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## DRAFT BASIC ASSESSMENT REPORT

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**PROPOSED BRIDGE CITY BP SERVICE STATION, SITUATED ON  
PORTION 151 OF ERF 8,  
BRIDGE CITY, KWAMASHU, WITHIN ETHEKWINI METROPOLITAN MUNICIPALITY,  
KWAZULU-NATAL**

**Submitted in terms of the Environmental Impact Assessment Regulations, 2014 promulgated in terms of  
the National Environmental Management Act, 1998 (Act No. 107 of 1998)**

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**EDTEA File Reference Number: \_\_\_\_\_**

<b>DOCUMENT NAME</b>	Draft Basic Assessment Report
<b>APPLICANT</b>	Hlengwa & Zulu Investments (Pty) Ltd
<b>PROJECT NAME</b>	The Proposed BP Service Station Development, situated on Portion 151 of Erf 8, Bridge City, KwaMashu, within the eThekweni Metropolitan Municipality, KwaZulu Natal.
<b>ENVIRONMENTAL ASSESSMENT PRACTITIONER'S ORGANISATION</b>	Hanslab (Pty) Ltd
<b>EDTEA FILE REFERENCE NUMBER</b>	
<b>LOCATION</b>	Durban

**COMPILED BY:** Jashmika Maharaj

**SIGNATURE:**  \_\_\_\_\_

**REVIEWED BY:** Mr. Sheldon Singh

**SIGNATURE:**  \_\_\_\_\_

**DATE:** 30 September 2016

## REVIEW OF THE DRAFT BASIC ASSESSMENT REPORT

This Draft Basic Assessment Report is available for commenting for a period of **30 days** (excluding Public Holidays) from **Monday, 03 October 2016** until **Friday, 05 November 2016**. A copy of the Draft Basic Assessment Report is available at strategic public place in the project area and upon request from Afzelia Environmental Consultants (Pty) Ltd.

The report is available for viewing at the following library:

**Bester Community Library, Next to the Bester Community Hall,**

**20 Dalmeny Main Road, Q-Section**

**KwaMashu,**

The report is also available for viewing on the **Afzelia website: [www.afzelia.co.za](http://www.afzelia.co.za)**

Please send your comments and queries before **05 November 2016** to:

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## ACRONYMS

<b>AMAFA</b>	Heritage Kwa-Zulu Natal
<b>BA</b>	Basic Assessment
<b>BAR</b>	Basic Assessment Report
<b>BID</b>	Background Information Document
<b>BPA</b>	Biodiversity Priority Area
<b>COGTA</b>	Co-operative Governance and Traditional Affairs
<b>DAFF</b>	Department of Agriculture, Forestry and Fisheries
<b>DBAR</b>	Draft Basic Assessment Report
<b>DEA</b>	Department Environmental Affairs
<b>DMOSS</b>	Durban Metropolitan Open Space System
<b>DO</b>	Dissolved Oxygen
<b>DOT</b>	Department of Transport
<b>DPL</b>	Dynamic Cone Penetrometer Light
<b>DWS</b>	Department of Water and Sanitation
<b>EAP</b>	Environmental Assessment Practitioner
<b>ECO</b>	Environmental Control Officer
<b>EDTEA</b>	Economic Development, Tourism & Environment Affairs
<b>EI</b>	Ecological Importance
<b>EIA</b>	Environmental Impact Assessment
<b>EIS</b>	Ecological Sensitivity and Importance
<b>EKZNW</b>	Ezemvelo KwaZulu-Natal Wildlife
<b>ELA</b>	Environmental Law Association
<b>EMA</b>	EThekweni Municipal Area
<b>EMF</b>	Environmental Management Framework
<b>EMPr</b>	Environmental Management Programme
<b>ES</b>	Ecological Sensitivity
<b>FEPA</b>	Freshwater Ecosystem Priority Areas
<b>GIS</b>	Geographic Information System
<b>HIA</b>	Heritage Assessment Practitioner
<b>I&amp;APs</b>	Interested and Affected Parties
<b>IAIASa</b>	International Association of Impact Assessment South Africa
<b>IAP</b>	Invasive Alien Plant
<b>IAP</b>	Invasive Alien Plant
<b>IAP2</b>	International Association of Public Participation
<b>IDP</b>	Integrated Development Plans
<b>IEM</b>	Integrated Environmental Management
<b>IWULA</b>	Integrated Water Use License Application
<b>LA21</b>	Local Agenda 21
<b>LAP</b>	Local Area Plan
<b>NEM: WA</b>	National Environmental Management: Waste Management Act
<b>NEMA</b>	National Environmental Management Act

<b>NFEPA</b>	National Freshwater Ecosystem Priority Areas
<b>NSDP</b>	National Spatial Development Perspective
<b>NWA</b>	National Water Act
<b>SACNASP</b>	South African Council for Natural Scientific Professions
<b>SANS</b>	South African National Standards
<b>SAQA</b>	South African Qualifications Authority
<b>SDF</b>	Spatial Development Framework
<b>SIPs</b>	Strategic Integrated Projects
<b>SUDS</b>	Sustainable Urban Drainage Systems
<b>SWMP</b>	Storm Water Management Plan
<b>WULA</b>	Water Use License Application

## EXECUTIVE SUMMARY

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Hlengwa & Zulu Investments (Pty) Ltd (Applicant) proposes to establish a new petrol filling station (BP Service Station) and associated infrastructure, on portion 151 of ERF 8, Bridge City Boulevard, KwaMashu, Durban, within the eThekweni Metropolitan Municipality, KwaZulu-Natal. This proposed development triggers Listed Activities published in Government Notice Regulations (GN R) 983 of 4 December 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). As such, the proposed development requires an Environmental Authorisation from the KwaZulu- Natal Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) subject to the undertaking of a Basic Assessment process. This report constitutes the Draft Basic Assessment Report (dBAR) for the application process. The proposed BP Service Station is intended to form a part of the original mixed use development infrastructure (Bridge City Development) which has been previously authorised by DEDTEA.

This report details the impacts associated with the proposed establishment of the proposed BP Service Station on the property. These have been identified through a combination of desktop research, site investigation, and consultation with the public and relevant key stakeholders as well as an assessment of the site by specialists. Potential impacts which have been identified and assessed include:

- Potential soil and groundwater contamination
- Increased traffic volumes
- Air quality and dust impacts
- Noise impacts
- Visual impacts
- Socio-economic impacts, both positive and negative.

Mitigation measures for the control and minimisation of negative impacts and the enhancement of benefits which must be adhered to during the design, construction, operation and decommissioning phases have been recommended and listed in this Draft Basic Assessment Report, as well as the Draft Environmental Management Programme EMP<sub>r</sub> (attached in **Appendix F**).

This Draft Basic Assessment Report (dBAR) will be available for a 30-day comment period, and comments received will be responded to and included in the Final version of the Basic Assessment Report (FBAR), which will be submitted to the DEDEAT for review and decision-making.

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## SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT

### PRACTITIONER, SPECIALISTS AND PROPONENT

#### 1.1 NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)'S ORGANISATION

**Table 1: Contact details of the EAP's Organisation**

Contact details of the EAP's organisation	
Business name	Hanslab (Pty) Ltd
Physical address	1 Terence Place, Umhlanga Rocks Drive, 4051
Postal address	P.O Box 2135, Umhlanga Manors, 4021
Telephone	031 563 1978
Fax	086 552 4224
Cell:	072 455 5168
E-mail	sheldon@hanslab.co.za

**Table 2: Names and details of expertise of the EAP involved in the preparation of the report**

Names of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Mr Sheldon Singh	M. Environment & Development	IAIASA	14
Ms Jashmika Maharaj	BSC. Environmental Science		1

## 1.2 NAMES AND EXPERTISE OF SPECIALISTS

Table 3: Names and details of expertise of each specialist that has contributed to the report

Name of specialist	Title of specialist report/ s as attached in Appendix D.	Date issued
Wayne Jackson	Wetland Functionality Assessment for the Proposed BP Service Station Development on Portion 151 of Erf 8, Bridge City, Kwamashu, Durban, eThekweni Municipality in KwaZulu-Natal	24 August 2016
M.D. Cooper	Geotechnical and Geohydrological report: PTN 151 of erf 8 Bridge City proposed BP Service Station & Shopping complex	25 November 2015
Krishantha Naidoo	Bridge City: Technical note 2 Internal Intersection Evaluation	14 August 2013
Ntando Kumalo	Vegetation Assessment Report	19 September 2016

## 1.3 CONTACT DETAILS OF PROPONENT

Table 4: Contact details of Proponent and Project Manager

<b>Proponent 1</b>	<b>Hlengwa &amp; Zulu Investments (Pty) Ltd</b>
<b>Contact person</b>	Siyabonga Hlengwa
<b>Physical address</b>	E 497 Timoni road, Kwasmashu, Durban, 4359
<b>Postal address</b>	E 497 Timoni road, Kwasmashu, Durban, 4359
<b>Email</b>	Siyabonga.hlengwa@gmail.com
<b>Telephone</b>	082 837 2348
<b>Proponent 2</b>	<b>Hlengwa &amp; Zulu Investments (Pty) Ltd</b>
<b>Contact person</b>	Wandile Hlengwa
<b>Physical address</b>	E 497 Timoni road, Kwasmashu, Durban, 4359
<b>Postal address</b>	E 497 Timoni road, Kwasmashu, Durban, 4359
<b>Email</b>	china.zulu@gmail.com

<b>Telephone</b>	071 339 0646
<b>Project Manager</b>	<b>Afzelia Environmental Consultants (Pty) Ltd</b>
<b>Contact person</b>	Solomon Fataki
<b>Physical address</b>	76 Valley View Road, Morningside, Durban, 4001
<b>Postal address</b>	PO Box 37069, Overport, Durban, 4067
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<b>Fax</b>	0866922547
<b>Telephone</b>	082 086 5133

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## SECTION B: ACTIVITY INFORMATION

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### 2.1 ACTIVITY BACKGROUND

Hanslab (Pty) Ltd was appointed by Afzelia Environmental Consultants (Pty) Ltd to compile the draft basic assessment report on behalf of Hlengwa & Zulu Investments (Applicant) for the proposed development of a BP Service station and convenience store. The eThekweni Municipality has developed a shopping centre and office park that is located in the Bridge City precinct, Kwa-Mashu area. The retail centre and office park is part of the first phase of a mixed use development that includes retail facilities, private residential apartment area, petrol filling station facility, government offices (Home Affairs, SASSA, Post Office, Legal Aid, Sizakala Centre) and medical centre. A Zoning Certificate was issued for the Bridge City Development, and the proposed development site was zoned as Special Zone 44. The purpose of this zone is to accommodate a wide range of recreational, entertainment, residential, shopping, business, commercial, community, industrial and related activities service. Refer to **Appendix G2** for the detailed report.

The proposed BP Service station site is situated within the Bridge City Developmental node which is part of the precinct plan created by the eThekweni Municipality and its partner Tongaat-Hulett Developments. An Environmental Impact Assessment has been conducted for the Bridge City Depot precinct and mixed use development, and a positive Environmental Authorization (EA) was issued by EDTEA for the proposed development. An application for a Water Use License for the establishment of the shopping precinct within 500m of an identified channelled valley bottom wetland was lodged with the Department of Water and Sanitation (DWS). The WULA for the Bridge City Depot was submitted to the Department of Water and Sanitation (DWS) Durban Regional Office on behalf of the eThekweni Transport Authority on the 17th June 2015 and the reference number for the application is **14/2/U20M/7**.

### 2.2 PURPOSE OF THE BASIC ASSESSMENT REPORT

**The main purpose of this report is to:**

- Determine the policy and legislative context within which the activity is located and how the activity complies with and responds to said policy and legislation;
- State the need and desirability of the proposed activity;

- Provide a description of the receiving environment that would be affected by the proposed activity;
- Identify the preferred site through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic and cultural aspects of the environment;
- Provide a summary of the specialist studies that will be conducted as part of the BA process;
- Determine the significance, duration and probability of the impacts that will occur to inform the technology and micro-siting of the activity on the site;
- Identify the most compatible micro-siting for the activity;
- Identify, assess and rank the significant impacts and risks that the activity will impose on the preferred site through the lifetime of the activity;
- Identify suitable measures to avoid, reverse, mitigate or manage identified impacts;
- Identify residual risks that need to be managed and monitored;
- Outline the public participation process that was undertaken; and
- Provide recommendations for the competent authority to make an informed decision.

### 2.3 LOCATION OF THE ACTIVITY

The proposed service station is located in KwaMashu, within the eThekweni Municipality, in KwaZulu-Natal. Refer to **Figure 3** for the Locality Map. Access to the site is via the Bridge City Boulevard from R102/M25 towards KwaMashu. The site is located adjacent west of the Bridge City shopping complex and positioned on the immediate western corner of the junction between Nkuzana Road and Bridge City Boulevard. At present the site is undeveloped. The geographical co-ordinates of the proposed construction site are indicated in **Table 5** below:

**Table 5: Coordinates of the proposed construction site**

Latitude/Longitude		Degrees	Minutes	Seconds
Start	South	29°	43'	30.1"
	East	30°	59'	00.3"
End	South	29°	43'	30.8"
	East	30°	59'	03.8"





**Figure 1: Depicting the vacant site on which the proposed BP Service Station is to be constructed.**



**Figure 2: Depicting the aerial view of the proposed BP Service Station construction site from the Bridge City shopping complex, West of the proposed site.**

## 2.4 PROPERTY DESCRIPTION

The property impacted by the proposed construction of the BP Service Station and convenience store and their respective owners is reflected in **Table 6** below.

**Table 6: Property associated with the proposed BP Service Station**

Property Name	Surveyor-General Cadastral Code No.	Title Deed Reference	Property size	Owner
Portion 151 of Erf 8 (the Farm Melk Houte Kraal No. 789	NOFT00000000078900306	T53982/2017	4999m <sup>2</sup>	Hlengwa & Zulu Investments





Figure 3: Depicting the locality map for the BP Service Station eThekweni Metropolitan Municipality.





Figure 4: Depicting the Aerial view of the proposed BP Service Station eThekweni Metropolitan Municipality.

## 2.5 PROJECT DESCRIPTION

The Applicant (Hlengwa & Zulu Investments) proposes to construct a new BP Service Station, comprising of the following:

- A forecourt area=251m<sup>2</sup>
- BP Express Shop= 306m<sup>2</sup>
- Anchor shop= 790m<sup>2</sup>
- Tanker loading bay=73.1m<sup>2</sup>
- General parking bays

The installation of five underground storage tanks (USTs), each with a storage capacity of 23m<sup>3</sup> (23000ℓ), equating to a total of 115m<sup>3</sup> or 115 000ℓ. Furthermore, new underground fuel tanks associated with the proposed development will need to be fitted at a typical depth of approximately 5m below existing ground level. The total extent of the site is 4999m<sup>2</sup>. The architectural design for the proposed BP Service Station is illustrated in **Figure 5 below (Refer to Appendix C1-Preferred layout)**.

There are no watercourses on the proposed site that would be directly impacted by the proposed project. However, there is an existing channelled valley bottom wetland that is located approximately **195m** south of the proposed project location and has been classified as a National Freshwater Ecosystem Priority Area (NFEPA) (**Refer to Figure 17 and Appendix A3- Wetland delineation map for the enlarged version**). **Refer to section 2.6.2** for further information regarding the Water Use Licence Application (WULA) for the above mentioned project.



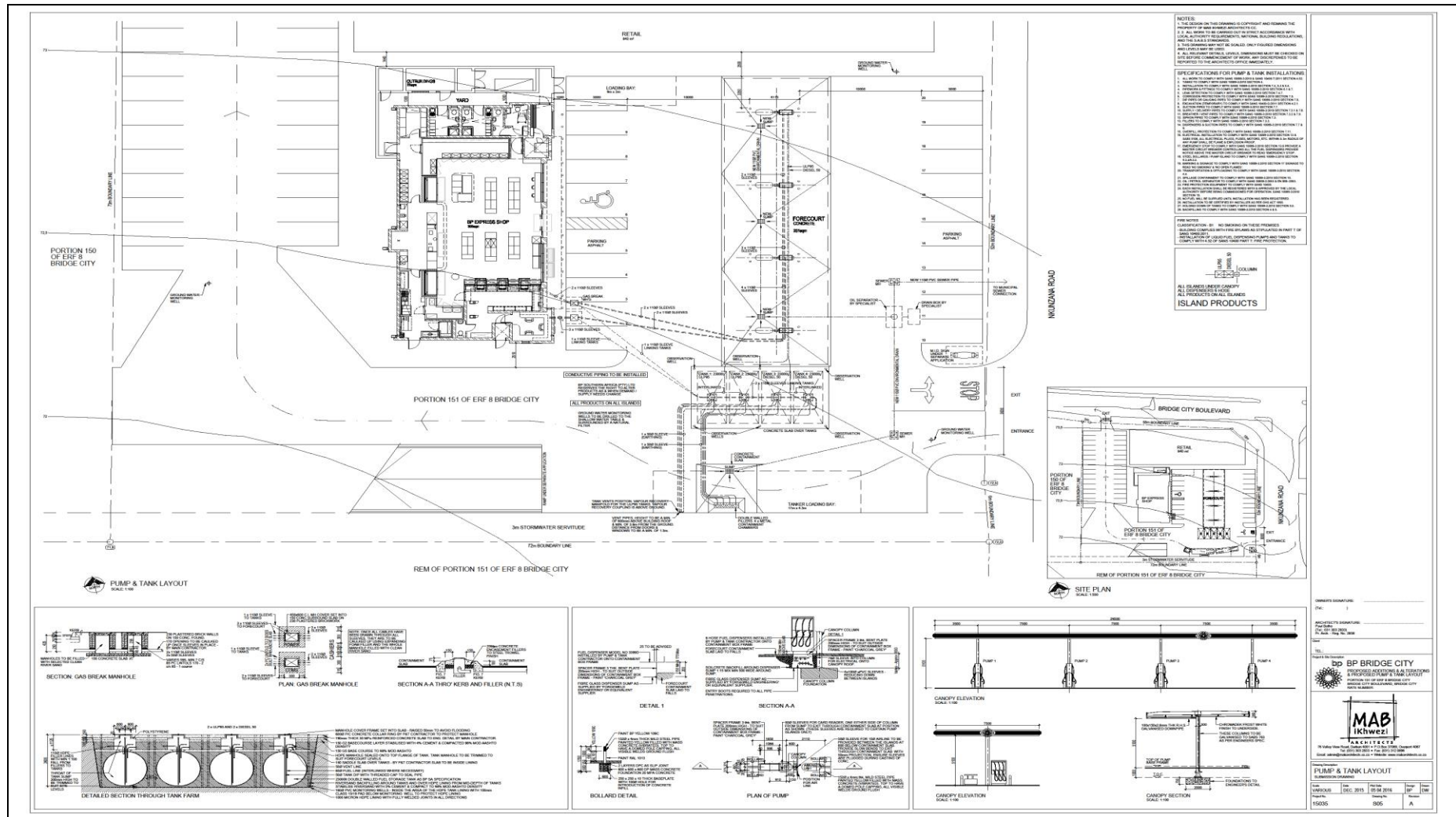


Figure 5: Depicting the Architectural drawing for the proposed BP Service Station, KwaMashu, EThekwini Metropolitan Municipality.

