



the **dedet**

Department:  
Economic Development, Environment and Tourism  
MPUMALANGA PROVINCIAL GOVERNMENT

**Basic assessment report in terms of the  
Environmental Impact Assessment Regulations, 2010, promulgated  
in terms of the National Environmental Management Act, 1998(Act  
No. 107 of 1998), as amended.**

(For applicant / EAP to complete)

<b>File Reference Number:</b>	17/4/WLMP313/13/01
<b>Project Title:</b>	Rockdale Refuse Transfer Station Waste Management License Application
<b>Name of Responsible Official:</b>	Ms Gezepi Nyalunga 084 815 2663

(For official use only)

<b>NEAS Reference Number:</b>	
<b>Date Received:</b>	

**Kindly note that:**

1. Required information must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. Tables can be extended as each space is filled with typing.
2. Where applicable **black out** the boxes that are not applicable in the form.
3. An incomplete report may be returned to the applicant for revision.
4. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
5. All reports (draft and final) must be submitted to the Department at the address of the relevant **DISTRICT OFFICE** given below or by delivery thereof to the relevant **DISTRICT OFFICE**. Should the reports not be submitted at the relevant district office, they will not be considered.
6. No faxed or e-mailed reports will be accepted.
7. One copy of the draft version of this report must be submitted to the relevant district office. The case officer may request more than one copy in certain circumstances.
8. **Copies of the draft report must be submitted to the relevant State Departments / Organs of State for comment.** In order to give effect to Regulation 56(7), proof of submission/delivery of the draft documents to the State Departments / Organs of State must be attached to the draft version of this report.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. All specialist reports must be appended to this document, and all specialists must complete a declaration of independence, which is obtainable from the Department.

<b>HEAD OFFICE</b> (18 Jones Street, Nelspruit)	<b>EHLANZENI DISTRICT</b> (50 Murray Street, Nelspruit)	<b>NKANGALA DISTRICT</b> (Pavilion Centre, Cnr Botha & Northey Streets, Witbank)	<b>GERT SIBANDE DISTRICT</b> (13 De Jager Street, Ermelo)
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# Rockdale Refuse Transfer Station Waste Management License Application

## SECTION A: BACKGROUND INFORMATION

Project applicant:	Steve Tshwete Local Municipality	
Trading name (if any):		
Contact person:	WD Fouche	
Physical address:	Corner Wonderers And Walter Sisulu Street, Middelburg, Mpumalanga	
Postal address:	P. O Box 14	
Postal code:	1050	Cell: 082 805 6480
Telephone:	013 249 7000	Fax: 013 243 2550
E-mail:	mmoffice@stevetshwetelm.gov.za	

Environmental Assessment Practitioner:	Jeffares & Green (Pty) Ltd	
Contact person:	Stuart Gower-Jackson	
Postal address:	P.O. Box 1109, Sunninghill, Gauteng	
Postal code:	2157	Cell: 0769839369
Telephone:	011 807 0660	Fax: 0118071607
E-mail:	stuart@jgi.co.za	
Qualifications:	Pr. Sci. Nat. (Environmental Sciences)	
Professional affiliations (if any):	IAIA, IWMSA, LIG, GISSA	

## SECTION B: DETAILED DESCRIPTION OF THE PROPOSED ACTIVITY

Describe the activity, which is being applied for, in detail. The description must include the size of the proposed activity (or in the case of linear activities, the length) and the size of the area that will be transformed by the activity.

**A. Project Title:**  
 Proposed establishment of a new Waste Transfer Station in Rockdale, Mpumalanga Province  
*(Waste License Application for the New Rockdale Refuse Transfer Station)*

**B. Project Description and Location:**  
 The communities of Rockdale, Nazareth, Hlalamnandi, and Middleburg Ext, just outside Middleburg, are receiving weekly refuse collection services. The Municipality is currently disposing its general waste at the existing Middleburg Landfill Site which is located at the end of a tar access road, off President Kruger Street, opposite the Federal Brick works, eastern Middleburg. There is however, widespread illegal dumping, and in an attempt to curb this, the Steve Tshwete Local Municipality is planning on establishing a Refuse Transfer Station that will allow residents to formally dispose of the waste in open skips. These skips will then be taken and emptied at the local licensed G:M:B+ Middleburg Rietfontein landfill site (16/2/7/B100/D33/Z1/P412).  
 Although there is a weekly refuse removal service, there is still evidence of widespread illegal curb side dumping. Additional skips are placed in some areas where illegal dumping is occurring, but this has had limited success. Typically, waste is either dumped next to the skip, elsewhere, or is burnt in the skip itself.

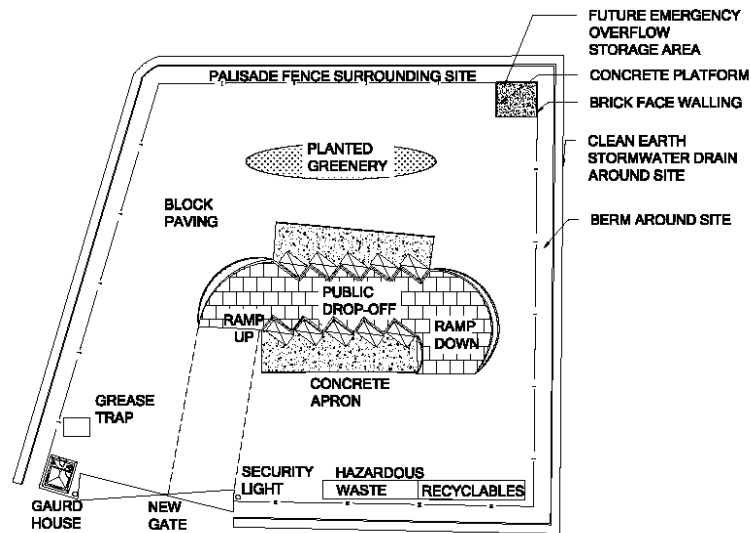
**C. Project Proponent:**  
 The Steve Tshwete Local Municipality (STLM) is proposing the establishment of the new Waste Transfer Station in Rockdale.

**D. Project Environmental Consultant:**  
 Jeffares and Green (Pty) Ltd has been appointed by STLM as the independent Environmental Assessment Practitioner to undertake the necessary processes to obtain a Waste License for the proposed new Waste Transfer Station.

## E. Details of Proposed Transfer Station:

### i. Infrastructure Proposed:

Details regarding the requirements for Transfer Stations as outlined in the General Waste Management Facility Standards Guideline Document – Guideline Schematic Layouts v14 09, March 2009, compiled by the Gauteng Department of Agriculture and Rural Development (GDARD) have been considered as part of this Waste Licence Application process. Layout Plans are attached to Appendix C of this Report. A copy of the layout plan is provided in Figure 1 below.



**Figure 1: Schematic Site Layout Plan**

The development footprint of the proposed Waste Transfer Station will be approximately 4000m<sup>2</sup> in extent. An earth berm and cut-off drain will be constructed on the outside along the perimeter fence. This berm/drain combination is required to assist with the management of stormwater during the operational phase of the Transfer Station. It is a requirement in terms of the GDARD General Waste Management Facility Standards Guideline Document that no stormwater may enter a Waste Transfer facility as surface flow. The earth berm/drain will therefore divert stormwater away from the Transfer Station site.

The site will be fenced off with a concrete palisade fence. The concrete palisade fence will not completely visually screen the site, but will provide some form of visual screening. If requested by the local residents, additional visual screening could be provided by the planting of locally indigenous trees or shrubs along the perimeter fence.



**Figure 2: Example of a Concrete Palisade Fence**

The entire site will be graded at a slope of 3%. A grease trap will be situated at the lowest point of the graded site. All stormwater and water from hosing down the tipping floor will flow to the grease trap. A guard house with an ablation facility will be constructed. The ablation facility will operate on a septic tank system. Water from the grease trap will flow to the septic tank.

The septic tank will be emptied by the municipal sewage service provider for disposal at the Municipal Sewage works.

The site will further include a raised ramp which will be approximately 43m in length, 1.5m in height, and 9m in width. Five (5) 6m<sup>3</sup> waste skips will be placed on either sides of the raised ramp (can accommodate 10 in total). The waste skips will be placed on a solid concrete surface. Cars and pedestrians would be able to travel up the ramp to load wastes into the skips. The raised ramp will allow for easy disposal, as the top of the ramp and the top of the skip will be at the same level. Waste collection trucks would travel around the ramp to load and off load waste skips. Refer to illustration provided in Figure 3 below.



**Figure 3: Example of Raised Ramp**

The ramp and concrete slabs where waste skips will be stored will be roofed with a corrugated iron roof. This will prevent rainwater from entering the skips, and will also provide shade. Less water and sunlight exposure will reduce bad odours.

The site will include a demarcated area for recyclable waste collection. This area will consist of a concrete slab where recycling bins will be placed. Bins could for example include amongst others a Ronnie Bin for paper recycling, a Consol bin for glass recycling, and a collect-a-can bin for can recycling. Recycling will be the initiative of residents, and residents whom want to separate their own wastes prior to taking the wastes to the Transfer Station could place their separated wastes into the recycling bins provided on site. All mixed wastes collected from the waste skips will be taken to the Middleburg landfill site where these wastes can be sorted and where recycling initiatives could possibly be in place. Waste from the recycling bins will be collected by the relevant recycling companies.

A demarcated hazardous waste storage area will also be provided. This area will consist of a concrete slab, and will contain a used oil tank which will be provided by a service provider such as the Rose Foundation, and a skip for the disposal of household hazardous wastes such as paint, batteries, e-waste and florescent tubes. The hazardous waste skip will also be provided by a service provider such as Enviroserv. The service providers will be responsible for the collection and safe disposal of these wastes.

The site will also include an area for the emergency storage of excess wastes should a problem occur with waste removal services, and the skips become overfilled. This area will consist of a fenced off concrete slab where excess wastes could be stored temporarily in case of an emergency.

The site will include a demarcated area which will be landscaped for aesthetic value. The remainder of the surface area on site will be covered with block paving. All surface areas will therefore be hard impervious surfaces except for the small area which will be landscaped. The landscaped area will be located above gradient of the skip storage area to ensure that water contaminated by waste does not infiltrate into the soil.

Security lighting will also be provided on site.

**i. Design and Storage Capacity:**

A total of ten (8) 6m<sup>3</sup> skips can be placed on site. A total of 48m<sup>3</sup> of waste could be stored in the skips at one time. Waste skips will be emptied on a weekly basis. Currently the towns of Rockdale, Nazareth, Hlalamnandi, and Middleburg Ext generate an estimated total of 100m<sup>3</sup> of wastes per week, which is collected on a weekly basis by the STLM and its contractors. The capacity provided by these waste skips in comparison with the volume of wastes generated on a weekly basis, is more than sufficient. The capacity of the transfer station therefore also considers future population growth and increase in waste volumes as a result. Furthermore, a formal recycling area will be provided where registered recyclers are able to sort their recyclables, bale them using a specially designed hand

baler, and store the bales in a secure, lockable cage until transport can be arranged to take the bales to a formal recycling facility.

**ii. Access Control:**

The Transfer Station will have an access controlled gate. This gate will be locked at all times outside of the Transfer Station's operating hours. During operating hours the gate will be manned by a security officer.

For traffic safety purposes a double lane access road will be provided where trucks will enter the site in a demarcated lane which will route the trucks around the ramp area, and cars will enter the site in a demarcated lane which will route the cars onto the ramp. These demarcated lanes will continue to lead cars and trucks until these vehicles exits the site.

In order to ensure pedestrian safety, pedestrian crossings could be provided at the access gate, and at the start and end of the ramp.

**iii. Operating Hours:**

The site's operating hours will be determined by the appointed service provider who will be responsible for the overall management of the site. At this early stage, the following operating hours are proposed.

PERIOD	FROM	UNTIL
Weekdays	07h00	18h00
Saturdays	07h00	18h00
Sunday	07h00	13h00
Public holidays	07h00	13h00

**iv. Management of the Site:**

The STLM will be responsible for the construction of the proposed Waste Transfer Station, and for the purchasing of the necessary waste removal vehicles and skips. The STLM will appoint a private service provider who will be responsible for the management of the entire Transfer Station site and all activities associated with it. This is to ensure that the Transfer Station will be managed at all times and that wastes will be collected regularly and taken to the Middleburg Landfill site.

**v. Waste Collection Frequency:**

The waste skips will be emptied on a weekly basis and all wastes will be taken to the Middleburg Landfill site for final disposal.

**vi. Operational Phase Roles and Responsibilities:**

During the sites operational phase, various parties will be responsible for fulfilling certain tasks and duties to ensure that the site is operated sufficiently and effectively. The various parties and their associated roles are provided below:

**a) Roles of the STLM**

The Service Provider will:

- Ensure that the Environmental Management Programme (EMPr) is effectively implemented;
- Liaise on a strategic level with authorities regarding any environmental issues as required;
- Provide the resources (human and financial) necessary to complete the required tasks in accordance with this EMPr;
- Review the EMPr; at least annually (or when required) to assess its effectiveness and practicality, and assess whether new environmental procedures are required;
- Ensure that the corrective action and non-conformance issues are addressed with regards to the EMPr;
- Liaise with the public and community regarding any environmental complaints/issues (as required);
- Ensure that the site is operated in accordance with current permits/licenses, regulations and all appropriate policies; and,
- Maintain proper control of the site and determine what, if any, problems exist, or may be anticipated such as operational issues, regulatory requirements, and stakeholder issues, management of unacceptable waste streams, pollution and emergencies.

## **b) Roles of the Waste Service Provider (Operational Manager)**

The Operational Manager shall:

- Be familiar with the contents of the EMPr;
- Ensure that a copy of the EMPr is kept at an accessible location at the site;
- Be fully conversant with the conditions of permits/licenses and authorisations relevant to the site;
- Provide environmental awareness training for site staff as required;
- Inspect the site on a daily basis for environmental issues;
- Ensure that all site staff are fully conversant with the EMPr;
- Ensure that that all safety checks and procedures have been followed and applied, as well as ensure adherence to the Occupational Health and Safety Act such as, but not limited to: ensuring that working procedures for all equipment and plant are readily available and displayed in an obvious and clear manner, as well as ensuring that staff are trained on safety aspects and are provided with the relevant protective clothing;
- Ensure that enough containers are provided for the storage of recyclables;
- Ensure that all areas and equipment and the facility (buildings and site) are properly cleaned, switched off and stored at the end of the workday;
- Ensure that equipment is serviced, in a timely manner;
- Record keeping such as but not limited to statistics of recyclables handled on the site including type of recyclables, volumes/mass treated, emergency incidents, complaints from the community (and corrective action/management actions), record of unacceptable wastes received at the site (and how it was managed);
- Ensure that the site access is managed and controlled;
- Ensure that a specific person is delegated to act as supervisor/safety co-ordinator during periods of absence;
- Weekly site report compilation;
- Analyse trip sheets on a monthly basis;
- Undertake route planning whenever required;
- Record tonnages on a daily basis;
- Take weekly site photographs;
- Undertake random site visits;
- Compile monthly reports to the STLM;
- Undertake proper record keeping;
- Conduct staff meetings and training at-least twice in a year; and
- Ensure good housekeeping and proper sign postage.

## **c) Roles of Supervisor**

- Sign in all employees on a daily basis
- Check whether employees are geared in the correct protective clothing
- Inspect areas on a daily basis to ensure that the site is being kept neat and clean, and well operated. It is recommended that a checklist be compiled including all items which should be inspected. These completed checklists should be filed for record keeping purposes;
- Ensure the removal of skips on a weekly basis
- Ensure that the site remains open during working hours, even if the site is full
- Report the status of skips on a daily basis
- Ensure that the site is kept clean on a daily basis
- Ensure that employees perform their tasks as expected; and
- Report defects to the Operations Manager on a daily basis

## **d) Roles of the Security Officer**

- The security officer should report on site by 06h00 and leave not later than 18h00;
- Man the gates at all times during operational hours;
- Take down registration number of vehicles entering the gate;
- Ensure that vehicles entering the gate have the correct type of waste;
- Direct vehicles to the correct skips where the site attendant will be standing;
- Treat all clients with respect and courtesy;
- In the case where the queues are long and there are delays, advise clients of such and ask for their patience;
- Open site to the public even if it is full. At no stage during normal working hours should the site be closed;
- Ensure that no unauthorised waste pickers collect any wastes from site;
- Co-operate with site attendants at all times and at no stage should the security personnel bully the site

- attendant; and
- They should at no stage during working hours be under the influence of alcohol.

**e) Site Attendants' Responsibilities**

- Ensure that cars are directed to the right containers and the waste is offloaded in correct skips;
- Ensure that there is no spillages on the floor when offloading is done;
- Ensure that site remains clean at all times;
- Ensure that no waste pickers collect any wastes from site;
- Ensure that any defect e.g. ablution facility on site is reported to the supervisor including the skips that are full; and
- Treat clients with courtesy and respect.

**vii. Waste Details**

The following waste volumes and types can be expected;

Household	1t/d
Building rubble	2t/d
Garden waste	1t/d

It is highly unlikely that hazardous, industrial and commercial waste would find its way to the RTS. These figures are estimations and would require characterisation in order to be sure.

No additional noise or atmospheric emissions are expected. Ground and surface water impacts will be unlikely, provided the engineering designs are adhered to.

**a) Types of Wastes that will be Accepted at the Site:**

- Garden wastes;
- Recyclable material e.g. cans, plastic, boxes etc.;
- Light builders rubble i.e. stones equivalent to one wheelbarrow in volume or trailer load;
- Household hazardous waste e.g. batteries, paints, etc.; and
- Domestic waste.

**b) Non Permissible Waste Types**

- Animal Carcasses;
- Putrescible waste;
- Hazardous waste, unless its household; and
- Health Care Risk Waste.

**viii. Control of Waste Pickers**

Only registered Waste Pickers and/or private recyclers will be allowed to collect any wastes from site. Only the appointed recycling service providers may collect recyclables from their bins provided on site. Although wastes could be a source of income to private recyclers and pickers, this will need to be closely monitored, as the risk of the site becoming uncontrolled is high. Waste picking initiatives and private recycling initiatives should take place at the Middleburg Landfill Site.

**ix. Garden waste chipping**

There is a communal allotment adjacent to the proposed site, which is connected to the local school. This land is used by residents to grow crops such as spinach, potatoes and cabbages. Provision will be made for the chipping of garden waste in order to be used as compost feedstock for crops. An appropriate hand chipper is considered and is currently being investigated.

Chipping of garden waste has the added advantage of reducing volume, should it be transported to the landfill site and not used for composting.

**SECTION C: PROPERTY/SITE DESCRIPTION**



Provide a full description of the preferred site alternative (farm name and number, portion number, registration division, erf number etc.):

Portion 6 Of The Farm Rockdale No 442 JS
Off The N11
Middleburg
Steve Tshwete Local Municipality
Nkangala District
Mpumalanga

Indicate the position of the activity using the latitude and longitude of the centre point of the preferred site alternative. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection. The position of alternative sites must be indicated in Section B of this document.

Number of corner	Latitude (S)			Longitude (E)		
N1	25°	48'	51.8"	29°	31'	29.2"
E2	25°	48'	53.1"	29°	31'	30.9"
S3	25°	48'	53.2"	29°	31'	26.8"
W4	25°	48'	54.7"	29°	31'	28.5"

In the case of linear activities:	Latitude (S):		Longitude (E):	
• Starting point of the activity	°	'	°	'
• Middle point of the activity	°	'	°	'
• End point of the activity	°	'	°	'

### SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as an appendix to this document.

The site or route plans must be at least A3 and must include the following:

- 6.1 a reference no / layout plan no., date, and a legend / land use table
- 6.2 the scale of the plan which must be at least a scale of 1:2000;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all indigenous trees taller than 1.8 metres and all vegetation of conservation concern (protected, endemic and/or red data species);
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - watercourses and wetlands;
  - the 1:100 year flood line;
  - ridges;
  - cultural and historical features;
- 6.9 10 metre contour intervals



## FACILITY ILLUSTRATION

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

## SECTION D: BASIC ASSESSMENT REPORT

Prepare a basic assessment report that complies with Regulation 22 of the Environmental Impact Assessment Regulations, 2010. The basic assessment report must be attached to this form and must contain all the information that is necessary for the competent authority to consider the application and to reach a decision contemplated in Regulation 25, and must include:

(Checklist  
for official  
use only)

1.	A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity.	
2.	An identification of all legislation and guidelines that have been considered in the preparation of the basic assessment report.	
3.	Details of the public participation process conducted in terms of Regulation 21(2)(a) in connection with the application, including – (i) the steps that were taken to notify potentially interested and affected parties of the proposed application; (ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given; (iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 55 as interested and affected parties in relation to the application; and (iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	
4.	A description of the need and desirability of the proposed activity;	
5.	A description of any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity;	
6.	A description and assessment of the significance of any environmental impacts, including— (i) cumulative impacts, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the activity; (ii) the nature of the impact; (iii) the extent and duration of the impact; (iv) the probability of the impact occurring; (v) the degree to which the impact can be reversed; (vi) the degree to which the impact may cause irreplaceable loss of resources; and (vii) the degree to which the impact can be mitigated;	
7.	Any environmental management and mitigation measures proposed by the EAP;	
8.	Any inputs and recommendations made by specialists to the extent that may be necessary;	
9.	A draft environmental management programme containing the aspects contemplated in regulation 33;	
10.	A description of any assumptions, uncertainties and gaps in knowledge;	
11.	A reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	
12.	Any representations, and comments received in connection with the application or the basic assessment report;	
13.	The minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants;	
14.	Any responses by the EAP to those representations, comments and views;	
15.	Any specific information required by the competent authority; and	
16.	Any other matters required in terms of sections 24(4)(a) and (b) of the Act.	

**1. A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity**

A high level ecological screening for the study site was undertaken by Synergistics Environmental Services. The refuse

transfer station will be located on the outskirts of Rockdale, to the north east side of current and proposed residential areas. The proposed site is currently vacant and undeveloped land. The property has no surface infrastructure, although there is a buried sewer line at the eastern edge of the site. Community livestock pens are located at the eastern boundary.

This high-level ecological scan of the site for the refuse transfer station at Rockdale concluded that the site is of low ecological sensitivity at the site scale and of no ecological sensitivity at the provincial scale. The proposed refuse transfer station and associated activities will transform an area of less than 0.5 ha, removing all natural vegetation. However, the activities will pose little risk to biodiversity or ecological function of the immediate surrounds. Much of surrounding area has or will be transformed to urban use and the site is not targeted for conservation.

There was no evidence of any red data or protected species for which permits may be required from the Provincial Department to destroy or remove. There was also no evidence of any need to conduct further ecological studies to inform the proposed development of the site. The transformation of the site will however increase the need for conservation of the remaining Rand Highveld Grassland.

It is noted that the proposed refuse transfer station is located reasonably close to a watercourse. Management of storm water and wind scatter will be important to prevent the dispersion of contaminants to the watercourse. The site also neighbours a local school as well as livestock yards and pens. It is essential that operations do not cause disturbance to school learners or generate litter than could be ingested by the livestock. If visual screening is required around the site, use should be made of locally adapted indigenous tree species such as *Acacia caffra*, *Celtis africana* and *Rhus magalismonata*.

**2. An identification of all legislation and guidelines that have been considered in the preparation of the basic assessment report**

In order to obtain a Waste Management License for the construction of the proposed new Waste Transfer Station, an application in terms of the National Environmental Management Waste Act (NEMWA) (the Waste Act) (Act 59 of 2008) needs to be undertaken.

The NEMWA (Act No. 58 of 2008), came into effect on the 1st of July 2009. The Waste Act repealed Section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) (ECA) and introduced new provisions regarding the licensing of waste management activities. In terms of the Waste Act no person may commence, undertake or conduct a waste management activity except in accordance with:

- The requirements or standards determined in terms of the Waste Act for that activity; and
- A waste management license issued in respect of that activity, if a license is required.

A list of waste management activities (Regulation 718) was published on the 3rd of July 2009. This list of activities identifies activities that may not commence, be undertaken or conducted by any person unless a waste management licence is issued in respect of that activity. The list of activities is divided into two Categories.

A person who wished to commence, undertake or conduct, an activity listed under Category A, must conduct a Basic Assessment process, and a person who wished to commence, undertake or conduct an activity listed under Category B, must conduct a Scoping and EIA process. In terms of NEMWA the following activities from R 718 are triggered by the proposed new Transfer Station:

GN 32368 3rd July 2009	Schedule 1 Category A (1)  Storage of Waste:	The storage including the temporary storage of general waste at a facility that has the capacity to store in excess of 100m <sup>3</sup> of general waste at any one time, excluding the storage of waste in lagoons.
GN 32368 3rd July 2009	Schedule 1 Category A (18)  Construction, expansion or decommissioning of facilities and associated structures and infrastructures:	The construction of facilities for activities listed in Category A of this Schedule (not isolated to associated activity).
<b>And possibly (provision for);</b> Although at present, recycling/recovery and composting volumes are well below the listed thresholds, the potential exists for them to exceed and thus trigger the relevant listed activities. The below threshold activities that will be provided for and therefore included in the application include:		
GN 32368 3rd July 2009	Schedule 1 Category A (7)  Reuse, recycling and recovery:	The separation of recyclable materials is promoted and this facility will allow and provide for separation of recyclables out of the general waste stream.

	The recycling or re-use of general waste of more than 10 tons per month.	
GN 32368 3rd July 2009	Schedule 1 Category A (9)  Treatment of Waste:  The biological, physical or physico-chemical treatment of general waste at a facility that has the capacity to process in excess of 10 tons of general waste per day.	Composting of organic waste is promoted. It is proposed to provide for a means of chipping organic waste such as garden refuse, in order to facilitate composting.

In terms of the activities triggered under Category A, of Regulation 718, a Basic Assessments under NEWMA is required for this project. Therefore, this Basic Assessment Report is compiled in fulfilment of the legislative requirements.

