Draft Section 24G Report for Mzinti Filling Station and Mini Shopping Centre, Mzinti, Nkomazi Local Municipality, Mpumalanga Province

30 January 2023

CORE Environmental Services
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SACNASP: 300067/15
EAPASA: 2020/602

EXECUTIVE SUMMARY

Mr. Akish Nhlambo is applying for Environmental Authorisation by means of a Section 24G Environmental Authorisation Application process, for the following activities:

- Construction of a bridge within a watercourse;
- Commencement of the construction of a filling station with mini shopping centre of which the filling station will be exceeding 80 000 litres storage capacity. The filling station is proposing a storage capacity of 120m^3;

Both of the above activities required Environmental Authorisation (EA) from the DARDLEA prior to commencement, and therefore a Section 24G Environmental Authorisation Application is being applied for in accordance with the National Environmental Management Act 107, 1998, in order to obtain approval for these activities.

The site is located on portion 0, of the farm Matebula 701-JU, within Mzinti, Nkomazi Local Municipality, Mpumalanga Province.
Coordinates:
25°40'52.66"S;
31°43'20.50"E.

In effort to engage potential stakeholders, different communication methods were used to inform Interested and Affected Parties and Stakeholders about the project and how to get involved in the Section 24G Environmental Authorisation process. These methods include:

- Distributing English Background Information Documents (BIDs) to all registered I&APs, 14 November 2022, proof of which is attached in Annexure C.2;
- Placement of media advert in a local newspaper (The Mpumalanga News) on 09 November 2022 (see Annexure C.3).
- Placing of a notice at the proposed site took place on 5 November 2022 (see Annexure C.4);

Some construction activities are still in process and for this reason, the environmental and social impacts associated with the construction and operation of the filling station and mini shopping centre, was assessed within the Section 24G Environmental Report.
The remainder of the construction activities as well as the operational activities are likely to result in environmental and socio-economic impacts. The identified impacts assessed within the report includes:

- *Impact on biodiversity;*
- *Generation of dust;*
- *Impact on soil (soil erosion and soil pollution);*
- *Impact on water resources (water pollution and sedimentation);*
- *Sanitation and waste generation;*
- *Socio-economic impact.*

From the environmental statement as indicated within the table below, it is evident that that impacts can be reduced to be of low to very low significance if mitigation measures are implemented and adhered to. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment and especially with the watercourse which is a sensitive environment, dividing the site into two sections for the filling station and mini shopping centre. It is recommended that pro-active measures are taken to minimise the impact on the watercourse.

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Impact on biodiversity	Low	Very Low
Generation of dust	Low	Very Low
Soil Pollution	Low	Very Low
Soil Erosion	Low	Very Low
Sedimentation	Medium	Low
Water pollution	Medium	Low
Sanitation and Waste generation	Medium	Low
Temporary job opportunities	Medium (+)	Medium (+)
Health and safety during construction	Low	Very Low
Operational Phase Impacts		
Spreading of alien invasive species	Medium	Low
Soil Erosion	Medium	Low
Soil Contamination	Medium	Low
Water pollution	High	Low
Waste generation and disposal	High	Low
Permanent Job Opportunites	High (+)	High (+)

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation. The compilation, implementation and adherence to the Storm Water Management Plan is imperative.

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1. OVERVIEW OF THE PROJECT

1.1 Introduction

Mr. Akish Nhlambo is applying for Environmental Authorisation by means of a Section 24G Environmental Authorisation Application process, for the following activities:

- Construction of a bridge within a watercourse;
- Commencement of the construction of a filling station with mini shopping centre of which the filling station will be exceeding 80 000 litres storage capacity. The filling station is proposing a storage capacity of 120m^3;

Both of the above activities required Environmental Authorisation (EA) from the DARDLEA prior to commencement, and therefore a Section 24G Environmental Authorisation Application is being applied for in accordance with the National Environmental Management Act 107, 1998, in order to obtain approval for these activities.

Mr. Nhlambo subsequently appointed **Core Environmental Services** to apply for the EA by means of conducting a Section 24G Environmental Authorisation Process

1.2 Location

The site is located on portion 0, of the farm Matebula 701-JU, within Mzinti, Nkomazi Local Municipality, Mpumalanga Province.

Coordinates:
25°40'52.66"S;
31°43'20.50"E

Please refer to the locality map below, Figure 1 and 2.