## 2.6 ACTIVITY DESCRIPTION

### 2.6.1 Listed activity triggered according to the EIA Regulations of 2014 (Listing Notice, GNR 983):

The proposed BP Service Station project triggers Listed Activities as stipulated in the EIA Regulations (2014) promulgated in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) as amended under Government Notice No. 982, 983 and 985. Refer to the attached EDTEA enquiry letter correspondence with proponent, and the EDTEA correspondence on the enquiry letter in **Appendix G4 & G5** respectively.

**Table 7: Summary of the Listed Activities**

Government Notice Number	Activity Number	Description of each Listed activity
No. R. 983 of 4 December 2014 (Listing Notice 1)	14	The development of facilities or infrastructure, for the storage, or for 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.

### 2.6.2 Water Use Licence Application (WULA) process:

A Water Use License Application (WULA) is a legislative process governed by the Department of Water and Sanitation (DWS) for the authorisation of all water uses as defined in section 21 of the National Water Act (NWA), 1998 (Act No 36 of 1998). The NWA is a legal framework for the effective and sustainable management of water resources in South Africa.

The proposed development of the BP Service Station project, including construction and operational activities will occur within a distance of 500 meters upstream or downstream from the boundary of the identified wetland, the development must consider the requirements of the National Water Act (NWA), 1998 (Act No 36 of 1998) of the undertaking an Integrated Water Use License Application (IWULA).

The following water uses are applicable for the proposed development of a BP Service station and convenience store:

- Section 21 (c) "impeding or diverting the flow of water in a watercourse"
- Section 21 (i) "altering the bed, banks, course or characteristics of a watercourse"

From the pre-application meeting with the Department of Water and Sanitation (DWS) that was held on the 23<sup>rd</sup> May 2016 at their offices, 85 Field Street, Southern Life Building, Cnr Pine & Field Street in Durban, the water use authorisation application in terms of section 21 (c) and (i) was ruled against as there is an existing application undertaken on behalf of the eThekweni Transport Authority for the Bridge City Depot development. Refer to the attached DWS Pre-Application Minutes of the Meeting in **Appendix E8**.

Section 19 of the NWA specifically deals with the prevention of pollution and provides the means for DWS to enforce pollution prevention. According to the NWA, 1998 (Act No 36 of 1998); Pollution means the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it—

(a) less fit for any beneficial purpose for which it may reasonably be expected to be used; or

(b) harmful or potentially harmful—

- (i) to the welfare, health or safety of human beings;
- (ii) to any aquatic or non-aquatic organisms;
- (iii) to the resource quality; or
- (iv) to property

The proposed service station also triggers the need for an environmental authorisation in terms of the 2014 EIA Regulations promulgated in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) under Government Notice Regulation (GNR) No. GN R 982, 983, 984 and 985 of 4 Dec 2014.

The Proponent must also adhere to the requirements of Section 28 of the NEMA - Duty of Care and Remediation of Environmental Damage; which states that: "(1) *Every person who causes has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm*



*to the environment is authorised by law or cannot be reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment".*

## 2.7 FEASIBLE AND REASONABLE ALTERNATIVES

Alternatives are defined in the Regulations as “different means of meeting the general purpose and requirements of the activity”. In terms of the NEMA EIA Regulations (2014) alternatives must be assessed and evaluated by the EAP at a scale and level that enables adequate comparison with the proposed development. The EAP must provide opportunities for stakeholder input in terms of the identification and evaluation of alternatives. When considering alternatives, the criterion to be taken into account is “any feasible and reasonable alternatives to the activity and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment”.

### 2.7.1 Preferred Site Alternative

**The proposed location of the BP Service Station is the preferred site and is considered feasible and reasonable for the following reasons:**

- The proposed site is highly disturbed due to anthropogenic activities, including large scale pollution and vegetation clearing and the presence of alien invasive species, and no protected or species or red data species were identified within the study site. Furthermore, the proposed site was rated low in terms of ecological sensitivity. **Refer to Appendix D4** for the detailed Vegetation Impact Assessment undertaken for the proposed project.
- According to the Geotechnical and Geohydrological report undertaken by Drennan Maud (Pty) Ltd for the proposed project, the conditions across the proposed project site have been established as relatively favourable and there is no indication of any fatal flaw that may prohibit the development of this site as a service station. **Refer to Appendix D2** for the in depth Geotechnical and Geohydrological Specialist Report.
- According to Wetland Functionality Assessment Report undertaken by Earth Water Environmental Science for the proposed project, the existing wetland is situated **195m away from the proposed development** and therefore, no impacts are predicted to arise over this distance. Refer to **Appendix D1** for the detailed report.
- The proposed BP Service Station is commercially feasible and is a requirement for the long term economic viability of the previously authorised Bridge City project.

- The proposed BP Service Station will enhance the level of convenience to surrounding residents, commercial and the transport corridor through the Bridge City area.
- The proposed BP Service Station forms part of a larger development, known as the Bridge City Depot precinct, which has been issued an Environmental authorisation (EA) by the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT). The economic feasibility and long term viability of the Bridge City Development may be compromised if the BP Service Station is not constructed in conjunction with it. Furthermore, site alternatives for the establishment of petrol filling stations have not been investigated.

**No alternative sites have been assessed.**

### ***2.7.2 Preferred Design or Layout Alternative***

In terms of the alternative layout designs for the proposed development, the site is relatively small 4999m<sup>2</sup> (0.4999 ha) and irregularly shaped (trapezium). Therefore, the design of the facility and its associated infrastructure is specific to the size and shape of the site. Due to these physical limitations, consideration must be given to the entering and existing of vehicles, both to and from the site. Safe, quick and easy access to the tank farm by fuel tankers must be established. This is considered to be of high importance. Refer to **Appendix C1** for the Preferred layout plan.

### ***2.7.3 Preferred Alternative Technologies***

No technology alternatives are being considered for this project as no alternatives which are feasible or reasonable are available. **The storage of fuel for dispensing is governed by SANS 10089-3 (SANS 10089-3 (2010) (English): The petroleum industry Part 3:** The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations), and the installation of the underground storage tanks and associated fuel handling infrastructure, will need to conform to these standards. This requirement limits the opportunity to implement alternate technology, therefore preferred technology requirements that are governed by SANS has taken the most appropriate engineering/architectural designs into consideration which reduces the environmental impacts.

**2.7.4 Alternative Operational Aspects**

No operational aspects beyond the operation of a filling station have been considered. Should the underground storage tanks, pumps and associated pipework being applied for, be approved and constructed, the only feasible operational use of this infrastructure is as a filling station. Therefore, as no alternate development types or technologies are under consideration, there are no alternate operational aspects available for consideration.

**2.7.5 No-go Alternative**

If the site was not developed, i.e. the No-Go Option was to be implemented, the site would remain as it is at present. As such, the site would not provide any services to the community, nor would it assist in improving the value of the area. The vacant site would remain in its current state, which is highly disturbed and degraded, thus offering no immediate or direct benefits to society. Furthermore, investment in the area by BP and other potential investors, which could uplift and be of benefit to the area, would not occur. In its current state, the site provides refuge for vagrants and unwanted elements and is of very little benefit to the landowner (Hlengwa & Zulu Investments (Pty) Ltd) or to the community.

## 2.8 PHYSICAL SIZE OF THE ACTIVITY

**Alternative (BP Service Station, KwaMashu, EThekwini M. Municipality):**

**Size of the activity:**

(Installation of a tank farm, forecourt area, BP Express shop. Anchor shop, tanker loading bay and general parking bays)

Alternative A1<sup>1</sup> (preferred activity alternative)

<4999m<sup>2</sup>

Alternative A2 (if any)

N/Am<sup>2</sup>

Alternative A3 (if any)

N/A m<sup>2</sup>

- **LOCALITY MAP**

A locality map serves as a tool to provide a visual representation of information in a particular geographic context. **Refer to Appendix A2.**

- **LAYOUT OR ROUTE PLAN**

The site plan has been prepared for the proposed site and no alternative site has been investigated. **Refer to Appendix A1.**

- **SITE PHOTOGRAPHS**

**Refer to Appendix B**

- **FACILITY ILLUSTRATION**

The facility illustration has been provided and is attached as an appendix to the report. Refer to **Appendix C1** for the preferred layout for the proposed BP Service Station project.

- **SENSITIVITY MAP**

A sensitivity map was compiled by the Wetland Specialist and is attached to the report. **Refer to Appendix A3.**

<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

## 2.9 THE NEED AND DESIRABILITY FOR THE PROPOSED PROJECT

The Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010 – GN 891 issued in October 2014 in GG 38108 has been used to inform and provide structure for the Need and Desirability.

The concept of “need and desirability” relates to, amongst others, the nature, scale and location of the development being proposed, as well as the wise use of land. Need and desirability are inter-related and the two have been considered in an integrated and holistic manner.

The proposed BP Service Station project is not seen to have Regional importance, however, it does have a high degree of significance at a local level. The proposed site is located within the Bridge City Urban Renewal Project area. This project is being implemented through a joint venture between eThekweni Municipality & Tongaat Hulett (Pty) Ltd in order to revitalise the KwaMashu urban area and boost local economic growth (eThekweni Municipality IDP, 2016/2017).

According to the Traffic Impact Assessment undertaken by Stimela Bosch and Associates (2013) the overall revitalisation project includes the development of 700 000m<sup>2</sup> of development bulk including some 3000 residential units, potentially increasing greater volumes of traffic in the area by 77%. In addition, the eThekweni Integrated Rapid Public Transport Network (IRPTN) (also known as Go! Durban) will include a transport corridor through the bridge City area, linked by various modes of transport (bus, rail and taxi). Phase 1 of the project includes 3 bus, rail and taxi routes: C1 Bridge City to Durban CBD (operational in 2017), C3 Bridge City to Pinetown (2016), C9 Bridge City to Umhlanga Corridor (2018) and the rail corridor: C2: Bridge City and KwaMashu via Berea Road to Umlazi and Isipingo (2016) (WULA Brief Assessment report for the BP Service Station, 2015).

As such, it is likely that traffic volumes in the Bridge City area will increase substantially in the next 2-3 years and that there will be a greater demand for a filling station and service station in the area. This opportunity was justified by the completion of the Traffic Impact Assessment (TIA) by Hatch Goba (Pty) Ltd in August 2013 for the Bridge City Development. The mixed use development is expected to create job opportunities of about 500 local people during the construction and operational phase. The BP service station will create approximately 20 jobs during the operational phase.

## 2.10 LEGISLATION TO BE CONSIDERED

Applicable legislation that is relevant to the proposed BP Service Station project are captured in the table below.

**Table 8: Legislation related to the proposed BP Service Station Development**

Title of legislation, policy or guideline	Administering authority	Date
South Africa's Constitution (Act 108 of 1996), specifically the Bill of Rights (Chapter 2, Section 24)	The State	1996
National Water Act (Act 36 of 1998)	DWS	1998
National Environmental Management Act (Act No. 107 of 1998)	National Department Environmental Affairs (DEA) Department of Economic Development, Tourism and Environmental Affairs (EDTEA (Provincial CA)	1998
Environmental Impact Assessment Regulations (2014) Government Notice No. R 982, 983 and 985	Provincial EDTEA	2014
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	DEA & Ezemvelo KZN Wildlife (EKZNW)	2004
Alien and Invasive Species Regulations (2014) in terms of section 97(1) of NEMBA	DEA & EKZNW	2014
National Environmental Management: Waste Management Act (59 of 2008)	National Department Environmental Affairs (DEA)	2008

The National Heritage Resources Act (Act No 25 of 1999 as amended)	Amafa KwaZulu-Natali (AMAFA)	1999
KwaZulu-Natal Nature Conservation Ordinance 15	EKZNW	1974
KwaZulu-Natal Planning and Development Act, 2008 (Act No.6 of 2008)	eThekweni Municipality Land Use Planning Department and the Department of Cooperative Governance and Traditional Affairs (COGTA)	2008
Municipal Systems Act (Act No 32 of 2000)	COGTA	2000
Integrated Environmental Management (IEM) Guidelines	EDTEA	2005
Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)	Department of Agriculture, Forestry, and Fisheries (DAFF)	1983
National Forests Act (Act No. 84 of 1998)	DAFF	1998
Hazardous Substances Act (Act No. 15 of 1973)	Department of Health	1973
Occupational Health and safety Act (Act No. 85 of 1993)	Department of Labour	1993
Spatial Planning and Land Use Management Act (Act 16 of 2013) (SPLUMA)	National Office of the Department of Rural Development & Land Reform	2013
KwaZulu-Natal Provincial Roads Act (Act No. 4 of 2001)	Department of Transport (DOT)	2001
National Road Traffic Act (No. 93 of 1996)	Department of Transport (DOT)	1996

**2.11 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

**2.11.1 Solid waste management**

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

YES	NO
X	
To be confirmed	

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

- How will the construction solid waste be disposed of?

All solid waste that will be accumulated during the construction phase of the project will be kept in designated areas and disposed weekly by the contractor at the registered local landfill site. This will be addressed in the EMPr (**Appendix F**). The ECO will audit the EMPr and submission will be made to the CA for review.

- Where will the construction solid waste be disposed of?

The construction solid waste will be disposed of at the registered municipal landfill site by the contractor. This will be addressed in the EMPr. Proof of such disposal must be submitted to the ECO by the contractor and form part of the monthly auditing process.

- Will the activity produce solid waste during its operational phase?

YES	NO
X	
To be confirmed	

- If YES, what estimated quantity will be produced per month?

**2.11.2 Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
	X



**2.11.3 Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?	YES	NO X
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

**2.11.4 Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM: WA?	YES	NO X
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**2.11.5 Generation of noise**

Will the activity generate noise?	YES X	NO
If YES, is it controlled by any legislation of any sphere of government?	YES	NO X

- Describe the noise in terms of type and level:

Noise will only be generated during the construction phase (machinery, generator etc.) The level of the noise is however low and below the 85 decibels threshold limit. No noise will be generated during the operational phase; therefore, the impact is short-term and can be minimised with affective monitoring and auditing.

**2.12 Water Use**

Municipal	Water board	Groundwater	River, stream, dam or lake	<b>Other Water will be transported to site via water tanks.</b>	The activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	N/A
---	-----



Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

YES	NO
X	

**Water will be transported to the site via water trucks as to minimise strain placed on the local municipal system, and no water will be abstracted from any watercourse during the construction phase of the project. A water use application in terms of section 21 (i) and (c) has been lodged with the Department of Water and Sanitation for impeding and diverting the flow of water in a watercourse, and altering the bed and banks of the watercourse for the Bridge City Development. A technical report was submitted, as part of the WULA for the entire development, refer to the Appendix G2 for the detailed report.**

## SECTION C: BIOPHYSICAL ENVIRONMENTAL CONDITION

### 3.1 PROPERTY DESCRIPTION

<b>Province</b>	KwaZulu-Natal
<b>District Municipality</b>	eThekweni Metropolitan Municipality
<b>Farm name and number</b>	Farm Melk Houte Kraal No. 789
<b>Portion number</b>	151 of Erf 8
<b>SG Code</b>	NOFT00000000078900306

- ❖ Specialists have been appointed to assist in compilation of this section and specialist reports have been attached as **Appendix D** to the final BAR.

### 3.2 GRADIENT OF THE SITE

#### Alternative S1 (Preferred Alternative):

FLAT	1:50-1:20	1:20-1:15	1:15-1:10	1:10-1:7.5	1:7.5-1:1.5	STEEPER THAN 1:5
		X				

### 3.3 LOCATION IN LANDSCAPE

2.1 Ridgeline		2.4 Closed valley		2.8 Dune	
2.2 Plateau		2.5 Open valley		2.9 Seafront	
2.3 Side slope of hill/mountain		2.6 Plain	X		
2.10 At sea		2.7 Undulating plain / low hills			





**Figure 6: Showing a topographical map of the proposed BP Service Station site .**



### 3.4 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

<b>Alternative S1- Preferred Alternative</b>		
Shallow water table (less than 1.5m deep)	YES	<b>NO</b>
Dolomite, sinkhole or doline areas	YES	<b>NO</b>
Seasonally wet soils (often close to water bodies)	<b>YES</b>	NO
Unstable rocky slopes or steep slopes with loose soil	YES	<b>NO</b>
Dispersive soils (soils that dissolve in water)	<b>YES</b>	NO
Soils with high clay content (clay fraction more than 40%)	YES	<b>NO</b>
Any other unstable soil or geological feature	YES	<b>NO</b>
An area sensitive to erosion	YES	<b>NO</b>

#### 3.4.1 Geotechnical & Geohydrological Study

Appropriately qualified and experienced specialists were appointed to undertake a Geotechnical Investigation and Geo-Hydrological Assessment of the proposed development site. Copies of the reports are attached in **Appendix D2**.

