viii. No open trenches or mounds of soils to be left.

ix. Rehabilitation plan for disturbed areas to be compiled and implemented as part of the construction phase.

x. Re-seeding of bare areas with local indigenous grasses to be part of the rehabilitation plan. No exotic species to be used for rehabilitation.

xi. No construction vehicles may drive through any streams.

xii. No topsoils or temporary soil mounds, concrete, sand, etc. may be stored temporary during the construction phase within 50m of the small stream south of the study area.

xiii. Only existing access roads may be used to and from construction site (study area).

xiv. Dust suppression must be implemented during the construction phase, as there are a number of nearby dwellings, businesses and busy roads.

Diversion of storm water run off -

i. Surface water that historically would have flowed into (or presently does flow into) nearby watercourses, such as the small stream south of Option 1 and Option 2, must not be rerouted (diverted) away from these watercourses. In other words, the stream must continue to be fed with inflow as occurred prior to any construction activities.

i. The access road must not impede surface stormwater flow along natural contours and gradients. The flow of surface water will be from north to south and eventually into the small stream south of Option 1.

ii. Construction of the access road must preferably take place during the dry, winter months when there is minimal surface storm water flow. However, this is not obligatory.

iii. Culverts or pipes must be used under the road. There is no need to construct a bridge, as there are no distinctive water channels such as drainage lines or streams that are to be traversed.

O: Low (+ ve)

Low

		<p>iv. The stormwater pipes / culverts under the road must be in alignment with the overall storm water management systems of the Filling Station, R114 and K33. In other words, these systems must work together and not against each other. For example, Stormwater outflow from the Filling Station must be accommodated by the stormwater system of the access road.</p> <p>Obstruction of storm water flow into watercourses -</p> <p>i. Proper and sufficient capacity stormwater drains and under road box culverts to be constructed to prevent impeding any surface stormwater run-off through the area and into the small stream south of the site.</p> <p>ii. Preferably construction should take place during the dry months, when rain and storm water run-off in the area is at a minimum. However, this is not always possible and in such cases care must be taken not to completely obstruct (impede or divert) surface water flow.</p> <p>Destruction of delineation watercourses -</p> <p>i. No activities may take place in the delineated stream & riparian area south of Option 1.</p> <p>ii. No activities may take place in the delineated buffer zone around the stream.</p> <p>iii. No temporary lay down areas or site office, etc. may be located within the buffer zone.</p> <p>iv. No vehicles or construction personnel may move through the buffer zone. The area, must be clearly demarcated as a buffer zone (no-go area) during the construction phase. And strict instructions must be given to contractors to stay out of the area. The area must be monitored.</p> <p>v. The buffer zone is adequate in terms of protecting the integrity of the stream</p> <p>vi. No access road may be constructed (even if only temporary) through delineated watercourses or buffer zones.</p> <p>vii. Only existing access roads may be used to access the construction site or only access from</p> <p>Increased flow velocity of surface water run-off causing erosion and potential siltation in the small stream south of the project site (study site) -</p> <p>i. The erosion potential of the site is moderate at present and will probably be lower once the K33 road is finalised in the area of the study site. Notwithstanding, due to the presence of sandy soils and some steep gradients, erosion and stormwater run-off must be monitored</p>		
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		<p>during the construction phase. A site-specific stormwater manage plan must be compiled for the access road, which needs to merge and align with that of the K33 road.</p> <p>ii. The velocity of the water flowing under the road must be reduced at point of outflow to reduce erosion potential.</p> <p>iii. Concrete shoulders / edges must be constructed at outflow to prevent erosion of soil and potential siltation of watercourses. Velocity reducing structures can be incorporated in these areas as well.</p> <p>Fringe impacts arising from construction phase -</p> <p>i. The construction footprint must be kept as small as possible.</p> <p>ii. No activities may take place within buffer zones or delineated watercourses.</p> <p>iii. All mitigating measures as recommended must be implemented and will reduce any measurable fringe impacts arising from the project and related activities.</p> <p>iv. The work area, including temporary laydown areas, site offices, etc. must be clean-up and rehabilitated to the state prior to commencement of the project.</p> <p>v. The planting of some locally indigenous trees (white stinkwood or karee) are recommended along the access road. This will help offset some of the potential negative impacts and will add environmental value to the site.</p>		
<p>Pollution of Surface Water</p> <p>The site falls within the A21C quaternary catchment.</p> <p>There are no major rivers present on the study site, with the closest river being the Klein-Jukskei, which is approximately 1,3km east of the study site. The Klein - Jukskei flows north and into the Jukskei River. There are however, a wetland seep, drainage lines and stormwater drains and run-off present on the study site. There is also a small stream to the east of the site. All of the water in these watercourses and artificial stormwater drains and channels eventually feed into the Klein-Jukskei River and the ground water table.</p> <p>There is a small stream and riparian area at the southern most point of the study site. Erosion and the apparent historical excavation of soils have had negative impacts on the shape and nature of the stream. On the east of the study site (north of the small stream, is a wetland (seep) area. The wetland is highly impacted on by years of cultivation, construction of camps, cutting of the grass and grazing of livestock. North of the natural wetland area is an artificial wet area that has formed due to the concentrated channelling of stormwater discharge into that area. The stormwater discharge is predominantly from the east and west of the R114. The discharge point is at a natural low in the area. Much of this water flows and seeps downward into the seep wetland further south in the study site. This has also caused the natural wetland seep to be wetter for longer periods than would naturally have occurred.</p>				

Much of the soils in the study area and surrounding area are sandy and gravely with a moderate to high drainage potential. This, along with the natural slope and shallow granite bedrock (in localised patches), leads to the formation and presence of some wetland seeps in the area. On flatter, sandy areas (or on slopes with deeper bedrock) surface water drains away quicker without the formation of any wetlands.

Nature of impact at Construction level:

The proposed development will not impact directly on the wetland that occurs south east of the site. The site is slightly sloped with an east aspect which means the risk of significant run off velocity from the site is low to moderate. Appropriate mitigation measures will be required during the construction phase.

Construction Impact	Rank
Extent	Local
Intensity	High
Duration	Short
Probability	Definite

Nature of impact at Operational Level:

The establishment of hard surfaces on the site will increase the rate of storm water run off and thus potentially increase the risks for localized flooding and erosion. This risk is however small owing to the small extent of the site as well as landscaped nature of the site.

Storm Water will flow out of the attenuation tank and drain into the municipal storm water pipe and into the Klein Jukskei water course. This could contaminate the Jukskei River. This water will also circumvent / prevent surface water recharge of the hill slope seep wetland and this could result in the wetland drying up.

The envisaged storm water plan provides for the drainage of storm water along the road that will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system (**Appendix G7**).

These measures will allow for the adequate control of the storm water run off during the operational phases of the project.

C. Medium (- ve)

Surface water run off must be managed to prevent siltation.

Berm must be erected at low points to cause water to reduce velocity and drop sediment.

Hay bales must be used to reduce silt from run off waters

An attenuation pond of suitable size must be established to prevent localized flooding as well as act as a silt trap.

Alternatively, a series of boulders with flow reduction blocks must be used to reduce the velocity of storm water run off at the head wall.

C. Medium

Low

O. Medium (- ve)

O. Low

Low

<table border="1"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Medium</td> </tr> <tr> <td>Duration</td> <td>Short</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table>	Construction Impact	Rank	Extent	Local	Intensity	Medium	Duration	Short	Probability	Probable					
Construction Impact	Rank														
Extent	Local														
Intensity	Medium														
Duration	Short														
Probability	Probable														
<p>The Loss of Ecological Habitat (Flora & Fauna):</p> <p>The site was investigated in the winter (July 2020) and summer of 2020 (November) by a professional scientist certified in botanical and ecological assessments (Appendix G4).</p> <p>The site lies within the Egoli Granite Grassland (Rutherford and Mucina 2006) vegetation type. Ecosystems that are threatened and in need of protection are listed in terms of Notice GN 1002 under Section 52 of the National Environmental Management Biodiversity Act (No 10 of 2004). The Egoli Granite Grassland ecosystem, on which the site is located, is classified as an Endangered Ecosystem.</p> <p>The area assessed is approximately 0.3ha in extent. The historic Google Earth maps show that the eastern part of the assessed area has historically been used for pastures since 2008. The vegetation on the western part has been disturbed since 2008. The reeds have already been on the site since 2008 but may have expanded due to the stormwater runoff from the R114. Regular burning may also have affected the vegetation as well as rubble dumping observed on site.</p> <p>The site supported mostly altered grassland. This means that the original grassland has been altered to such an extent, that only a few of the original species are still present on the site. A patch of reeds have established on the eastern part of the site. Google images indicate that the reeds were already there in 2008, but that the wet area might have expanded before this time due to the construction of the R114. Downhill, a wet altered grassland occurred that has historically been planted with pasture grasses and used for agriculture.</p> <p>Several common bird species were observed such as Hadeda, Indian mynah, Red-eyed dove, Wattled lapwing, Common Thickknee, Stonechat and Crowned lapwing. It is likely that smaller mammal species such as Slender Mongoose</p>															

<p>(<i>Galerella sanguinea</i>), Scrub hare (<i>Lepus saxatilis</i>) and Yellow mongoose (<i>Cynictis penicillata</i>) still occur in the area. Busy roads and human activity on small holdings would however have scared off larger and more sensitive species such as Honey Badger.</p> <p>The following bird species are prioritized by the GDARD: Cape Vulture, Blue Crane, Lesser Kestrel, African Grass- Owl, African Marsh-Harrier, White-backed Night-Heron, White-bellied Korhaan, Martial Eagle, African Finfoot, Lesser Flamingo, Secretarybird, Black Stork, Half-collared Kingfisher and Greater Flamingo. Some of these species have been recorded in the pentad (9x9 km – SABAP2) area in recent years. Species recorded in the pentad area for which no habitat occurred on the site assessed, include African Marsh harrier, African Finfoot, Greater Flamingo and Halfcollared kingfisher. The use of the lower lying wet grassland for grazing, has further made it unsuitable for Grass Owl, but surrounding existing grassland can still be used for hunting ground for this latter species. It has last been observed in the area in 2017.</p> <p>It is highly unlikely that protected or threatened flora or mammal species will occur on the proposed development site due to the altered habitats observed as well as the human activity and traffic in the area.</p> <p>Under C-Plan version 3 (latest version i.e. version 3.3), no specialist studies for any species of amphibian are requested for consideration in the review of a development application. Giant Bullfrog, which has been recorded in the area, should therefore not specifically be considered as a red flag. As per the C-Plan approach, the conservation of the Giant Bullfrog and of amphibians in general will be met by the protected area network as well as the designation of priority habitats i.e., pans or quaternary catchments, with associated restrictions on land use.</p> <p><u>Nature of Impact at Construction Level:</u> The potential impacts on the ecology of the site will include activities such as site clearance and earthworks that will level the site. This will remove the largely transformed parts of the site and may impact on the Hypoxis population in the north west of the site.</p> <p>The vegetation along the second access road was found to be fragmented and altered by the construction activities on the filling station site as well as with the construction of the K33. This has left only remnants of the original vegetation intact in garmented patches here and there. Limited rural land will be left around the filling station after the construction of both the filling station and the K33.</p> <p>Sensitive faunal species can still be found to occur in rural areas such as is found in rural parts of Nietgedacht area. Sensitive species are however often more shy and sensitive to disturbance, resulting in such species leaving areas where people, dogs and traffic may affect their peace</p> <p>The most significant natural features on the site include the closely situated Orange listed plant population. The large population of <i>Hypoxis hemerocallidae</i> plants observed on site will largely fall outside the access road, but with detailed layout plans, it should be confirmed that specimens of this population will not be affected.</p> <p>Should individual plants be affected by the access road, they should be</p>	<p>C. Low (-ve)</p>	<p>The impact is of Low significance.</p> <p>During construction the ECO should ensure that vegetation is re-established as part of the landscape plan to be implemented.</p> <p>The most significant natural features on the site include one Orange listed plant species.</p> <p>The Orange Listed plants need to be transplanted according to the GDARD medicinal plant policy.</p> <p>Effort should be made to include the plant on site in landscaped areas.</p> <p>Additional mitigation measures are recommended to include:</p> <p>Development of an appropriate storm water managed plan that ensures that storm water run off during the construction and operational phases of the site do not erode the site, wash silt into water courses and areas that may drain into water courses;</p>	<p>C. Low to None</p>	<p>Low</p>
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transplanted in an appropriate way to the landscaped parts of the site and in accordance with the Medicinal Plant policy where roots and soil will be removed, and an anti-bacterial spray will be used on the roots from the time that the plants are removed from the one location to the other. Sufficient land will however be available in the landscape part of the filling station for the immediate transplanting of the Hypoxis plants.