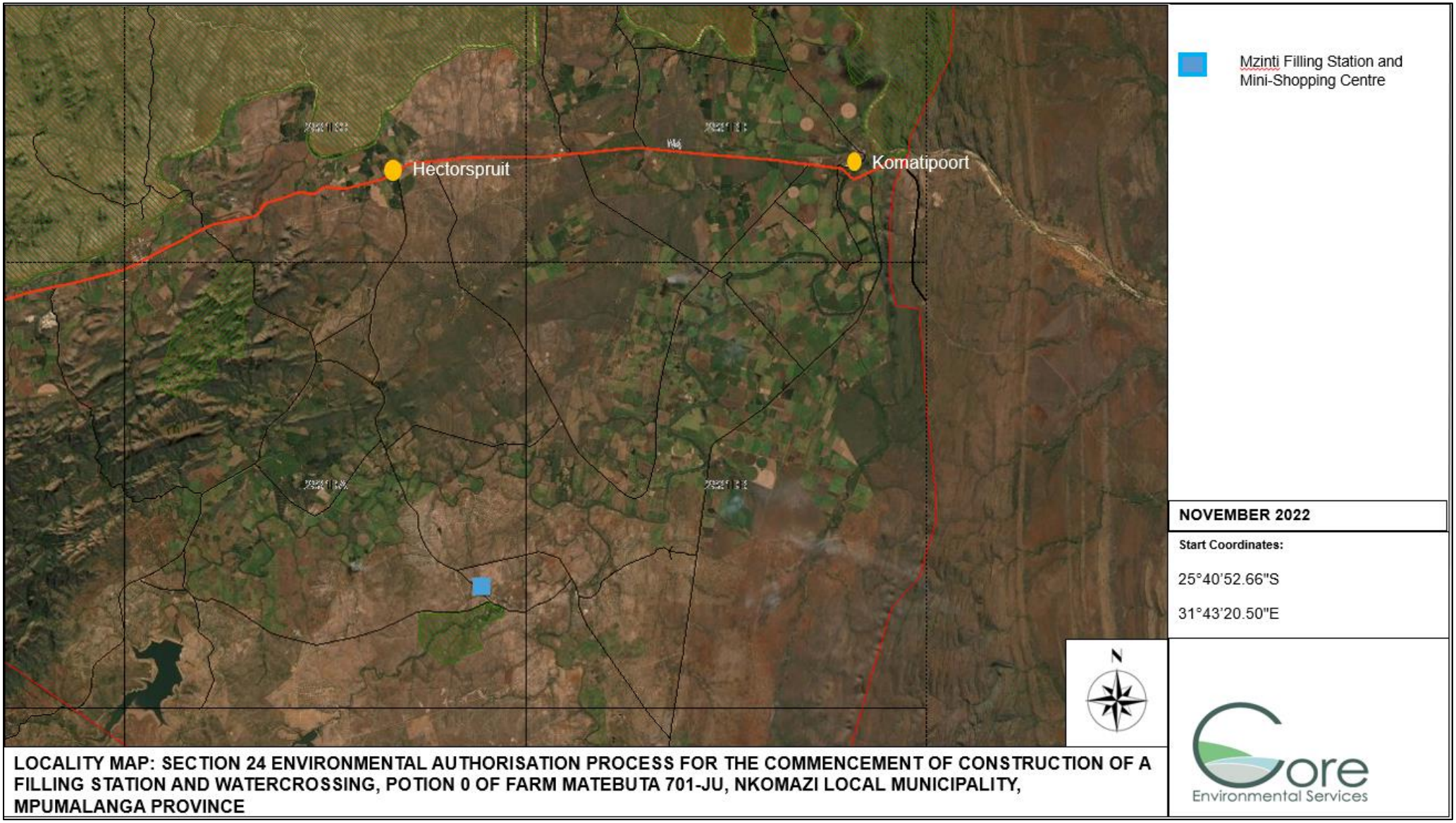

FIGURE 1: MZINTI FILLING STATION AND MINI SHOPPING CENTRE LOCALITY MAP

FIGURE 2: AREA CURRENTLY BEING DEVELOPED FOR THE FILLING STATION AND MINI SHOPPING CENTRE

1.3 Details of the EAP

Ms. Anne-Mari White, is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. White is registered with the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15) as well as with the Environmental Assessment Practitioners Association South Africa (EAPASA – Reg. No. 2020/602). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

1.4 Policy Legal and Administrative Framework

1.4.1 National Environmental Management Act, 107, 1998

In accordance with the National Environmental Management Act 107, 1998, GNR983, 2014 (as amended in 2017), the following listed activities applies for the project and therefore requires Environmental Authorisation.

GNR983, 2014 (as amended in 2017), Activity 14:

The development and related operation of facilities or infrastructure, for the storage, or the storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.

GNR983, 2014 (as amended in 2017), Activity 12:

The development of (ii) infrastructure or structures with a physical footprint of 100 square metres or more where such development occurs (a) within a watercourse.

GNR983, 2014 (as amended in 2017), Activity 19:

The infilling or depositing of any material or more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shell grit, pebbles, or rock of more than 10 cubic metres from a (i) watercourse.

As the above activities have already commenced, Environmental Authorisation is applied for by means of conducting a Section 24G Environmental Authorisation application process in accordance with GNR982, of 2014 (as amended).

Other national, provincial or local legislation applicable to the proposed project, is indicated in Table 1, below.

TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	Project application and type (permit / licence / authorisation / comment)
The Constitution of South Africa, Act No. 108 of 1996	Mr. Akish Nhlambo will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented. As per Section 25 the Constitution, a public participation process (PPP) was and will continue to be undertaken, as this is considered to be an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation was not applied for prior to the construction of filling station which will exceed 80 000 litres carrying capacity as well as the activities undertaken within the watercourse/drainage line and therefore a Section 24G rectification process is undertaken to apply for these activities by means of conducting a Section 24G Environmental Authorisation process.
National Water Act, 1998 (Act No. 36 of 1998)	Water resources must subsequently be managed in accordance with the National Water Act 36 of 1998. A Water Use License is also required in terms of Section 21 of the National Water Act 36 of 1998 for the activities taking place within and near the watercourse/drainage line.
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	The Act provides for the control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of soil, water, and vegetation and the combatting of weeds and invader plant species. Mr. Akish Nhlambo must comply with the regulations included within the CARA 43 of 1983, to ensure the preservation of soil, water resources, and vegetation and prevent the spreading of invader plant species.
National Heritage Resources Act, 1999 (Act No 25 of 1999)	This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations.
Hazardous Substances Act, 1973 (Act No 15 of 1973)	This legislation provides for the control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of hazardous substances. Mr. Nhlambo must comply with the regulations included within this regulation.

Mpumalanga Spatial Development Framework (MSDF) Draft (2013)	The MSDF has a vision to provide: *"a sustainable urban and rural spatial development pattern focussed on a modern, ecologically sustainable economy, supported by a suitably skilled labour force and providing for quality of living* [emphasis added]*."* The underlined portions of the Vision address those aspects which are applicable to this project: ● Mr. Nhlambo will provide permanent job opportunities to employees. ● The implementation of the Environmental Management Programme (EMPr) associated with this application will ensure that the quality of the environment directly and indirectly affected by the operations of the commercial activities does not deteriorate or is limited as far as reasonably possible.
Nkomazi Local Municipality Integrated Development Plan (IDP)	Nkomazi Local Municipality Integrated Development Plan (IDP). The primary objectives of the IDP are to foster economic growth that creates jobs and improve infrastructure within the province. Job opportunities will be created by the proposed commercial activities which supports economic growth within the area.

1.5 Description of the project

The applicant, Mr. Nhlambo, commenced with the construction of the following activities during October 2022:

1. Construction of a filling station with underground tanks with a storage capacity of 120m^3 (approximately 1 500m^2);
2. Construction of a bridge for vehicles to cross the watercourse/drainage line in order to access the Mini Shopping Centre;
3. Construction of a channel within the watercourse/drainage line to channel the flow of water;
4. Construction of a Mini Shopping Centre (approximately 1 800m^2)

1.6 Need and Desirability

Mzinti is an informal township area which expanded quite extensively over the past 10 years. With the expansion of the area, population have also increased significantly within the immediate area, establishing a need for residents to refuel their vehicles and buy necessities.

The Applicant, Mr. Nhlambo, saw the need within the area and decided to invest into this business opportunity in providing the community with these necessities.

2. DESCRIPTION OF THE ENVIRONMENT

The project site has already been transformed. Some of the aspects are described below in order to provide a description of the affected and surrounding environment. The description of the affected environment below draws on existing knowledge from published data, previous studies, as well as a site visits to the area.

2.1 Topography

A drainage line divides the project area in to two areas and the topography of the project area slopes slightly towards this drainage line. The topography project area slopes towards the west, however the project site itself is flat and approximately 260m above sea level.

2.2 Climate

Mpumalanga is a province where the climate varies due to is topography. The proposed project area is located on the Lowveld Region and has a tropical climate with warm sub-tropical temperatures and experiences high summer rainfalls. The study area experiences a humid and hot weather during summer seasons. The climatic trends of the area suggest summer season precipitation and dryer periods during winter. The area receives a total of about 800-1000 mm of rain over 12 months.

2.3 Land Use

The project area as well as surrounding areas has already been transformed and has been informally urbanized. Mzinti is currently surrounded by other informal settlement areas such as Kamhlushwa and Tonga.

2.4 Surface and Groundwater

A drainage line is located within the project development area and divides the project area into two areas. The drainage line connects with the Mzinti River which is located approximately 1.5km to the south-east of the project development area. A bridge has been constructed to provide a connection between the filling station and mini-shopping centre.

2.5 Terrestrial Environment

Terrestrial Ecology: The study area is classified as Lowveld (A10), according to Acocks (1988). The project area falls within the Savannah Biome. The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the lowveld and Kalahari region of South Africa. It is characterized by a grassy ground layer and a distinct upper layer of woody plants.