The Geotechnical study conducted by Drennan Maud (PTY) (LTD) in November 2015 has been summarized below:

- The site is underlain at generally very shallow depths by cut shale bedrock of the Pietermaritzburg Formation, which is obscured from view at the existing ground surface by a very thin veneer (0.1 to 0.5m) of fill material placed thereon.
- In the north-western corner of the site the platform has not been cut into bedrock, and is underlain by a moderate thickness ( $\leq 1.5\text{m}$ ) of the very clayey residual and colluvial soils capping the bedrock. The limited thickness of clay soils on the north-western portion of this site will not be suitable for use in this development, as they are highly active and will undergo volume changes with fluctuating moisture content. In addition, they will be prone to soften and heave if used in earthworks. **Refer to figure 7 below.**



- Stormwater will be prone to pond on the site surface if it is not adequately graded. No groundwater seepage is expected within the scope of normal fuel tank excavations (5m depth), however, stormwater will be liable to pond in the excavations, which may necessitate a sump and pump in the wet season.
- None of the soils encountered on-site are considered erodible to any significant degree, and the shale bedrock will not be erodible under normal conditions.
- Excavations into the moderately weathered shale will be inherently stable at steep angles, even vertically, in terms of the overall rock mass strength.
- The shallow founding conditions across the site are highly favourable, and a design bearing pressure of 200kPa can be confidently applied for foundations taken into the hard hand-pickable shale.
- **In terms of the development proposal, founding conditions for the structures are considered to be favourable, however the presence of cut shale at the surface means consideration must be given to the bedrock excavatability for subsurface fuel tanks.**

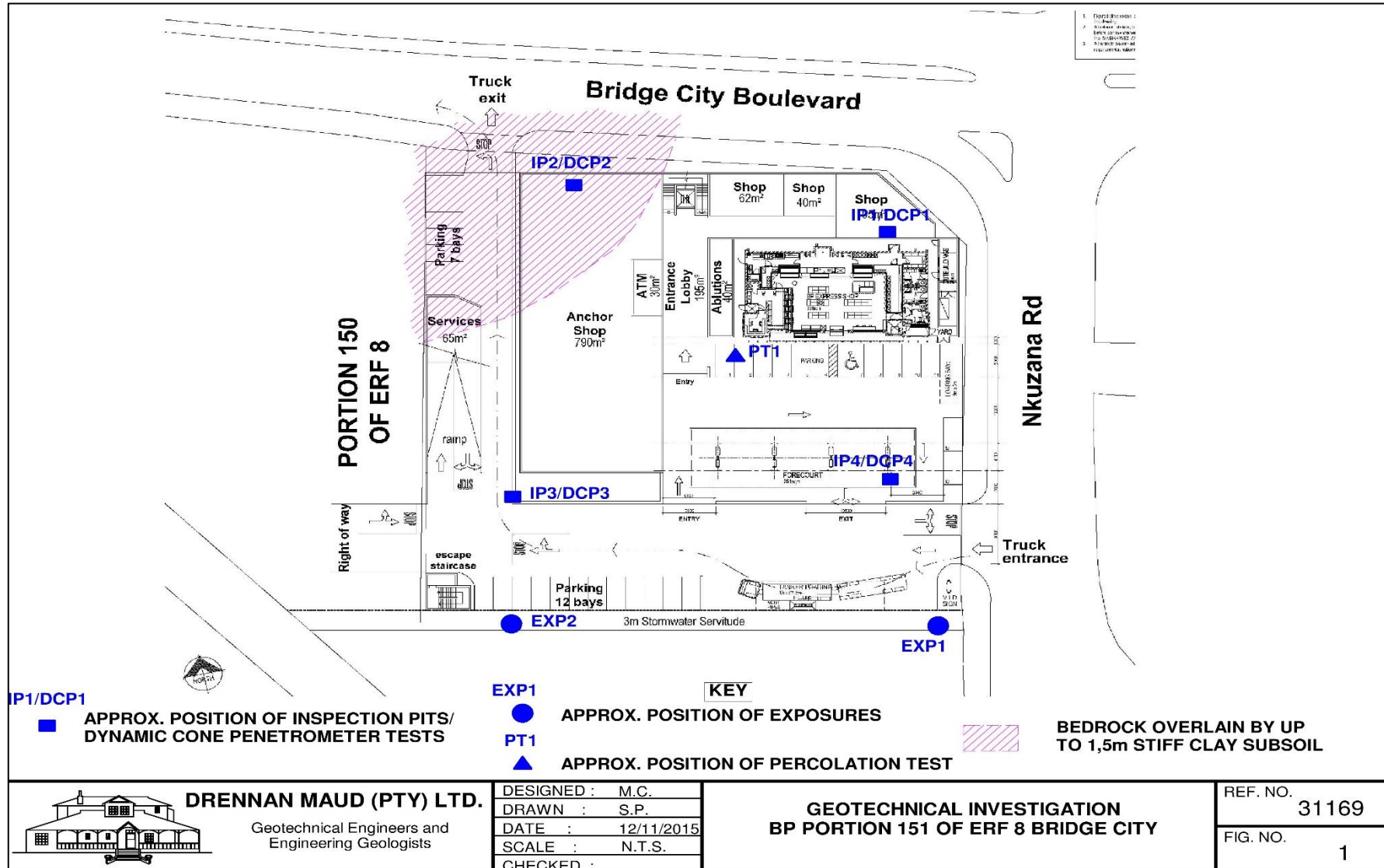


Figure 7: Showing the site layout plan for the proposed BP Service Station.

### 3.4.2 Surface and groundwater

According to the Geo-Hydrological Assessment conducted by Drennan Maud in November 2015, there are no water abstraction boreholes within 1km radius of the proposed development, however two perennial drainage lines are present in the vicinity of the proposed development. Drainage line 1, is approx. 550m North of the site and has largely been canalized in order to realign it through the Phoenix Industrial Development. The stream channels have a relatively steady flow and the unconsolidated alluvial soils within the channels are expected to comprise predominantly sandy material. Drainage line 2 is approx. 650m South of the site and constitutes the main watercourse of the Piesang River. The shale bedrock underlying the footprint of the proposed development is a notoriously poor aquifer. The recommendations that are outlined by the Specialist in the Geo-Hydrological Assessment Report (Pages 10 to 12) attached to this Draft BAR must be incorporated into the Final EMP and must be monitored during the construction phase by an ECO/Specialist.

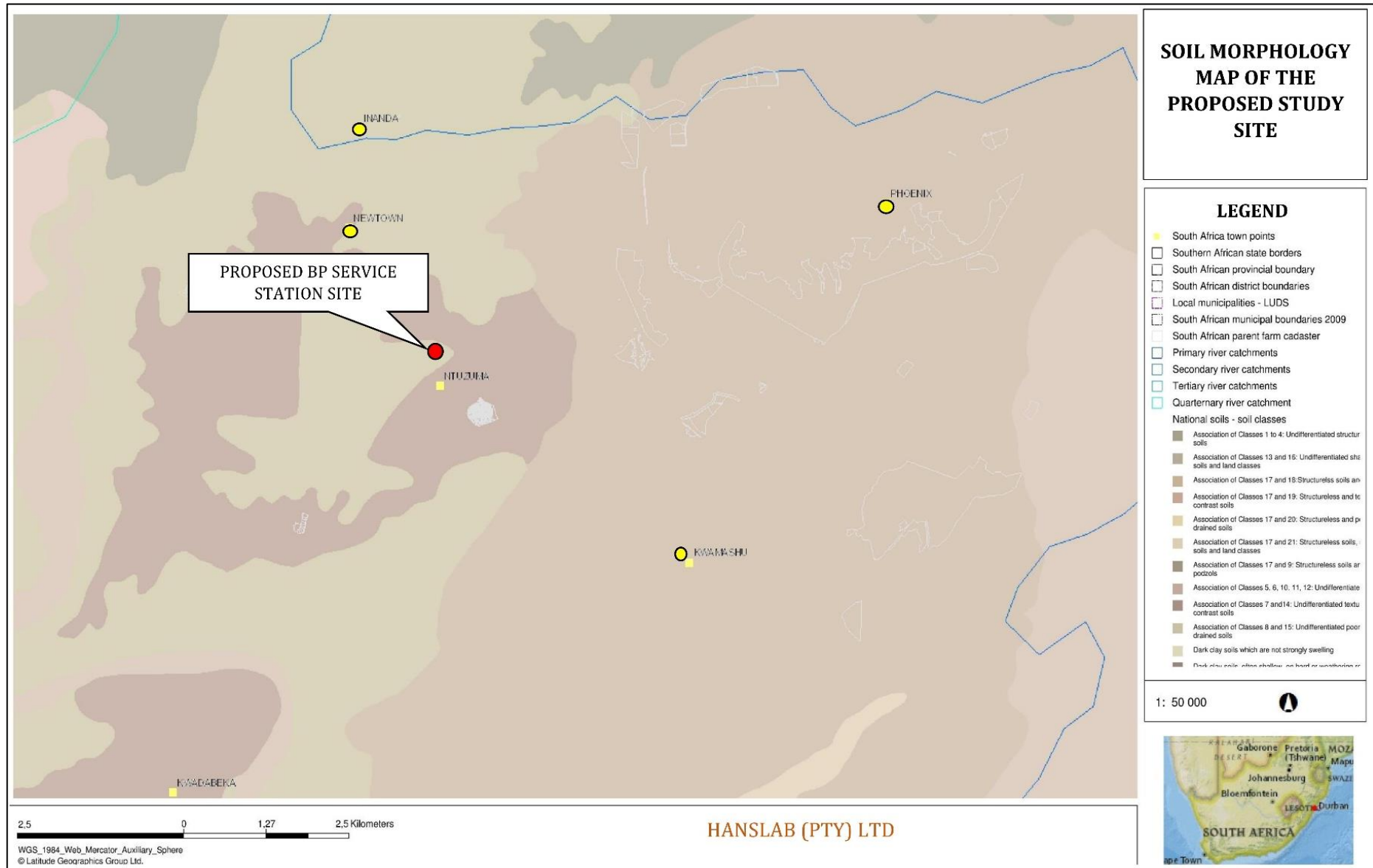
***“The geotechnical and geo-hydrological conditions across the site are considered relatively favourable and there is no indication of any fatal flaw that might preclude the development of this site as a service station” (Geotechnical Report, 2015 prepared by Drennan Maud).***

### 3.5 GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition	Natural veld with scattered aliens	Natural veld with heavy alien infestation	<b>Veld dominated by alien species</b>	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil





**Figure 8: Map depicting the soil morphology of the proposed BP Service Station site.**



A field survey was conducted by an ecologist from Afzelia Environmental Consultants; to determine the vegetation types and species present within the study area **Appendix D4 – Vegetation Assessment Report**.

The proposed development site is situated within the KwaZulu-Natal Coastal Belt Grassland. This vegetation type is characterised by highly dissected undulating coastal plains which presumably used to be covered to a greater extent with several types of subtropical coastal forest. This vegetation type is considered endangered with only a small percentage conserved. Approximately 50% has been transformed mainly through urban sprawl and cultivation (Mucina and Rutherford, 2006; Scott-Shaw and Escott, 2011). Currently the KwaZulu-Natal Coastal Belt is comprised mainly of a mosaic of sugarcane fields, timber plantations, thickets, coastal thornveld and secondary *Aristida* grasslands.

The dominant vegetation type in the study area is the KwaZulu-Natal Coastal Belt Grassland vegetation type (Mucina and Rutherford, 2006; Scott-Shaw and Escott, 2011). The KwaZulu-Natal Coastal Belt Grassland is characterised by undulating coastal plains. It is comprised mainly of a mosaic of sugarcane fields, timber plantations, thickets, coastal thornveld and secondary *Aristida* grasslands. This vegetation type is considered endangered with at least 50% already transformed by cultivation and urban sprawl. The vegetation on site differs significantly from the above benchmark. The site is highly disturbed due to anthropogenic activities including large scale pollution and vegetation clearing and the presence of alien invasive species. No primary or secondary grasslands are present on site. Indigenous grass species including *Aristida junciformis* (Ngongoni Three-awn), *Chloris gayana* (Rhodes grass), *Melinis repens* (Natal Red-top) and *Tragus berteronianus* (Carrot-seed grass) are present in small clusters throughout the site. Alien species in the development footprint included *Ricinus communis var. communis* (Castor oil plant), *Solanum mauritianum* (Bugweed), *Bidens pilosa* (Common blackjack) and *Melia azedarach* (Syringa). Possible impacts that may occur as a result of the proposed BP Service Station include the loss of indigenous vegetation and extensive proliferation of alien invasive species. The study site is rated as “low” in terms of ecological sensitivity. No protected species or red data species were identified within the study site.



**Figure 9: Photo depicting the presence of alien invasive species within the proposed project site.**



**Figure 10: Photo depicting the proposed project area cleared of vegetation.**



The following mitigation measures have been proposed and must be included in the Environmental Management Programme:

- An alien invasive control programme must be implemented to eradicate the existing alien invasive plants and to prevent the introduction and spread of these species as per the legislative requirements specified under the Conservation of Agricultural Resources Act, 1983 amended in 2001 and the National Environmental Management: Biodiversity Act 2004 (Act No, 10 of 2004).
- Disturbed areas must be rehabilitated immediately after construction has been completed in that area by planting appropriate indigenous plant species. Refer to **Appendix D4** for the recommended grass seed mix.

### 3.6 SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites:

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
<b>Permanent Wetland (195 m away from proposed site)</b>	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

The development site is situated within the U20M quaternary catchment which is part of the Mgeni Sub Water Management Area, and the Mvoti to Umzimkulu Water Management Area. The major rivers within the catchment are the Umgeni, Mvoti, Umkomazi and Umzimkulu Rivers. These rivers experience significant levels of high water demand related stress, particularly during drought seasons. Many of these surrounding communities rely on fresh water from these rivers throughout the year. Land use within the U20M quaternary catchment is generally associated with transformation through the development of road networks, housing and industries (**Refer to figure 11 below**).



**Figure 11: Photo depicting the urbanization of the project area.**

**3.7 LAND USE CHARACTER OF SURROUNDING AREA**

Natural area		Dam or reservoir		Polo fields	
Low density residential		Hospital/medical centre	X	Filling station	X
Medium density residential	X	School	X	Landfill or waste treatment site	X
High density residential	X	Tertiary education facility		Plantation	
Informal residential		Church	X	Agriculture	
Retail commercial & warehousing	X	Old age home		River, stream or wetland	<b>A wetland is present 195 m from the proposed development site.</b>

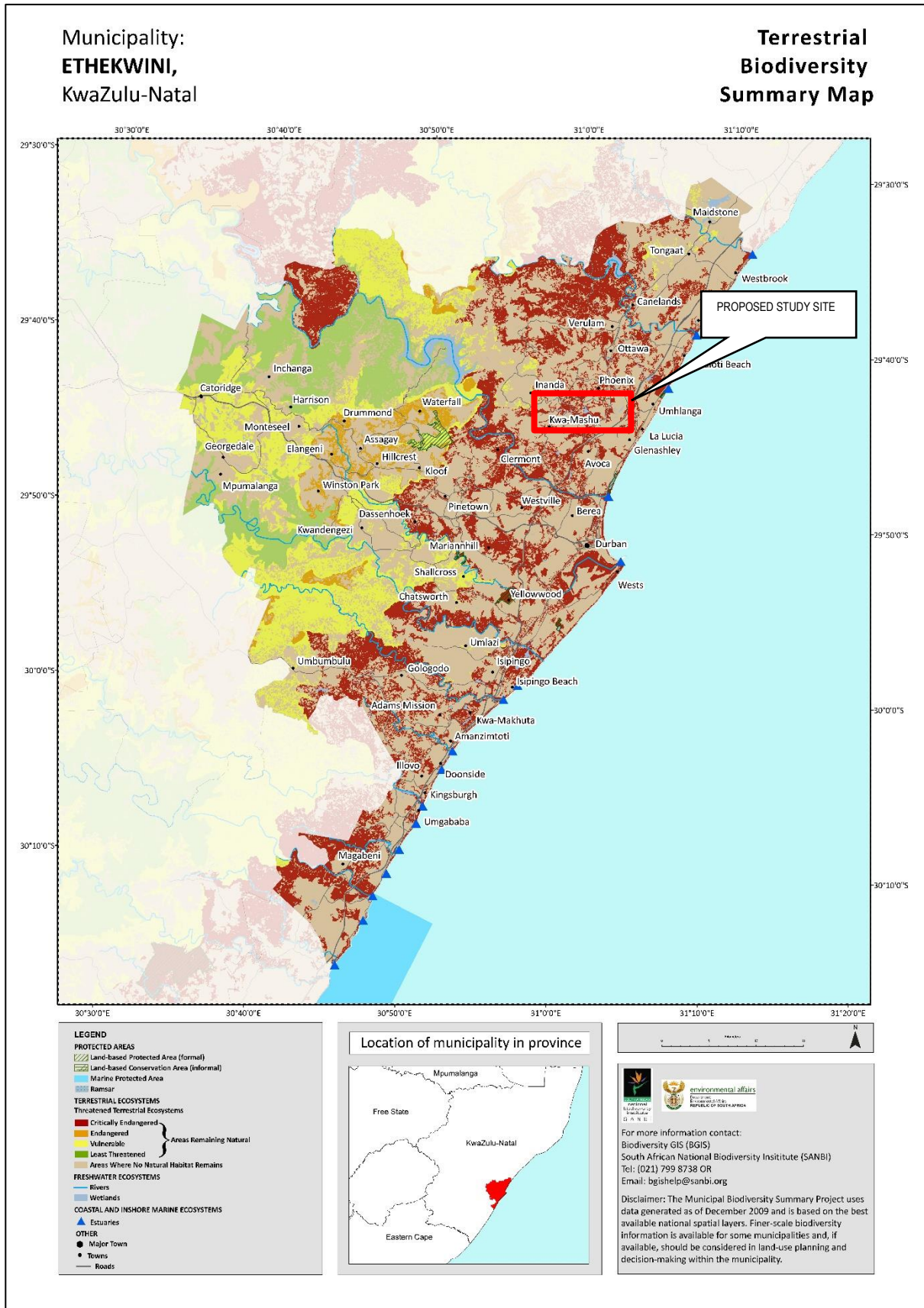
Light industrial	X	Sewage treatment plant	Nature conservation area	
Medium industrial		Train station or shunting yard	Mountain, koppie or ridge	
Heavy industrial		Railway line	Museum	
Power station		Major road (4 lanes or more)	Historical building	
Office/consulting room		Airport	Protected Area	
Military or police base/station/compound		Harbour	Graveyard	
Spoil heap or slimes dam		Sport facilities	Archaeological site	
Quarry, sand or borrow pit		Golf course	Other land uses (describe)	

**Does the proposed site (including any alternative sites) fall within any of the following:**

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO X
Core area of a protected area?	YES	NO X
Buffer area of a protected area?	YES	NO



		X
Planned expansion area of an existing protected area?	YES	NO X
Existing offset area associated with a previous Environmental Authorisation?	YES	NO X
Buffer area of the SKA?	YES	NO X



**Figure 12: Showing a SANBI BGIS biodiversity map of the eThekweni Municipality.**

The GIS map above (**Figure 12**) depicts a summary of the distribution of terrestrial features and biodiversity (South African Biodiversity Institute (SANBI), 2009). The GIS map illustrates the terrestrial ecosystems, protected areas, and freshwater ecosystems within the EThekweni Municipality. Upon consultation and interpretation of this map it was established that the KwaMashu region is dominated by areas within which no natural habitat remains, however critically endangered species may exist within the area.