Direct impacts of the development on the site and adjoining area will include the loss of indigenous vegetation species as the site is cleared as well as impacts associated with storm water run off that may erode parts of the site.

The generally transformed status of the vegetation as well as low biodiversity suggests that this impact will be of Low Significance. The change to the habitat functionality as a result of these impacts is likely to be of Low significance owing to the general transformed state of the site as well as the low species richness and well as limited biodiversity on site. The site also lies within an area rapidly being transformed into an urban area with the future expansion and development of a double carriageway proposed adjacent to the site.

Additional impacts are also likely to include the increased risk of exotic plant invasion as well as risks with elevated erosion, siltation and sediment in the downslope areas.

Construction Impact	Rank
Extent	Local
Intensity	Low
Duration	Short
Probability	Probable

Nature of Impact at Operational Level:

Operational impacts are likely to include edge effects because of the possible risk of exotic plants invading adjacent areas, as well as risks with increased run off impacting on the downslope areas (including the wetland).

Operation Impact	Rank
Extent	Local
Intensity	Low
Duration	Permanent
Probability	Improbable

Development of a landscape plan around the site that includes indigenous species.

The landscaping of the site must include indigenous plant species.

Exotic plants must be regularly removed from the site as well as surround areas.

O. None

O. None

Low

#2 ALTERNATIVE LAYOUT: CONSTRUCTION OF ROAD WITH PARTIAL RETAINING WALL AND EMBANKMENT & CULVERT – see FIGURE 12

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p>Impacts on Soils and Geology of the area:</p> <p>A specialist assessment of the geology and soil on site was compiled by an engineering geologist (refer to Appendix G2),</p> <p>From the 1:250 000 Geological Map 2526 Rustenburg, the base rocks comprise Swazian Era granites, granite gneiss, homogeneous and porphyritic granodiorite.</p> <p>The soils encountered on site comprise silty clayey sand (transported material) and gravelly silty sand with ferricrete nodules underlain by hardpan ferricrete to the northern side of the property and soft rock granite to southern side of the property.</p> <p>The soil profiles present on site can be summarised as follows:</p> <ul style="list-style-type: none"> • 0.0 – 0.4 m Topsoil • 0.4 – 0.6 to 1.3 m Transported • 0.6 – 0.9 to 2.5 m Residual to soft rock granite/hardpan ferricrete <p>No groundwater water seepage was encountered in any of the test pits, however the presence of the ferricrete nodules is a good indicator that groundwater seepage can be present during a rainy period.</p> <p>Construction material</p> <p>The residual material from TP5 was tested for use as construction material. With a CBR value of 23, compacted to 95 % Mod AASHTO, this material classifies as a G8 and is not suitable as a structural fill material. This material can only be used as a general fill material.</p> <p>Foundation conditions</p> <p>Foundations on the residual granite at a depth of 1.8m can be designed for a bearing capacity of 250 kPa.</p> <p>The estimated maximum bearing capacity is 300kPa on the hardpan ferricrete layer at 1.2m below natural ground level.</p> <p>Residual granite is characterised by a collapsible structure therefore compaction of the base material after excavation should be done to eliminate collapse and differential settlement.</p> <p>Precautions must be taken to protect the foundations from moisture ingress.</p>				

<p>Records for site specific aquifer parameters (through previous aquifer tests) were not available but common hydraulic conductivity values for granite ranges between 5.8×10^{-6} to 3.2×10^{-5} m/s (0.5 to 2.7 m/d).</p> <p>Groundwater Levels and Flow: Groundwater level depths were deduced from the DWAF GRA2 Mean Water Level Depth Map (2005). According to the maps, the average groundwater depth ranges from 11 to 15 mbgl (Appendix A – Figure 9).</p> <p>Groundwater Recharge: Groundwater recharge was determined from the Vegter Map and DWAF GRA2 Project Recharge Depth Map (Appendix A - Figure 10). The groundwater recharge is estimated to range between 37 and 50 mm/a which accounts for 5 to 7% of the Mean Annual Precipitation.</p> <p>Groundwater Users: Groundwater users in the immediate vicinity (1km radius) of the proposed site were identified during the hydrocensus. The users are dependent on groundwater as their only source of water supply. This aquifer is therefore identified as a Sole Aquifer System for the community. Based on this information, it is assumed that groundwater will be the only water source at the proposed filling station.</p> <p>Groundwater Chemistry: The Hydrogeological map of Johannesburg indicates Electrical Conductivity values below 70 mS/m and pH values that are neutral (6.5 to 7.5).</p> <p>The basic groundwater direction determined from the hydrocensus boreholes is towards the east. It must however be noted that some of the water levels are not measured on rest water level due to some boreholes being used for water supply.</p> <p>The effective catchment data is as follows:</p> <ul style="list-style-type: none"> • Effective catchment area is 20.1 km² • Population is 19 733 therefore creating a Basic Human Need of 0.18 Mm³/a • Recharge is 0.83 Mm³/a • Baseflow is 0.5 Mm³/a • Current Abstraction is 0.04 Mm³/a • The Groundwater Allocation is therefore calculated as 0.15 Mm³/a • Current Abstraction is less than the Groundwater Allocation • Stress index is low and falls under Category A (Unstressed) • The underlying dyke is usually resistive and non-penetrable. Naturally this rock will prevent contaminated water from seeping into the groundwater apart from the baked contact zone with the host rock. <p>Nature of Construction Impact: Construction impacts are not likely to affect the underlying aquifer except in the event of improper construction activities.</p> <p>These may include the illegal discharge of waste or water containing waste onto the site or into the surrounding environment, the inadequate use of ablation facilities or the illegal discharge of materials that could contaminate the site (chemicals, paints, solvents or solids).</p> <p>The low number of staff and limited extent of the development footprint suggest</p>	<p>C. Medium (-ve)</p>	<p>To minimize the pollution risk of the above-mentioned threats, the following management plan should be implemented:</p> <p>Domestic waste should be placed in a water tight container and disposed of off-site on a regular basis.</p> <p>Drip trays must be used to contain impacts caused by leaking vehicles.</p>	<p>C. Low</p>	<p>Low</p>
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that this impact will be unlikely and/or the impact will be of a low magnitude or extent.

Construction Impact	Rank
Extent	Local
Intensity	Low
Duration	Short term
Probability	Improbable

Nature of Operational Impact:

The shallow groundwater table, high recharge rates (up to 50mm/a) and possibly high transmissivity rate makes the aquifer vulnerable to pollution in the event of significant contamination.

Operation Impact	Rank
Extent	Regional
Intensity	High
Duration	Medium
Probability	Improbable

O. Medium (- ve)

Appropriate facilities must be used to store, handle and manage fuels, solvents and organic materials stored on site.
No wastes may be permitted to run off the site or contaminate watercourses near to the site.

O. Low

Low

Impacts on the Topography of the site.

The site has a shallow slope and north east aspect. The site is situated more or less in the 1400 contour with a high point at 1407masl and low point of 1397masl.

The general topography of the area and the study site is that of moderately undulating plains, low hills and shallow lowlands. Rocky outcrops or rock sheets with a mix of shrubs or small trees are scattered throughout the open grasslands or the area (Barnard, 2000).

No mountainous areas, deep valleys or other landscape features occur on the site or within the surrounding area.

Nature of Impact at Construction Level:

During the primary construction phase, the site will have to be leveled and prepared for the actual construction of the aboveground structures. This activity will generate dust and give rise to sloped areas that may erode. This alternative will require that more fill be worked into the site and a greater area will need to be covered.

Construction Impact	Rank
Extent	Local
Intensity	Medium
Duration	Short
Probability	Probable

C. Medium (- ve)

The slopes of the infill must be adequately prepared to minimize erosion impacts. This will require hydroseeding.

C. Low

Low

O. Low (-ve)

Landscaping plan to be implemented.

O. Medium (Positive)

Low

Nature of Impact at Operational Level:

The possible impacts/changes to the topography during the operational phase includes minor height difference between the new structure and the structures of the surrounding areas.

Operation Impact	Rank																								
Extent	Local																								
Intensity	Medium																								
Duration	Long term																								
Probability	Definite																								
Impacts on the Land Value of the Development Property																									
<p>The site is currently located within a peri-urban area that is rapidly undergoing transformation. Currently the predominant land use remains plots of rural residential land use upon which several businesses typically are operated. A few more formalized business activities occur within the area and close to the intersection of the Dieplsoot Road and Cedar Road. The site lies near to Fourways, Lanseria, Cosmo City and Dieplsoot, each of which are currently expanding.</p> <p>The current construction of the dual carriage way Cedar Road (P33) will no doubt create demand for land at this intersection.</p> <p><u>Nature of Impact at Construction Level:</u> The proposed development properties consist of agricultural land which is susceptible to informal settlement, dumping and crime. Construction activities, in the short term, may lead to lower property values owing to increased levels of dust, pollution, risk of crime and noise.</p> <table border="1"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Long term</td> </tr> <tr> <td>Probability</td> <td>Definite</td> </tr> </tbody> </table> <p><u>Nature of Impact at Operational Level:</u> The proposed development will enhance the current state of the property. Developing the land would diminish the possibility of it being subjected to informal settlement / dumping ground. The access road will offer convenient access to the approved Filling Station site located on Portion 108 Nietgedacht 535JQ. This will significantly increase the value of this property,</p> <table border="1"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Long term</td> </tr> <tr> <td>Probability</td> <td>Definite</td> </tr> </tbody> </table>		Construction Impact	Rank	Extent	Local	Intensity	Low	Duration	Long term	Probability	Definite	Operation Impact	Rank	Extent	Local	Intensity	Low	Duration	Long term	Probability	Definite	C. Medium (+ ve)	No mitigation measures are proposed.	C. Medium	Low
Construction Impact	Rank																								
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Duration	Long term																								
Probability	Definite																								
		O. High (+ ve)	No mitigation measures are proposed	O. High	Low																				

Impacts on Traffic

The following conclusions and recommendations can be made based on the findings of a Traffic Impact Assessment report (**Appendix G6**) that was compiled for the filling station and proposed second access road:

The study site was previously registered as Portion 71 and Portion 108 of the Farm Nietgedacht 535-JQ and has been consolidated to Portion 179 of the Farm Nietgedacht 535- JQ for the purpose of the proposed Filling Station. An In-Principle Access application and Traffic Impact Assessment was undertaken by CHRISEN for the proposed Filling Station on Portion 179 of the Farm Nietgedacht 535-JQ during December 2018 and subsequently approved by the Gauteng Department of Roads and Transport (GDRT) and Johannesburg Road Agency (JRA). Furthermore, a Section 7 report as per the requirements of the Gauteng Transport Infrastructure Act (GTIA), 2001 was undertaken to address the planned and approved K52 and K33 route in relation to the application site.

The Traffic Impact Assessment was approved for a Marginal Access (left-in, left-out configuration) off R114 (the planned K33) at approximately 145,0 m from the intersection of R114 and 6th Road. Portion 179 of the Farm Nietgedacht 535-JQ has an extent of 10611,705 m2 and is to comprise of the following:

- Convenience store with canopy: 130 m2

Access to the proposed Filling Station will be taken off R114 (future K52) and future K33 provincial road, as soon as it has been constructed. The proposed accesses are to be designed according to the Gauteng Department of Roads and Transport Guidelines for Access to Filling Stations (BB2 Manual).

