




IN ASSOCIATION WITH INKANYEZI YETHU





**AUGUST 2020**  
**ENVIRONMENTAL MANAGEMENT PROGRAMME**  
**CONSTRUCTION OF THE ESTCOURT PRIVATE HOSPITAL ON ERF 3229**  
**ESTCOURT**  
**INKOSI LANGALIBALELE LOCAL MUNICIPALITY**  
**NDLOMZINTU TRADING (PTY) LTD**  
**EIA REF NO: DC23/0010/2020**


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## SECTION 1

## INTRODUCTION, PROJECT AND SITE DESCRIPTION

### 1.1. Background

Ndlomzintu Trading (Pty) Ltd propose to construct a new private hospital just outside of Estcourt town. The site is located on Erf 3229 of Estcourt Ext 19 Township in the iNkosi Langalibalele Local Municipality, uThukela District. The centre of the site is located at 29°01'20.69"S; 29°50'59.76"E. The site is accessed directly off Ntabamhlope Road. The construction of the hospital will result in the clearance of 2.2 hectares of indigenous grassland.

### 1.2. Scope of Work

Prepare a site specific Environmental Management Programme (EMPr) for the construction of the hospital in order to manage and mitigate potential environmental impacts during construction. The provisions of this EMPr are binding on the contractor throughout the life of the contract.

### 1.3. General Principles and Purpose of This EMPr

The purpose of this EMPr is to provide guidance to all contractors and site workers on how to operate in a responsible manner to achieve these goals and ensure that the requirements of the legislation are met. This EMPr is a working document to be used during construction and has been generated to ensure that:

- The protection of the environment during the construction period.
- All emissions to air water and soil are controlled and managed to mitigate their impacts on the environment and surrounding communities.
- Nuisance factors associated with construction are controlled as far as is reasonably possible.
- The correct principles are followed from the very beginning during site set up thereby reducing frustrations on the part of the contractor when asked to comply with the strictures of the EMPr and relevant environmental legislation.
- The post construction clean-up is carried out correctly so as to avoid environmental impacts and meet the legislated requirements.

This EMPr is subject to change as brought about by variations in the project specification and any changes must be approved by the relevant authorities.

### 1.4. Responsibilities

The Project Applicant (Ndlomzintu Trading) is responsible for:

- Ensuring that the engineer and contractors comply with the approved EMPr.
- Ensuring compliance with the provisions for duty of care and remediation of damage in accordance with section 28 of the National Environmental Management Act (NEMA), (No. 107 of 1998) and its obligations regarding the control of emergency incidents in terms of Section 30 of NEMA.
- Notifying the relevant authorities (EDTEA) of any incident as defined in subsection 30(1)(a) of NEMA.
- Ensuring that the mitigation measures to address environmental impacts identified are carried out by the contractor.

The Project Manager or Engineer is responsible for:

- Appointing a qualified contractor and ensuring that they have read and understood the EMPr.
- Ensuring all work undertaken is in accordance with the EMPr.
- Ensuring adherence to safety, health and environment (SHE) standards and ensuring the construction activities comply with the EMPr.

- Arranging for the site to be monitored on a daily basis to ensure compliance with the EMPr.
- Overall responsibility and accountability for the site during the construction phase.
- Mitigating impact on the environment through responsible operation and adherence to the EMPr.
- Ensuring transparency in their operation and environmental management of the site.
- Managing the contractor to ensure that they adhere to the EMPr and ensuring that all necessary documentation is maintained on site.
- Ensuring that the contractor has a copy of the EMPr and Method Statements.

The Site Contractor(s) is/are responsible for:

- Providing a suitable person to operate as Environmental Officer (EO) to undertake the monitoring of the day to day requirements of the EMPr.
- Operating in accordance with the EMPr and carrying out construction activities with due care and diligence.
- Ensuring that any communications from stakeholders are reported to the Environmental Control Officer (ECO).
- Maintaining relevant documentation for review by the ECO.
- Undertaking the mitigation measures to address environmental impacts identified.

The Environmental Officer (EO) or designated Safety Health Environment (SHE) officer is responsible for:

- Daily compliance monitoring of construction against the requirements set out in this EMPr, and the environmental authorization.
- Undertaking the mitigation measures to address environmental impacts identified.
- Ensuring that all site staff are adequately trained in environmental matters.
- Liaising with site staff and I&APs through the Community Liaison Officer (CLO), if required.
- Must be conversant with the applicable legislation pertaining to the environment.
- Liaise directly with the ECO on the monthly audit findings.
- Identification of possible areas of improvement during construction.
- Monitoring the construction site on a regular basis and recording key findings.
- Advising the Project Manager and the contractors on environmental matters.
- Provide recommendations to address and rectify these matters.
- Monitoring implementation of the EMPr by the contractor.
- Work hand in hand with the health and safety officer.
- Maintain records pertinent to the requirements of the EMPr.

The Environmental Control Officer (ECO) is responsible for:

- Conducting regular auditing against the requirements of the EMPr and Environmental Authorization.
- Liaising directly with the EDTEA and supplying them with copies of the audit reports.
- Liaising directly with the contractor and EO and supplying them with a copy of the audit reports.

### 1.5. Monitoring

The key to a successful EMPr is effective monitoring and review to ensure effective functioning of the EMPr and to identify and implement corrective measures in a timely manner. The EO must be responsible for day-to-day monitoring and reporting while the ECO must undertake to monitor the site on a bi-monthly basis (i.e. once every two months). The day-to-day monitoring must be conducted by the EO in conjunction with the contractor and the engineer. The bi-monthly audit report by the ECO can then be used to provide external monitoring and reporting to EDTEA Compliance and Enforcement. Paramount to the reporting of non-conformances or incidents is that corrective and preventive action plans are developed and adhered to. Photographic records of all incidents and/ or non-conformances must be retained. Non-compliances identified by the ECO must be resolved within fourteen days of being noted, incidents that are deemed by the ECO to have a large environmental impact must be resolved immediately.

### 1.6. Applicable Legislation

The site engineers and contractors must be aware of any compliance issues raised by the EO and ECO and must ensure that the necessary corrective measures are implemented. As per the National Environmental Management Act No 107 of 1998 (Section 28), offending parties may be held financially accountable for any pollution or environmental damage.

The following environmental legislation must be adhered to:

- Constitution of South Africa (Act No. 108 of 1996)
- National Environmental Management Act (Act No 107 of 1998)
- Environment Conservation Act (Act No 73 of 1989)
- National Heritage Resources Act (Act No 25 of 1999)
- National Water Act (Act No 36 of 1998)
- Hazardous Substances Act (Act No. 15 of 1973)
- National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
- Occupational Health and Safety Act (Act No 85 of 1993)
- National Environmental Management: Waste Management Act (Act No. 59 of 2008)
- National Building Regulations and Building Standards Act 103 of 1977
- Relevant local bylaws

This EMPr meets the requirements of the stipulations provided in Appendix 4 of NEMA, 1998 (Act No. 107 of 1998) Environmental Impact Assessment Regulations, 2014 as amended with regards to the content of EMPr. This EMPr has been developed to specifically address the impacts related to this project in each phase of development.

### 1.7. Layout of the EMPr

The EMPr is divided into six sections dealing with an Introduction and Description of the Proposal and the Site, Pre-Construction and Site Set Up, Construction Activities and Post Construction, Rehabilitation and Operation Activities. Sections 5 and 6 provide Definitions & Records that can be used to record training, incidents & complaints. Under the construction section, each section deals with a specific aspect of the development i.e. administration & records. Within these sections, the specific activity is described & the mitigation action provided. The tables have been set up to enable ease of auditing with a section for the EO/SHE officer or ECO to state whether mitigation measures have been put in place and to make comment about any problems noted.

### 1.8. Project Details

Ndlomzintu Trading (Pty) Ltd propose to construct a new private hospital west of Estcourt town. The proposed site is located on Erf 3229 of Estcourt Ext 19 township, which is accessed directly off Ntabamhlope Road at 29°01'20.69"S; 29°50'59.76"E. **The total extent of the property is 5.2 hectares. The total development footprint to be occupied by the proposed hospital is 2.2 hectares.**

The first phase of the new hospital will accommodate 73 hospital beds, doctors consulting wings as well as Casualty, Radiology & Pathology Departments. The total number of beds will increase to 111 as part of the second phase of the hospital. **The proposed private hospital will ultimately include the following:**

- Consultation Offices, Pathology, Pharmacy, Restaurant, tearoom, Administration, Cafeteria, Kitchen, Laundry, Services Area and Waste Area;
- Radiology, Labour Unit and NNICU;
- Maternity Ward;
- Paediatrics Ward;
- Medical Ward;
- Surgical Ward;
- Theatre Complex;
- Casualties Ward;
- Day Ward; and
- ICU and Intensive Ward.

The development will connect to the bulk municipal system for bulk water provision & sewerage disposal. **The connection points for both are available on site and are indicated in Figure 1.** The municipal Waste Water Treatment Works (WWTWs) is in the process of being licenced with the Department of Water and Sanitation (DWS) and therefore DWS have confirmed during the Water Use Authorisation pre-application meeting that the development may connect to the municipal WWTWs. **A conservancy tank is therefore not required.**

The proposed development will result in the clearance of 2.2 hectares of indigenous grassland which requires environmental authorisation from the Department of Economic Development, Tourism and Environmental Affairs. The location of the site camp must be located within the proposed development footprint. Figures 1 & 2 below provides the proposed layout and development footprint on the property. The remainder of the grassland, in the western portion of the property is to be cordoned off during construction and remain untouched.