### 3.8 CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
Uncertain		
<p><b>The Draft BAR will be submitted to AMAFA for comment, and thereafter the organization will determine if a Heritage Impact Assessment should be undertaken and provide a written request for the assessment to be conducted by a registered Heritage Specialist.</b></p>		

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

- **AMAFA to provide comment**

YES	NO
-----	----

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

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

- **Awaiting response from AMAFA.**

YES	NO
-----	----

### 3.9 SOCIO-ECONOMIC CHARACTER

#### 3.9.1 Local Municipality

The eThekweni Municipality is located on the east coast of South Africa in the province of KwaZulu-Natal (KZN). The Municipality has an approximate area of 2217km<sup>2</sup> with a population of around 3 555 868 million people. Population statistics indicate a gender imbalance whereby females outnumber males by 51% to 49 %. The Municipality therefore needs to develop programs and projects that would continuously respond to gender issues (eThekweni Municipality IDP, 2015; Statistics South Africa, 2011).

The eThekweni Municipal Region is the economic powerhouse of KwaZulu-Natal and also makes a significant contribution to the South African economy. It is a vital link between the regional economies of Pietermaritzburg (and onward to Gauteng) and Richards Bay. eThekweni ranks as the second largest economic centre and is the second most significant industrial region in South Africa. It is a promising global competitor with a world-class manufacturing sector. eThekweni is home to Africa's first multimodal logistics platform and international passenger airport, Africa's busiest port, and a global conferencing, sporting and tourist destination. It is also a substantial administrative centre, providing key public services within the Metropolitan area as well as to the wider region. It is both a centre for low cost production, as well as a key logistics hub in the national economy. It is home to 10% of all employment opportunities in South Africa (eThekweni Municipality IDP, 2015).

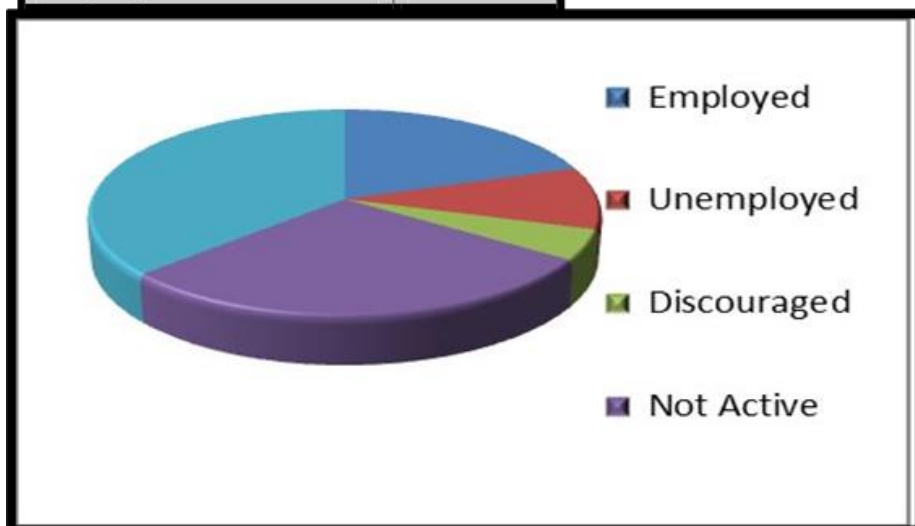
#### **The key issues relating to the economy in eThekweni include:**

1. Persistently high unemployment
2. 41,8% of population subject to conditions associated with poverty
3. Need for greater diversity in the economy
4. Declining resource base and the impacts of climate change
5. Unreliable electricity supply through Eskom (frequent load shedding)
6. Urbanisation
7. Low foreign direct investment (FDI) and business expansion

### 3.9.2 Level of unemployment

According to the EThekwini Municipality, Draft IDP 2015/16, the majority of the unemployed in EThekwini were from the African population (85%), followed by the Asian population (11%) as well as the Coloured and White populations (2% each). The EThekwini draft IDP 2015/2016, indicated that Females constituted 47% of unemployment in 2011, with Males making up the majority of those unemployed with 53%. EThekwini comprised of 54% of KZN's total unemployment in 2011. In 2012, formal employment according to the draft IDP 2015/2016 comprised 84% of total employment whilst informal employment was 16%. The informal sector employed just over 205 000 people in 2013, with a decrease of 1.4% from 2012 (EThekwini Municipality, 2015/16).

Unemployment status	Number
<b>Employed</b>	992560
<b>Unemployed</b>	430319
<b>Discouraged</b>	114229
<b>Not Active</b>	873583
<b>Employment NA</b>	1031671

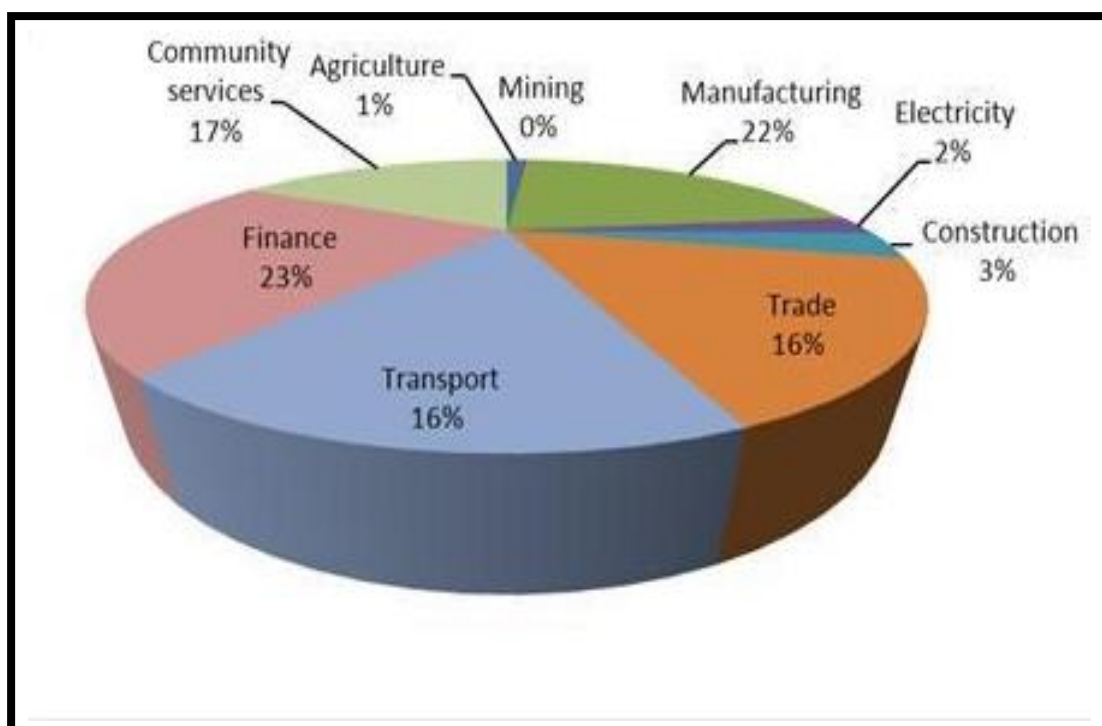


**Figure 13: Showing unemployment status within the EThekwini Municipality (eThekwini Municipality, 2015).**

### 3.9.3 Economic profile of local municipality

According to the EThekweni SDF (2015), the EThekweni municipal region is the economic powerhouse of KwaZulu-Natal, which also makes a significant contribution to the South African economy. EThekweni is ranked as the second largest economic centre and is the second most significant industrial region in South Africa (EThekweni Municipality, 2015).

EThekweni is Africa's first multimodal logistics platform and international passenger airport, Africa's busiest port, as well as a global conferencing, sporting and tourist destination (EThekweni Municipality, 2015). The highest employer in EThekweni is community services with 19%, followed by Trade: 18%, manufacturing: 17%. The smallest sector is mining with only 2% (EThekweni Municipality, 2015/16).

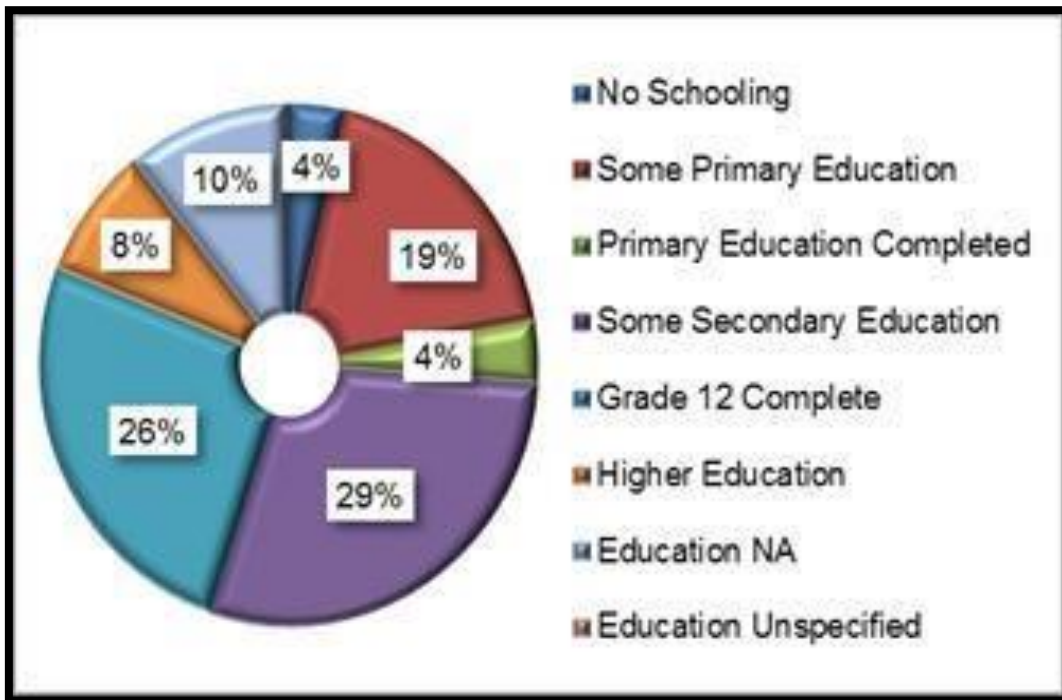


**Figure 14: Showing percentage contribution to GDP (EThekweni Municipality, 2015).**

### 3.9.4 Level of education

According to the SDF (2015), 29% of the EThekweni municipal population has some secondary education, 19% of the population has primary education, 4% have no schooling and 4% is unspecified which means that they are functionally illiterate in that they either do not have school-based education or have not received sufficient school-based education to acquire marketable skills to engage in serious business ventures. 26% of the population has secondary education (grade 12) while only 8% of the population have tertiary level education.





**Figure 15: Showing educational profile of the EThekweni Municipality (EThekweni Municipality, 2015).**

**3.9.5 Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	To be determined	
What is the expected yearly income that will be generated by or as a result of the activity?	To be determined	
Will the activity contribute to service infrastructure?	<b>YES</b>	NO
Is the activity a public amenity?	<b>YES</b>	NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	30	
What is the expected value of the employment opportunities during the development and construction phase?	R2.5 million	
What percentage of this will accrue to previously disadvantaged individuals?	100%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	15	
What is the expected current value of the employment opportunities during the first 10 years?	R250 million	
What percentage of this will accrue to previously disadvantaged individuals?	100%	

### 3.10 BIODIVERSITY

Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category):

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	

The project area falls within the Indian Ocean Coastal Belt vegetation group, but more specifically the CB 3 (KwaZulu-Natal Coastal Belt) vegetation Type. This vegetation type is found to be highly dissected undulating coastal plains which, historically, used to be covered to a great extent with various types of subtropical coastal forest. Some primary grassland dominated by *Themeda triandra* still occurs in hilly, high-rainfall areas where pressure from natural fire and grazing regimes prevailed. At present the KwaZulu-Natal Coastal Belt is affected by an intricate mosaic of very extensive sugarcane fields, timber plantations and coastal holiday resorts, with interspersed secondary *Aristida* grasslands, thickets and patches of coastal thornveld (Mucina, et al. 2006). This vegetation unit has been classified as endangered. Target 25%. Only a very small part is statutorily conserved in Ngoye, Mbumbazi and Vernon Crookes. **The project area has been heavily urbanized and very little natural vegetation has remained** (Wetland Functionality and Delineation Report, 2016).

Indicate and describe the habitat condition on site:

HABITAT CONDITION	PERCENTAGE OF HABITAT CONDITION CLASS (ADDING UP TO 100%)	DESCRIPTION AND ADDITIONAL COMMENTS AND OBSERVATIONS (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	%	
Degraded (includes areas heavily invaded by alien plants)	20%	An alien invasive rehabilitation programme has been recommended by the specialist.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	80%	The study site is rated as "low" in terms of ecological sensitivity. No protected species or red data species were identified within the study site. The site has been transformed by anthropogenic activities.

Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

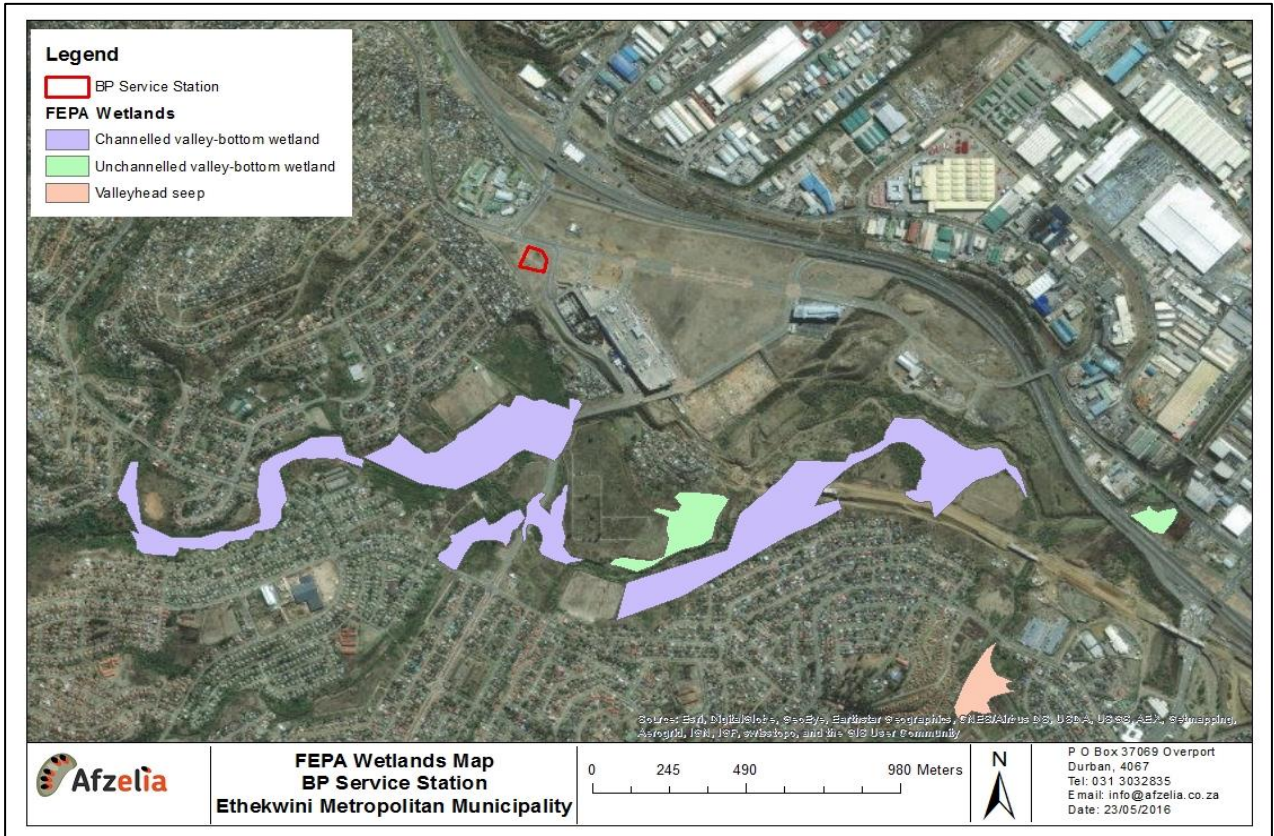
TERRESTRIAL ECOSYSTEMS		AQUATIC ECOSYSTEMS						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened							
		YES	NO	UNSURE	YES	NO	YES	NO