The vegetation type is classified as the Granite Lowveld. This vegetation type occurs at altitudes of 250 - 700 m above mean sea level and is characterised by tall shrubland with few trees to moderately dense low woodland on deep sandy uplands (Mucina and Rutherford, 2006). Dominant species in this vegetation type are: Acacia nigrescens, Sclerocarya birrea subsp. caffra, Acacia nilotica, Albizia harveyi, Combretum apiculatum, C. imberbe, C. zeyheri, Ficus stuhlmannii, Peltophorum africanum, Pterocarpus rotundifolius, Terminalia sericea, Combretum hereroense, Dichrostachys cinerea, Euclea divinorum, Strychnos madagascariensis, Brachiaria nigropedata, Digitaria eriantha subsp. eriantha, Eragrostis rigidior, Melinis repens, Panicum maximum and Pogonarthria squarrosa (Mucina and Rutherford, 2006).

This vegetation type is described as vulnerable but moderately protected in South Africa. They estimate that roughly 79.2% of the vegetation type remains intact with about 17.5% being protected in provincial nature reserves and private conservation areas.

According to the Mpumalanga Biodiversity Sector Plan, 2014, the project area falls within an Ecological Support Area (ESA): Protected Area Buffers. ESA's are "areas that are not essential for meeting (conservation) targets, but play an important role in supporting the functioning of CBA's and that deliver important ecosystem services" (Lötter et al., 2014). Protected Area Buffers are areas that surround proclaimed protected areas that moderate the negative impacts of land-uses that may affect the ecological functioning of those protected areas.

FIGURE 3: PROJECT AREA IN ACCORDANCE WITH THE MPUMALANGA BIODIVERSITY SECTOR PLAN, 2014

3. PUBLIC PARTICIPATION PROCESS

The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the Section 24G Environmental Authorisation process.

Consultation with the public forms an integral component of the EA process. This process enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the Section 24G Environmental Authorisation process. The PPP has thus been structured such as to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concerns at various stages throughout the EA process.

I&APs were identified during the public participation phase of the project. All the parties identified as an I&AP (surrounding landowners, relevant departments, stakeholders, local and district authorities) have automatically been registered in the I&APs database for the project. The registered I&AP list is attached as **Annexure C.1.**

In effort to engage potential stakeholders, different communication methods were used to inform them about the project and how to get involved in the EA process. These methods include:

- Distributing English Background Information Documents (BIDs) to all registered I&APs, 14 November 2022, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Mpumalanga News) on 09 November 2022 (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on 5 November 2022 (see **Annexure C.4**);

To date no comments have been received.

4. CONSIDERATION OF ALTERNATIVES

The EIA process requires the developer to identify and investigate/assess feasible and reasonable alternatives. The project alternatives range from the location where the activity is proposed, type of activity to be undertaken, design the of activity, technology to be used in the activity to the option of not implementing the activity (No-Go Alternative).

The assessment of the alternatives is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

4.1 Alternative Selection

4.1.1 Location Alternatives

No other locality alternatives could be investigated as the application is applying for a S24G rectification for the unlawful commencement of this activity**.** The applicant commenced with the filling station and mini shopping centre in October 2022 and also completed the construction of a bridge to access the mini shopping centre from the area where the filling station is being constructed.

4.1.2 No-Go Alternatives

The no-go alternative would be to not authorise the application for the filling station and mini shopping centre. Should this alternative be favourable, potential job opportunities will be lost and residents of Mzinti will have to purchase the necessities by means of travelling further from their place of residence.

5. METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF IMPACTS

This section outlines the method used for assessing the significance of the potential environmental impacts during the construction/establishment, operational and decommissioning phases.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described, as shown in Table 2: Assessment criteria for the evaluation of impacts. These criteria are then used to determine the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

TABLE 2: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS

Criteria	Category	Description
Extent or spatial influence of impact	**Regional**	Beyond a 30km radius of the candidate site.
	Local	Within a 30km radius of the candidate site.
	Site-specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Long-term**	More than 10 years after construction
	Medium-term	Up to 5 years after construction
	Construction-term	Up to 3 years

The SIGNIFICANCE of an impact is derived by taking into account magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 3.

TABLE 3: DEFINITION OF SIGNIFICANCE RATINGS

Significance ratings	Level of criteria required
High	• High magnitude with a regional extent and long-term duration • High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration • Medium magnitude with a regional extent and long-term duration
Medium	• High magnitude with a local extent and medium-term duration • High magnitude with a regional extent and construction period or a site-specific extent and long-term duration • High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long-term duration
Low	• High magnitude with a site-specific extent and construction period duration • Medium magnitude with a site-specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long-term duration
Very low	• Low magnitude with a site-specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the **PROBABILITY** and **CONFIDENCE** of this impact are determined using the rating systems outlined in Table 4 and Table 5. The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in Table 6**.**

TABLE 4: DEFINITION OF PROBABILITY RATINGS

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

TABLE 5: DEFINITION OF CONFIDENCE RATINGS

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

TABLE 6: DEFINITION OF REVERSIBILITY RATINGS

Reversibility ratings	Criteria
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

6. ENVIRONMENTAL IMPACT ASSESSMENT

Some construction activities are still in process and for this reason, the environmental and social impacts associated with the construction and operation of the filling station and mini shopping centre, is assessed in Section 6.1 and 6.2 below.