### 1.9. Construction Methodology

On receipt of Environmental Authorisation, the following construction methodology is anticipated:

- A construction camp will be established in the eastern portion of the property, within the development footprint.
- Clearing and grubbing of the site will be undertaken by heavy machinery i.e. a TLB. Bulk earthwork will take place once the site has been prepared. Approximately 2.2 hectares of grassland will be cleared.
- The remainder of the site will be cordoned off to prevent any further clearance of vegetation from occurring.
- Construction of the hospital and associated services will take place in accordance with the EMPr.
- Once construction is complete, all exposed areas will be rehabilitated according to a landscaping plan to ensure there is no long-term erosion.

- A Post Construction audit will take place by an independent Environmental Control Officer to ensure that the site is stable and there are no residual impacts remaining.

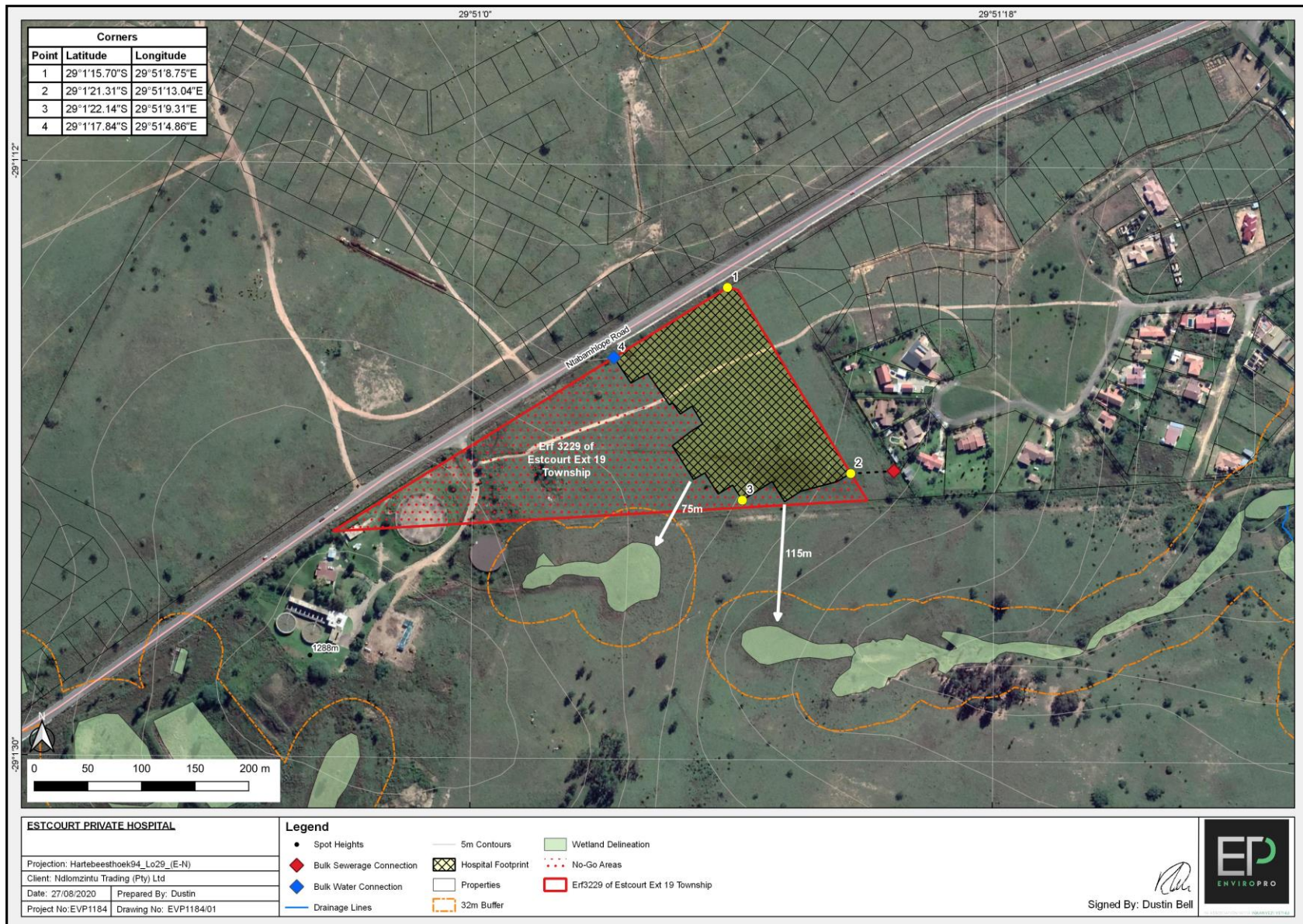
### 1.10. Impact Management Outcomes

The overall impact management outcome is for an environmentally sustainable development. Infrastructure to be constructed in the eastern portion of the site with the remainder of the grassland being retained as open space providing an ecological link with the grasslands to the north and south of the property. The specific impact management outcomes are provided above the impact management actions in sections 2, 3 & 4 and summarised below for ease of reference:

#	Impact Management Outcome	Phase of Development
1	Reduce stormwater runoff so it does not cause erosion and sedimentation of downstream watercourses.	Construction
2	Prevent increased volume & rate of runoff entering wetlands causing a decrease in wetland functionality.	Construction
3	Maintain open space system within the estate to retain surface and sub-surface hydrology.	Construction
4	Road network upgraded to managed the increase in traffic associated with the development.	Operation
5	Electrical network monitored to managed the increase in people residing in the area.	Operation
6	Bulk potable water supply managed to accommodate the increase in people residing in the area.	Operation
7	Waterborne sewage reticulation network managed to accommodate the increase in people residing in the area.	Operation
8	Impacts on the environment are minimised during site establishment.	Pre-Construction
9	All on site staff are aware and understand the individual responsibilities in terms of the EMPr	Pre-Construction
10	The impact on sensitive social and environmental areas on site is minimised during construction across the site	Construction
11	Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.	Construction
12	Construction activities managed to prevent any nuisance to neighbours	Construction
13	Minimise impact on the environment through management of construction vehicles on site.	Construction
14	Soil, surface water and groundwater contamination is minimised during construction.	Construction
15	To ensure there are no long lasting impacts on the environment remaining once construction is complete.	Post-construction
16	To improve the functionality of the wetlands on site.	Rehabilitation post-construction
17	Improve the current condition of the environment during the operational phase of the Estate	Operation



Figure 1: Aerial photograph showing the preferred layout for the Estcourt Private Hospital (source: QGIS vs 2.3 with SDP wetland overlay, 2020).





**1.11. Table of Responsibilities**

This is to state that the undersigned have received a copy of the Environmental Management Plan (EMPr) developed for this site by *EnviroPro* dated August 2020. Any contravention of the EMPr must be recorded and corrective action must be carried out. Any changes to the EMPr must be approved by the *Environmental Control Officer (ECO)*, the consultant *EnviroPro* and the relevant authority. Such changes are to be made in writing and a record must be maintained.

The undersigned do hereby agree to abide by the structures of the Environmental Management Plan (EMPr) and accept responsibility for ensuring adherence to the Construction EMPr as it relates to the following areas:

Table of Responsibilities				
Job description / title	Scope of work or area of responsibility i.e. camp drainage, construction camp, housekeeping etc.	Responsible person (Name)	Signature	Date



**1.12. Names and Telephone Numbers of Contact Persons**

The following list of contacts must be printed and made clearly visible on the site.

Contact List			
Designation	Organisation	Name	Contact number
Applicant	Ndlomzintu Trading (Pty) Ltd	LS Mzinyane	082 492 5678
Consulting Engineer	Umsunguli Project Management	Jannie Cronje	033 330 8386
Independent Environmental Practitioner and ECO	EnviroPro	Josette Oberholzer Iain Jourdan	031 765 2942
Wetland Consultant	SDP Ecological & Environment	Alex Whitehead	073 268 4157
Environmental Authority (Enforcement & Compliance)	EDTEA	Compliance Officer	036 638 1800
Reporting for Incidents involving Watercourses	DWS	Sibusiso Sikhosana	082 888 7079
Wildlife Related Incident	Ezemvelo KZN Wildlife	Irene Hatton	082 611 6614
Heritage Resources	AMAFA	Weziwe Tchabalala	033 394 6543
Fire Emergency	Fire Department	-	0800 033911
Crime Emergency	Police	-	10111

**SECTION 2 SITE SPECIFIC IMPACTS AND MITIGATIONS AS IDENTIFIED IN THE BAR**



Figure 3: Pre-construction photographs taken of the site in May 2019 (a) Existing dirt track and grassland which is to be retained in the western portion of the property; (b) Grassland which will be cleared in the eastern portion of the site to accommodate the hospital; and (c) Degraded grassland in the centre of the site.

Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
<b>1. Impact Management Outcome:</b> <i>Restrict excessive clearing of indigenous vegetation.</i>				
<p>Activity: There will be clearing of up to 2.2 hectares of indigenous vegetation for the construction of the Estcourt Private Hospital.</p> <p>Impact: Loss of vegetation within the</p>	<p>The following measures must be carried out to mitigate against excessive vegetation clearing on the site during construction:</p> <ul style="list-style-type: none"> <li>This impact cannot be fully mitigated as there will be a loss of 2.2 hectares of indigenous vegetation found within the KwaZulu-Natal Highland Thornveld (Gs 6) vegetation type.</li> <li>The vegetation cleared must be restricted to the construction footprint of the hospital and associated parking areas, as per Figures 1 &amp; 2.</li> <li>The construction camp must be located within the authorised footprint of the hospital.</li> </ul>	CON / ECO		

Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
KwaZulu-Natal Highland Thornveld (Gs 6) vegetation type.	<ul style="list-style-type: none"> <li>Contractors must avoid damaging any vegetation that is not within the construction footprint. In this regard, the remainder of the property must be visibly cordoned off to prevent access into this grassland during construction.</li> <li>All staff on site must undergo environmental induction training with the independent Environmental Control Officer.</li> <li>Areas disturbed during construction must be revegetated in accordance with a suitable landscaping plan.</li> <li>The remaining grassland area is to be retained.</li> </ul>			
<b>2. Impact Management Outcome:</b> <i>Prevent the establishment and spread of alien plant species.</i>				
<p>Activity: Disturbance of the site during the construction of the hospital</p> <p>Impact: Resulting in the encroachment of alien vegetation into disturbed areas i.e. Castor Oil.</p>	<p>There is currently alien vegetation located within the surrounding area.</p> <ul style="list-style-type: none"> <li>Alien invasive plant management be implemented. An Alien Plant Control Plan is provided under section 6.</li> <li>Alien vegetation must not be allowed to encroach onto the site and must be continually removed during construction.</li> <li>Construction must not promote further alien plant disturbances in the surrounding area.</li> </ul>	CON / ECO		
<b>3. Impact Management Outcome:</b> <i>Prevent sedimentation of downstream wetlands during construction.</i>				

Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
<p>Activity: Clearing of site and creation of hard surfaces leading to increased stormwater run off</p> <p>Impact: Sedimentation of the downstream wetland system.</p>	<p>The nearest wetland is located 78m away from the development footprint creating a substantial buffer for stormwater to percolate naturally and evaporate. The following stormwater and erosion control measures are however required during construction to manage stormwater runoff:</p> <ul style="list-style-type: none"> <li>• Temporary stormwater protection measures must be established before construction activities commence.</li> <li>• The long-term stormwater infrastructure required, described in the approved Stormwater Management Plan, must be established early in the construction process.</li> <li>• Any sign of erosion on site must be immediately rectified to prevent any significant wash away of soil into the adjacent grassland area.</li> <li>• The Contractor must regularly check and clean material from behind erosion barriers.</li> </ul>	CON		
<p><b>4. Impact Management Outcome:</b> <i>Prevent damage to palaeontological resources.</i></p>				
<p>Activity: Deep excavations during construction</p> <p>Impact: Damage or loss of possible palaeontological resources.</p>	<p>The site lies on Normandien Formation which could potentially preserve fossils of the <i>Glossopteris</i> flora. Based on the nature of the project, the development is unlikely to impact upon the fossil heritage, even if preserved well below the land surface in the development footprint. No mitigation measures were therefore prescribed by the palaeontologist specialist.</p>	APP		
<p><b>5. Impact Management Outcome:</b> <i>Positive impact on local community.</i></p>				
<p>Activity: Creation of temporary employment for the local community during construction</p>	<p>This is a positive impact.</p>	APP		

Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
Impact: Positive impact on local community and local economy				
Activity: Creation of a private health care facility servicing Estcourt and surrounding areas.  Impact: Positive impact on access to health care for local community.	This is a positive impact.	APP		
<b>6. Impact Management Outcome:</b> <i>Prevent the loss of faunal habitat on the remainder of the property outside the development footprint.</i>				
Activity: Clearing of indigenous vegetation for the construction of the Estcourt Private Hospital.  Impact: Loss of grassland habitat for fauna currently utilising the site impacting on local biodiversity and ecosystem services provided by the site.	This impact cannot be completely avoided as there will be a loss of 2.2 hectares of indigenous vegetation from within a Critical Biodiversity Area identified by Ezemvelo KZN Wildlife. Despite the majority of the site falling within an EKZN Wildlife earmarked “irreplaceable” zone, the grassland habitat has been subjected to low level anthropogenic impacts associated with veld management and livestock farming. The following measures are in place to reduce the impact on any species that may still utilise the property (i.e. retain local biodiversity) as well as maintaining the ecosystem services currently provided by the grassland and open space: <ul style="list-style-type: none"> <li>• The remaining 2 hectares of grassland in the western portion of the property must remain undeveloped.</li> <li>• This area of the property must be visibly cordoned off to prevent access into this grassland during construction.</li> <li>• The construction camp must be located within the authorised footprint of the hospital.</li> </ul>	CON		



Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
	<ul style="list-style-type: none"> <li>All staff on site must undergo environmental induction training with the independent Environmental Control Officer.</li> </ul>			
<b>7. Impact Management Outcome:</b> <i>Prevent any impacts on Wagendrift Nature Reserve</i>				
<p>Activity: Construction activities associated with the Estcourt Private Hospital.</p> <p>Impact: Negative visual, hydrological and ecological impacts on the Wagendrift Nature Reserve.</p>	<p>The Wagendrift Nature Reserve is located 2km south of the proposed development, on the other side of N3. The Nature Reserve is also upstream of the hospital and therefore the proposed development will not impact on the protected area.</p>	APP		
<b>8. Impact Management Outcome:</b> <i>Prevent sedimentation of downstream wetlands during operation.</i>				
<p>Activity: Creation of hardened surfaces leading to increased post development run off.</p> <p>Impact: Resulting in sedimentation of the downstream wetland system.</p>	<p>Stormwater from the attenuation structure in the south eastern corner will be released and allowed to flow into the southern wetland system (HGM units 2 &amp; 3). The following is therefore required, as per the attached Engineering Services Report:</p> <ul style="list-style-type: none"> <li>Stormwater from the hospital must be collected in the kerbed parking areas and surface channels.</li> <li>The stormwater attenuation system must be designed to release flow at near natural flow volumes and velocities.</li> <li>Stormwater must be diverted through an attenuation process, before discharging it in a controlled manner into the downstream natural drainage systems. The construction of open attenuation ponds may be used as water features combined as a focal point in the landscaping plan (see Stormwater Management Plan).</li> <li>Appropriate erosion control measures must be constructed at the various stormwater discharge points located throughout</li> </ul>	CON		

Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
	<p>the site to limit erosion on the receiving environment e.g. at headwalls and culverts.</p> <ul style="list-style-type: none"> <li>The capacity of municipal infrastructure should be assessed during the detail design stage to ensure it is sufficient to handle the increase in stormwater from the hospital site.</li> <li>The stormwater system must be kept separate from the sewage system.</li> </ul> <p>The wetland specialist confirmed that the volume of additional water that will ultimately enter the wetland system is unlikely to be significant relative to the natural runoff volumes. The resultant impacts on the wetland area are expected to be minimal and of low significance.</p>			
<p><b>9. Impact Management Outcome:</b> <i>Minimise the impact on the existing road network.</i></p>				
<p>Activity: Everyday operation of the Estcourt Private Hospital.</p> <p>Impact: Increase in traffic on the road network disrupting existing traffic conditions.</p>	<p>A Traffic Impact Assessment was conducted by AG Traffic and Transportation Consultants. There are no capacity road or external intersection upgrades required however the recommendations of the traffic specialists are as follows:</p> <ul style="list-style-type: none"> <li>The development must be served by one ingress/egress point.</li> <li>Access to the site will be taken directly off the Ntabamhlophe Road. This access point will have one ingress lane and two egress lanes.</li> <li>Vegetation cleared to accommodate the new road must be maintained so it does not grow again. This will ensure that sight distance, at any point, is not compromised as this will have a negative road safety effect should sufficient sight distance be not available.</li> <li>A minimum of 72 parking bays must be provided.</li> <li>A taxi drop off area, as proposed in the layout must be constructed as part of the facility.</li> </ul>	<p>APP</p>		
<p><b>10. Impact Management Outcome:</b> <i>Reduce the risk of improper storage and disposal of medical waste.</i></p>				

Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
<p>Activity: Generation of hazardous medical waste during the operation of the hospital.</p> <p>Impact: Improper storage of hazardous medical waste leading to health impacts and risk to environment on site. Improper / illegal disposal leading to contamination of off-site disposal areas and risk to affected local communities.</p>	<ul style="list-style-type: none"> <li>• A banded waste storage area for domestic waste will be constructed on the property.</li> <li>• A separate waste storage area should be constructed inside the health care facility for non-domestic waste, such as medical waste.</li> <li>• The storage area must be clearly marked with the international infectious substance symbol.</li> <li>• Medical waste must be removed by licensed service providers and taken for disposal, as required by law.</li> <li>• Only recognised and registered medical waste companies may be used for waste disposal and treatment.</li> <li>• A record of the type and volumes of medical waste generated must be kept on site.</li> <li>• Safe disposal certificates must be kept on file to confirm that waste has been disposed of at an appropriate and licenced medical waste facility i.e. safe disposal certificates to indicate type and volume of waste disposed and method / location of disposal.</li> </ul>	APP		
<p><b>11. Impact Management Outcome:</b> <i>Maintain open space system linkages retaining local biodiversity.</i></p>				
<p>Activity: Retention of open space connectivity in the western portion of the site.</p> <p>Impact: Ecological link maintained between the open space and grassland to the north and south of the property.</p>	<p>This has a positive impact on the local biodiversity.</p>	APP		
<p><b>12. Impact Management Outcome:</b> <i>Reduced pressure on municipal services.</i></p>				

Nature and Consequences of impact	Proposed mitigation and Extent to which impact can be reversed / avoided, managed or mitigated:	Person	In place (Yes / No)	Comments
<p>Activity: Hospital will make use of municipal services i.e. water and electricity supply and sewage disposal.</p> <p>Impact: Increased pressure on the municipal services for bulk water provision and sewage disposal.</p>	<p>uMsunguli Project Management prepared the Engineering Services Report. As per sections 3.3 &amp; 3.4, uThukela District Municipality has approved the bulk water connection and that the hospital may connect into the existing sewer network. There is therefore sufficient capacity available to service this development.</p>	<p>APP</p>		