**Other applicable legislations includes;**

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Waste Act (Act 59 of 2008)	National and Provincial	10 March 2009
National Environmental Management Laws Amendment Act (Act 14 of 2013)	National and Provincial	24 July 2013
Government Gazette No 36784; <ul style="list-style-type: none"> <li>R634 Waste Classification &amp; Management Regulations</li> <li>R635 National Norms &amp; Standards for the Assessment of Waste for Landfill Disposal</li> <li>R636 National Norms &amp; Standards for Disposal of Waste to Landfill</li> </ul>	National and Provincial	23 August 2013
Waste Management Activities Regulations, July 2003 [Regulation 718, Waste Management Activities as promulgated in terms of Section 19(1) of the National Environmental Management Act (Act 59 of 2008) Waste Management Activities].	National and Provincial	3 July 2009
National Environmental Management Act No. 107 of 1998 as amended.	National & Provincial	27 November 1998
Environmental Impact Assessment Regulations, 18 June 2010	National & Provincial	18 June 2010
National Water Act (Act 36 of 1998)	National	20 August 1998
General Waste Management Facility Standards Guideline Document – Guideline Schematic Layouts v14	GDARD	9 March 2009

**3. Details of the public participation process conducted in terms of Regulation 21(2)(a) in connection with the application, including –**  
**(i) the steps that were taken to notify potentially interested and affected parties of the proposed application;**

Key stakeholders were identified. The Background Information Document (BID) was sent to the key stakeholders. A list of the stakeholders is given below:

Contact Person	Organisation	I&AP Type
Wilma Moolmam	Department of Water Affairs	Authority
F Guma	Department of Water Affairs (Mpumalanga Regional Office)	Authority
Badanile Skhosana	Councillor Ward 8	Councillor
Deborah Longman	Councillor Ward 10	Councillor
WD Fouche	Steve Tshwete Local Municipality	Authority
Benjamin Moduka	South African Heritage Resources Agency (Mpumalanga)	Authority
Vusi Mahlalgu	Nkangala District Municipality	Authority

Macevele Stanford	Department of Water Affairs (Mpumalanga Regional Office)	Authority
Moloto Maditsietsi	Department of Water Affairs (Mpumalanga Regional Office)	Authority

(ii) *proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;*

See Attached in Appendix B

(iii) *a list of all persons, organisations and organs of state that were registered in terms of regulation 55 as interested and affected parties in relation to the application; and*

First Name	Last Name	Organisation	I&AP Type
Wilma	Moolmam	Department of Water Affairs	Authority
	Guma	Department of Water Affairs (Mpumalanga Regional Office)	Authority
Badanile	Skhosana	Councillor Ward 8	Councillor
Deborah	Longman	Councillor Ward 10	Councillor
	Fouche	Steve Tshwete Local Municipality	Authority
Benjamin	Moduka	South African Heritage Resources Agency (Mpumalanga)	Authority
Vusi	Mahlalgu	Nkangala District Municipality	Authority
Macevele	Stanford	Department of Water Affairs (Mpumalanga Regional Office)	Authority
Moloto	Maditsietsi	Department of Water Affairs (Mpumalanga Regional Office)	Authority
Christopher	Bulose	Youth Leader Ext 24	I&AP
Daniel	Makuse	Principal Pumelela Secondary School	I&AP
Solly	Links	Nkangala District Municipality	Authority

(iv) *a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;*

Stakeholder	Comment and Responses
<b>Mr WD Fouche</b> <b>STEVE TSHWETE LOCAL MUNICIPALITY</b>	<b>Comment Made:</b> The project has been acknowledged <b>Response Provided:</b> Noted: Thank you for your response
<b>Mr Solly Links</b> <b>NKANGALA DISTRICT MUNICIPALITY</b>	<b>Comment Made:</b> The transfer station is to be properly monitored, and recycling to take place. Garden refuse to be treated separately. Burning of refuse is discouraged Road signs of the transfer station (directions) <b>Response Provided:</b> Noted: You have been registered as an Interested and Affected Party and your details have been added to our Stakeholder Database. Your comments will be captured and addressed in the Draft and Final Basic Assessment Reports.
<b>Mr C Bulose</b> <b>YOUTH LEADER</b>	<b>Comment Made:</b> The Youth Leader thanked for the development that would cater for the people of EXT.24 and the rest of the surrounding of our area. There is an organization of young people in the community and they are desperately looking for the jobs. Would it be possible to hire locals in order to alleviate unemployment and help society? <b>Response Provided:</b> Noted: You have been registered as an Interested and Affected Party and

	your details have been added to our Stakeholder Database. Your comments will be captured and addressed in the Draft and Final Basic Assessment Reports.
Mr D Makuse <b>PHUMELELA SECONDARY SCHOOL</b>	<b>Comment Made:</b> Would like to be put on board as to how this project can impact negatively on learners at school and the surrounding areas. How would this project will be managed to limit the risk of diseases for the majority of the learners. <b>Response Provided:</b> Noted: You have been registered as an Interested and Affected Party and your details have been added to our Stakeholder Database. Your comments will be captured and addressed in the Draft and Final Basic Assessment Reports.

**4. A description of the need and desirability of the proposed activity**

<b>NEED:</b>			
1.	Was the relevant provincial planning department involved in the application?	YES <b>X</b>	NO
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES <b>X</b>	NO
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation: <b>N/A</b>		

<b>DESIRABILITY:</b>			
1.	Does the proposed land use / development fit the surrounding area?	YES <b>X</b>	NO
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES <b>X</b>	NO
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES <b>X</b>	NO
5.	Will the proposed land use / development impact on the sense of place?	YES	NO <b>X</b>
6.	Will the proposed land use / development set a precedent?	YES	NO <b>X</b>
7.	Will any person's rights be affected by the proposed land use / development?	YES	NO <b>X</b>
8.	Will the proposed land use / development compromise the "urban edge"?	YES	NO <b>X</b>
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation. <b>N/A</b>		

<b>BENEFITS:</b>			
1.	Will the land use / development have any benefits for society in general?	YES <b>X</b>	NO
2.	Explain: This purpose of the proposed refuse transfer station (RTS), is to provide a facility for individuals to dispose of their household waste, which was not collected by the Municipality.  The Steve Tshwete Local Municipality (STLM), provides a weekly refuse service to households in the Rockdale, Nazareth, Hlalamnandi, and Middleburg Ext areas, however, there is still evidence of widespread illegal curb side dumping. Additional skips are placed in some areas where illegal dumping is occurring, but this has had limited success. Typically, waste is either dumped next to the skip, elsewhere, or is burnt in the skip itself.		



The proposed RTS will attempt to alleviate the illegal dumping in the area, as well as provide a centralised facility where source separation of recyclables and garden refuse can take place. It is proposed to provide the community with a hand baler and investigate the possibility of a hand chipper/grinder for garden waste. Recyclables can then be separated, baled and sold; and green garden waste can be chipped and used to produce compost for the adjacent gardening activities. These two activities alone will assist in reducing the waste requiring transport to the local landfill site, will reduce the volume of waste disposed (resulting in reduced loss of airspace), will provide a potential source of income in the sale of recyclables, and provide compost feedstock for the local subsistence farmers/gardeners.

3.	Will the land use / development have any benefits for the local communities where it will be located?	YES <b>X</b>	NO
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4.	<p>Explain:</p> <p>The proposed RTS will attempt to alleviate the illegal dumping in the area, as well as provide a centralised facility where source separation of recyclables and garden refuse can take place. It is proposed to provide the community with a hand baler and investigate the possibility of a hand chipper/grinder for garden waste. Recyclables can then be separated, baled and sold; and green garden waste can be chipped and used to produce compost for the adjacent gardening activities. These two activities alone will assist in reducing the waste requiring transport to the local landfill site, will reduce the volume of waste disposed (resulting in reduced loss of airspace), will provide a potential source of income in the sale of recyclables, and provide compost feedstock for the local subsistence farmers/gardeners.</p>
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**5. A description of any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity**

Alternatives with regards to design and logistics were considered. The various alternatives would however have limited differences in advantages or disadvantages on the receiving environment and community. The following design alternatives have been selected that will benefit the community;

- 1. Roofed drop-off**
  - a. This will allow disposing of waste into the skips during wet weather.
  - b. The roof will reduce the amount of water (rain) that enters the skips and waste, thereby reducing the potential contaminated water production.
  - c. Rainwater can be harvested from the gutters.
- 2. Recycling area & secure shelter**
  - a. Recyclers are able to sort recyclables on an all-weather surface.
  - b. Baling of recyclables increases the amount of recyclables that can be transported.
  - c. Secure lockable cages allow for secure, overnight storage of recyclables.
- 3. Green waste chipping area**

- a. Garden waste can be chipped and used for compost.
  - b. Chipping reduces the volume (increases the density) of green waste should it require transport to another facility.
4. **Cattle grid**
- a. The cattle grid at the entrance of the transfer station prevents livestock from entering the site and foraging in the waste that may have spilt from the skips.

Allowing the illegal dumping throughout the community is not an option for the various negative impacts discussed previously. Alternative solutions may exist, such as;

- 1. Community education
- 2. Formal regular refuse removal (which is currently undertaken)
- 3. Satellite skip drop off areas (currently in place but not effective)
- 4. Locate the RTS closer to the main road (however, this will then be visible on entering the town and may not be desirable from an aesthetic perspective)

#### Impact Assessment Methodology

The Environmental Impact Assessment Regulations, 2010, promulgated in terms of Section 24(5) of the National Environmental Management Act (Act 107 of 1998) prescribes requirements to be adhered to when undertaking impact assessments. Requirements for undertaking impact assessments for Basic Assessments and full Environmental Impact Assessments are outlined in the following sections of the EIA Regulations:

- Regulation 543, Section 22, 2(i) – Basic Assessment Impact Assessment Requirements: and
- Regulation 543, Section 32, 2(l) – Environmental Impact Assessment Requirements

In terms of these Regulations, the following should be considered when undertaking an impact assessment:

- A description and assessment of the significance of any environmental impacts, including –
  - a. Cumulative impacts, that may occur as a result of the undertaking of the activity during project life cycle;
  - b. Nature of the impact;
  - c. Extent and Duration of Impact;
  - d. The Probability of Impact Occurring;
  - e. The degree to which the impact can be reversed;
  - f. The degree to which the impact may cause irreplaceable loss of resources; and
  - g. The degree to which the impact can be mitigated.

In terms of the above legislated requirements a standard impact assessment methodology was compiled. In order to compile the impact assessment methodology a review of existing impact assessment methodologies utilised by consultants in the field was undertaken. Furthermore, the following document as compiled by the former Department of Environmental Affairs and Tourism (DEAT) was utilised during the compilation for the impact assessment methodology:

- *DEAT (2004) Cumulative Effects Assessment, Integrated Environmental Management, Information Series 7, Department of Environmental Affairs and Tourism (DEAT), Pretoria.*

A description of the method for assessing the above criteria as well as the method for determining impact risks are provided in Sections A to I below.

#### **A. Cumulative Impacts**

Cumulative impacts can occur over different temporal and spatial scales by interacting, combining and compounding so that the overall effect often exceeds the simple sum of previous effects. The spatial scale can be local, regional or global, whilst the frequency or temporal scale includes past, present and future impacts on a specific environment or region.

Cumulative effects can simply be defined as the total impact that a series of developments, either present, past or future, will have on the environment within a specific region over a particular period of time.

Potential cumulative impacts on all elements of the receiving environment are addressed for all project phases (pre-construction, construction, operational and decommissioning), before and after implementation of mitigation measures.

## B. Significance/Magnitude/Nature of Impacts

The significance or magnitude of an impact refers to the importance of an impact. When rating the extent of an impact, it is important to also rate the significance of an impact in order to determine the actual importance of an impact. For example, the size of an area affected by atmospheric pollution may be extremely large, but the significance of this effect is dependent on the concentration or level of pollution. If the concentration is great, the significance of the impact would be High or Very High, but if it is dilute it would be Very Low or Low.

The significance of impacts has been grouped into five classes, as outlined in the Table below

RATING		DESCRIPTION
5	VERY HIGH	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	HIGH	Impact is of substantial order within the bounds of impacts, which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	MODERATE	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	LOW	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	VERY LOW	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity is needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	NO IMPACT	There is no impact at all - not even a very low impact on a party or system.

## C. Extent of Impacts

The extent or spatial scale of an impact refers to whether an impact will occur at a local, regional, or global scale. The extent of impacts has been grouped into five classes, as outlined in the Table below.

RATING		DESCRIPTION
5	Global/National	The impact could/will occur on a national or global scale.
4	Regional/Provincial	The impact could/will occur at a Regional/Provincial Level
3	Local	The impact will affect an area up to 5 km from the proposed site.
2	Study Area	The impact will affect an area not exceeding the Boundary of the study site
1	Isolated Sites / proposed site	The impact will affect an area no bigger than the development footprint.

## D. Duration of Impacts and Degree to which impacts can be reversed

The duration or temporal scale of an impact refers to actual impact timeframe, i.e. how long will impacts to the environment last. The reversibility of impacts is directly linked to the duration of impacts. For e.g. permanent impacts are irreversible impacts, whereas, incidental impacts are immediately reversible. The duration and reversibility of impacts has been grouped into five classes, as outlined in the Table below.



RATING		DESCRIPTION	REVERSIBILITY
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.	Immediately reversible
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.	Quickly reversible
3	Medium term	The environmental impact identified will operate for the duration of life of the project.	Reversible over time
4	Long term	The environmental impact identified will operate beyond the life of the project.	Reversible over the long term
5	Permanent	The environmental impact will be permanent.	Irreversible, impact is permanent

#### E. Probability of Impact Occurring

The probability of an impact refers to the likelihood of an impact occurring. The probability of impacts has been grouped into five classes, as outlined in the Table below.

RATING	DESCRIPTION
1	Practically impossible that impact will occur
2	Unlikely that impact will occur
3	Impact could occur
4	Very Likely that impact will occur
5	Impact will occur or has already occurred

#### F. Degree to which the impact may cause irreplaceable loss of resources (Intensity or Severity of an Impact)

The degrees to which an impact may cause irreplaceable loss of resources are determined based on the outcome of the impact risk assessment. High risk impacts in sensitive areas are more likely to result in irreplaceable loss of resources compared to low risk impacts.

RATING	DESCRIPTION
High	Disturbance or pristine areas that have important conservation value. Destruction of rare or endangered species.
Medium	Disturbance of areas that have potential conservation value or rare of use as resources. Complete change in species occurrence or variety.
Low	Disturbance of degraded areas, which have little conservation value. Minor change in species occurrence or variety.

#### G. The degree to which the impact can be mitigated

The degree to which an impact can be mitigated are determined by comparing the impact risk class prior to implementation of mitigation measures to the impact risk class after implementation of mitigation measures. If for e.g. an impact risk class can be reduced from a high to very low, then it is likely that there is a high potential that an impact can be mitigated.

RATING	DESCRIPTION
High	High Potential to mitigate negative impacts to the level of insignificant effects.
Medium	Potential to mitigate negative impacts. However, the implementation of mitigation measures may still not prevent some negative effects.
Low	Little or no mechanism to mitigate negative impacts.

#### H. Degree of Certainty

As it is not possible to be 100% certain of all facts, a standard "degree of certainty" has been incorporated into this Impact Assessment Methodology to indicate the degree of the EAP's certainty regarding impact ratings.

As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard “degree of certainty” scale will be used as outlined in the Table below. When very detailed specialist studies are available or have been undertaken as part of a project, impacts can be more accurately determined.

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact or of the likelihood of an impact occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.
Don't know	The consultant cannot, or is unwilling, to make an assessment given available information.

### I. Quantitative Description of Impacts

In order to describe impacts in a quantitative manner in addition to the qualitative description given above, a rating scale of between 1 and 5 have been used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and duration scale as described below:

$$\text{Impact Risk} = \frac{(\text{Significance} + \text{Spatial} + \text{Duration})}{3} \times \frac{\text{Probability}}{5}$$

An example of how this rating scale is applied is shown below:

Impact	Significance	Spatial Scale	Duration Scale	Probability	Risk Rating
Impact to air quality - For e.g. construction vehicles travelling on areas where vegetation has been cleared could result in dust impact.	Low	Local	Medium-Term	Could Happen	1.6
	2	3	3	3	

Note: The significance, spatial and temporal scales are added to give a total of 8, that is divided by 3 to give a criteria rating of 2.67. The probability (3) is divided by 5 to give a probability rating of 0.6. The criteria rating of 2.67 is then multiplied by the probability rating (0.6) to give the final rating of 1.6.

The impact risk is classified according to 5 classes as described in the table below.

Impact Risk Classes:

Rating	Impact Class	Description
0.1-1.0	1	Very Low
1.1-2.0	2	Low
2.1-3.0	3	Moderate
3.1-4.0	4	High
4.1-5.0	5	Very High

Therefore with reference to the example used for air quality above, an impact rating of 1.6 will fall in the Impact Class 2, which will be considered to be a low impact.

## 2.1 Pre-Construction and Construction Phase

### 2.1.1 Geology

Decommissioning and Closure	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	During the construction phase excavations will be made for the installation of the grease trap. Excavations could impact in underlying geology, depending on soil depth in the area. However impact will be minimal. Foundations for the Guard House construction could also impact the underlying geology depending on the soil depth. However, this impact will be minimal.	None required.
<b>Indirect Impact</b>	None Expected	None Required
<b>Cumulative Impact</b>	None Expected	None Required

### 2.1.2 Topography

Decommissioning and Closure	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	The site earmarked for development slopes gradually to the north. During the construction phase the site will be graded to have a 3% slope. The site will be sloped to drain in a to a single sump or grease trap. An earth berm and cut-off drain will be constructed along the perimeter of the site to prevent stormwater from adjacent areas to enter the site. The grading of the site and the construction of the earth berm will alter topography and will alter surface water flow patterns. However, the impact will be insignificant.	None required.
<b>Indirect Impact</b>	None Expected	None Required
<b>Cumulative Impact</b>	None Expected	None Required

### 2.1.3 Soils and Land Capability

Decommissioning and Closure	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	<p>According to the Environmental Potential Atlas Data (ENPAT), 2001, for the Mpumalanga Province, soils found on site and within the greater study area are of poor suitability for agriculture.</p> <p>Soils will be exposed during the construction phase, as vegetation will be cleared for construction purposes. The entire site will be developed with a hard footprint, therefore soils will be compacted, and covered with a hard surface. However, impact is very low to insignificant as soils are of poor agricultural potential.</p> <p>Accidental leaks and spillages of hydrocarbons from construction vehicles and machinery could occur.</p>	<ul style="list-style-type: none"> <li>The Contractor will ensure that there is a supply of absorbent material (e.g. sawdust) readily available to absorb, breakdown and, where possible, encapsulate minor hydrocarbon spillage.</li> <li>All construction vehicles and machinery should be kept in good working order to avoid fuel or oil leaks;</li> <li>Vehicles and machinery displaying signs of leakage should be removed from site and necessary repairs should be undertaken off-site at an appropriate workshop area.</li> </ul>
<b>Indirect Impact</b>	None Expected	None Required
<b>Cumulative Impact</b>	None Expected	None Required

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty	Impact Risk		Intensity / Severity	Reversibility	
Soils and Land Capability	Direct Impact	LOW	2	Isolated Sites / proposed site	1	Incidental	1	Very Likely	4	Probable	1.07	Very Low	Low	Immediately reversible	1

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty	Impact Risk		Degree of Mitigation		
Soils and Land Capability	Direct Impact	LOW	2	Isolated Sites / proposed site	1	Incidental	1	Could occur	3	Possible	0.80	Very Low	High		

## 2.1.4 Land Use

Decommissioning and Closure	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	The proposed site for the refuse transfer station is situated on an undeveloped piece of land just outside the eastern boundary of Rockdale. Although the site has no formal surface infrastructure a recently installed sewer pipeline does traverse the eastern extent of the site. The area is well used by the local community for livestock yards and pens as well as vegetable gardening. Uncontrolled waste dumping and burning is widespread and soil material is also borrowed. The site is criss-crossed with footpaths and some vehicle tracks. A small ephemeral watercourse lies ~ 140 m to the east of the site. The current residential areas of Rockdale are located 150 m to the south and west, although new suburbs are being developed immediately south of the site.	Mitigation measures with regards to noise, air quality and visual impacts are addressed below in separate sections.
<b>Indirect Impact</b>	None Expected	None Required
<b>Cumulative Impact</b>	None Expected	None Required

All impacts identified in this section have been rated under noise, visual, and air quality impacts. Refer to these ratings in the relevant sections below.

## 2.1.5 Fauna

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	<p>During the construction phase vegetation on site will be cleared. The proposed transfer station site will have a hard impacted surface, with only a small landscaped garden area. Therefore, all natural vegetation and habitat will be destroyed over the estimated 4500m<sup>3</sup> footprint of the proposed transfer station site.</p> <p>Vegetation outside of the demarcated construction footprint could be disturbed by construction vehicles and equipment. Mammals, reptiles and birds could be killed as a</p>	<ul style="list-style-type: none"> <li>All construction areas should be demarcated prior to construction to ensure that the footprint of the impacts are limited (including areas where vehicles may traverse);</li> <li>No animal, reptile or bird of any sort found on site may be killed. This specifically includes snakes or other animals considered potentially dangerous discovered on site. If such an animal is discovered on site an appropriately skilled person should be summoned to remove the animal</li> </ul>

	<p>result of construction activities.</p> <p>However, in terms of the High Level Ecological Assessment which was undertaken for this project, no mammalian or reptilian species were observed on site during the day of the site visit. There were also no signs of active burrows, and a few common bird species were observed. The site could provide habitat for local adapted faunal species. The site is unlikely to host any suitable habitat for species of concern.</p>	<p>from the site. Consideration should be given to selection and nomination of such a person prior to site establishment. If no-one is available, training should be provided to at least two site staff members.</p> <ul style="list-style-type: none"> <li>No construction equipment, vehicles or unauthorised personnel will be allowed onto areas that have been rehabilitated.</li> </ul>
<b>Indirect Impact</b>	<p>Poaching of livestock on farm and adjacent properties could occur. Livestock theft could also occur.</p>	<ul style="list-style-type: none"> <li>No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site. Construction workers should receive Environmental Awareness Training prior to commencement of construction activities. The contractor should implement monitoring and control measures where possible.</li> </ul>
<b>Cumulative Impact</b>	None Expected	None Required

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
Fauna	Direct Impact	LOW	2	Study Area	2	Incidental	1	Unlikely	2	Definite	0.67	Very Low	Low	Immediately reversible	1
	Indirect Impact	MODERATE	3	Local	3	Short-term	2	Could occur	3	Possible	1.60	Low	Low	Quickly reversible	2

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
Fauna	Direct Impact	VERY LOW	1	Isolated Sites / proposed site	1	Incidental	1	Could occur	3	Probable	0.60	Very Low	High		
	Indirect Impact	LOW	2	Local	3	Incidental	1	Could occur	3	Possible	1.20	Low	High		

2.1.6 Flora

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	<p>During the construction phase vegetation on site will be cleared. The proposed transfer station site will have a hard impacted surface, with only a small landscaped garden area. Therefore, all natural vegetation and habitat will be destroyed over the 4500m<sup>2</sup> footprint of the proposed transfer station site. Clearing of vegetation during the construction phase could destroy suitable habitat for sensitive floral species. Compaction of soil leads to decrease in soil fertility which could impact on vegetation re-establishment.</p> <p>Vegetation outside of the demarcated construction footprint could be disturbed by construction vehicles and equipment.</p> <p>However, in terms of the High Level Ecological Assessment which was undertaken for this project, no species of concern have been observed on site. There is evidence of heavy use by livestock. The ecological sensitivity of both the site and surrounds appear to be low.</p>	<ul style="list-style-type: none"> <li>• All construction works and movement of construction vehicles and equipment should be restricted to existing roads and the construction footprint;</li> <li>• Vegetation clearance should only be undertaken where necessary for construction purposes. No vegetation to be cleared outside of construction footprint;</li> <li>• Damage to vegetation by construction vehicles, machinery or equipment should be avoided as far as possible</li> <li>• Where possible cutting down of trees should be avoided</li> <li>• No trees may be removed from the site prior to establishing whether the trees are protected in terms of the Notice of the List of Protected Tree Species under the National Forests Act, or whether Licenses or Permits are required for the removal of such species. Removal of trees should be avoided as far as possible. All trees in the way of construction should be identified by a suitably qualified specialist, and necessary authorisations for the removal of such trees must be obtained from the relevant regulating authority as specified by the Department of Agriculture, Forestry and Fisheries.</li> </ul>
<b>Indirect Impact</b>	None Expected	None Required
<b>Cumulative Impact</b>	None Expected	None Required

Impact Ratings Before Mitigation							
Significance	Extent	Duration	Probability	Degree of Certainty	Impact Risk	Intensity / Severity	Reversibility

Flora	Direct Impact	LOW	2	Study Area	2	Permanent	5	Will / Has occurred	5	Probable	3.00	Moderate	Low	Irreversible, impact is permanent	5
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Impact Ratings After Mitigation														
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation
Flora	Direct Impact	LOW	2	Study Area	2	Long term	4	Could occur	3	Possible	1.60	Low	Medium	

#### 2.1.7 Surface Water and Ground Water

Operational Phase	Impact Description	Proposed Mitigation Measures
Direct Impact	<p>Accidental hydrocarbon spillages from construction vehicles on site, could lead to contamination of surface water. Contaminated surface water could infiltrate and lead to contamination of ground water.</p> <p>Contaminated surface water could flow into the nearby stream would negatively impact on the stream.</p> <p>Water contamination could have a negative impact on aquatic fauna and flora.</p>	<ul style="list-style-type: none"> <li>The Contractor will ensure that there is a supply of absorbent material (e.g. sawdust) readily available to absorb, breakdown and where possible encapsulate minor hydrocarbon spillage;</li> <li>All construction vehicles and machinery should be kept in good working order to avoid fuel or oil leaks;</li> <li>Vehicles and machinery displaying signs of leakage should be removed from site and necessary repairs should be undertaken off-site at an appropriate workshop area.</li> <li>Stockpiles should not be placed in close proximity to stormwater culverts or channels to avoid soils from entering stormwater which could lead to sedimentation of nearby waterbodies; and</li> <li>Rehabilitation of disturbed areas to be undertaken as soon as possible to avoid soil erosion.</li> </ul>
Indirect Impact	Contaminants and sediments could be carried downstream causing water quality impacts downstream of the construction site. Water contamination could have a negative impact on downstream aquatic fauna and flora.	As above.
Cumulative Impact	None expected	None required



Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty	Impact Risk		Intensity / Severity	Reversibility	
Surface and Groundwater	Direct Impact	MODERATE	3	Local	3	Short-term	2	Could occur	3	Possible	1.60	Low	Medium	Quickly reversible	2
	Indirect Impact	HIGH	4	Local	3	Short-term	2	Could occur	3	Possible	1.80	Low	Medium	Quickly reversible	2

Impact Ratings After Mitigation													
		Significance		Extent		Duration		Probability		Degree of Certainty	Impact Risk		Degree of Mitigation
Surface and Groundwater	Direct Impact	MODERATE	3	Local	3	Incidental	1	Could occur	3	Possible	1.40	Low	Medium
	Indirect Impact	MODERATE	3	Local	3	Incidental	1	Unlikely	2	Possible	0.93	Very Low	High

### 2.1.8 Air Quality

Operational Phase	Impact Description	Proposed Mitigation Measures
Direct Impact	<p>Removal of vegetation for the construction purposes will leave soil bare and could lead to dust pollution under windy conditions.</p> <p>Emissions from heavy vehicles transporting wastes, as well as emissions from construction vehicles and equipment will impact on air quality. However, they will be located within an existing town where with existing vehicle traffic.</p>	<ul style="list-style-type: none"> <li>Dust control measures to be implemented during the construction phase. Use of water to suppress dust should be considered carefully, as there is a risk of surface water contamination on site.</li> <li>All heavy vehicles to be kept in good working order and serviced regularly.</li> <li>Vehicle speed on dirt roads to be strictly controlled to 40km/h.</li> </ul>

	Construction vehicles will travel along a 1.5km dirt road in order to access the site. Vehicles travelling on the dirt road will cause dust pollution.	
<b>Indirect Impact</b>	None expected.	N/A
<b>Cumulative Impact</b>	None expected.	N/A

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
<b>Air Quality</b>	<b>Direct Impact</b>	LOW	2	Study Area	2	Short-term	2	Very Likely	4	Possible	1.60	Low	Low	Quickly reversible	2

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
<b>Air Quality</b>	<b>Direct Impact</b>	LOW	2	Study Area	2	Incidental	1	Could occur	3	Possible	1.00	Very Low	High		

### 2.1.9 Noise

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	During the construction phase, the operation of machinery and equipment, as well as the construction vehicle traffic will create a noise impact. However, the site proposed for transfer station construction has a very remote location, and noise impact is not expected to be significant.	<ul style="list-style-type: none"> <li>All equipment should be kept in good working order;</li> <li>Equipment should be operated within its specifications and capacity and should not be overloaded;</li> <li>All machinery/plant should be serviced and lubricated regularly to ensure a good working order;</li> <li>The provisions of SABS 1200A will apply to all areas within audible distance of residents;</li> <li>No amplified music will be allowed on the site. The use of radios, tape recorders, compact disc players, television sets etc. will not be permitted</li> </ul>

