Sasol South Africa Limited

PROPOSED SASOL RECEIVER PIGGING STATION IN KWAZULU-NATAL

Draft Environmental Management Programme

APRIL 2023

PUBLIC

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Draft Environmental Management Programme

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GLOSSARY

Abbreviation	Definition
AIS	Alien and Invasive Species
BDM	Biodiversity Management Branch
CARA	Conservation of Agricultural Resources Act (No. 43 of 1993)
CR	Critically Endangered
DEA	Department of Environmental Affairs
D'MOSS	Durban Metropolitan Open Space System
ECA	Environmental Conservation Act 73 of 1989
EFZ	Estuarine Functional Zone
EI	Ecological Importance
EMPr	Environmental Management Programme
EN	Endangered
EPL	Ecosystem Protection level
ESA	Ecological Support Areas
ETS	Ecosystem Threat Status
GA	General Authorisation
GDP	Gross Domestic Product
IDP	Integrated Development Plan
LC	Least Concern
NEM:AQA	The National Environmental Management: Air Quality Act 39 of 2004
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:PAA	National Environmental Management Protected Areas Act (No. 57 of 2003)
NEM:WA	National Environmental Management: Waste Act (59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	The National Heritage Resources Act (No. 25 Of 1999)

Abbreviation	Definition
NPAES	National Protected Areas Expansion Strategy
NWA	The National Water Act (No. 36 Of 1998)
OEC	Obstacle Evaluation Committee
OHSA	National Occupational Health and Safety Act (No. 85 of 1993)
PES	Present Ecological Status
SAAF	South African Air Force
SACAA	South African Civil Aviation Authority
SAHRA	South African Heritage Resource Authority
SQR	Sub-quaternary Reach
VU	Vulnerable
WMA	Water Management Area
WUL	Water Use Licence

1 INTRODUCTION

WSP Group Africa (Pty) Ltd (hereafter 'WSP') have been appointed by Sasol South Africa Limited (hereafter "Sasol") to undertake a Basic Assessment (BA) process for the expansion of the South Pressure Reducing Station (PRS) to include a Receiver "Pigging" Station, located in Umbogintwini. The Pigging Station is to be established on the existing operating South Durban Pipeline (SDP) network in KwaZulu-Natal (KZN) adjacent to the existing PRS (**Figure 1-1**).

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the Environmental Impact Assessment (EIA) Regulations promulgated in Government Notice (GNR) 982 of 2014 as amended (hereafter EIA Regulations), a Basic Assessment (BA) process is required for the proposed expansion project. In order for the proposed project to proceed, it will require an Environmental Authorisation (EA) from the Competent Authority (i.e., the KwaZulu-Natal Department of Economic Development, Tourism & Environmental Affairs (EDTEA)).

1.1 BACKGROUND INFORMATION

Sasol is the supplier of natural gas, sourced from the Pande and Temane gas fields in Mozambique via the existing Mozambique to Secunda pipeline, as well as methane rich gas manufactured in the Sasol Secunda Plant. The gas is transported through an underground network of pipelines through to the various provinces in South Africa namely Mpumalanga, North-West, Gauteng, Free-State and KZN.

To verify pipeline integrity and conduct internal cleaning of the pipeline, Sasol Satellite Operations proposes to perform "pigging" of the pipeline at predefined intervals. Pigging along the KZN route are proposed to be located as follows:

- Launch station located near Bayhead Road, close to the harbour [29°54'20.09"S; 31° 0'32.46"E]
- Receiving Station will be located near Kynoch Road, Umbogintwini [30°0'59.26"S; 30°54'31.58"E] (**Figure 1-1**).

It must be noted that the application for EA and the associated BAR is applicable only to the Receiver Station located in Umbogintwini. Despite all construction and operational activities associated with the proposed Receiver Station being located within a completely transformed area, the proposed activities constitute the expansion of the footprint of the existing PRS which may result in the removal of 300 m^2 or more of indigenous vegetation within an area defined as Critical Biodiversity Area (CBA): Irreplaceable (KZN Biodiversity Sector Plan (2016) therefore an application subject to a BA is required.

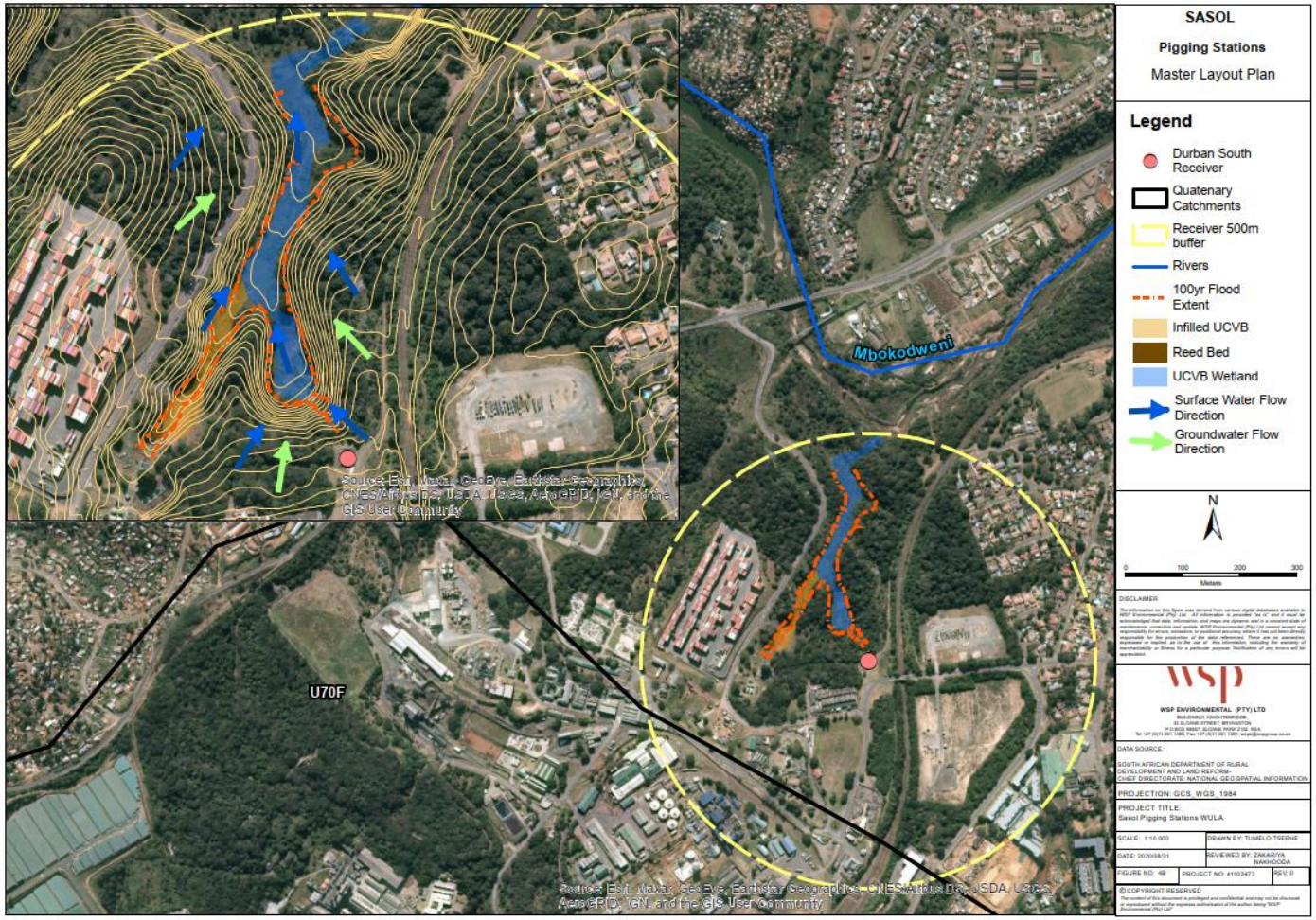

Figure 1-1 – Locality map of the Proposed Project

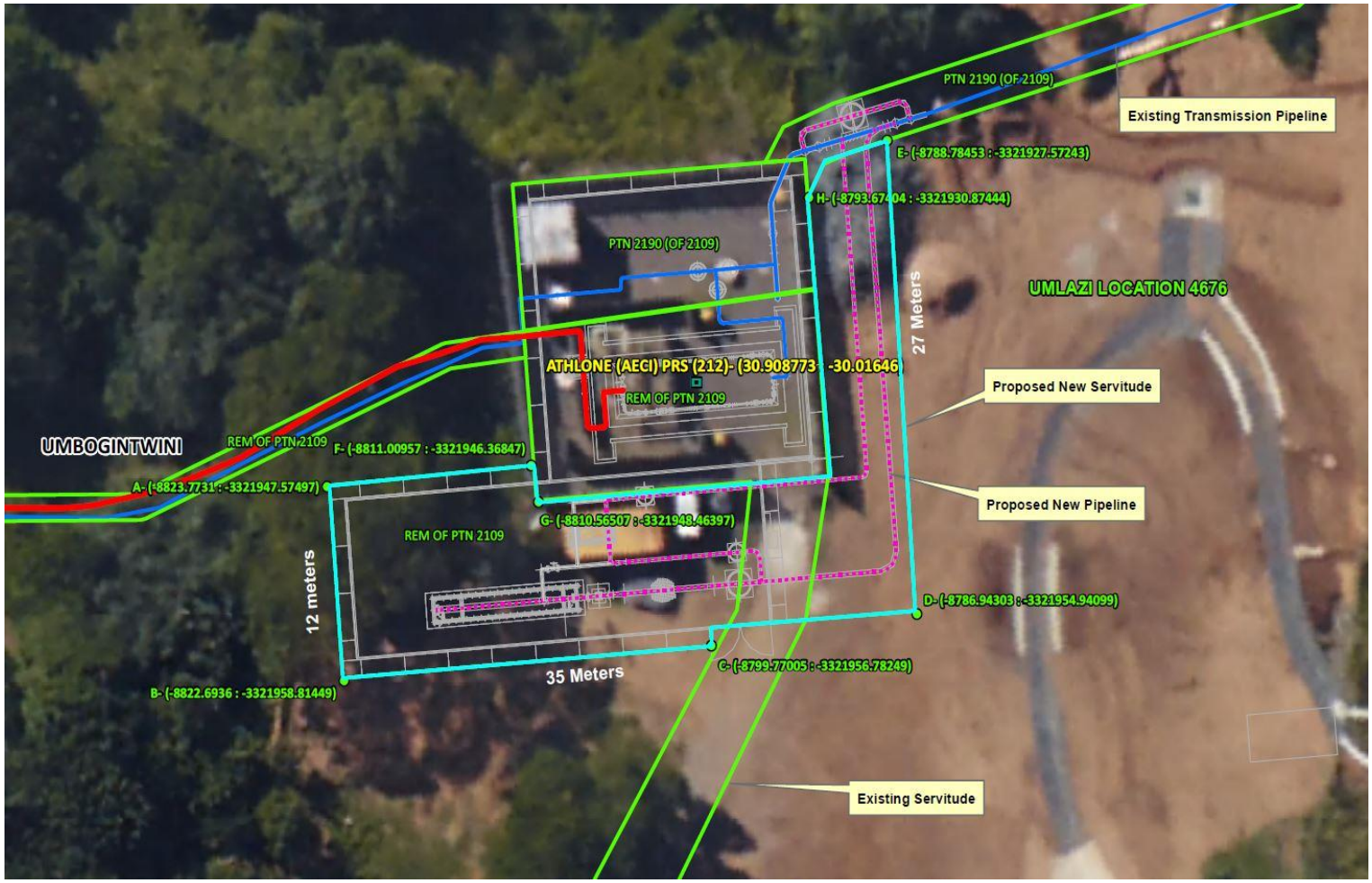

Figure 1-2 – Sasol Receiver Station Project Layout at the existing PRS Site

1.2 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

WSP was appointed in the role of Independent Environmental Assessment Practitioner (EAP) to undertake the BA process for the proposed project. The CV of the EAP is available in **Appendix A**. The EAP declaration of interest and undertaking is included in **Appendix B**. **Table 1-1** details the relevant contact details of the EAP.

Table 1-1 – Details of the EAP

EAP:	**WSP Group Africa (Pty) Ltd**
Contact Person:	Patricia Nathaniel
Physical Address:	1st Floor, Pharos House, 70 Buckingham Terrace, Westville 3629 South Africa
Postal Address:	As above
Telephone:	+27 11 361 1398
Fax:	N/A
Email:	Patricia.nathaniel@wsp.co.za
EAP Qualifications:	BSc (Hons) Geography and Environmental Management
EAPASA Registration Number:	EAPASA (2020/1120)

1.3 PURPOSE OF THE EMPR

An EMPr is defined as "*an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented or mitigated, and that the positive benefits of the projects are enhanced*."

This EMPr has been compiled in accordance with Appendix 4 of the EIA Regulations, in compliance with section 24N of NEMA, with the purpose of ensuring that negative impacts are reduced, and positive effects are enhanced through a process of continual improvement, during the construction, operational and decommissioning phases of the Proposed Project.

To facilitate compliance to the EMPr by appointed contractors and sub-contractors, it is required that all onsite personnel are aware of the requirements of the EMPr as well as the prescribed penalties should a non-conformance be identified during the construction, operation and decommissioning activities.

Further to the above, appointed contractors and sub-contractors will also be required to comply with all relevant legislation and standards.

A hard copy of the EMPr must always be in the site office and made available to officials on request.

1.3.1 EMPR OBJECTIVES

The EMPr has the following objectives:

- Identify mitigation measures and environmental specifications which are required to be implemented for the planning, construction, operation, rehabilitation and decommissioning phases of the Project in order to manage and minimise the extent of potential environmental impacts associated with the facility;
- Ensure that all the phases of the proposed Project do not result in undue or reasonably avoidable adverse environmental impacts, and ensure that any potential environmental benefits are enhanced;
- Identify entities responsible for the implementation of the measures and outline functions and responsibilities;
- Create management structures that address the concerns and complaints of interested and affected parties (I&APs) with regards to the proposed project;
- Propose mechanisms and frequency for monitoring compliance, and preventing long-term or permanent environmental degradation; Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment;
- Train onsite personnel with regard to their environmental obligations; and
- Facilitate appropriate and proactive responses to unforeseen events or changes in project implementation that was not considered in the BA process.

1.3.2 ENVIRONMENTAL OBJECTIVES AND TARGETS

To facilitate compliance to the EMPr, the project proponent must comply with all relevant legislation and standards and make all personnel aware of the requirements of the EMPr, as well as the prescribed penalties should a non-conformance be identified during the different phases of the proposed Project.

It is recommended that environmental objectives (as outlined in this document) be emphasised as minimum requirements. Objectives include:

- Encourage good management practices through planning and commitment to environmental issues; and provide rational and practical environmental guidelines to:
  - Minimise disturbance of the natural environment;
  - Minimise fugitive emissions;
  - Minimise impact of added traffic into the area;
  - Ensure surface and groundwater resource protection;
  - Prevent or minimise all forms of pollution;
  - Protect indigenous flora and fauna;
  - Prevent soil erosion;
  - Promote sustainable use of resources;
  - Adopt the best practical means available to prevent or minimise adverse environmental impacts;
  - Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment;
  - Promote the reduction, reuse, recycling and recovery of waste;
  - Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of waste;

- Describe all monitoring procedures required to identify impacts on the environment;
- Define how the management of the environment is reported and performance evaluated; and
- Train onsite personnel on their environmental obligations.

1.4 STRUCTURE OF THE EMPR

For the purposes of demonstrating legal compliance, **Table 1-2** cross-references the sections within the EMPr with the requirements as per Appendix 4 of the EIA Regulations.

Table 1-2 – Legislation Requirements as detailed in Appendix 4 of the EIA Regulations

Appendix 4	Legislated Requirements as detailed in Appendix 4 of GNR 326	Relevant Report Section
(a)	details of-	
	(i) the EAP who prepared the EMPr; and	**Section 1.2**
	(ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	**Section 1.2** **Appendix A**
(b)	a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	**Section** Error! Reference source not found.
(c)	a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	**Section 3** **Appendix C**
(d)	A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	**Section 3.2 and Section 6**
	(i) planning and design;	
	(ii) pre-construction activities;	
	(iii) construction activities;	
	(iv) rehabilitation of the environment after construction and where applicable post closure; and	
	(v) where relevant, operation activities;	
(f)	a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to -	**Section 6**
	(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	

Appendix 4	Legislated Requirements as detailed in Appendix 4 of GNR 326	Relevant Report Section
	(ii) comply with any prescribed environmental management standards or practices;	
	(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	
	(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable	
(g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	**Section 5**
(h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	**Section 5**
(i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	**Section 5 / Section 6**
(j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	**Section 6**
(k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	**Section 5**
(l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations	**Section 5 / Section 6**
(m)	an environmental awareness plan describing the manner in which-	**Section 5.2**
	(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and	
	(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	
(n)	any specific information that may be required by the competent authority	N/A

2 PROJECT DESCRIPTION

This section provides a description of the project site location and a summary of the project details. The descriptions encompass the activities to be done during the construction, operational and decommissioning (should it be decided that the facility will be decommissioned) phases, as well as the consideration for the needs and desirability of the project in accordance with Appendix 3 of GNR 982, as amended.