It is proposed that the access to the proposed Filling Station be taken off R114 (K52) at approximately 145,0 m south of the intersection of R114 and 6th Road and be designed as follows:

- Left-in, Left-out access configuration (marginal access)
- A kerbed island should be provided at the access separating the left-in, left-out manoeuvre.
- A kerbed median should be provided to separate northbound and southbound traffic
- The access should accommodate a SU+T vehicle (14,0 m)

It is proposed that the access to the proposed Filling Station be taken off the planned K33 provincial route at approximately 145,0 m east of the intersection of R1114(future K52) and K33 provincial road, as soon as the road has been constructed. The access will be designed as follows:

- Left-in, Left-out access configuration (marginal access)
- A kerbed island should be provided at the access separating the left-in, left-out manoeuvre.
- A kerbed median should be provided to separate northbound and southbound traffic

<ul style="list-style-type: none"> · The access should accommodate a SU+T vehicle (14,0 m) · It is proposed that a right of way servitude be provided for the future alternative access to Portion 179 Nietgedacht 535-JQ. <p>A 6% interceptor rate will be applied, based on current information received from surrounding filling station sites. It is important to note that a Filling Station is an interceptor and not a generator of traffic. Therefore, most of the site traffic will be intercepted from the adjacent roads past the site and only a minimal new traffic can be expected from the surrounding road network as new or primary trips.</p> <p>The proposed Filling Station development is expected to generate approximately 200 and 536 trips during the AM and PM peak periods respectively.</p> <ul style="list-style-type: none"> · The proposed development will generate approximately 2290 trips during the entire weekday · The proposed Filling Station development on Portion 179 of the Farm Nietgedacht 535-JQ is not expected to have any negative impacts on the immediate or surrounding road network. <p>The proposed Filling Station is not regarded as a trip generator, but rather as an interceptor of traffic. It is proposed that a 2,0 m wide paved sidewalk be provided along the site frontage boundary of Portion 179, Nietgedacht 535-JQ which will ease and formalise the movement of pedestrians between the site access and public transport facilities. The site is to be provided with the minimum number of parking bays in accordance with the City of Johannesburg Town planning Scheme. The parking bays will be 90 degrees, having dimensions of 5,0 m long by 2,5 m wide and a minimum aisle width of 7,5 m. This is in line with the DOT (1995) parking standards. According to the BB2 guidelines, the proposed filling station should not have more than 15 parking bays.</p> <p>A vehicle manoeuvring assessment was undertaken for the development site using the Auto-TURN software. The results of a heavy vehicle (fuel tanker truck) simulation indicated that the site will be able to accommodate the truck at the ingress / egress and circulation within the site.</p> <p>It is therefore recommended that the proposed new Filling Station development on Portion 179 of the Farm Nietgedacht 535-JQ be approved from a traffic engineering point of view.</p> <p><u>Nature of Impact at Construction Level:</u> The approved filling station site is currently under construction although this has only included site clearance. The K33 is currently under construction. Access to the site is largely confined by the construction activities along the R114 that is also currently being upgraded. The K33 will only become operational toward mid 2021.</p> <p>Construction activities are likely to contribute to road congestion and traffic delays on the R114 and K33 in the short term. Construction vehicles are likely to use the K33 to access the site. Adequate warning signs and road safety measures must therefore be provided to ensure for the safety of road users during the construction phase.</p>	<p>C. Low (- ve)</p>	<p>Ensure the roads are constructed to meet the requirements of the GDRT/JRA.</p> <p>The developer will be required to provide adequate road warning signs and implement appropriate measures to ensure that road users along the R114 and K33 remain safe from traffic accidents.</p> <p>Delivery times to the site must not occur during peak traffic times.</p>	<p>C. Low</p>	<p>Low</p>
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<table border="1"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Short</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table>	Construction Impact	Rank	Extent	Local	Intensity	Low	Duration	Short	Probability	Probable			<p>Flagmen must be used to control access to the site and control vehicles travelling along the roads.</p>		
Construction Impact	Rank														
Extent	Local														
Intensity	Low														
Duration	Short														
Probability	Probable														
<p><u>Nature of Impact at Operational Level:</u> The proposed Filling Station development on Portion 179 of the Farm Nietgedacht 535-JQ is not expected to have any negative impacts on the immediate or surrounding road network. The proposed Filling Station is not regarded as a trip generator, but rather as an interceptor of traffic. Like-wise the use of the access road during the operational phases is unlikely to give rise to any significant traffic issues or concerns assuming the relevant road safety protocols are in place to circumvent accidents or unsafe conditions. This is because the road will be built to meet with GDRT/JRA requirements and adequate site safety distance and space exists for road users to access the approved filling station site. The development proposes the use of Armco Barriers and other safety mechanisms to minimize the risks and significance of accidents.</p>		<p>O. Low (-ve)</p>	<p>Appropriate road safety signs must be erected to ensure that road users are aware of speed limits, direction changes and entry/exit points along the R114 and K33.</p> <p>The ARMCO barriers must be installed to circumvent accidents.</p> <p>Adequate lighting (down lights) must be provided for along the road to ensure access points are visible after dusk.</p>	<p>O. Low</p>	<p>Low</p>										
<table border="1"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Long</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table>	Construction Impact	Rank	Extent	Local	Intensity	Low	Duration	Long	Probability	Probable					
Construction Impact	Rank														
Extent	Local														
Intensity	Low														
Duration	Long														
Probability	Probable														
<p><u>Impacts on Surrounding Land Values:</u></p>															
<p>The site and the majority of the surrounding land portions are zoned for agricultural use and used for rural residential and/or business uses. However the general area is in a state of transition and change. A number of business activities occur on adjacent stands and the development of the Cedar Road Intersection (R114/K109) will no doubt continue to support the development of similar land uses.</p> <p>The soon to be developed K52 dual carriage way road will similarly spur on development in this area as will the current construction of the K33 (Cedar Road).</p>		<p>C. Medium (-ve)</p>	<p>Measures that reduce the impact of construction activities on the site are required. These include noise and dust abatement as well as management of crime, health, safety and traffic flow.</p>	<p>C. Low</p>	<p>Low</p>										
<p><u>Nature of Impact at Construction Level:</u></p>															
<p>During the construction phase, the site may become an eyesore to the residence and passerby who will have opportunity to slowly adjust to the changes. This may temporarily lower land values.</p>															

<table border="1"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Short</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table> <p>Nature of Impact at Operational Level: It is envisaged that the proposed development will have a positive impact on the surrounding land values. This includes increased land value, job creation, and infrastructure improvement, reduction in litter and illegal dumping and added security.</p> <p>It is foreseen that an economical viable development will be provided which will complement existing land uses in the area.</p> <p>The traffic model suggests that there is demand and feasibility for the sustainable development of the site without significantly removing trade from the existing stations.</p> <p>The envisaged growth in vehicle use along Cedar Road and the K52 is further likely to increase the potential customer base in the area. Continued urban expansion, in nearby areas that are currently undeveloped, will further drive the feasibility of the sites as well as surrounding competitor markets.</p> <table border="1"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Regional</td> </tr> <tr> <td>Intensity</td> <td>Medium</td> </tr> <tr> <td>Duration</td> <td>Long</td> </tr> <tr> <td>Probability</td> <td>Definite</td> </tr> </tbody> </table>	Construction Impact	Rank	Extent	Local	Intensity	Low	Duration	Short	Probability	Probable	Operation Impact	Rank	Extent	Regional	Intensity	Medium	Duration	Long	Probability	Definite	<p>O. Medium (-ve)</p>	<p>Continued management of the site will be required to ensure that adjoining land owners are not impacted upon by impacts that will reduce the ambient environment such as – Noise, Dust, Crime, Health, Safety, Traffic Congestion</p> <p>The site must be maintained to ensure that the facades, features and character of the site remains in a good working order and appearance.</p>	<p>O. Low</p>	<p>Low</p>
Construction Impact	Rank																							
Extent	Local																							
Intensity	Low																							
Duration	Short																							
Probability	Probable																							
Operation Impact	Rank																							
Extent	Regional																							
Intensity	Medium																							
Duration	Long																							
Probability	Definite																							
<p>Damage to Cultural Historic Features:</p> <p>A specialist cultural historic assessment (Appendix G5) located no archaeological sites or materials or cultural historic features on the site.</p> <p>In terms of Section 34 of the NHRA this feature’s potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and it is therefore of no heritage significance, however sites like these might contain unmarked graves and if impacted on these areas must be monitored during construction.</p> <p>No archaeological sites or material was recorded during the survey and based on the SAHRIS Paleontological Sensitivity Map, the area is of insignificance paleontological sensitivity. Therefore, no further mitigation prior to construction is recommended in terms of Section 35 for the proposed development to proceed.</p> <p>In terms of Section 36 of the Act no grave sites were identified in the study area although numerous graves have been recorded on the larger property. If any additional graves are identified they should ideally be preserved <i>in-situ</i> or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The study area is surrounded by industrial and residential developments and road infrastructure developments and the proposed road development will not impact negatively on significant cultural</p>																								

Impacts on the Aesthetic Quality / Visual Character of the site & area:

The surrounding areas generally comprise a mix of rural residential land use and business. Cedar Road and the existing Diepsloot/Krugersdorp R114 both carry high volumes of traffic, especially at peak times, and this has changed the general character of the area to be more business related, and less rural.

The soon to be upgraded K52 (north and south as well as east and west) will undoubtedly change the character of the area to become more urbanized and developed. This is likely to include medium to high density residential land use, businesses, light industrial and other land uses (e.g. retail).

Similarly the current construction and imminent operation of the new K33 (Cedar Road) will vastly alter the current rural nature and character of the site and thus lead to a more urban form.

Nature of Impact at construction Level:

Adjacent land owners could possibly complain about their views being obstructed by the proposed development. Soil heaps could cause unsightly views as construction continues.

Construction Impact	Rank
Extent	Local
Intensity	Low
Duration	Short term
Probability	Probability

Nature of Impact at Operational Level:

The impact would be of a positive nature and support the current development of the K33 Road. However, the site will operate 24 hours for 7 days and thus pose concerns with light pollution or visual intrusion, especially for surrounding properties.

Construction Impact	Rank
Extent	Local
Intensity	Medium to Low
Duration	Long term
Probability	Definite

C. Medium (- ve)

Construction activities must be screened from adjacent land owners with shade cloth or something of similar nature where views of such owners are likely to be disturbed during the construction period.

Dust suppression techniques should be implemented especially on windy days.

Remove rubble and construction rubbish offsite as soon as possible.

C. Low

Low

O. Medium (-ve)

A landscape management plan should be implemented as soon as possible.

Down lighting must be used wherever possible to prevent lighting impacting the adjacent land owners.

The buildings, structures and services on the site must be adequately serviced and maintained to ensure they retain the original quality and character of the site.

O. Medium (-ve)

Low

Impacts on Air Quality:

The quality of the air in the general area is fair to good depending on the time of day and the number of vehicles using Cedar Road and the Diepsloot/Krugersdorp Road. Often heavy vehicles use this road under peak conditions and this degrades the quality of the ambient air quality. This road is currently being upgraded that will improve the air quality in the area.

Similarly, the current construction of the K33 gives rise to elevated dust levels that impact negatively on the ambient air quality. The eventual surfacing of this road will improve this condition.

The air quality along the K33 and R114 are both likely to be negatively influenced by air emissions during the operational life of both roads, The access road may contribute to this reduction in air quality long term.

Nature of Impact at Construction Level:

Dust will be generated and existing air pollution levels will increase as a result of construction activities. This alternative will also require more fill to be excavated and worked into the site that will elevate dust impacts.

Construction Impact	Rank
Extent	Local
Intensity	Medium
Duration	Short Term
Probability	Definite

Nature of Impact at Operational Level:

Smells can be expected from waste management and from the convenience store.

Minimal amount of dust can be expected from the constant vehicle movements.

Vehicle emissions could potentially decrease the ambient air quality of the site due to the cumulative impact of vehicles using the K33, R114 and new access road.

Operation Impact	Rank
Extent	Local
Intensity	Low
Duration	Short term
Probability	Probable

C. Medium (- ve)

Appropriate dust abatement measures must be implemented to prevent dust pollution.

Un-surfaced access roads must be watered regularly to prevent wind-blown dust.

Vehicles transporting friable must be covered and speed regulating signs of 35km/h should be in place.

Construction should preferably take place during summer when wind and dry conditions are not eminent.

Mini storage depot for waste should be placed away from the residential units and covered at all times to minimize fumes. Disposal of waste should be done regularly at approved landfill sites.

Paved areas should be kept free of dust, through regular sweeping and use of water.

C. Low

Low

O. Low (- ve)

O. None

Low

Impacts on Health, Safety and Security:

The area generally has a high incidence of motor vehicle accidents owing to the high volume of traffic on the roads and the poor condition of the road surface. The configuration of the road ways further complicates turning events and this, along with high speed, contributes frequently to fatal accidents.

The K52 is soon to be upgraded in an attempt to reduce these impacts and this will significantly improve safety on the roads.

Owing to the high number of vehicles using the roads, a high number of pedestrians and other people occur in the area and this reduces the security of people, businesses and properties in the area.

Nature of Impact at Construction Level:

Construction activities may attract undesirable characters. Misuse and lack of skill in handling tools could result in accidents. Similarly construction of the fill and the excavation of trenches for the retention walls may give rise to increased opportunities for fall risk, side wall collapse and/or accidents.

Operation Impact	Rank
Extent	Local
Intensity	Low
Duration	Permanent
Probability	Probable

C. Medium (- ve)

Building rubble and excavation could pose safety risks and the rubble should be removed on a regular basis. Excavated areas should be clearly demarcated to prevent injuries.

All domestic waste generated by the contractor's activities at the contractor's camp must be stored in either refuse bins (i.e. steel or plastic 210L drums) or in a waste skip.