		<ul style="list-style-type: none"> <li>unless at a level that does not serve as an intrusion to adjacent land-owners;</li> <li>• Construction activities generating output levels of 85 dB or more will be confined to the hours 08h00 to 17h00 Mondays to Fridays;</li> <li>• The Contractor will take preventative measures (e.g. screening, muffling, timing, pre-notification of affected parties) to minimise complaints regarding noise and vibration nuisances from sources such as power tools.</li> </ul>
<b>Indirect Impact</b>	None expected	N/A
<b>Cumulative Impact</b>	None expected	N/A

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
<b>Noise</b>	<b>Direct Impact</b>	MODERATE	3	Local	3	Short-term	2	Could occur	3	Probable	1.60	<b>Low</b>	<b>Low</b>	Quickly reversible	2

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
<b>Noise</b>	<b>Direct Impact</b>	LOW	2	Local	3	Incidental	1	Could occur	3	Possible	1.20	<b>Low</b>	<b>Medium</b>		

#### 2.1.10 Visual

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	The removal of vegetation, construction equipment, stockpiles and activities undertaken during the construction phase may have a negative visual impact on the local community and adjacent land uses. However, the site has a very remote location, and visual impact	<ul style="list-style-type: none"> <li>• Advertising and lighting will be in accordance with the South African National Roads Agency requirements and will not constitute an eyesore / hazard to</li> </ul>

	is not expected to be significant.	<p>users of the road.</p> <ul style="list-style-type: none"> <li>Lighting will be sufficient to ensure security but will not constitute 'light pollution' to the surrounding areas.</li> <li>The site will be shielded from the adjacent landowners to minimise the visual impact where this is feasibly possible, and where this is required; and</li> <li>Site structures, albeit temporary, must be fitted with appropriate cladding and colouring to ensure reduced reflection and visual pollution.</li> </ul>
<b>Indirect Impact</b>	None expected	N/A
<b>Cumulative Impact</b>	None expected	N/A

Impact Ratings Before Mitigation																
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility	
<b>Visual</b>	<b>Direct Impact</b>	MODERATE	3	Local	3	Short-term	2	Could occur	3	Probable	1.60	<b>Low</b>	<b>Low</b>	Quickly reversible	2	

Impact Ratings After Mitigation																
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation		
<b>Visual</b>	<b>Direct Impact</b>	LOW	2	Local	3	Short-term	2	Could occur	3	Probable	1.40	<b>Low</b>	<b>Medium</b>			

### 2.1.11 Traffic

Operational Phase	Impact Description	Proposed Mitigation Measures
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<b>Direct Impact</b>	During the construction phase, construction vehicles will travel to and from the site delivering construction materials. This will have an impact on traffic in the area. Although very low volumes of traffic occur in the area. Heavy vehicle traffic could be a safety risk to pedestrians and children.	<ul style="list-style-type: none"> <li>Ensure that vehicle operators are suitably licensed, have had appropriate environmental and safety induction, are aware of specific site procedures, and are well rested and cognisant when operating heavy or unsafe vehicles / machinery.</li> </ul>
<b>Indirect Impact</b>	None expected	N/A
<b>Cumulative Impact</b>	None expected	N/A

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
Traffic	Direct Impact	MODERATE	3	Local	3	Short-term	2	Could occur	3	Probable	1.60	Low	Low	Quickly reversible	2

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
Traffic	Direct Impact	LOW	2	Local	3	Short-term	2	Could occur	3	Probable	1.40	Low	Medium		

#### 2.1.12 Socio-Economic

Operational Phase	Impact Description	Proposed Mitigation Measures
Direct Impact	Positive Impact:	N/A

	Temporary job opportunities for local residents could be created during the construction phase.	
<b>Indirect Impact</b>	None Expected	N/A
<b>Cumulative Impact</b>	None expected	N/A

## 2.2 Operational Phase

### 2.2.1 Soils and Land Capability

Decommissioning and Closure	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	Accidental leaks and spillages of hydrocarbons from waste trucks, and other vehicles could contaminate soils. However, the impact will be minimal as the site will be covered with an impervious surface.	<ul style="list-style-type: none"> <li>The Contractor will ensure that there is a supply of absorbent material (e.g. sawdust) readily available to absorb, breakdown and where possible encapsulate minor hydrocarbon spillage.</li> <li>All construction vehicles and machinery should be kept in good working order to avoid fuel or oil leaks;</li> <li>Vehicles and machinery displaying signs of leakage should be removed from site and necessary repairs should be undertaken off-site at an appropriate workshop area.</li> </ul>
<b>Indirect Impact</b>	None Expected	None Required
<b>Cumulative Impact</b>	None Expected	None Required

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
Soils and	Direct Impact	LOW	2	Isolated Sites /	1	Incidental	1	Unlikely	2	Probable	0.53	Very Low	Low	Immediately	1

Land Capability				proposed site										reversible	
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Impact Ratings After Mitigation														
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation
Soils and Land Capability	Direct Impact	LOW	2	Isolated Sites / proposed site	1	Incidental	1	Unlikely	2	Possible	0.53	Very Low	High	

### 2.2.2 Land Use

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	<p>The Transfer Station may have negative visual impacts, as well as negative air quality impacts due to poor odours on adjacent land uses.</p> <p>Garbage, particularly food waste and grass, has a high potential for odour. Poor facility design and operational methods could lead to nuisance to adjacent landowners.</p> <p>Furthermore rodents and flies could be a nuisance at waste transfer stations which could easily spread into becoming a nuisance to adjacent landowners.</p> <p>Noise generated by heavy truck traffic and tipping of skips could create a noise impact in the area.</p> <p>However, due to the remote location of the site these impacts should be low.</p>	<ul style="list-style-type: none"> <li>• Proper facility design can significantly reduce odour problems, therefore the wastes skips will be placed under roof to protect wastes from exposure to heat and sunlight.</li> <li>• Site manager must implement a pest control program at least every quarter;</li> <li>• "First-in, first-out" waste handling practices should be implemented on site to ensure that wastes are only kept on site for short periods.</li> <li>• Wastes from the tipping floor should be removed at the end of each operating day so that these surfaces can be swept clean and washed down.</li> <li>• Good housekeeping" measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.</li> <li>• Water misting and/or deodorizing systems could be implemented.</li> <li>• Activities which generate the most noise should be conducted between standard business hours (8:00 to 17:00). No wastes should be collected from site or sorted on site on weekends or public holidays.</li> </ul>
<b>Indirect Impact</b>	Windblown litter from vehicles during transport could have an impact on land uses located	Waste trucks should not be overfilled and should be adequately covered with

	further away from the transfer station.	netting or another suitable cover to prevent windblown litter impacts.
<b>Cumulative Impact</b>	None expected	N/A

All impacts identified in this section have been rated under noise, visual, air quality, littering and health. Refer to these ratings in the relevant sections below.

### 2.2.3 Fauna

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	Animals could consume wastes on site if the site is not well managed and littering occurs.	<ul style="list-style-type: none"> <li>• Good housekeeping” measures should be implemented including regular cleaning;</li> <li>• The gate should remain closed and locked at all times outside of working hours.</li> </ul>
<b>Indirect Impact</b>	Non-Biological Pest control programs implemented for rodent control could have a negative impact on birds, dogs and cats which could consume the poisoned rodents.	Biological or mechanical Pest control measures to be implemented. The best biological and mechanical rodent control measures as recommended by Birdlife Africa includes: <ul style="list-style-type: none"> <li>• Barn Owls as a Biological control measure. Barn Owls can be attracted to cities by putting up owl nest boxes; and</li> <li>• Rat Zappers as a Mechanical control measure. With this method rodents are enticed into a trap in which they are killed by a quick but powerful electrical shock</li> </ul>
<b>Cumulative Impact</b>	None expected.	N/A

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty	Impact Risk		Intensity / Severity	Reversibility	
Fauna	<b>Direct Impact</b>	MODERATE	3	Local	3	Medium term	3	Will / Has occurred	5	Definite	3.00	Moderate	Low	Reversible over time	3
	<b>Indirect Impact</b>	MODERATE	3	Local	3	Medium term	3	Very Likely	4	Possible	2.40	Moderate	Low	Reversible over time	3

#### Impact Ratings After Mitigation



		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
Fauna	Direct Impact	LOW	2	Local	3	Medium term	3	Unlikely	2	Probable	1.07	Very Low	High		
	Indirect Impact	LOW	2	Local	3	Incidental	1	Unlikely	2	Possible	0.80	Very Low	High		

#### 2.2.4 Flora

Operational Phase	Impact Description	Proposed Mitigation Measures
Direct Impact	Poor vegetation establishment on areas rehabilitated after the construction phase, including the earth berm could result in the occurrence and spread of alien vegetation. Poor monitoring of vegetation establishment could lead to spread of weeds and alien invasive plants which could encroach into the nearby riparian area.	Vegetation establishment should be monitored for up to a period of six months after completion of construction activities. Alien vegetation control monitoring should also be undertaken.  The earth berm should be maintained and alien vegetation monitoring should be undertaken throughout the life of the project.
Indirect Impact	Poor stormwater control on site, and accidental hydrocarbon spillages from heavy vehicles on site, could lead to contaminated surface water flowing into adjacent properties.  The grading of the site will prevent contaminated stormwater from flowing towards the nearby riparian area, as the site will be graded to channel stormwater away from the riparian area.	Proper stormwater control measures to be implemented and grease trap to be installed.  All heavy vehicles to be kept in good working order and serviced regularly.
Cumulative Impact	None expected	N/A

Impact Ratings Before Mitigation																	
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity		Reversibility	
Flora	Direct Impact	MODERATE	3	Local	3	Medium term	3	Could occur	3	Possible	1.80	Low	Medium	Reversible over time	3		
	Indirect Impact	MODERATE	3	Local	3	Incidental	1	Could occur	3	Possible	1.40	Low	Medium	Immediately reversible	1		

Impact Ratings After Mitigation														
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation
Flora	Direct Impact	LOW	2	Local	3	Incidental	1	Could occur	3	Possible	1.20	Low	Medium	
	Indirect Impact	LOW	2	Local	3	Incidental	1	Unlikely	2	Possible	0.80	Very Low	High	

### 2.2.5 Surface Water and Ground Water

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	<p>Poor stormwater control on site, and accidental hydrocarbon spillages from heavy vehicles on site, could lead to contamination of surface water. Contaminated surface water could infiltrate and lead to contamination of ground water.</p> <p>Accidental leaks and spillages from used oil containers could lead to soils, surface water and groundwater contamination. Furthermore, oils are flammable, and negligence could cause site fires.</p>	<ul style="list-style-type: none"> <li>• Proper stormwater control measures to be implemented and grease trap to be installed.</li> <li>• All heavy vehicles to be kept in good working order and serviced regularly.</li> <li>• A licensed and registered services provider such as the Rose Foundation or Enviroserv should be appointed to collect used oils from site;</li> <li>• Used oils should be stored on site in safe approved containers as provided by licensed and registered services providers such as the Rose Foundation or Enviroserv;</li> <li>• Use oil tanks/containers shall be situated in a bunded area the volume of which shall be at least 110% of the volume of the largest tank. The floor of bund shall be smooth and impermeable constructed of concrete or plastic sheeting with impermeable joints with a layer of sand over to prevent perishing. The bund walls shall be formed of well-packed earth with the impermeable lining extending to the crest. The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled fuel and/or fuel-soaked water to be removed.</li> <li>• A letter of commitment from the oil company indicating that the site, all equipment and secondary containment measures will comply with the applicable SANS and industry standards should be submitted to DEA prior to the commencement of operational activities.</li> </ul>
<b>Indirect Impact</b>	<p>Poor stormwater control on site, and accidental hydrocarbon spillages from heavy vehicles on site, could lead to contaminated surface water flowing onto adjacent properties. Contaminated surface water could infiltrate and lead to</p>	<p>Proper stormwater control measures to be implemented and grease trap to be installed.</p> <p>All heavy vehicles to be kept in good working order and serviced regularly.</p>

	contamination of ground water.	
<b>Cumulative Impact</b>	None Expected	None Required

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
Surface and Groundwater	Direct Impact	MODERATE	3	Study Area	2	Medium term	3	Could occur	3	Possible	1.60	Low	Medium	Reversible over time	3
	Indirect Impact	MODERATE	3	Local	3	Incidental	1	Could occur	3	Possible	1.40	Low	Medium	Immediately reversible	1

Impact Ratings After Mitigation														
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation
Surface and Groundwater	Direct Impact	LOW	2	Study Area	2	Incidental	1	Could occur	3	Definite	1.00	Very Low	High	
	Indirect Impact	LOW	2	Local	3	Incidental	1	Unlikely	2	Possible	0.80	Very Low	High	

## 2.2.6 Air Quality

Operational Phase	Impact Description	Proposed Mitigation Measures
Direct Impact	Waste, particularly food waste and grass, has a high potential for odour. Poor facility design and operational methods could lead to nuisance to adjacent landowners.	<ul style="list-style-type: none"> <li>• Proper facility design can significantly reduce odour problems.</li> <li>• "First-in, first-out" waste handling practices should be implemented on site to ensure that wastes are only kept on site for short periods.</li> <li>• Wastes from the tipping floor should be removed at the end of each operating day so</li> </ul>

	Waste trucks and vehicles travelling to the transfer station site will travel along an approximate 1.5km dirt road. Vehicle traffic on the dirt road will cause dust impact.	<p>that these surfaces can be swept clean and washed down.</p> <ul style="list-style-type: none"> <li>• Good housekeeping” measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.</li> <li>• Water misting and/or deodorizing systems could be implemented.</li> <li>• Vehicle speeds to be strictly controlled to 40km/h in order to minimize dust impact.</li> </ul>
<b>Indirect Impact</b>	Waste trucks and vehicles travelling to the transfer station site will travel along an approximate 1.5km dirt road. Vehicle traffic on the dirt road will cause dust impact.	Vehicle speeds to be strictly controlled to 40km/h in order to minimize dust impact.
<b>Cumulative Impact</b>	None expected.	N/A

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
Air Quality	Direct Impact	MODERATE	3	Study Area	2	Medium term	3	Could occur	3	Probable	1.60	Low	Low	Reversible over time	3
	Indirect Impact	HIGH	4	Local	3	Medium term	3	Very Likely	4	Possible	2.67	Moderate	Low	Reversible over time	3

Impact Ratings After Mitigation														
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation
Air Quality	Direct Impact	LOW	2	Study Area	2	Incidental	1	Could occur	3	Possible	1.00	Very Low	High	
	Indirect Impact	LOW	2	Local	3	Incidental	1	Could occur	3	Possible	1.20	Low	Medium	

## 2.2.7 Noise

Operational Phase	Impact Description	Proposed Mitigation Measures
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<b>Direct Impact</b>	Noise generated by heavy truck traffic and tipping of skips cause noise impact. However, the site proposed for transfer station construction has a very remote location, and noise impact is not expected to be significant.	Activities which generate the most noise should be conducted between standard business hours (8:00 to 17:00). No wastes should be collected from site on weekends or public holidays.
<b>Indirect Impact</b>	None expected	N/A
<b>Cumulative Impact</b>	None expected	N/A

Impact Ratings Before Mitigation																	
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity		Reversibility	
Noise	Direct Impact	MODERATE	3	Local	3	Medium term	3	Very Likely	4	Probable	2.40	Moderate	Low	Reversible over time	3		

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
Noise	Direct Impact	MODERATE	3	Local	3	Medium term	3	Could occur	3	Possible	1.80	Low	Medium		

## 2.2.8 Visual

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	The site earmarked for development of the transfer station has a very remote location. However, the site may have a visual impact on the adjacent livestock auction yard, and on the shop located a few metres to the south east of the site.	<ul style="list-style-type: none"> <li>Proper facility design can significantly reduce odour problems.</li> <li>"First-in, first-out" waste handling practices should be implemented on site to ensure that wastes are only kept on site for short periods.</li> <li>Wastes from the tipping floor should be removed at the end of each operating day so that these surfaces can be swept clean and washed down.</li> </ul>

		<ul style="list-style-type: none"> <li>• Good housekeeping” measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.</li> </ul>
<b>Indirect Impact</b>	Windblown litter from vehicles during transport could have an impact on land uses located further away from the transfer station.	Waste trucks should not be overfilled and should be adequately covered with netting or another suitable cover to prevent windblown litter impacts.
<b>Cumulative Impact</b>	None expected	N/A

Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility
Visual	Direct Impact	MODERATE	3	Local	3	Medium term	3	Very Likely	4	Probable	2.40	Moderate	Low	Reversible over time	3
	Indirect Impact	MODERATE	3	Local	3	Medium term	3	Very Likely	4	Possible	2.40	Moderate	Low	Reversible over time	3

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
Visual	Direct Impact	LOW	2	Local	3	Incidental	1	Could occur	3	Probable	1.20	Low	Medium		
	Indirect Impact	LOW	2	Local	3	Incidental	1	Could occur	3	Probable	1.20	Low	Medium		

## 2.2.9 Health

Operational Phase	Impact Description	Proposed Mitigation Measures
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<b>Direct Impact</b>	<p>Rodents could be a nuisance and a potential health concern at waste transfer stations which could easily spread into becoming a nuisance to adjacent landowners.</p> <p>Potential Health hazards associated with green waste, which is a potential health hazard for transfer station site employees includes:</p> <table border="1"> <thead> <tr> <th>Problem (Infections, Chemicals, Skin)</th> <th>Cause</th> <th>Route into the body</th> </tr> </thead> <tbody> <tr> <td>Rat Fever (leptospirosis)</td> <td>Rat Urine</td> <td>Cuts and abrasions</td> </tr> <tr> <td>Tetanus (lockjaw)</td> <td>Soils and organic material</td> <td>Deeper cuts and wounds</td> </tr> <tr> <td>Botulism</td> <td>Soils</td> <td>Ingestion: hand to mouth contact</td> </tr> <tr> <td>Problem (Infections, Chemicals, Skin)</td> <td>Cause</td> <td>Route into the body</td> </tr> <tr> <td><i>Pasteurella multocida</i></td> <td>Bites</td> <td>Skin pierced by bites</td> </tr> <tr> <td>Pesticide and Insecticide residues</td> <td>Garden sprays, weed killers etc.</td> <td>Cuts, abrasions, Hands to mouth contact</td> </tr> <tr> <td>Premature Skin Ageing and Skin Cancer</td> <td>Excessive exposure to strong sunlight</td> <td>Through unprotected skin</td> </tr> </tbody> </table>	Problem (Infections, Chemicals, Skin)	Cause	Route into the body	Rat Fever (leptospirosis)	Rat Urine	Cuts and abrasions	Tetanus (lockjaw)	Soils and organic material	Deeper cuts and wounds	Botulism	Soils	Ingestion: hand to mouth contact	Problem (Infections, Chemicals, Skin)	Cause	Route into the body	<i>Pasteurella multocida</i>	Bites	Skin pierced by bites	Pesticide and Insecticide residues	Garden sprays, weed killers etc.	Cuts, abrasions, Hands to mouth contact	Premature Skin Ageing and Skin Cancer	Excessive exposure to strong sunlight	Through unprotected skin	<ul style="list-style-type: none"> <li>• Site manager must implement a pest control program at least every quarter.</li> <li>• Good housekeeping” measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.</li> <li>• Removing all waste delivered to the facility by the end of each day and cleaning the receiving floor daily.</li> </ul> <p>Potential Health Hazard – Preventative Measures:</p> <table border="1"> <thead> <tr> <th>Problem (Infections, Chemicals, Skin)</th> <th>Preventative Measures</th> </tr> </thead> <tbody> <tr> <td>Rat Fever (leptospirosis)</td> <td>Good House-keeping and good hygiene</td> </tr> <tr> <td>Tetanus (lockjaw)</td> <td>Wear protective clothes e.g. gloves, safety shoes etc.</td> </tr> <tr> <td>Botulism</td> <td>Cover cuts and abrasions, wash hands during breaks</td> </tr> <tr> <td>Problem (Infections, Chemicals, Skin)</td> <td>Preventative Measures</td> </tr> <tr> <td><i>Pasteurella multocida</i></td> <td>Clean any wound quickly and apply antiseptic</td> </tr> <tr> <td>Pesticide and Insecticide residues</td> <td>Wear protective clothing, Good Hygiene practices</td> </tr> <tr> <td>Premature Skin Ageing and Skin Cancer</td> <td>Wear long sleeved clothing Wear hats</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>• Protective clothing to be worn on the garden site: <ul style="list-style-type: none"> <li>○ Protective overalls</li> <li>○ Dust masks</li> <li>○ Safety goggles</li> <li>○ Gloves</li> <li>○ Safety boots</li> <li>○ Gum boots</li> <li>○ Rain suit</li> <li>○ Hats</li> </ul> </li> </ul>	Problem (Infections, Chemicals, Skin)	Preventative Measures	Rat Fever (leptospirosis)	Good House-keeping and good hygiene	Tetanus (lockjaw)	Wear protective clothes e.g. gloves, safety shoes etc.	Botulism	Cover cuts and abrasions, wash hands during breaks	Problem (Infections, Chemicals, Skin)	Preventative Measures	<i>Pasteurella multocida</i>	Clean any wound quickly and apply antiseptic	Pesticide and Insecticide residues	Wear protective clothing, Good Hygiene practices	Premature Skin Ageing and Skin Cancer	Wear long sleeved clothing Wear hats
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<b>Indirect Impact</b>	None expected	N/A																																								
<b>Cumulative Impact</b>	None expected	N/A																																								

Impact Ratings Before Mitigation																
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility	
Health	Direct Impact	HIGH	4	Study Area	2	Medium term	3	Very Likely	4	Probable	2.40	Moderate	Low	Reversible over time	3	

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
Health	Direct Impact	LOW	2	Study Area	2	Incidental	1	Could occur	3	Possible	1.00	Very Low	High		

#### 2.2.10 Traffic / Waste / Litter

Operational Phase	Impact Description	Proposed Mitigation Measures
Direct Impact	<p>Littering from open waste skips could occur under windy conditions. Furthermore litter from the tipping floor could spread to adjacent sites under windy conditions.</p> <p>Heavy waste vehicles travelling to and from site could have an impact on traffic in the area. However, low volumes of traffic occur in the study area.</p>	<ul style="list-style-type: none"> <li>All vehicles transporting wastes should not be overfilled and should be adequately covered with netting or another suitable cover to prevent windblown litter impacts.</li> <li>Waste should only be collected and delivered to site between normal business hours. A waste collection schedule should be compiled to prevent traffic piling up outside the gates.</li> <li>Patrolling nearby access roads to control litter from truck traffic.</li> </ul>
Indirect Impact	<p>Windblown litter from heavy waste vehicles could have an impact on land uses located further away from the transfer station.</p> <p>Heavy waste vehicles travelling to and from site could have an impact on traffic in the area.</p>	As per direct impact.



<b>Cumulative Impact</b>	None expected	N/A
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Impact Ratings Before Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty	Impact Risk		Intensity / Severity	Reversibility	
Traffic / Waste / Litter	Direct Impact	MODERATE	3	Local	3	Medium term	3	Very Likely	4	Probable	2.40	Moderate	Low	Reversible over time	3
	Indirect Impact	MODERATE	3	Local	3	Medium term	3	Very Likely	4	Possible	2.40	Moderate	Low	Reversible over time	3

Impact Ratings After Mitigation															
		Significance		Extent		Duration		Probability		Degree of Certainty	Impact Risk		Degree of Mitigation		
Traffic / Waste / Litter	Direct Impact	LOW	2	Local	3	Incidental	1	Could occur	3	Probable	1.20	Low	High		
	Indirect Impact	LOW	2	Local	3	Incidental	1	Could occur	3	Probable	1.20	Low	High		

### 2.2.11 Socio-Economic

Operational Phase	Impact Description	Proposed Mitigation Measures
Direct Impact	<p><b>Positive Impact:</b> Potential job opportunities for local residents could be created during the operational phase of the proposed new waste transfer station.</p> <p>Source separated recyclables may present better income opportunities for authorised recyclers.</p> <p>Source separated green waste will allow for authorised persons to access clean</p>	N/A

	organics for composting, that may be used for the beneficial application in community gardens.	
<b>Indirect Impact</b>	None expected	N/A
<b>Cumulative Impact</b>	None expected	N/A

### 2.2.12 Safety and Security

Operational Phase	Impact Description	Proposed Mitigation Measures
<b>Direct Impact</b>	<p>Poor security control measures could lead to:</p> <ul style="list-style-type: none"> <li>• Dumping of wastes not permitted at the site;</li> <li>• Illegal collection of recyclable wastes;</li> <li>• Site becoming overfilled; and</li> <li>• Littering on site and off site.</li> </ul>	<p><b>Security Personnel responsibilities</b></p> <ul style="list-style-type: none"> <li>• The security officer should report on site by 6 a.m. and leave not later than 18:00 p.m.</li> <li>• Gates should be manned at all times between operating hours;</li> <li>• Take down registration number of vehicles entering the gate</li> <li>• Ensure that vehicles entering the gate have the correct type of waste</li> <li>• Direct vehicles to the correct bins where the site attendant will be standing</li> <li>• Treat all clients with respect and courtesy</li> <li>• In the case where the queues are long and there are delays, advise clients of such and ask for their patience.</li> <li>• Open site to the public even if it is full. At no stage during normal working hours should the site be closed.</li> <li>• Co-operate with site attendants at all times and at no stage should the security personnel bully the site attendant</li> <li>• They should at no stage during working hours be under the influence of alcohol.</li> </ul>
<b>Indirect Impact</b>	None Expected	N/A
<b>Cumulative Impact</b>	None Expected	N/A

Impact Ratings Before Mitigation

		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Intensity / Severity	Reversibility	
<b>Safety and Security</b>	<b>Direct Impact</b>	MODERATE	3	Study Area	2	Medium term	3	Very Likely	4	Probable	2.13	<b>Moderate</b>	<b>Low</b>	Reversible over time	3	

<b>Impact Ratings After Mitigation</b>															
		Significance		Extent		Duration		Probability		Degree of Certainty		Impact Risk		Degree of Mitigation	
<b>Safety and Security</b>	<b>Direct Impact</b>	LOW	2	Study Area	2	Incidental	1	Could occur	3	Probable	1.00	<b>Very Low</b>	<b>High</b>		

### 2.3 Decommissioning and Closure Phase

It is not anticipated that the transfer station site will be decommissioned as this facility is required in the area. Should the site ever be decommissioned and closed, a Closure Plan needs to be compiled by a suitably qualified Environmental Assessment Practitioner and should be submitted to MP DEDET for review and approval.