2.1 LOCATION OF THE PROPOSED PROJECT

The locality details of the proposed Project are tabulated in **Table 2-1** below. The proposed Project will be located at Sasol's existing PRS in Umbogintwini within the eThekwini Municipality in KZN. It is proposed that the Receiver Station and the associated pipelines will expand the footprint of the PRS by an area of 408 m^2 within the transformed low sensitivity area (**Figure 3-1).**

The co-ordinates of the proposed development site are included in **Table 2-2** below.

Table 2-1 – Sasol Receiver Station Affected Farm Portions

Farm Name	21 Digit Surveyor General Code of Each Cadastral Land Parcel
Remainder of Portion 2190, Umlazi Location 4676	N0ET00000467602505
Remainder of Portion 2505, Umlazi Location 4676	N0ET00000467602190

Table 2-2 –Sasol Receiver Station Co-ordinates

Map Label	Latitude	Longitude	Map Label	Latitude	Longitude

Proposed Pipelines					
A	30° 0'59.69"S	30°54'30.98"E	**E**	30° 0'58.83"S	30°54'31.84"E
B	30° 0'59.63"S	30°54'31.74"E	**F**	30° 0'59.43"S	30°54'31.98"E
C	30° 0'59.61"S	30°54'32.03"E	**G**	30° 0'59.48"S	30°54'31.38"E
D	30° 0'58.76"S	30°54'32.08"E	**H**	30° 0'59.60"S	30°54'31.39"E
Site Office					
SO1	30° 0'59.85"S	30°54'30.84"E	**SO2**	30° 0'59.78"S	30°54'30.93"E
SO3	30° 0'59.95"S	30°54'31.13"E	**SO4**	30° 0'60.00"S	30°54'31.05"E
Ablution Facilities					
A1	30° 1'0.26"S	30°54'31.06"E	**A2**	30° 1'0.35"S	30°54'31.13"E

The Project is located in a developed, transformed area that is designated for industrial activity and for purposes of the existing PRS. Principal areas of activity within 5km of the Project include:

- Dickens, Kynoch and Oppenheimer Roads;
- Natrans Natal Transport Southwest from the site;
- Life Occupational Heath Clinic Southwest from the site;
- Umbogintwini Industrial Complex West of the site;
- Railway line East of the site; and
- Forest area and Mbokodweni River North of the site.

2.2 GENERAL PIPELINE PIGGING

2.2.1 TYPES OF PIPELINE PIGS

Pipeline pigging involves the use of a "pig" device to perform pipeline maintenance, inspection, and clean-up tasks. The pipeline propels the pigs through the flow of liquid or gas in the line. Pigs come in various shapes and sizes and can be tailored to the parameters of a particular pipeline. There are four main types of pipeline pigs: foam pigs, brush pigs, cup pigs, and intelligent pigs.

Foam pigs are a basic pigging solution for pipelines that contain liquid. They are typically made from a lightweight foam material and have a conical shape. This allows them to travel through the pipeline with minimal resistance. Foam pigs have brushes attached to the tail, which helps sweep debris from the pipeline walls. Foam pigs are ideal for short pipelines, as it can be difficult to control in longer lengths.

Brush pigs are designed to clean pipelines that contain corrosive or sedimentary materials. These have a cylindrical shape and are made from rubber or nylon bristles. The bristles are designed to scrub away any residue that may be present in the pipeline. Brush pigs are ideal for long pipelines, as it provides a thorough cleaning and can travel long distances with minimal resistance.

Cup pigs are designed to separate debris from the liquid in a pipeline. These have a cup-shaped head with a tail sporting cups or discs. As the pig moves through the pipeline, the cups collect any present sediment. Cup pigs are most effective when dealing with small particles, such as sand and dirt, as larger particles may not be collected.

Intelligent pigs are designed to detect defects in pipelines. These are typically made from steel or plastic and contain various sensor components. These sensors allow the pig to detect any abnormalities in the pipeline walls, such as corrosion and cracks. Intelligent pigs are ideal for long-distance pipelines and can detect small defects that may be missed.

The figure below is a typical intelligent pipeline pig.

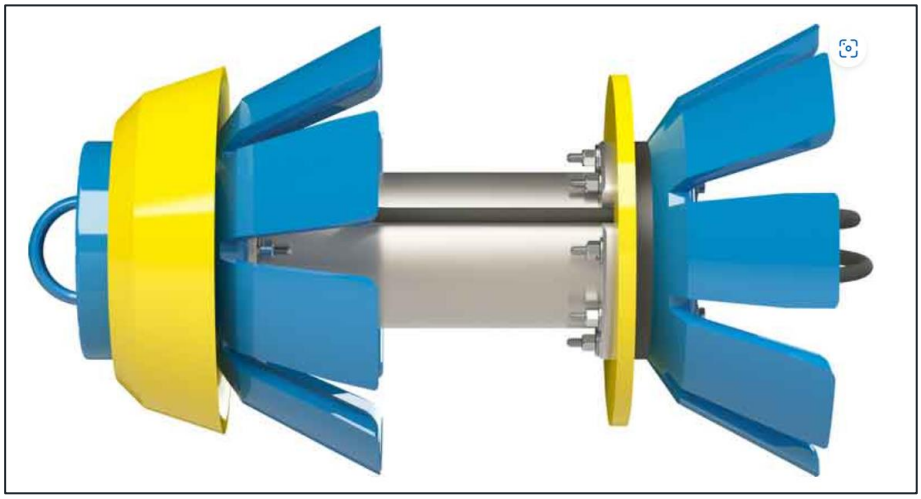

Figure 2-1 – A typical intelligent pipeline pig (www.i2ipipelines.com)

2.2.2 TYPICAL PIGGING PROCESS

By inserting the pig into a Pig Launcher (or Launching Station) and then applying flow under pressure to the rear of the device, it will move into the pipeline. The force applied by a pig as it

traverses a pipeline can be calculated by multiplying the cross-sectional area of the back of the pig by the pressure applied to the rear of the pig.

Once a pig has launched and is moving through the pipeline, the differential pressure can be calculated by subtracting the pressure in front of the pig from the pressure acting on the back of the pig. The pig speed can be calculated by tracking the pig at various points along the pipeline and calculating the time it takes to arrive at each point against the input pressure and flow rate and then converting to velocity.

Generally, the outside diameter of most pigs will be sized to be larger than the internal bore and the resultant 'interference' enables the pig to scrape and remove debris as it traverses the pipeline. The degree of effectiveness in cleaning or clearing a pipeline is determined by the type of pig employed along with other influencing factors such as flow rate, pig speed, pressure, temperature, volume of debris to be removed, length of the pipeline, number of pigging runs, number and type of bends, pipeline elevations. pigging frequency and others.

When the pig reaches the other end of the pipeline it is captured in a Pig Catcher (or 'Receiving Station') which is isolated via a shut-off valve, allowing the pig to be safely removed.

Figure 2-2 below is a pig launcher/ receiver belonging to a natural gas pipeline.

Figure 2-2 – Pig launcer/receiver for a natural gas pipeline

2.2.3 SASOL PIGGING OPERATIONS

The proposed Receiver Station will be constructed on apron slabs within the disturbed footprint, but outside the currently fenced area of the existing PRS at Umbogintwini. New pipelines will also be installed for the Receiver Station which will expand the existing servitude of the PRS by approximately 109 m^2.

Temporary offices and ablution facilities will place on side and be made available during the construction phase and will be located within the Very Low sensitivity areas to the south of the PRS.

The proposed Receiver Station and associated pigs will be installed to fulfil the purposes of the mandatory integrity assessment of the South Durban Pipeline (SDP). Integrity assessment of pipelines is a code requirement (ASME B31.8S). In- line inspection is the preferred method for the assessment of long pipelines such as the South Durban Pipeline (SDP) as it does not require the pipelines to be shut down. The main objective of the proposed Project is to make the pipeline piggable – to allow passage of in-line inspection tools which will enable smart tools to be launched into the pipeline to examine its integrity and safety of operations.

The initial piggability study undertaken by Sasol concentrated on establishing a Pig Launcher Station (not part of this application) and a Receiver Station. The study focussed on ensuring that the bends are piggagle (minimum radius of 1.5D) and that all valves are full bore ball valves and of the same diameter or larger than the main pipeline. All modifications (deviations and tie-ins) made to the pipeline will be examined to ensure the passage of inspection tools is not hampered.

2.3 PROJECT INFRASTRUCTURE AND CONSTRUCTION METHODS

Table 2-3 provides a summary of the project infrastructure and the associated methods that will be implemented during construction. The activities and infrastructure include:

- Site preparation;
- 10m trench bypass line;
- Stopple fittings installation;
- Bypass line construction;
- 50m trenching for the Receiver inlet line and filter outlet line;
- Receiver inlet line and filter outlet line construction;
- Fence installation; and
- Concrete apron slabs.

Table 2-3 – Project Infrastructure and Construction Methods

Activity	Method
Site Preparation	▪ Site establishment i.e., temporary ablution facilities and site offices (**Table 2-2**). ▪ SHE files' approval and site access. ▪ Transport of piping and equipment to site. ▪ Clearance of the site of rubble and grass where required. ▪ Demarcation of the construction area – barricades to be used around the working area. ▪ Erection of temporary fences prior to construction.
10m Trench for Bypass Line	▪ Permit to be received from Sasol Satellite Operations. ▪ Excavate trench using a TLB, use of shoring if required, to expose the existing pipeline. All ground that has been dug up will be placed a minimum of 1 m away from the trench.
Stopple Fittings installation	▪ Remove existing pipeline wrapping and clean weld areas by grinding. ▪ Install end blank and connect digital recorder to pressure test manifold as well as a suitable pressure gauge.
Bypass line construction	▪ Material to be bought for the construction of the bypass lines. ▪ Bypass line to be constructed according to line stop fittings on site.
50m Trenching for Receiver inlet line and filter outlet line	▪ Excavation will take place by using a TLB. ▪ There will be 2 trenches dug out, the trench sizes are 1.2m deep x 800mm wide. ▪ If required shoring will be done and an access will be created. ▪ All ground that has been dug out will be placed in a demarcated area to prevent the trench from caving in.
Receiver inlet line and filter outlet line construction	▪ The piping will be put in place by using an 8 Ton truck mounted crane. ▪ Each section of piping will be tack welded. ▪ Once all tack welds are completed the AIA will inspect all fit ups. ▪ Welding will then commence. ▪ Once all welds are cleared by NDE. The pressure testing of the pipeline will take place. ▪ A pig launcher and receiver will be installed to clean and dry the two pipelines to ensure that no residual water is left after venting is completed. ▪ Once the pipelines are cleaned, the wrapping process will commence.

	▪ Holiday testing to take place on the pipelines to ensure that there are no holiday defects. ▪ Seven (7) excavations for the receiver slab and filter slab will then be done, at the indicated positions. ▪ Excavations for the valves will be done at indicated positions. ▪ The valve concrete slabs will then be cast for all valve chambers. ▪ Concrete slab will then be cast for the receiver slab and filter slab.
Fence installation	▪ Trenches for the clear-vu fence poles will be dug 500mmx500mmx500mm. ▪ The poles will be planted. ▪ The clear-vu fence will then be installed. ▪ 19mm crusher stone will then be transported onto the newly constructed site area.
Concrete apron slabs	▪ Excavations to be done around the clear-vu fence will be made 2mx1mx380mm deep. ▪ The ground will then be refilled and compacted into layers of 150mm with each layer to be compacted to 95% MODAASHTO (maximum dry density). ▪ Shutters will then be put in place for the apron slabs. ▪ The apron slabs will then be cast in two block sections until the apron slab is completed.
Erection of the Receiver Station	▪ The Receiver Station will be erected on the apron slabs as described above.

2.3.1 OPERATIONAL PHASE

During operation, the key activities will include the passage of in-line inspection tools which will enable smart tools to be launched into the pipeline to examine its integrity.

2.3.2 DECOMMISSIONING PHASE

The decommissioning phase will include activities similar to that of the construction phase as indicated in **Table 2-4.**

3 ENVIRONMENTAL SENSITIVITY

3.1 SITE SENSITIVITY

Table 3-1 and **Figure 3-1** below illustrate the overall sensitivity of the site in relation to the Proposed Project, the map also indicates the 'no-go' area as recommended in the Terrestrial Biodiversity Baseline Assessment.

Table 3-1 – Environmental Sensitivities identified by the DFFE Screening Tool and Specialists

Discipline	Infrastructure Type and Specialist Sensitivity Criteria	
	DFFE Screening Tool	Specialist/EAP Verification
Agricultural Theme	▪ According to the DFFE Screening Tool, the Agricultural Theme sensitivity is rated as Very High as the land capability ratings range from medium to very high (7 to 13). ▪ Site verification required as per the DFFE Specialist Protocol.	▪ The site verification by the EAP found the site to be currently transformed and historically disturbed with the current PRS fenced area being hard standing and therefore cannot be considered as arable land, therefore the site is considered Low sensitivity.
Animal Species Theme	▪ According to the DFFE Screening Tool, the site is considered High sensitivity for the Animal Species Theme for which an assessment is required.	▪ During the site verification assessment, the EAP identified the presence of the adjacent forest and wetland areas which serve as a habitat for potential Species of Conservation Concern (SCC) therefore the EAP agrees with requirement for an assessment as per the Protocol and an assessment was undertaken. ▪ The Terrestrial Biodiversity Assessment confirmed that the High sensitivity of the site for the Animal Species Theme due to the adjacent forest areas that serves as a habitat for potential SCC.
Aquatic Biodiversity Theme	▪ According to the DFFE Screening Tool, the site is considered Low sensitivity for the Aquatic Biodiversity Theme, as such the Protocol requires a Compliance Statement to be undertaken for the proposed Project.	▪ The site verification by the aquatic ecologist confirmed the presence of a drainage line approximately 40 m from the proposed Receiver Station site and the Mbokodweni River in the greater Project Area of Influence (PAOI) which could potentially be impacted upon if strict controls are not implemented during the construction phase. The site verification assessment confirmed the Low sensitivity of the site however the downstream

		freshwater habitat is considered as Very High Sensitivity; therefore, an Aquatic Compliance Statement was undertaken.
Archaeological and Cultural Heritage Theme	▪ The DFFE Screening Tool rendered the proposed site to be Low sensitivity in relation to the Archaeological and Cultural Theme, as such the Protocol requires a site verification be undertaken and the level of assessment to be determined based on the findings.	▪ The site verification assessment by the heritage specialist confirmed that the activities will be confined to a small area in close proximity to the existing disturbed site therefore there is a low probability of impacting upon resources of cultural and heritage significance. However, a Heritage Impact Assessment was undertaken to verify the findings of the EAP.
Civil Aviation Theme	▪ The DFFE Screening Tool rendered the proposed site for the Receiver Station as High sensitivity for the Civil Aviation Theme due to the presence of a civil aviation radar within 15km of the site and other civil aviation aerodrome within 8km of the site, however the Screening Tool did not prescribe a protocol for any specialist assessment to be undertaken.	▪ A formal Civil Aviation Assessment will not be undertaken as part of this BA process. Nevertheless, the Air Traffic Navigation Services have been included on the list of I&APs.
Defence Theme Sensitivity	▪ The DFFE Screening Tool rendered the proposed site as Very High Sensitivity in relation to the Defence Theme, this is due to the presence of a military and defence site within proximity of the site. However, the Screening Tool did not prescribe a protocol for any specialist assessment to be undertaken	▪ Following the site verification by the EAP, it was concluded that the proposed Project is not likely to have any impact on any surrounding sites. The Department of Defence has been included on the project stakeholder database and will be allowed to provide comment on the proposed Project details and locality.
Palaeontology Theme Sensitivity	▪ The DFFE Screening Tool rendered the site as High Sensitivity in relation to the Palaeontology Theme due to the presence of features with high palaeontological sensitivity, however the protocol for an assessment as contained in the Screening Tool Report indicated that a site verification must be undertaken and the level of assessment to be determined thereafter.	▪ A Palaeontological Survey was undertaken as part of the Heritage Assessment, the findings of which confirmed that the site is transformed and the impact on any heritage or palaeontological resources are low.