6.1 Impacts during construction phase

The remainder of the construction activities are likely to result in environmental and socio-economic impacts. The identified impacts are listed below and discussed thereafter:

- *Impact on biodiversity;*
- *Generation of dust;*
- *Impact on soil (soil erosion and soil pollution);*
- *Impact on water resources (water pollution and sedimentation);*
- *Sanitation and waste generation;*
- *Socio-economic impact.*

6.1.1 Impact on biodiversity

Description of the potential impact

The project area has already been cleared of vegetation due to the surrounding informal urbanisation of the area. However, according to the Mpumalanga Biodiversity Sector Plan, 2014, the project area falls within an Ecological Support Area (ESA): Protected Area Buffers, as the project area is located within 10km from a Protected Area. ESA's are "areas that are not essential for meeting (conservation) targets, but play an important role in supporting the functioning of CBA's and that deliver important ecosystem services" (Lötter et al., 2014). Protected Area Buffers are areas that surround proclaimed protected areas that moderate the negative impacts of land-uses that may affect the ecological functioning of those protected areas.

The project area has however already been cleared of vegetation due to the expansion of the area of Mzinti. The drainage line is invested with alien invasive species and the clearance of vegetation could lead to the spreading of alien invasive species.

Significance of the impact

As noted above, the project area has already been cleared of vegetation and the project area is surrounded by informal settlements. The drainage line is invested with alien invasive species and the construction activities could lead to the further spreading of alien invasive species.

As the project area is located within an ESA according to the Mpumalanga Biodiversity Sector Plan of 2014, the magnitude of the impact on biodiversity is rated to be of medium, however, with the site specific

extent and short duration of the construction phase, the significance of the impact is rated as low prior to the implementation of mitigation measures. The implementation of mitigation measures will reduce the impact to be of very low significance.

TABLE 7: IMPACT ASSESSMENT – BIODIVERSITY DURING CONSTRUCTION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Impact on biodiversity [NEGATIVE]	**Medium**	**Site specific**	**Short-term**	**Probable**	**Low**	**Very Low**

Mitigation measures

- The footprint of activities associated with construction activities must be restricted to the area which have already been cleared.
- It must be ensured that the materials used during construction activities are located far away from any other watercourse or drainage lines.
- All disturbed areas must be rehabilitated.
- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the construction phases of the project.

6.1.2 Generation of dust

Description of the potential impact

Soil is disturbed during the construction phase of the project which increases the possibility of dust generation affecting adjacent owners and road users.

Significance of the impact

The construction site is relatively small and is located within a township, with residents surrounding the project site. The impacts associated with the generation of dust is of short duration and therefore of low significance prior to the implementation of mitigation measures.

Mitigation measures are however recommended to minimise the generation of dust.

TABLE 8: IMPACT ASSESSMENT – GENERATION OF DUST DURING CONSTRUCTION

MPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Dust generation [NEGATIVE]	Low	Site Specific	Short-term	Probable	Low	Very Low

Mitigation measures

- Areas may not be disturbed and left unattended for long periods of time;
- Construction site must be sprayed with water to limit the generation of dust of the surfaces if required.

6.1.3 Impact on soil

Description of the potential impact

The construction process will disturb the soil surface and increase the possibility of soil erosion. The topography of the site slopes towards the drainage line and therefore the possibility of erosion occurring during the construction phase is increased.

Other activities which could have an impact on soil, include any spillage of hazardous substances. Hazardous substances such as oil, diesel etc., could be spilled while refuelling or using machinery, leading to the pollution of soil which can alter microbial processes and be toxic to soil organisms.

Significance of the impact

During establishment, soil could be impacted by the following:

- Erosion; and
- Contamination with the use and possible spillage of hazardous substances.

The significance of soil pollution as well as soil erosion is of medium magnitude, site specific and short duration and for this reason the impact is of low significance prior to the implementation of mitigation measures.

TABLE 9: IMPACT ASSESSMENT – IMPACT ON SOIL DURING CONSTRUCTION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Soil pollution [NEGATIVE]	Medium	Site Specific	Short-term	Probable	Low	Very Low

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Erosion [NEGATIVE]	**Medium**	**Site Specific**	**Short-term**	**Probable**	**Low**	**Very Low**

Mitigation measures

- To minimise the possibility of erosion, it is recommended that no disturbed areas be left unattended. Disturbance and removal must be restricted to the footprint of the site.
- Measures to reduce the velocity of water, must be taken on areas prone to erosion.
- Should there be any spillage of hazardous substances during the construction activities, soil must be removed up to a depth of 300mm and be disposed of at a registered hazardous waste disposal facility. Proof of such disposal must be kept on file.

6.1.4 Impact on water resources

Description of the potential impact

The applicant constructed a bridge to provide access from the filling station to the mini shopping centre, by means of installing a culvert for the flow of water underneath the newly constructed bridge. During the construction process, the drainage line was channelled and the banks of the drainage line reinforced by constructing a wall on both sides of the banks of the watercourse. The construction activities within the watercourse could lead to the sedimentation of the watercourse.