<p><b>7. Any environmental management and mitigation measures proposed by the EAP</b></p> <p>Refer to attached EMPr.</p>
<p><b>8. Any inputs and recommendations made by specialists to the extent that may be necessary</b></p> <p>It is noted that the proposed refuse transfer station is located reasonably close to a watercourse. Management of storm water and wind scatter will be important to prevent the dispersion of contaminants to the watercourse. The site also neighbours a local school as well as livestock yards and pens. It is essential that operations do not cause disturbance to school learners or generate litter than could be ingested by the livestock. If visual screening is required around the site, use should be made of locally adapted indigenous tree species such as <i>Acacia caffra</i>, <i>Celtis africana</i> and <i>Rhus magalisonata</i>.</p>
<p><b>9. A draft environmental management programme containing the aspects contemplated in regulation 33</b></p> <p>Attached.</p>
<p><b>10. A description of any assumptions, uncertainties and gaps in knowledge</b></p> <p>It is uncertain as to the exact extent of the waste which will be collected and transferred through this RTS. For this reason, the design of the transfer station will allow for additional or less skips to be placed, without requiring additional construction. A long-term and 'worse case' scenario has been designed for, however it is anticipated that with education and awareness, the illegal dumping situation should be reduced.</p> <p>This should by no means provide the Municipality and its service providers with opportunity to neglect or reduce the waste collection service in the area, and should be seen as an additional service to augment the existing one, not replace it.</p>
<p><b>11. A reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation</b></p> <p>With the implementation of mitigation measures prescribed in the Basic Assessment Report, and with the implementation of management and monitoring measures prescribed in the EMP, all impacts expected during the construction and operational phase of the Transfer Station could be of low to very low risk.</p> <p>Furthermore, the Transfer Station will have a positive impact in the study area, as the unsightly, illegal dumping should be greatly reduced. Therefore, all health and visual impacts associated with the dumping will no longer exist in the area.</p> <p>All mitigation measures addressed in the Basic Assessment Report, as well as monitoring and mitigation measures proposed in the EMPr should be adhered to.</p>
<p><b>12. Any representations, and comments received in connection with the application or the basic assessment report</b></p> <p>Refer to Section 3(iv) regarding the Public participation Process (above).</p>
<p><b>13. The minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants</b></p> <p>None to date, but should include a meeting with the Phumelela Secondary School Headmaster and possible local resident associations/councillors.</p>
<p><b>14. Any responses by the EAP to those representations, comments and views</b></p> <p>Refer to Section 3(iv) regarding the Public participation Process (above).</p>
<p><b>15. Any specific information required by the competent authority</b></p> <p>None at the time of printing this report.</p>
<p><b>16. Any other matters required in terms of sections 24(4)(a) and (b) of the Act</b></p>

**The basic assessment report must take into account -**

- (a) any relevant guidelines; and
- (b) any departmental policies, environmental management instruments and other decision making instruments that have been developed or adopted by the competent authority in respect of the kind of activity which is the subject of the application.

\* In terms of Regulation 22(4), the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in subregulation 22(2)(h), exist.

Have reasonable and feasible alternatives been identified, described and assessed?	<b>YES</b>	<b>NO</b>
If NO, the motivation and investigation required in terms of Regulation 22(4) must be attached as an Appendix to this document		

## SECTION E: CONSULTATION WITH OTHER STATE DEPARTMENTS

Provide a list of all State Departments / Organs of State that have been consulted and registered as interested and affected parties, and to whom draft reports have been submitted for comment. **Proof of submission / delivery of the draft report to all State Department / Organs of State must be attached to this document.**

<b>Department:</b>	Mpumalanga Provincial Department of Economic Development, Environment and Tourism		
<b>Contact person:</b>	Ms. GH Nyalunga		
<b>Postal address:</b>	Pvt Bag X 11215 Nelspruit		
<b>Postal code:</b>	1300	<b>Cell:</b>	084 815 2663
<b>Telephone:</b>	013 766 4846	<b>Fax:</b>	013 766 4846
<b>E-mail:</b>	ghnyalunga@mpg.gov.za		

<b>Department:</b>	Department of Water Affairs		
<b>Contact person:</b>	Mr Macevele Stanford or Mr Moloto Maditsietsi		
<b>Postal address:</b>	Private Bag X11259 Nelspruit		
<b>Postal code:</b>	1200	<b>Cell:</b>	Mr Standford- 0784603439
<b>Telephone:</b>	013 793 2061	<b>Fax:</b>	
<b>E-mail:</b>	MaceveleS@dwa.gov.za MolotoM@dwa.gov.za		

<b>Department:</b>	South African Heritage Resources Agency (SAHRA)- Mpumalanga Regional office		
<b>Contact person:</b>	Mr Benjamin Moduka		
<b>Postal address:</b>	P O Box 1243, Mbombela		
<b>Postal code:</b>	1200	<b>Cell:</b>	
<b>Telephone:</b>	013 766 5196	<b>Fax:</b>	
<b>E-mail:</b>	bmoduka@mpg.gov.za		

<b>Department:</b>	Steve Tshwete Local Municipality		
<b>Contact person:</b>	Mr WD Fouche		
<b>Postal address:</b>	P O Box 14 , Middleburg		
<b>Postal code:</b>	1050	<b>Cell:</b>	
<b>Telephone:</b>	013 249 2161	<b>Fax:</b>	013 243 2550
<b>E-mail:</b>	mmoffice@stevetshwetelm.gov.za		

<b>Department:</b>	Nkangala District Municipality		
<b>Contact person:</b>	Mr Solly Links		
<b>Postal address:</b>	P O Box 437 Middleburg		
<b>Postal code:</b>	1050	<b>Cell:</b>	072 075 1738
<b>Telephone:</b>	013 249 2004	<b>Fax:</b>	086 764 3542
<b>E-mail:</b>	linkss@nkangala.gov.za		

## **SECTION F: APPENDICES**

The following appendices must be attached to the basic assessment report as appropriate:

Site plan(s) **Appendix A**

Photographs **Appendix B**

Facility illustration(s) **Appendix C**

Specialist reports **Appendix D**

Comments and responses report **Appendix E**

Other information **Appendix F**

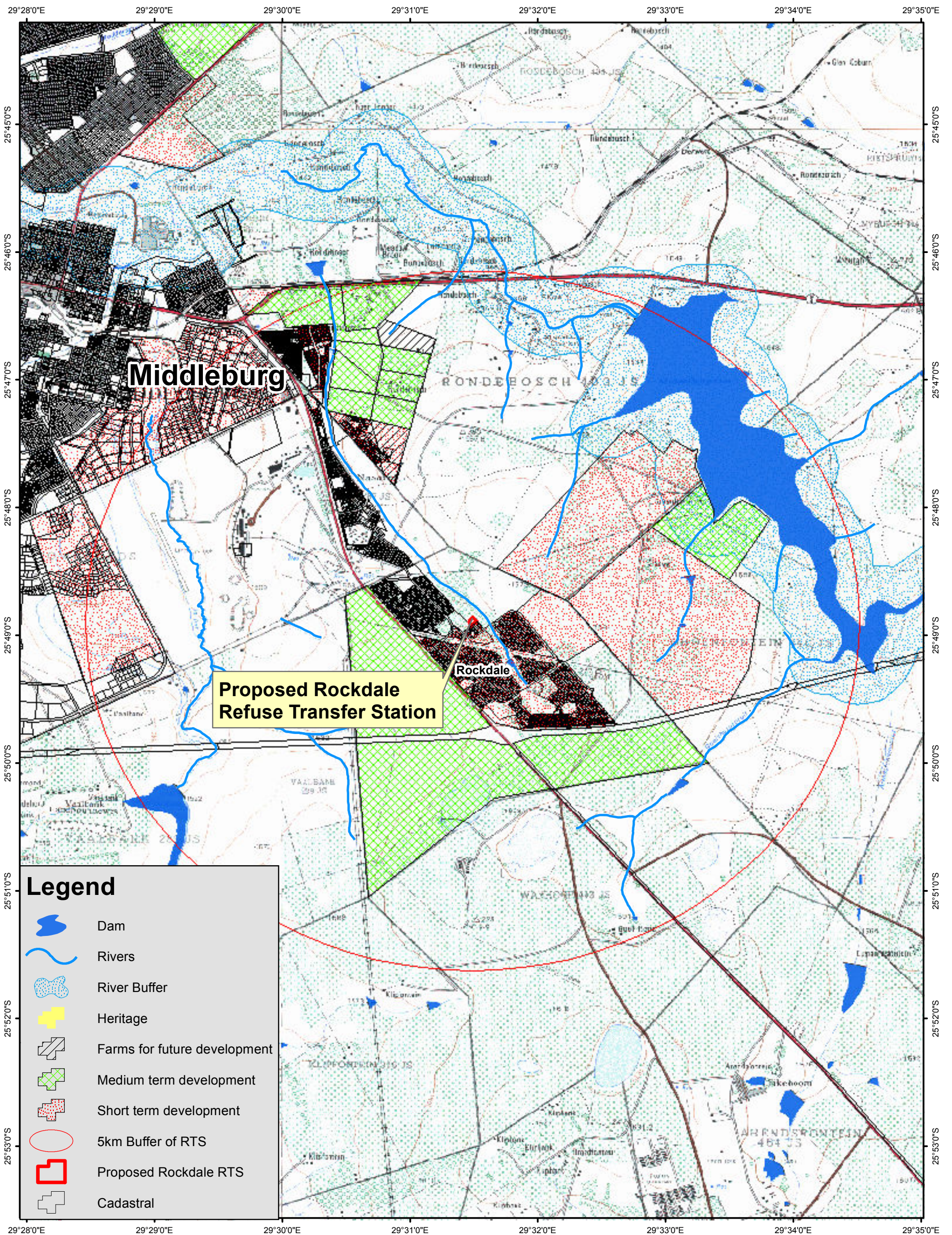
## **SITE PLAN(S) APPENDIX A**

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as an appendix to this document.

The site or route plans must be at least A3 and must include the following:

- 6.1 a reference no / layout plan no., date, and a legend / land use table
- 6.2 the scale of the plan which must be at least a scale of 1:2000;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all indigenous trees taller than 1.8 metres and all vegetation of conservation concern (protected, endemic and/or red data species);
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - watercourses and wetlands;
  - the 1:100 year flood line;
  - ridges;
  - cultural and historical features;
- 6.9 10 metre contour intervals

# TITLE: Rockdale Transfer Station Locality Plan



## Legend

- Dam
- Rivers
- River Buffer
- Heritage
- Farms for future development
- Medium term development
- Short term development
- 5km Buffer of RTS
- Proposed Rockdale RTS
- Cadastral

**Figure 1**



1:50,000  
@ A3



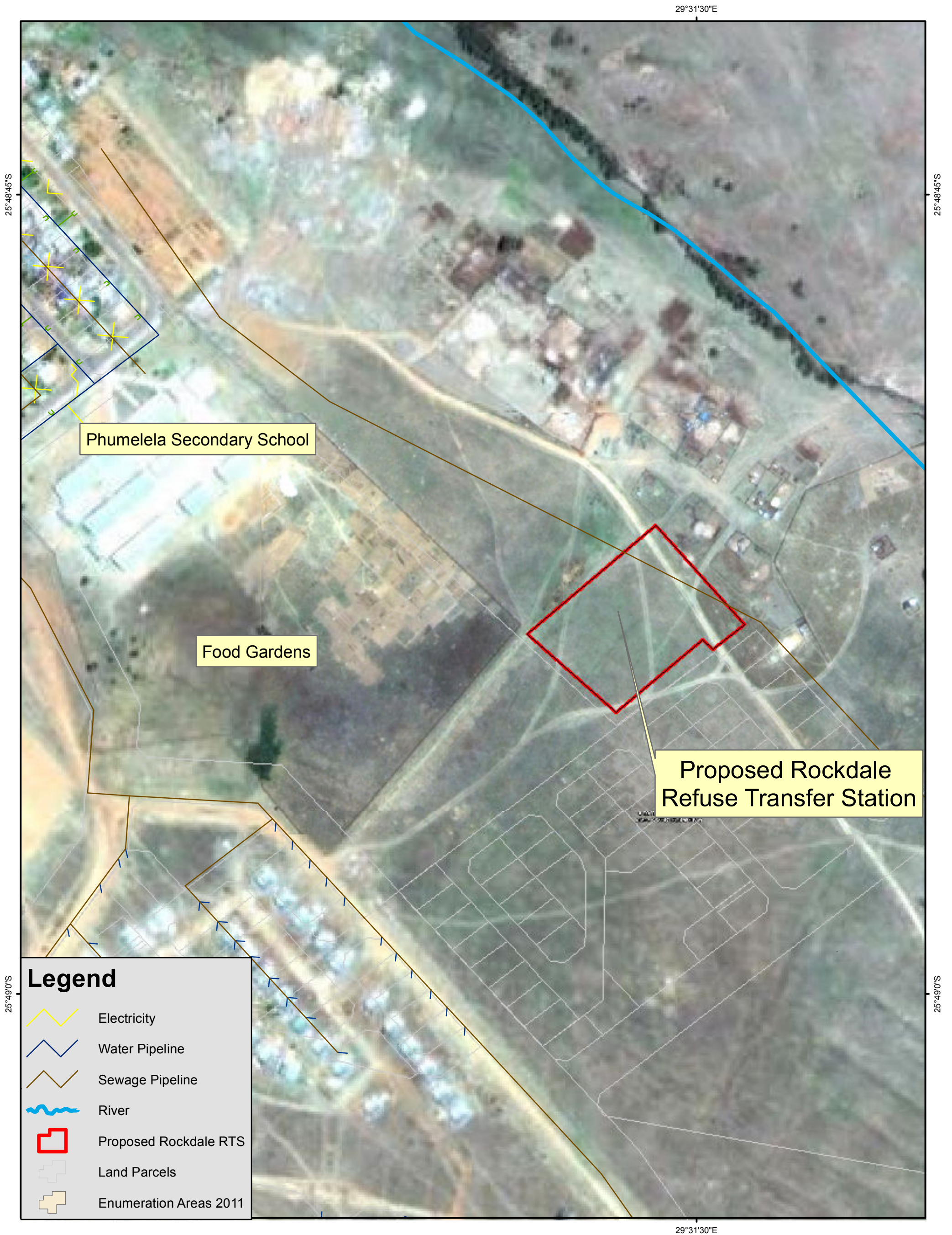
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Rockdale RTS Waste Management License  
Date Printed: 2013/9/17  
File:  
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BAR & Concept design (SG-JJ03 Drawings/  
Working/Rockdale Locality.mxd

Datum: WGS84  
Spheroid: WGS84  
Projection: Decimal Degrees

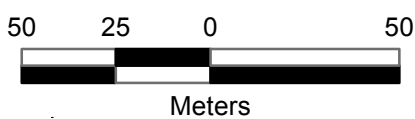
GIS, Jeffares & Green (Pty) Ltd.  
37 Sunninghill Office Park,  
Peltier Rd, Sunninghill  
Tel (011) 807-0660  
Email: jgijhb@jgi.co.za  
Web: www.jgi.co.za



# TITLE: Rockdale Refuse Transfer Station Site Location Aerial



**Figure 2**



1:2,000  
@ A3



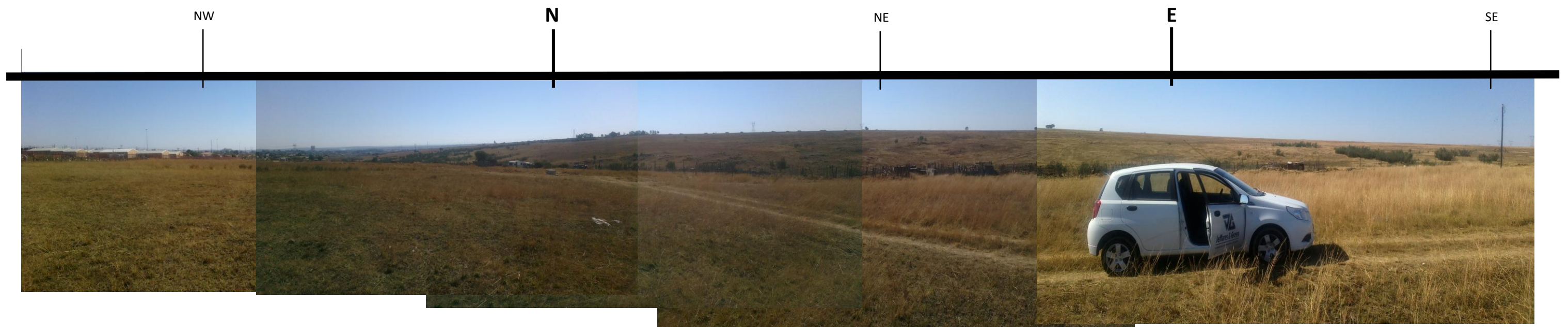
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Rockdale RTS Waste Management License  
Date Printed: 2013/7/26  
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Waste Section/3354 - Rockdale RTS  
BAR & Concept design (SG-J/03 Drawings/  
Working/Rockdale Locality.mxd

Datum: WGS84  
Spheroid: WGS84  
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37 Sunninghill Office Park,  
Peltier Rd. Sunninghill  
Tel (011) 807-0660  
Email: jgijhb@jgi.co.za  
Web: www.jgi.co.za

**APPENDIX B: SITE PHOTOGRAPHS**

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached as an appendix to this form.



# Proof of Site Notices Placed to Provide Notification of the Proposed Development of a Transfer Station in Rockdale



Figure 1: Site Notice Placed opposite the Phumelela Secondary School



Figure 2: Site Notice Placed at the Main entrance of Ext 14



Figure 3: Background Information Documents (BIDs) distributed to Phumelela Secondary School



**Notification of proposed exhumation and reburial of human remains from BHP Billiton operation;**

Notification is hereby given in terms of section 36 of National Heritage Resources Act (Act 25 of 1999) and section 2(1) of the Graves and Dead Bodies Ordinance 1925 (Ordinance no 7 of 1925) of the intent of exhumation and reburial of graves that could be impacted upon by the project construction and related activities.

**Location of the activities**

- Boschmanskrans 22 IS Ptn of Remainder of Ptn 3
- Boschmanskrans 22 IS Ptn of Remainder of Ptn 4
- Welverdiend 23 IS Remainder of the farm

To ensure that you are identified as an interested and /or affected party, please submit your name and contact details and confirm your interest to the contact person by 30 September 2013.

**Contact details : Wonderful Mafu**

Tel : 013 690 2989  
 Fax : 013 690 2987  
 Cell : 082 856 7854  
 Email : wonderful1@live.co.za



**ADJUSTMENT BUDGET WITH THE REVISED SERVICE DELIVERY TARGETS 2012/2013 FINANCIAL YEAR**

Notice is hereby given in terms of Section 21A of the Municipal Systems Act that the Adjustment Budget with the revised service delivery targets was approved by Council per Resolution SC51/07/2013 on 25 July 31, 2013.

Copies of the Adjustment Budget and the Revised Service Delivery and Budget Implementation Plan for the Financial year 2012/2013, are available for public inspection at the Office of the Executive Director: Financial Services, Civic Centre, Middelburg and on Council's official website: [www.stewetshwete.m.gov.za](http://www.stewetshwete.m.gov.za).

WD FOUCHE  
 MUNICIPAL MANAGER



P.O. BOX 1107 MIDDELBURG  
 MPUMALANGA 1050  
 TEL: 013 282 9595  
 FAX: 013 282 0380  
 E-mail: [ntulit@stha.co.za](mailto:ntulit@stha.co.za)  
 Internet: <http://www.stha.co.za>

148 Cowan Null Street  
 Stand 406, Portion No: 2  
 MIDDELBURG  
 1050

**REQUEST FOR QUOTATIONS FOR SECURITY GUARDS AT HOPE CITY - 501 FAMILY UNITS, CHROMEVILLE - 179 FAMILY UNITS, 10 - BACHELOR UNITS AND 23 BUSINESS UNITS.**

Steve Tshwete Housing Association is a Section 21 Company (Nonprofit organization) established in 2000, with the main intention being the provision of integrated, well located and affordable accommodation of a suitable standard to residents of Steve Tshwete Local Municipality and surrounding areas through rental.

Steve Tshwete Housing Association is requesting quotations from various security companies with a good track record. Quotations should include grade of the security guard per shift. Briefing session will be held on the 08 August 2013 at 10 o'clock at Steve Tshwete Housing Association offices, 148 Cowan Null Street, Middelburg, 1050.

Interested companies should forward their quotations or proposal to: Hand delivery: 148 Cowan Null Street, Middelburg, 1050. Fax: 013 282 0380. Email: [ntulit@stha.co.za](mailto:ntulit@stha.co.za). For more enquiries please contact Ms Nobile Mkhutshwa at 013 282 9595.

**Closing date for application is 16 August 2013.** Should you not hear from us within 30 days after the closing date, assume that your application was unsuccessful.



**Isaziso sokukhishwa kwama thuna amadala eBhpbilliton Mine**

Sazisa wonke umuntu ohlala e Middelburg nezindawo ezakhelene nayo (Hendrina, Emalahleni, njalonzalo) ukuthi kuzokhishwa wonke amathuna amadala ase bhpbilliton Mine.

Lesi saziso senziwa ngokubambisana ne Section ye National Heritage Resource act (Act 25 of 1999) ne Section 2 (1) umthetho wango 1925 wama thuna kanye nezidumbu (ordinance no 7 of 1925) Mayelana nesifiso sokwemba amathuna nokungcwatshwa kwawo kabusha uma ngabe uyathinteka kulomsebenzi sicela usazise ngokukhulu ukushehsa.

**Indawo lapho kuzokhishwa khona amathuna amadala**

- Boschmanskrans 22 IS Ptn of Remainder of Ptn 3
- Boschmanskrans 22 IS Ptn of Remainder of Ptn 4
- Welverdiend 23 IS Remainder of the farm

Ukuze uqiniseke ukuthi yiso ngempela isihlobo sakho, nokuthi siyobekwa kuphi ngandlela efanale.

Sicela ufake igama lakho kanye nalapho ungatholakala khona, konke lokhu sikucela ngaphambi kokuba kufike umhla ka 30 September 2013.

Ningathintana : Wonderful Mafu

Tel : 013 690 2989  
 Fax : 013 690 2987  
 Cell : 082 856 7854  
[wonderful1@live.co.za](mailto:wonderful1@live.co.za)



**NOTICE OF WASTE LICENSE APPLICATION PROCESSES FOR THE**

**PROPOSED DEVELOPMENT OF A REFUSE TRANSFER STATION IN ROCKDALE**

Notice is hereby given in terms of Regulation 710, Category A, Activities 1, 7, 9 and 10 for the New Refuse Transfer Station of the National Environmental Management Waste Act (Act 50 of 2000) to carry out the following activity:

**PROJECT DETAILS:** The Steve Tshwete Local Municipality is proposing to undertake the following project:

**The Proposed Development of a New Waste Transfer Station in Rockdale.**

The Steve Tshwete Local Municipality (STLM), provides a weekly refuse service to households in the Rockdale, Nazareth, Hlatsemndi, and Middelburg East areas, however, there is still evidence of widespread illegal curb side dumping.

The proposed Refuse Transfer Station (RTS) will attempt to eliminate the illegal dumping in the area, as well as provide a centralised facility where source separation of recyclables and garden refuse can take place. The proposed Refuse Transfer Station will be located on Portion 6 of the Farm Rockdale No 442.25 of the N11.

**ENVIRONMENTAL ASSESSMENT PRACTITIONER:** Jeffares & Green (Pty) Ltd has been appointed by STLM as the Independent Environmental Assessment Practitioner to undertake the necessary processes to obtain a Waste License for the proposed new Rockdale RTS.

**RELEVANT CONTACT PERSON:**

Stuart Gowen-Jackson  
 Jeffares & Green (Pty) Ltd, P.O.Box 1109, SUNNINGHILL, 2157  
 Tel No: 011 007 0660  
 Fax No: 011 007 1607  
 e-mail: [stuart@jg.co.za](mailto:stuart@jg.co.za)

**OBTAIN MORE INFORMATION ON THE PROJECT:** A Background Information Document (BID) providing details on the proposed project, legislation and proposed processes to be followed can be obtained from the consultant detailed above.

**OPPORTUNITY TO PARTICIPATE:** Interested and Affected Parties (IAP's) are invited to provide written comments together with the relevant project reference number, their name, email address, and contact details to the contact person (indicated above) by no later than the 30<sup>th</sup> of August 2013. Written comments can be faxed, e-mailed, or could be posted to the consultant.

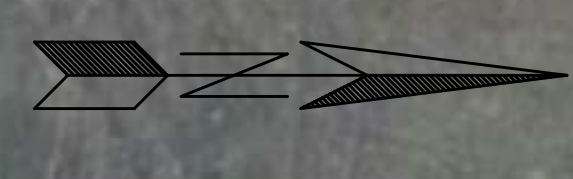
**REVIEW OF DRAFT AND FINAL REPORTS:** The Draft Basic Assessment Reports will be made available for Public Review and Commentary Authority Review for a 40 day review period. Registered IAP's will be notified in writing of the date during which these Reports will be made available for Public Review, as well as the venues and website where these Reports can be reviewed. Furthermore, the Ward Council of (s), will be notified of the Public Review period. Should substantial comment be received on the Draft Basic Assessment Report, the Final Basic Assessment Report will also be made available for a 21 day Public Review period, and the notified in and review procedure will be the same as above.





## **FACILITY ILLUSTRATION(S) APPENDIX C**

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



PROPOSED TRANSFER STATION

Rockdale

N4

N4

Transfer Station Boundary Points WGS84

Point	Latitude	Longitude
A	25°48'54.70"S	29°31'28.45"E
B	25°48'53.22"S	29°31'26.81"E
C	25°48'51.20"S	29°31'29.20"E
D	25°48'53.06"S	29°31'30.87"E

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No.	DATE	REVISION	CHECKED BY	DESIGNED BY
1	17/07/2013	PRELIMINARY DESIGN	T. BOOVENS	-



CONSULTANT

**Jeffares & Green (Pty) Ltd**  
ENGINEERING & ENVIRONMENTAL CONSULTANTS

P O Box 1109  
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E-Mail: jg@jg.co.za

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DESIGN APPROVED	
Consulting Engineer	BRCC
Date	Date

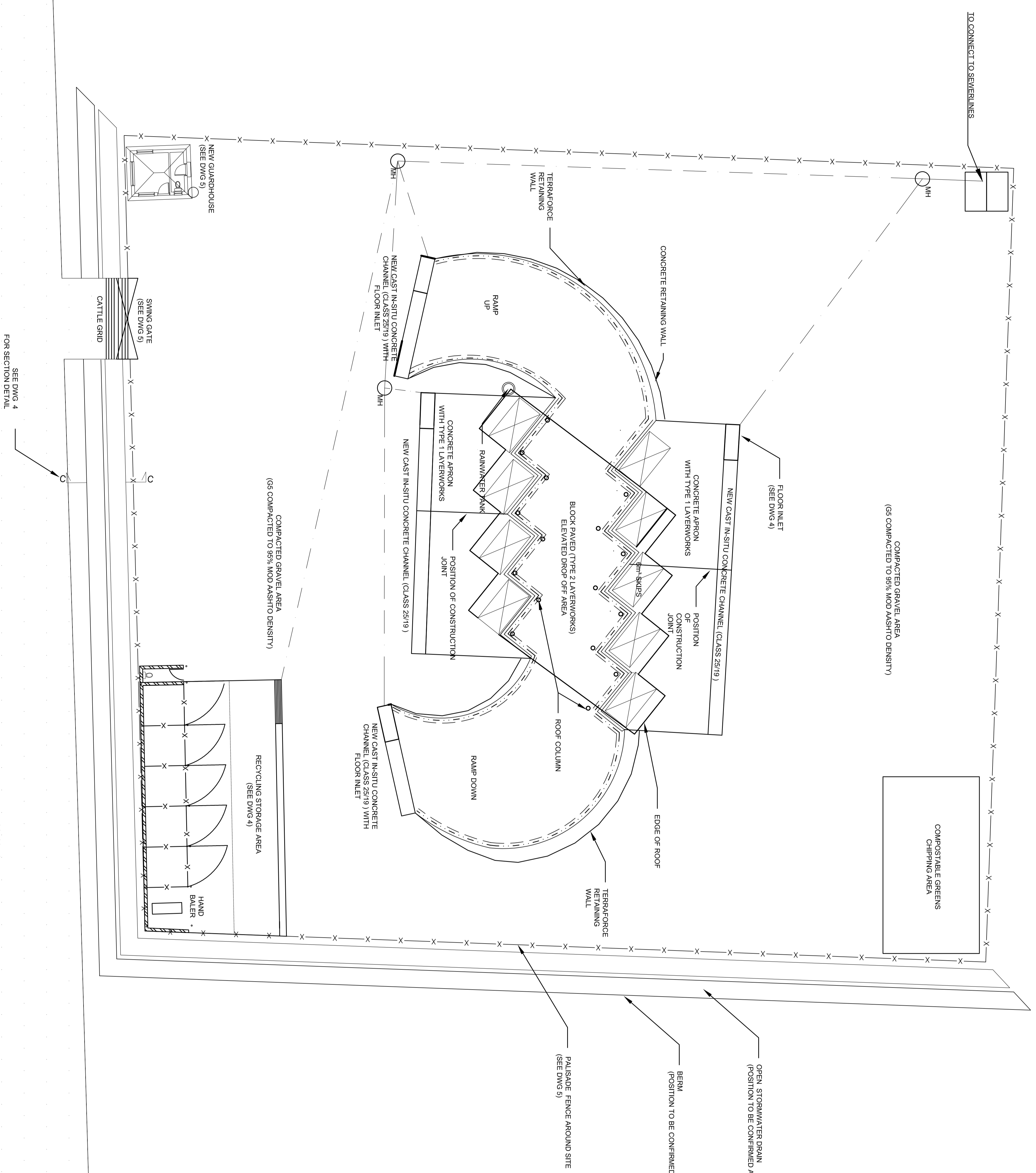
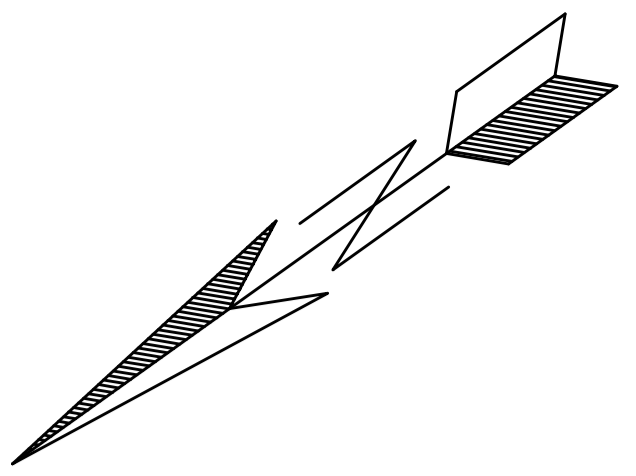
STEVE TSHWETE LOCAL MUNICIPALITY  
CONSTRUCTION OF THE ROCKDALE TRANSFER STATION

ROCKDALE STATION LOCALITY MAP

(Full signature)  
for Consulting Engineer  
PROJECT PLAN No. -

SHEET 1 OF 5  
SCALE  
NTS  
CONTRACT PLAN No. -

FOR APPLICATION PURPOSES



LEGEND	
	CONCRETE
	BLOCK PAVING
	GRAVEL
	PALISADE FENCE
	KERBING
	GUARDRAILS
	TIMBER POLES
	PIPELINES

- NOTES:**
1. BLOCK PAVING IS "TYPE 2" LAYERWORKS. REFER TO DWG 3
  2. REFER TO DWG 3 FOR TIMBER POST DETAIL.
  3. REFER TO DWG 3 AND DWG 4 FOR ALL SECTIONS.