Plant Species Theme	▪ The DFFE Screening Tool rendered the site to be Medium in sensitivity in relation to the Plant Species Theme with majority of the site categorised as Low sensitivity. This is due to the potential occurrence of SCC in the adjacent forest area. The Protocol prescribes that an assessment be undertaken.	▪ The plant species assessment was undertaken as part of the Terrestrial Ecology Compliance Statement which confirmed that there is a possibility of SCC occurring within the forest areas and therefore the sensitivity rating was confirmed.
Terrestrial Biodiversity Theme	▪ The DFFE Screening Tool rendered the site to be Very High in sensitivity in relation to the Terrestrial Biodiversity Theme, this is due to the proposed site being located entirely within a Critical Biodiversity Area (CBA) and an Endangered Ecosystem i.e. the KZN Costal Belt Grassland. ▪ The prescribed protocol as per the Screening Report deemed an assessment necessary.	▪ The site verification by the terrestrial ecologist confirmed the site being built up and initially disturbed for purposes of the existing PRS and all construction and related operational activities will be undertaken within the transformed Very Low sensitivity areas of the site and will not extend into the adjacent forest or wetland areas therefore only a Compliance Statement was undertaken for the Terrestrial Biodiversity Theme. ▪ The Compliance Statement disputed the Very High Sensitivity of the site and rated it as Very Low sensitivity due to the significant levels of environmental disturbance that have taken place within the immediate vicinity and adjacent to the footprint area. ▪ Only the forest and wetland areas are considered High sensitivity and must be demarcated as 'no-go' areas (Error! Reference source not found.)
Geotechnical Theme	▪ The DFFE Screening Tool identified a Geotechnical Assessment as an assessment that must be considered for the receiver station. However, a protocol for the assessment was not prescribed and site verification must determine if a study is required and the associated level of the assessment to be undertaken.	▪ The site is developed for purposes of the existing PRS and is considered transformed and historically disturbed. It is unlikely that the Receiver Station will have any negative impact on the subsurface conditions of the proposed site. The DFFE Screening Tool identified a Geotechnical Assessment as a potential specialist study however a protocol for the assessment was not prescribed and a site verification was deemed necessary to determine the level of assessment that will be required, if any. Following the site verification, it was confirmed that

		the proposed Receiver Station will be located within the existing footprint of the PRS therefore, sufficient information exists on the underlying geology at the site and surrounds that a Geotechnical Assessment will not be conducted as this stage of the proposed Project.

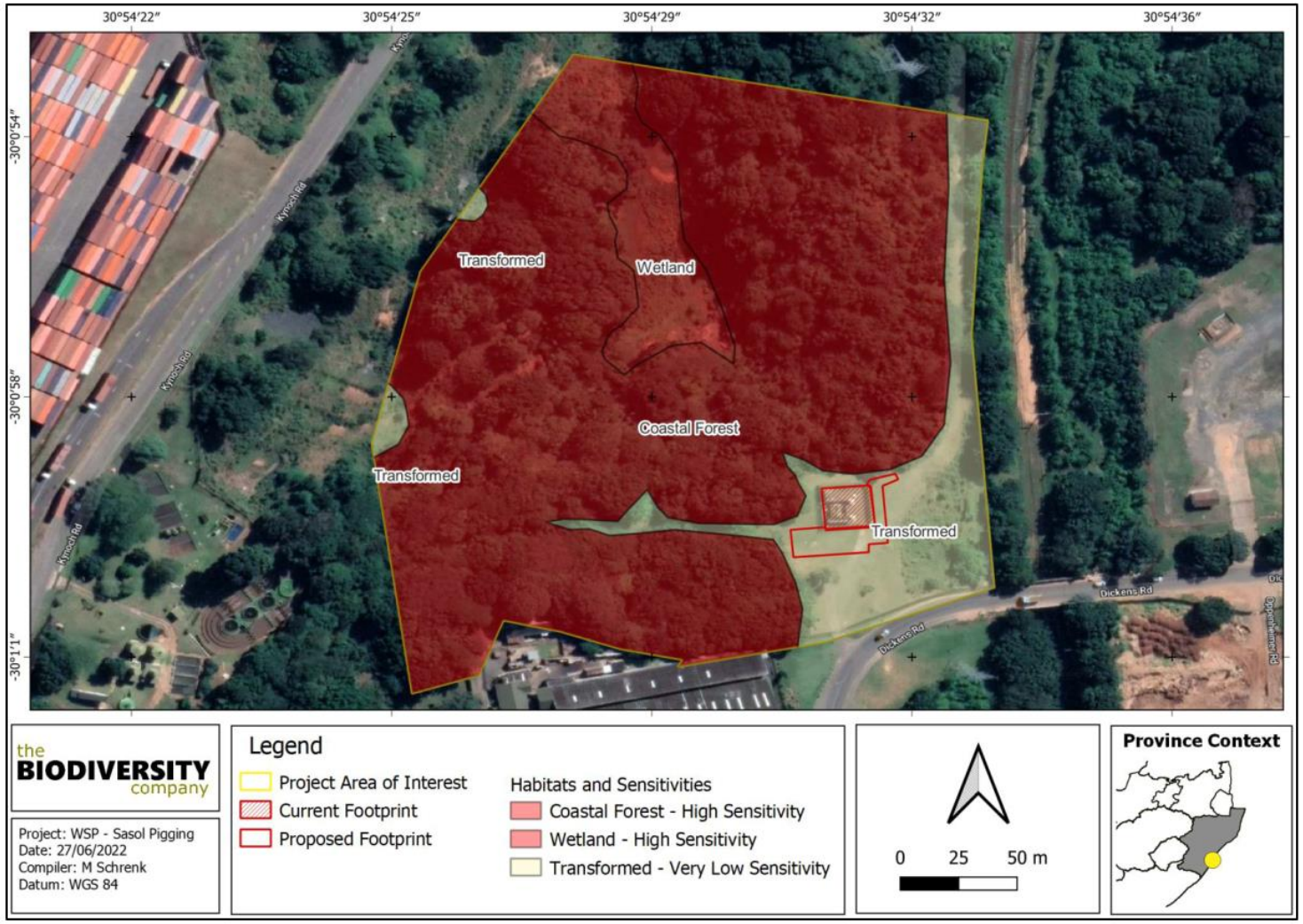

Figure 3-1 – Combined No-Go Sensitivity Map for the proposed Project

3.2 IMPACT ASSESSMENT OUTCOMES

All impacts associated with the proposed Project can be reduced to a low significance with the implementation of recommended mitigation measures as presented within this EMPr and the associated specialist studies.

It must be noted that the site for the Receiver Station is has been subjected to complete transformation due to the presence of the Pressure Reducing Station and site clearing activities therefore the impacts associated with the Receiver Station will be exerted on transformed land.

A summary of the identified impacts and corresponding significance ratings for the proposed Project is provided in **Table 3-2** below.

Table 3-2 – Impact Assessment Summary

Aspect	Impact Description	Phase	Without Mitigation		With Mitigation	
Terrestrial Biodiversity	Impact on CBA and NPAES areas outside of the expansion footprint	C/O/D	56	Moderate	10	Very Low
	Loss of indigenous flora and SCC outside the expansion footprint	C/O/D	70	High	22	Low
	Impacts to fauna due to construction, operation, and decommissioning activities outside the expansion footprint	C/O/D	70	High	22	Low
	Proliferation of alien invasive species during construction, operation and decommissioning	C/O/D	52	Moderate	24	Low
Archaeology and Palaeontology	Potential removal and destruction of archaeological and paleontological material or objects	C/D	28	Low	8	Very Low
Social	Impacts from expenditure and employment during the construction, operation and decommissioning of the Project	C/O/D	36	Moderate	45	Moderate
	Disturbance to surrounding businesses during the construction phase	C	60	Moderate	30	Low
	Impact of noise from construction and decommissioning activities	C/D	36	Moderate	28	Low

Aspect	Impact Description	Phase	Without Mitigation		With Mitigation	
Cumulative Impact Assessment	Terrestrial Biodiversity: Loss of CBA and NPAES areas outside of the expansion footprint during the construction, operation and decommissioning phases. Loss of floral and faunal SCC Loss of functional faunal habitats	C/O/D	56	Moderate	10	Very Low
Cumulative Impact Assessment	Impacts of the proposed Project contributing to the Control of Alien Invasive Vegetation and Fauna within the PAOI	C/O/D	36	Moderate	45	Moderate
Cumulative Impact Assessment	Cumulative Impact on Palaeontology	C/O/D	56	Moderate	10	Very Low

It is acknowledged that the project site falls within an area identified as highly sensitive in terms of biodiversity due to the CBA status of the site. However, the specialist has confirmed that the selected project footprint is located in a historically impacted area and therefore the impact of vegetation removal to accommodate the project is deemed to be of low significance.

Considering the findings of the respective studies, no fatal flaws were identified for the proposed Project. Should the avoidance and mitigation measures prescribed be implemented, the post-mitigation significance of the considered impacts for the negative aspects pertaining to the environmental aspects is expected to be low to very low.

3.3 APPLICABLE DOCUMENTATION

The following documents are to be read in conjunction with the EMPr:

- BA for the proposed Receiver Station;
- EA issued by the KZN EDTEA in terms of the NEMA (once issued).

4 GOVERNANCE FRAMEWORK

4.1 NATIONAL LEGAL AND REGULATORY FRAMEWORK

The South African regulatory framework establishes well-defined requirements and standards for environmental and social management of industrial and civil infrastructure developments. Different authorities at both national and regional levels carry out environmental protection functions. The applicable legislation and policies are shown in **Table 4-1**.

Table 4-1 – Applicable Legislation

Legislation	Description of Legislation and Applicability
The Constitution of South Africa (No. 108 of 1996)	The Constitution cannot manage environmental resources as a stand-alone piece of legislation hence additional legislation has been promulgated to manage the various spheres of both the social and natural environment. Each promulgated Act and associated Regulations are designed to focus on various industries or components of the environment to ensure that the objectives of the Constitution are effectively implemented and upheld in an on-going basis throughout the country. In terms of Section 7, a positive obligation is placed on the State to give effect to the environmental rights.
National Environmental Management Act (No. 107 of 1998)	In terms of Section 24(2) of the NEMA, the Minister may identify activities, which may not commence without prior authorisation. The Minister thus published GNR 983 (as amended) (Listing Notice 1), GNR 984 (as amended) (Listing Notice 2) and GNR 985 (as amended) (Listing Notice 3) listing activities that may not commence prior to obtaining an EA. The regulations outlining the procedures required for authorisation are published in the EIA Regulations (GNR 982). Listing Notice 1 identifies activities that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 2 identifies activities that require a Scoping and Environmental Impact Assessment (S&EIA) process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 3 identifies activities within specific areas that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. WSP undertook a legal review of the listed activities according to the proposed Project description to conclude that the activities listed in in this section are considered applicable to the development: A BA process must be followed. An EA is required and will be applied for with the EDTEA.
Listing Notice 3: GNR 985	**Activity 12** *The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan in (d) KZN:* *iv. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;*

Legislation	Description of Legislation and Applicability
	v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; **Description:** It is possible that 300 m^3 will be cleared during the expansion of the South Receiver Station. The site, although transformed, is located in a CBA: Irreplaceable as defined by the KZN Biodiversity Sector Plan (2016) and situated within the KZN Coastal Belt Grassland which is considered Endangered (EN) as per the NBA, 2018. This activity will be triggered by the expansion of the PRS to include the Receiver Station.
Listing Notice 3: GNR 985	**Activity 23** *The expansion of-* *(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more;* *Where such expansion occurs* *a) Within a watercourse;* *b) In front of a development setback adopted in the prescribed manner; or* *c) If no development setback has been adopted within 32 metes of a watercourse measured from the edge of a watercourse* *d. in KZN* *vii. Critical biodiversity areas or ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;* Upon completion of the wetland study and aquatic compliance statement, it is confirmed that the proposed Receiver Station and associated laydown area is approximately 68 m away from the nearest watercourse and therefore this activity is not applicable.
National Environmental Management: Waste Act (59 of 2008) (NEM: WA)	This Act provides for regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation. The Act also provides for the licensing and control of waste management activities through GNR. 921 (2013): List of Waste Management Activities that Have, or are Likely to Have, a Detrimental Effect on the Environment. The proposed Project does not constitute a Listed Activity requiring a Waste Management Licence as defined in GNR 921. However, the EMPr includes reasonable measures for the prevention of pollution and Good International Industry Practice (GIIP).
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) was promulgated in June 2004, within the framework of NEMA, to provide for the management and conservation of national biodiversity. NEMBA's primary aims are for the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources, and the fair and equitable sharing of

Legislation	Description of Legislation and Applicability
	benefits arising from bioprospecting involving indigenous biological resources. In addition, NEMBA provides for the establishment and functions of the South African National Biodiversity Institute (SANBI). SANBI was established primarily to report on the status of the country's biodiversity and conservation status of all listed threatened or protected species and ecosystems. The Conservation of Agricultural Resources Act (No. 43 of 1993) (CARA) Regulations with regards to alien and invasive species have been superseded by the NEMBA- Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014. The proposed Project, including the associated infrastructure may negatively impact on the biodiversity of the area, as the project site is located within a CBA and the Critically Endangered KZN Coastal Belt Grassland as mapped by the KZN Biodiversity Sector Plan (2016) and the NBA (2018).
National Environmental Management Protected Areas Act (No. 57 of 2003)	The purpose of the National Environmental Management Protected Areas Act (No. 57 of 2003) (NEMPAA) is to, *inter alia*, provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. To this end, it provides for the declaration and management of various types of protected areas. Section 50(5) of NEMPAA states that "no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority." According to the National Protected Area Expansion Strategy (NPAES), the site overlaps with priority focus areas for expansion.
The National Water Act (No. 36 of 1998)	The purpose of the National Water Act (No. 36 of 1998) (NWA) is to provide a framework for the equitable allocation and sustainable management of water resources. Both surface and groundwater sources are national resources, which cannot be owned by any individual, and rights to which are not automatically coupled to land rights, but for which prospective users must apply for authorisation and register as users. The NWA also provides for measures to prevent, control and remedy the pollution of surface and groundwater sources. The Act aims to regulate the use of water and activities (as defined in Part 4, Section 21), which may impact on water resources through the categorisation of 'listed water uses.' Defined water-use activities require the approval of DWS in the form of a General Authorisation (GA) or Water Use Licence (WUL) authorisation. Registration of the Section 21c and i water uses via a GA is required for the Receiver Station in Umbongintwini due to the proposed expansion which is being undertaken within the DWS Regulated Zone of a river.
The National Heritage Resources Act (No. 25 Of 1999)	The National Heritage Resource Act (Act No. 25 of 1999) (NHRA) serves to protect national and provincial heritage resources across South Africa. The NHRA provides for the protection of all archaeological and palaeontological sites, the conservation and care of cemeteries and graves by the South African Heritage Resource Agency (SAHRA) and lists activities which require any person who intends to undertake to notify the responsible

Legislation	Description of Legislation and Applicability
	heritage resources agency and furnish details regarding the location, nature, and extent of the proposed development. Construction activities should be conducted carefully, and all activities ceased if any archaeological, cultural and heritage resources are discovered. SAHRA should be notified, and investigation conducted in accordance with the Chance Find Procedure to be established for the Project before any activities can commence. A Heritage Assessment has been conducted for the proposed Project.
Noise Control Regulations in terms of the Environmental Conservation, 1989 (Act 73 of 1989)	In South Africa, environmental noise control has been in place for three decades, beginning in the 1980s with codes of practice issued by the South African National Standards (formerly the South African Bureau of Standards, SABS) to address noise pollution in various sectors of the country. Under the previous generation of environmental legislation, specifically the Environmental Conservation Act 73 of 1989 (ECA), provisions were made to control noise from a National level in the form of the Noise Control Regulations (GNR 154 of January 1992). In later years, the ECA was replaced by the NEMA as amended. The National Environmental Management: Air Quality Act 39 of 2004 (NEM:AQA) was published in line with NEMA and contains noise control provisions under Section 34: (1) The minister may prescribe essential national standards – (a) for the control of noise, either in general or by specific machinery or activities or in specified places or areas; or (b) for determining – (i) a definition of noise; and (ii) the maximum levels of noise. (2) When controlling noise, the provincial and local spheres of government are bound by any prescribed national standards. Under NEMAQA, the Noise Control Regulations were updated and are to be applied to all provinces in South Africa. The Noise Control Regulations give all the responsibilities of enforcement to the Local Provincial Authority, where location specific by-laws can be created and applied to the locations with approval of Provincial Government. Where province-specific regulations have not been promulgated, acoustic impact assessments must follow the Noise Control Regulations. Furthermore, NEM:AQA prescribes that the Minister must publish maximum allowable noise levels for different districts and national noise standards. These have not yet been accomplished and as a result all monitoring and assessments are done in accordance with the South African National Standards (SANS) 10103:2008 and 10328:2008.
National Environment Management Air Quality Act (No. 39 of 2004)	The National Environment Management: Air Quality Act (No. 39 of 2004) (NEM:AQA) came into effect on 11 September 2005. Persons undertaking such activities listed under GNR 893, as amended, are required to possess an Atmospheric Emissions License (AEL). The NEM:AQA aims to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air in South Africa, to prevent air pollution

Legislation	Description of Legislation and Applicability
	and ecological degradation and to secure ecological sustainable development while promoting justifiable economic and social development. In line with Section 21 of NEM:AQA, GNR 893 of 2013 provides the listed activities for which an AEL is required and the associated minimum emission standards (MES) by emission category. In terms of Section 32 of the NEM:AQA The National Dust Control Regulations (GNR 827) were promulgated, which aim at prescribing general measures for the control of dust in both residential and non-residential areas. No AEL will be required for the construction and operation of the proposed project.
Civil Aviation Act (No. 13 of 2009)	Civil aviation in South Africa is governed by the Civil Aviation Act (Act 13 of 2009). This Act provides for the establishment of a stand-alone authority mandated with controlling, promoting, regulating, supporting, developing, enforcing and continuously improving levels of safety and security throughout the civil aviation industry. This mandate is fulfilled by the South African Civil Aviation Authority (SACAA) as an agency of the Department of Transport (DoT). SACAA achieves the objectives set out in the Act by complying with the Standards and Recommended Practices (SARPs) of the International Civil Aviation Organisation (ICAO), while considering the local context when issuing the South African Civil Aviation Regulations. All proposed developments or activities in South Africa that potentially could affect civil aviation must thus be assessed by SACAA in terms of the Civil Aviation Regulations and South African Civil Aviation Technical Standards (SA CATS) to ensure aviation safety. Potential impacts from the pigging station must be reviewed by these authorities. The Obstacle Evaluation Committee (OEC) which consists of members from both the SACAA and South African Air Force (SAAF) fulfils the role of streamlining and coordinating the assessment and approvals of proposed developments or activities that have the potential to affect civil aviation, military aviation, or military areas of interest. With both being national and international priorities, the OEC is responsible for facilitating the coexistence of aviation and renewable energy development, without compromising aviation safety. The details of the proposed Project will be provided to the SACAA who will be registered on the list of IAPs.
Occupational Health and Safety Act (No. 85 of 1993)	The National Occupational Health and Safety Act (No. 85 of 1993) (OHSA) and the relevant regulations under the Act are applicable to the proposed project. This includes the Construction Regulations promulgated in 2014 under Section 43 of the Act. Adherence to South Africa's OHSA and its relevant Regulations is essential.