**SECTION 3 CONSTRUCTION MITIGATION MEASURES**

**13. Impact Management Outcome:** *Impacts on the environment are minimised during site establishment.*

**3.1 Site Camp, Storage & Handling of Hazardous and Non-Hazardous Materials & Stockpiling**

Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
Location & establishment of construction camp	<ul style="list-style-type: none"> <li>The location of the construction camp must remain within the proposed development footprint shaded in yellow in Figure 1.</li> <li>The construction camp and associated waste management areas must not be located in the western portion of the site.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>The site camps must be clearly demarcated and fenced off to prevent illegal entry.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>The following areas must be demarcated and clearly marked within the construction camps:                             <ul style="list-style-type: none"> <li>A waste storage area</li> <li>A materials storage area</li> <li>Areas for fuel and hazardous chemical / flammable goods</li> <li>Stockpile areas</li> <li>Vehicle servicing and wash bay areas (if required)</li> <li>Parking area</li> </ul> </li> </ul>	CON		
Establishing storage areas & stockpiles	<ul style="list-style-type: none"> <li>A waste storage area must be demarcated and sufficient waste bins must be provided within the camps. Storage of waste must be on a hard surface, and under cover. Liquid waste must be situated within a bunded area.                             <ul style="list-style-type: none"> <li>Liquid waste and accumulated waste must be removed from site monthly by a recognized Waste Contractor.</li> </ul> </li> </ul>	CON		
	<ul style="list-style-type: none"> <li>A materials storage area must be identified and designated within the construction camps. Materials, specifically liquid and potentially environmentally hazardous materials must be stored within a bunded area (110% capacity of largest container) and on a hard surface. The storage area must be under cover.</li> </ul>	CON		

	<ul style="list-style-type: none"> <li>• <b>Areas for fuel and hazardous chemical / flammable goods</b> must be identified and clearly signposted within the construction camps. An inventory of the materials and volumes stored must be maintained and updated once a week. These areas must be located within a bunded, hard surfaced impermeable area.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• <b>Bulk fuel storage:</b> No bulk fuel storage to occur on any of the sites.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• <b>Designated areas for stockpiling of raw materials</b> must be demarcated within the construction camps. No stockpiling is to occur on or near slopes where they could be washed into the surrounding properties.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• <b>Parking:</b> The contractor must designate parking areas on the sites and ensure that only these parking areas are used.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• <b>Vehicle servicing and washing:</b> only emergency (breakdown where equipment is no longer mobile) and minor maintenance (e.g. greasing) must be done on the sites.                             <ul style="list-style-type: none"> <li>○ A designated area must be set aside for this, which must be hard surfaced and bunded.</li> <li>○ Drip trays must be used.</li> <li>○ Any other planned or required maintenance must be done off site.</li> <li>○ Vehicle washing must also be conducted off site at a designated vehicle wash bay, the washbay must be lined with impermeable material and must drain to a sump to ensure hydrocarbons, and other contaminants are separated out of the effluent prior to remaining runoff being discharged into municipal sewer.</li> <li>○ No cement vehicles must be washed on site.</li> </ul> </li> </ul>	CON		
<b>Handling of liquids on site</b>	<ul style="list-style-type: none"> <li>• Decanting of any liquids / chemicals paints etc. must be done within the confines of a drip tray or on a hardened surface within a bunded area.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• Decanting from large containers (e.g. 210L drums) must be done using a hand pump, where possible. If no hand pump is available, liquids must be decanted on a drip tray using a funnel.</li> </ul>	CON		

	<ul style="list-style-type: none"> <li>All handling of hazardous materials including cement must take place on a hardened surface or within a drip tray or cement mixing tray.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Decanting of hazardous materials must take place within the site camp above drip trays or containers to prevent the potential spillage into these areas.</li> </ul>	CON		
<b>Inventory and record of substances stored on site</b>	<ul style="list-style-type: none"> <li>A full inventory of hazardous substances and Material Safety Data Sheet (MSDS) for each substance stored on site must be maintained and each substance must be stored and managed in accordance with the MSDS.</li> </ul>	CON		

### 3.2 Administration & Records

Activity / Document	Required Action	Person	In place (Yes / No)	Comments
<b>Site Specific EMPr</b>	<ul style="list-style-type: none"> <li>Keep a hard copy of the Site Specific EMPr on site and ensure that it has been signed and received by the contractor and engineer.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>All contractors, the engineers and the ECO must have a copy of the EMPr before coming on to site.</li> </ul>	ECO/ ENG		
<b>Records</b>	<ul style="list-style-type: none"> <li>Keep records and proofs of all agreements, meetings etc. to demonstrate compliance with this EMPr.</li> </ul>	CON		
<b>Proof of raw material sourcing and resource use</b>	<ul style="list-style-type: none"> <li>Proof of sustainable source of all materials used must be obtained and documented especially for raw material i.e. topsoil, sands, natural gravels, crushed stone, clay liners, timber etc. <u>In other words, documented proof that materials have been sustainably sourced must be maintained on site for review by EDTEA.</u> <ul style="list-style-type: none"> <li>E.g.: sand must only be obtained from an approved sand winning operation, which is licensed by the Department of Mineral Resources (DMR) and has an approved EMPr for operation.</li> <li>Where materials are borrowed (mined), proof must be provided of authorization to utilise these materials from the</li> </ul> </li> </ul>	CON/ EO		

	landowner / mineral rights owner and the Department of Mineral Resources.			
<b>Water abstraction for dust suppression</b>	<ul style="list-style-type: none"> <li>• Water used on site must be obtained from a municipal source. If this is not available and water needs to be obtained from a nearby water resource then the following will apply:             <ul style="list-style-type: none"> <li>○ If water is to be abstracted from a water resource, it must be from an approved source and permission from the land owner must be obtained.</li> <li>○ No more than 50 000l per day must be abstracted. All water use must be registered with DWS.</li> <li>○ If water is abstracted, a daily record of the volume of water extracted must be retained and:                 <ul style="list-style-type: none"> <li>▪ The driver must record each truck load that is removed and this will be used to determine the volume of water extracted.</li> <li>▪ These records must be provided to the ECO for record and review.</li> <li>▪ The ECO must monitor volumes to ensure that usage remains below 50 cubic metres per property per day or that abstracted amounts remain within those allowed by the permit that must then need to be applied for.</li> </ul> </li> <li>○ Water use must be controlled by keeping a record of the number of water carts / tank loads used for dust suppression and reduced wherever possible (i.e. no dust suppression during rainy conditions, cover exposed stockpiles to reduce dusty conditions on site, training staff to turn off taps or hose pipes when not in use etc.).</li> </ul> </li> </ul>	APP		
<b>Maintenance of the extraction point</b>	<ul style="list-style-type: none"> <li>• One point of entry must be established and approved by the ECO. Multiple entry points and pathways must not be permitted.</li> <li>• Multiple abstraction points are not permitted.</li> <li>• The abstraction point must not be established within wetland areas or in areas thickly vegetated by riparian vegetation.</li> <li>• The abstraction point must be easily accessible and where possible, located in close proximity to an established road to not create additional tracks.</li> </ul>	CON/ EO		



	<ul style="list-style-type: none"> <li>The abstraction area must not be located on steep slopes where the point may be come eroded.</li> <li>Vehicles approaching the extraction point must remain 32m away from the edge of the water resource except where required to pump directly from the stream/river.</li> <li>No vehicle repairs or maintenance or refuelling must be conducted at the abstraction point.</li> <li>Damage to the banks of any water resource must not take place.</li> <li>Should the area become damaged or eroded, erosion protection measures such as sand bags or hessian sheeting must be put in place to allow the re-establishment of vegetation and stabilisation of the area.</li> <li>Once an abstraction point is no longer being used, the area must be rehabilitated to its former state.</li> </ul>			
<b>Proof of training</b>	<ul style="list-style-type: none"> <li>Keep training attendance registers on file at all times.</li> </ul>	EO		
<b>Incident records &amp; Photographs</b>	<ul style="list-style-type: none"> <li>Keep records of incidents that have occurred and how they were remediated. Photographs when incidents occur must be taken and then follow up pictures taken to demonstrate remediation and keep these on record.</li> <li>These records must be kept on site for review by EDTEA.</li> </ul>	EO		
<b>Appointment of ECO / EO</b>	<ul style="list-style-type: none"> <li>Appoint an ECO (Environmental Control Officer) prior to commencement of construction to monitor the entire construction phase.</li> </ul>	ENG		
	<ul style="list-style-type: none"> <li>Keep proof of appointment and contact details as well as dates of audits.</li> </ul>	APP		
<b>Emergency response plan</b>	<ul style="list-style-type: none"> <li>An emergency response plan must remain on site as must a copy of the EMPr and the Environmental Authorization.</li> </ul>	ECO		
<b>Audits</b>	<ul style="list-style-type: none"> <li>A record of audits conducted on the site as well as findings must be kept on site.</li> </ul>	CON/ EO		
<b>Permits &amp; Approvals</b>	<ul style="list-style-type: none"> <li>Keep all permits and approvals on file i.e. construction licences etc.</li> <li>These must be kept on site for review by EDTEA.</li> </ul>	CON		
<b>MSDSs</b>	<ul style="list-style-type: none"> <li>Material Safety Data Sheets (MSDSs) are to be kept on site for all hazardous materials.</li> </ul>	CON		

**14. Impact Management Outcome:** *All on site staff are aware and understand the individual responsibilities in terms of the EMP*
**3.3 Training & Awareness**

Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>Who should be trained &amp; Frequency of training</b>	<ul style="list-style-type: none"> <li>All construction staff must have basic environmental awareness training, which can be conducted at the same time as the required health &amp; safety training.</li> </ul>	EO		
	<ul style="list-style-type: none"> <li>Staff must be trained on their environmental responsibilities before commencing work and refresher sessions can be conducted during toolbox talks on specific areas causing problems.</li> </ul>	EO		
	<ul style="list-style-type: none"> <li>Staff must sign training register and Records of training must be kept.</li> <li>These records must be maintained on site for review by EDTEA.</li> </ul>	EO		
<b>Training Content and staff conduct</b>	<ul style="list-style-type: none"> <li>Training must include               <ol style="list-style-type: none"> <li>The definition of environment (people + air + soil + water +business);</li> <li>Reasons for conserving and protecting the environment;</li> <li>How the following activities can impact the environment: - Not using assigned ablutions, hazardous materials, uncleaned spills, mixing of cement or paint on soil or grass surfaces, waste management i.e. use of waste receptacles and waste separation for recycling, vehicle washing polluting soil &amp; ground water; litter;</li> <li>What to do to prevent the above impacting the environment i.e. assign impermeable mixing areas, no vehicle washing on site, use of waste receptacles and separation of waste to allow for recycling, how to respond in an emergency and deal with a spill;</li> <li>Consideration of neighbours.</li> <li>Do not play music or create any other disturbance to neighbours.</li> <li>Use only the chemical toilets provided.</li> <li>No dumping to occur in sensitive areas on site.</li> </ol> </li> </ul>	EO		

	<p>9. Use waste bins provided.</p> <p>10. Use drip trays provided.</p> <p>11. Do not build fires for any purpose on the site.</p> <p>12. Behave in socially acceptable manner and do not use drugs or alcohol on site.</p> <p>13. There is to be no hunting of wildlife on the site and no setting of snares or traps. No animals are to be harmed or harassed.</p> <p>14. Restrictions associated with the environmentally sensitive areas on the site, as indicated in Figure 1.</p>			
<b>Neighbours &amp; working hours</b>	<ul style="list-style-type: none"> <li>Limit hours of operation to weekdays 7-5pm and Saturday mornings 7- 12pm. Neighbours to be notified before construction on weekends takes place.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Advise the adjoining neighbours of the work and hours of work at least one week prior to commencement. This can also be indicated on the signboards.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Neighbours to be advised prior to periods where work will be done outside normal working hours.</li> </ul>	CON		

**15. Impact Management Outcome:** *The impact on sensitive social and environmental areas on site is minimised during construction across the site*

3.4 Sensitive Social Areas, Environmental Areas, Vegetation and Vegetation Clearing and Wildlife				
Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>Soil</b>	<ul style="list-style-type: none"> <li>Top soil removed during the excavations must be kept to one side.</li> <li>This must then be re-used for rehabilitation purposes. Soil must be replaced in the same area that it was excavated from. Much of this topsoil, especially the top 30cm will retain grass and vegetation seeds.</li> <li>Soil stockpiles must not exceed 2m in height, must be covered, or grassed to prevent erosion caused by exposure to heavy wind or rain.</li> </ul>	CON/EO		

	<ul style="list-style-type: none"> <li>• Topsoil must not to be mixed with subsoil. Stockpiling of top and subsoils must be in the correct sequence. The soil profile must be restored to the natural structure with topsoil and subsoil being replaced in sequence.</li> <li>• Soil must not to be stockpiled against tree trunks as this will encourage ant infestations.</li> </ul>			
<b>Vegetation clearing and planting</b>	<ul style="list-style-type: none"> <li>• Only vegetation within the development footprint must be cleared.</li> <li>• Any vegetation clearing must be done under the supervision of the ECO and Engineer.</li> </ul>	CON/EO		
<b>Alien vegetation control</b>	<ul style="list-style-type: none"> <li>• On-going control of alien vegetation within the construction area must be maintained.</li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li>• An alien eradication program must be in place to control the spread of alien invasive species on site.</li> </ul>	CON/EO		
<b>Cultural and Heritage items</b>	<ul style="list-style-type: none"> <li>• Should any items with historical or archaeological value be found during construction, these must be reported to AMAFA and work in the affected area must be stopped immediately.</li> <li>• Under no circumstances may any heritage material be destroyed or removed from site unless under direction of the KZN and Amafa Research Institute and a heritage specialist.</li> <li>• Should any remains be found on site that is potentially human remains, SAPS must be contacted. No SAPS official may disturb or exhume such remains, without the necessary permission from the KZN and Amafa Research Institute.</li> </ul>	CON		

3.5 Soil, Stormwater Runoff; Erosion				
Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>Stormwater system</b>	<ul style="list-style-type: none"> <li>• Temporary stormwater protection measures must be established before construction activities commence.</li> <li>• Sand bags, berms, stone pitching must be used to control erosion from forming during construction.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• No contaminated runoff or grey water is allowed to be discharged from the site camps into the surrounding environment. It must be contained in a sump or put through an</li> </ul>	CON		

	oil/grease separator to remove the contaminant from the water prior to discharge into stormwater.			
	<ul style="list-style-type: none"> <li>Uncontrolled storm water must not be allowed to flow into surrounding properties and must enter existing stormwater channels.</li> <li>Temporary stormwater measures must be implemented to ensure that material does not wash off the surface into any watercourse during construction.</li> </ul>	CON		
<b>Stormwater quality</b>	<ul style="list-style-type: none"> <li>Only clean stormwater must be diverted off site and then precautions must be in place to prevent erosion. These precautions can include gabion baskets, berms or diversion ditches, sandbags.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Washings from any vessels or any containers must not enter the wetland or storm water. These washings are to be contained and removed as waste.</li> </ul>	CON		
<b>Incidents</b>	<ul style="list-style-type: none"> <li>Entry of any substance (i.e. any material or substance that is not clean stormwater) into the stormwater or a water body is considered an incident and must be reported to the ECO <b>immediately</b> for the purposes of maintaining the site's incident records.</li> </ul>	CON/ EO		
<b>Stormwater flow</b>	<ul style="list-style-type: none"> <li>The drainage system must be checked by the ECO during the monthly audits to ensure an unobstructed water flow.</li> </ul>	CON		
<b>Erosion Control</b>	<ul style="list-style-type: none"> <li>Install erosion barriers (gabion baskets, berms or diversion ditches, sandbags) and other sediment control structures (grates or grids, geofabric) before clearing in order to prevent substances from entering exposed drains or channels.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Identify any steeper areas where erosion is more likely to occur. These areas must be protected from erosion. This can be achieved through planting of vegetation, placement of berms or use of hessian material.</li> </ul>	CON/ EO		
	<ul style="list-style-type: none"> <li>The ECO must check and clean material from behind erosion barriers during the monthly audits.</li> </ul>	CON/ EO		
	<ul style="list-style-type: none"> <li>Sediment / soil must not be permitted to enter the wetland system downstream of the site.</li> <li>The contractor must install erosion barriers (gabion baskets, berms or diversion ditches, sandbags) and other sediment control structures (grates or grids, geofabric).</li> </ul>	CON/ EO		

**16. Impact Management Outcome:** *Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.*

### 3.6 Housekeeping, Waste Storage Handling and Disposal

Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>General Waste Storage</b>	<ul style="list-style-type: none"> <li>Waste management areas must be designated and demarcated within the various construction camps.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Solid waste must be stored in covered, tip proof metal drums to be collected and disposed of by a certified waste contractor.</li> <li>Proof of safe disposal of solid waste must be documented and these records must be maintained on site for review by EDTEA.</li> </ul>	CON		
<b>Hazardous waste</b>	<ul style="list-style-type: none"> <li>Hazardous materials that require disposal (cement, paints, solvents, old fuel/oil etc.) must be disposed of at a registered hazardous landfill site.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>These materials must be removed by a hazardous waste contractor. Proof of disposal must be available to the ECO for scrutiny and kept on record.</li> <li>Proof of safe disposal of solid waste must be documented and these records must be maintained on site for review by EDTEA.</li> </ul>	CON		
<b>Waste from Chemical toilets</b>	<ul style="list-style-type: none"> <li>Install chemical toilets and insure disposal of waste at a licenced disposal facility. Proof of disposal must be kept on site at all times.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Waste from the toilets must be collected on a weekly basis by a registered and reputable company.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Safe disposal certificates for toilet waste must be obtained and kept on site as assurance that the waste was properly disposed of.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Staff must use facilities provided and are not permitted to use any other areas on site as toilet facilities.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Chemical toilets must be checked daily and cleaned.</li> </ul>	CON		
<b>Waste storage and handling</b>	<ul style="list-style-type: none"> <li>No waste may be buried or burned on site or dumped on surrounding properties and farmland. All waste must be</li> </ul>	CON		

	disposed of at a licenced waste disposal facility. Proof of disposal must be kept on site at all times.			
	<ul style="list-style-type: none"> <li>All skips must be covered to contain odours and prevent waste from blowing around the site.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>A register of all waste generated and disposed of must be maintained.</li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li>No dumping is permitted. There must be no dumping on site under any circumstances. The contractor is liable to a fine should there be any evidence of illegal dumping.</li> <li>The ECO to review damage and advise on rehabilitation measures if required.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Do not place waste containers, skip bins or building materials on steep slopes.</li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li>Waste accumulated on site must be removed on a weekly basis. The waste must be moved to a licenced waste disposal facility.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Provide litterbins throughout the site for use by all staff on site.</li> </ul>	CON		
<b>Waste separation</b>	<ul style="list-style-type: none"> <li><b>Hazardous:</b> Hazardous waste must be stored separately from general waste. <ul style="list-style-type: none"> <li>Hazardous waste must be disposed of at an approved hazardous waste landfill and safe disposal certificates must be obtained.</li> <li>Hazardous waste includes used oils, lubricants, solvents, solvent based paints, concrete waste, and cement.</li> </ul> </li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li><b>Oils</b> must be within a bunded storage area and treated as flammable waste. <ul style="list-style-type: none"> <li>Where possible used oils must be recycled.</li> <li>Safe disposal certificates must be kept on site demonstrating disposal or recycling of the used oils.</li> <li>Solid paint waste must be disposed of as general waste.</li> </ul> </li> </ul>	CON/EO		