The filling station is being constructed within 30m from the edge of the watercourse and therefore further construction activities could lead to the pollution of water resources, should any hazardous substances be spilled during the construction process.

Currently, there is no water within the drainage line and the area has already been heavily disturbed.

Significance of the impact

The disturbance of the watercourse could lead to sedimentation downstream of the activity, having a negative impact on the aquatic biodiversity of the watercourse. This impact is of medium magnitude, local extent and short duration and therefore the impact is rated to be of medium significance prior to the implementation of mitigation measures. Although the bridge has already been constructed, other construction activities within a close proximity of the watercourse must be mitigated to ensure that the significance of the impact is reduced.

Any spillages within or within a close proximity to the drainage line will have an impact on the water quality of the watercourse. This impact is also of medium magnitude, local extent and short duration. For this reason, the impact is rated to be of medium significance prior to the implementation of mitigation measures.

TABLE 10: IMPACT ASSESSMENT – IMPACT ON WATER RESOURCES DURING CONSTRUCTION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Sedimentation [NEGATIVE]	**Medium**	**Local**	**Short-term**	**Probable**	**Medium**	**Low**
Water pollution [NEGATIVE]	**Medium**	**Local**	**Short-term**	**Probable**	**Medium**	**Low**

Mitigation measures

- No material or stockpiles may be stored within 30m from the edge of the watercourse.
- It must be ensured that all machinery working within the watercourse must be in a good working condition to ensure that there are no oil leaks.
- Should vehicles be washed, it must take place on a designated area, located far from these watercourses. Washing of equipment or any vehicles are not allowed within or near any watercourse.

6.1.5 Sanitation and waste generation

Description of the potential impact

During construction, domestic and construction waste is generated. The township of Mzinti is not being serviced as it is an informal township area. Waste generated during the construction phase is therefore stored and removed from site to a registered waste disposal site. Construction and domestic waste could have an impact on the surrounding environment and adjacent watercourse if not managed and or mitigated.

Significance of the impact

Due to the proximity of the watercourse, improper waste disposal will negatively impact the surrounding environment. The impact is of medium magnitude, local extent and short duration during construction and therefore of medium significance prior to the implementation of mitigation measures.

TABLE 11: IMPACT ASSESSMENT – SANITATION AND WASTE DURING CONSTRUCTION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Waste disposal [NEGATIVE]	**Medium**	**Local**	**Short-term**	**Probable**	**Medium**	**Low**

Mitigation Measures

- Construction waste can be stored temporarily on site and must be placed as far as possible from the watercourse;
- Waste storage area must be demarcated and waste must be removed to a registered waste disposal site on a regular basis;
- Sufficient refuse bins must be provided on site during construction; and
- Waste must not be left to decay on site.

6.1.6 Socio-Economic Impact

Description of the potential impact

During the construction activities, various temporary job opportunities are created which will have a positive socio-economic impact on the livelihood of the surrounding community.

In terms of safety and security, there is always risk associated when working with machinery and therefore it is essential that all workers comply with the Health and Safety Act 85 of 1993.

Significance of the impacts

Based on the methodology detailed in **Section 5**, the following ratings have been assigned to the 'employment opportunities' and impact associated with health and safety of employees, respectively.

The job opportunities during the construction phase are short-lived and therefore the impact is only of medium (+) significance. In terms of the health and safety aspects of workforce, the significance of the impact has been rated to be of low significance due to the short construction timeframe. Mitigation measures must however be adhered to.

TABLE 12: IMPACT ASSESSMENT – SOCIO-ECONOMIC IMPACT DURING CONSTRUCTION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Job opportunities **[POSITIVE]**	**Medium**	**Local**	**Short-term**	**Definite**	**Medium (+)**	**Medium (+)**
Health and Safety **[NEGATIVE]**	**Medium**	**Site Specific**	**Short-term**	**Probable**	**Low**	**Very Low**

Mitigation measures

The applicant and/or project manager must ensure that local residents receive preference for job opportunities where local labour might be required.

It is imperative that all personnel adhere to the Occupational Health and Safety Act 85 of 1998 and that no personnel enter any other surrounding properties.

6.2 Impacts during the Operational Phase

During operation, the activities associated with the filling station and mini shopping centre are likely to result in the following environmental and socio-economic impacts:

- *Impact on biodiversity*
- *Impact on soil;*
- *Impact on water resources;*
- *Generation of waste and waste disposal; and*
- *Socio-economic impact.*

6 .2.1 Impact on biodiversity

Description of the potential impact

During operation, vegetation will be permanently lost and fragmented. The disturbed area could also lead to the spread of alien invasive species.

Significance of the impact

Invasion of alien invasive species and use of pesticides and herbicides:

When natural vegetation is removed and activities are undertaken, the opportunity for invasive plant species within the perimeter of the site will increase and will be problematic if not adequately removed or managed. Alien vegetation is normally removed mechanically or chemically. Using harmful chemicals would kill all pest and alien vegetation but also affect other insects and mammals which must be protected. Mechanical removal or removal of alien vegetation by hand is therefore preferred above the chemical treatment thereof.