5 MANAGEMENT PROCEDURES AND ADMINISTRATIVE REQUIREMENTS

5.1 ORGANISATIONAL STRUCTURE AND RESPONSIBILITIES

Formal responsibilities are necessary to ensure that key management measures/procedures are executed. Sasol (the Project Company) (via the appointed Engineering, Procurement, and Construction (EPC) contractor/contractor/principal contractor), will be responsible for the overall control of the project site during the pre-construction, construction, operation, decommissioning and rehabilitation phases of the project. Sasol responsibilities (via the appointed EPC contractor/contractor/principal contractor) will include the following:

- Appointing an independent Environmental Control Officer (ECO) for the duration of the Contract during construction and as specified by EDTEA during operation;
- Being fully familiar with the BAR, EA conditions and the EMPr;
- Applying for an amendment of the EA from the EDTEA as and when required in line with the prevailing legislation;
- The overall implementation of the EMPr;
- Ensuring compliance, by all parties, and the imposition of penalties for non-compliance;
- Implementing corrective and preventive actions, where required;
- Ensuring that any other necessary permits or licences are obtained and complied with;
- Preventing pollution and actions that will harm or may cause harm to the environment;
- Notifying EDTEA within 30 days that construction activity will commence;
- Notifying EDTEA in writing within 24 hours if any condition in the EA cannot be or is not adhered to; and
- Notifying the EDTEA 14 days prior to commencement of the operational phase.

Table 5-1 provides a high-level outline of the various roles and responsibilities of the project

Table 5-1 – Roles and Responsibilities

Designation	Roles and Responsibilities
EDTEA	▪ Is the designated authority responsible for authorising this EMPr and has overall responsibility for ensuring that the proposed Project complies with this EMPr, and any conditions listed in the Environmental Authorisation. ▪ Shall also be responsible for approving any significant amendments that may be required to the EMPr. ▪ May further perform random site inspections to check compliance with the EMPr.
Project Manager/Engineer/Site Engineer	▪ Ensure that Sasol and the relevant contractor/s are aware of all specifications, legal constraints pertaining to the project during construction, specifically with regards to the environment. ▪ Ensure that all stipulations within the EMPr and conditions of the environmental authorisation are communicated and adhered to by Sasol and its contractor(s). ▪ Monitor the implementation of the EMPr and conditions of the environmental authorisation throughout the project by means of site

Designation	Roles and Responsibilities
	inspections and meetings. This will be documented as part of the site meeting minutes. ▪ Be fully conversant with the BAR for the project, the conditions of environmental authorisation and all relevant environmental legislation.
Site Manager (EPC Contractor)	▪ Be fully conversant with the BAR, the conditions of the EA and the EMPr. ▪ Approve method statements. ▪ Provide support to the ECO. ▪ Be fully conversant with all relevant environmental legislation and ensure compliance thereof. ▪ Have overall responsibility for the implementation of the EMPr and conditions of the environmental authorisation ▪ Ensure that audits are conducted to ensure compliance to the EMPr and conditions of the environmental authorisation. ▪ Liaise with the Project Manager or his delegate, the ECO and others on matters concerning the environment ▪ Prevent actions that will harm or may cause harm to the environment and take steps to prevent pollution and unnecessary degradation onsite. ▪ Confine construction activities to demarcated areas.
Environmental Officer (EO) (EPC Contractor)	The EO must be appointed by the Contractor and is responsible for managing the day-to-day onsite implementation of the EMPr, and for the compilation of weekly environmental monitoring reports during construction. During the operational phase environmental monitoring reports may be as specified by EDTEA (such as annually) by the external EO or ECO. In addition, the EO must act as liaison and advisor on all environmental and related issues, seek advice from the ECO when necessary, and ensure that any complaints received from I&APs are duly processed and addressed and that conflicts are resolved in an acceptable and timely manner. The EO shall be a full-time dedicated member of the Contractor's team and must be approved by Sasol (Project Company). The following qualifications, qualities and experience are recommended for the individual appointed as the EO: ▪ A relevant environmental diploma or degree in natural sciences, as well as a minimum of three years' experience in construction site monitoring, excluding health and safety; ▪ A level-headed and firm person with above-average communication and negotiating skills. The ability to handle and address conflict management situations will be an advantage; and ▪ Relevant experience in environmental site management and EMPr compliance monitoring. The EO's responsibilities include, but not limited to: ▪ Monitoring, on a daily basis, environmental specifications on site and compliance with the conditions of the EA, environmental legislation and EMPr; ▪ Keeping a register of compliance / non-compliance with the environmental specifications; ▪ Identifying and assessing previously unforeseen, actual or potential impacts on the environment; ▪ Ensuring that a brief weekly environmental monitoring report is submitted to the ECO;

Designation	Roles and Responsibilities
	▪ Conducting site inspections during the defects liability period, and bringing any environmental concerns to the attention of the ECO and Contractor; ▪ Advising the Contractor on the rectification of any pollution, contamination or damage to the construction site, rights of way and adjacent land; ▪ Attending site meetings (scheduled and ad hoc); ▪ Presenting the environmental awareness training course to all staff, Contractors and Sub contractors, and monitoring the environmental awareness training for all new personnel on-site, as undertaken by the Contractor; ▪ Ensuring that a copy of the EA and the latest version of the EMPr are available on site at all times, and maintaining a records-keeping system of all compliance and environmental documentation; ▪ Ensuring that the Contractor is made aware of all applicable changes to the EMPr that are approved by the DEA; ▪ Assisting the Contractor in drafting environmental method statements and/or the Environmental Policy where such knowledge/expertise is lacking; ▪ Undertaking daily environmental monitoring to ensure the Contractor's activities do not impact upon the receiving environment. Such monitoring shall include dust, noise and water monitoring; and ▪ Maintaining the following on site: • A weekly site diary. • A non-conformance register (NCR). • An I&AP communications register, and • A register of audits. • Records of all communication received in relation to compliance actions. The EO will remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is handed over to the Operator.
Independent ECO	A suitably qualified independent ECO must be appointed by Sasol to monitor the project compliance with the EMPr and conditions of the environmental authorisation on a monthly basis during construction. During the operational phase environmental monitoring may be undertaken as specified by EDTEA (such as annually) by this external ECO. Proof of external ECO appointment must be maintained onsite. Responsibilities of the ECO include: ▪ Be fully conversant with the BAR, the conditions of environmental authorisation and the EMPr; ▪ Be fully conversant with all relevant environmental legislation and ensure compliance thereof; ▪ Approve method statements; ▪ Remain employed until the completion of the construction activities; and ▪ Report to the Project Manager, including all findings identified onsite. In addition, the ECO will: ▪ Undertake independent monthly inspections of the site and surrounding areas in order to audit compliance with the EMPr and conditions of the environmental authorisation; ▪ Take appropriate action if the specifications contained in the EMPr and conditions of the environmental authorisation are not followed; ▪ Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and

Designation	Roles and Responsibilities
	▪ Ensure that activities onsite comply with all relevant environmental legislation.
Contractors, Staff and Service Providers	▪ Prepare Method Statements as per the EMPr, and ensure all activities are conducted as per the approved Method Statements. ▪ Regular on-site auditing to assess performance against the requirements of this EMPr. ▪ Completion of the appropriate training requirements as specified in the training program. ▪ Implementation and maintenance of environmental management controls as set out in the project's environmental management documentation.

5.2 ENVIRONMENTAL AWARENESS PLAN

Legislation requires that Sasol (via the appointed EPC contractor/contractor/principal contractor) must develop an environmental awareness plan that describes the manner in which Sasol intends to inform employees of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. In recognition of the need to protect our environment, environmental management should not only be seen as a legal obligation but also as a moral obligation.

It is important to ensure that all relevant personnel have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and ongoing minimisation of environmental degradation and harm.

To achieve effective environmental management, it is important that employees, contractors (including subcontractors) are aware of the responsibilities in terms of the relevant environmental legislation and the contents of the EMPr, conditions of the environmental authorisation.

Sasol will provide appropriate resources to facilitate social and environmental awareness training during the construction, operational and decommissioning phases of the project. Sasol will require that all managers associated with the project adhere to the mitigation/management measures detailed in the EMPr and identify, evaluate, and minimise risks to the social, physical and biophysical environments. This will be implemented by educating employees in social and environmental matters and responsibilities relating to performance of their assigned tasks. Furthermore, employees will be entrusted to maintain the necessary level of environmental performance for their activities. Contractors, and their associated sub-contractors, will also need to demonstrate compliance to mitigation/ management measures included in the EMPr.

The following methodology described must be used to implement and ensure environmental and social awareness and competence:

5.2.1 INTERNAL COMMUNICATION

Internal Communication of environmental issues to ensure environmental awareness will be achieved by using any combination of the following means:

- Meetings;
- Memos;
- Notice boards;

- Briefs;
- Reports;
- Monthly themes;
- Daily operational bulletins;
- Newsletter;
- E-mail;
- Telephone; and
- Induction training.

5.2.2 STANDARD MEETINGS

The following standard meetings will be held at specific times to ensure that environmental and social awareness; potential problems; complaints etc. are heard and addressed proactively:

- Safety, Health and Environmental Meetings will be held monthly by the Senior Management;
- Safety, Health and Environmental Meetings will be held weekly (during construction) and monthly (during operation) by the relevant personnel, environmental and social issues will form part of the agenda;
- Communication between all personnel and Senior Management will be facilitated through the appropriate reporting lines, or by using complaint and incident forms.

5.2.3 ENVIRONMENTAL AND SOCIAL TALK TOPICS

Monthly environmental and social talk topics must be compiled and distributed/shared to relevant personnel and must be displayed on appropriate notice boards or shared by whatever means established on site. As a minimum, the following topics must be considered during the course of the construction phase:

- Water Quality;
- Water Use and Consumption;
- Air Quality i.e. dust;
- Waste Management;
- Fauna and Flora;
- Emergency Procedures;
- Incidents Reporting;
- Systems;
- Noise;
- Heritage Impacts;
- Landowner Etiquette;
- Speed Limits;
- Health Risks (such as HIV/ Aids); and
- General Awareness (e.g. World Environment Day, National Arbour Day).

5.2.4 GENERAL COMMUNICATIONS

Communication to the community, government, landowners, neighbouring farmers, environmental groups, non-government organisations and other stakeholders will be communicated to ensure environmental and social awareness by means of the following:

- Fax or E-mail;
- Telephone; or

- Formal meetings.

5.2.5 TRAINING

It is important to ensure that all personnel, contractors and their sub-contractors have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and on-going minimisation of environmental harm. As a minimum environmental training must include the following:

- Employees must have a basic understanding of the key environmental features of the site and the surrounding environment.
- Employees will be thoroughly familiar with the requirements of the EMPr and the environmental specifications as they apply to the project.
- Employees must undergo training for the operation and maintenance activities associated with project and have a basic knowledge of the potential environmental impacts that could occur and how they can be minimised and mitigated.
- Awareness of any other environmental matters, which are deemed to be necessary by the Environmental Officer.
- Training must include the environment, health and safety as well as basic HIV/AIDS education.

The following facets to training form part of this Environmental and Social Awareness Plan:

- **Induction:** Environmental and social awareness training will be given at induction when personnel join the company and/or return from leave. Induction training will also be given to visitors entering the site. Induction training will include, inter alia:
  - A discussion on the environment concept, what does it comprise of and how do we interact with it;
  - A description on the components and phases of the specific renewable power generation facility;
  - A general account of how the facility and its associated activities can affect the environment, giving rise to what are called environmental impacts;
  - A discussion on what staff can do in order to help prevent the negative environmental impacts from degrading the environment i.e. environmental impact management.
- **Job Specific Training:** Job specific training programmes will be developed as and when required. The programs will be based on the significant environmental and social aspects/ impacts that are identified during regular audits and site inspections. Supervisory staff will be equipped with the necessary knowledge and information to guide their employees on environmental and social aspects applicable to performing a specific task.
- **Competency Training:** The Environmental Officer will be responsible for the environmental and social competency and awareness training of Middle Management and supervisors. This training will be performed both on a one-on-one basis and through workshops and presentations. Competence and the effectiveness of training and development initiatives will be determined through the following methods:
  - Trend analysis of incidents reported; and
  - Analysis of work areas during visits and audits.

The process to declare competency of personnel is documented in the ISO9001:2000 procedure. This plan will be amended periodically in light of operational changes, learning experienced during its implementation and other activities that can affect the risk profiles.

- **Training Records**: Training can be done either in a written or verbal format but will be in an appropriate format for the receiving audience. Persons having received training must indicate in writing that they have indeed attended a training session and have been notified in detail of the contents and requirements of the EMPr. The attendance registers must be kept on file.

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place.

5.3 MONITORING

The EPC contractor's EO will monitor the day-to-day site activities on an ongoing basis and will produce weekly monitoring reports during construction. The independent, external ECO will undertake monthly audits to ensure compliance with the EMPr and conditions of the environmental authorisation during the construction activities and will report to the Site Manager should any non-compliance be identified, or corrective action deemed necessary.

During the operational phase, Sasol (via the appointed EPC contractor/contractor/principal contractor) will establish, implement and maintain a procedure to monitor and measure, on a regular basis, the key characteristics of the operations that may have a significant environmental impact. The procedure shall include the documenting of information to monitor performance, applicable operational controls and conformity with the operation's environmental objectives and targets.

Sasol will ensure that all instruments and devices used for the measurement or monitoring are calibrated and appropriately operated and maintained. Calibration records must be kept on site or in close proximity to the equipment for ease of availability.

All the conditions outlined in the EMPr will be subject to required internal day-to-day monitoring and external compliance monitoring.

5.4 NON-CONFORMANCE AND CORRECTIVE ACTION

The auditing of the construction and operational activities may identify non-conformances to the EMPr and conditions of the EA. Non-conformances may also be identified through incidents, emergencies or complaints recorded. In order to correct non-conformances, the source must be determined, and corrective actions must be identified and implemented.