ROCKDALE TRANSFER STATION SITE LAYOUT  
SCALE 1:150

No.	17/07/2013	PRELIMINARY DESIGN
DATE		

DESIGNED BY	-
CHECKED BY	-
DRAWN BY	T. BOOVENS
CHECKED BY	

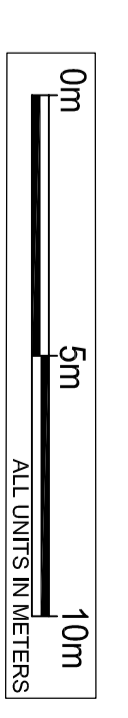


**Jeffares & Green (Pty) Ltd**  
ENGINEERING & ENVIRONMENTAL CONSULTANTS  
P O Box 1109  
Summinghill  
2157  
Tel: +27 11 807-0660  
Fax: +27 11 807-1607  
E-Mail: jg@jg.co.za

DESIGN APPROVED	DATE
Consulting Engineer	
DATE	

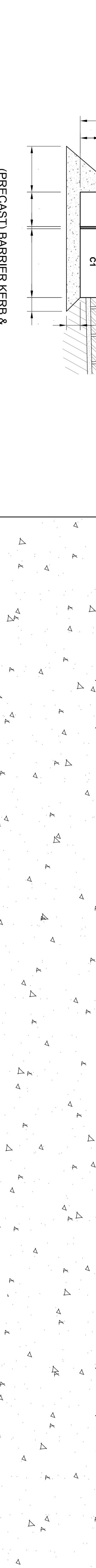
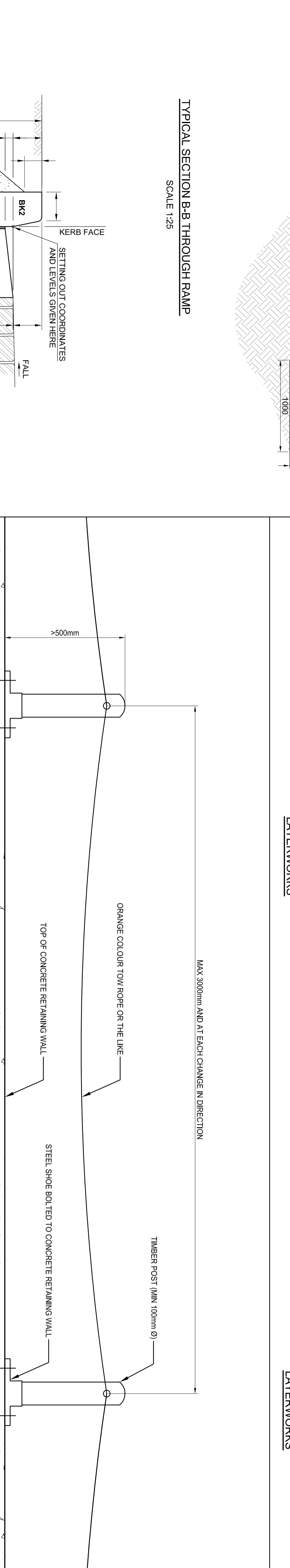
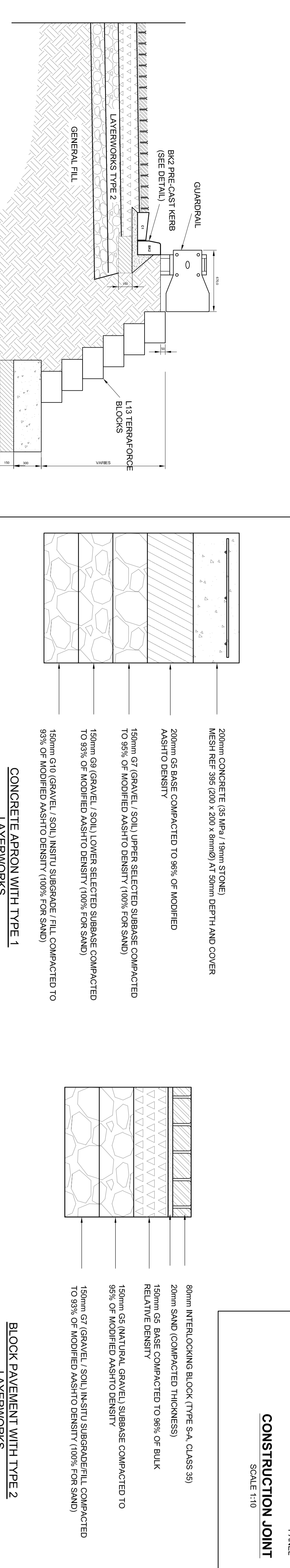
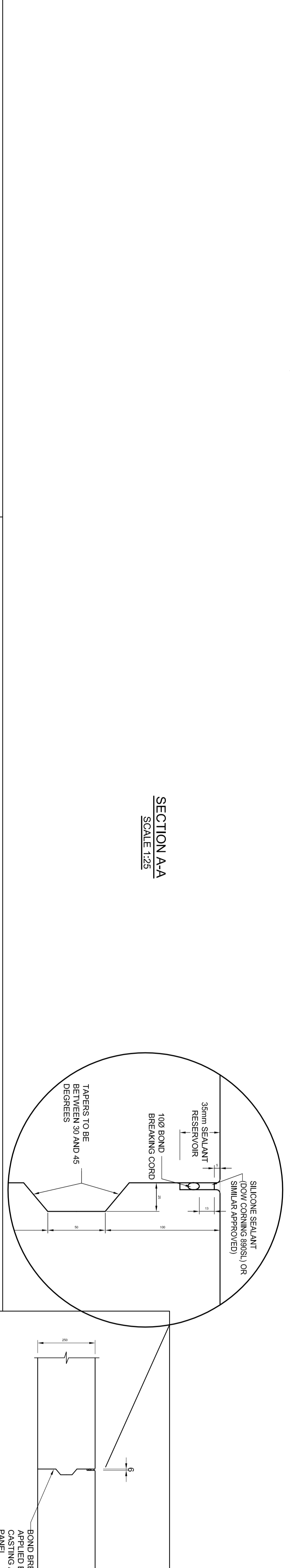
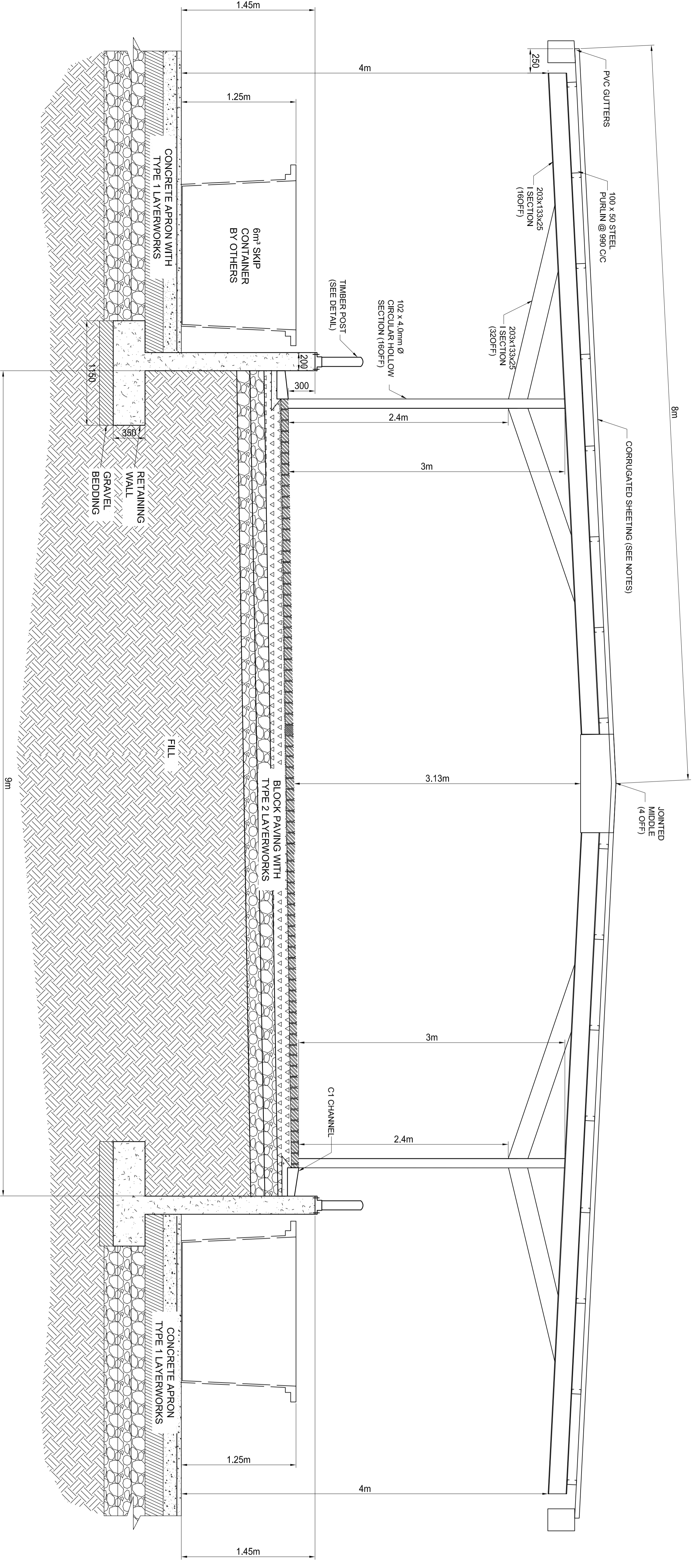
STEVE TSHWETE LOCAL MUNICIPALITY  
CONSTRUCTION OF THE ROCKDALE TRANSFER STATION  
ROCKDALE STATION SITE LAYOUT

(full signature)	SHEET 2 OF 5
for: Consulting Engineer	SCALE 1:150 (A0)
PROJECT PLAN No.	CONTRACT PLAN No.

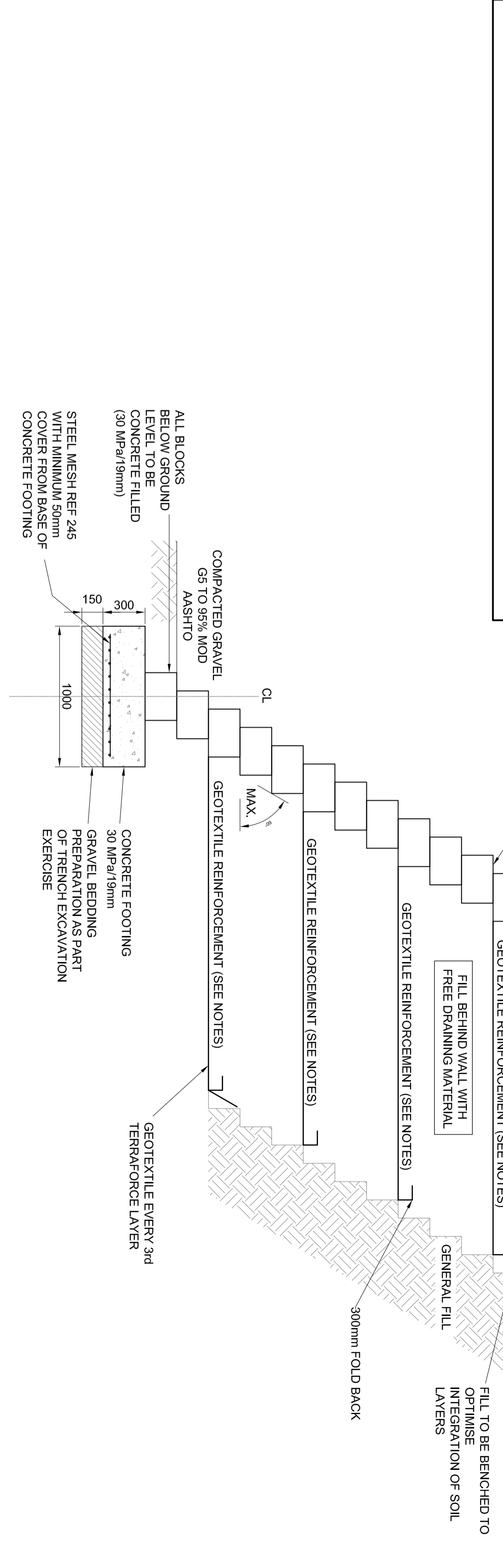


FOR APPLICATION PURPOSES

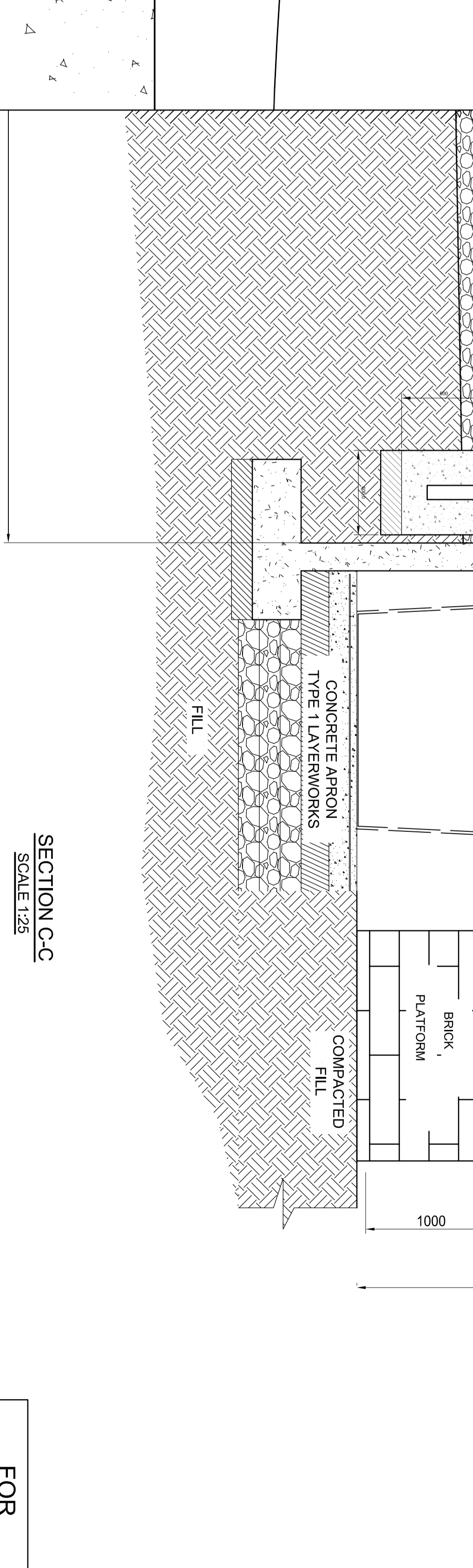
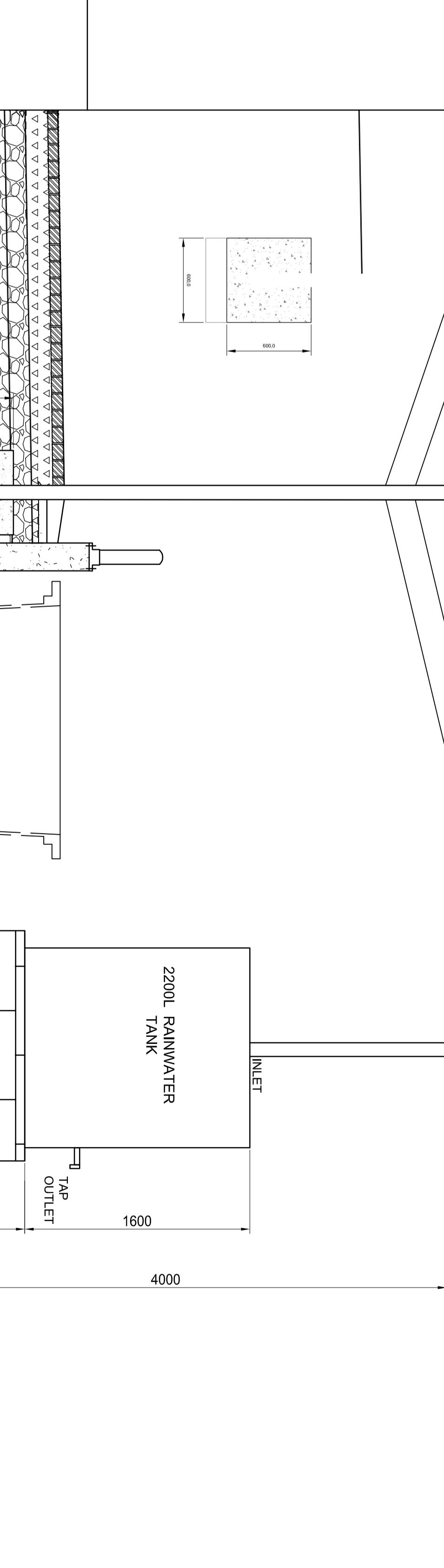
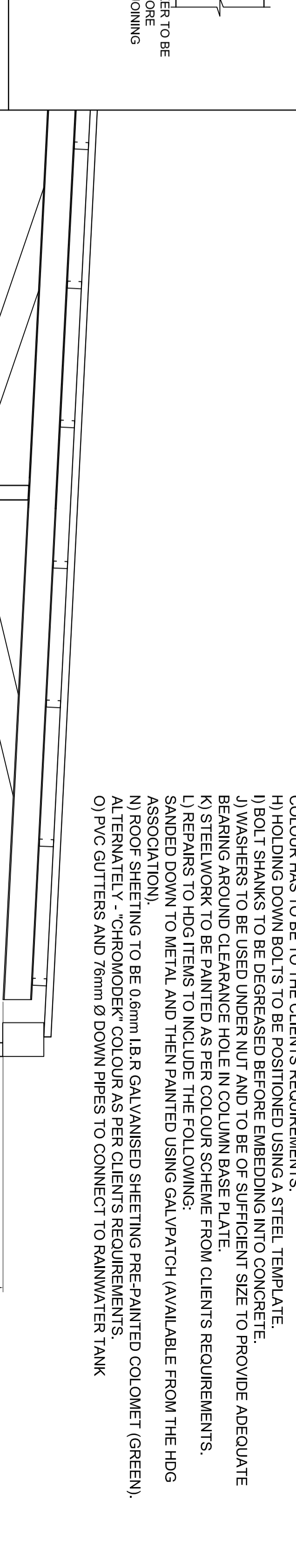




- NOTES:**
1. TERRAFORCE RETAINING WALL TO BE CONSTRUCTED TO 80° ALONG FULL LENGTH UP TO (NEAREST) TOP-OF-KERB LEVEL MINUS 150MM. BLOCKS TO BE INSTALLED TO AN ACCURACY OF ±3.
  2. 'X & Y' SETTING OUT COORDINATES ARE ALONG THE CENTRELINE OF FOOTING. THE 'Z' VALUE IS THE LEVEL ON TOP OF THE CONCRETE FOOTING (METERS ABOVE MEAN SEA LEVEL).
  3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PARTICULAR SPECIFICATIONS 'PRV AND RELEVANT SABS 1200 CLAUSES.
  4. GEOTEXTILE REINFORCEMENT TO BE GEOTEXTILE TYPE C, RETAINING WALL BLOCKS TO BE INSTALLED IN ACCORDANCE WITH TERRAFORCE SPECIFICATIONS OR SIMILAR APPROVED. 'TOL' REFERS TO THE LEVEL OF THE GROUND AFTER LEVELLING IS COMPLETED. THIS LEVEL WILL VARY ALONG THE LENGTH OF THE WALL (IN RELATION TO THE FOOTING).



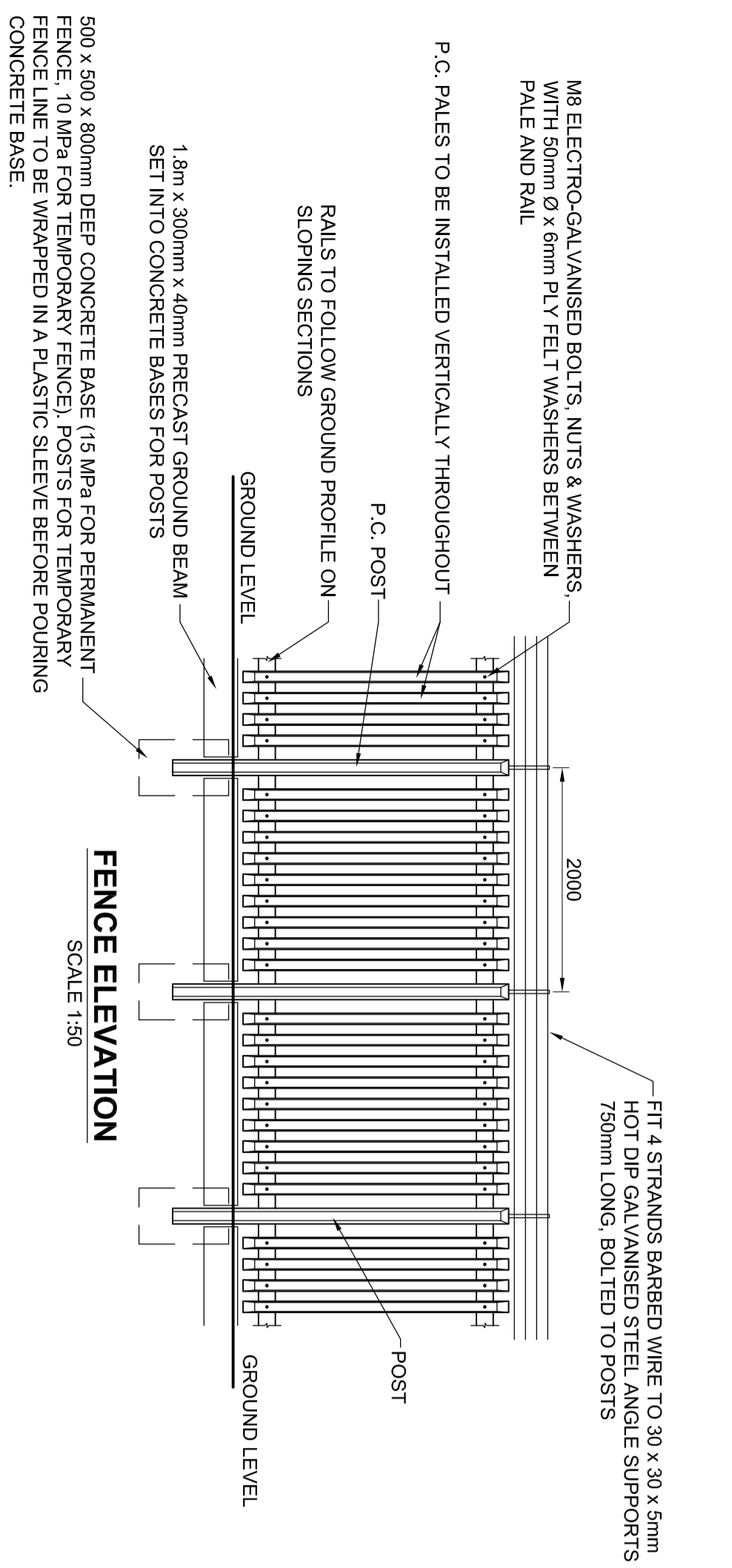
- RAINWATER TANK NOTE:**
1. A 750 LITER VERTICAL, 1000 WATER TANK TO BE INSTALLED (KHAKI BROWN)
  2. DIMENSIONS OF TANK
  3. DIAMETER 420MM HEIGHT 1600MM
  4. THE INSTALLATION AND OPERATIONS GUIDELINES PROVIDED BY THE TANK SUPPLIER ARE TO BE FOLLOWED.
  5. THE PVC GUTTER PIPES ARE TO BE CONNECTED TO THE TANK INLET
  6. TANK TO BE RAISED ON A 1000MM HIGH X 2010MM WIDE SQUARE FACE BRICK PLATFOM
  7. SOAKAWAY TO BE INSTALLED UNDER THE TANK ON TANK