The burning of waste on site shall be prohibited.

The personnel must be adequately trained and informed in the tasks that they are expected to perform.

All security personal must have radio/cell phone contact with their offices, SA Police Service and the local fire department.

The movement of construction workers through the residential areas or to adjacent properties should be restricted wherever possible.

Adequate fencing should be erected around the construction camps and construction sites.

Adequate ablution facilities must be provided to construction workers during the construction period.

The personnel must be adequately trained and informed in the tasks that they are expected to perform.

Biodegradable waste should be removed on a regular basis to prevent the attraction of vermin that could pose a health risk.

All security personal must have radio/cell phone contact with their offices, SA Police Service and the local fire

C. Low

Low

<p>Nature of Impact at Operational Level: The access road is not likely to present operational Health & Safety impacts. However high speed accidents or the failure to abide by road traffic laws may give rise to road users having accidents whilst using the access road. This could include vehicles crashing through the Armco barriers or pedestrians crossing a busy dual carriage way road and being involved in accidents.</p> <table border="1" data-bbox="120 376 477 531"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Short term</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table>	Operation Impact	Rank	Extent	Local	Intensity	Low	Duration	Short term	Probability	Probable	O. Medium (- ve)	<p>department. All staff must be inducted and drills done on how to handle security threats.</p> <p>Adequate warning signs must be erected at key points along the access road to forewarn the public of the risks of accidents. These must follow requirements as set by the JRA.</p>	O. Low	Low
Operation Impact	Rank													
Extent	Local													
Intensity	Low													
Duration	Short term													
Probability	Probable													
<p>Impacts Associated with Noise and Vibration</p> <p>The area generally has a low ambient noise impact as it largely comprises rural residential land uses. However the high volume of cars and trucks that use the roads in peak and sometimes off peak times, means that vehicle noise and vibration impacts are apparent.</p> <p>Nature of Impact at Construction Level: Due to the increase in traffic and use of construction machinery the noise levels will increase for the duration of the construction phase. The construction phase will require the use of blasting and heavy impact construction that is likely to give rise to vibration impacts. However the site is distant from adjacent properties and separated by a provincial road. The construction of the road may require compaction that could impact on buildings or structures within 500m of the site.</p> <table border="1" data-bbox="120 911 477 1066"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Short Term</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table> <p>Nature of Impact at Operational Level: It can be expected that there will be a Moderate to Low increase in noise levels from motorists and consumers. A certain level of noise can be expected due to normal operational procedures. Due to the fact that the sites are located along</p>	Construction Impact	Rank	Extent	Local	Intensity	Low	Duration	Short Term	Probability	Probable	O. Low (- ve)	<p>Limit construction time to the following hours: 06:00 to 18:00 during the week; 07:00 to 13:00 on Saturdays and no construction activities on Sundays or public holidays.</p> <p>Where necessary, noise mufflers should be used.</p> <p>Construction workers should abide by the local “by-laws” regarding noise.</p> <p>Should blasting be required due to hard rock occurrence, covered blasting should be used (unless otherwise authorized). All affected adjacent parties must be informed beforehand.</p> <p>All applicable industry standards, as well as SANS requirements, will be enforced and adhered to during construction and operation of the site.</p> <p>The level of noise will be within the acceptable noise levels, therefore no mitigation measures are recommended.</p> <p>Filling station workers should abide by the local “by-laws” regarding noise.</p> <p>Comply to relevant By Laws to control nuisance noise.</p>	O. None	Low
Construction Impact	Rank													
Extent	Local													
Intensity	Low													
Duration	Short Term													
Probability	Probable													

heavily used urban roads, the overall noise is likely to be masked by this background noise.

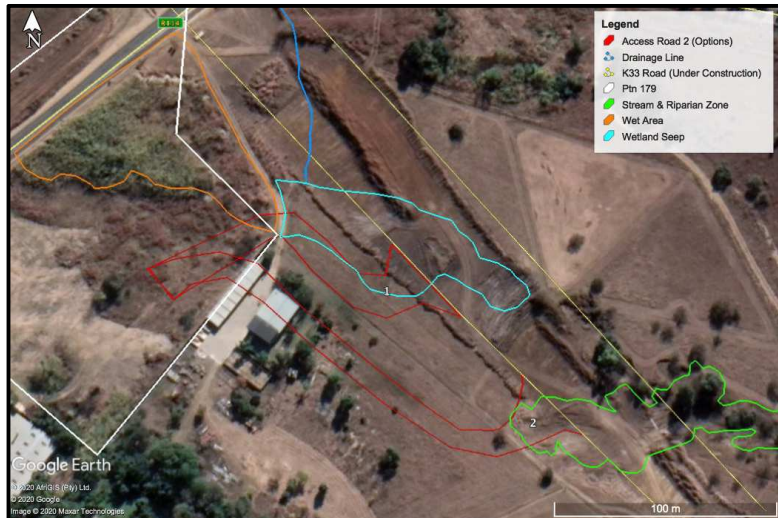
Operation Impact	Rank
Extent	Local
Intensity	Low
Duration	Permanent
Probability	Highly probably

Impacts on Aquatic Ecosystems, Wetlands and Water Courses

A specialist wetland assessment has been compiled to evaluate the potential impact of the development on the site (**Appendix G3**).

Numerous negative impacts on the watercourses within the study site and the surrounding area exist. Historical cultivation of lands in the area and along the main streams and through wetlands was probably the biggest impact over the years, until recently. Presently the rapid growth of urbanisation and associated infrastructure such as roads, buildings, etc. is having further (and even greater) negative impact on the water environment. There are no pristine wetlands (or other watercourses) in the study site or surrounding area. There are also no pristine grasslands in the study area. The method of stormwater channelling and discharge (although necessary and important) has also had a negative impact on the flow and seasonality of the watercourses.

There are no existing natural watercourses within the demarcated area of Access road option 1. A small stream and riparian zone is located immediately south of where Option 1 links in with the K33. The construction of the K33 has significantly affected (and largely removed) all the watercourses that previously were found to occur east of the site.



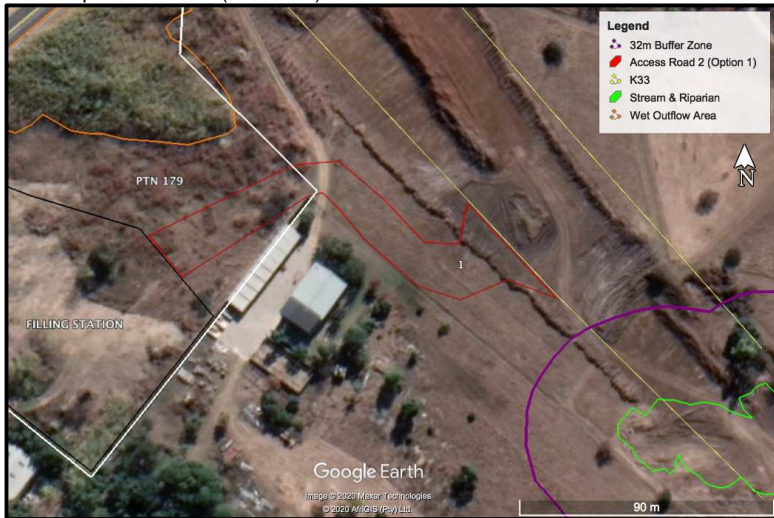
The wetland seep (#1 above) that historically occurred in the study area has been totally destroyed by road construction activities and alignments for the K33. Therefore there are no watercourses, including wetlands or drainage lines, present in the study area. Downslope of the site occurs a stream and riparian area (#2) that will not directly be affected by the development.

No Red Data Aquatic fauna or flora were observed or are likely to occur on site.

The PES rating of the seep cannot be rated as the seep has been excavated by the K33 construction.

The EIA rating of the combined watercourses in the area (that is the water environment) is Category D (Low).

The proposed development of Option 1 (Proposed Layout) is not likely to impact directly on the 32m buffer of the stream and riparian area of the watercourse downslope of the road (#2 above).



Nature of Impact at Construction Level:

The project is small and will have little negative impacts on the remaining watercourses in the area. The biggest potential negative impacts will take place during the construction phase of the short, narrow access road. These will be quickly neutralised after the construction phase.

There are no obvious positive impacts arising from the proposed project. The main remaining watercourse in the area is a small, semi-perennial stream situated approximately 80m south of the study site.

The project and construction phase will have no impact on this watercourse.

Project related potential negative impacts include:

- Diversion of stormwater run-off during construction phase;

C: Medium (- ve)

Impacts associated with the larger project -

- Impacts arising from the proposed access road from off of the K33 are low.
- Any temporary storage, lay-down areas or accommodation facilities to be setup in existing built-up areas or disturbed areas only.
- Ensure small footprint during construction phase.
- Previously proposed buffer areas (no-go zones) around the small semi-perennial stream south of the study site must be implemented and strictly controlled.
- An Erosion Plan to be implemented and monitored

C: Low

Low

- Obstruction of surface water flow into watercourses;
- Destruction of delineated wetlands, stream and riparian zone.
- Increased flow velocity of surface water run-off causing erosion and potential siltation in the small stream south of the project site (study site);
- General negative impacts arising from an increase in vehicles and people in the area.

Construction Impact	Rank
Extent	Local
Intensity	Moderate
Duration	Long
Probability	Probable

Nature of Impact at Operational Level:

The operational impact will largely include the influence storm water flows will have on the functionality of the stream and riparian area downslope of the site. The retention wall option allows more room for the watercourse affected by the K33 to recover and offers a more normalized storm water run off route. This will assist storm water to be directed toward the watercourse south east of the site and thereby retain the normal hydrology in this channel.

Operation Impact	Rank
Extent	Local
Intensity	Medium
Duration	Long
Probability	Possible

O: Low (+ ve)

during construction phase as the erosion potential is moderate. Need to illuminate possible (although low potential) erosion and gully formation south of site towards small stream. This also to illuminate low potential of siltation of small stream.

vi. All hazardous materials must be stored appropriately to prevent these contaminants from entering the water environment;

vii. All excess materials brought onto site for construction to be removed after construction.

viii. No open trenches or mounds of soils to be left.

ix. Rehabilitation plan for disturbed areas to be compiled and implemented as part of the construction phase.

x. Re-seeding of bare areas with local indigenous grasses to be part of the rehabilitation plan. No exotic species to be used for rehabilitation.

xi. No construction vehicles may drive through any streams.

xii. No topsoils or temporary soil mounds, concrete, sand, etc. may be stored temporary during the construction phase within 50m of the small stream south of the study area.

xiii. Only existing access roads may be used to and from construction site (study area).

xiv. Dust suppression must be implemented during the construction phase, as there are a number of nearby dwellings, businesses and busy roads.

Diversion of storm water run off -

i. Surface water that historically would have flowed into (or presently does flow into) nearby watercourses, such as the small stream south of Option 1 and Option 2, must not be rerouted (diverted) away from these watercourses. In other words, the stream must continue to be fed with inflow as occurred prior to any construction activities.

i. The access road must not impede surface stormwater flow along natural contours and gradients. The flow of surface water will be from north to south and eventually into the small stream south of Option 1.

ii. Construction of the access road must preferably take place during the dry, winter months when there is minimal surface storm water flow. However, this is not obligatory.

iii. Culverts or pipes must be used under the road. There is no need to construct a bridge, as there are no distinctive water channels such as drainage lines or

O: Low (+ ve)