5.4.1 COMPLIANCE WITH THE EMPR AND CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION

- A copy of the EMPr and conditions of the EA will be available onsite at all times for the duration of the construction and operational activities;
- All persons employed by a contractor or their sub-contractors will abide by the requirements of the EMPr and conditions of the environmental authorisation;
- Any members of the workforce found to be in breach of any of the specifications contained within the EMPr and conditions of the environmental authorisation may be ordered by the Site Manager to leave the site. A contractor will not direct a person to undertake any activity which would place them in contravention of the specifications contained within the EMPr and conditions of the EA;

- Should a contractor be in breach of any of the specifications contained in the EMPr and conditions of the environmental authorisation, the Site Manager will, in writing, instruct the contractor responsible for the incident of non-compliance regarding corrective and/or remedial action required, specify a timeframe for implementation of these actions, implement a penalty and/or indicate that work will be suspended should non-compliance continue;
- Should non-compliance continue, further written notification will be forwarded to the contractor responsible for the incident of non-compliance outlining the required corrective and/or remedial action, the timeframe for implementation, penalties and/or work will be suspended as specified previously; and
- Departmental officials will be given access to the property referred to in the BAR and EMPr for the purpose of assessing and/or monitoring compliance with the EMPr and conditions of the environmental authorisation, at all reasonable times.

5.4.2 DUTY OF CARE

All personnel involved with the construction and operational activities onsite will be responsible for implementing measures to prevent pollution or degradation of the environment from occurring, continuing or recurring. Failure to comply with the above conditions is a breach of the duty of care. If such harm is unavoidable, steps must be taken to minimise and rectify such pollution or degradation of the environment.

5.5 DOCUMENTATION AND REPORTING

The following documentation must be kept onsite in order to record compliance with the EMPr and conditions of the environmental authorisation:

- Record of complaints; and
- Record of emergencies and incidents.

The contractor will be required to report on the following:

- Environmental incidents involving contractor/ employees and/or the public;
- Environmental complaints and correspondence received from the public; and
- Incidents that cause harm or may cause harm to the environment.

The above records will form an integral part of the ECO's reports and records thereof maintained for the duration of the project. These records will be kept with the EMPr and conditions of the EA, and will be made available for scrutiny if so requested by the Site Manager or his delegate and the ECO.

The contractor will ensure that the following information is recorded for all environmental complaints/incidents/emergencies:

- Date of complaint/incident/emergency;
- Location of complaint/incident/emergency;
- Nature of complaint/incident/emergency;
- Causes of complaint/incident/emergency;
- Party/parties responsible for causing complaint/incident/emergency;
- Immediate actions undertaken to stop/reduce/contain the causes of the complaint/incident/emergency;
- Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint/incident/emergency;

- Timeframes and the parties responsible for the implementation of the corrective or remedial actions;
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented; and
- Copies of all correspondence received regarding complaints/incidents/emergency.

5.6 PUBLIC COMPLAINTS

The Contractor shall keep a Complaints Register on site to allow the general public to document any comments on or complaints regarding the activities of the site.

The Complaints Register must:

- Have numbered pages – any missing pages must be accounted for by the Contractor;
- Be tabled during monthly site meetings;
- Be made available to the SE/Contract Manager, the ECO, the Project Company, and/or any authority at any time if requested; and
- Include a section for the documentation of the action taken to address the complaint.

All complaints must be investigated, responded to, and recorded in the Complaints Register within 28 calendar days.

6 SITE SPECIFIC ENVIRONMENTAL CONTROLS

The EMPr contains guidelines, operating procedures, rehabilitation and pollution control requirements which will be binding to the onsite personnel working for, or on behalf of the Proposed Project. It is essential that the EMPr be carefully studied, understood, implemented and adhered to at all times.

In instances where the method statements provided by the contractor conflict with the EMPr, such conflicts will be discussed between the Site Manager, ECO and contractor and if unresolved the EMPr will take precedent.

The EMPr identifies various actions which are undertaken throughout the construction and operational phases of the proposed Project. Not every action will be required during the entire course of activities. Therefore, the actions identified in the EMPr have been given priority timeframes for proposed implementation. The columns in the structure of the EMPr have been described **Table 6-1** below.

Table 6-1 – Structure of EMPr

Column	Description
Activity/Aspect	Highlights the various activities/aspects associated with the project i.e. the contractors' activities that will interact with the environment.
Impact Management Outcome	The desired outcomes from effectively minimising negative impacts and/or enhancing positive impacts.
Impact Management Actions/Measures	Indicates the actions required to prevent and /or minimise the potential impacts on the environment that are associated with the project.
Indicator and Compliance Management	Items that will assist with determining compliance against management actions.
Responsibility	Indicates the party responsible for implementing the environmental measures and action plans laid out in the EMPr. Please note that the Site Manager will have authority to stop works if/as necessary.
Priority Timeframe	Indicates when the actions for the specific aspect must be implemented and/or monitored.

Table 6-2 – Contractor laydown area and site access: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
CONTRACTOR LAYDOWN AREA AND SITE ACCESS			
Impact Management Outcome: ▪ To implement measures to minimise impacts on the environment from the initiation of construction activities through planning, careful site access route selection and implementation of mitigation measures.			
Indicator and Compliance Mechanism: ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Visual inspection of the signage indicating the 'no-go' areas. ▪ Close-out on incidents. ▪ Monitoring and audit reports. ▪ Inductions training and register. ▪ Environmental awareness programme/toolbox talks.			
Project initiation of Construction Activities	Appoint an ECO to manage and verify compliance with the EA and EMPr.	▪ Project Manager ▪ EO ▪ Contractor (Site Manager)	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Development activities may take place only within the Very Low sensitivity areas as indicated in **Figure 3-1**. This includes laydown, material storage, cement mixing, earth deposition and storage etc. that will result from the construction activities. The no-go area identified i.e., the wetland and forest areas must be demarcated before the construction or decommissioning commences. This area must be labelled as a 'no-go' area and no construction activities must be permitted in this area.		
	All personnel and contractors to undergo Environmental Awareness Training, including awareness of the surrounding area to inform importance of these areas and their conservation. A signed register of attendance must be kept for proof.		▪ Pre-Construction ▪ Construction ▪ Operation

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
			▪ Decommissioning
	Site clearing must be limited to the approved footprint only.		▪ Pre-Construction ▪ Construction ▪ Decommissioning
	Laydown and construction preparation activities (such as cement mixing, temporary toilets, etc.) must be limited to demarcated transformed Very Low sensitivity areas and should take up the smallest footprint possible.		
	Locate firefighting measures at laydown areas and vehicles, such as fire extinguishers, and make personnel aware of fire prevention and firefighting measures.		
	A fire management plan needs to be compiled and implemented to restrict the impact that fire would have on remaining natural and newly rehabilitated areas. Natural areas remaining adjacent to the development footprint should be left to naturally regenerate, fire and cutting control methods are not to be used to clear areas containing natural indigenous vegetation.		
	Firefighting equipment must be securely placed and inspected monthly.		
	Any materials may not be stored for extended periods of time and must be removed from the project area once the construction phase has been concluded. No permanent construction phase structures should be permitted. Construction buildings should preferably be prefabricated or constructed of re-usable/recyclable materials.		

Table 6-3 – Vehicle, Equipment and Machinery Management: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
VEHICLE, EQUIPMENT AND MACHINERY MANAGEMENT			
Impact Management Outcome: ▪ To implement measures to minimise impacts on the environment from poorly maintained equipment, machinery and vehicles onsite.			
Indicator and Compliance Mechanism: ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Close-out on incidents. ▪ Monitoring and audit reports. ▪ Equipment, machinery and vehicle checklists. ▪ Incident classification and reporting procedure.			
Operation of Equipment, Machinery and Vehicles	Ensure that the equipment, machinery and vehicles are adequately maintained so as to: ▪ Reduce the potential for spillages of oil, diesel, fuel or hydraulic fluid. ▪ Ensure road-worthiness. ▪ Reduce emissions. Evidence of such maintenance must be recorded and maintained onsite for verification.	▪ EO ▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	The movement of vehicles into and out of the site must be managed to ensure that there is no impact on the surrounding areas of High Sensitivity i.e., the forest and wetland area. The planned routes and designated vehicle and machinery storage areas must be located within the transformed areas on site. Management measures includes ensuring that abnormal loads are moved outside of peak traffic hours, and reasonable measures are taken to ensure that public and staff safety is managed adequately.		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. Speed limits must be enforced to ensure that road killings and erosion is limited.		
	No storage of vehicles or equipment must be allowed outside of the designated laydown areas.		
	All vehicles and personnel must make use of the existing roads and walking paths, especially construction/operational vehicles.		
	No servicing of plant and equipment should take place on site unless necessary. Drip trays must be utilized if emergency servicing/repairs are required.		

Table 6-4 – Fuel and Chemical Management: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
FUEL AND CHEMICAL MANAGEMENT			
Impact Management Outcome: ▪ To ensure the correct storage, handling and disposal of fuels and chemicals in order to prevent impacts to the surrounding environment.			
Indicator and Compliance Mechanism: ▪ Maintenance records ▪ Safe disposal certificates (if applicable) ▪ Material safety data sheets (MSDS) (if applicable) ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Chemicals management procedure (to be developed). ▪ Monitoring and audit reports.			

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
▪ Training records.			
Fuel and Chemical Management	Fuel, oil, chemicals and other hazardous materials that will be required for the duration of the construction process must be stored within the existing PRS site in an area designated for the storage of such hazardous materials.	▪ EO ▪ Contractor	▪ Pre - Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Indicate the location of the fuel and chemical storage area on the layout plans.		
	Label all liquids (chemicals and hydrocarbons) stored onsite for easy identification. MSDS for onsite chemicals, hydrocarbon materials and hazardous substances must be readily available. MSDS must include mitigation measures to ameliorate potential environmental impacts which may result from a spill, incorporating health and safety mitigation measures.		
	A spill management plan must be in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use.		
	No servicing of equipment on site unless necessary. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers for safe disposal.		
	In cases where a surface leak occurs during loading and off-loading of construction materials , the spill material will be cleaned using a spill kit.		
	Leaking equipment and vehicles must be repaired immediately or be removed from project area to facilitate repair.		
	The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site.	▪ EO ▪ Contractor ▪ Operator	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use.	▪ EO ▪ Contractor ▪ Operator	▪ Pre-Construction ▪ Construction ▪ Decommissioning
	All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers	▪ EO ▪ Contractor ▪ Operator	▪ Pre-Construction ▪ Construction ▪ Decommissioning
Health and Safety	Display “no smoking” and “no naked flame” signs in and around the project area, as well as near the hazardous material store (if any).	▪ EO ▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Strategically place the correct types of fire extinguishers onsite and near the hazardous material store. Train key personnel on basic firefighting skills		

Table 6-5 – Waste Management: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
WASTE MANAGEMENT			
Impact Management Outcome: ▪ To ensure the correct handling, storage, transportation and disposal of general waste and hazardous waste.			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Waste Management Protocol ▪ Relevant SANS Codes of Practice. ▪ Waste manifests and safety disposal certificates (all waste streams). ▪ Emergency preparedness and response procedure. ▪ Incident classification and reporting management procedure (to be developed). ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Monitoring and audit reports.			
General Waste Management	General waste generated as a result of construction and operational activities must be managed in accordance with a waste management protocol for the Project.	▪ EO ▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Train and inform all onsite personnel regarding general waste minimisation, management and disposal.		
	Place an adequate number of labelled or colour coded general waste bins around the laydown area and at the construction area in order to minimise littering. The bins must be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site as and when required basis to prevent rodents and pests entering the site.		
	Any litter, spills, fuels, chemical and human waste in and around the project area must be removed and disposed of timeously and responsibly.		
	Refuse bins shall be emptied as required and secured.		
	Temporary storage of domestic waste shall be in covered waste skips.		
	Maximum domestic waste storage period shall be weekly.		
	Retain records such as waybills and waste manifests associated with waste removal, transportation and disposal (safe disposal certificates).		
	Prohibit the mixing of general waste with hazardous waste. Should general waste be mixed with hazardous waste, it will be considered hazardous waste. There should be waste segregation implemented on site (e.g. chemicals, oil contaminated rags, paper, plastic) and management on the site.		
	Waste may never be stored in an open pit where it is susceptible to the elements such as wind and rain.		
	Recover, recycle and reuse general waste as far as possible.		
Hazardous Waste Management	Hazardous waste generated as a result of construction, operational and decommissioning activities must be disposed of to a registered landfill.	▪ ECO ▪ EO ▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Strict management of potential sources of pollution (e.g. litter, hydrocarbons from vehicles & machinery, cement during construction, etc.) within demarcated / bunded areas		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	Train and inform all onsite personnel regarding hazardous waste minimisation, management and disposal.		
	Ensure that all hazardous wastes temporarily stored on site are stored in a covered sealed skip.		
	Clean areas where hazardous waste spills have occurred and dispose of the hazardous material appropriately. Key personnel must be trained on handling spillages.		
	Retain records of appropriate safety disposal certificates associated with hazardous waste removal, transportation and disposal.		
	Ensure that waste manifest documentation (as per the Waste Classification and Management Regulations – GNR 634) is prepared and maintained for the generation, transportation and disposal of waste.		
	All spills should be reported to the authorities as per the emergency preparedness and response frequencies / specifications.		

Table 6-6 – Health and Safety: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
HEALTH AND SAFETY			
Impact Management Outcome: ▪ To ensure communication with members of the public and Contractor Personnel to promote safety awareness. ▪ To prevent public access to construction sites and storage areas. ▪ To ensure safety for all onsite personnel. ▪ To ensure the health and safety of all site personnel, landowners and communities that may emanate from proposed Receiver Station			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Monitoring and audit reports. ▪ Incident classification and reporting management procedure (to be developed). ▪ PPE Register. ▪ Occupational health and safety plan (to be developed). ▪ Health and safety protocol (to be developed). ▪ Competency certification. ▪ Health and safety file for Developer, EPC and contractors. ▪ SANS certification. ▪ Compliance with OSHACT, Act 85 of 1993. ▪ Legal Register. ▪ Legal Appointments as per OSHACT.			
Health and Safety	The construction phase will be managed according to all the requirements of the Occupational Health and Safety Act 85 of 1993 specifically the Construction Regulations.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	All onsite personnel are required to undergo induction training and regular toolbox talks in order to raise awareness of health and safety requirements.		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	Development and implementation of an Occupational Health and Safety Plan and Safety Health Environment Risk & Quality (SHERQ) policy	▪ Contractor/Operator ▪ Site Manager	▪ Pre-Construction ▪ Construction ▪ Operation
	The appointed contractor will be responsible for the development of a comprehensive health and safety protocol which must be adhered to.	▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Emergency response plan to be in place prior to beginning construction and to include aspects such as appointment of emergency controller, provision of first aid, first responder contact numbers.		
	Provide and wear appropriate PPE onsite.	▪ Contractor/Operator ▪ Site Manager	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Compile detailed Risk Assessments for all aspects of construction and operational activities prior to work.		
	Ensure all legal OSHACT appointments are in place.		
	Ensure all contractor's safety files are in place and up to date prior to commencement of their work.		
	All necessary good hygiene practices to be in place, e.g., provision of toilets, eating areas, infectious disease controls.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Policies and practice for dealing with known vectors of disease such as Aids, TB, COVID 19 and others.		
	Prior to construction determine the dangerous species in the area and what responses are needed to bites/exposure/attacks.		
	Train all onsite personnel handling chemical or hazardous substances in the use of such substances and the environmental, health and safety consequences of incidents.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
			▪ Decommissioning
Facility emergencies	Emergency Response Plan for full operation and maintenance phase to be in place prior to beginning commissioning and to include aspects such as: ▪ appointment of emergency controller, ▪ provision of PPE for hazardous materials response, ▪ provision of first aid facilities, ▪ first responder contact numbers ▪ Anti-venom, snake bite treatment and facilities	▪ Operator	▪ Operation
	A detailed risk assessment of all normal operating and maintenance activities on site to be compiled, and form the basis of operating instructions, prior to commencing commissioning.	▪ Operator	▪ Operation
Fire risk	Suitable fire-fighting equipment on site near source of fuel.	▪ Site Manager ▪ Contractor ▪ Operator ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Safety integrity level rating of equipment (failure probably) with suitable redundancy if required.		
	Ensure regular testing of emergency alarm systems are undertaken.		
	Emergency Response plan in compliance with SANS 1514 to be compiled, e.g. plan from transport and construction phase to be extended to operational phase to include the hazards of the systems containing large quantities of highly hazardous chemicals.		
	A fire management plan needs to be compiled and implemented to restrict the impact that fire would have on remaining natural and newly rehabilitated areas. Natural areas remaining adjacent to the development footprint should be left to naturally regenerate, fire and cutting control methods are not to be used to clear areas containing natural indigenous vegetation.		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
Public Safety	Restrict public access by extending the security of the existing PRS to the Receiver Station.	▪ Site Manager ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning

Table 6-7 – Water Management: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
WATER MANAGEMENT			
Impact Management Outcome: ▪ To implement measures to prevent the contamination on surface and groundwater resources. ▪ To prevent erosion.			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Incident classification and reporting management procedure (to be developed). ▪ Environmental awareness programme/toolbox talks. ▪			
	Stormwater control measures must be implemented for the duration of the construction phase of the project.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction
	Containment of all contaminated water by means of careful run-off management on site.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Working protocols incorporating pollution control measures (including approved method statements by the contractor) should be clearly set out for the project and strictly enforced.		
	Acquire spill kits to clean up any hydrocarbon or chemical spills during construction, operation and closure to prevent seepage. All spillage incidents must be reported to the responsible site officer as soon as they occur.		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	Any cement mixing shall be completed on impervious hardstanding surfaces to prevent spillage to the environment.		▪ Construction ▪ Decommissioning
	Onsite staff are to be provided with an appropriate potable water supply, safe and healthy sanitary facilities and protection against exposure to environmentally dangerous or unhealthy situations or conditions.		▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Appropriate ablution facilities should be provided for construction workers during construction. These must be situated outside of any High sensitivity areas i.e., delineated watercourses and forest areas.		