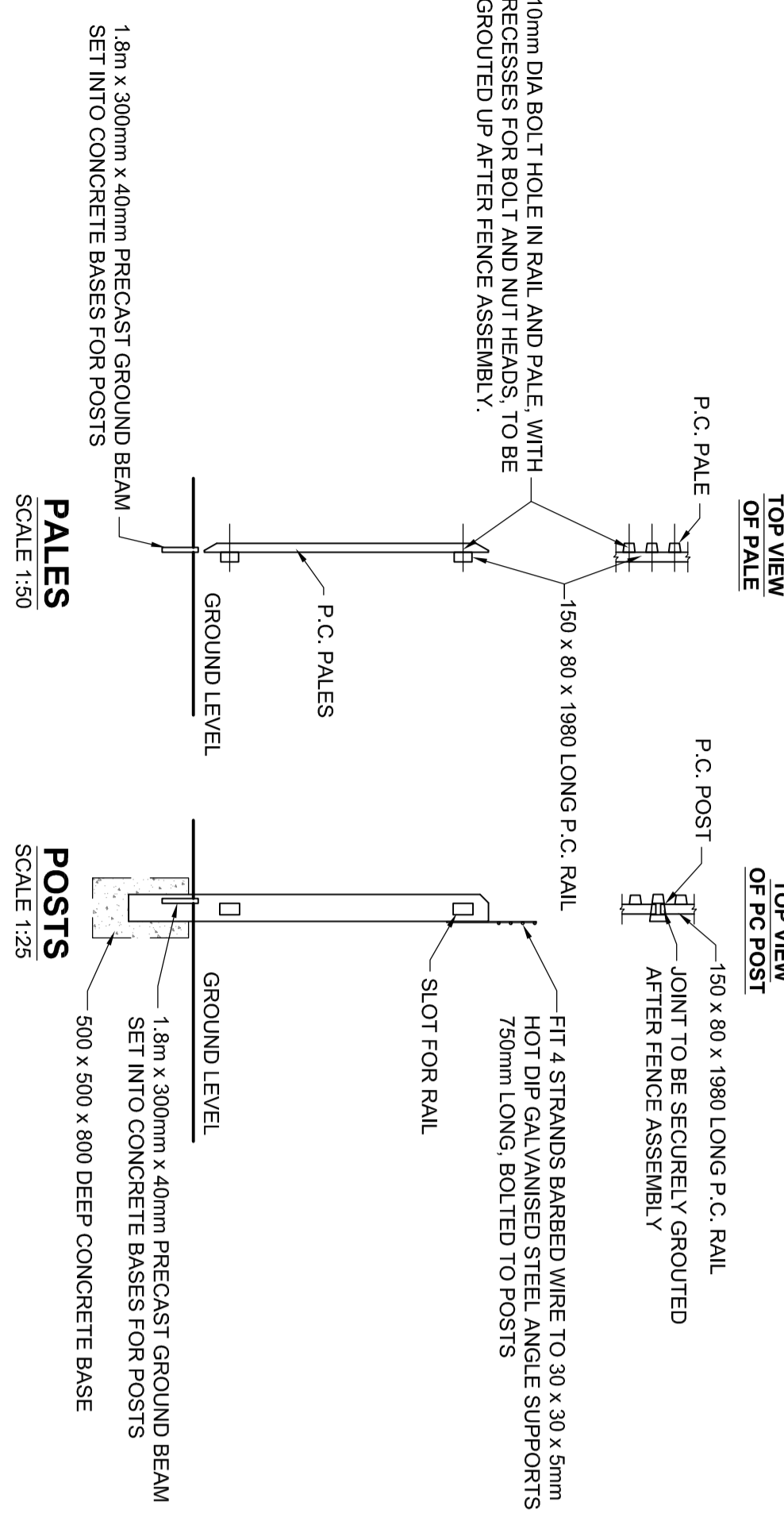
No.	DATE	PRELIMINARY DESIGN	DESIGNED BY	DESIGNED BY	DESIGNED BY
		REVISION	CHECKED BY	CHECKED BY	CHECKED BY
			DRAWN BY	DRAWN BY	DRAWN BY
			CHECKED BY	CHECKED BY	CHECKED BY
			STEVE TSHWETE LOCAL MUNICIPALITY	STEVE TSHWETE LOCAL MUNICIPALITY	STEVE TSHWETE LOCAL MUNICIPALITY
			CONSULTANT	CONSULTANT	CONSULTANT
			Jeffares & Green (Pty) Ltd	Jeffares & Green (Pty) Ltd	Jeffares & Green (Pty) Ltd
			ENGINEERING & ENVIRONMENTAL CONSULTANTS	ENGINEERING & ENVIRONMENTAL CONSULTANTS	ENGINEERING & ENVIRONMENTAL CONSULTANTS
			P O Box 1109	P O Box 1109	P O Box 1109
			Sunninghill	Sunninghill	Sunninghill
			2157	2157	2157
			Tel: +27 11 807-0880	Tel: +27 11 807-0880	Tel: +27 11 807-0880
			Fax: +27 11 807-1607	Fax: +27 11 807-1607	Fax: +27 11 807-1607
			E-Mail: jg@jg.co.za	E-Mail: jg@jg.co.za	E-Mail: jg@jg.co.za
			Copyright Reserved	Copyright Reserved	Copyright Reserved
			DESIGN APPROVED	DESIGN APPROVED	DESIGN APPROVED
			Consulting Engineer	Consulting Engineer	Consulting Engineer
			BPCC	BPCC	BPCC
			Date	Date	Date
			Date	Date	Date

STEVE TSHWETE LOCAL MUNICIPALITY	CONSTRUCTION OF THE ROCKDALE TRANSFER STATION	FOR APPLICATION PURPOSES
ROCKDALE STATION STRUCTURAL DETAILS	PROJECT PLAN No.	CONTRACT PLAN No.
	SCALE	SHEET 3 OF 5
	AS SHOWN	





DETAIL OF PRECAST CONCRETE PALSADE FENCE  
SCALE 1:50



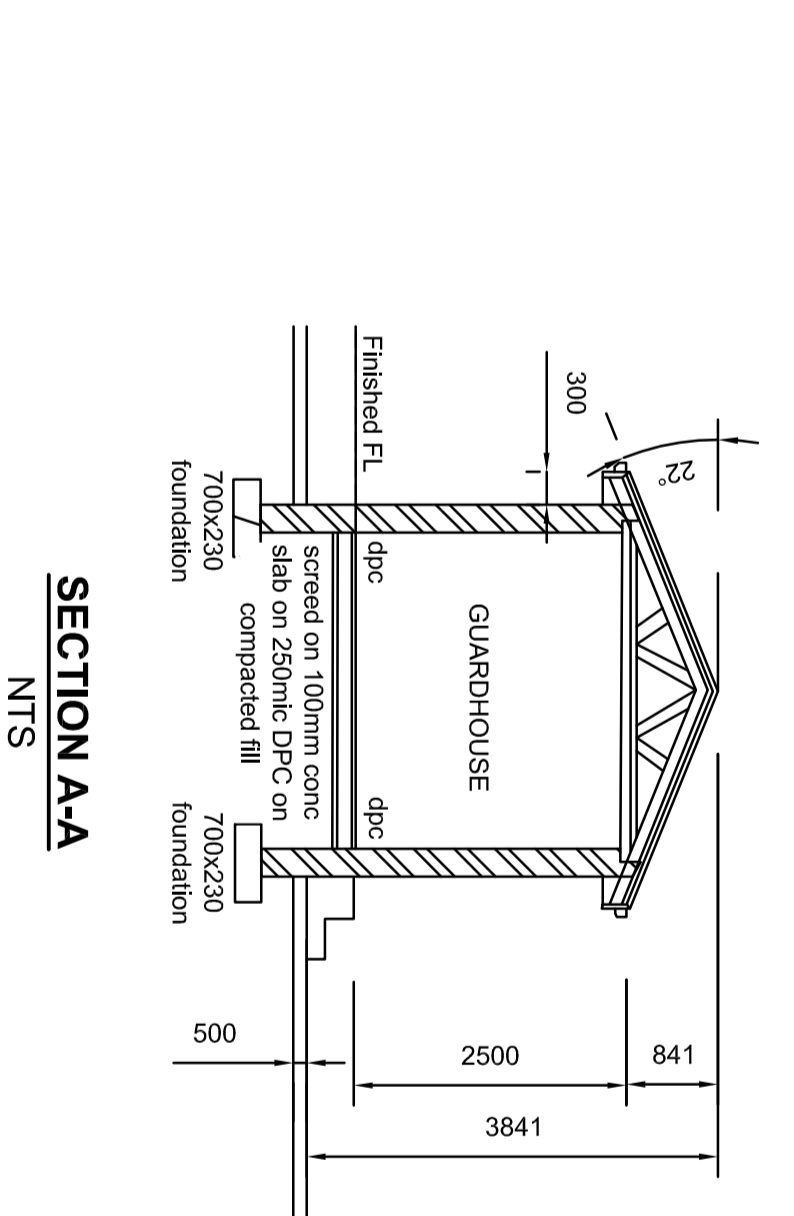
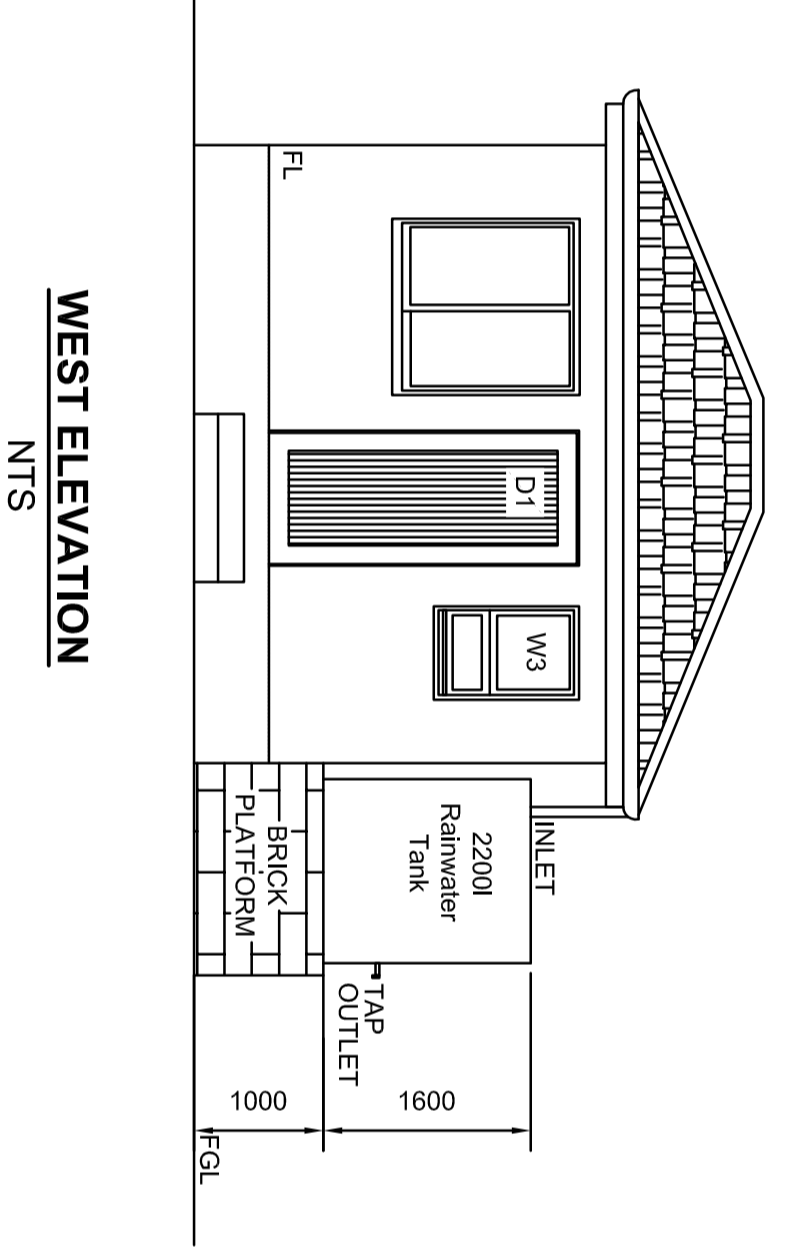
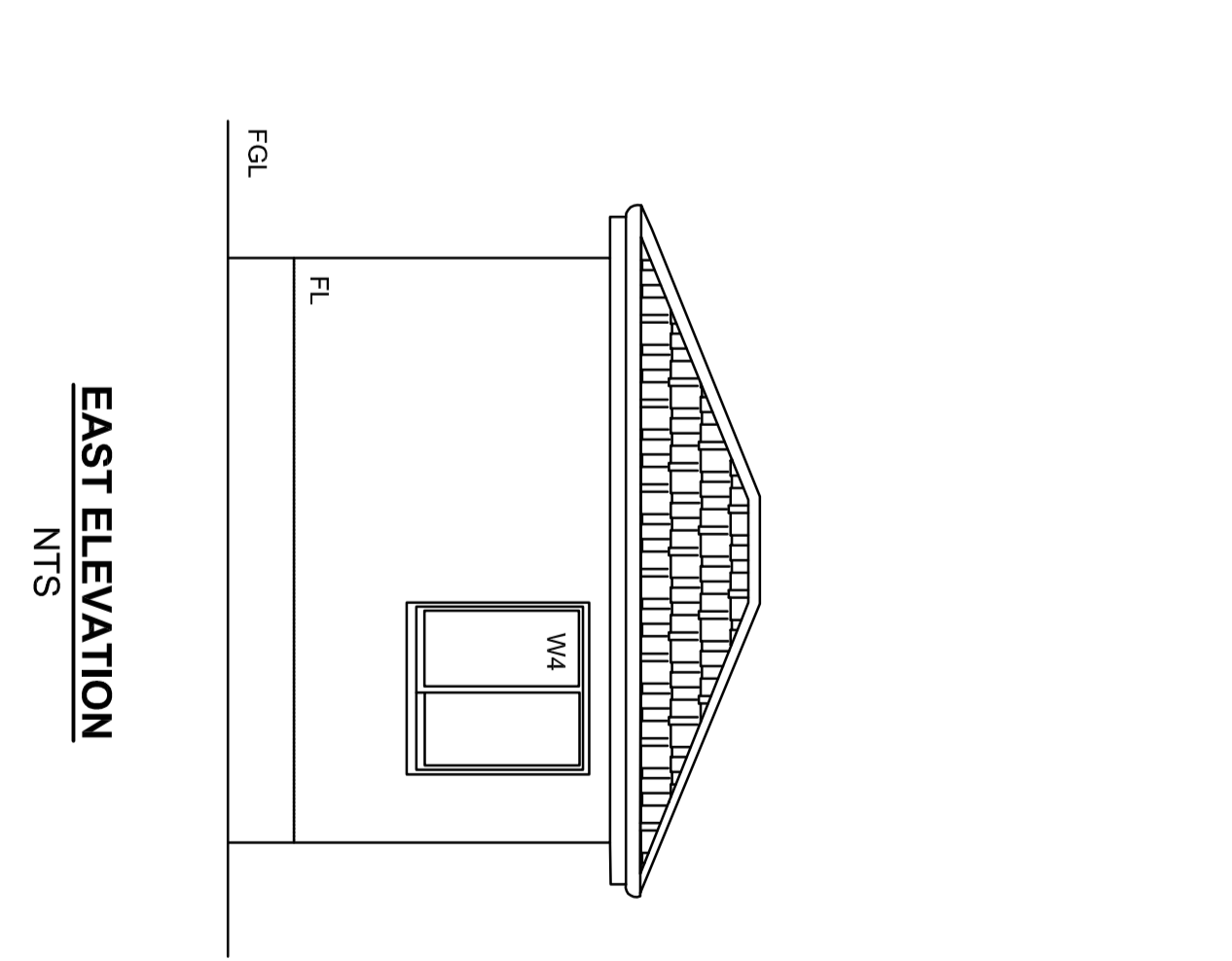
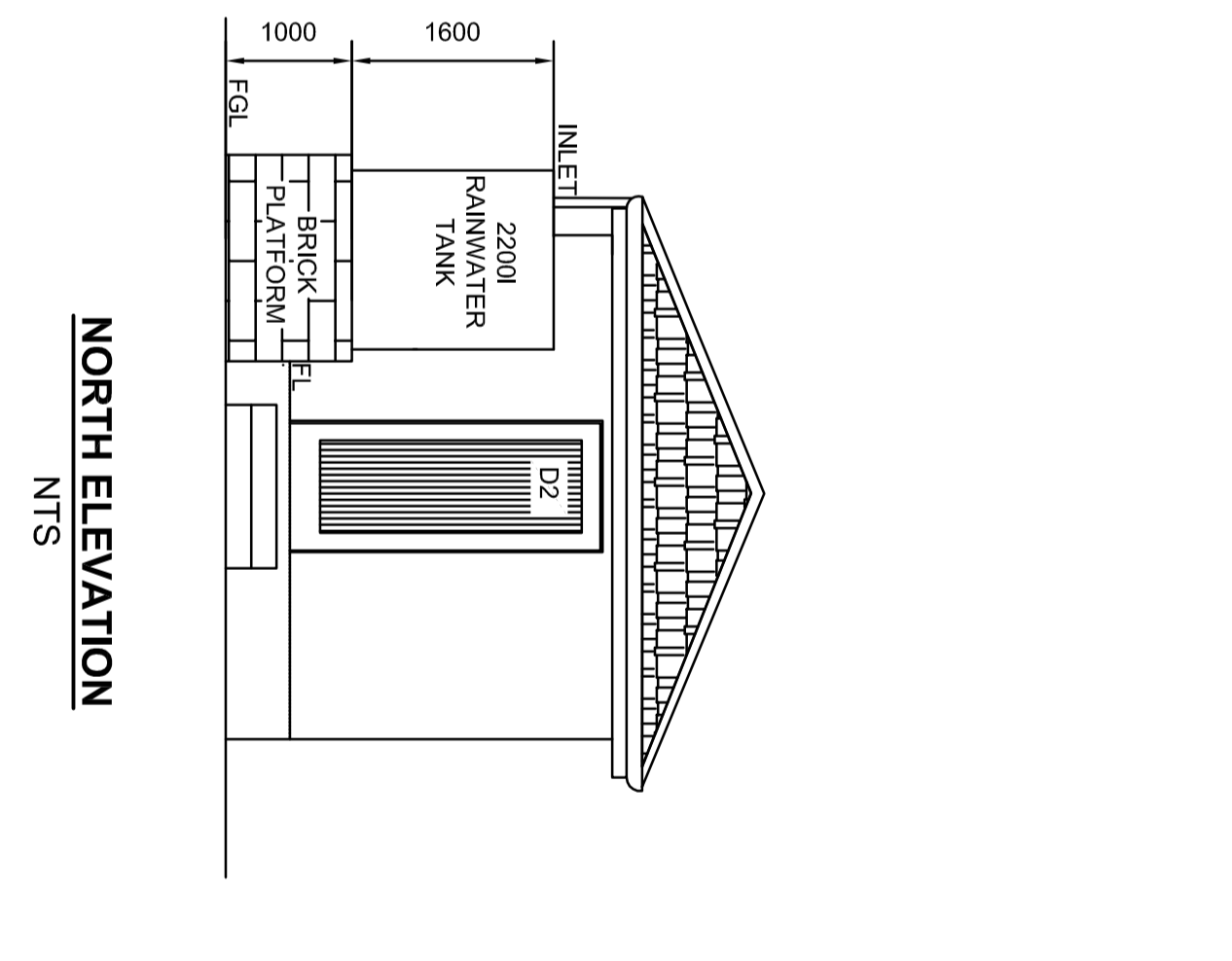
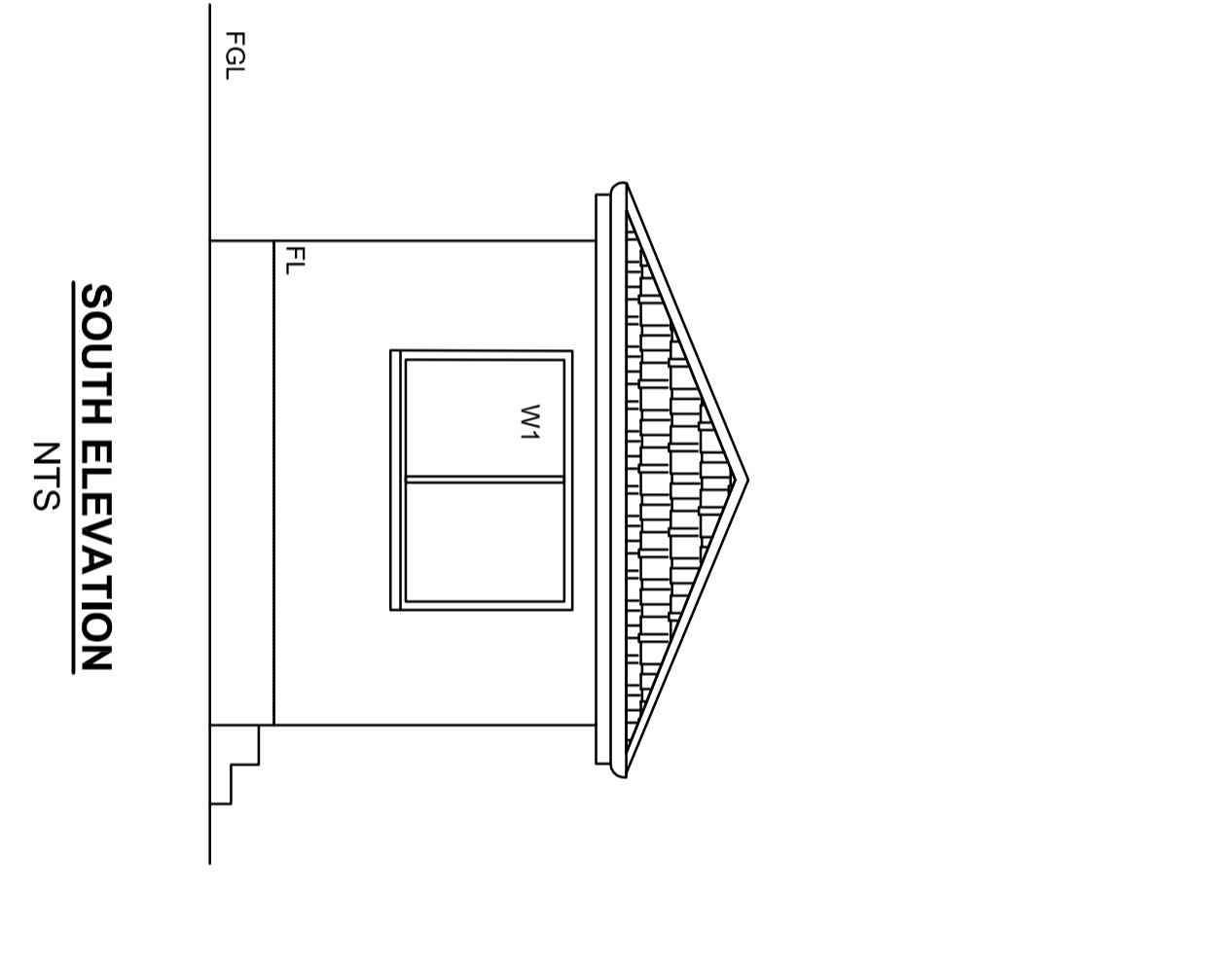
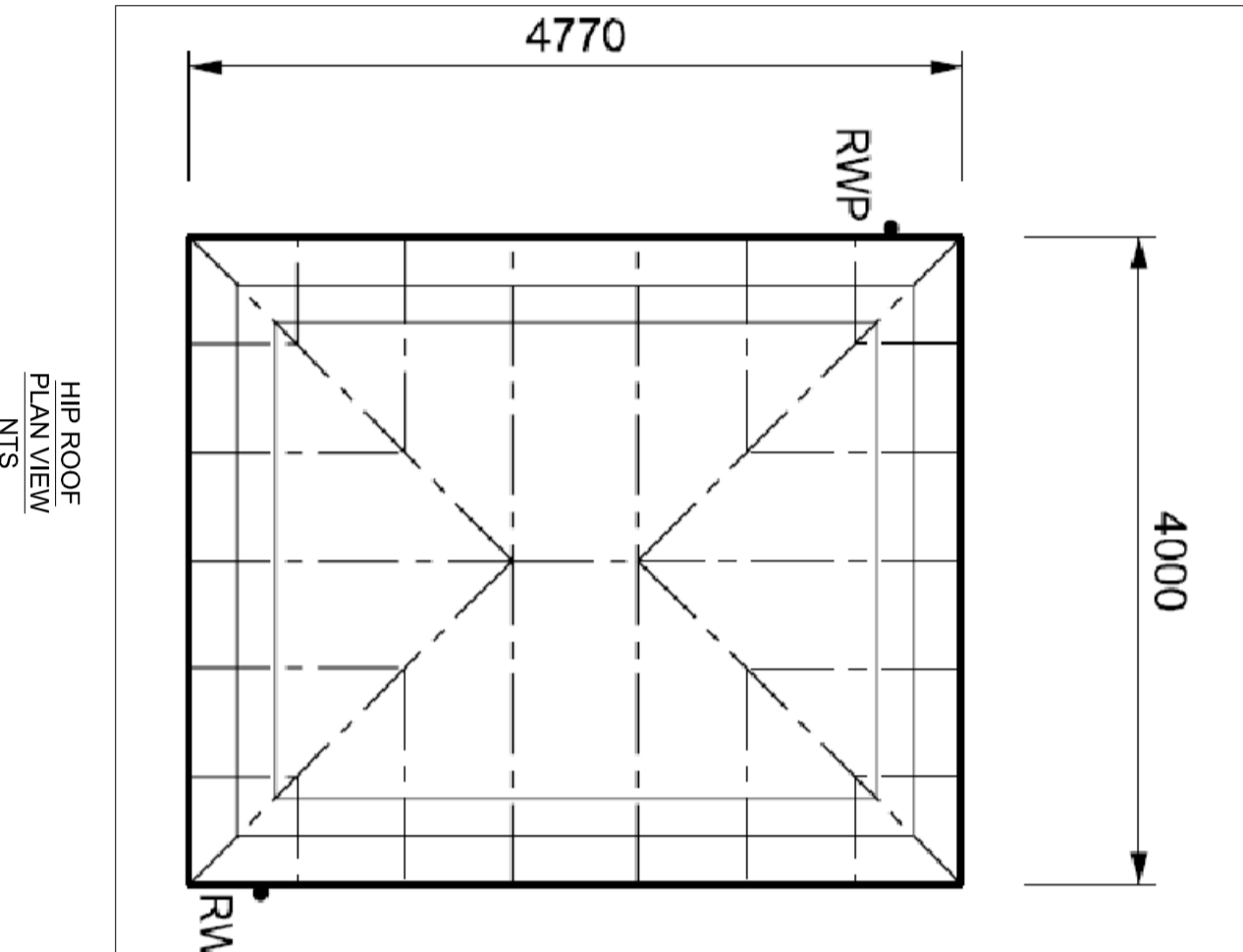
**ROOF TRUSS TO MANUFACTURERS ENGINEERS DESIGN & SPECIFICATIONS**

**BUILDING ROOF:**  
To be agreed with Employer prior to ordering. Where concrete roof ties @ 22 degree pitch rod underlay on 100x80mm precast concrete roof trusses maximum 700mm c/c to truss Manufacturer's specification and details. Roof trusses to rest on 114x30mm wall plates and secured with 30x12mm galvanized MS hexagon nuts and 30mm conical washers @ maximum 100mm c/c. 300mm overhang with that eaves.