Low

		<p>streams that are to be traversed.</p> <p>iv. The stormwater pipes / culverts under the road must be in alignment with the overall storm water management systems of the Filling Station, R114 and K33. In other words, these systems must work together and not against each other. For example, Stormwater outflow from the Filling Station must be accommodated by the stormwater system of the access road.</p> <p>Obstruction of storm water flow into watercourses -</p> <p>i. Proper and sufficient capacity stormwater drains and under road box culverts to be constructed to prevent impeding any surface stormwater run-off through the area and into the small stream south of the site.</p> <p>ii. Preferably construction should take place during the dry months, when rain and storm water run-off in the area is at a minimum. However, this is not always possible and in such cases care must be taken not to completely obstruct (impede or divert) surface water flow.</p> <p>Destruction of delineation watercourses -</p> <p>i. No activities may take place in the delineated stream & riparian area south of Option 1.</p> <p>ii. No activities may take place in the delineated buffer zone around the stream.</p> <p>iii. No temporary lay down areas or site office, etc. may be located within the buffer zone.</p> <p>iv. No vehicles or construction personnel may move through the buffer zone. The area, must be clearly demarcated as a buffer zone (no-go area) during the construction phase. And strict instructions must be given to contractors to stay out of the area. The area must be monitored.</p> <p>v. The buffer zone is adequate in terms of protecting the integrity of the stream</p> <p>vi. No access road may be constructed (even if only temporary) through delineated watercourses or buffer zones.</p> <p>vii. Only existing access roads may be used to access the construction site or only access from</p> <p>Increased flow velocity of surface water run-off causing erosion and potential siltation in the small stream south of the project site (study site) -</p> <p>i. The erosion potential of the site is moderate at present and will probably be lower once the K33 road is finalised in the area of the study site. Notwithstanding, due to the presence of sandy soils and some steep gradients,</p>		
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		<p>erosion and stormwater run-off must be monitored during the construction phase. A site-specific stormwater manage plan must be compiled for the access road, which needs to merge and align with that of the K33 road.</p> <p>ii. The velocity of the water flowing under the road must be reduced at point of outflow to reduce erosion potential.</p> <p>iii. Concrete shoulders / edges must be constructed at outflow to prevent erosion of soil and potential siltation of watercourses. Velocity reducing structures can be incorporated in these areas as well.</p> <p>Fringe impacts arising from construction phase -</p> <p>i. The construction footprint must be kept as small as possible.</p> <p>ii. No activities may take place within buffer zones or delineated watercourses.</p> <p>iii. All mitigating measures as recommended must be implemented and will reduce any measurable fringe impacts arising from the project and related activities.</p> <p>iv. The work area, including temporary laydown areas, site offices, etc. must be clean-up and rehabilitated to the state prior to commencement of the project.</p> <p>v. The planting of some locally indigenous trees (white stinkwood or karee) are recommended along the access road. This will help offset some of the potential negative impacts and will add environmental value to the site.</p>		
<p>Pollution of Surface Water</p> <p>The site falls within the A21C quaternary catchment.</p> <p>There are no major rivers present on the study site, with the closest river being the Klein-Jukskei, which is approximately 1,3km east of the study site. The Klein - Jukskei flows north and into the Jukskei River. There are however, a wetland seep, drainage lines and stormwater drains and run-off present on the study site. There is also a small stream to the east of the site. All of the water in these watercourses and artificial stormwater drains and channels eventually feed into the Klein-Jukskei River and the ground water table.</p> <p>There is a small stream and riparian area at the southern most point of the study site. Erosion and the apparent historical excavation of soils have had negative impacts on the shape and nature of the stream. On the east of the study site (north of the small stream, is a wetland (seep) area. The wetland is highly impacted on by years of cultivation, construction of camps, cutting of the grass and grazing of livestock. North of the natural wetland area is an artificial wet area that has formed due to the concentrated channelling of stormwater discharge into that area. The stormwater discharge is predominantly from the east and west of the R114. The discharge point is at a natural low in the area. Much of this water flows and seeps downward into the seep wetland further south in the study site. This has also caused the natural wetland seep to be wetter for longer periods than would</p>				

naturally have occurred.

Much of the soils in the study area and surrounding area are sandy and gravelly with a moderate to high drainage potential. This, along with the natural slope and shallow granite bedrock (in localised patches), leads to the formation and presence of some wetland seeps in the area. On flatter, sandy areas (or on slopes with deeper bedrock) surface water drains away quicker without the formation of any wetlands.

Nature of impact at Construction level:

The proposed development will not impact directly on the wetland that occurs south east of the site. The site is slightly sloped with an east aspect which means the risk of significant run off velocity from the site is low to moderate. Appropriate mitigation measures will be required during the construction phase. This alternative will require more loose material to be used as a fill to construct the embankment and this could easily erode during peak run off event that would contaminate run off with silt. This could pollute downstream areas that include the Klein Jukskei River.

Construction Impact	Rank
Extent	Local
Intensity	High
Duration	Short
Probability	Definite

Nature of impact at Operational Level:

The establishment of hard surfaces on the site will increase the rate of storm water run off and thus potentially increase the risks for localized flooding and erosion. This risk is however small owing to the small extent of the site as well as landscaped nature of the site.

Storm Water will flow out of the attenuation tank and drain into the municipal storm water pipe and into the Klein Jukskei water course. This could contaminate the Jukskei River. This water will also circumvent / prevent surface water recharge of the hill slope seep wetland and this could result in the wetland drying up.

The envisaged storm water plan provides for the drainage of storm water along the road that will include a network of grid inlets, catchpits and reticulation network. Storm water will first be directed to a detention pond via a 375mm dia concrete pipe. Water is then channelled under the access road via a 600mm dia concrete pipe. This terminates into a headwall with reno mattresses and energy dissipaters. Water then flows along the K33 embankment into a rectangular portal culvert (3600mm x 3000mm) that connects the access road to the K33. Water then enters the grid inlet of the K33 and is carried away by the approved K33 storm water management system (**Appendix G7**).

These measures will allow for the adequate control of the storm water run off during the operational phases of the project.

C. High (- ve)

O. Medium (- ve)

Surface water run off must be managed to prevent siltation.

Berms must be erected at low points to cause water to reduce velocity and drop sediment.

Hay bayles must be used to reduce silt from run off waters

An attenuation pond of suitable size must be established to prevent localized flooding as well as act as a silt trap.

Alternatively, a series of bidden with flow reduction blocks must be used to reduce the velocity of storm water run off at the head wall.

C. Medium

O. Low

Low

Low

<table border="1"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Medium</td> </tr> <tr> <td>Duration</td> <td>Short</td> </tr> <tr> <td>Probability</td> <td>Probable</td> </tr> </tbody> </table>	Construction Impact	Rank	Extent	Local	Intensity	Medium	Duration	Short	Probability	Probable					
Construction Impact	Rank														
Extent	Local														
Intensity	Medium														
Duration	Short														
Probability	Probable														
<p>The Loss of Ecological Habitat (Flora & Fauna):</p> <p>The site was investigated in the winter (July 2020) and summer of 2020 (November) by a professional scientist certified in botanical and ecological assessments (Appendix G4).</p> <p>The site lies within the Egoli Granite Grassland (Rutherford and Mucina 2006) vegetation type. Ecosystems that are threatened and in need of protection are listed in terms of Notice GN 1002 under Section 52 of the National Environmental Management Biodiversity Act (No 10 of 2004). The Egoli Granite Grassland ecosystem, on which the site is located, is classified as an Endangered Ecosystem.</p> <p>The area assessed is approximately 0.3ha in extent. The historic Google Earth maps show that the eastern part of the assessed area has historically been used for pastures since 2008. The vegetation on the western part has been disturbed since 2008. The reeds have already been on the site since 2008 but may have expanded due to the stormwater runoff from the R114. Regular burning may also have affected the vegetation as well as rubble dumping observed on site.</p> <p>The site supported mostly altered grassland. This means that the original grassland has been altered to such an extent, that only a few of the original species are still present on the site. A patch of reeds have established on the eastern part of the site. Google images indicate that the reeds were already there in 2008, but that the wet area might have expanded before this time due to the construction of the R114. Downhill, a wet altered grassland occurred that has historically been planted with pasture grasses and used for agriculture.</p> <p>Several common bird species were observed such as Hadeda, Indian mynah, Red-eyed dove, Wattled lapwing, Common Thickknee, Stonechat and Crowned lapwing. It is likely that smaller mammal species such as Slender Mongoose</p>															

<p>(<i>Galerella sanguinea</i>), Scrub hare (<i>Lepus saxatilis</i>) and Yellow mongoose (<i>Cynictis penicillata</i>) still occur in the area. Busy roads and human activity on small holdings would however have scared off larger and more sensitive species such as Honey Badger.</p> <p>The following bird species are prioritized by the GDARD: Cape Vulture, Blue Crane, Lesser Kestrel, African Grass- Owl, African Marsh-Harrier, White-backed Night-Heron, White-bellied Korhaan, Martial Eagle, African Finfoot, Lesser Flamingo, Secretarybird, Black Stork, Half-collared Kingfisher and Greater Flamingo. Some of these species have been recorded in the pentad (9x9 km – SABAP2) area in recent years. Species recorded in the pentad area for which no habitat occurred on the site assessed, include African Marsh harrier, African Finfoot, Greater Flamingo and Halfcollared kingfisher. The use of the lower lying wet grassland for grazing, has further made it unsuitable for Grass Owl, but surrounding existing grassland can still be used for hunting ground for this latter species. It has last been observed in the area in 2017.</p> <p>It is highly unlikely that protected or threatened flora or mammal species will occur on the proposed development site due to the altered habitats observed as well as the human activity and traffic in the area.</p> <p>Under C-Plan version 3 (latest version i.e. version 3.3), no specialist studies for any species of amphibian are requested for consideration in the review of a development application. Giant Bullfrog, which has been recorded in the area, should therefore not specifically be considered as a red flag. As per the C-Plan approach, the conservation of the Giant Bullfrog and of amphibians in general will be met by the protected area network as well as the designation of priority habitats i.e., pans or quaternary catchments, with associated restrictions on land use.</p> <p><u>Nature of Impact at Construction Level:</u> The potential impacts on the ecology of the site will include activities such as site clearance and earthworks that will level the site. This will remove the largely transformed parts of the site and may impact on the Hypoxis population in the north west of the site.</p> <p>The vegetation along the second access road was found to be fragmented and altered by the construction activities on the filling station site as well as with the construction of the K33. This has left only remnants of the original vegetation intact in garmented patches here and there. Limited rural land will be left around the filling station after the construction of both the filling station and the K33.</p> <p>Sensitive faunal species can still be found to occur in rural areas such as is found in rural parts of Nietgedacht area. Sensitive species are however often more shy and sensitive to disturbance, resulting in such species leaving areas where people, dogs and traffic may affect their peace</p> <p>The most significant natural features on the site include the closely situated Orange listed plant population. The large population of <i>Hypoxis hemerocallidae</i> plants observed on site will largely fall outside the access road, but with detailed layout plans, it should be confirmed that specimens of this population will not be affected.</p> <p>Should individual plants be affected by the access road, they should be</p>	<p>C. Low (-ve)</p>	<p>The impact is of Low significance.</p> <p>During construction the ECO should ensure that vegetation is re-established as part of the landscape plan to be implemented.</p> <p>The most significant natural features on the site include one Orange listed plant species.</p> <p>The Orange Listed plants need to be transplanted according to the GDARD medicinal plant policy.</p> <p>Effort should be made to include the plant on site in landscaped areas.</p> <p>Additional mitigation measures are recommended to include:</p> <p>Development of an appropriate storm water managed plan that ensures that storm water run off during the construction and operational phases of the site do not erode the site, wash silt into water courses and areas that may drain into water courses;</p>	<p>C. Low to None</p>	<p>Low</p>
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transplanted in an appropriate way to the landscaped parts of the site and in accordance with the Medicinal Plant policy where roots and soil will be removed, and an anti-bacterial spray will be used on the roots from the time that the plants are removed from the one location to the other. Sufficient land will however be available in the landscape part of the filling station for the immediate transplanting of the Hypoxis plants.

Direct impacts of the development on the site and adjoining area will include the loss of indigenous vegetation species as the site is cleared as well as impacts associated with storm water run off that may erode parts of the site.

The generally transformed status of the vegetation as well as low biodiversity suggests that this impact will be of Low Significance. The change to the habitat functionality as a result of these impacts is likely to be of Low significance owing to the general transformed state of the site as well as the low species richness and well as limited biodiversity on site. The site also lies within an area rapidly being transformed into an urban area with the future expansion and development of a double carriageway proposed adjacent to the site.

Additional impacts are also likely to include the increased risk of exotic plant invasion as well as risks with elevated erosion, siltation and sediment in the downslope areas.

Construction Impact	Rank
Extent	Local
Intensity	Low
Duration	Short
Probability	Probable

Nature of Impact at Operational Level:

Operational impacts are likely to include edge effects because of the possible risk of exotic plants invading adjacent areas, as well as risks with increased run off impacting on the downslope areas (including the wetland).

Operation Impact	Rank
Extent	Local
Intensity	Low
Duration	Permanent
Probability	Improbable

Development of a landscape plan around the site that includes indigenous species.

The landscaping of the site must include indigenous plant species.

Exotic plants must be regularly removed from the site as well as surround areas.