Table 6-8 – Air Quality: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
AIR QUALITY			
Impact Management Outcome: ▪ To ensure that impacts to air quality of the surrounding environment are minimised.			
Indicator and Compliance Mechanism: ▪ Complaints register. ▪ Incident reporting system. ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Incident classification and reporting management procedure (to be developed). ▪ Equipment, machinery and vehicle maintenance.			
Dust Management	Before the commencement of any site works and during the operation, as much vegetation as possible must be retained, including patches and strips to minimise dust.	▪ EO ▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Activities with high dust-causing potential, such as excavating and moving of soil, must not be carried out close to the sensitive CBA areas during adverse wind conditions.		▪ Pre-Construction ▪ Construction ▪ Decommissioning
	All stockpiles (if any) must be restricted to designated areas and may not exceed a height of two (2) metres;		
	Excavation activities have the potential to generate large amounts of dust. Pre-planning of earth-moving works can reduce dust emissions by limiting the time the site is exposed. Options for dust control can include the following:		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	▪ Plan excavation activities so that they are completed just prior to the time they are needed; ▪ Observe weather conditions and do not commence or continue excavation activities if conditions are unsuitable e.g., under conditions of strong winds; and ▪ Pre-water areas to be disturbed.		
	Cover trucks hauling any loose material that could produce dust when travelling. Minimise transfer points.		
	Re-vegetate disturbed areas as soon as possible to prevent excessive dust from occurring.		
	Dampen exposed soil to suppress dust if required. Use watering sprays on materials to be loaded and during loading. No non-environmentally friendly dust suppressants may be used.		
	Where possible, minimise speed limits, vehicle weights and the number of vehicles using unpaved roads.		

Table 6-9 – Noise: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
NOISE			
Impact Management Outcome: ▪ To ensure that noise impacts to the surrounding environment are minimal or mitigated.			
Indicator and Compliance Mechanism: ▪ Complaints register. ▪ Incident reporting system. ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Incident classification and reporting management procedure (to be developed). ▪ Equipment, machinery and vehicle maintenance.			
Noise	Fit equipment, machinery and vehicles generating excessive noise with appropriate noise abatement measures and undergo regular maintenance to ensure optimum efficiency during operation.	▪ EO ▪ Contractor/Operator	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Provide complaints register to report any excessive noise incidents. Manage all complaints as per the Incident Classification and Reporting Management Procedure.		
	Regular maintenance of equipment to reduce the generation of additional unwanted noise.		
	Construction activities must be restricted to weekdays and daylight hours.		
	Employees / contractors are to be provided with appropriate hearing protection when undertaking noisy activities.	▪ EO ▪ Contractor/Operator	▪ Pre-Construction ▪ Construction ▪ Operation

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
			▪ Decommissioning
	Employees to be provided with hearing protection if working near equipment that exceeds the noise limits.	▪ EO ▪ Contractor/Operator	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning

Table 6-10 – Soil, Land Use and Agriculture: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
SOIL, LAND USE AND AGRICULUTURE			
Impact Management Outcome: ▪ To prevent any disturbance, erosion or contamination of soil resources.			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Incident classification and reporting management procedure (to be developed). ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Monitoring and audit reports. ▪ Stormwater Management Plan (SWMP) (to be developed).			
Soil and Land Management	Land clearance must only be undertaken immediately prior to construction activities and only within the approved project footprint. Unnecessary land clearance must be avoided particularly within the surrounding no-go wetland and forest areas.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Decommissioning
Erosion Management	A system of stormwater management, which will prevent erosion, must be implemented on site. Any occurrences of erosion must be attended to immediately and the integrity of the erosion control system at that point must be amended to prevent further erosion from occurring.	▪ Site Manager ▪ Contractor ▪ Operator/Developer ▪ EO	▪ Pre-Construction ▪ Construction ▪ Decommissioning

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	Areas that are denuded during construction need to be re-vegetated with indigenous vegetation or stored topsoil to prevent erosion from high winds and rainfall events.		
	Any indigenous woody material that is removed during construction can be shredded and used in conjunction with the topsoil to augment soil moisture and prevent erosion. Large, wooded stumps or branches may be used to enhance the local habitat features and encourage herpetofauna.		
	Rocks removed during the construction phase may not be dumped but can be used in areas where erosion control needs to be performed. Alternatively, they may be piled to create useful habitat features for herpetofauna.		
	Topsoil should only be stripped in areas that are excavated.		
	Across the majority of the site, including construction laydown areas, it will be much more effective for rehabilitation, to retain the topsoil in place.		
	It will be advantageous to have topsoil and vegetation cover around the facility during the operational phase to control dust and erosion.		▪ Operation

Table 6-11 – Terrestrial Biodiversity: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
TERRESTRIAL BIODIVERSITY			
Impact Management Outcome: ▪ Prevent the unnecessary destruction of, and fragmentation of the biodiversity of the area. ▪ No excess habitat loss within sensitive areas. ▪ Revegetation of cleared areas. ▪ Alien vegetation clearing & control. ▪ Reduce erosion.			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Incident classification and reporting management procedure (to be developed). ▪ Environmental awareness programme/toolbox talks. ▪ Monitoring and audit reports. ▪ Alien Invasive Management Plan.			
No-go areas	The areas to be developed (or activity areas) must be specifically demarcated to prevent the movement of staff or equipment/vehicles into the surrounding High sensitivity environment i.e., wetland and forest areas. Signs must be erected enforce this.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	All laydown, chemical toilets etc. must be restricted to Very Low sensitivity areas. Any materials may not be stored for extended periods of time and must be removed from the area once the construction phase has been concluded.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
Species of Conservation Concern (SCC)	Any individual protected plant that may be observed needs a relocation or destruction permit if it will be removed or destroyed as a result of the activities.	▪ Site Manager ▪ Contractor	▪ Pre-Construction ▪ Construction

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	Preferably, the plants should be relocated to an area that will not be impacted on by future activities.	▪ EO	▪
Fauna	No trapping, killing, or poisoning of any wildlife is to be allowed. Signs must be put up to enforce this. These actions are illegal in terms of provincial environmental legislation.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	A qualified environmental control officer must be on site when clearing begins. The area must be walked though prior to construction to ensure that no faunal species remain in the habitat and get killed. Should animals not move out of the area on their own, relevant specialists must be contacted to advise on how the species can be relocated.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪
	Any holes/deep excavations must be dug in a progressive manner in order to allow burrowing animals time to move off and to prevent trapping. Should the holes remain open overnight they must be covered temporarily to ensure no fauna species fall in.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪
	Should any SCC fauna be observed nesting within the proposed footprint area before or during construction, all activities must cease immediately. A relevant faunal specialist must be consulted in order to facilitate the capture or removal of any SCC animals	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Decommissioning
	Any significant heat generated from any source must be monitored to ensure that it does not negatively affect the local fauna.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
Rehabilitation	Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events and strong winds and to support the adjacent habitat. This will also reduce the likelihood of encroachment by more alien invasive plant species.	▪ Contractor ▪ EO	▪ Post Construction

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	All disturbed areas are to be rehabilitated and appropriately landscaped. Rehabilitation of the disturbed areas existing in the PAOI must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to the project area vegetation type. Progressive rehabilitation of cleared areas will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank.		
Alien Vegetation Management	The development and implementation of an Alien Invasive Plant management plan is very important, especially because of the invasive species identified on site which, if left unchecked, will continue to grow and spread prolifically leading to further and more significant deterioration to the health of the natural environment within and nearby to the footprint area. The plan must especially pertain to any recently cleared and changed areas.	▪ Site Manager ▪ Contractor ▪ EO ▪ Operator	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	All alien vegetation occurring within construction and operational areas must be removed and monitored for re-growth.		
	No plant species whether indigenous or exotic may be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.		
	Walked Surveys of the project perimeter, access roads and other areas adjacent to hard infrastructure to monitor for alien vegetation and re-growth.		

Table 6-12 – Aquatic: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
AQUATIC BIODIVERSITY			
Impact Management Outcome: ▪ Prevent the unnecessary destruction of, and fragmentation of the biodiversity of the area. ▪ Revegetation of cleared areas. ▪ Alien vegetation clearing & control. ▪ Reduce erosion. ▪ Reduce sedimentation			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Incident classification and reporting management procedure (to be developed). ▪ Environmental awareness programme/toolbox talks. ▪ Monitoring and audit reports. ▪ Alien Invasive Management Plan.			
Water Resource Management	The ephemeral drainage line approximately 68 m in a North East of the Receiver Station must be avoided during all phases of the Project.	▪ Site Manager ▪ Contractor ▪ EO ▪ Operator	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Vehicles should make use of existing access roads and vehicles must avoid the drainage line.		
	The wetland and forest areas surrounding the site must be treated as 'no go'	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Any soil stockpiles within 100 m of the watercourse should be bunded using an appropriate structure (silt nets, sandbags, etc.).		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	All laydown, chemical toilets etc. must be restricted to 'Very Low' sensitivity areas. Any materials may not be stored for extended periods of time and must be removed from the area once the construction/closure phase has been concluded.		

Table 6-13 – Archaeological and Cultural Heritage: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
ARCHAEOLOGICAL AND CULTURAL HERITAGE			
Impact Management Outcome: ▪ To ensure that sites/artefacts of heritage value are identified and protected.			
Indicator and Compliance Mechanism: ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Incident classification and reporting management procedure (to be developed). ▪ Monitoring and audit reports.			
Chance Finds	If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments and charcoal/ash concentrations) are found during construction activities, the finds must be reported and the Chance Find Protocol must be implemented (**Section 7.8.1**).	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Decommissioning
	If any graves are uncovered during construction activities, the archaeologist must be called in to inspect the finds and/or if the police find them to be heritage graves, mitigation may be necessary and the SAHRA Burial Grounds and Graves (BGG) Unit (Mimi Seetelo: 012 320 8490) must be contacted for processes to follow as per section 36(6) of the NHRA.	▪ Site Manager ▪ Contractor ▪ EO ▪ Archaeologist	

Table 6-14 – Palaeontology: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
PALAEONTOLOGY			
Impact Management Outcome: ▪ To ensure that palaeontological material is identified and protected.			
Indicator and Compliance Mechanism: ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Incident classification and reporting management procedure (to be developed). ▪ Monitoring and audit reports.			
Chance Finds	If any palaeontological material is exposed during digging, excavating, drilling or blasting Implement the finds must be reported and the Chance Find Protocol must be implemented (**Section 7.8.1**).	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Decommissioning

Table 6-15 – Traffic: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
TRAFFIC			
Impact Management Outcome: ▪ To ensure that the traffic impacts of the project are mitigated and managed.			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Monitoring and audit reports. ▪ Incident classification and reporting management procedure (to be developed). ▪ PPE Register. ▪ Occupational health and safety plan (to be developed). ▪ Health and safety protocol (to be developed). ▪ Traffic and transportation management plan			
Management Plan	A Traffic Management Plan (TMP) is to be compiled once the contractor has been appointed and all the relevant details of the construction process are known. The TMP needs to address, inter alia: ▪ clearly defined route/s to the site for specific vehicles needed to transport equipment and materials. ▪ scheduled deliveries to avoid local congestion.	▪ Site Manager ▪ Contractor ▪ Developer ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
Records	A photographic record of the road condition should be maintained throughout the various phases of the project development. This provides an objective assessment and mitigates any subjective views from road users.	▪ Contractor ▪ Developer ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
Signage and Notifications	Post relevant road signage along affected routes.	▪ Site Manager	▪ Pre-Construction

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
		▪ Contractor ▪ EO	▪ Construction ▪ Decommissioning ▪ Decommissioning
	The developer shall ensure that the contractor erects temporary signs warning motorists of construction vehicles on the approaches to the access road.	▪ Contractor ▪ Developer ▪ EO	
Dust Emissions	Reduce travel speed for construction vehicles on the gravel road to reduce dust .	▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Dust-reducing mitigation measures must be put in place and be strictly adhered to, particularly for all dirt roads and any earth dumps. This includes the wetting of exposed soft soil surfaces and not conducting activities on windy days which will increase the likelihood of dust being generated. Only environmentally friendly suppressants may be used to avoid the pollution of water sources. Speed limits must be put in place to reduce erosion, and speed bumps should also be constructed.		
Vehicle Management	Ensure all vehicles are roadworthy, visible, adequately marked, and operated by an appropriately licenced operator.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Ensure that the access roads are left in the same or better condition, post-construction.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	All remedial work or modifications to any of the public roads shall be done in consultation with and have the approval of the local road's authority (as is standard practice, this will be finalised during and be a requirement of the municipal planning approval process.	▪ Site Manager ▪ Contractor ▪ Developer	

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
	The developer shall ensure that the contractor provides the necessary driver training to key personnel to minimise the potential of incidents on the public road network.		
Permits	A permit must be obtained from the relevant authority for any abnormal loads transported.	▪ Site Manager ▪ Contractor ▪ EO ▪ Operator	▪ Construction ▪ Operation ▪ Decommissioning

Table 6-16 – Socio-Economic: EMPr Mitigation and Management Measures

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
SOCIO-ECONOMIC			
Impact Management Outcome: ▪ To ensure that the negative socio-economic impacts are mitigated and managed. ▪ To ensure that the positive socio-economic impacts are enhanced.			
Indicator and Compliance Mechanism: ▪ Induction training and records. ▪ Health, safety, environmental and community incident and complaints management system register. ▪ Monitoring and audit reports. ▪ Incident classification and reporting management procedure (to be developed). ▪ PPE Register. ▪ Occupational health and safety plan (to be developed). ▪ Health and safety protocol (to be developed). ▪ Employment records and community engagement local enterprise development records.			
Employment	Opportunities for the training of unskilled and skilled workers from local communities should be maximized.	▪ Site Manager ▪ Contractor ▪ Developer	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Using local sub-contractors where possible and requiring that contractors from outside the local area that tender also meet targets for how many locals are given employment.		
	Exploring ways to enhance local community benefits with a focus on broad-based BEE and preferential procurement.		
	A ‘locals first’ policy with regard to construction and operational labour needs.		

Activity/Aspect	Impact Management Actions/Measures	Responsible Person	Priority Timeframe
Employee Management	The applicant and the contractors should develop a Code of Conduct for the project. The code should identify what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers.	▪ Site Manager ▪ Contractor ▪ Developer	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	The applicant should implement measures to assist and, if needed, fairly compensate any surrounding businesses for damage to property as a result of construction activities		▪ Pre-Construction ▪ Construction ▪ Decommissioning
	No construction workers, with the exception of security personnel, should be allowed to stay on the site overnight.	▪ Site Manager ▪ Contractor	▪ Pre-Construction ▪ Construction ▪ Decommissioning
	The movement of workers on and off the site should be closely managed and monitored by the contractors. In this regard the contractors should be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis.		
Complaints	A complaints register should be available on site to any individual who may have a particular complaint with regards to the construction or operations processes.	▪ Site Manager ▪ Contractor ▪ EO	▪ Pre-Construction ▪ Construction ▪ Operation ▪ Decommissioning
	Surrounding businesses should be able to contact the site manager to report any issues which they may have. The site manager should be stationed within the area and should therefore be available on hand to deal with and address any concerns which may be raised.		

7 MANAGEMENT PLANS

A number of generic management plans have been included in the EMPr. The plans included below provide an indication of the requirements that must be followed on the proposed construction and operation of the Proposed Project. It must be noted that many of these plans can be updated at any stage depending on any changes that may occur on the site.

The following specific plans have been compiled:

- Emergency Response Plan (ERP);
- Hazardous Substance Management Plan;
- Fire Management Plan;
- Alien Invasive Plant Management Plan;
- Traffic and Transport Management Plan;
- Heritage and Palaeontological Management Plan;

7.1 EMERGENCY RESPONSE PLAN

Appropriate resources must be provided to respond to accidental and emergency situations for operations and activities during construction and operation phases. The procedures will include plans for addressing training, resources, responsibilities, communication and all other aspects required to effectively respond to emergencies associated with their respective hazards.

This ERP is intended as a practical working document for the Proposed Project. The purpose of this document is to provide the basic guidelines on how to respond to potential emergency situations that may arise during project activities. These potential emergency situations include medical emergencies and fires.