**Wetlands**

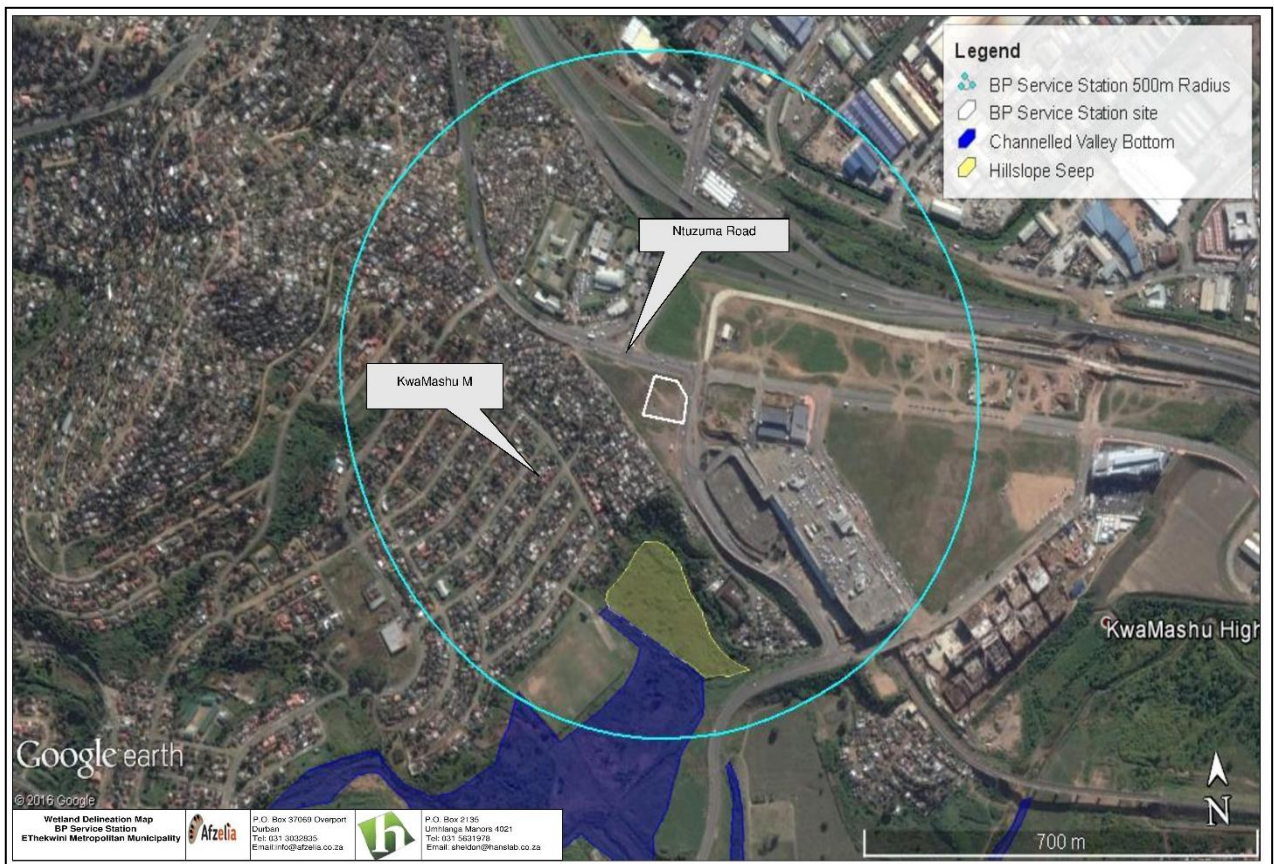
A wetland functionality and delineation assessment was conducted on the 13<sup>th</sup> June 2016 by Earth Water Environmental Science and the report is attached as **Appendix D1** to this report. The National Freshwater Ecosystem Priority Areas (NFEPA) database forms part of a comprehensive approach to the sustainable and equitable development of South Africa’s scarce water resources. The FEPA sites within 500m of the BP Service Station are shown on the maps below. They are classified as **moderately modified (Class C)** from a natural vegetation point of view and have been ranked as a 5 as a result of being located within the sub quaternary catchment with a working for wetlands site. (Refer to page 12 of the Wetland Report for a detailed description).







**Figure 16: Showing a map of the FEPA Wetlands that are present within the KwaMashu region, eThekweni Municipality.**



**Figure 17: Showing the wetland delineation map for the proposed BP Service Station site.**

A channelled valley bottom wetland (HGM) is located approx. 195m south of the proposed development site and is located on the valley floor landscape unit. The wetland was classified primarily by its topographical position (Valley Floor), and the wetland vegetation located on-site. The Wet-Health assessment indicated that the wetland system was a **D classification (Largely Modified)**. The wetland has been modified through the channelling of flow, alien vegetation encroachment, sports field and limited subsistence farming. The EcoServices assessment showed that the wetland provided a high level of services with regards to sediment trapping and some toxicant assimilation, as well as some benefits through providing a source of harvestable material and food for a limited number of households. On average Ecoservices were rated at an **intermediate level**. The EIS assessment indicates that the wetland has a **moderate rating of C** and this correlates with the intermediate Ecoservices score and the **Largely Modified PES** rating.

**The recommended buffer for the service station was calculated to be 100m. This is the requirement to reduce the high risks related to the construction and operation of this type of activity. At this distance there will be no impacts on the wetland. The wetland as identified on the map above, is located 195m away from the proposed development site and as a result no impacts are anticipated to occur over this distance. According to the wetland specialist, the proposed development should be considered favourably as no impacts are anticipated to occur over such a distance ie. 195 m away.**

The vegetation type has been addressed in **Section 3.5** of this report. **The study site is rated as “low” in terms of ecological sensitivity. No protected species or red data species were identified within the study site.** Refer to **Appendix D4** for the attached Vegetation Assessment Report.

The aquatic ecosystem present on site has been addressed in **Section 3.10** of this report. A detailed description of the wetland type is outlined within this section. Refer to **Appendix D1** for the comprehensive Wetland Delineation & Functionality Report.



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## SECTION D: PUBLIC PARTICIPATION

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### 4.1 PUBLIC PARTICIPATION PROCESS

The Public Participation Process (PPP) forms a vital component of the EIA process. The following steps were taken during the PPP:

Afzelia Environmental Consultants (Pty) Ltd developed an initial IAP database consisting of key IAPs and authorities. This database was maintained throughout the duration of the process; and IAPs were notified of the process through: placement of an advertisement in the local newspapers; distribution of a Background Information Document (BID); placement of site notices; discussions with key authorities and IAPs through a public meeting.

#### 4.1.1 Advertisement and Site Notices

Newspaper articles (English & Zulu) were published in The Independent Newspapers – Isolezwe and The Mercury on the 11/01/2016 (**Refer to Appendix E1 & Appendix E2 respectively**). This newspaper article formed part of the Public Participation Process and afforded the public with the opportunity to register as Interested & Affected Parties (I&AP's).

On the 14 January 2016 site notices were placed at strategic points (within close proximity of the proposed project site) for public viewing, **refer to Appendix E3- Proof of Site Notice**.

***As per sub-regulation 3 (8) of the EIA Regulations, 2014, any public participation process must be conducted for a period of at least 30 days.*** The 30-day commenting period has since lapsed. No comments were received with regards to the site notices and the newspaper advertisement, and no individuals have been registered as I&APs during the mandatory commenting period, therefore according to ***sub-regulation 3 (4) of the EIA regulations, 2014, it has been regarded as no comments received from the public.***

## 4.2 STAKEHOLDER ENGAGEMENT AND CONSULTATION WITH COMMUNITY MEMBERS

A Public meeting was held on the 10 February 2016, refer to figure 18 below. All Interested & Affected Parties (I&APs) including the local community members were invited by Afzelia Environmental consultants to attend this meeting. The aim of this meeting was for I&APs to convey their issues and concerns about the proposed BP Service Station project. **No I&APs attended the public meeting.**

**NOTICE OF INTENT TO APPLY: FOR ENVIRONMENTAL AUTHORISATION AND SECTION 21 (C) AND (I) OF THE NATIONAL WATER ACT, 1998 - FOR THE DEVELOPMENT OF A BP SERVICE STATION, BRIDGE CITY BOULEVARD, KWAMASHU, ETHEKWINI MUNICIPALITY, KWAZULU-NATAL**

The application is made in terms of Section 21 (c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) and for the Environmental Authorisation in terms of a Basic Assessment as published in Government Notice No. R 983 Listing Notice 1 of 2014.

**Description of proposed activities:**  
The site is to be developed as a BP service station, comprising a typical forecourt area and BP Express shop, in addition to an anchor shop, tanker loading bay and general parking bays. Five (5) underground storage tanks with a storage capacity of 23m<sup>3</sup> each will be fitted. The total extent of the site is 30 882m<sup>2</sup>.

**Proponent:** H Z Investments

**Location:** The development site is located on the corner of Bridge City Boulevard and Nkuzana Road, across from Bridge City Centre, KwaMashu.





Interested and Affected Parties (I&APs) are invited to provide written comments on the proposed development within 30 days of the placement of this advertisement. Comments must include the I&AP's name, contact details, interest in the proposed projects, preferred method of communication and their concerns. Comments must be sent to the Environmental Assessment Practitioner's contact details below by no later than **11 February 2016**.

**Contact Details:**  
Consultant: Ms Paige Potter  
Contact details: Afzelia Environmental Consultants, PO Box 37069, Overport, 4067  
Tel/fax: 031 303 2835/ 086 692 2547  
Email: paige@afzelia.co.za

**Public Meeting:** You are invited to attend the meeting to obtain additional information on the project and ask questions of the project team  
**Date: Wednesday 10 February**  
**Time: 5.30pm -6.30pm**  
**Location of Public Meeting:**  
**L-section Community Hall, Sibisi Road, KwaMashu**

**Figure 18: Showing the site notice that was placed at the proposed site advertising the public meeting.**

#### 4.3 BACKGROUND INFORMATION DOCUMENT (BID)

A BID was compiled in English and distributed on 29 January 2016 to all identified IAPs, which included local businesses in the area, existing IAPs on the database, local authorities and non-governmental organisations. The BID briefly described the proposed project and explained the EIA process. A copy of the BID is included as **Appendix E5** of this report.

#### 4.4 IDENTIFICATION OF I&APs

Afzelia Environmental consultants (Pty) Ltd developed an initial I&AP database consisting of key I&APs, stakeholders, and authorities. This database was maintained throughout the duration of the process. **Table 9** below lists the I&APs identified during the process (refer to **Appendix E4- I&AP register**)

**Table 9: List of Interested and Affected Parties (I&APS) and key Stakeholders (other than Organs of State) identified in terms of Regulation 41(2)(B) OF GN983**

NAME	AFFILIATION/ ORGANISATION/KEY STAKEHOLDER STATUS	CONTACT NUMBER	EMAIL ADDRESS
Zimisele Madlala	Ward Councillor 54 (ANC)	(031) 519 1110/ 073 160 788	mandlalazimisele@gmail.com
Professor Mbasobheni	Ward Councillor 47 (ANC)	(0)836584976 / 082 760 0471	Professor.Sibiya@durban.gov.za
	Fuel Retailers Association	(011) 886-2664 (011)/ 787-8719	reception@fra.org.za
	South African Petroleum Retailer's Association	(011) 886 6300	henriette.coetzee@sapra.co.za
Eugene Potgieter	Retail Network Services	(011)807 6995/ (086)544 9031/(083)269 9996	eugene@rms.co.za
-	BP Hunslet road	(031)5005766	-
-	Total-Manjoe M25 off ramp	-	-
-	Engen Phoenix/Sulzer	-	-
-	BP M21	(031)5192019	-



-	Houses along the 108285 Street	-	-
-	Bridge city tenants	-	-
-	Besters Community Library	-	-
-	Mabanga Driving school	827 692 975	-
-	Wiseman Driving school	(031)309897/736537299	-
-	Jacob Zuma High School	-	-
-	Shell Mafukuzela	-	-
-	KwaZulu Finance and Investment Corporation (KFC)	(031) 907 8911/031-9074808	mspies@ithala.co.za
-	KwaZulu-Natal Peace Committee Development Unit	(031) 309 6530 031-3096563	kcap@mweb.co.za
-	Bridge city management Association	(031) 5004628/ (031) 5601900	-
-	Bester Dizanempilo Health Clinic	-	-
-	BP Dube Village Mall	(031)5192004	-
-	Taxi Rank	-	-

**Table 10: Issues raised by Interested and Affected Parties (I&APS)**

<b>SUMMARY OF MAIN ISSUES RAISED BY I&amp;APS</b>	<b>SUMMARY OF RESPONSE FROM EAP</b>
No concerns have been raised by the I&APs to date. The mandatory 30-day commenting period has since lapsed.	Once I&APs provide their comments and issues of concern with regards to the Draft BAR for the proposed project, the EAP will then provide responses to all comments received.



Table 11: Authority participation and Organs of State identified as key Stakeholders

AUTHORITY/ORGAN OF STATE	CONTACT PERSON (TITLE, NAME AND SURNAME)	CONTACT NUMBER	E-MAIL ADDRESS	POSTAL ADDRESS
Amafa	Ms Bernadet	033 3946543	<a href="mailto:bernadep@amafapmb.co.za">bernadep@amafapmb.co.za</a>	P.O.Box 2685 PMB 3201
KZN Wildlife	Mr D Wieners	033 8451999	<a href="mailto:Dominic.Wieners@kznwildlife.com">Dominic.Wieners@kznwildlife.com</a>	P.O.Box 13053 3202
Department of Water & Sanitation	Mr S. Govender	031 336 2759	<a href="mailto:GovenderS2@dwa.gov.za">GovenderS2@dwa.gov.za</a>	88 Field Street Durban 4001
KwaZulu Natal Department of Economic Development, Tourism & Environmental Affairs	Ms Mavis Padayachee	0366346300/ 0366341977	<a href="mailto:mavis.padayachee@kznedtea.gov.za">mavis.padayachee@kznedtea.gov.za</a>	-
KwaZulu Natal Department of Economic Development, Tourism & Environmental Affairs	Natasha Brijlall	031 328 3900	<a href="mailto:Natasha.brijlall@kznedtea.gov.za">Natasha.brijlall@kznedtea.gov.za</a>	-

AUTHORITY/ORGAN OF STATE	CONTACT PERSON (TITLE, NAME AND SURNAME)	CONTACT NUMBER	E-MAIL ADDRESS	POSTAL ADDRESS
Department of Agriculture and Rural Development: Land Use and Soil Management	Nonhlanhla Myeni	033 355 9330 or 033 355 9339/47	Thandekile.Nxumalo@kzndard.gov.za	Private Bag X9059, PMB, 3200
Department of Agriculture, Forestry & Fisheries	Nandipha Sontangane	033 392 7739 or 033 345 8783	nandiphas@nda.agric.za	Box 9029, Pietermaritzburg, 3200
Department of Water and Sanitation	Shameilla Ramburan	0313362741 or 0313059915	shameillar@dwa.gov.za	PO Box 1018, Durban, 4000 85 Field Street, Southern Life Building, Cnr Pine & Field Street, Durban, 4001"
Transportation, Infrastructure and Regional Services - KZN Department of Transport - Bridge Office	Mr Paul Dantuma	0333550545	paul.dantuma@kzntransport.gov.za	224 Prince Alfred Street, Pietermaritzburg, 3201

DRAFT BASIC ASSESSMENT REPORT

AUTHORITY/ORGAN OF STATE	CONTACT PERSON (TITLE, NAME AND SURNAME)	CONTACT NUMBER	E-MAIL ADDRESS	POSTAL ADDRESS
Provincial Department of Co-operative Governance & Traditional Affairs	Navani Rajah	033 355 6534/0333556459	navani.rajah@kzncogta.gov.za	Private Bag X9018, Pietermaritzburg, 3200
Ingonyama Board Trust	Pravesh Manipersadh	338 469 939/ 033 3862528	praveshm@ingonyamatrust.org.za	65 Trelawney Road, Southgate, PMB, 3201
eThekweni Metropolitan Municipality	Mr Sibusiso Sithole	0313112132/ 0313112170	metrocea@durban.gov.za	PO BOX 1014, Durban, 4000
ANC- Ward councillor 54	Zimisele Madlala	(031) 519 1110/0736160788	mandlalazimisele@gmail.com	-
ANC	Professor Mbasobheni Sibiya		Professor.Sibiya@durban.gov.za	-

**Table 12: Comments received from Stakeholders and I&AP's following the circulation of the background information document (BIS)**

Interested and Affected Party or Stakeholder	Comments received
<p>1. eThekwini Municipality: Sustainable Development and City Enterprises (Development, Planning, and Management unit)</p>	<p>Date received: 29 February 2016</p> <p><b>Consolidated comments received from the various Municipal Departments:</b></p> <ol style="list-style-type: none"> <li>1. eThekwini Electricity Department</li> <li>2. Environmental Planning and Climate Protection Department</li> <li>3. Land Use Management Branch</li> <li>4. Strategic Spatial Planning Branch</li> <li>5. Geotechnical Engineering Branch</li> <li>6. eThekwini Transport Authority</li> <li>7. Environmental Health Department</li> <li>8. Coastal, Stormwater and Catchment Management</li> <li>9. eThekwini Water and Sanitation Department</li> <li>10. Durban Solid Waste</li> <li>11. Disaster Management</li> <li>12. Fire Safety</li> </ol> <p>Kindly refer to <b>Appendix E6</b> for the detailed comments received from the various Municipal Departments listed above and <b>Appendix E7</b> for the Comments and Responses Report.</p>

## SECTION E: IMPACT ASSESSMENT

### 5.1: IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES.

All mitigation measures have been outlined in specific detail in the EMPr (**Refer to Appendix M**); therefore, this section must be read in conjunction with the EMPr. The impacts that have been outlined below relate to a petrol filling station (service station). No alternative sites or technology alternatives have been investigated as the preferred site alternative and technology was the most feasible and reasonable alternatives in terms of meeting design requirements and SANS standards. The proposed BP Service Station will also be constructed on undeveloped land which has been highly disturbed by anthropogenic activities, within the KwaMashu Bridge City Precinct and falls **195m away from a wetland** (closest sensitive area to the site).