O. None

O. None

Low

Impacts on loss of sensitive (Red Data) species:														
<p>The site assessment indicated the following (refer Appendix G3):</p> <p>C Plan indicates that two thirds of the site is categorized as Important Ecological Area for primary vegetation, Orange listed plants and Red listed bird habitat. The rest of the site has no status. The site assessment indicated that the site does not support primary vegetation. One population of the orange listed plants species <i>Hypoxis hemerocallidae</i> was observed on site.</p> <p>The proposed filling station is located on a part of land where the vegetation has been altered by human related activities such as farming and dumping.</p> <p>Subsequently, no primary vegetation was observed on the proposed filling station site and therefor the vegetation is classified as having a Low sensitivity. The wet areas should be considered by the wetland specialist to limit impacts on the hydrology of the area.</p> <p>No Red Data Fauna nor Flora has been recorded on site nor is expected to occur on site.</p> <p><u>Nature of Impact at Construction Level:</u> According to an ecological specialist analysis there are no species of importance (Red Data) within this footprint or in the surrounding areas. This alternative however will require that fill cover areas where a population of Hypoxis hemerocallidea occurs and this will impact on this species directly.</p> <table border="1" data-bbox="120 785 477 941"> <thead> <tr> <th>Construction Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>High</td> </tr> <tr> <td>Duration</td> <td>Short</td> </tr> <tr> <td>Probability</td> <td>Definate</td> </tr> </tbody> </table>	Construction Impact	Rank	Extent	Local	Intensity	High	Duration	Short	Probability	Definate	<p>C. Medium (-ve)</p>	<p>The existing population of plants will need to be relocated according to the medicinal plant policy of GDARD and planted in a suitable area on Portion 22. The plants will need to be "nursed" to ensure they re-establish.</p>	<p>C. Low</p>	<p>Low</p>
Construction Impact	Rank													
Extent	Local													
Intensity	High													
Duration	Short													
Probability	Definate													
<p><u>Nature of Impact at Operational Level</u> According to the ecological specialist there are no species of importance within the proposed filling station footprint.</p> <table border="1" data-bbox="120 1077 477 1256"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low</td> </tr> <tr> <td>Duration</td> <td>Permanent</td> </tr> <tr> <td>Probability</td> <td>Highly Improbable</td> </tr> </tbody> </table>	Operation Impact	Rank	Extent	Local	Intensity	Low	Duration	Permanent	Probability	Highly Improbable	<p>O. None</p>	<p>The impact is of No significance and no mitigation measures are proposed.</p>	<p>O. None</p>	<p>Low</p>
Operation Impact	Rank													
Extent	Local													
Intensity	Low													
Duration	Permanent													
Probability	Highly Improbable													

Impact on Socio-Economic Environment (Job Creation):

The need for work and the demand for employment in the general area is high. The site lies within walking distance of the Diepsloot community and the informal settlement at the intersection of Malibongwe Road the the R114. The site is located a major mobility spine that carries many people that are seeking employment.

Nature of Impact at Construction Level:

Constructor is expected to hire labour from the local community (where possible) with the assistance of the Ward councilor. Several local companies within proximity of the site will be able to provide materials, labour and expertise to the development and this will aid the local economy of Diepsloot, Fourways & Lanseria as well as the regional economy of the City of Johannesburg.

Construction Impact	Rank
Extent	Regional
Intensity	High
Duration	Short term
Probability	Definite

Nature of Impact at Operational Level:

Job opportunities will be created at the operational level and the development will attract people and revenue to the area. This will assist in boosting the local economy of Diepsloot, Fourways and Cosmo City as well as the City of Johannesburg via increased rates and taxes.

Operation Impact	Rank
Extent	Regional
Intensity	Medium
Duration	Long term
Probability	Highly probable

C. High (+ ve)

Employ local contractors and construction workers as well as operational staff wherever possible.

C. Medium

Low

Ensure there is skills transfer and training during construction.

O. Medium (+ ve)

None likely as the road is a public road operated by JRA

O. Medium

Low

No Go ALTERNATIVE

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented										
<p>Risk of illegal dumping</p> <p>Nature of impact: The site currently serves as place where litter, building rubble and waste accumulates. There are no fences or walls around the site and the site is thus open and accessible. There is little or no likelihood that litter, waste and rubble will be removed from the site or that the site will become secured owing to the high cost to fence or enclose the site</p> <table border="1" data-bbox="120 533 477 715"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>High (negative)</td> </tr> <tr> <td>Duration</td> <td>Permanent</td> </tr> <tr> <td>Probability</td> <td>Definite</td> </tr> </tbody> </table>	Operation Impact	Rank	Extent	Local	Intensity	High (negative)	Duration	Permanent	Probability	Definite	High (negative)	<p>Enclose the site to prevent free access.</p> <p>Regularly remove waste, rubble and litter from the site</p>	Low	High
Operation Impact	Rank													
Extent	Local													
Intensity	High (negative)													
Duration	Permanent													
Probability	Definite													
<p>Increase in Alien Exotic Plants</p> <p>Nature of impact: Currently parts of the site include altered vegetation with alien plants. There is a good chance that exotic plants will continue to invade the site and this will further degrade the vegetation on site.</p> <table border="1" data-bbox="120 919 477 1149"> <thead> <tr> <th>Operation Impact</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local</td> </tr> <tr> <td>Intensity</td> <td>Low to Medium (negative)</td> </tr> <tr> <td>Duration</td> <td>Permanent</td> </tr> <tr> <td>Probability</td> <td>Highly Probable</td> </tr> </tbody> </table>	Operation Impact	Rank	Extent	Local	Intensity	Low to Medium (negative)	Duration	Permanent	Probability	Highly Probable	Medium to High (negative)	Physically remove exotic plants from the site	Low	High
Operation Impact	Rank													
Extent	Local													
Intensity	Low to Medium (negative)													
Duration	Permanent													
Probability	Highly Probable													
<p>Increased risk of erosion</p> <p>Nature of impact: The site has a gradual slope with a north east aspect. This means that the risk of erosion is moderate to high.</p>	Low	<p>Place appropriate berms in strategic places to ensure that storm water run off is better controlled.</p> <p>Erect silt traps to prevent sediment</p>	Low to none	High										

Operation Impact	Rank			accumulating into roads and polluting the storm water run off		
Extent	Local					
Intensity	Low					
Duration	Permanent					
Probability	Probable					
Increase risk of crime						
Nature of impact: The open area is likely to promote unsafe circumstances for people walking across the site at night and living in the area. Open spaces typically allow people free & easy access to neighboring areas and allow criminals easy ways of escape. This risk is likely to increase the longer the site is left vacant.		Medium (negative)		Reduce access onto the site by erecting appropriate fencing. This material may however be easily stripped off / stolen.	Low	High (owing to high cost and risk of theft)
Operation Impact	Rank					
Extent	Local					
Intensity	Medium					
Duration	Permanent					
Probability	Probable					

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

Specialist studies are included in this report as **Appendix G**

- G1 Design Report
- G2 Geotech Report
- G3 Wetland Delineation & Assessment
- G4 Ecological Assessment
- G5 Heritage Impact Assessment
- G6 Traffic Impact Assessment
- G7 Storm Water Management Plan

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

None

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

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

Proposal

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
The proposal is for a local access road which will operate continuously. It is not proposed that the development will be decommissioned or closed within the next 30 - 60 years.	None	None	None	

Alternative 1

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
The proposal is for a local access road which will operate continuously. It is not proposed that the development will be decommissioned or closed within the next 30 - 60 years.	None	None	None	

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

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

N/A

4. CUMULATIVE IMPACTS

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

- Increased storm water runoff owing the creation of hard surfaces across the entire site and adjoining areas as urban development continues in the area;
- Increased traffic to the area by patrons and motorists owing to the growing node of activity;
- Positive cumulative impact as a result of increased activity in this local area. This has the potential to offer:
 - Job opportunities;
 - Upgrade of community infrastructure;
 - Investment opportunities;
 - More convenience (i.e. easier access to resources);
 - Contribution to the objectives of the Regional Spatial Development Plan by supporting initiatives for the expansion of services, infrastructure, growth, business confidence as well as development opportunities that have been set for the area.

5. ENVIRONMENTAL IMPACT STATEMENT [COMPARATIVE ASSESSMENT]

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.

#1 Proposal (Proposal)

The proposed development includes the construction of a second access road to service an approved filling station site located on Portion 108 of the Farm Nietgedacht535JQ. The road will take access off the newly constructed K33 Provincial Road (dual carriageway road). The access road will span a length of approximately 150m and width of 10m. The road will be designed and built to fulfil requirements of the Johannesburg Roads Agency/GDRT and will become a public road.

This option will include the placement of fill between a retention wall placed on either side of the road. This will reduce the development footprint of the road as the embankment toward the K33 will not be required. A culvert will be located under the road where future storm water (collected off the K33 and access road) can flow.

An ecological assessment finds that the vegetation on site has largely been altered by historical agricultural activities. More recently, the construction of the K33 has altered the natural vegetation and removed ecological habitat in the east of the site and within the K33 Road Reserve that lies on Portion 22. The only natural vegetation that remains includes the small portion of land on Rem/P71. This vegetation is small in extent (less than 0.3ha) and does not take on the form or function of Egoli Granite Grassland. Hence it is not identified to form part of a threatened ecosystem. Furthermore no Red Data or other sensitive fauna or flora species area likely to occupy or use this area. On this basis, the impact for the loss of this habitat is rated to be of Low Significance.

The only sensitive ecological component includes the presence of the Orange Listed Plant *Hypoxis hemerocallidea* that is located north east of the site. A small population of this plant occurs in association with the prevalence of the Alien Reed *Arundo donax* that is representative of the storm water that flows from the R114. This habitat is rated to have a Moderate Sensitivity. Under the proposed layout option, this area is protected from development by the use of the retaining wall.

Similarly, a wetland specialist has confirmed that no watercourses occur where the proposed road is proposed. The historical wetland that once existed on the boundary and downslope of Rem/P71 has been excavated and removed by the construction of the K33. The only other wetland and water course habitat lies further south east of the site. The proposed access road study area lies outside of the 32m buffer from this watercourse. The wetland ecologist has indicated that the construction of the access road will have a Low Significance on watercourses in the area. This assumes that the mitigation measures as recommended are implemented and that storm water flows are retained to further feed the watercourse south east of the site.

Construction activities invariably impact on the socio-economic environment and the proposed development is likely to negatively impact the site with elevated noise, dust, vibration, traffic and construction activity impacts. These are likely to alter the current sense of place and aesthetic appeal of the site. In addition, more people on a site invariably increase the risks of crime and with reduced health and safety impacts. These impacts are likely to span a relatively short duration and local extent during the construction of this short local road. This suggests that the impact is of Medium Significance and mitigation is thus required.

Operational impacts are likely to be reduced in number and significance owing to the small extent of the development and limited scale of the impacts. Adequate measures have been included in the layout to address risks of storm water management and these specifically include measures that accommodate impacts caused by the construction of the K33 Road. The Storm Water Engineers on this project have also ensured that the proposed management plan integrates with the approved K33 Storm Water Design. This option allows more opportunity for integration with the K33 SWMP as the development footprint of the access road is minimized.

Other impacts that may result due to the operation of the access road include light impacts, visual impact, air quality impacts and reduced safety impacts. The access road is a local road and the final design and development will be prescribed in terms of JRA/GDRT requirements that are standard for such roads in urban areas. This local road will thus integrate well into the current development planning for the site and area that is already progressing at pace. This is observable with the current development of the K33 Dual Carriageway road as well as other developments adjacent to the site for the access road (i.e. the approved filling station at P108 and Portion 22 and the proposed development of Portion 91 and 98 Nietgedacht 535JQ for commercial activities).

Based on the above, we are of the view that the proposed development offers a sustainable way to provide a second access road to the approved filling station site located at P108 and that the development impact will be of Low Significance should the proposed EMP be implemented to mitigate the envisaged impacts on the environment.

#2 Alternative 1 (Alternative Layout)

The alternative layout includes the construction of a second access road along the same alignment as the proposal. The key design principles as described in the proposal above apply to the alternative layout. However, the alternative layout differs in that only 1 retaining wall is to be constructed where it abuts the adjacent property of Portion 91 Nietgedacht 535JQ. This means that an earth embankment with slope of 1:2 will need to be located north east of the access road in order to provide the necessary fill that is required. This embankment will impact directly on the Orange Listed Plant population located in association with the *Arundo donax* alien reeds. This embankment will also impact indirectly on the storm water flow that drains from the R114 toward the south.

As with the proposal, an ecological assessment finds that the vegetation on site has largely been altered by historical agricultural activities. More recently, the construction of the K33 has altered the natural vegetation and removed ecological habitat in the east of the site and within the K33 Road Reserve that lies on Portion 22. The only natural vegetation that remains includes the small portion of land on Rem/P71. This vegetation is small in extent (less than 0.3ha) and does not take on the form or function of Egoli Granite Grassland. Hence it is not identified to form part of a threatened ecosystem. Furthermore no Red Data or other sensitive fauna or flora species are likely to occupy or use this area. On this basis, the impact for the loss of this habitat is rated to be of Low Significance.