All activities associated with the project will require site-specific emergency response plans to mitigate impacts, which meet or exceed all applicable regulations.

The objectives of this plan are as follows:

- Protect the communities and the environment through the development of emergency response strategies and capabilities.
- Set out the framework for hazard identification in order to define procedures for response to the situations including the development of contingency measures.
- Structure a process for rapid and efficient response to and manage emergency situations during the construction and operational phases of the project.
- Assign responsibilities for responding to emergency situations.

The ERP must take the incident procedures referred to in Section 30 of the NEMA into account.

7.1.1 ROLES AND RESPONSIBILITIES

With respect to this plan, Sasol (via the appointed EPC contractor/contractor/ principal contractor) has the responsibility to:

- Provide emergency response services (such as first aid and firefighting representative) and to structure and coordinate emergency response procedures for the project.
- Ensure that specific emergency responsibilities allocated to them are organised and undertaken.

- Ensure that employees and contractor third parties are trained and aware of all required emergency procedures.

7.1.2 EMERGENCY COMMUNICATIONS AND COORDINATION PLAN

In an emergency situation where there is an immediate threat to communities, personnel or the environment, the Project Manager will be notified immediately. The Project Manager will dispatch the Emergency Response Coordinator (or suitably tasked person) who will determine the appropriate plan of action depending on the severity of the emergency, the people affected, and the need to evacuate.

If there is a developing emergency or unusual situation, where an emergency is not imminent, but could occur if no action is taken, the Project Manager (or if the Project Manager is absent the Environmental Officer) is to be informed immediately. Once the emergency or unusual situation has been managed, the correct incident/near miss must be reported to the General Manager.

If an emergency situation poses a direct threat to surrounding businesses and/or land uses in the area, the Environmental Officer and/or Social Officer will advise persons in the vicinity of the emergency to evacuate due to the potential risk. The appropriate government authorities will immediately be notified of such an emergency evacuation. The Emergency Response Coordinator (or suitably tasked person) will be tasked with responding to the potential risk. Should the emergency situation be such that it can be managed by Sasol, equipment and personnel will be deployed to the maximum extent necessary, so as to prevent/minimise potential risks.

7.1.3 RESPONSE TO INCIDENTS

An incident is any occurrence that has caused, or has the potential to cause, a negative impact on people, the environment or property (or a combination thereof). It also includes any significant departure from standard operating procedures. The reporting and investigation of all potential and actual incidents that could have a detrimental impact on human health, the natural environment or property is required so that remedial and preventive steps can be taken to reduce the potential or actual impacts because of all such incidents.

The actions resulting from any formal or informal investigations will be used to update the EMPr.

7.1.4 BUDGET FOR EMERGENCY RESPONSE

Costs for emergency response and management will be included in the capital expenditure budget for the construction phase and operational budget for the operational and decommissioning phases of the project.

7.1.5 VERIFICATION

An environmental emergency response system will be developed for the execution of emergency drills that will include the following, inter alia:

- Fire Drills
- Emergency Evacuation Drills
- Medical and Environmental Drills.

Reporting and monitoring requirements for the plan will include:

- Monthly inspections and audits
- Quarterly reporting of accidents/ incidents

- Reporting at the time of the incident and monthly spill reporting developed by the Environmental and Quality, Health and Safety departments
- Annual reporting on training

Emergency response drills and reporting will be maintained by the Project Manager and will provide information regarding required revisions to training or the emergency response actions. Each incident reported will be reviewed and investigated upon occurring. Actions will be identified where possible to improve the site's overall response to emergencies. Updates/revisions that are necessary to protect worker or community health and safety will be implemented immediately after approval by the General Manager. On a bi-annual basis, Key Performance Indicators (KPIs) will be compared against past-performance and analysed for trends to determine if there are areas for improvement. Changes because of the trend analysis and identified areas for improvement will be implemented following the project's change management system as required.

7.2 HAZARDOUS SUBSTANCES MANAGEMENT PLAN

Hazardous substances are chemicals or materials that can cause acute or chronic harm to health, be it humans or the environment. The key potential sources of impact related to the management of Hazardous Chemical Substances (HCS) and fuel during construction relate to the risk of accidental release of hydrocarbons to the environment, accidental exposure to workers, and fire and explosion risks.

Potential impacts associated with these risks, if poorly managed, include:

- Impact to soil and/or groundwater, which may result in degradation of the resource and requirement for remedial action;
- Impacts on pastoralist livelihoods due to contamination of pasture or water resources and consequent impacts to their, health, livelihood and animals;
- Impacts on human health & safety due to either direct exposure or through fire/explosion;
- Gas emissions associated with the combustion of fuel, are mainly compounds of nitrogen, carbon including very small traces of sulphur and particulate matter; and
- Fugitive emissions from HCS & fuel storage.

The purpose of a Hazardous Substances Management Plan (HSMP) is to provide a framework for the management of hazardous substances onsite during the construction and operation of the Proposed project:

- Ensure the handling and storage of hazardous substances are in accordance with relevant standards;
- To ensure that the storage and handling of chemicals and hydrocarbons on-site does not cause pollution to the environment or harm to persons;
- To ensure that the storage and maintenance of machinery onsite does not cause pollution of the environment or harm to persons.

7.2.1 HAZARDOUS SUBSTANCES MANAGEMENT PROCEDURE

A plan for managing the transportation, delivery, storage and handling of hazardous substances onsite is detailed below. A method statement detailing the specific storage and handling practices during construction must be prepared by the Contractor prior to the commencement of construction.

REGISTER OF HAZARDOUS SUBSTANCES

Contractors shall establish inventories or registers of hazardous substances on site. The inventory is to be updated when new hazardous substances are introduced to the workplace or the use of existing hazardous substances is discontinued. Both the chemicals' register and the Material Safety Data Sheets (MSDSs) must be readily available at a central location or near where the chemicals are being stored or used.

MSDS

It is standard practice that an MSDS is provided by the manufacturer or supplier of all hazardous substances. An MSDS is required for all chemicals and substances on site. These MSDSs are to be made available to all parties affected by the use or storage of the chemical. MSDSs are the key to communicating hazards and safe handling practices for chemicals. In addition, MSDS information is to be made available to all employees.

DELIVERIES

Transport of all hazardous substances must be in accordance with the relevant legislation and regulations. Contractors are responsible for identifying and securing any necessary permits for any proposed bulk fuel storage arrangements. The supplier will fill contractors fuel tanks; fuelling is the responsibility of the licensed contractor who will be supervised by the storage/work area supervisor. No 'black-market' or 'grey-import' fuels shall be used. All fuels purchased must be legitimate and subject to required duties and taxes.

Prior to fuel transfer the operator will verify that: all fuel transfer hoses have been connected properly and couplings are tight; transfer hoses are not obviously damaged; fuel transfer personnel are familiar with procedures; for fuelling stations, personnel are located at both the fuel truck and fuel transfer tank(s) and have the ability to shut off fuel flow manually; a means of communication has been established between the two people transferring fuel; and a high liquid level shutoff device can be substituted for the person at the delivery tank, in which case operation of the shutoff will be verified each time it is used; The fuel contractor will clean up and report any accidents or spills immediately to the project ESHS team.

ENVIRONMENT AND OCCUPATIONAL HEALTH AND SAFETY

The following requirements are additional to any applicable requirements established in other management plans such as the Occupational Health & Safety Management Plan:

- Storage facilities will have the applicable MSDS available;
- Smoking will be strictly prohibited from any areas where fuel loading operations take place;
- Appropriate signage will be used to identify potential spill risks;
- Any accidental damage to containment structures will be inspected immediately and appropriate repairs undertaken. The extent of damage will be reported in writing to WP as well as remedial repairs effected together with the date of repairs and any follow up inspection. Any release of fuels or other substance will be cleaned up;
- All used fuel / oil products will be collected in tanks marked "Waste Oil"; and
- All hydrocarbon associated wastes will be managed in line with the Waste Management Plan.

MATERIALS STORAGE

- All temporary hydrocarbon storage will be situated above ground. There will be no buried storage tanks permitted.
- All chemicals, fuels and other hazardous materials are to be stored in designated and bunded areas, where the bunded area is impermeable and is impervious to the stored substance as per the requirements of SABS 089:1999 Part 1. The bunded area will contain 110% volume of the largest container stored.
- Bunds and service area platforms to be cleaned and maintained regularly.
- SABS approved Spill kits must be made available on-site for the clean-up of spills and leaks of contaminants. The relevant construction crew members must be trained in their use.
- Keep a record of all hazardous substances stored on site. Clearly label all the containers storing hazardous waste.
- The storage of flammable and combustible liquids such as oils will be in designated areas which are appropriately bunded, and stored in compliance with Material Safety Data Sheets (MSDS) files and applicable regulations and safety instructions.
- Chemical and hydrocarbon storage facilities shall be covered to prevent rainfall ingress into secondary containment units and well-ventilated
- Any storage and disposal permits/approvals which may be required must be obtained, and the conditions attached to such permits and approvals will be compiled with.
- An effective monitoring system must be put in place to detect any leakage or spillage of all hazardous substances during their transportation, handling, installation and storage.

SPILL AND LEAK MANAGEMENT AND PREVENTION

- In the event of a major spill or leak of contaminants, the relevant authorities must be informed. The relevant construction crew members must be trained in their use.
- Spilled cement must be cleaned up immediately and, stored as hazardous waste and disposed of at a suitably licensed hazardous waste disposal facility.
- Routine servicing and maintenance of vehicles must not be undertaken onsite (except for emergencies). If repairs of vehicles must take place, an appropriate drip tray must be used to contain any fuel or oils.
- Any water that collects in bunds must not be allowed to stand. Should the water be contaminated, it is to be removed and treated prior to discharge, or disposed of as hazardous waste. Clean stormwater contained within the bunds may be reused.
- No chemicals must be stored, or vehicle maintenance undertaken within 100m of wetlands or drainage lines.
- Construction machinery must be stored in an appropriately sealed area. If machinery cannot be stored in a sealed area, then a drip tray must be used to prevent spillage from any leaks.
- As far as practicable, all equipment servicing / maintenance shall be undertaken within designated workshop areas.
- All generators on site, including generators that are not in use must be located in a bunded area or on a drip tray.
- Bunded areas and drip trays must be maintained on a regular basis.
- Diesel generators and water pumps shall be located in secondary containment areas or shall be self-contained to prevent loss of fuels and oils;
- Precautions must be in place to limit the possibility of oil and other toxic liquids from entering the soil or clean stormwater system.

- Upon completion of construction, the area must be cleared of potentially polluting materials.
- Emergency response planning will be managed via the Emergency Preparedness and Response Plan.

7.2.2 OPERATIONAL PHASE

During the operational phase of the project limited hazardous substances and chemicals will be stored onsite. During maintenance activities, contractors will need to produce a method statement detailing the specific storage and handling practices. The following measures need to be implemented onsite during the operational phase of the project.

- Hazardous substances must be stored in sealed containers within a clearly demarcated designated area.
- Care must be taken to ensure that spillage of oils and other hazardous substances are limited during maintenance. Handling of these materials must take place within an appropriately sealed and bunded area.
- Should any accidental spillage take place, it must be cleaned up according to specified standards regarding bioremediation.
- The storage of flammable and combustible liquids such as oils will be in designated areas which are appropriately bunded, and stored in compliance with Material Safety Data Sheets (MSDS) files and applicable regulations and safety instructions.
- Used oils and chemicals:
- Appropriate disposal must be arranged with a licensed facility in consultation with the administering authority;
- Waste must be stored and handled according to the relevant legislation and regulations.

7.2.3 INSPECTION, MONITORING AND TRAINING

Fuel storage areas must be inspected regularly to ensure bund stability, integrity, and function.

The contents of the Hazardous Substances Management Plan must be communicated to the staff through the induction training. On the job training can also be undertaken through the use of Environmental Toolbox Talks. All training must be undertaken as outlined in the relevant Training Procedure.

Examples of Toolbox Talks include:

- Storage of hazardous substances
- Working with hazardous substances
- Management of hazardous waste
- Spill Prevention

7.3 FIRE MANAGEMENT PLAN

The purpose of this plan is to address firefighting requirements throughout the construction of the project and to preserve and protect human life as well as tangible goods and equipment in the event of a fire.

Mitigation and management measures include, but are not limited to the following:

- All construction camps shall be provided with portable fire extinguishing equipment, in accordance with all relevant legislation and must be readily accessible.

- The Contractor shall take specific measures to prevent the spread of veld fires, caused by activities at the campsites. These measures must include appropriate instruction of employees about fire risks and designated smoking areas.
- Fire prevention facilities must be present at all storage facilities. No open fires shall be allowed on site under any circumstance. No cooking on open fires shall be done onsite to prevent runaway fires.
- The Contractor shall have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.
- Emergency numbers for local police and fire department etc. must be placed in a prominent area.
- Firefighting equipment must be placed in prominent positions across the site where it is easily accessible. This includes fire extinguishers, a fire blanket as well as a water tank.
- All construction staff must be trained in fire hazard control and firefighting techniques. Translators are to be used where necessary.
- All flammable substances must be stored in dry areas which do not pose an ignition risk to the said substances.
- Smoking must only be conducted in demarcated areas.
- Firefighting equipment must be regularly maintained by a suitable service provider.

7.4 ALIEN INVASIVE PLANT MANAGEMENT PLAN

The purpose of this Plan is to provide a framework for the management of alien and invasive plant species during the construction and operation of the project, which in turn serves to manage open spaces, as required. The broad objectives of the plan include the following:

- Ensure alien plants do not become dominant in parts or the whole site through the control and management of alien and invasive species presence, dispersal and encroachment.
- Managing and maintaining the ecosystem in a near-natural state and restoring and/or rehabilitating the ecosystems to such a state.
- Develop and implement a monitoring and eradication programme for alien and invasive species.
- Promote the natural re-establishment and planting of indigenous species in order to retard erosion and alien plant invasion.

Mitigation and management measures include, but are not limited to the following:

- Monitor for early detection, to find species when they first appear on site. This should be as per the frequency specified in the management plan, and should be conducted by an experienced botanist. Early detection should provide a list of species and locations where they have been detected. Summer (vegetation maximum growth period) is usually the most appropriate time, but monitoring can be adaptable, depending on local conditions.
- Monitor for the effect of management actions on target species, which provides information on the effectiveness of management actions. Such monitoring depends on the management actions taking place. It should take place after each management action.
- Monitor for the effect of management actions on non-target species and habitats.
- Stockpiles must be kept clear of weeds and alien vegetation growth by regular weeding.
- Alien vegetation and the spread of exotic species on the site will need to be controlled.

- The contractor must be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.
- Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only suitable herbicides shall be used.
- The use of pesticides and herbicides on the site must be discouraged as these can impact on important pollinator species of indigenous vegetation. Use of these should only be permitted where absolutely necessary.
- Correct rehabilitation with locally indigenous species.
- Monitoring programme to ensure that rehabilitation efforts are successful to ensure that risks such as erosion, spread of exotic species and the edge effect are avoided.
- Constant maintenance of the area to ensure re-colonisation of floral species.
- Ensure regular removal of alien species, which may otherwise jeopardise the proliferation of indigenous species.

7.5 RE-VEGETATION AND HABITAT REHABILITATION PLAN

The purpose of the rehabilitation plan is to ensure that areas cleared or impacted during construction activities are rehabilitated with a plant cover that reduces the risk or erosion from these areas as well as restores some ecosystem function. The purpose of the rehabilitation plan for the site can be summarised as follows:

- Achieve long-term stabilisation of all disturbed areas to minimise erosion potential.
- Re-vegetate all disturbed areas with suitable local/indigenous plant species or grass/crop.
- Minimise visual impact of disturbed areas.
- Ensure that disturbed areas are safe for future uses.
- Re-vegetation must aim to accelerate the natural succession processes so that the plant community develops in the desired way, i.e. promote rapid vegetation establishment.
- Re-vegetation of disturbed surfaces must occur immediately after construction activities are completed. This must be done through seeding with suitable crop or locally indigenous species typical of the representative botanical unit.
- Re-vegetation of the disturbed site is aimed at approximating as near as possible the existing vegetative conditions prevailing prior to construction.
- Seeds from surrounding seed banks can be used for re-seeding.
- Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.
- Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.
- Habitat destruction must be limited to what is absolutely necessary for the construction of the infrastructure, including the construction of new roads. In this respect, the recommendations from the Biodiversity Assessment must be applied strictly. Personnel must be adequately briefed on the need to restrict habitat destruction, and must be restricted to the actual construction area.
- Monitoring programme to ensure that rehabilitation efforts are successful to ensure that risks such as erosion, spread of exotic species and the edge effect are avoided.