	<ul style="list-style-type: none"> <li>• <b>Concrete waste:</b> <ul style="list-style-type: none"> <li>○ Return excess concrete with the delivery truck to supplier for recycling or proper disposal.</li> <li>○ Any other excess concrete i.e. on-site mixed concrete can be stored in a lined bin for eventual recycling or disposal.</li> </ul> </li> </ul>	CON/EO		
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**17. Impact Management Outcome:** *Construction activities managed to prevent any nuisance to neighbours.*

**3.7 Noise**

Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
Noise Generation and suppression	<ul style="list-style-type: none"> <li>• All construction vehicles must be fitted with standard silencers and be well maintained.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• Workers must be trained regarding noise on site and construction hours must be kept to working hours (07h00 to 17h00).</li> </ul>	CON		

**3.8 Dust & Emissions**

Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
Dust from stockpiles	<ul style="list-style-type: none"> <li>• Cover any stockpiled fine material that may release dust with plastic.</li> </ul>	CON		
Dust from surfaces	<ul style="list-style-type: none"> <li>• Damp down surfaces and stockpiles as required to reduce windblown dust.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• A water cart must be used which must remain on designated roadways if required.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>• If dust from the site is likely to create problems for nearby residents, these areas must be shielded with shade cloth.</li> <li>• Vehicle speed limits must be reduced to 40km/hr to reduce the amount of dust raised along the gravel roads to and from the site.</li> </ul>	CON		



	<ul style="list-style-type: none"> <li>The material being transported to the site in the back of the trucks must be covered.</li> </ul>			
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**18. Impact Management Outcome:** *Minimise impact on the environment through management of construction vehicles on site*

3.9 Vehicle Maintenance, Operation, Driving On Site and Vehicle Washing				
Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>Access points</b>	<ul style="list-style-type: none"> <li>Haulage roads must be demarcated at site set up.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Turning areas must be located within the construction footprint and must be clearly designated.</li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li>No ad hoc haulage roads or turning areas must be created.</li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li>Limit vehicle entry point to the designated access point and ensure no other point of entry is used.</li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li>All vehicles to remain in the parking area designated within the construction site.</li> </ul>	CON/EO		
<b>Vehicle servicing and repairs</b>	<ul style="list-style-type: none"> <li>No major equipment or vehicle servicing to occur on site i.e. major disassembly and repair work, clutch replacements and oil or lubricant changes must be carried out at an equipped workshop.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Only minor emergency repairs, i.e. those necessary to get the vehicle moving so that it can be taken to a repair facility to be carried out i.e. stopping of oil leaks, lubricating of hydraulics, changing of buckets / breakers on Excavators and TLBs or changing of tyres. This must be carried out in designated work shop areas within the allowed construction camps. These areas to be hard surfaced and bunded.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Drip trays are to be used by all leaking vehicles and equipment.</li> </ul>	CON/EO		

	• All vehicles to be equipped with drip trays.	CON/ EO		
	• All small machinery used on site must be situated on a drip tray (i.e. pumps, generators, compressors etc.).	CON/ EO		
	• All vehicles to be maintained and maintenance records must be made available on request.	CON/ EO		
	• No leaking vehicles to be allowed on site.	CON/ EO		
	• No vehicles to be washed on site - cement trucks are not permitted to wash out cement mixers on site.	CON/ EO		

**19. Impact Management Outcome:** *Soil, surface water and groundwater contamination is minimized during construction.*

3.10 Incidents, Spills and Emergency Response				
Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
Spill kits	• Spill kits and containers for spilled and contaminated material to be on standby on site.	CON/EO		
	• Keep clearly marked booms and/or absorbent material on site to contain spills if they occur.	CON/ EO		
	• All staff must be trained on how to react in the case of an emergency.	CON- SHE		
	• If a spill occurs, stop the source, contain it, clean up in accordance with MSDSs and notify relevant authorities.	CON/ EO		
	• Make staff aware of emergency phone numbers to use in the case of a large spill.	CON/ EO		
Definition of incidents	• All incidents are to be recorded.	CON/ EO		
	• <b>Minor incidents:</b> small spills less than 5 l that do not enter stormwater or the stream, minor non-compliance with EMP that does not cause major environmental impact i.e. housekeeping issues etc. <ul style="list-style-type: none"> <li>○ <b>Action:</b> Supervisor and staff on site to record and address</li> </ul>	CON/ EO		

	<p>and notify ECO. Take photos of spill. Prevent spill from spreading and contain. Collect spilled material and contaminated soil and place in sealed container for disposal. ECO to advise on remediation measures and to follow up on actions taken to address incident.</p> <ul style="list-style-type: none"> <li>○ <b>Records:</b> On site incident register.</li> </ul>			
	<ul style="list-style-type: none"> <li>● <b>Major incidents:</b> Large spills or any spills that enter stormwater or the stream, fires, explosions. Please see definition of a reportable incident provided below. <ul style="list-style-type: none"> <li>○ <b>Action:</b> Report immediately to ECO, action to be taken to prevent further damage and incident to be reported to authorities. ECO to advise on remediation measures and to follow up on actions taken to address incident.</li> <li>○ <b>Records:</b> On site incident register and report to authorities.</li> </ul> </li> </ul>	CON/ EO		

3.11 Sewage and Grey Water Management				
Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
Sewage	<ul style="list-style-type: none"> <li>● Toilet facilities (such as chemical toilets) sufficient in number must be provided to cater for the number of staff on site must be provided. One toilet per 15 staff must be provided.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>● Waste must be managed as per section 3.5 namely removed by licensed contractor and safe disposal certificates retained to prove proper disposal.</li> <li>● Safe disposal certificates must be kept on site for review by the EDTEA.</li> </ul>	CON/ EO		
Grey water / wash water	<ul style="list-style-type: none"> <li>● Grey water must not be permitted to enter the surrounding properties or stormwater.</li> </ul>	CON/ EO		
	<ul style="list-style-type: none"> <li>● Vehicles, especially cement trucks, must not be washed on site these must be washed at a wash bay facility off site.</li> </ul>	CON/ EO		
	<ul style="list-style-type: none"> <li>● Alternately the wash water can be collected and returned with the supplier's truck for disposal by the supplier.</li> </ul>	CON/ EO		

**SECTION 4 POST CONSTRUCTION, REHABILITATION AND OPERATION**

**20. Impact Management Outcome:** *To ensure there are no long lasting impacts on the environment remaining once construction is complete.*

**4.0 Post Construction Activities**

Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>Post Construction Audit</b>	<ul style="list-style-type: none"> <li>A Post Construction Audit must be submitted to EDTEA CME once construction is complete.</li> <li>Clearance from the ECO must be obtained to ensure the all of the requirements of the EMPr have been complied with and that the site is in a stable condition.</li> </ul>	ECO		
<b>Stormwater</b>	<ul style="list-style-type: none"> <li>The Contractor must check that the stormwater channels are free from building rubble, spoil materials, and waste materials.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Ensure that in the long term; stormwater is protected from ingress by potential pollutants.</li> </ul>	CON		
<b>Waste &amp; Spills</b>	<ul style="list-style-type: none"> <li>All spillages must be cleaned and contaminated soil must be removed and disposed.</li> </ul>	CON/ EO		
	<ul style="list-style-type: none"> <li>All remaining waste bins and / or skips must be removed and disposed of. Records of disposal must be retained.</li> </ul>	CON/ EO		
	<ul style="list-style-type: none"> <li>All excess concrete must be removed from site on completion of works and disposed of. Washing of the excess into the ground is not allowed.</li> </ul>	CON/ EO		
	<ul style="list-style-type: none"> <li>All excess aggregate must also be removed.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Used oil must have been collected by a registered used oil contractor and documentation to this effect provided.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>Surfaces are to be checked for waste products from activities such as concreting are cleared in a manner approved by the ECO.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>No litter must be left on site.</li> </ul>	CON/EO		



<b>Structures, materials and stockpiles</b>	<ul style="list-style-type: none"> <li>Any fences, barriers, or demarcations utilized for the construction phase must be removed and disposed of.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>All structures and imported materials within the construction camp must be removed.</li> </ul>	CON		
	<ul style="list-style-type: none"> <li>The remaining building materials must be removed from the site.</li> </ul>	CON		
<b>Damage</b>	<ul style="list-style-type: none"> <li>Any damage to existing infrastructure must be repaired or replaced on completion of the project.</li> <li>Damage to water pipes or sewer infrastructure must be considered as emergency incidents whereby correction must be immediate so as not to waste water resources and to not create environmental damage.</li> </ul>	CON		
<b>Close Out</b>	<ul style="list-style-type: none"> <li>A meeting must be held between Engineer, the ECO, and the contractor to approve all remediation activities and ensure that the site has been restored to a condition, which has been approved by the Engineer.</li> </ul>	ENG		
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>All vegetation planting must be completed and any areas that have been disturbed or cleared must have been rehabilitated and re vegetated.</li> </ul>	ECO		
	<ul style="list-style-type: none"> <li>Re-vegetation of cleared land must utilize only 100% locally indigenous plant material to ensure no erosion occurs once the site is vacated.</li> </ul>	CON/EO		
	<ul style="list-style-type: none"> <li>Ensure that no sensitive habitats have been damaged during the construction phase.</li> </ul>	ECO		
	<ul style="list-style-type: none"> <li>Where habitats have been damaged these must be reported to the ECO and procedures for rehabilitation of these habitats must be undertaken.</li> </ul>	CON/EO		
<b>Erosion</b>	<ul style="list-style-type: none"> <li>Any eroded soil on paths / roadways / other areas must be collected and replaced in the area from which it was eroded. These high-risk erosion areas must be protected from further soil erosion.</li> </ul>	CON/EO		