The only sensitive ecological component includes the presence of the Orange Listed Plant *Hypoxis hemerocallidea* that is located north east of the site. A small population of this plant occurs in association with the prevalence of the Alien Reed *Arundo donax* that is representative of the storm water that flows from the R114. This habitat is rated to have a Moderate Sensitivity. Under the Alternative layout option, this area is unprotected from development by the embankment that will be required and hence this population will have to be relocated to a suitable site on Portion 22.

Similarly, a wetland specialist has confirmed that no watercourses occur where the proposed road is proposed. The historical wetland that once existed on the boundary and downslope of Rem/P71 has

been excavated and removed by the construction of the K33. The only other wetland and water course habitat lies further south east of the site. The proposed access road study area lies outside of the 32m buffer from this watercourse. The wetland ecologist has indicated that the construction of the access road will have a Low Significance on watercourses in the area. This assumes that the mitigation measures as recommended are implemented and that storm water flows are retained to further feed the watercourse south east of the site.

Construction activities invariably impact on the socio-economic environment and the proposed development is likely to negatively impact the site with elevated noise, dust, vibration, traffic and construction activity impacts. These are likely to alter the current sense of place and aesthetic appeal of the site. In addition, more people on a site invariably increase the risks of crime and with reduced health and safety impacts. These impacts are likely to span a relatively short duration and local extent during the construction of this short local road. This suggests that the impact is of Medium Significance and mitigation is thus required.

Operational impacts are likely to be reduced in number and significance owing to the small extent of the development and limited scale of the impacts. Adequate measures have been included in the layout to address risks of storm water management and these specifically include measures that accommodate impacts caused by the construction of the K33 Road. The Storm Water Engineers on this project have also ensured that the proposed management plan integrates with the approved K33 Storm Water Design. This option allows more opportunity for integration with the K33 SWMP as the development footprint of the access road is minimized.

Other impacts that may result due to the operation of the access road include light impacts, visual impact, air quality impacts and reduced safety impacts. The access road is a local road and the final design and development will be prescribed in terms of JRA/GDRT requirements that are standard for such roads in urban areas. This local road will thus integrate well into the current development planning for the site and area that is already progressing at pace. This is observable with the current development of the K33 Dual Carriageway road as well as other developments adjacent to the site for the access road (i.e. the approved filling station at P108 and Portion 22 and the proposed development of Portion 91 and 98 Nietgedacht 535JQ for commercial activities).

Based on the above, we are of the view that this option offers a less sustainable development approach as the Orange Listed Plant will be impacted upon directly by the layout of the access road. Consequently this alternative is not supported or alternatively, will require the relocation of the *Hypoxis hemerocallidea* population that is currently established there.

No-go (compulsory)

The 'no-go' alternative is the option of not developing the site for local access to the approved Filling Station located at P108 Nietgedacht 535 JQ.

This alternative would result in no construction impacts considering that the development would not be pursued.

However, there could be other environmental and economic consequences in the long term. These include the increased risk and prevalence of exotic vegetation on site, the likely erosion of the site, increased chance of dumping and litter accumulating on site as well as the potential risk for crime to take place on site and on the surrounding properties. Open areas typically act as havens for illegal activity including ease of access onto adjoining properties and escape from the area.

In addition, the no-go alternative could potentially result in the movement away of prospective motorists to less strategic sites resulting in increased costs, lost opportunities for upgrading of services, loss of potential employment for prospective employees that reside close to the site.

6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For Proposal (Figure 11):

Environmental Aspect	Significance			
	Construction	With Mitigation	Operation	With Mitigation
Soils & Geology	M (-ve)	L	L (-ve)	None
Pollution of ground water & Aquifer contamination	M (-ve)	L	M (-ve)	L
Topography of site	L (-ve)	L to M	L (+ve)	M
Land Value of site	M (+ve)	M	H (+ve)	H
Surrounding Land Values	M (-ve)	L	M (-ve)	L
Cultural Historic Features	L (-ve)	None	None	None
Aesthetic Quality / Visual Character	M (-ve)	L	M (-ve)	M
Air Quality	M (-ve)	L	L	None
Health, Safety & Security	M (-ve)	L	M (-ve)	L
Noise & Vibration	M (-ve)	L	L	None
Traffic Congestion & Flow Disruption	L (-ve)	L	L	L
Impact on Surface Water	M (-ve)	M	M (-ve)	L
Impact on Aquatic Ecosystems, Wetlands & Watercourses	M (-ve)	L	L (+ve)	L
Loss of Ecological Habitat (Flora + Fauna)	L (-ve)	L to None	None	None
Loss Of Sensitive Species (Red Data Species)	None	None	None	None
Socio-Economic (Job Creation)	H (+ve)	M	M (+ve)	M

H – High

M – Medium

L – Low

+ve – positive

-ve - negative

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 proposed development includes the construction of a second access road on Remainder Portion 71 and part of Portion 22 of the Farm Nietgedacht 535JQ (Johannesburg) to service an approved filling station site. Four layout options were considered in the initial design of the access road with two such options being excluded, firstly as Option 3 (Bridge design) was considered too expensive and secondly as Option 4 (Portion 91) includes land not under the ownership of the applicant and also as GDRT/CoJ did not support the engineering design.

Consequently Option 1 (Proposal) and Option 2 (Alternative 1) were assessed.

Option 1 includes the use of two retaining walls to include the fill along with a storm water culvert. The road is proposed over a distance of 150m with width of 10m. The retaining walls are designed so as to prevent the road impacting directly on Portion 91 and secondly to prevent the development footprint extending into and over a population of Orange Listed Plants. This is considered the preferred option and offers a more sustainable development approach.

Option 2 (Alternative Layout) will make use of only 1 retaining wall along the boundary with Portion 91. The earth embankment proposed in the north east of the site would thus impact directly on the Orange Listed Plant population, and is thus considered to be the less preferred, and less sustainable, option.

Both the Proposal and Alternative would further impact on the environment by means of various socio-economic and well as bio-physical impacts which significance is considered to be moderate to low. This is because the study area in the site is located in a rapidly transforming area from a rural-agricultural setting to a more urbanized setting partly due to the rapid expansion and upgrade of two provincial roads that bisect where the site is located. The K33 is a new alignment of Cedar Road and includes dual carriageway road that is currently being constructed. The R114 is currently being upgraded. The local access road (this project) integrates well with these two roads and has the "in principle support" of GDRT. The original purpose of this application is because the GDRT requires that filling stations that lie within an intersection of a two provincial roads requires access from both. The construction of the K33 immediately east of the project site thus necessitated that access be provided off the K33.

The proposed local access road, that will be designed to meet the requirements of GDRT/JRA, is therefore unlikely to degrade the environment nor lead to significant pollution of the environment. The development footprint for the proposal does not impact on watercourses, wetlands, endangered ecosystems nor red data or orange listed plants. The proposed mitigation measures included in the EMPr are likely to offer feasible and implementable mitigation measures that can be used minimize the extent, duration, intensity and probability (or likelihood) of the impact on the environment and thus offers a sustainable approach to providing access to the approved filling station site.

7. SPATIAL DEVELOPMENT TOOLS

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

DEFF Screening Tool

The screening tool highlights the following key sensitivities (refer to **Appendix I** for detail of the screening tool output for the site):

Agricultural Theme - Medium
Animal Species Theme - High
Paleontology Theme - Medium

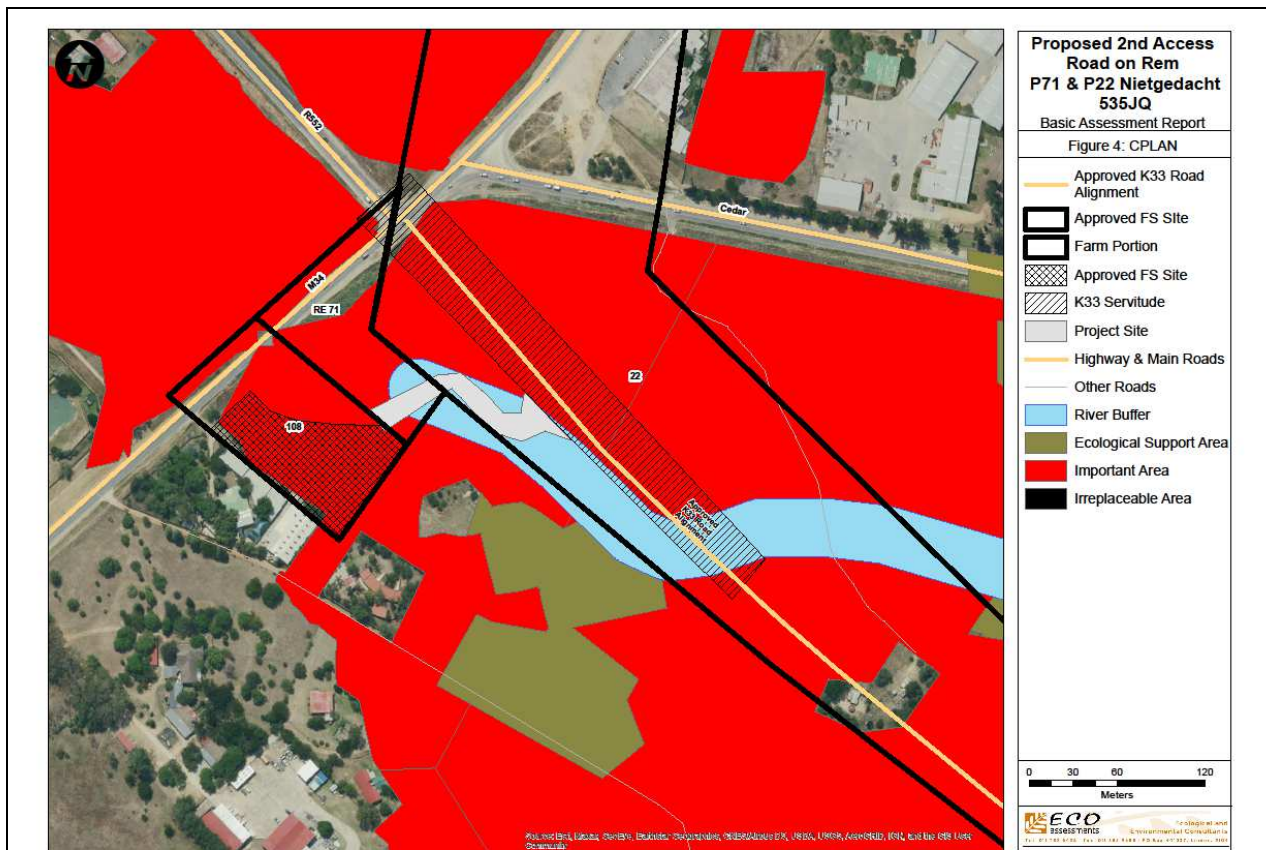
In terms of the agricultural theme, the site lies adjacent to a Provincial Road (K33) that is currently being constructed and two agricultural holdings (P108 and P91). P108 has been approved for use as a Filling Station site and a town planning application similarly under consideration. Portion 91 has been earmarked for commercial land uses (including mini-storage). Portion 22 that lies east of the site has been partly developed as the Lion park Produce (a store) and also has approved environmental rights for a filling station. The larger area also falls within the Urban Development Zone of the City of Johannesburg and the area largely is classified to have an agricultural potential that is Low. Based on the above, the site is not regarded to be suited to agricultural land uses and rather meets the requirements for urban development.

In terms of Animal Species, an ecological assessment has been compiled (**Appendix G4**) and this finds that the site offers limited to no suitable habitat for the listed species. The construction of the K33 has destroyed and altered large areas of the surrounding areas that would make it highly unlikely that these species could occur in the area.

In terms of Paleontology, a cultural historic assessment has been compiled (**Appendix G4**) and this finds that the site offers a low opportunity that these fossils occur on the site. This is supported by the fact that large parts of the study area for the access road have already been altered by construction activities of the K33 Provincial Road.