7.6 EROSION MANAGEMENT PLAN

Exposed and unprotected soils are the main cause of erosion in most situations. Therefore, this erosion management plan and the revegetation and rehabilitation plan are closely linked to one another and should not operate independently but should rather be seen as complementary activities within the broader environmental management of the site and should therefore be managed together. This Erosion Management Plan addresses the management and mitigation of potential impacts relating to soil erosion, including:

- Material stockpiled for long periods (2 weeks) must be retained in a bermed area.
- Stockpiles not used in three (3) months after stripping must be covered with hessian or a similar material to prevent dust and erosion.
- Sensitive areas need to be identified prior to construction so that the necessary precautions can be implemented.
- Any vegetation clearance must be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.
- Areas to be cleared must be clearly demarcated and this footprint strictly maintained.
- Silt fences and erosion control measures must be implemented in areas where these risks are more prevalent.
- Wind screening and stormwater control must be undertaken to prevent soil loss from the site.
- Other erosion control measures that can be implemented are as follows:
    - Brush packing with cleared vegetation
    - Mulch or chip packing
    - Planting of vegetation
    - Hydroseeding / hand sowing
- All erosion control mechanisms need to be regularly maintained.
- Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.
- Re-vegetation of disturbed surfaces must occur immediately after construction activities are completed. This must be done through seeding with indigenous grasses.
- No impediment to the natural water flow other than approved erosion control works is permitted.
- To prevent stormwater damage, the increase in stormwater run-off resulting from construction activities must be estimated and the drainage system assessed accordingly.

7.6.1 MONITORING

The site must be monitored continuously during construction and operation in order to determine any indications of erosion. If any erosion features are recorded as a result of the activities on-site the Environmental Officer (during construction) or Site Manager (during operation) must:

- Assess the significance of the situation.
- Take photographs of the soil degradation.
- Determine the cause of the soil erosion.
- Inform the contractor/operator that rehabilitation must take place and that the contractor/operator is to implement a rehabilitation method statement and management plan.
- Monitor that the contractor/operator is taking action to stop the erosion and assist them where needed.

- Report and monitor the progress of the rehabilitation weekly and record all the findings in a site register.
- All actions with regards to the incidents must be reported on a monthly compliance report which will be submitted to the Competent Authority (during construction) and kept on file for consideration during the annual audits (during construction and operation).

The Contractor (in consultation with an appropriate specialist) must:

- Select a system/mechanism to treat the erosion.
- Design and implement the appropriate system/mechanism.
- Monitor the area to ensure that the system functions like it should. If the system fails, the method must be adapted or adjusted to ensure the accelerated erosion is controlled.
- Continue monitoring until the area has been stabilised.

7.7 TRAFFIC AND TRANSPORT MANAGEMENT PLAN

The purpose of a Traffic and Transportation Management Plan is to address regulatory compliance, traffic management practices, and protection measures to help reduce impacts related to transportation and the construction of temporary and long-term access within the vicinity of the project site. The objectives of this plan include the following:

- To ensure compliance with all legislation regulating traffic and transportation within South Africa National, Provincial, Local and associated guidelines.
- To avoid incidents and accidents while vehicles are being driven and while transporting personnel, materials, and equipment to and from the project site.
- To raise greater safety awareness in each driver and to ensure the compliance of all safe driving provisions for all the vehicles.
- To raise awareness to ensure drivers respect and follow traffic regulations.
- To avoid the deterioration of access roads and the pollution that can be created due to noise and emissions produced by equipment, machinery, and vehicles.

Mitigation and management measures include, but are not limited to the following:

- All vehicles used during the transport of materials and in the construction, activities are required to be roadworthy per the National Road Traffic Act (NRTA) and display all pertinent certificates as required.
- All vehicles travelling to and from the site shall adhere to all laws imposed by the law enforcement agencies and shall comply with any requests made by the law enforcement officials.
- For each convoy of abnormal vehicles/loads a designated safety officer shall be nominated. All abnormal vehicles and loads to be transported are required to have a valid permit before any trip is begun.
- The route must be assessed to determine if any structures or vegetation need to be temporarily or permanently relocated so as to avoid damage to the load as well as public and private property during the trips.
- A designated transport coordination manager must be appointed to oversee and manage the traffic safety officers. Additionally, the designated transport coordination manager must inform and keep up-to-date the interested and affected parties of all the activities taking place that may have a direct impact on them.
- A traffic safety officer shall be nominated to make all the necessary arrangements to maintain the required traffic measures for the duration of the project as outlined in the “Standard Specifications

for Road and Bridge Works for State Road Authorities,' 1998 edition. The safety officer shall liaise daily with the transportation coordination manager to keep them apprised of the state of all the traffic arrangements.

- All construction vehicles that are entering the site shall also be available via radio or telephone communication to the transport coordination manager. So that in the event of an emergency, all vehicles can be accounted for.
- All vehicles shall comply with the posted speed limits on public roads as well as the speed limits within the development. For additional speed limits that are imposed on the construction traffic, refer to the South African Road Traffic Signs Manual (SARTSM), Volume 2, June 1999 for the restrictions.
- All construction traffic shall comply with the legal load requirements as outlined in the National Road Traffic Act and National Road Traffic Regulations.
- Construction traffic entering the site along public roads must be limited to times when peak hour traffic can be avoided. The peak traffic occurs during 7h00 to 8h30, and 16h00 to 17h30.
- The South African Road Traffic Signs Manual (SARTSM), Volume 2, June 1999 is to be used for all traffic during the construction activities of the proposed project.
- During periods of high construction traffic entering and exiting the site, it is recommended that flagmen help direct the traffic. This will enable the safe movement of construction and public traffic at the entrance and reduce the number of potential conflicts.

7.8 HERITAGE AND PALAEONTOLOGICAL MANAGEMENT PLAN

The purpose of this document is to provide a response guideline should archaeological sites, palaeontological sites or graves become exposed during ground altering activities within the area of the Proposed Project. Heritage resources are protected in terms of the National Heritage Resources Act, Act 25 of 1999 (NHRA).

7.8.1 CHANCE FIND PROCEDURE

The following procedural guidelines must be considered in the event that previously unknown heritage resources are exposed or found during the construction of the Proposed Project. This chance find procedure (CFP) must be read in conjunction with the Environmental Authorisation, the Environmental Management Programme, Final BAR and the final layout archaeological ground-truthing report.

The Contractor or other person discovering a potentially significant site or artefact will initiate the following actions:

- Once alerted to heritage resource/fossil occurrence(s): alert site foreman, stop work in area immediately, safeguard site with security tape / fence / sand bags if necessary.
- Record key data while fossil remains are still in situ:
  - Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo
  - Context – describe position of fossils within stratigraphy (rock layering), depth below surface
  - Photograph fossil(s) in situ with scale, from different angles, including images showing context (e.g. rock layering)
- If feasible to leave fossils in situ:

- Alert Heritage Resources Agency and project palaeontologist (if any) who will advise on any necessary mitigation
- Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Agency for work to resume

- If not feasible to leave fossils in situ (emergency procedure only):
  - Carefully remove fossils, as far as possible still enclosed within the original sedimentary matrix (e.g. entire block of fossiliferous rock)
  - Photograph fossils against a plain, level background, with scale
  - Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags
  - Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist
  - Alert Heritage Resources Agency and project palaeontologist (if any) who will advise on any necessary mitigation
- If required by Heritage Resources Agency, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.
- Implement any further mitigation measures proposed by the palaeontologist and Heritage Resources Agency;
- The Specialist Palaeontologist must undertake the following:
  - Apply for Fossil Collection Permit Record / submit Work Plan to relevant Heritage Resources Agency.
  - Describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy).
  - Ensure that fossils are curated in an approved repository (e.g. museum / university / Council for Geoscience collection) together with full collection data.
  - Submit Palaeontological Mitigation report to Heritage Resources Agency.
  - Adhere to best international practice for palaeontological fieldwork and Heritage Resources Agency minimum standards.

7.8.2 TRAINING, INSPECTION AND MONITORING

Since it is not practical to have a regular monitoring presence over the construction period by either an archaeologist or palaeontologist, environmental awareness training must be conducted by the EO for all contractors and subcontractors. The training must include, as a minimum, the following:

- Identifying potential features of heritage significance;
- Procedures for dealing with heritage resources discovered on site;
- Applicable Legislation pertaining to the protection of heritage resources; and
- The importance of protecting heritage resources.
- The contents of the Heritage Management Plan must be communicated to the staff through the induction training. On the job training can also be undertaken through the use of Environmental Toolbox Talks.

7.9 GRIEVANCE MECHANISM

7.9.1 GRIEVANCE MECHANISM - EXTERNAL

A grievance mechanism is a tool used to address affected communities' concerns and complaints and is an important pillar of the stakeholder engagement process, since it creates opportunities for companies and communities to identify problems and discover solutions together. The Project proponent can benefit from understanding community concerns and complaints and addressing them through all stages of project development.

Where it is anticipated that a new project will involve ongoing risk and adverse impacts on surrounding communities, the project proponent is required to establish a grievance mechanism to receive and facilitate resolution of the affected communities' concerns and complaints about the proponent's environmental and social performance. The grievance mechanism should be scaled to risks and adverse impacts of the project, address concerns promptly, use an understandable and transparent process that is culturally appropriate and readily accessible to all segments of the affected communities, and do so at no cost to communities and without retribution. The mechanism should not impede access to judicial and administrative remedies.

This Grievance Mechanism has been developed to receive and facilitate grievances and provide a solution to these concerns and grievances. The aim of the grievance mechanism is to ensure that grievances or concerns raised by local landowners, staff and or communities are addressed in a manner that:

- Provides accessible avenues for all internal and external stakeholders to contact management of the facility;
- Provides a predictable, transparent, and credible process to all parties, resulting in outcomes that are seen as fair, effective, lasting and dealt with in a timely manner;
- Builds trust as an integral component of staff and broader community relations activities; and
- Enables more systematic identification of issues and trends affecting a project, facilitating corrective action and pre-emptive engagement.

The aim of this Grievance Mechanism is to address grievances in a manner that does not require a potentially costly and time-consuming legal process. This grievance mechanism also ensures alignment with local and international best practices in human resources development and stakeholder engagement.

7.9.2 OBJECTIVES

The objectives of the grievance mechanism include:

- To be respectful of complainant culture, values, traditions and views;
- To resolve grievances at the local level and in a timely manner;
- To identify the root causes of grievances and address systemic issues;
- To provide a process that is dialogue based, with the complainant and the Proponent cooperating in the investigation, discussion, resolution and announcement of the grievance and result;
- To ensure fair, equitable and consistent outcomes to resolve grievances;
- To enhance and continuously improve the ability of the Proponent to fairly address community concerns.

7.9.3 SCOPE AND RESPONSIBLE PARTIES

A grievance mechanism is primarily for the community to raise relevant concerns about the Project / Proponent's activities and is to be implemented throughout the life cycle of the Project (i.e. throughout assessment, construction, and implementation phases).

WSP will only be involved in the stakeholder engagement and grievance management process for the assessment phase. The Project proponent and the Contractor will be responsible for implementation of the grievance mechanism throughout the construction phase.

7.9.4 GRIEVANCE REDRESS PROCEDURE

This grievance mechanism sets out the following steps to be taken to resolve grievances.

- **Register grievance**
  - A grievance can be submitted in a written letter, e-mail, fax, or raised verbally in person or via telephone.
  - Grievances raised during the assessment process are to be submitted to the EAP via the details provided as per the stakeholder engagement notifications. The EAP will notify the Proponent of the grievance.
  - Grievances raised during the implementation process are to be submitted to the Proponent / Contractor via the relevant details, which are to be made available to registered stakeholders prior to commencement of onsite activities, as well as via site notice boards.
  - In the event that a complaint is raised verbally, the responsible person must obtain the approval of the complainant as to the documented complaint (by way of signature of the Receipt of Grievance Form). Should the complainant have literacy issues, the responsible person may request that a third party (friend / relative of complainant) is available to verify / approve the contents of the documented complaint to the satisfaction of the complainant.
  - The submission should include the nature of the grievance, the date when it occurred and the name and contact details of the complainant.
  - Grievances will be accepted anonymously or through a third party (e.g. unions, NGOs, local authorities, community representatives, etc.).
  - Individuals have the right to request that their name be kept confidential throughout the grievance process.
  - As men and women may communicate their grievances differently, and also have different types of grievances, the complainant may request that their grievance is processed by a female / male representative. In the event that such a request is made, the Proponent, as far as reasonably practicable, will accommodate this request.
- **Within a Week (7 days) of receiving the grievance the Proponent will:**
  - Enter the grievance into the Proponent's records that track grievances;
  - Assess the grievance according to specific criteria and if necessary, develop an appropriate approach for the particular grievance;
  - Provide a written acknowledgement of the grievance including the name of the responsible person to contact about progress, an explanation of the steps that will be taken to investigate, discuss and resolve the grievance, and an anticipated timetable for processing the grievance.
- **Processing the Grievance:**

The responsible person will:

- Identify the parties involved;
- Clarify issues and concerns raised by the grievance through direct dialogue;
- Classify the grievance in terms of seriousness according to the gravity of the allegation, the potential impact on an individual's or a group's welfare and safety, or the public profile of the issue;
- Convene a staff group with expertise relative to the grievance;
- Determine the method for resolving the grievance – the most common approaches, not excluding others, will be:
  - The Proponent proposes a solution;
  - The Proponent and aggrieved party decide together the solution;
  - The Proponent and aggrieved party defer to a third party for mediation / arbitration.
- Gather views of other stakeholders, including those of the Proponent and if necessary, an agreed neutral technical opinion;
- Determine initial options that parties have considered and explore various approaches for settlement;
- Conduct the process as agreed;
- Close the grievances by signing the Complaint Close-Out Form (i.e. that the grievance has been resolved satisfactory to both parties).
- The Proponent may "close" the grievance even if the complainant is not satisfied with the outcome. This option can be pursued by the Proponent in the case that the complainant is unable to substantiate a grievance, or if there is an obvious speculative or fraudulent attempt. In such situations, the Proponent's efforts to investigate the grievance and to arrive at a conclusion will be well documented and the complainant advised of the situation. The Proponent (or contractors working for the Proponent) will not dismiss grievances based on a cursory review and close them in their grievance record unless the complainant has been notified and had the opportunity to provide supplementary information / evidence;
- Keep a record that tracks the progress and communications for each grievance.

- **Processing Timeline**

  - The Proponent will aim to bring the grievance to a resolution within 30 days of receiving the grievance. The grievance shall be acknowledged within 7 days by the responsible person, and responded to within 30 days. If the matter takes longer than 30 days to resolve, the complainant will be informed through dialogue and in writing, of the reason for the delay, any advances or difficulties encountered and the anticipated new resolution date.

7.9.5 RECOURSE

If the complainant is not satisfied with the outcome of the grievance process the aggrieved party has the right to address the grievance via the judicial system.

8 CONCLUSION

This BA process considered the biophysical location of the proposed Project, as well as a feasibility assessment by Sasol, which *inter alia* served to identify the potential impacts on the receiving environment as a result of the proposed Receiver Station. The purpose of the Proposed Project is to fulfil the requirement for mandatory inspection of Sasol's South Durban Pipeline (SDP).

It is therefore the opinion of the EAP that provided this project is mitigated, as per the mitigation and management measures outlined in this EMPr, the project will result in impacts that should not negatively impact the environment. It is the applicant's responsibility to ensure that this EMPr is made binding on the contractor by including the EMPr in the contract documentation. The contractor must thoroughly familiarise himself with the requirements of the EMPr and appoint an EO to oversee the implementation of the EMPr on a day-to-day basis. In addition, the applicant must appoint an external independent ECO to undertake monthly compliance audits during construction against the requirements of the EMPr as well as the EA.

Parties responsible for transgression of this EMPr must be held responsible for any corrective actions that may need to be undertaken. Parties responsible for environmental degradation through irresponsible behaviour/negligence must receive penalties.

WSP is of the opinion that the project can proceed, provided that the outlined mitigation measures of the BA process and this EMPr are implemented effectively.

In terms of NEMA, everyone (i.e. all persons engaging in any component of this project) is required to take reasonable measures to ensure that they do not pollute the environment. 'Reasonable measures' includes informing and educating employees about the environmental risks associated with their work and training them to operate in an environmentally responsible manner.

Sasol also recognises that, in terms of NEMA, the cost to repair any environmental damage will be borne by the person responsible for the damage. Should the above-mentioned environmental guidelines and mitigation measures be adopted, it is anticipated that the negative environmental impacts of the Proposed Project will be mitigated adequately. Sasol and the selected Contractor shall appoint relevant personnel, as well as an independent ECO, to monitor the site periodically throughout construction to ensure that the required environmental controls are in place and working effectively.

If you have any further enquiries, please feel free to contact:

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Appendix A

EAP CV

Appendix B

EAP DECLARATION OF INTEREST AND OATH UNDERTAKING

Appendix C

MAPS

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