### 5.2: RISK IMPACT ASSESSMENT AND MANAGEMENT MEASURES

#### 5.2.1: Risk Assessment Methodology

The following presents the assessment criteria used to evaluate the impacts resulting from the proposed development.

#### IMPACT ASSESSMENT METHODOLOGY

#### RANKING SCALES FOR ENVIRONMENTAL RISK ASSESSMENT:

#### Probability Rating (P)

Rating	Probability	
5	Definite	The impact will occur regardless of the implementation of any prevention or corrective actions, or it is not known what the probability will be, based on a lack of published information.
4	High Probability	It is most likely that the impact will occur

3	Medium Probability	The impact may occur
2	Low Probability	There is a probability that the impact will occur
1	Improbable	The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate corrective actions;
0	None	The impact will not occur

### Duration Rating (D)

Rating	Duration
5	Permanent
4	Long term (ceases with operational life)
3	Medium Term (5-15 years)
2	Short-term (0-5 years)
1	Immediate >1 year

### Scale Rating (S)

Rating	Scale	
5	International	Southern Africa
4	National	South Africa
3	Regional	The KwaZulu-Natal province
2	Local	The area within 5 km of the site;
1	Site	Within the boundaries of the development site;
0	None	



**Magnitude Rating (M)**

Rating	Magnitude	
10	Very High	Natural, cultural or social functions / processes are altered to the extent that they will permanently cease.
8	High	Natural, cultural or social functions / processes are altered to the extent that they will temporarily cease
6	Moderate	The affected environment is altered but natural, cultural and social functions / processes continue, albeit in a modified way
4	Low	Where the impact affects the environment in such a way that the natural, cultural and social functions / processes are slightly affected.

**5.2.2 Environmental Significance**

Once each impact is rated according to the ranking scales above, the **environmental significance** of each impact could be assessed by applying the following formula:

$$SP = (\text{Magnitude (M)} + \text{Duration (D)} + \text{Scale(S)} \times \text{Probability (P)})$$

**SP** is defined as **Significance Points**. The maximum value of significance points (SP) is 100. Environmental effects could therefore be rated as either **high (H)**, **moderate (M)**, or **low (L) significance** is based on the following:

Rating	SP
>60 Points	High Environmental Significance (HES)
30-60 Points	Moderate Environmental Significance (MES)
<30 Points	Low Environmental Significance (LES)

It must be noted that in identifying and describing the potential impacts of the development, as well as in determining the significance ratings for the impacts, a team of specialist sub-consultants were consulted and appointed to undertake individual specialist studies. These studies informed the findings of this report and are appended in **Appendix D**.

**Table 13: Different Phases of the Project Life-cycle**

<b>CATEGORY</b>	<b>PHASE</b>	<b>DESCRIPTION</b>
<b>Category A</b>	<b>Design and planning</b>	This section of the BAR provides management principles for the design and planning phase of the project. Environmental actions, procedures and responsibilities as required within this phase are specified and will be the responsibility of the applicant.
<b>Category B</b>	<b>Construction</b>	This section of the BAR provides management principles for the construction phase of the project. Environmental actions, procedures and responsibilities as required within the construction phase are specified. These specifications will form part of the contract documentation and, therefore, the Contractor (or Contractors, including sub-contractors) will be required to comply with the specifications to the satisfaction of the Project Manager in terms of the construction contract.
<b>Category C</b>	<b>Operational</b>	This section of the BAR provides management principles for the operation phase of the project. Environmental actions, procedures and responsibilities as required by the applicant during the operation and maintenance phase.
<b>Category D</b>	<b>Decommissioning</b>	This section includes principles for the decommissioning phase of the project. This section will be required to be revisited and updated at the time of decommissioning.

**5.3 CATEGORY A: DESIGN & PLANNING PHASE- PROPOSED BP SERVICE STATION, KWAMASHU, ETHEKWINI METROPOLITAN MUNICIPALITY  
(PREFERRED ALTERNATIVE)**

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACTS</b>			
<p><b>ACCESS ROADS</b></p> <p>New access roads and haulage routes could impact on areas of sensitivity (fauna and flora, etc.).</p>	<p><b>Scale:</b> Site (1)</p> <p><b>Duration:</b> Long-term (4)</p> <p><b>Probability:</b> Medium (3)</p> <p><b>Magnitude:</b> Moderate (6)</p> <p><b>Significance points: MES (33)</b></p>	<p>Temporary access and haulage routes must be designed prior to construction commencing to ensure that the most preferable access and haulage routes has been identified. Provision made for the erection of appropriate warning signs.</p> <p>Road safety must be taken into account when planning access to the site.</p> <p>Use should be made of existing roads as far as possible.</p>	<p><b>Scale:</b> Site (1)</p> <p><b>Duration:</b> Medium-term (3)</p> <p><b>Probability:</b> Improbable (1)</p> <p><b>Magnitude:</b> Low (4)</p> <p><b>Significance points: LES (8)</b></p>
<p><b>EMPLOYMENT OPPORTUNITIES</b></p> <p>Employment opportunities for design and assessment-related services, such as engineers and environmental consultants. In addition, input would be required from the</p>	<p><b>Scale:</b> Local (2)</p> <p><b>Duration:</b> Short-term (2)</p> <p><b>Probability:</b> Medium (5)</p> <p><b>Magnitude:</b> Moderate (6)</p> <p><b>Significance points: MES (50)</b></p>	<p>Positive impact is noted.</p>	<p><b>Scale:</b> N/A</p> <p><b>Duration:</b> N/A</p> <p><b>Probability:</b> N/A</p> <p><b>Magnitude:</b> N/A</p> <p><b>Significance points: N/A</b></p>

<p>authorities responsible for reviewing the applications made in terms of the relevant legislation.</p>			
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**INDIRECT IMPACTS**  
None.

**CUMULATIVE IMPACTS**  
None.

**NO GO ALTERNATIVE**

**DIRECT IMPACTS**

- The identified need for a filling station and convenience services for Integrated Rapid Public Transport Network (IRPTN) Corridors 1 and 3 users would not be met.
- No employment opportunities would be created for design and assessment-related services, such as engineers and environmental consultants, nor for the regional and national authorities responsible for reviewing the applications made in terms of the relevant legislation.

**INDIRECT IMPACTS**

- None.

**CUMULATIVE IMPACTS**

- None.

**5.4 CATEGORY B: CONSTRUCTION PHASE – PROPOSED BP SERVICE STATION, KWAMASHU, ETHEKWINI METROPOLITAN MUNICIPALITY  
(PREFERED ALTERNATIVE)**

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>EROSION &amp; SOIL DISTURBANCE:</b></p> <ul style="list-style-type: none"> <li>Sources of water and soil pollution on construction sites include: diesel and oil; paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt.</li> <li>Spillages of oil, lubricants and fuel from construction vehicles, plant and machinery has the potential to contaminate the soil.</li> <li>When portions of the site are cleared, combined with the failure to implement erosion control measures effectively, silt-bearing run-off and sedimentation pollution will result.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (44)</b></p>	<ul style="list-style-type: none"> <li>Apply erosion controls (e.g., berms, sand bags and hessian sheets) to prevent/minimise soil erosion during construction activities.</li> <li>The top soil layer of not less than 200mm (or as per geotechnical soil profiling result) must be removed and stockpiled in mounds no more than 2m in height in a designated area for use during progressive rehabilitation.</li> <li>Care must be taken to prevent the compaction of topsoil in any way, especially by trucks and other construction machinery.</li> <li>Apply a protective covering on disturbed soils with suitable vegetation after completion of construction activities.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (12)</b></p>

<ul style="list-style-type: none"> <li>• Ground disturbing activities such as blasting and foundation construction can lead to increased erosion.</li> <li>• Stormwater runoff has the potential to erode the topsoil.</li> <li>• Soil compaction due to construction activities will reduce aeration, permeability, and water holding capacity of the soils and cause an increase in surface runoff, potentially causing increased sheet or gully erosion.</li> </ul>		<ul style="list-style-type: none"> <li>• Save topsoil removed during construction and use it to reclaim disturbed areas upon completion of construction activities.</li> <li>• According to the Geotechnical and Geo-Hydrological Assessment Report, none of the soils encountered on site during the present investigation are considered erodible to any significant degree, and the shale bedrock will not be erodible under normal conditions.</li> <li>• Avoid creating excessive slopes during excavation.</li> <li>• Implement a stormwater management plan to ensure compliance with regulations and prevent off-site migration of contaminated stormwater or increased soil erosion during the construction phase. <b>Refer to Appendix D5 for the Stormwater Management Plan undertaken for the Bridge City project.</b></li> <li>• The installation of the Underground Storage Pump &amp; Tanks must follow the SANS 10089-</li> </ul>	
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<b>EROSION &amp; SOIL DISTRUBANCE</b> <b>CONTINUED...</b>		3:2010, and SANS 50858-2:2003 & EN 858- :2003 guidelines. <ul style="list-style-type: none"><li>• Excavation (temporary) to comply with SANS 10400-G:2011 guidelines.</li></ul>	
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POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>SURFACE &amp; GROUNDWATER CONTAMINATION:</b></p> <ul style="list-style-type: none"> <li>• Two drainage lines were identified. Drainage line 1 is approximately 550m North of Site, and Drainage line 2 is approximately 650m South of Site:</li> <li>➤ Drainage line 1 has perennial drainage line has largely been canalized in order to realign it through the Phoenix Industrial development.</li> <li>➤ Drainage Line 2, Approximately 650m South of Site.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (48)</b></p>	<ul style="list-style-type: none"> <li>• Implement all the recommendations set out in the Geotechnical and Geo-Hydrological Assessment Report.</li> <li>• According to the Geotechnical and Geo-Hydrological Report, no groundwater seepage is expected within the scope of normal fuel tank excavations (~5m depth), however, stormwater will be liable to pond in the excavations, which may necessitate a sump and pump in the wet season.</li> <li>• To mitigate the potential for leakage migrating toward an aquifer, the new fuel tank excavations should be thoroughly sealed prior to construction of the new tanks therein.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (3)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (18)</b></p>

<p>This perennial drainage line (drainage line 2) constitutes the main watercourse of the Piesang River, which is joined by a number of smaller tributary streams <i>en route</i> to its ultimate discharge into the Umgeni River some 4km from its mouth. Sections of the river within Phoenix Industrial and Springfield/Sea Cow Lake have been canalised.</p> <ul style="list-style-type: none"> <li>• Spillages of oil, lubricants and fuel from construction vehicles, plant and machinery has the potential to contaminate surface and groundwater.</li> <li>• Spillages and deposition of chemicals onsite can soak into ground water. For instance, the fuel tanks will be buried into a cavity excavated into generally soft to</li> </ul>		<ul style="list-style-type: none"> <li>• To prevent ponding of stormwater following heavy downpours, lined interceptor drains connecting to a sand, oil and grease trap should be installed around the site periphery to collect the run-off deriving from the forecourt area.</li> <li>• Areas outside the forecourt should be ensured to adequately grade away from the forecourt, with all runoff therefrom being collected in suitable surface drains and discharged into the Municipal system allowed for.</li> </ul>	
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medium hard shale bedrock. These tanks could potentially leak in the future. Although the shale bedrock under normal conditions has an extremely low permeability, it is possible that more fractured zones occur, through which any leaked hydrocarbons could potentially seep until they intersect the nearest dolerite body, which is inferred to be a good aquifer, and could in theory transmit the hydrocarbons down strike (south-southwest) toward the Piesang River.

- According to the Geo-Hydrological and Geotechnical Assessment Report, founding conditions for the structures are considered to be favourable, however the presence of cut shale at surface means consideration must be given to

the bedrock excavatability for subsurface fuel tanks.

- Stormwater will be prone to pond on the site surface if it is not adequately graded, as a consequence of the relatively impermeable shale bedrock (Geotechnical & Geo-Hydrological Assessment Report, 2016).

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>AIR QUALITY:</b></p> <ul style="list-style-type: none"> <li>Air quality impacts may arise during the construction phase as a result of dust generated by the exposure and disturbance of soil.</li> <li>Fugitive dust may become a nuisance for surrounding land users and occupiers.</li> <li>Further air quality impacts will arise as a result of the exhaust emissions from construction vehicles and plant.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: MES (40)</b></p>	<ul style="list-style-type: none"> <li>Dust minimisation and control measures should be implemented on the construction site at regular intervals. This could include irrigation by water tankers.</li> <li>The frequency of implementation of dust suppression measures should be increased when it is expected that high wind conditions will develop.</li> <li>Vegetation clearing should only take place immediately prior to the commencement of construction activities in an area, in order to minimise the amount of exposed soil on the site.</li> <li>Stock piles and spoil heaps must be covered with tarpaulins or straw to prevent fugitive dust.</li> <li>All construction vehicles must be appropriately maintained to minimise exhaust emissions.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (3)  <b>Magnitude:</b> Minor (2)  <b>Significance points: LES (12)</b></p>



POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>VEGETATION CLEARING:</b></p> <ul style="list-style-type: none"> <li>Loss of vegetation will occur as a result of vegetation clearing to prepare the site for construction activities.</li> <li>According to the botanical study undertaken by Afzelia Environmental Consulting in 2016, the vegetation of the site comprises KwaZulu-Natal Coastal Belt Grassland. This vegetation type is characterised by highly dissected undulating coastal plains which presumably used to be covered to a greater extent with several types of subtropical coastal forest. This vegetation type is considered endangered with only a small percentage conserved.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Definite (5)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: MES (55)</b></p>	<ul style="list-style-type: none"> <li>The extent of the construction footprint must be limited as much as possible.</li> <li>Limit vegetation removal to the construction footprint only. Retain natural vegetation as much as possible.</li> <li>Re-vegetate disturbed areas, which are not intended to be developed, as soon as construction activities have been completed.</li> <li>Rehabilitation must make use of indigenous grasses and should be undertaken by means of in-situ grass sods and hydro-seeding.</li> <li>Indigenous, low maintenance and water-wise plants should be utilised in landscaped areas.</li> </ul>	<p><b>Scale:</b> Site (2)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (16)</b></p>

**VEGETATION CLEARING CONTINUED...**

Approximately 50% has been transformed mainly through urban sprawl and cultivation.

- No protected species or red data species were identified within the study site.
- The site is not located along a “movement corridor” such as a valley or watercourse, rather it is located between two main transport routes further minimizing the significance of the site in the functioning of the ecological corridor.

- Alien plants must be removed by the Contractor, where these plants establish in the construction footprint during the construction period.

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>TRAFFIC:</b></p> <ul style="list-style-type: none"> <li>Increased traffic volumes will be generated, including heavy vehicles delivering materials to the site. This could cause slight delays in existing traffic operations. The heavy vehicles may also cause damage to the public road.</li> <li>According to the Traffic Impact Assessment undertaken for the Bridge City Development, the following intersections have been identified: <ul style="list-style-type: none"> <li>➤ 1) <i>Railway Road and Main Boulevard (North Western)</i></li> <li>2) <i>Bhejane Road and Main Road Boulevard (North Eastern)</i></li> </ul> </li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: MES (48)</b></p>	<ul style="list-style-type: none"> <li>A detailed Traffic Management Plan should be compiled by the Contractor to ensure that traffic on the local roads is disrupted as little as possible.</li> <li>This plan should include measures for the optimization of the amount of travel on the local roads, thereby reducing impacts.</li> <li>The delivery of construction equipment and material should be limited to hours outside peak traffic times (including weekends).</li> <li>Where obvious damage to the road infrastructure has occurred as a result of the project, repairs should be undertaken in accordance with the relevant authority's specifications and requirements.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (20)</b></p>

<p>3) <i>Bhejane Road and Station Road (Southern)</i></p> <p>4) <i>Bhejane Road and Railway Road (Southern)</i></p> <ul style="list-style-type: none"> <li>➤ The results of the analysis undertaken identified that the critical intersections indicate that all the turning movements operate at acceptable levels of service.</li> <li>• The sensitivity analyses conducted for the Traffic Impact Assessment identified that private car usage of 10 times the norm was assumed. The evaluation indicates that the proposed infrastructure will require minimal changes to accommodate the additional volumes. The upgrades can be accommodated in the road reserve provided.</li> </ul>			
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<ul style="list-style-type: none"><li>The road infrastructure, as proposed in the traffic roads layout, has acceptable LOS for the anticipated traffic volumes and is sufficiently robust to handle an increase of 77 percent in traffic volumes, with minor changes in configuration. This is, however, considered an extreme case (Traffic Impact Assessment for the Bridge City Development, 2013).</li></ul>			
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POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>WASTE GENERATION:</b></p> <p>Waste generation during the construction phase will have a negative impact on the environment, if not controlled adequately. Waste on site includes domestic waste, mixed concrete, paint cans and brushes, insulation material, building rubble and other construction waste.</p>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (52)</b></p>	<ul style="list-style-type: none"> <li>• General waste disposal bins will be made available for employees to use throughout the construction phase.</li> <li>• Where possible construction waste on site should be recycled or reused.</li> <li>• Waste will be temporarily stored on site (less than 90 days) before being disposed of appropriately.</li> <li>• General waste should be placed in a water tight container and disposed of on a regular basis.</li> <li>• Records of all waste being taken off site must be recorded and kept as evidence.</li> <li>• Evidence of correct disposal must be kept.</li> <li>• Construction rubble will be disposed of at an appropriate site.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (14)</b></p>



**WASTE GENERATION CONTINUED...**

- Burning of waste material will not be permitted.
- Hazardous materials will be generated if there are spillages during construction and maintenance periods. This waste should be cleaned up using absorbent material provided in spill kits on site, and must be disposed of accordingly at a hazardous waste landfill.
- Absorbent materials used to clean up spillages should be disposed of in a separate hazardous waste bin.
- The storage area for hazardous material must be concreted, bunded, covered, labelled and well ventilated.
- Provide employees with appropriate PPE for handling hazardous materials.
- All hazardous waste will be disposed of in a registered hazardous waste disposal facility.