The impact of alien vegetation and the control thereof is of medium magnitude due to the project area being located within an ESA. The extent of the impact is local and of long-term duration and for this reason the spreading of alien invasive species is rated to be of medium significance prior to the implementation of mitigation measures.

TABLE 13: IMPACT ASSESSMENT – BIODIVERSITY DURING OPERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Spreading of alien invasive species [NEGATIVE]	**Medium**	**Local**	**Long-term**	**Probable**	**Medium**	**Low**

Mitigation measures

- An Invasive Species Management Programme must be compiled and complied with during the operational phase of the project;
- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the establishment and operational phases of the project.

6.2.2 Impact on soil

Description of the potential impact

During operation, fuel spillages can occur. Soil become contaminated when fuel accumulate in soils, which can alter microbial processes and are toxic to soil organisms.

The hardened surfaces can also give rise to the increase in the flow of water during storm events, resulting in erosion and sedimentation of the adjacent drainage line.

Significance of the impact

During operation, soil could be impacted by the following:

- Erosion; and
- Contamination by means of fuel spillages.

Due to the location of the watercourse within the project site, storm water will naturally flow toward the drainage line/watercourse and hardened surfaces will increase the velocity of the water, causing erosion on site which will result to the sedimentation of the watercourse. The impact of erosion during operation is of high magnitude, site specific and long-term duration and for this reason the impact is rated to be of medium significance prior to the implantation of mitigation measures.

Another factor impacting soil would be the spillage of fuel which could accumulate in soil, altering the microbial processes within the soil. This impact is medium magnitude, site specific extent and long duration and for this reason the impact is of also of medium significance prior to the implementation of mitigation measures.

TABLE 14: IMPACT ASSESSMENT – IMPACT ON SOIL DURING OPERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Erosion [NEGATIVE]	**High**	**Site Specific**	**Long-term**	**Probable**	**Medium**	**Low**
Contamination of soil with hazardous substances [NEGATIVE]	**Medium**	**Site Specific**	**Long-term**	**Probable**	**Medium**	**Low**

Mitigation measures

- Permanent measures must be taken on areas prone to erosion. These measures can include gabions or revegetation with indigenous plant species.
- A proper storm water management plan must be drafted and implemented and no storm water from the filling station may be directed to the watercourse. Stormwater from the filling station site must be diverted and stored separately and be removed from site as water containing traces of hazardous substances.
- All surface spillages must be cleaned immediately. Contaminated soil must be removed and contained in a separate container to be disposed of by an approved hazardous waste disposal contractor;

6.2.3 Impact on water resources

Description of the potential impact

As discussed, a watercourse/drainage line separates the filling station from the mini shopping centre and is within a close proximity to both the filling station and other structures and infrastructure. Improper stormwater management could result in contaminants and hazardous substances being transferred to the adjacent watercourse/drainage line, having a negative impact of high severity on the quality of water. This could result to further negative impacts downstream of the activity, impacting the aquatic biodiversity of the watercourse.

The project area is also not serviced by the Nkomazi Local Municipality and therefore sanitation services will be provided by means of septic tanks. The location of the septic tanks is imperative to ensure that the watercourse is not affected by any septic tank failure.

Significance of the impact

Due to the proximity of the watercourse, fuel and oil spillages could enter watercourse, affecting the water quality of the watercourse. Failure of septic tanks can also lead to contaminants affecting the quality of the water due to the proximity of the drainage line / watercourse. This could lead to the pollution of water if not mitigated properly. This impact is of high magnitude, local extent and long-term duration and therefore the impact has been rated to be of high significance prior to the implementation of mitigation measures.

TABLE 15: IMPACT ASSESSMENT – IMPACT ON WATER DURING OPERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Water pollution [NEGATIVE]	**High**	**Local**	**Long-term**	**Probable**	**High**	**Low**

Mitigation Measures

- Stipulations of the Environmental Management Program (EMPr) should be strictly adhered to during the operational phase of the project.
- No fuels or oils may discharge directly into the surrounding area;
- A proper Stormwater Management Plan for the project must be drafted and implemented. All water which could possibly contain traces of hazardous substances, must be diverted away from the watercourse, stored and disposed of as hazardous waste.
- The efficiency of the septic tanks must be checked on a regular basis;
- All septic tanks must be placed outside the 1:100-year flood line.

6.2.4 Generation of waste and waste disposal

Description of the potential impact

As noted previously, the area is not serviced by the Nkomazi Local Municipality and therefore waste generation and disposal must be addressed by the applicant. Improper waste storage and disposal could lead to detrimental environmental impacts.

The types of waste generated by filling stations and mini shopping centres include domestic waste as well as hazardous substances which requires removal from a third-party contractor.