**21. Impact Management Outcome:** *To preserve and manage the remaining grassland on site.*

4.1 Rehabilitation				
Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>Soil</b>	<ul style="list-style-type: none"> <li>• Top soil removed during the excavations must be kept to one side and re-used during landscaping. Much of this topsoil, especially the top 30cm will retain grass and vegetation seeds.</li> <li>• This top soil to be used when re-vegetating and rehabilitating areas cleared for construction/ excavation.</li> <li>• In instances where soil compaction has taken place, the area must be ripped.</li> </ul>	CON		
<b>Rehabilitation of exposed areas susceptible to erosion</b>	<p>There will be large areas of bare and disturbed soils which will be susceptible to establishment of alien invasive plant species. These may spread into the grassland adjacent to the disturbance footprint. The post-construction rehabilitation must follow these steps:</p> <ul style="list-style-type: none"> <li>• Re-shape and contour any banks;</li> <li>• Revegetate exposed areas with indigenous grassland seeds (recommended by the ECO).</li> <li>• Cleared areas must not be left exposed for periods longer than two weeks and must be re- vegetated in stages as each section is completed.</li> <li>• Any erosion damage caused during construction must be repaired. The affected area must be reshaped and soil replaced.</li> <li>• The eroded area must be re-vegetated or measures put in place to control further erosion. The contractor must install erosion barriers (gabion baskets, berms or diversion ditches, sandbags) and other sediment control structures (grates or grids, geofabric).</li> </ul>	CON/ EO		
<b>Removal of alien invasive plants</b>	<ul style="list-style-type: none"> <li>• Alien invasive species must be removed on an on-going basis.</li> <li>• Mechanical removal by hand is preferred, not chemicals.</li> </ul>	CON/ EO		

**22. Impact Management Outcome:** *Effective long-term management of the remaining open space on site.*

**4.2 Operation & Maintenance**

Activity	Required Action / remediation to control environmental impact	Person	In place (Yes / No)	Comments
<b>Maintenance of the Open Space System through the property.</b>	<ul style="list-style-type: none"> <li>• The open space system is visible in Figure 1 and includes the remaining grassland in the western portion of the property.</li> <li>• The aim of this open space is for an ecological corridor to be maintained through the property for fauna and avi-fauna to utilise. The open space system will also ensure that certain ecological services are retained during the operation of the hospital.</li> <li>• No other infrastructure must be constructed in this portion of the property without prior approval from EDTEA.</li> </ul>	APP		
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>• Alien vegetation must be monitored and removed on an on-going basis across the remainder of property as per section 6.0 of the EMPr.</li> </ul>	APP		
<b>Sewerage Infrastructure</b>	<p>The Estcourt private hospital will connect into the municipal sewerage reticulation network at the point indicated in Figure 1.</p> <ul style="list-style-type: none"> <li>• The uThukela District Municipality is responsible for the maintenance of service infrastructure from this point to the WWTWs.</li> <li>• All sewerage pipelines and infrastructure constructed on Erf 3229 Estcourt must be maintained by the applicant.</li> <li>• In the event of a sewage spill / leak, the following measures must take place:                             <ul style="list-style-type: none"> <li>○ The source of the spill must be identified and the damaged infrastructure isolated;</li> <li>○ An on call plumber must be contracted to replaced the damaged infrastructure;</li> <li>○ Depending on the size of the spill, garden lime can be used to clean the affected area by sprinkling the area until it is covered in white dust. Once dry (after 24 hours), the lime must be placed in bags and disposed of at a registered landfill.</li> </ul> </li> </ul>	APP		

**SECTION 5****DEFINITIONS****Stormwater**

Clean rainwater, must be allowed to enter the stormwater system or natural water bodies without causing erosion. Stormwater must not be contaminated with any other substance including soaps, washings, hazardous materials, soil etc.

**Grey water**

This is wash water that may contain non-hazardous soaps i.e. bath water, vehicle wash water etc. This must not be permitted to enter the stormwater system but can be disposed of in the sewage system or as effluent. If no sewage system is available on site the grey water must be collected and disposed of.

**Sewage**

Human excrement from chemical toilets.

**Raw materials for which source statement must be obtained**

Topsoil, sands, natural gravels, crushed stone, asphalt, clay liners, timber etc. E.G.: sand may only be obtained from an approved sand winning operation, which is licensed and has an approved EMPr for operation.

**Incidents**

All incidents must be recorded. Minor incidents could include small spills of less than 5l that do not enter a water body or any stormwater drains, as well as housekeeping issues and general small non-compliances with the requirements of the EMPr. Major incidents are those that must be reported to the authorities and include all incidents involving contamination of a water body or stormwater or other reportable incidents as defined below.

**Reportable incident** is defined as 'an unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed' NEMA Section 30, 'includes any incident or accident in which a substance (a) pollutes or has the potential to pollute a water resource; or (b) has, or is likely to have, a detrimental effect on a water resource.' NWA Section 20.





Non-conformance Record – Record any non-conformances i.e. small spills, overflowing waste bins etc.				
Date of Non-conformance	Details of non-conformance	Mitigation required	Corrective action taken	Date action completed





**Environmental Emergency Response and Definition of an Incident**

<p><b>Aim of this document</b></p>	<ul style="list-style-type: none"> <li>To effectively manage response to emergency incidents and control these incidents should they occur.</li> <li>To ensure that such incidents are recorded and, where possible, all measures are taken to prevent them from re-occurring.</li> <li>To provide a definition for what would be considered a reportable incident in terms of the environmental legislation.</li> </ul> <p>Activities covered in this procedure include:</p> <ul style="list-style-type: none"> <li>Identification and definition of an incident and whether or not it needs to be reported to the authorities.</li> <li>Reporting to the relevant authorities in the event that a reportable incident occurs</li> <li>Procedure to follow in the event of a spill or fire.</li> </ul>
<p><b>Personnel Duties and Responsibilities</b></p>	<p>The contractor is responsible for:</p> <ul style="list-style-type: none"> <li>Ensuring all activities are carried out as per this procedure and that the company complies with relevant legislation.</li> <li>Maintaining a register of all incidents as well as ensuring that an incident report is generated for each incident, including details of the incident and how it was closed out.</li> <li>Ensuring that safe disposal certificates are obtained for any waste materials generated as a result of an incident and that this waste is recorded.</li> <li>Providing the necessary spill kit equipment and drums for storage of contaminated soil etc.</li> </ul>
<p><b>Training Requirements</b></p>	<ul style="list-style-type: none"> <li>All personnel and manpower to undergo a site safety and environmental induction prior to starting work on site. All employees to be trained on how to respond to an environmental incident and who to contact in order to ensure that the incident is addressed and recorded and if necessary reported.</li> </ul>
<p><b>Definition of a “reportable incident”</b></p>	<ul style="list-style-type: none"> <li>In terms of the National Environmental Management Act, major incidents must be reported to the authorities. In terms of the National Water Act, any incident involving a substance which has the potential to pollute a water resource must be reported i.e. any spill of into a watercourse or into the stormwater system must be reported. The relevant sections from the legislation are provided below:</li> </ul>
<p><b>National Environmental Management Act</b></p>	<p><i>As defined by NEMA, section 30 “Control of emergency incidents”.</i></p> <p><i>(1) In this section—</i></p> <p><i>(a) “incident” means an unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed;</i></p> <p><i>(b) “responsible person” includes any person who—</i></p> <p><i>(i) is responsible for the incident;</i></p> <p><i>(ii) owns any hazardous substance involved in the incident; or</i></p> <p><i>(iii) was in control of any hazardous substance involved in the incident at the time of the incident;</i></p> <p><i>(c) “relevant authority” means—</i></p> <p><i>(i) a municipality with jurisdiction over the area in which an incident occurs;</i></p> <p><i>(ii) a provincial head of department or any other provincial official designated for that purpose by the MEC in a province in which an incident occurs;</i></p> <p><i>(iii) the Director General;</i></p> <p><i>(iv) any other Director General of a national department.</i></p>
<p><b>National Water Act</b></p>	<p><i>As defined by the National Water Act section 20 “Control of emergency incidents”</i></p> <p><i>(1) In this section “incident” includes any incident or accident in which a substance -</i></p>