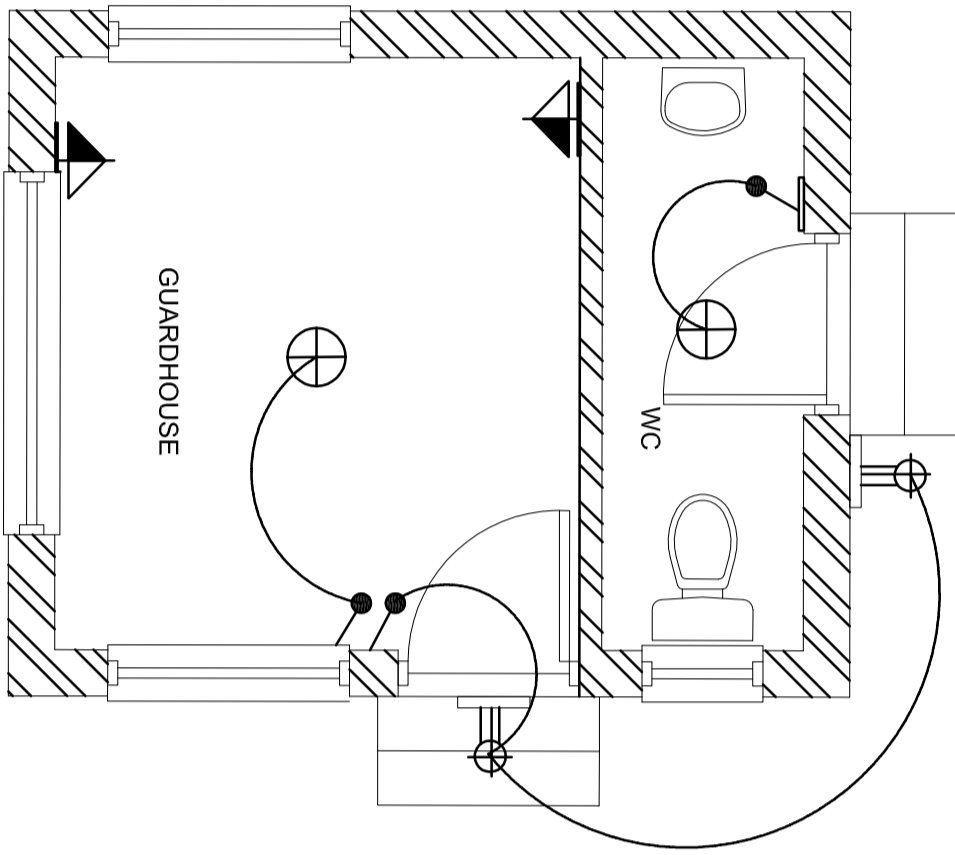
**ROOF TRUSS DESIGN:**  
To be Engineer designed with girders/rafter trusses by Maker or other approved. All structural timber to be treated, 110x30mm 45 diagonally fixed truss bracing. All timber Grade E. Engineer to check and verify the building dimensions on site prior to manufacturing and commencing erection. All works to be in accordance with the National Building Regulations, "City of Cape Town" and the Local Council Administration.

**Miscellaneous details:**

- 1. Underlay S.A.B.S.
- 2. Timber fascia - 33x220
- 3. Valley boards - 23x152
- 4. PVC drain waterbanding 450
- 5. PVC Gutter & 75mm dia downpipes



**GUARDHOUSE LAYOUT AND DETAILS**



**ELECTRICAL LAYOUT**  
NTS

**ALL ELECTRICAL POINTS TO BE CONSTRUCTED BY QUALIFIED ELECTRICIAN.**

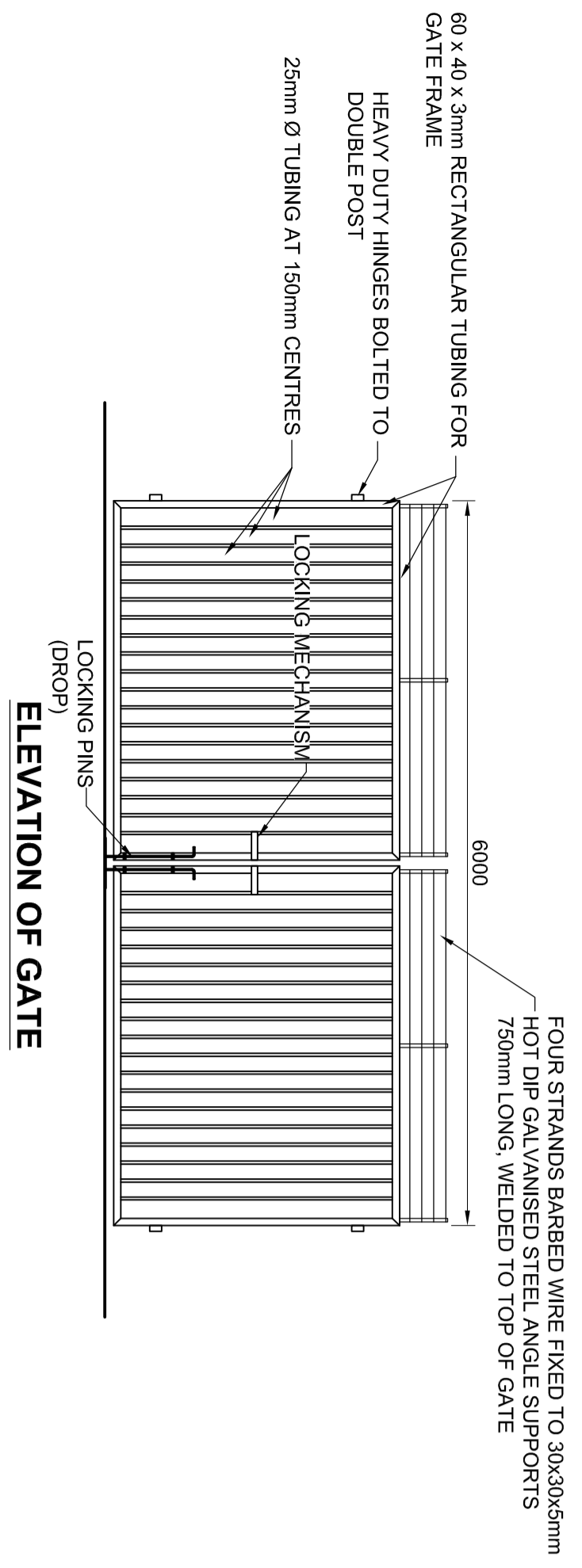
**ELECTRICAL LEGEND**

- Wall light
- Double plug
- Light switch
- Ceiling light

**NOTES:**  
1. The positions of all electrical points and plugs to be verified and confirmed by Manager with contractor prior to the commencement of any site works.  
2. Reposition existing light points and plugs where necessary.  
3. Electrical Certificate to be provided on completion.



SWING GATE DETAIL  
SCALE 1:50



ELEVATION OF GATE

**FINISHING SCHEDULE**

<b>FLOORS:</b>	- Ceramic tiles laid square to walls.
<b>SKIRTING:</b>	- 75x75mm Meranti or Pine skirting to plastered walls.
<b>CORNICE:</b>	- Skimmed cornice to all rooms.
<b>WINDOW SILLS:</b>	- Internals - plastered & painted.
<b>PAINTING:</b>	- Walls - Plaster Primer + 2 coats Acrylic Copolymer (Wash & wear) paint. - Ceilings - 2 Coats white Acrylic PVA. - Skirtings - Sanding Sealer + 2 coats Matt Polyurethane varnish.

**FIRE EQUIPMENT**

F.H.R	30 METRE FIRE HOSE REEL, CENTERED 1750 A.F.F.L.
D.C.P	DRY CHEMICAL POWDER PORTABLE MOUNTED BELOW FIRE HOSE REEL
B.G	BREAK GLASS UNIT

**FIRE EQUIPMENT:**  
Fire extinguishers to comply with SABS 0400. All fire equipment to be installed in compliance with SABS 0105. Signage must be provided to comply with Local By Laws. Fire extinguishers to be wall mounted in positions as shown on plan at a rate of 1 per 100m and must be clearly signposted. 30m hose reel wall mounted in positions as per plan.

**DOOR SCHEDULE**

L1nto	2100	613
<b>TYPE</b>	D1	
<b>FRAME</b>	60x70mm Solid wood frame with sill	
<b>FINISH</b>	2 coats varnish	
<b>DOOR</b>	Vertical slated Meranti door	
<b>HITINGS</b>	Brass hinges Stainless Steel lever handle to opening section with key locking system	
<b>N. REQD</b>	1 0' OFF	

**WINDOW SCHEDULE**

L1nto	1800	1200	600
<b>TYPE</b>	W1	W2, W4	W3
<b>FRAME</b>	Anodized aluminium	Anodized aluminium	Anodized aluminium
<b>GLASS</b>	6mm Tinted safety glass	6mm Tinted safety glass	4mm opaque glass
<b>HITINGS</b>	Nil	Purpose-made locking system	Friction stays and casement handles to opening sections
<b>B. BARS</b>	Nil	Nil	Nil
<b>N. REQD</b>	1 0' OFF	2 0' OFF	1 0' OFF
<b>BINDS</b>	Vertical binds	Vertical binds	Nil

**SPECIFICATIONS:**

**FOUNDATIONS AND FLOORING:**  
270mm Cavity walls, Facebrick exterior brickwork and R.O.K. Internal brickwork to S.A.B.S. standard. Walls to be built on strip foundations, cavity filled with concrete on 700x230 footings. 25mm Screed on 100mm concrete surface bed on DPM on well compacted fill.

**EXTERNAL WALLS:**  
270mm Cavity walls, Facebrick exterior brickwork (to match existing) and R.O.K. Internal brickwork to S.A.B.S. Standard. Top 5 courses to be built solid with brickforce to each course. Cavity to be filled with concrete below D.P.C. at surface bed. Weepholes at every 4th perpend. Precast concrete lintols and 4 courses brickwork with brickforce to all openings to a max. of 3m laid to manufacturers specifications.

**INTERNAL WALLS:**  
110mm Brick structural and partition walls to be plastered and painted. To be Engineer designed.

**CEILINGING:**  
Skimmed ceilings on 6.4mm thick plasterboard on 38x38mm battenbracing @ max. 450mm centres. All joints to be sealed.

**LINTOLS:**  
AP's precast lintols to be built over all openings with a min. of 4 courses brickwork above lintol with minimum anchoring of 200mm at either end of lintol.

**VENTILATION / GLAZING:**  
All aluminium windows to be supplied by "Four Seasons" catalogue or other reputable manufacturer. All glazing to comply with N.B.R. Timber exterior and internal doors to "Swartland" catalogue. Light areas to be min. 10% of floor area. Ventilation to be min. 5% of floor area. Glazing to windows in excess of 1m<sup>2</sup> or less than 300mm from FFL to be safety glazed in accordance with the NBR part N of S.A.B.S. 0400 1990. Artificial lighting and ventilation to comply with Part 0 of SABS 0400.

**GENERAL:**

- All dimensions and levels to be checked and verified on site, by the contractor prior to commencing works.
- Written dimensions to be used on preference to scaling drawings.
- All discrepancies to be agreed with the Engineer prior to commencing works.
- All floor levels shown as finished floor levels.
- All building work to comply to the National Building Regulations and Building Standards Act of 1977 and amendments thereof.
- All levels on this drawing are local and not in relation to mean sea level. ELECTRICAL.

**PLUMBING:**

- Contractor to adequately protect drain pipe from bulking head.
- Garbage pipes to pass above concrete footings.
- Provide sleeves where drain runs through brick wall.
- Provide stub stacks to w.c.s.
- Provide min 50mm vent to highest point of run
- Ceiling and joints to be provided to all bends and junctions in waste pipes. Bends and junctions in soil pipes to have easily accessible inspection eyes clearly marked at ground level.
- 40mm waste pipes from basins.
- 50mm waste pipes from showers.
- All waste pipes on a one pipe system to be fitted with anti-vac bottle traps. Rodding eyes to be provided at changes in direction of drain exceeding 45 degrees and at max. of 25m along length of drain.

**UNDERGROUND STORAGE TANK:**  
- A 12000 liter (2 adjoined 6000l tanks) underground tank to be installed  
- Tanks to be Jobo 6000l conservancy tank or similar or better approved.  
- Dimensions of tank Width 1899 Height 1900 (outer)  
- Fill lid with concrete  
- The installation and operations guidelines provided by the tank supplier are to be followed. These conditions must be read in conjunction with the Code of Practice for the Application of the National Building Regulations, SABS 0400-1990.

**RAINWATER TANK:**  
- A 2200 LITER VERTICAL JOJO TANK TO BE INSTALLED (KHAKI BROWN)  
- DIMENSIONS OF TANK DIAMETER 1420MM HEIGHT 1600MM  
- THE INSTALLATION AND OPERATIONS GUIDELINES PROVIDED BY THE TANK SUPPLIER ARE TO BE FOLLOWED.  
- THE PVC GUTTER PIPES ARE TO BE CONNECTED TO THE TANK INLET  
- TANK TO BE RAISED ON A 1000MM HIGH X 1620MM WIDE SQUARE FACE BRICK PLATFORM  
- STANDARD LOCKABLE GARDEN TAP TO BE INSTALLED ON TANK.  
- ALL BUILDING WORKS IS TO BE DONE IN COMPLIANCE WITH SANS 1200 AND SANS 10400

FOR APPLICATION PURPOSES

No.	1	DATE	12/2/2013	REVISION	PRELIMINARY DESIGN	DESIGNED BY	CHKD BY	DATE



STEVE TSHWETE LOCAL MUNICIPALITY

**CONSULTANT**  
Jefares & Green  
ENGINEERING & ENVIRONMENTAL CONSULTANTS  
P O Box 1109 Sunninghill 2157  
Tel: +27 11 807-0860 Fax: +27 11 807-1607 E-Mail: jg@jg.co.za

**DESIGN APPROVED**

Consulting Engineer	
Date	

**STEVE TSHWETE LOCAL MUNICIPALITY**  
CONSTRUCTION OF THE ROCKDALE TRANSFER STATION  
**GUARDHOUSE LAYOUT & DETAILS**  
FENCE AND GATE DETAIL

(Full signature)		SHEET 5 OF 5
for Consulting Engineer		SCALE AS SHOWN
PROJECT PLAN No.		CONTRACT PLAN No.



# SPECIALIST REPORTS APPENDIX D



Project Applicant: **Jeffares & Green (Pty) Ltd**

Project: **Refuse Transfer Station at Rockdale for  
the Steve Tshwete Local Municipality**

Report Name: **HIGH-LEVEL ECOLOGICAL SCREENING REPORT**

Report Status: **(Final)**

Revision No: 01

Report Date: 5 August 2013

Report Number: S0581/EC02

Prepared by: Matthew Hemming

Reviewed by: Matthew Hemming

For Submission to:

Reference No: 3354

**HEAD OFFICE**

**Johannesburg:** Tel: 011 807 8225, Fax: 011 807 8226  
PO Box 1822, Rivonia, 2128

**REGIONAL OFFICES**

**Eastern Cape:** Tel: 082 415 0289 / Fax: 086 562 0165  
Suite 71, P Bag X13130, Humewood,  
Port Elizabeth, Nelson Mandela Bay, 6013

**KwaZulu Natal:** Tel/Fax: 033 343 4642  
15 Quarry Road, Hilton, 3201

**Synergistics**  
Environmental Services

# PROJECT INFORMATION SHEET

## PROJECT:

**Refuse Transfer Station at Rockdale for the Steve Tshwete Local Municipality**

## REPORT DETAILS:

Report Name: **High-level Ecological Screening Report**  
Report Number: S0779/ESR  
Report Status: Final  
Revision No: 01  
Date: 5 August 2013

## CLIENT:

### **Jeffares & Green (Pty) Ltd**

Contact Person: Mr S Gower-Jackson  
Designation:  
Tel: 011 807 0660  
Fax: 011 807 1607  
Email: gower-jacksons@jgi.co.za  
Address: 37 Sunninghill Office Park, Peltier Drive, Sunninghill

## INDEPENDENT ENVIRONMENTAL CONSULTANT:

### **Synergistics Environmental Services (Pty) Ltd (*Synergistics*)**

Contact Person: Matthew Hemming  
Designation: Environmental Assessment Practitioner (EAP)  
Tel: 011 326 4158 / 082 940 8274  
Fax: 011 326 4118  
Email: mhemming@slrconsulting.com  
Postal Address: PO Box 68821, Bryanston, Johannesburg, 2021  
EAP: Matthew Hemming  
EAP Expertise: MSc (Conservation Biology), UCT, 2001.  
7+ years' environmental management and assessment experience, specifically in the mining and waste management sectors.

**JEFFARES & GREEN (PTY) LTD**  
**Refuse Transfer Station at Rockdale for the**  
**Steve Tshwete Local Municipality**  
**High-level Ecological Screening Report**  
**(Final)**

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SO779/ESR01

5 August 2013

**JEFFARES & GREEN (PTY) LTD**  
**Refuse Transfer Station at Rockdale for the**  
**Steve Tshwete Local Municipality**  
**High-level Ecological Screening Report**  
**(Final)**

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## 1. Introduction

Jeffares & Green (Pty) Ltd are assisting the Steve Tshwete Local Municipality with the implementation of a waste management strategy for areas of Rockdale, Nazareth, Hlalamnandi and Middelburg Ext. Jeffares & Green has proposed that a refuse transfer station (RTS) be developed at Rockdale.

One of the potential issues is the risk posed by RTS to the ecology and biodiversity of the site and surrounds. A high-level ecological assessment of the site is required to identify the ecological value of the site, to consider the risks to biodiversity of the proposed development and to identify the requirements for further in-depth ecological studies, if any.

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### 1.1 Terms of Reference

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Jeffares & Green appointed Synergistics Environmental Services (Pty) Ltd to undertake a high-level ecological screening of the newly proposed site for the RTS at Rockdale.

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## 2. Study Approach and Methodology

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### 2.1 Study Objectives

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The specific objectives for the study were to:

- Provide a high-level assessment of the current ecological status of the site, the adjacent connected habitat and areas that could be affected by the development.
- Determine if there are any known ecological or biodiversity resources which may be affected by the development; and
- Provide recommendations on the need for any further inputs regarding the ecology and biodiversity at the site.

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## 2.2 Study Area

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The proposed Rockdale Refuse Transfer Station site is located at 25°48'53.36"S; 29°31'28.64"E. The available site is approximately 65 m by 80 m in extent. The study area comprised the proposed site at Rockdale and the area of land within 100 m of the site boundary.

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## 2.3 Methodology

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The main focus of the study was to identify the presence or absence of species, habitat or areas that are protected or assigned conservation status through local, provincial or National legislation or regulation. Synergistics undertook the study through desktop research and fieldwork.

### 2.3.1 Desktop Review

Synergistics reviewed documented ecological and biodiversity information from the following sources:

- Vegetation of South Africa by Mucina and Rutherford (2006);
- Protected area, threatened ecosystems, wetland, watercourse databases held by SANBI; and
- Mpumalanga Biodiversity and Conservation Plan by Mpumalanga Tourism & Parks agency (2006).

### 2.3.2 Site Visit

Synergistics undertook a site visit to the site for the Rockdale refuse transfer station. The site and the immediate surrounds were walked in order to inspect the general ecological status of the site and to search for the presence of important and protected species. The site visit was undertaken on 1 August 2013.

*Note that August is not a good time for identification of floral species in Highveld grasslands. Such studies should ideally be undertaken in the summer months. However, the timeframes for the basic assessment do not allow for this. The ecological information presented here has limitations as a result.*

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## **3. Brief Project Description**

The following section presents a brief description of the current status and proposed development of the site, as understood by Synergistics.

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### **3.1 Proposed Rockdale Refuse Transfer Station**

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Jeffares & Green have proposed the development of a refuse transfer station at Rockdale in order to improve waste management and alleviate the illegal curb-side dumping that occurs in the areas of Rockdale, Nazareth, Hlalamnandi and Middelburg Ext.

The facility will provide a central location where the community can dispose of household waste. The facility will enable the separation of recyclables and garden refuse from the waste stream. Recyclables will be sorted and baled for sale while the gardens green will be chipped and used to produce compost. Residual waste will be collected from the RTS by the municipality for disposal at the municipal landfill site.

The refuse transfer station will be located on the outskirts of Rockdale, to the north east side of current and proposed residential areas. The proposed site is currently vacant and undeveloped land. The property has no surface infrastructure, although there is a buried sewer line at the eastern edge of the site. Community livestock pens are located at the eastern boundary.

---

## 4. Ecological and Biodiversity Status

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### 4.1 Introduction

---

The proposed site for the refuse transfer station is situated on an undeveloped piece of land just outside the eastern boundary of Rockdale. Although the site has no formal surface infrastructure a recently installed sewer pipeline does traverse the eastern extent of the site. The area is well used by the local community for livestock yards and pens as well as vegetable gardening. Uncontrolled waste dumping and burning is widespread and soil material is also borrowed. The site is criss-crossed with footpaths and some vehicle tracks. A small ephemeral watercourse lies ~ 140 m to the east of the site. The current residential areas of Rockdale are located 150 m to the south and west, although new suburbs are being developed immediately south of the site.

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### 4.2 Vegetation

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The natural vegetation of the site and surrounds do not appear to have been transformed in recent times (with the exception of the sewer line corridor – see plate 1). For the large part the soil profile and natural vegetation appear intact. There is however evidence of heavy to very heavy consumptive use by livestock with the grass sward grazed short (see plates 2 and 3). Areas of the site are also subject to heavy trampling by livestock and humans. The location of pens for community cattle, goats, pigs, geese and chickens on and immediately adjacent to the site are the major reason for the heavy use (see plate 4). The ecological status of the site and surrounds are adjudged to be in low to moderate condition.

Vegetation in the area is identified as Rand Highveld Grassland (Mucina and Rutherford, 2006). The site comprises low grassland on a north east facing slope. The grass cover is dense and mostly short with a large number of herbs and forbs. Although most of these could not be identified, many were of the Asteraceae family and the Helichrysum genus in particular. The site had no trees or shrubs and there were no rocky outcrops. The grass sward is comprised of indigenous species and is subjected to moderate to heavy over-grazing. The grass layer was dominated by the Themeda and Heteropogon genera. There were no species of conservation concern noted on the site or in the immediate surrounds.

At the northern edge of the site there was a small area where wetter soils have facilitated the presence of hydrophyllic vegetation, as evident by the sedge plants and *Andropogon eucomus* (see plate 3 and inset). This wetness may be from storm water runoff channelled by adjacent development or could reflect a leaking water pipe. It is not considered to be a natural wetland.

Vegetation to the east of the site and across the watercourse appears in similar in composition, and in a similar or better condition. It is likely that the vegetation condition relates to the distance from the suburb and the livestock pens. See photographs in Section 6. The only noted alien or invasive plant was the copse of black wattles along the nearby watercourse.

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## 4.3 Fauna

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No indigenous mammalian or reptilian species were observed on site. There were also no signs of active burrows or faeces. The site did have termitaria present, but none that were obviously active. A few common bird species were observed on or adjacent to the site. The current habitat status of the site means that is potentially available for local faunal species. However, given the sites proximity to town and the relatively heavily use, the site will only be available to species adapted to such transformed habitats. It is thus unlikely that the site is used by any indigenous species, except perhaps in transit. The site is very unlikely to be host to any species of conservation concern.

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## 4.4 Biodiversity Status

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According to Mucina and Rutherford the Rand Highveld Grassland is an endangered vegetation type as it has suffered from heavy transformation (~50%) through cultivation, plantations and urbanisation. Poor land management is likely to have led to degradation of significant portions of the remainder. Only 1% of the vegetation type is found in any statutory conservation area. In the Mpumalanga Biodiversity Conversation Plan (2006) the site is assessed as being of least concern and is closely associated with areas where no natural habitat remains. From the site assessment there is no obvious evidence of any important or unique biodiversity. No red data or protected species were recorded on site.

At least three quarters of the area within a 500m radius of the site has been or is planned to be transformed for urban use (see Figure in Section 7). Much of remaining area is subject to heavy use or transformation through informal development. Although the site is contiguous with a relatively large tract of undeveloped land with natural vegetation to the east, the site is adjacent to the current and proposed urban areas of Rockdale. The degree of transformation is likely to increase in the next decade. As such the site is not considered as a suitable target for conservation efforts.

The watercourse and any natural vegetation that persists to the east are likely to increase in ecological relevance as a corridor for the movement of fauna (and will increase in importance as on-going development occurs).

## 5. Conclusions and Key Findings

This high-level ecological scan of the site for the refuse transfer station at Rockdale has concluded that the site is of low ecological sensitivity at the site scale and of no ecological sensitivity at the provincial scale. The proposed refuse transfer station and associated activities will transform an area of less than 0.5 ha, removing all natural vegetation. However, the activities will pose little risk to biodiversity or ecological function of the immediate surrounds. Much of surrounding area has or will be transformed to urban use and the site is not targeted for conservation.

There was no evidence of any red data or protected species for which permits may be required from the Provincial Department to destroy or remove. There was also no evidence of any need to conduct further ecological studies to inform the proposed development of the site. The transformation of the site will however increase the need for conservation of the remaining Rand Highveld Grassland.

It is noted that the proposed refuse transfer station is located reasonably close to a watercourse. Management of storm water and wind scatter will be important to prevent the dispersion of contaminants to the watercourse. The site also neighbours a local school as well as livestock yards and pens. It is essential that operations do not cause disturbance to school learners or generate litter than could be ingested by the livestock. If visual screening is required around the site, use should be made of locally adapted indigenous tree species such as *Acacia caffra*, *Celtis africana* and *Rhus magalismonata*.

## 6. Site Photographs



**Plate 1: Recently installed sewer line traversing the eastern edge of the site.**



**Plate 2: View northwards across the site (note disturbances and heavy grazing).**



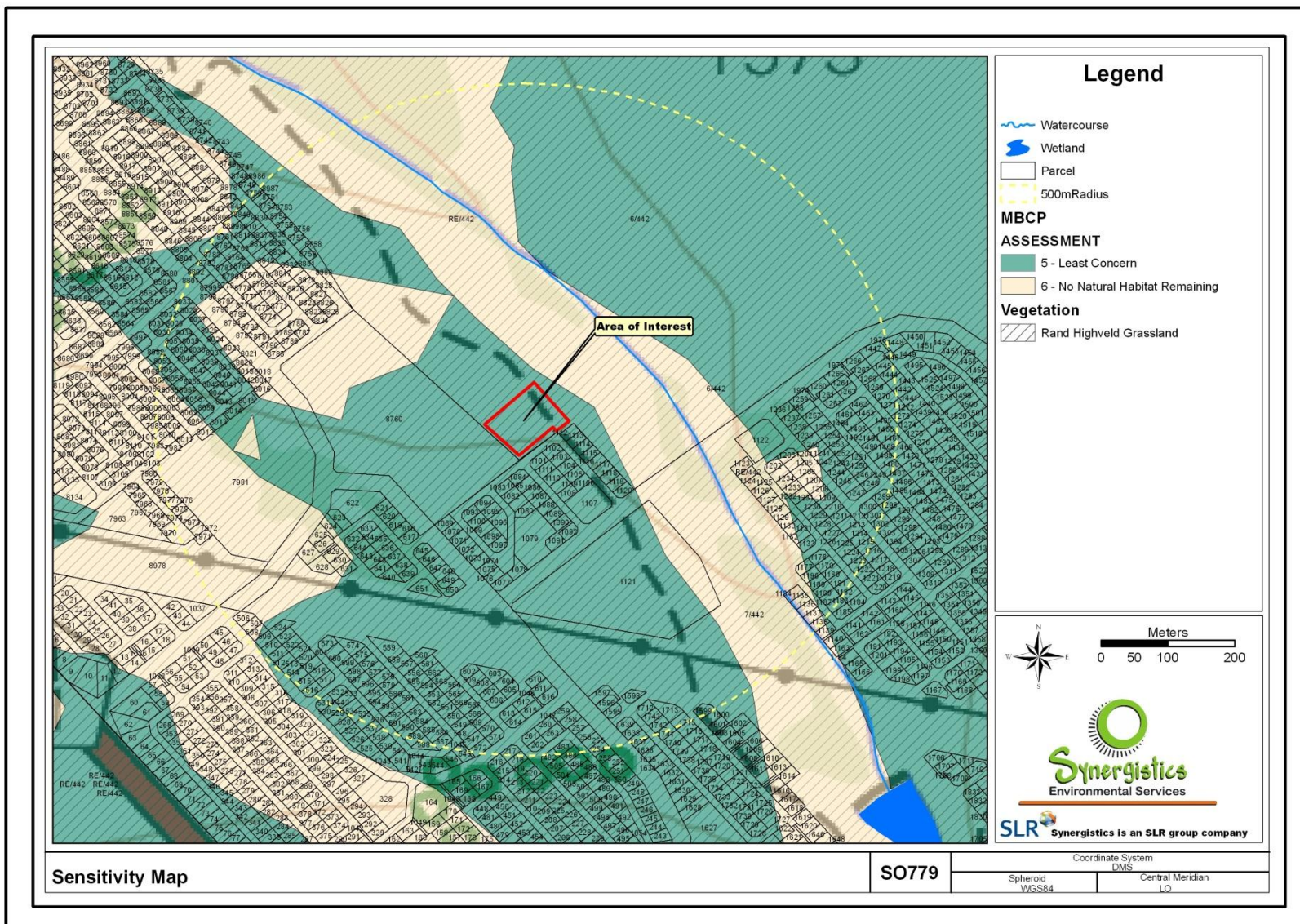
**Plate 3: View west across the site toward Rockdale**  
(inset shows sedge vegetation in seep area)



**Plate 4: Livestock pens at the eastern edge of the site**



# 7. Site Map





the dedet

Department:  
Economic Development, Environment and Tourism  
MPUMALANGA PROVINCIAL GOVERNMENT

**Details of specialist and declaration of interest in respect of an application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010**

**PROJECT TITLE**

Rockdale Refuse Transfer Station Waste Management License Application

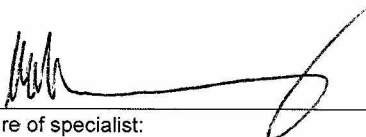
<b>Specialist:</b>	Synergistics Environmental Services (Py) Ltd		
<b>Nature of specialist study compiled:</b>	High-level ecological screening study		
<b>Contact person:</b>	Matthew Hemming		
<b>Postal address:</b>	PO Box 68821, Bryanston,		
<b>Postal code:</b>	2021	<b>Cell:</b>	082 940 8274
<b>Telephone:</b>	011 326 4158	<b>Fax:</b>	011 326 4118
<b>E-mail:</b>	mhemming@slrconsulting.com		
<b>Qualifications &amp; relevant experience:</b>	BSc (Wildlife Science & Zoology) MSc (Conservation Biology) 7+ years as an environmental assessment practitioner and ecologist		
<b>Professional affiliation(s) (if any)</b>	IAIAsa, IWMSA		

## The specialist appointed in terms of the Regulations

I, Matthew Hemming declare that -

General declaration:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in Regulation 8;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act.