Significance of the impacts

As the area is not being serviced by the local municipality, proper storage of waste until removal is prudent. Improper waste storage could lead to detrimental environmental impacts and impact the health of the surrounding community members.

Taking the environmental and social aspects of the site into consideration, the impact of waste generation and disposal is of high magnitude, local extent and long-term duration. For this reason, the impact is rated to be of high significance prior to the implementation of mitigation measures.

TABLE 16: IMPACT ASSESSMENT – GENERATION OF WASTE AND WASTE DISPOSAL DURING OPERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Waste generation and disposal [NEGATIVE]	High	Local	Long-term	Probable	High	Low

Mitigation measures

- Domestic waste must be separated from hazardous waste and stored separately until it can be removed to a registered waste disposal facility;

- A dedicated, lined, waste storage area must be incorporated into the filling station and mini shopping centre and this area must be surrounded by walls to reduce the visual impact of the waste storage area. This area must be located as far as possible form the watercourse (possibly adjacent to the main road to ease the loading the removal of waste to a registered waste disposal facility;
- The applicant must appoint a certified third-party contractor for the removal of hazardous waste when required;
- Refuse bins must be available on site to reduce the possibility of littering on site during operation.

6.2.5 Socio-economic Impact

Description of the potential impact

The filling station and mini shopping centre will provide much needed permanent job opportunities to the residents of Mzinti. The provision of these job opportunities will impact the livelihoods of the employed positively as it provides an opportunity for these workers to provide for their families.

Significance of the impacts

Based on the methodology detailed in **Section 5**, the following ratings have been assigned to the 'employment opportunities' impact before and after mitigation. The magnitude of the socio-economic impact is high, while the impact is of local extent and long-term duration. The impact is therefore of high (+) significance.

TABLE 17: IMPACT ASSESSMENT – SOCIO-ECONOMIC IMPACTS DURING OPERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Job opportunities **[POSITIVE]**	**High**	**Local**	**Long-term**	**Probable**	**High (+)**	**High (+)**

Mitigation measures

Creating jobs and business opportunities for the local community will have a positive impact. No mitigation measures would be required to further enhance this impact; however, the applicant must ensure that local residents receive preference for job opportunities.

6.3 Environmental Impact Statement

The table below summarises the impact assessed during the construction and operational phases of the filling statin and mini shopping centre. From the table below it is evident that that impacts can be reduced to be of low to very low significance if mitigation measures are implemented and adhered to.

TABLE 18: ENVIRONMENTAL IMPACT STATEMENT

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction Phase Impacts		
Impact on biodiversity	Low	Very Low
Generation of dust	Low	Very Low
Soil Pollution	Low	Very Low
Soil Erosion	Low	Very Low
Sedimentation	Medium	Low
Water pollution	Medium	Low
Sanitation and Waste generation	Medium	Low
Temporary job opportunities	Medium (+)	Medium (+)
Health and safety during construction	Low	Very Low
Operational Phase Impacts		
Spreading of alien invasive species	Medium	Low
Soil Erosion	Medium	Low
Soil Contamination	Medium	Low
Water pollution	High	Low
Waste generation and disposal	High	Low
Permanent Job Opportunites	High (+)	High (+)

7. RECOMMENDATIONS AND WAY FORWARD

7.1 Assumptions and Limitations

In undertaking this investigation and compiling the Draft Section 24G Report, the following has been assumed:

- The information provided by the proponent is accurate and unbiased, and no information that could change the outcome of the Environmental Authorisation process has been withheld.
- The scope of this investigation is limited to assessing the environmental impacts associated with the construction and operation of the filling station and mini shopping centre.
- The conclusion and recommendations proposed are based solely on the information, scope of works as agreed with the proponent.

7.2 Conclusion

The essence of all environmental assessment processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. The impact assessment for this project has been undertaken in line with the requirements prescribed in the NEMA regulations.

The assessment of the possible impacts associated with the construction and operational activities, concluded that the impact on the surrounding environment is of **low significance** with the implementation of mitigation measures. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment and especially with the watercourse which is a sensitive environment, dividing the site into two sections for the filling station and mini shopping centre. It is recommended that pro-active measures are taken to minimise the impact on the watercourse. Recommendations for the mitigation of impact are included within Section 6 and also the Draft Environmental Management Plan attached.

The significance of the potential environmental (biophysical and social) impacts associated with the proposed project are discussed in detail under **Section 6.**

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation. The compilation, implementation and adherence to the Storm Water Management Plan is imperative.

8.3 Way Forward

The next steps for the Section 24G Environmental Authorisation process will be to distribute the Draft Section 24G Report and make it available to the public (including the registered I&APs) and Stakeholders for a period of 30 days, during which the Competent Authority (DARDLEA) will also be given the opportunity to provide comments on the report. After the 30-day comment period, all comments will be addressed by the EAP and incorporated within the Final Section 24G Report to be submitted to the DARDLEA for decision making. All registered I&APs will be notified of the decision and will be given an opportunity to appeal as per the NEMA requirements.