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>VISUAL IMPACTS:</b></p> <ul style="list-style-type: none"> <li>Visual impacts will be caused by construction-related activities such as the stockpiling of material, trucks, construction offices, clearance of vegetation, excavation and storage of construction materials and equipment. This impact will be temporary in nature, limited to the construction phase.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Medium probability (3)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (27)</b></p>	<ul style="list-style-type: none"> <li>The construction site, material stores, stockpiles and lay-down area should be kept tidy.</li> <li>Measures to control wastes and litter should be included in the contract specification documents.</li> <li>Wind-blown dust from stockpiles and construction activities, should be controlled.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Improbable (1)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (6)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>NOISE IMPACTS:</b></p> <ul style="list-style-type: none"> <li>Noise impacts will arise as a result of the use of construction vehicles and machinery. These noise impacts may be a nuisance to surrounding land users and occupiers. It must be noted that the significance of the nuisance is somewhat reduced by the location of the proposed development site in close proximity to two busy road routes.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Definite (5)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (55)</b></p>	<ul style="list-style-type: none"> <li>Construction activities should be limited to normal working hours (08:00 – 17:00) and limited to weekdays.</li> <li>No work should occur on weekends or on public holidays.</li> <li>The contractor will adhere to local authority by-laws relating to noise control.</li> <li>Mechanical equipment with lower sound power levels must be selected to ensure that the permissible occupation noise-rating limit of 85 dBA is not exceeded.</li> <li>Equipment must be fitted with silencers as far as possible to reduce noise.</li> <li>All equipment to be adequately maintained and kept in good working order to reduce noise.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (14)</b></p>

**NOISE IMPACTS CONTINUED...**

It is anticipated that the construction activities will not contribute significantly to ambient noise levels.

- Neighbouring landowners should be informed prior to the initiation of noisy activities e.g. high intensity drilling. A grievance procedure will be established whereby noise complaints can be received, recorded and responded to appropriately.
- All construction workers and personnel must wear hearing protection during working hours.
- Noise levels must comply with the SANS 100103 – 0994 (recommended noise levels).

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>HEALTH &amp; SAFETY:</b></p> <ul style="list-style-type: none"> <li>• Potential human health and safety impacts during the operations and maintenance phase would include: <ul style="list-style-type: none"> <li>➤ Exposures to hazardous materials such as petroleum, oils, lubricants, and herbicides can cause serious health problems.</li> <li>➤ The risk of serious injuries or accidents associated with maintenance of infrastructure.</li> </ul> </li> <li>• Adverse impacts could also occur from the risk of fires caused by development activities.</li> <li>• The hazardous nature of the operations that occur at a filling station (i.e. transfer of flammable liquids) have the potential to impact on the safety of those employed at the facility and those onsite or immediately surrounding the site, should there be an accident, spillage or fire.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (40)</b></p>	<ul style="list-style-type: none"> <li>• The construction site must be fenced off to prohibit unauthorised access and site access must be strictly controlled.</li> <li>• All employees, contractors and sub- contractors to wear appropriate PPE.</li> <li>• Open excavations must be clearly marked.</li> <li>• Appropriate health and safety signage must be displayed on site.</li> <li>• Safety Audits must be conducted on a monthly basis and submitted to the relevant departments.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (12)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>ARCHAEOLOGY &amp; PALAEOLOGY:</b></p> <ul style="list-style-type: none"> <li>The construction phase may potentially result in the loss of cultural heritage resources and artefacts buried beneath the surface.</li> <li>It is understood that the site has previously been cultivated. Any heritage resources would have been uncovered at that time.</li> <li>A request was sent to AMAFA to comment on the proposed project and to determine whether a Heritage Impact Assessment must be undertaken.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Permanent (5)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (56)</b></p>	<ul style="list-style-type: none"> <li>If an artefact of potential historical significance is uncovered during construction, AMAFA must be notified immediately.</li> <li>An Environmental Control Officer (ECO) must be appointed to oversee the implementation of the Environmental Management Programme (EMPr) for the duration of the construction phase.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (16)</b></p>

**Indirect impacts of the proposed BP Service Station, KwaMashu, eThekwini Metropolitan Municipality**

**INDIRECT IMPACTS**

**Soils:**

- The clearance of vegetation and the exposure of the soil will increase the risk of erosion of the site and the associated sedimentation of nearby watercourses, particularly in light of the dispersive nature of the soils, as noted by the Geotechnical Specialists.
- Altered hydrological regime as a result of artificial hardening of the soil surface, cut and fill activities and compaction of soils on the site.

**Vegetation:**

- Spread of alien invasive plant species as a result of the disturbance of vegetation and soils on the site by construction activities.

**Social Impacts:**

- Potential increase in criminal activity in the areas surrounding the construction site, associated with the presence of transient job seekers on the site.

**Cumulative impacts of the proposed BP Service Station, KwaMashu, eThekwini Metropolitan Municipality**

**CUMULATIVE IMPACTS**

**Litter:**

- Litter (if wastes are improperly handled, stored and disposed of).

**Economic Impacts:**

- Increased wealth in the community and trading opportunities created by the Bridge City Development. (Positive Impact Noted).

**Social Impacts**

- Skills development. (Positive Impact Noted).



**No-go alternative of the proposed BP service station, KwaMashu, eThekweni Metropolitan Municipality**

**NO-GO ALTERNATIVE**

- No disturbance of the soil on the site, no potential for contamination or an increase in erosion of the site.
- No potential for the contamination of groundwater.
- No additional traffic volumes or associated impacts.
- No increase in air quality impacts and no dust nuisance to local land users and occupiers or road users.
- No loss of terrestrial vegetation and associated habitat / ecological corridor.
- No increase in noise impacts.
- No alteration to the visual environment.
- No occupational health and safety risks.
- No risk presented to potential heritage resources on the site.
- No job creation opportunity.
- No job security for employees of the appointed contractor.
- No potential for economic growth in the metropolitan area.

**5.5 CATEGORY C: OPERATION PHASE OF THE PROPOSED BP SERVICE STATION, KWAMASHU, ETHEKWINI METROPOLITAN MUNICIPALITY  
(PREFERED ALTERNATIVE)**

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>SOIL AND GROUNDWATER CONTAMINATION:</b></p> <ul style="list-style-type: none"> <li>Potential for soil and/ or groundwater contamination during the operation phase, as a result of accidental spills or leaks from the underground fuel storage and handling infrastructure, including pipework and underground storage tanks.</li> <li>Contamination could also arise as a result of the spillage of hazardous substances, inappropriate responses to hazardous spills, improper waste handling, storage and disposal, and the failure of the effluent management system or stormwater management system.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (56)</b></p>	<ul style="list-style-type: none"> <li>Any significant spills or leak incidents must be reported in terms of the National Environmental Management Act, 1998 and the National Water Act, 1998.</li> <li>Fuel dispenser pumps must be located on a hardened surface to contain spillages.</li> <li>The accumulated contents of the oil/water separator must be removed by an accredited company.</li> <li>The oil/water separator must be inspected regularly to ensure that it is functioning at all times.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (22)</b></p>

<ul style="list-style-type: none"> <li>It is very important that these impacts be prevented from arising as a number of the surrounding landowners and residents are reliant on these groundwater reserves to supply water for domestic and business use, as the area is not serviced by municipal bulk water supplies.</li> </ul>		<ul style="list-style-type: none"> <li>Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices.</li> <li>Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch.</li> <li>In the event of the pump dispenser or the hoses being knocked over or ripped off, the fuel supply must be cut off by shear-off valves.</li> <li>All forecourt staff must undergo appropriate training, which must include training to prevent spillages during fuel dispensing.</li> <li>The underground storage tanks, pipelines and other associated infrastructure must be inspected regularly for leaks and to ensure structural integrity.</li> </ul>	
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**SOIL & GROUNDWATER CONTAMINATION  
CONTINUED...**

- A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the underground storage tanks.
- An Emergency Response Plan must be in place for the site, this must clearly describe emergency procedures and include emergency contact numbers.
- If contamination or leakage is detected, this Emergency Response Plan must be followed.
- Following a leak or accidental spill, a remediation plan must be compiled and executed.
- Accidental spills that may occur on the forecourt must be cleaned up immediately using a spill absorbent, which must then be removed by a licenced contractor.

**SOIL AND GROUNDWATER CONTAMINATION  
CONTINUED...**

- Fuel stock must be monitored on a daily basis and these records must be kept on site.
- USTs must have corrosion protection and secondary containment.
- Inspection wells will be installed within the underground storage tank containment area, at all four corners of the containment area. These wells must be inspected on a monthly basis so that leaks can be detected early.
- The forecourt must have an impervious surface, such that fuel and oil products will not leak into the soil or groundwater below the forecourt.
- An appropriate storm water management system must be included in the final site layout.
- The underground storage tank installation must comply with SANS

**SOIL AND GROUNDWATER CONTAMINATION  
CONTINUED...**

10089 part 1 (storage of dangerous goods in underground storage tanks).

- Monitoring of the quality of groundwater should be undertaken on a regular basis. The results of this monitoring should be compared against the baseline quality conditions. If any contamination is detected, immediate steps must be taken to locate the source of the contamination and to correct it. Until such time as the water is safe for consumption, an alternate water supply will need to be provided for the local community.

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>SOLID &amp; LIQUID WASTE GENERATION:</b></p> <ul style="list-style-type: none"> <li>• Solid and liquid waste will be generated by the BP Shop and ablution facilities on-site.</li> <li>• Wastewater will be generated by the BP store and the staff ablution facilities will also generate sewage.</li> <li>• Failure to remove material associated with the running of the service station, including refuse from the shop (i.e. plastic wrappers, boxes, food etc.) would increase litter problems within the area.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (52)</b></p>	<ul style="list-style-type: none"> <li>• Fuels and chemicals must be stored in adequate storage facilities that are secure, enclosed and banded.</li> <li>• Every effort must be made to ensure that any chemicals or hazardous substances do not contaminate the soil and water resources.</li> <li>• A waste management plan must be adhered to at all times. The Contractor must ensure that all solid and liquid waste is collected from the work and camp areas daily and must be disposed of at a registered landfill site. Extra care must be taken on windy days. Address spillages and deposition of hazardous chemicals immediately and initiate soil clean-up and soil removal if required.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (14)</b></p>



<p><b>SOLID &amp; LIQUID WASTE GENERATION CONTINUED...</b></p> <ul style="list-style-type: none"> <li>Hazardous wastes are generated during routine operations and maintenance activities (e.g., lubricating oils, hydraulic fluids, coolants, solvents, and cleaning agents).</li> </ul>		<ul style="list-style-type: none"> <li>No vehicles transporting concrete or bitumen may be washed on site.</li> <li>All cement, bitumen and other potential environmental pollutants must be mixed on an impermeable lipped surface.</li> <li>All hazardous substances / materials are to be transported in sealed containers and bags,</li> <li>Material Safety Data Sheets (MSDSs) must be available on site for all chemicals and hazardous substances to be used on the site.</li> <li>No product is allowed to be discharged into municipal stormwater and/or sewer system.</li> <li>A Spill Contingency or Emergency Response Plan must be drawn up and must include the following actions that need to be taken into account in the event of a spill:             <ul style="list-style-type: none"> <li>➤ Stop the source of the spill</li> <li>➤ Contain the spill</li> </ul> </li> </ul>	
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<p><b>SOLID &amp; LIQUID WASTE GENERATION CONTINUED...</b></p>		<ul style="list-style-type: none"> <li>➤ All significant spills must be reports to the relevant Departments (EDTEA, DWS) and other relevant authorities.</li> <li>➤ Remove the spilled product for treatment or authorised disposal.</li> <li>➤ Determine if there is any soil, groundwater or other environmental impact.</li> <li>➤ If necessary, remedial action must be taken in consultation with this Department.</li> <li>➤ Incident must be documented.</li> <li>• Staff must be trained to execute the spill management procedure.</li> <li>• An emergency preparedness procedure must be developed and kept on site.</li> <li>• Spill kits must be kept on site and staff must be trained in the correct use of these kits.</li> </ul>	
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POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>AIR QUALITY IMPACTS:</b></p> <ul style="list-style-type: none"> <li>Impacts on air quality will arise due to exhaust fumes from motor vehicles, emissions from vent pipes and the release of Volatile Organic Compounds (VOCs) during fuel transfer.</li> <li>The VOCs released during fuel transfer and from vents will dissipate into the atmosphere shortly after being released and are not likely to travel to the surrounding areas.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Low probability (4)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: MES (56)</b></p>	<ul style="list-style-type: none"> <li>The underground storage tanks must be designed and installed in accordance with the SABS 089-3-1999, Third Edition. Code of practice - The petroleum industry, Part 3: The installation of underground storage tanks, pumps/dispensers and pipework at service station and consumer installations). SANS standards adequately address various potential air quality impacts via the implementation of required engineering measures.</li> <li>Underground storage tanks must be fitted with breather pipes.</li> <li>Vent pipes are to be fitted such that they face away from neighbouring residential areas.</li> <li>All fuel delivery vehicles must be adequately maintained to reduce exhaust emissions.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> Improbable (1)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (9)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>TRAFFIC IMPACTS:</b></p> <ul style="list-style-type: none"> <li>The operational filling station will result in an increase in traffic volumes on the road network surrounding the site. The assessment undertaken by the traffic specialist indicated that the existing road network has sufficient capacity to accommodate this increased volume of traffic.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (56)</b></p>	<ul style="list-style-type: none"> <li>Construct two public transport facilities, together with the associated pedestrian facilities in close proximity to the proposed access point.</li> <li>Sufficient parking and loading bays must be provided on the site, as indicated in the specialist report.</li> <li>All signage and road markings for the proposed site intersection should be in accordance with the South African Road Traffic Signs Manual".</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (2)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> High (8)  <b>Significance points: LES (24)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>NOISE IMPACTS:</b></p> <ul style="list-style-type: none"> <li>During operation, the noises that may be associated with the service station may include music broadcast over speakers in the forecourt, staff talking amongst one another, and vehicles revving as they leave the service station.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (56)</b></p>	<ul style="list-style-type: none"> <li>A grievance procedure will be established whereby noise complaints can be received, recorded and responded to appropriately.</li> <li>Equipment such as mechanical equipment, extraction fans, refrigerators that are fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained properly.</li> <li>Noise levels should comply with the SANS Code of Practice 100103 – 0994 (recommended noise levels).</li> <li>Local by-laws for noise levels must be adhered to.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Medium-term (3)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (16)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>VISUAL IMPACTS:</b></p> <ul style="list-style-type: none"> <li>The presence of the service station in a previously agricultural area will have a visual impact in the area, particularly for the neighbouring landowners.</li> <li>In order for the service station to attract customers, there is a need for identifiable corporate and direction signage, most of which will be illuminated at night.</li> <li>The lighting used for signage will increase the visual impact of the facility during the night time for both neighbours and road users.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> Low (4)  <b>Significance points: MES (40)</b></p>	<ul style="list-style-type: none"> <li>Building and landscaping should receive on-going maintenance to avoid visual decay.</li> <li>Litter and waste should be effectively managed to avoid visual problems in the area.</li> <li>The forecourt apron and parking bays should be paved with brick or other unit pavers to minimise expansive asphalt areas.</li> <li>External lighting should be confined to the dispensing forecourt, commercial outlets and other essential areas.</li> <li>Lights should be low-level, where possible, and fitted with reflectors to avoid light spillage</li> <li>Lights and signage should be fixed to buildings or walls, where possible, to avoid unnecessary masts and visual clutter.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Improbable (1)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (9)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>HEALTH &amp; SAFETY IMPACTS:</b></p> <ul style="list-style-type: none"> <li>Petroleum and diesel fuel are considered dangerous substances as they are volatile and could potentially ignite under specific circumstances. Therefore, there is a risk of fire or explosions on site, which would pose a threat to on-site employees and surrounding land users and occupiers.</li> <li>However, this impact is highly unlikely to occur as there are numerous imbedded mitigation measures to minimize the risk of fires and explosions.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (24)</b></p>	<ul style="list-style-type: none"> <li>Fire extinguishers and sand bags must be readily available onsite and easily accessible.</li> <li>Firefighting equipment must comply with SANS 1151 (Portable rechargeable fire extinguishers - Halogenated hydrocarbon type extinguishers), and must be inspected regularly.</li> <li>Appropriate health and safety signage must be displayed on site.</li> <li>An Emergency Response Plan must be in place for the site, this must clearly describe emergency procedures and include emergency contact numbers.</li> <li>No smoking may be permitted on site.</li> <li>No cell phones may be used during fuel dispensing.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (18)</b></p>



**HEALTH & SAFETY IMPACTS CONTINUED...**

- Staff must be trained adequately so as to identify potential high risk situations and implement the Emergency Response Plan.
- Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices.
- Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch and a fire extinguisher.
- A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the underground storage tanks to prevent fugitive emissions.