	<p>(a) pollutes or has the potential to pollute a water resource; or          (b) has, or is likely to have, a detrimental effect on a water resource.</p>
<p><b>Reporting to the authorities</b></p>	<p>In the event that a reportable incident occurs, the Site Agent / Project Manager and Environmental Control Officer must be notified immediately. No site staff may communicate directly with the authorities.          The relevant sections from the legislation are included below:          As taken from NEMA, section 30: Control of Emergency Incidents:          (3) <i>The responsible person or, where the incident occurred in the course of that person’s employment, his or her employer must forthwith after knowledge of the incident, report through the most effective means reasonably available—</i>          (a) <i>the nature of the incident;</i>          (b) <i>any risks posed by the incident to public health, safety and property;</i>          (c) <i>the toxicity of substances or byproducts released by the incident; and</i>          (d) <i>any steps that should be taken in order to avoid or minimise the effects of the incident on public health and the environment to—</i>              (i) <i>the Director General;</i>              (ii) <i>the South African Police Services and the relevant fire prevention service;</i>              (iii) <i>the relevant provincial head of department or municipality; and</i>              (iv) <i>all persons whose health may be affected by the incident.</i>          (4) <i>The responsible person or, where the incident occurred in the course of that person’s employment, his or her employer, must, as soon as reasonably practicable after knowledge of the incident—</i>              (a) <i>take all reasonable measures to contain and minimise the effects of the incident, including its effects on the environment and any risks posed by the incident to the health, safety and property of persons;</i>              (b) <i>undertake cleanup procedures;</i>              (c) <i>remedy the effects of the incident;</i>              (d) <i>assess the immediate and long term effects of the incident on the environment and public health.</i>          (5) <i>The responsible person or, where the incident occurred in the course of that person’s employment, his or her employer, must, within 14 days of the incident, report to the Director General, provincial head of department and municipality such information as is available to enable an initial evaluation of the incident, including—</i>              (a) <i>the nature of the incident;</i>              (b) <i>the substances involved and an estimation of the quantity released and their possible acute effect on persons and the environment and data needed to assess these effects;</i>              (c) <i>initial measures taken to minimise impacts;</i>              (d) <i>causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure; and</i>              (e) <i>measures taken and to be taken to avoid a recurrence of such incident.</i>          (6) <i>A relevant authority may direct the responsible person to undertake specific measures within a specific time to fulfil his or her obligations under subsections (4) and (5): Provided that the relevant authority must, when considering any such measure or time period, have regard to the following:</i>              (a) <i>the principles set out in section 2;</i>              (b) <i>the severity of any impact on the environment as a result of the incident and the costs of the measures being considered;</i>              (c) <i>any measures already taken or proposed by the person on whom measures are to be imposed, if applicable;</i>              (d) <i>the desirability of the State fulfilling its role as custodian holding the environment in public trust for the people;</i>              (e) <i>any other relevant factors.</i>          (7) <i>A verbal directive must be confirmed in writing at the earliest opportunity, which must be within seven days.</i></p>

	<p>(8) <i>Should—</i>  <i>(a) the responsible person fail to comply, or inadequately comply with a directive under subsection (6);</i>  <i>(b) there be uncertainty as to who the responsible person is; or</i>  <i>(c) there be an immediate risk of serious danger to the public or potentially serious detriment to the environment, a relevant authority may take the measures it considers necessary to—</i>  <i>(i) contain and minimise the effects of the incident;</i>  <i>(ii) undertake cleanup procedures; and</i>  <i>(iii) remedy the effects of the incident.</i></p>
<p><b>National Water Act section 20: Control of emergency incidents</b></p>	<p>(2) <i>In this section, "responsible person" includes any person who -</i>  <i>(a) is responsible for the incident;</i>  <i>(b) owns the substance involved in the incident; or</i>  <i>(c) was in control of the substance involved in the incident at the time of the incident.</i>  (3) <i>The responsible person, any other person involved in the incident or any other person with knowledge of the incident must, as soon as reasonably practicable after obtaining knowledge of the incident, report to -</i>  <i>(a) the Department;</i>  <i>(b) the South African Police Service or the relevant fire department; or</i>  <i>(c) the relevant catchment management agency.</i>  (4) <i>A responsible person must -</i>  <i>(a) take all reasonable measures to contain and minimise the effects of the incident;</i>  <i>(b) undertake clean-up procedures;</i>  <i>(c) remedy the effects of the incident; and</i>  <i>(d) take such measures as the catchment management agency may either verbally or in writing direct within the time specified by such institution.</i></p>
<p><b>Spill response</b></p>	
<p><b>Responsible Person/s</b></p>	<p>The spill is reported to the site foreman who must notify his superior.  All employees must be made aware of the procedure in case of a spill.</p>
<p><b>Procedure</b></p>	<ol style="list-style-type: none"> <li>1. Identify nature of spill e.g. paint, oil or lubricants</li> <li>2. Locate spill kit</li> <li>3. Contain spill according to the training provided</li> <li>4. Where necessary, contact external spill control contractors</li> <li>5. Ensure spill does not cause any external contamination (such as storm/ground water or soil)</li> <li>6. Ensure that cleanup measures are taken if any contamination has occurred</li> <li>7. Record in emergency response record the: <ul style="list-style-type: none"> <li>• Nature of incident</li> <li>• Cause of incident</li> <li>• Clean up measures</li> <li>• Mitigation measures taken</li> </ul> </li> <li>8. Record in non-conformance register</li> <li>9. The ECO and Project Manager will determine if the event qualifies as an incident and take steps to report the incident to the necessary authorities i.e. EDTEA and DWA.</li> <li>10. The ECO shall review all spill reports</li> </ol>
<p><b>Fire</b></p>	

<b>Responsible Person/s</b>	The fire is reported to the site foreman All employees must be made aware of the procedure in case of fire.
<b>Procedure</b>	<ol style="list-style-type: none"> <li>1. Identify source and nature of fire.</li> <li>2. In case of small fire extinguish with material appropriate to the nature of the fire</li> <li>3. In case of a large fire contact Fire Department</li> <li>4. In the site camp, seal off exposed stormwater drains to ensure firewater does not cause any external contamination. If on site, take measures to prevent firewater entering any water body.</li> <li>5. Ensure that clean-up measures are taken if any contamination has occurred</li> <li>6. Record in emergency response record the: <ul style="list-style-type: none"> <li>• Nature of incident</li> <li>• Cause of incident</li> <li>• Clean up measures</li> <li>• Mitigation measures taken</li> </ul> </li> <li>7. Record in non-compliance register</li> <li>8. The ECO and Project Manager will determine if the event qualifies as an incident and take steps to report to the authorities.</li> <li>9. The EO shall review incident / nonconformance reports</li> <li>10. Adjustments will be made, if necessary, to the operational and emergency procedures and the Environmental Management System to prevent future occurrences</li> </ol>
<b>Explosion</b>	
<b>Responsible Person/S</b>	The explosion is reported to the site foreman who must notify his superior. All employees must be made aware of the procedure in case of explosion.
<b>Procedure</b>	<ol style="list-style-type: none"> <li>1. Identify source and nature of explosion.</li> <li>2. In case of small fire as a result of the explosion, extinguish with material appropriate to the nature of the fire</li> <li>3. In case of a large fire as a result of the explosion contact Fire Department</li> <li>4. In the site camp, seal off exposed stormwater drains to ensure firewater does not cause any external contamination. If on site, take measures to prevent firewater entering any water body.</li> <li>5. Ensure that clean-up measures are taken if any contamination has occurred</li> <li>6. Record in emergency response record the: <ul style="list-style-type: none"> <li>• Nature of incident</li> <li>• Cause of incident</li> <li>• Clean up measures</li> <li>• Mitigation measures taken</li> </ul> </li> <li>7. Record in non-compliance register</li> <li>8. The ECO and Project Manager will determine if the event qualifies as an incident and take steps to report the incident to the necessary authorities i.e. EDTEA and DWS.</li> <li>9. The ECO shall review spill reports</li> </ol>
<b>Resource Requirements</b>	
<b>Materials</b>	<ul style="list-style-type: none"> <li>• Separate drums for contaminated soil.</li> <li>• Spade and clean soil</li> <li>• Fire equipment</li> </ul>

**Alien Plant Control Plan**

<b>Alien Plant Control Plan</b>	
<b>Activity</b>	<b>Site Mitigation Measures to control alien plants</b>
Training and expertise of personnel involved in alien plant management on site	<ul style="list-style-type: none"> <li>• It is rare that either a contractor has employees or members respectively with good knowledge of alien plants and their eradication, who can then eradicate these plants effectively and on a near-complete basis. Partial knowledge means that some alien species are missed or ignored or indigenous plants harmed. Partial work, or work that is not sustained is also ineffective in the long run as any residual presence can regenerate and expand quickly, particularly if live material or many seeds still in the ground.</li> <li>• As a result, the contractor must continually train their works as to the importance of alien plant control and at the same time providing them with the correct knowledge as to which plant must be removed and what method must take place.</li> </ul>
Alien Invasive Plant Management in construction area	<ul style="list-style-type: none"> <li>• The construction area must be kept free of alien invasive plants. Regular inspections of the site must take place by the appointed ECO during the monthly audits. The following methods of alien plant control can be adapted:                             <ul style="list-style-type: none"> <li>○ Mechanical Control                                     <ul style="list-style-type: none"> <li>▪ Hand pulling</li> <li>▪ Manual removal using hand tools</li> <li>▪ Manual removal using mechanised tools</li> </ul> </li> <li>○ Chemical Control                                     <ul style="list-style-type: none"> <li>▪ Foliar spraying</li> <li>▪ Handheld spraying</li> <li>▪ High pressure spraying</li> </ul> </li> </ul> </li> <li>• The construction area must be rehabilitated immediately following the completion of construction to ensure that alien invasive plants do not become established.</li> <li>• The construction area must be inspected following rehabilitation and alien invasive plants removed if they have become established.</li> </ul>
Responsible Use of herbicides	<ul style="list-style-type: none"> <li>• Problem plants in construction areas usually short-lived weeds for which mechanical methods alone are not successful some use of herbicides may be unavoidable. The following must be followed with the use of herbicides:                             <ul style="list-style-type: none"> <li>○ Do not spray herbicides in windy conditions</li> <li>○ Preferably spray in dry conditions and not prior to any predicted heavy rainfall as most pesticide movement either to the surface or to the groundwater will occur in the first major storm event after application. Heavy losses are reported when application occurs immediately before a major storm.</li> <li>○ A buffer zone which must remain untreated must be retained around the wetlands. A minimum buffer of 15m must be retained. This are will have to be managed by mechanical means.</li> <li>○ Empty containers or unused herbicides must be disposed of correctly and may not be dumped on site.</li> </ul> </li> </ul>