The site lies within a Critical Biodiversity Area (classified as an **Important Area**). The following features have been used to provide this ranking -

Vegetation
Plants, with specific reference to *Gnaphalium nelsonii*
Birds, with specific reference to *Tyto capensis*
Wetland/non-perennial river



The ecological assessment (**Appendix G4**) however indicated the following -

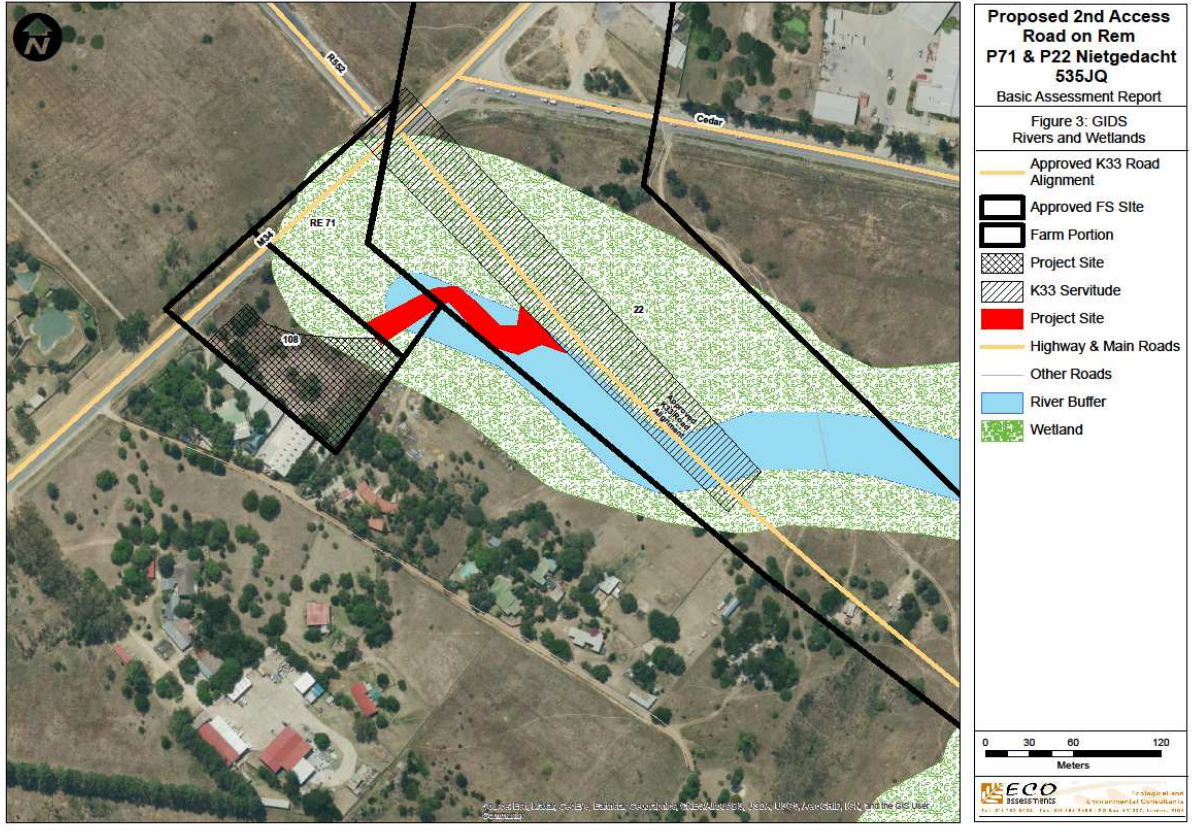
Primary Vegetation - Although several natural species occurs on site, the vegetation has been altered by historical farming activities as well as the current construction activities of the K33 Provincial Road. The current habitat on site is therefore not primary vegetation and does not represent Egoli Granite Grassland (Gm10) as described by Mucina and Rutherford (2006).

Red and Orange Listed Plants - No Red Data species have been recorded on the site or farm, or within 5km of the site. According to GDARD, Red Data species may however occur on site should suitable habitat occur. The field assessment however found that the vegetation has historically been altered which reduces the likelihood that red Data species will occur on site.

One orange listed plant species was recorded on site, namely *Hypoxis hemerocallidae*. This species does not have a specific priority grouping and does therefore not require sensitivity mapping (i.e. does not fall within either of the buffers for A1, A2, A3 or B priority grouped species).

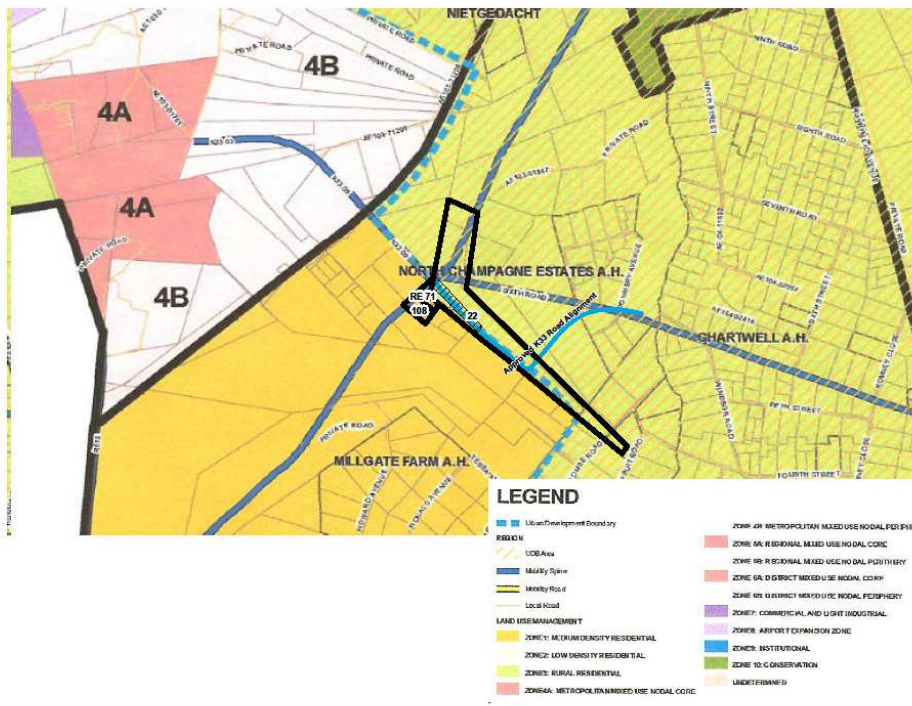
Red List Bird Habitat - Several (i.e. nine) sensitive bird species have been recorded in the pentad (9x9km area) the site occurs within. All these species had very low reporting rates implying that they are infrequently observed in the area. The lack of habitat diversity and generally poor quality of the vegetation on site further suggests that the listed species are not considered to be an ecological red flag for the site (i.e. there is a low likelihood that any of these species will occur or frequent the site owing to the poor quality of the habitat present).

CPlan further highlights that the site is affected by a wetland and/or wetland buffer.



A wetland assessment (**Appendix G3**) however finds that the wetland is located **south east of the site** and that **the site includes no characteristics of wetland areas** (i.e. neither soil wetness, soil form, wetland vegetation nor topographically position). A storm water discharge area lies on the eastern boundary of the site. The development of this area will have no direct or indirect impact on the fauna, flora, ecology or wetland characteristics of the site or surrounding area.

The CoJ Regional Spatial Development Framework (Region A Sub Area 2)

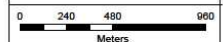


**Proposed 2nd Access
Road on Rem
P71 & P22 Nietgedacht
535JQ**

Basic Assessment Report

Figure 6: RSDF of
City of Johannesburg

- Approved FS Site
- Farm Portion
- K33 Servitude
- Approved K33 Road Alignment
- Access Options 1 - 3



The application site falls within the Regional Spatial Development Framework for Administrative Region A, Sub-Area 2. The area is further governed by the Northern Areas Framework 2020, 2008, which forms part of the RSDF.

The site is located inside the Urban Development Boundary and subject to the provisions of this policy as contained in the Spatial Development Framework. The application site is earmarked for medium density residential uses in terms of the RSDF. At a medium density, a large number of residents will be located in the area in the coming years and the intensity of the use of the Provincial roads in the area, such as the K52 and K33 will increase tremendously. Traffic volumes with thus increase further and road upgrades are already underway to accommodate this increase (present and future).

The town planning trends in the area indicate that several township applications have already been lodged and are expected to develop in the next number of years. The area to the north of the site, west and the N14 where existing township applications have been lodged, are in the process of finalization once services are available. Apart from the existing traffic volumes and the need for fuel service stations, there is a growing need in the larger area for such services and the application site will fulfill this need.

The development will have no negative impact on the surrounding area and will not hamper potential future development of the area. No high potential agricultural land is in this case affected.

8. RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

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

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

- The Management and Mitigation measures proposed in the Environmental Management Plan must be adhered to and the Environmental Management Plan must be enforced as legally binding.
- The Applicant must ensure a site specific rehabilitation or landscaping plan is put in place to restore and improve on pre-construction status, as well as to promote re-vegetation of the site.
- The construction of all structures, roads and implementation of services must be in accordance with the specifications of the geotechnical engineering assessment.
- Building rubble and solid waste (such as sand, gravel, concrete and waste material) that cannot be used for filling and rehabilitation and other waste generated during the construction and operation phases must be removed from site and be disposed of safely and responsibly at a licensed landfill.
- Recycling processes to be implemented during construction and operational level.
- Adequate precautions are to be taken to prevent the spread of refuse. Contractor must remove waste once a week to a registered landfill site. During construction phase, the premises and the works site must be maintained by the contractor in a reasonably neat and orderly condition and free from accumulation of waste materials and rubbish during the entire construction period.
- Appropriate precautions should be taken to ensure activities (including traffic) associated with the construction and operation phases of the project, do not pose a danger to passing traffic or cause undue inconvenience to local communities.
- Construction activities may only take place between the hours of 06:00 to 18:00 during the week; 07:00 to 13:00 on Saturdays and no construction activities on Sundays or public holidays. Construction on Sundays will only take place in exceptional conditions, with the consent of Interested and Affected Parties, or with consent from the authority.
- Contractor personnel (with the exception of security personnel) shall under no circumstances be permitted to remain on the building site other than the hours of work specified.

9. THE NEEDS AND DESIRABILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

The proposed development has the in principle support of the City of Johannesburg Metropolitan Municipality and complies to the requirements of the Regional Spatial Development Framework for the area).

The need for the development is obvious from the high degree of vehicular traffic on the R114 (as apparent from the TIA). The surrounding areas are largely under development urban areas and the site currently lies vacant. The development would greatly help add to convenience for vehicle owners as well as the public and residents in the area in being able to supply and deliver essential services such as convenience centres, car wash, fuel & gas supplies and well as public transport venue and recreational facilities.

The construction impacts of the development and to a lesser degree the operational impact may impact negatively on the current (short term) rural residential character of the area owing to impacts such as noise, traffic, odours and people gathering on the site.

These impacts are however offset by the positive benefits that include opportunities for job creation, part time work, employment of local contractors, use of local supplies, increased community safety and trade opportunities. The medium to long term strategy to develop the surrounding areas into industrial and commercial uses, all in line with the planning for the Regional Spatial Development Framework, adds to the desirability for the site to provide such a critical service in the area.

These benefits are likely to make the project desirable to the local community that are desperate for

work in this area.

The development is likely to offer a sustainable land use option for the area and will not undermine or degrade the ecological integrity of the site nor surrounding area. Impacts on site can be managed to minimize impacts off site.

This includes for instance that all relevant services (including water, sewage, storm water and waste management) can be provided at little additional cost for resource use.

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

The development is likely to proceed within 24 months of the Environmental Authorisation and subject to delays due to Town Planning or other economic factors that may delay the construction process.

The project is envisaged to remain operative in perpetuity and for at least 60 - 100 years.

Environmental authorization should thus extend a period of at least 10 years.

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

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

EMPr attached

Yes

SECTION F: APPENDIXES

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

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

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

Fig. 1 Topographic Map (1: 50 000)

Fig. 2 Aerial Photo with Contours

Fig. 3 GIDS Map

Fig. 4 CPlan Map

Fig. 5 GDARD EMF Map

Fig 6. RSDF for City of Johannesburg

Fig 7. Land Use Map

Fig 8. Zoning Map

Fig 9. Site Vegetation & Wetland Features Map

Fig 10. Environmental Sensitivity Map

Appendix B: Photographs

Appendix C: Facility illustration(s)

Figure 11 Proposed Layout Plan

Figure 12 Alternative Layout Plan

Figure 13 Storm Water Management Plan

Appendix D: Route position information

Not Applicable

Appendix E: Public participation information

[TO BE UPDATED IN THE FINAL BA REPORT]

Appendix 1 – Proof of site notice

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

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

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

Appendix 6 - Comments and Responses Report

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

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

Appendix 9 – Copy of the register of I&Aps

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

Appendix G: Specialist reports

Specialist studies are included in this report as **Appendix G**

G1 Design Report
G2 Geotech Report
G3 Wetland Delineation & Assessment
G4 Ecological Assessment
G5 Heritage Impact Assessment
G6 Traffic Impact Assessment
G7 Storm Water Management Plan

G1 Design Report

Appendix H: EMPr

Appendix I: Other information

CHECKLIST

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

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