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>JOB CREATION:</b></p> <ul style="list-style-type: none"> <li>It is expected that 40- 45 people will be employed during the operational phase of the development, with approximately 75 percent of the employment positions being made available to previously disadvantaged South Africans.</li> </ul>	<p><b>Scale:</b> Regional (3)  <b>Duration:</b> Long-term (4)  <b>Probability:</b> Medium probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (22)</b></p>	<p>Positive impact noted.</p>	<p><b>Scale:</b> N/A  <b>Duration:</b> N/A  <b>Probability:</b> N/A  <b>Magnitude:</b> N/A  <b>Significance points: N/A</b></p>

## Indirect impacts of the proposed BP Service Station, KwaMashu, eThekweni Metropolitan Municipality

### INDIRECT IMPACT

#### ECONOMIC IMPACTS:

- The presence of a service station may cause a real or perceived decrease in property values in the adjacent area. The reverse is that the amenity benefit may be attractive to some neighbouring occupiers. The in-filling of such areas with appropriate commercial development also accords with urban planning principles.
- There is a possibility that the proposed facility will compete with existing, established filling stations located within approximately a 5 km radius of the proposed development site. This would affect the economic feasibility and long terms sustainability of both the existing facilities and the proposed new facility and may result in decreased profit margins. This may result in the need to cut down on the number of staff at the existing stations. It is not anticipated, however, that this impact will arise, as the proposed facility intends to target a market which is not targeted by the existing facilities, namely that which is driving along the IRPTN corridors 1 and 3. Thus, it is anticipated that there is sufficient market demand to support all of the filling station facilities. The proposed development is projected to provide an input stimulus into the local economy. The direct impact on the economy, through the associated larger development, could result in growth in the local economy.

### CUMULATIVE IMPACTS

- Litter (if wastes are improperly handled, stored and disposed of).
- Skills development.
- Increased wealth in the community.

**NO GO ALTERNATIVE**

**DIRECT IMPACTS:**

- No risk of soil or groundwater contamination.
- No additional air quality impacts.
- No increase in traffic volumes.
- No increase in noise impacts.
- No additional visual impacts.
- No potential health and safety risks.
- No potential employment creation.

**INDIRECT IMPACTS:**

- No alteration in local property values.
- No stimulus of the local economy.

**CUMULATIVE IMPACTS:**

- No risk of increased litter generation.
- No potential for skills development.
- No increase in the wealth of the community.

**5.6 CATEGORY D: DECOMMISSIONING AND CLOSURE PHASE OF THE PROPOSED BP SERVICE STATION, KWAMASHU, ETHEKWINI  
METROPOLITAN MUNICIPALITY  
(PREFERED ALTERNATIVE)**

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>SOIL AND GROUNDWATER CONTAMINATION:</b></p> <ul style="list-style-type: none"> <li>There is potential for soil and groundwater contamination as a result of accidental spills and leaks from underground storage tanks and associated infrastructure that may have occurred during the operation phase.</li> <li>Hydrocarbon contamination may persist in the subsurface for an extended period before degradation takes place.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> High probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (44)</b></p>	<ul style="list-style-type: none"> <li>Residual product must be removed from the underground storage tanks and associated infrastructure.</li> <li>Underground storage tanks must be degassed before removal.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Short-term (2)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (14)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>AIR QUALITY:</b></p> <ul style="list-style-type: none"> <li>• There is potential for the air quality to be impacted through the decommissioning activities that may generate dust through excavation activities and disturbing the ground.</li> <li>• Exhaust emissions produced by construction equipment will be dispersed and it is not anticipated that they will cause a nuisance to surrounding landowners.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Medium probability (4)  <b>Magnitude:</b> High (8)  <b>Significance points: MES (44)</b></p>	<ul style="list-style-type: none"> <li>• Dust suppression methods, such as wetting or laying straw, should be applied where there are large tracks of exposed surfaces.</li> <li>• Stockpiles and soil heaps must be covered with tarpaulins or straw to prevent fugitive dust.</li> <li>• All construction vehicles must be appropriately maintained to minimise exhaust emissions.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (12)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>LOSS OF EMPLOYMENT:</b> The closure of the service station will mean that those employed at the service station will no longer be required, and their employment may be terminated.</p>	<p><b>Scale:</b> Regional (3) <b>Duration:</b> Immediate (1) <b>Probability:</b> Medium probability (3) <b>Magnitude:</b> Moderate (6) <b>Significance points: LES (30)</b></p>	<ul style="list-style-type: none"> <li>Existing employees may be transferred to another service station if feasible.</li> <li>Employees must be given adequate notice prior to closure, to allow them time to seek alternative employment.</li> <li>Service station management must supply employees with a letter of recommendation and certificate of skills to assist them with future job applications.</li> </ul>	<p><b>Scale:</b> Regional (3) <b>Duration:</b> Immediate (1) <b>Probability:</b> Low probability (2) <b>Magnitude:</b> Low (4) <b>Significance points: LES (16)</b></p>



POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>TRAFFIC IMPACT:</b></p> <ul style="list-style-type: none"> <li>Vehicle traffic around the site may increase during the decommissioning phase and impact the natural traffic flow around the site.</li> </ul>	<p><b>Scale:</b> local (2)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (3)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (27)</b></p>	<ul style="list-style-type: none"> <li>Co-ordination of movement of vehicles on and off site to reduce risks and prevent congestion on roads in the vicinity of the site.</li> <li>No vehicles or machinery should be serviced or refuelled onsite.</li> <li>Peak traffic hours should be avoided.</li> <li>Large vehicle turning must take place onsite and not in the adjacent roads.</li> <li>In cases where activities may obstruct traffic, local traffic officials must be contacted.</li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (14)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>HEALTH AND SAFETY:</b></p> <ul style="list-style-type: none"> <li>During the decommissioning phase, open excavations, vehicle movement and other construction activities may pose a health and safety hazard to workers.</li> <li>Storage, handling and transport of fuel is potentially dangerous to humans and properties due to the risk of fire and explosions.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Medium probability (3)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (24)</b></p>	<ul style="list-style-type: none"> <li>The construction site must be fenced off to prohibit unauthorised access and site access must be strictly controlled.</li> <li>All employees, contractors and sub- contractors to wear appropriate PPE.</li> <li>Open excavations must be clearly marked.</li> <li>All employees, contractors and sub- contractors must comply with the relevant Health and Safety Policy.</li> <li>Fire safety should be considered and all vehicles should have fire extinguisher.</li> <li>Employees should be trained on fire safety and there should be fire marshals.</li> <li>Local emergency fire brigade number should be known to everybody.</li> <li>Appropriate health and safety signage must be displayed on site.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (12)</b></p>

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION
<b>DIRECT IMPACT</b>			
<p><b>NOISE AND VIBRATIONS:</b></p> <ul style="list-style-type: none"> <li>• Vehicles and other machinery required for decommissioning will increase the noise levels during working hours.</li> <li>• Decommissioning activities which are likely to cause vibrations include:               <ul style="list-style-type: none"> <li>➤ Gaining access to the underground tanks through the demolition of concrete by excavation machinery.</li> <li>➤ Entry and use of construction vehicles as well as cranes on site.</li> </ul> </li> </ul>	<p><b>Scale:</b> Local (2)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Low probability (2)  <b>Magnitude:</b> Moderate (6)  <b>Significance points: LES (18)</b></p>	<ul style="list-style-type: none"> <li>• The contractor will adhere to local authority by-laws relating to noise control.</li> <li>• Decommissioning activities will be restricted to regular working hours, i.e. Monday to Friday (08:00 – 17:00).</li> <li>• Mechanical equipment with lower sound power levels will be selected to ensure that the permissible occupation noise-rating limit of 85 dBA is not exceeded.</li> <li>• Equipment will be fitted with silencers as far as possible to reduce noise.</li> </ul>	<p><b>Scale:</b> Site (1)  <b>Duration:</b> Immediate (1)  <b>Probability:</b> Improbable (1)  <b>Magnitude:</b> Low (4)  <b>Significance points: LES (6)</b></p>

Table 14: Summary of the impacts for all phases of the proposed development (preferred alternative)

<b>CONSTRUCTION PHASE</b>		
<b>IMPACTS</b>	<b>SIGNIFICANCE POINTS WITHOUT MITIGATION</b>	<b>SIGNIFICANCE POINTS WITH MITIGATION</b>
Erosion & soil disturbance	44 (MES)	12 (LES)
Surface & groundwater contamination	48 (MES)	18 (LES)
Air Quality	40 (MES)	12 (LES)
Vegetation Clearing	55 (MES)	16 (LES)
Traffic	48 (MES)	20 (LES)
Waste generation	52 (MES)	14 (LES)
Visual impacts	27 (LES)	6 (LES)
Noise impacts	55 (MES)	14 (LES)
Health & safety	40 (MES)	12 (LES)
Archaeology & palaeontology	56 (MES)	16 (LES)
<b>AVERAGE</b>	<b>47 (MES)</b>	<b>14 (LES)</b>
<b>OPERATIONAL PHASE</b>		
<b>IMPACTS</b>	<b>SIGNIFICANCE POINTS WITHOUT MITIGATION</b>	<b>SIGNIFICANCE POINTS WITH MITIGATION</b>
Soil & groundwater contamination	56 (MES)	22 (LES)
Solid & liquid waste generation	52 (MES)	14 (LES)

Air quality	56 (MES)	9 (LES)
Traffic	56 (MES)	24 (LES)
Noise impact	56 (MES)	16 (LES)
Visual impact	40 (MES)	9 (LES)
Health & safety	24 (LES)	18 (LES)
Job creation	22 (LES)	N/A
<b>AVERAGE</b>	<b>45 (MES)</b>	<b>16 (LES)</b>
<b>DECOMMISSIONING PHASE</b>		
<b>IMPACTS</b>	<b>SIGNIFICANCE POINTS WITHOUT MITIGATION</b>	<b>SIGNIFICANCE POINTS WITH MITIGATION</b>
Soil & groundwater contamination	44 (MES)	14 (LES)
Air quality impact	44 (MES)	12 (LES)
Loss of employment	30 (LES)	16 (LES)
Traffic impact	27 (LES)	14 (LES)
Health & safety	24 (LES)	12 (LES)
Noise & vibrations	18 (LES)	6 (LES)
<b>AVERAGE</b>	<b>31(MES)</b>	<b>12 (LES)</b>

## 5.7 ENVIRONMENTAL IMPACT STATEMENT

This draft Basic Assessment Report (dBAR) for the proposed BP Service Station has been undertaken in accordance with the Environmental Impact Assessment Regulations (2014) published in Government Notices R. 982 of 4 December 2014 read with Section 44, of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

This draft BAR provides an assessment of both the benefits and potential negative impacts anticipated as a result of the BP Service Station construction. The results of the specialist studies undertaken indicate that the development of the BP Service Station is likely to yield both negative and positive socio-economic impacts. The proposed project would result in limited negative impacts on the biophysical and socio-economic environment during the construction phase. Those negative impacts that would arise on the biophysical and socio-economic environments would have a low significance if the recommended mitigation measures are implemented.

Potential construction related impacts were assessed, in general, to be of low significance, due to their local nature and short term durations. Impacts would decrease to lower levels of significance with the implementation of the recommended mitigation measures. During the operational phase, the impacts relating to the contamination of the surrounding area through operational activities was found to be of medium to low significance, however through the implementation of the recommended mitigation measures these could be reduced to low significance. Furthermore, the no-go option is not preferred as the economic and social challenges related to the KwaMashu area and its immediate surrounding areas will continue. The above mentioned must be considered by the Department in its evaluation of the environmental authorisation application.

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## SECTION F: RECOMMENDATIONS OF THE EAP

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**The following recommendations are made as they relate to the primary environmental issues identified during the course of the EIA:**

The proposed development of a service station is seen as a positive development when viewed in the broader context as this will result in improved service and better environmental management of the site. This includes improved infrastructure and installation and operational methods that will reduce environmental risks associated with operation of the service station.

**In the event that the project is approved, the following recommendations should be considered:**

➤ **Filling Station Layout and Design**

- All recommendations made by the Geohydrological Specialist should be considered. These recommendations are listed in **Section C**, of this Report and should be considered in the design of the proposed facility.
- The layout and design of the facility must include a stormwater management system that collects and directs all contaminated / potentially stormwater runoff from the site into an oil / grease separator and then into the effluent treatment system, prior to discharge to the environment.
- The recommendations made by the Geotechnical Specialist regarding earthworks, founding conditions, control of surface and groundwater and the positioning of underground storage tanks, should be given consideration in the design of the filling station.
- If a rock pecker is to be utilised for hard excavation, surrounding land owners and occupiers must be engaged before and during the excavation activities, in order to minimise frustration and impacts. If blasting is the proposed hard excavation technique proposed, appropriate applications will need to be made, and surrounding landowners and road authorities (including SANRAL and the Provincial Roads Authority) will need to be informed and have input to this process.
- An experienced and competent geotechnical engineer should be appointed to inspect the earthworks and foundation excavations during the development of the site to confirm founding depths and bearing pressures.

➤ **Tank and pipe work installation**

- The tank installation must comply with the necessary SANS codes especially SANS 1535 and

SANS 089-3. In particular the following are important to prevent ground water contamination:

- All pipe work must be installed on non-cohesive drainage/bedding material in reverse graded trenches, to ensure that any lost product will migrate back to the UST
- The base of the tank pit should be V-shaped and graded to a sump to allow collection of any hydrocarbon product leaking from filler and dip-point manholes
- The tank farm must be lined with a heavy-duty HDPE liner or clay layer to prevent infiltration of product to the ground water should a leak/spill occur. It must be noted that this is especially important if bedrock is encountered during excavation activities
- The void around the UST must be back filled with free-draining granular material to ensure that any product loss through the UST or ancillary pipe work will flow towards the low point
- All filler and dip-point manholes must be properly sealed and regularly cleaned out to prevent accumulation of hydrocarbon product on these contaminant structures.
- All pipelines must be fuel-grade HDPE piping with thermo-weld fittings.

➤ **Stormwater**

- All surface spillages must be contained on site through channels and trenches, these must be diverted to an oil / water separator or sump of sufficient capacity.
- The forecourt will be concrete paved to prevent infiltration of fuel into the subsurface soils with surface runoff designed to flow towards a centralised collection point which is connected to an oil/water separator.
- The area around the filler points will be concreted and the drainage connected to the oil/water separator.
- The oil / water separator should be regularly checked and kept clean to prevent blockage and overflow.
- Any material collected must be disposed at an appropriately registered waste disposal site; and
- All accidental surface spills of oil or fuel must be contained on-site and diverted to the oil/water separator.

➤ **Construction Phase Management**


- The EMPr (**attached in Appendix F**) must be implemented and complied with to ensure the minimisation, control and mitigation of construction phase impacts.
- Compliance with the EMPr should be evaluated and audited by an independent, appropriately qualified and experienced ECO, on a monthly basis, as a minimum.




- Alien plants must be removed by the Contractor, where these plants establish in the construction.
- Construction activities should be limited to normal working hours (08:00 – 17:00) and limited to weekdays. No work should occur on weekends or on public holidays.
- The Contractor must adhere to local authority by-laws relating to noise control.
- If an artefact of potential historical significance is uncovered during construction, AMAFA must be notified immediately.

➤ **Operational Phase Management**

- Spill kit stations must be established and maintained on site. Filling Station staff must receive training on the appropriate response to a spill / leak situation. In addition, all forecourt staff must undergo appropriate training to prevent spillages during fuel dispensing.
- Accidental spills that may occur on the forecourt must be cleaned up immediately using a spill absorbent, which must then be removed by a licenced contractor.
- Any significant spills or leak incidents must be reported in terms of the National Environmental Management Act, 1998 and the National Water Act, 1998.
- The underground storage tanks, pipelines and other associated infrastructure must be inspected regularly for leaks and to ensure structural integrity.
- The oil/water separator must be inspected regularly to ensure that it is functioning at all times.
- The monitoring wells installed in each corner of the underground storage tank excavations must be monitored regularly, as an early warning leak detection system. Underground storage tanks should also be fitted with automatic leak detectors that alert management to a leak.
- Fuel stock must be monitored on a daily basis and these records must be kept on site.
- If contamination or leakage is detected, this Emergency Response Plan must be followed.
- Following a leak or accidental spill, a remediation plan must be compiled and executed.

  
\_\_\_\_\_  
**JASHMIKA MAHARAJ (EAP)**

30/09/2016  
**DATE**

  
\_\_\_\_\_  
**SHELDON SINGH**  
**(ENVIRONMENTAL SPECIALIST)**

30/09/2016  
**DATE**

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## APPENDICES

**The following Appendices are attached to this report:**

Appendix A: Maps

Appendix A.1: Aerial Map

Appendix A.2: Locality Map

Appendix A.3: Wetland Delineation Map

Appendix B: Site Photographs

Appendix C: Facility illustration(s)

Appendix C1: Preferred Layout

Appendix D: Specialist reports

Appendix D1: Wetland Assessment

Appendix D2: Geotechnical & Geohydrological Report

Appendix D3: Traffic Impact Assessment – Bridge City

Appendix D4: Vegetation Impact Assessment

Appendix D5: Stormwater Management Plan- Bridge City

Appendix E: Public Participation

Appendix E1: Newspaper adverts 1 (Zulu)

Appendix E2: Newspaper adverts 2 (English)

Appendix E3: Proof of Site Notice

Appendix E4: I&AP Register

Appendix E5: BID Document

Appendix E6: Comments from Organs of State and I&APs

Appendix E7: Comments and Responses Report

Appendix E8: Proof of Consultation with DWS for the WULA

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other Information

Appendix G1: WULA Brief Assessment Report

Appendix G2: Property Zoning Certificate

Appendix G3: Details of EAP and Declaration of Interest

Appendix G4: EDTEA Enquiry Letter Correspondence with the Proponent

Appendix G5: EDTEA Correspondence on the Enquiry Letter

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