  
Signature of specialist:

Synergistics Environmental Services (Py) Ltd  
Name of company:

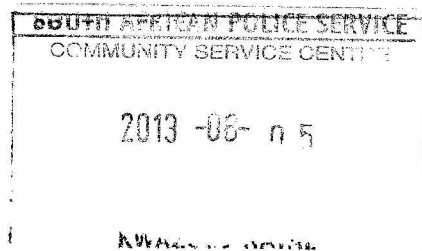
5/05/2013  
Date:

  
Signature of Commissioner of Oaths

2013/05/05  
Date:

Specialist  
Designation:

Official stamp (below)





# COMMENTS AND RESPONSES REPORT APPENDIX E

## COMMENTS AND RESPONSES REPORT


This Comments and Responses Report reflects the comments submitted in writing during the Public Participation phase for the above mentioned project.


✉ - mail; 📧 - email; 📠 - facsimile; ☎ - telephone

RESPONDENT & ORGANISATION	DATE	MEANS OF COMMUNICATION
<i>MR WD FOUCHE</i> <b>STEVE TSHWETELCAL MUNICIPALITY</b>	27 AUGUST 2013	📧 - email
COMMENT	RESPONSE	
The project has been acknowledged	Noted: Thank you for your response	

RESPONDENT & ORGANISATION	DATE	MEANS OF COMMUNICATION
<i>MR SOLLY LINKS</i> <b>NKANGALA DISTRICT MUNICIPLAITY</b>	3 SEPTEMBER 2013	📠 - facsimile
COMMENT	RESPONSE	
The transfer station is to be properly monitored, and recycling to take place.	Noted: You have been registered as an Interested and Affected Party and your details have been added to our Stakeholder Database. Your comments will be captured and addressed in the Draft and Final Basic Assessment Reports.	
Garden refuse to be treated separately.	Noted	
Burning of refuse id discouraged	Noted	
Road signs of the transfer station (directions)	Noted	

3354: ROCKDALE REFUSE TRANSFER STATION.

RESPONDENT & ORGANISATION	DATE	MEANS OF COMMUNICATION
MR C BULOSE YOUTH LEADER	21 AUGUST 2013	 - email
COMMENT	RESPONSE	
The Youth Leader thanked for the development that would cater for the people of EXT.24 and the rest of the surrounding of our area.	Noted: You have been registered as an Interested and Affected Party and your details have been added to our Stakeholder Database. Your comments will be captured and addressed in the Draft and Final Basic Assessment Reports.	
There is an organization of young people in the community and they are desperately looking for the jobs. Would it be possible to hire locals in order to alleviate unemployment and help society	Noted:	

RESPONDENT & ORGANISATION	DATE	MEANS OF COMMUNICATION
MR D MAKUSE PHUMELELA SECONDARY SCHOOL	10 AUGUST 2013	 - email
COMMENT	RESPONSE	
Would like to be put on board as to how this project can impact negatively on learners at school and the surrounding areas.	Noted: You have been registered as an Interested and Affected Party and your details have been added to our Stakeholder Database. Your comments will be captured and addressed in the Draft and Final Basic Assessment Reports.	
How this project will be managed to limit the risk of diseases for the majority of the learners	Noted.	





# OTHER INFORMATION APPENDIX F

Draft EMPr

# DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

## PROPOSED ROCKDALE TRANSFER STATION

MPU DEDET REF NO: 17/4/WML/MP313/13/01

*September 2013*

Prepared by:

**JEFFARES & GREEN (PTY) LTD**

P O Box 1109

**SUNNINGHILL**

2157



Tel: (011) 807 0660

Fax: (011) 807 1607

E-mail: [stuart@jgi.co.za](mailto:stuart@jgi.co.za)

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## ABBREVIATIONS

<b>BA</b>	Basic Environmental Assessment
<b>C</b>	Contractor
<b>DEA</b>	Department of Environmental Affairs
<b>DWA</b>	Department of Water Affairs
<b>E</b>	Engineer
<b>ECO</b>	Environmental Control officer
<b>EMPr</b>	Environmental Management Programme
<b>I&amp;APs</b>	Interested and Affected Parties
<b>MSDSs</b>	Material Safety Data Sheets
<b>NEMA</b>	National Environmental Management Act (Act No. 107 of 1998)
<b>NEMWA</b>	National Environmental Management Waste Act (Act No. 58 of 2008)
<b>OHSA</b>	Occupational Health and Safety Act
<b>PPE</b>	Personal Protective Equipment
<b>SAHRA</b>	South African Heritage Resources Agency
<b>WUL</b>	Water Use Licence
<b>WML</b>	Waste Management License

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## GLOSSARY OF TERMS

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**Corrective (or remedial) Action:** Reactive response required to address an environmental problem that is in conflict with the requirements of the EMP. The need for corrective action may be determined through monitoring, audits or management review.

**Emergency:** An undesired event that does result in a significant environmental impact and requires the notification of the relevant statutory body, such as the local authority.

**Environment:** In terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), “environment” means the surroundings within which humans exist and that are made up of:

- (i) the land, water and atmosphere of the earth;
- (ii) micro-organisms, plant and animal life;
- (iii) any combination of (i) or (ii) and the interrelationships among and between the; and
- (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

**Environmental Aspect:** Those components of a company’s activities, products and services that are likely to interact with the environment.

**Environmental impact:** A change to the environment, whether adverse or beneficial, wholly or partially resulting from activities taking place at the site.

**Environmental Management Programme (EMP):** A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive environmental impacts and limiting or preventing negative environmental impacts are implemented during the life-cycle of the project. The EMP contains environmental management and mitigation measures that must be implemented in order to reduce and/or eliminate negative impacts.

**Incident:** An undesired event which may result in a significant environmental impact, but can be managed through internal response.

**Interested and Affected Party (I&AP):** Individuals or groups concerned with, or affected by, an activity and its consequences. These include the authorities, local communities, investors, work force, customers and consumers, environmental interest groups and the general public (DEAT, 1998).

**Recycling:** Collecting, cleaning and re-using waste materials.

## 1. PROJECT BACKGROUND

The purpose of the proposed refuse transfer station (RTS), is to provide a facility for individuals to dispose of their excess household waste, which includes building and garden waste which is currently not collected by the municipality.

The Steve Tshwete Local Municipality (STLM), provides a weekly refuse service to households in the Rockdale, Nazareth, Hlalamnandi, and Middleburg Ext 18 areas, however, there is still evidence of widespread illegal kerb side dumping. Additional skips are placed in some areas where illegal dumping is occurring, but this has had limited success. Typically, waste is either dumped next to the skip, elsewhere, or is burnt in the skip itself.

The proposed RTS will attempt to alleviate the illegal dumping in the area, as well as provide a centralised facility where source separation of recyclables and garden refuse can take place. It is proposed to provide the community with a hand baler and investigate the possibility of a hand chipper/grinder for garden waste. Recyclables can then be separated, baled and sold; and green garden waste can be chipped and used to produce compost for the adjacent gardening activities. These two activities alone will assist in reducing the waste requiring transport to the local landfill site, will reduce the volume of waste disposed (resulting in reduced loss of airspace), will provide a potential source of income in the sale of recyclables, and provide compost feedstock for the local subsistence farmers/gardeners. The proposed Waste Transfer Station will be located on Portion 6 of the Farm Rockdale No 442 JS off the N11.

## 2. PROJECT PROPONENT

The Steve Tshwete Local Municipality (STLM) is proposing the establishment of the new Waste Transfer Station in Rockdale.

## 3. PROJECT ENVIRONMENTAL CONSULTANT

Jeffares and Green (Pty) Ltd has been appointed by Steve Tshwete Local Municipality as the independent Environmental Assessment Practitioner to undertake the necessary processes to obtain a Waste License for the proposed new Rockdale Transfer Station.

<b>Company Name:</b>	Jeffares & Green (Pty) Ltd
<b>Author:</b>	Kirithi Peramaul
<b>Reviewed by:</b>	Stuart Gower-Jackson
<b>Authorised by:</b>	C Canahai (Director)
<b>Address:</b>	PO Box 1109 Sunninghill
<b>Tel:</b>	011 807 0660
<b>Fax:</b>	011 807 1607
<b>E-mail:</b>	stuart@jgi.co.za

### 3.1. RELEVANT EXPERTISE OF THE INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONERS

#### S van Eden

Sonja van Eden gained her first experience when she joined Cymbian Enviro-Social Consulting Services where she worked as a Junior Environmental Consultant and later a Senior Environmental Consultant at during the period May 2005 until February 2009. In this position, Sonja was responsible for undertaking amongst others Environmental Impact Assessments, Basic Assessments, Feasibility Studies, Mine Closure Planning, and Environmental Control Auditing, GIS Mapping, managing Junior Practitioners and preparing proposals to source new work. When Cymbian Enviro-Social Consulting Services was liquidated in February 2009, Sonja joined Phoenix Environmental where she worked as a Senior Environmental Consultant from February 2009 until May 2009.

Sonja then joined Nemai Consulting where she was appointed to primarily fulfil the duties of a Senior Environmental Practitioner within the company. In this position, Sonja was responsible for undertaking environmental protocols (e.g. Environmental Impact Assessments) for large-scale and strategic projects, managing Junior Practitioners and preparing proposals to source new work. Sonja was employed at Nemai Consulting from May 2009 until February 2011.

Sonja joined Jeffares and Green (Pty) Ltd in May 2011 where she fulfils the duties of an Environmental Scientist.

### **S Gower-Jackson**

Stuart is currently employed as a Senior Waste and Environmental Scientist for Jeffares & Green (J & G), in the Geotechnical, Environmental and Earth Sciences Consulting section in Johannesburg, South Africa. He has been extensively involved and completed several Environmental Impact Assessments, which have progressed to various stages in the EIA process. He specialises in Waste Management (*inter alia*) and is significantly involved in the identification, assessment, and licensing of landfill sites, as well as many environmental assessment projects throughout Gauteng, the Free State, KZN and Swaziland



## 4. PROJECT DETAILS

### 4.1. DETAILS OF PROPOSED TRANSFER STATION

The development footprint of the proposed Waste Transfer Station will be approximately 4500m<sup>2</sup> in extent. An earth berm and cut-off drain will be constructed on the outside along the perimeter fence. This berm/drain combination is required to assist with the management of stormwater during the operational phase of the Transfer Station. It is a requirement in terms of the GDARD General Waste Management Facility Standards Guideline Document (this document was used as a reference source) that no stormwater may enter a Waste Transfer facility as surface flow. The earth berm/drain will therefore divert stormwater away from the Transfer Station site.

The site will be fenced off with a concrete palisade fence. The concrete palisade fence will not completely visually screen the site, but will provide some form of visual screening. If requested by the local residents, additional visual screening could be provided by the planting of locally indigenous trees or shrubs along the perimeter fence.

The entire site will be graded at a slope of 3%. A grease trap will be situated at the lowest point of the graded site. All stormwater and water from hosing down the tipping floor will flow to the grease trap. A guard house with an ablution facility will be constructed. The ablution facility will operate on a septic tank system. Water from the grease trap will flow to the septic tank.

The septic tank will be emptied by the municipal sewage service provider for disposal at the Municipal Sewage works.

The site will further include a raised ramp which will be 43m in length, 1.5m in height, and 9m in width. Four (4) 6m<sup>3</sup> waste skips will be placed on either sides of the raised ramp (can accommodate 10 in total). The wastes skips will be placed on a solid concrete surface. Cars and pedestrians would be able to travel up the ramp to load wastes into the skips. The raised ramp will allow for easy disposal as the top of the ramp and the top of the skip will be at the same level. Waste collection trucks would travel around the ramp to load and off load waste skips

The ramp and concrete slabs where waste skips will be stored will be roofed with a corrugated iron roof. This will prevent rainwater from entering the skips, and will also provide shade. Less water and sunlight exposure will reduce bad odours.

The site will include a demarcated area for recyclable waste collection. This area will consist of a concrete slab where recycling bins will be placed. Bins could for example include amongst others a Ronnie Bin for paper recycling, a Consol bin for glass recycling, and a collect-a-can bin for can recycling. Recycling will be the initiative of residents, and residents whom want to separate their own wastes prior to taking the wastes to the Transfer Station could place their separated wastes into the recycling bins provided on site. All mixed wastes collected from the waste skips will be taken to the Middleburg landfill site where these wastes can be sorted and where recycling initiatives could possibly be in place. Waste from the recycling bins will be collected by the relevant recycling companies.

A demarcated hazardous waste storage area will also be provided. This area will consist of a concrete slab, and will contain a used oil tank which will be provided by a service provider such as the Rose Foundation, and a skip for the disposal of household hazardous wastes such as paint, batteries, e-waste and florescent tubes. The hazardous waste skip will also be provided by a service provider such as Enviroserv. The service providers will be responsible for the collection and safe disposal of these wastes.

The site will include a demarcated area which will be landscaped for aesthetic value. The remainder of the surface area on site will be covered with block paving. All surface areas will therefore be hard impervious surfaces except for the small area which will be landscaped. The landscaped area will be located above gradient of the skip storage area to ensure that water contaminated by waste does not infiltrate into the soil.

Security lighting will also be provided on site.

#### 4.2. DESIGN AND STORAGE CAPACITY

A total of eight (8) 6m<sup>3</sup> skips will be placed on site. A total of 48m<sup>3</sup> of waste could be stored in the skips at one time. Waste skips will be emptied on a weekly basis. Currently the towns of Rockdale, Nazareth, Hlalamnandi, and Middleburg Ext 18 generate an estimated total of 100m<sup>3</sup> of wastes per week. The capacity provided by these waste skips in comparison with the volume of wastes generated on a weekly basis, is more than sufficient. The capacity of the transfer station therefore also considers future population growth and increase in waste volumes as a result. Furthermore, a formal recycling area will be provided where registered recyclers are able to sort their recyclables, bale them using a specially designed hand baler, and store the bales in a secure, lockable cage until transport can be arranged to take the bales to a formal recycling facility.

#### 4.3. OPERATIONAL HOURS

The site's operating hours will be determined by the appointed service provider who will be responsible for the overall management of the site. At this early stage, the following operating hours are proposed.

PERIOD	FROM	UNTIL
Weekdays	07h00	18h00
Saturdays	07h00	18h00
Sunday	07h00	13h00
Public holidays	07h00	13h00

#### 4.4. ACCESS CONTROL AND SECURITY

The Transfer Station will have an access controlled gate. This gate will be locked at all times outside of the Transfer Station's operating hours. During operating hours the gate will be manned by a security officer.

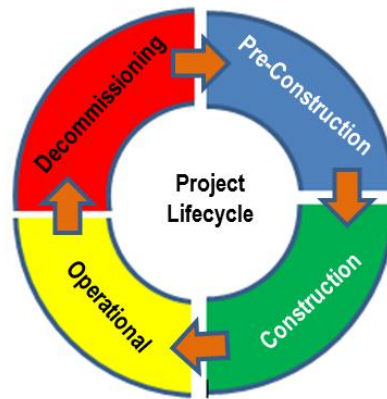
For traffic safety purposes a double lane access road will be provided where trucks will enter the site in a demarcated lane which will route the trucks around the ramp area, and cars will enter the site in a demarcated lane which will route the cars onto the ramp. These demarcated lanes will continue to lead cars and trucks until these vehicles exits the site.

In order to ensure pedestrian safety, pedestrian crossings could be provided at the access gate, and at the start and end of the ramp.

### 5. ENVIRONMENTAL MANAGEMENT PROGRAMME

#### 5.1. EMPR DEFINED

Project journeys through a lifecycle process which consist of four main phases, as presented in Figure 1 below. These phases include the Pre-Construction Phase, the Construction Phase, the Operational Phase, and the Decommissioning or Closure Phase.



**Figure 1: Project Lifecycle**

Environmental Management Programmes/Plan is a plan or programme that seeks to achieve a required state and describes how activities that have or could have an adverse impact on the environment, will be mitigated, controlled and monitored. Therefore, it is a plan or programme which prescribes mitigation, monitoring and controlling measures for all activities that could have an adverse environmental impact to be undertaken throughout a project lifecycle.

## **5.2. EMPR LEGISLATIVE REQUIREMENTS**

The compilation of an Environmental Management Programme (EMPr) in accordance with Regulation 33 of the EIA Regulations, 2010, is a requirement for all environmental authorisation and waste license application processes. Therefore this Environmental Management Programme is compiled in fulfilment of the Waste License Application Process, and will be appended to the Draft and Final Basic Assessment Report which will be submitted to the Department of Environmental Affairs (DEA) for review and decision making. The Draft Basic Assessment Report with the attached EMPr will be submitted to all relevant commentary authorities for review and comment, as well as to all registered Interested and Affected Parties (I&AP's) for review and comment. Depending on the number and content of comments received, a decision will be made on whether the Final Basic Assessment Report and EMPr will be made available for review by I&AP's prior to submission of the Final Reports to DEA.

## **5.3. SCOPE OF THE EMPR**

The activity to be undertaken is new and would require a construction phase, the EMPr will focus on construction and operation activities being undertaken; Furthermore it is not anticipated that site will be decommissioned, and therefore this EMPr does not include any mitigation and monitoring measures with regards to the decommissioning, closure and rehabilitation phases.

## **5.4. THIS PURPOSE AND STRUCTURE OF THE EMPR**

The EMPr will provide an essential tool for ensuring that the mitigation of negative impacts and enhancement of positive impacts is carried out effectively during the construction and operational phases of the activity. In this regard, this EMPr will inter alia:

- Define the roles and responsibilities in order to give effect to stipulated management/mitigation actions;
- Identify potential operational environmental impacts;
- Define mitigation measures for impacts generated during the operational phase of the development;
- Provide requirements for environmental awareness and training of staff;
- Outline a monitoring and auditing framework;

- Provide measures for emergency events;
- Reduce environmental risks; and
- Improve environmental performance of the activities.

## 6. ROLES AND RESPONSIBILITIES

The Rockdale Transfer Station will be managed by a Private Waste Service provider. The details of this service provider are not yet available. Once available, the details of the persons whom will be responsible for the overall operation and management of the site should be provided to MPU DEDET.

### 6.1. MANAGEMENT OF THE SITE:

The STLM will be responsible for the construction of the proposed waste Transfer Station, and for the purchasing of the necessary waste removal vehicles and skips. The STLM will appoint a private service provider who will be responsible for the management of the entire Transfer Station site and all activities associated with it. This is to ensure that the transfer station will be managed at all times and that wastes will be collected regularly and taken to the Middleburg landfill site.

### 6.2. WASTE COLLECTION FREQUENCY:

The waste skips will be emptied on a weekly basis and all wastes will be taken to the Middleburg Landfill site for final disposal.

### 6.3. OPERATIONAL PHASE ROLES AND RESPONSIBILITIES:

During the sites operational phase, various parties will be responsible for fulfilling certain tasks and duties to ensure that the site is operated sufficiently and effectively. The various parties and their associated roles are provided below:

#### ***6.3.1. Roles of the Steve Tshwete Local Municipality***

The Service Provider will:

- Ensure that the Environmental Management Programme (EMPr) is effectively implemented;
- Liaise on a strategic level with authorities regarding any environmental issues as required;
- Provide the resources (human and financial) necessary to complete the required tasks in accordance with this EMPr;
- Review the EMPr; at least, annually (or when required) to assess its effectiveness and practicality assess whether new environmental procedures are required;
- Ensure that the corrective action and non-conformance issues are addressed with regards to the EMPr;
- Liaise with the public and community regarding any environmental complaints/issues (as required);
- Ensure that the sites are operated in accordance with current permits/licenses, regulations and all appropriate policies; and,
- Maintain proper control of the site and determine what, if any, problems exist, or may be anticipated such as operational issues, regulatory requirements, and stakeholder issues, management of unacceptable waste streams, pollution and emergencies.

#### ***6.3.2. Roles of the Waste Service Provider (Operational Manager)***

The Operational Manager shall:

- Be familiar with the contents of the EMPr;
- Ensure that a copy of the EMPr is kept at an accessible location at the site;
- Be fully conversant with the conditions of permits/licenses and authorisations relevant to the site;
- Provide environmental awareness training for site staff as required;
- Inspect the site on a daily basis for environmental issues;
- Ensure that all site staff are fully conversant with the EMPr;
- Ensure that all safety checks and procedures have been followed and applied, as well as ensure adherence to the Occupational Health and Safety Act such as but not limited to: ensuring that working procedures for all equipment and plant are readily available and displayed in an obvious and clear manner, as well as ensuring that staff are trained on safety aspects and are provided with the relevant protective clothing;
- Ensure that enough containers are provided for the storage of recyclables;
- Ensure that all areas and equipment and the facility (buildings and site) are properly cleaned, switched off and stored at the end of the workday;
- Ensure that equipment is serviced, in a timely manner;
- Record keeping such as but not limited to statistics of recyclables handled on the site including type of recyclables, volumes/mass treated, emergency incidents, complaints from the community (and corrective action/management actions), record of unacceptable wastes received at the site (and how it was managed);
- Ensure that the site access is managed and controlled;
- Ensure that a specific person is delegated to act as supervisor/safety co-ordinator during periods of absence;
- Weekly site report compilation;
- Analyse trip sheets on a monthly basis;
- Undertake route planning whenever required;
- Record tonnages on a daily basis;
- Take weekly site photographs;
- Undertake random site visits;
- Compile monthly reports to the Steve Tshwete Local Municipality;
- Undertake proper record keeping;
- Conduct staff meetings and training at-least twice in a year; and
- Ensure good housekeeping and proper sign postage.

### **6.3.3. Roles of Supervisor**

- Sign in all employees on a daily basis
- Check whether employees are geared in the correct protective clothing
- Inspect areas on a daily basis to ensure that the site is being kept neat and clean, and well operated. It is recommended that a checklist be compiled including all items which should be inspected. These completed checklists should be filed for record keeping purposes;
- Ensure the removal of skips on a weekly basis
- Ensure that the site remains open during working hours, even if the site is full
- Report the status of skips on a daily basis
- Ensure that the site is kept clean on a daily basis
- Ensure that employees perform their tasks as expected; and
- Report defects to the operations Manager on a daily basis

#### **6.3.4. Roles of the Security officer**

- The security officer should report on site by 6 a.m. and leave not later than 18:00 p.m.;
- Man the gates at all times during operational hours;
- Take down registration number of vehicles entering the gate;
- Ensure that vehicles entering the gate have the correct type of waste;
- Direct vehicles to the correct skips where the site attendant will be standing;
- Treat all clients with respect and courtesy;
- In the case where the queues are long and there are delays, advise clients of such and ask for their patience;
- Open site to the public even if it is full. At no stage during normal working hours should the site be closed;
- Ensure that no waste pickers collect any wastes from site;
- Co-operate with site attendants at all times and at no stage should the security personnel bully the site attendant; and
- They should at no stage during working hours be under the influence of alcohol.

#### **6.3.5. Site Attendants' Responsibilities**

- Ensure that cars are directed to the right containers and the waste is offloaded in correct skips;
- Ensure that there is no spillages on the floor when offloading is done;
- Ensure that Site remains clean at all times;
- Ensure that no waste pickers collect any wastes from site;
- Ensure that any defect e.g. Ablution facility on site is reported to the supervisor including the skips that are full; and
- Treat clients with courtesy and respect.

### **6.4. WASTE DETAILS**

#### **6.4.1. Types of wastes that will be accepted at the Site:**

- Garden wastes;
- Recyclable material e.g. cans, plastic, boxes etc.;
- Light builders rubble i.e. stones equivalent to one wheelbarrow in volume or trailer load;
- House hold hazardous waste e.g. batteries, paints, etc.; and
- Domestic waste.

#### **6.4.2. Non Permissible Waste Types**

- Animal Carcasses;
- Putrescible waste;
- Hazardous waste, unless its household; and
- Health care risk waste.

#### **6.4.3. Disposal of Non-Permissible Wastes**

Provision for the acceptance and transfer of currently non-permissible wastes is under investigation and will be included in the Final Basic Assessment Report. Currently it is proposed to liaise with private hazardous waste service providers to provide some form of receptacle to accommodate non-permissible wastes.

#### **6.4.4. Control of Waste Pickers**

Only registered Waste Pickers and/or private recyclers will be allowed to collect any wastes from site. Only the appointed recycling service providers may collect recyclables from their bins provided on site. Although wastes could be a source of income to private recyclers and pickers, this will need to be closely monitored, as the risk of the site becoming uncontrolled is high. Waste picking initiatives and private recycling initiatives should take place at the Middleburg Landfill Site.

## 7. PRE-CONSTRUCTION, CONSTRUCTION AND POST-CONSTRUCTION PHASES

Activity	Mitigation Measures	Responsible Party	Frequency
<b>SECTION A. SITE ESTABLISHMENT AND PRELIMINARY ACTIVITIES</b>			
<b>A.1 Access to Site</b>			
<b>A.1.1 Routing</b>  <i>Sound environmental principles must be followed whilst establishing access to the site</i>	Limitations identified and recommendations made during the environmental study shall be taken into account when deciding on an access route to the construction site. No access will be allowed to the site other than via public roads.	E, ECO	Ongoing
	The location of all underground services and servitudes shall be identified and confirmed from all service providers prior to commencing any excavation. All the relevant precautions shall then be taken to avoid damage to the identified service runs.	E, ECO	Ongoing
	In the event that additional service runs become uncovered and damaged, the relevant utility company / organization shall be informed to facilitate a speedy repair to ensure that nuisance, waste of resources and pollution are minimized.	E, ECO	Ongoing
<b>A.1.2 Haulage Roads</b>	All roads for construction access must be planned and approved by the Engineer and ECO ahead of the construction activities. They should not be created on an ad-hoc basis.	E, ECO	Ongoing
	No haul roads will be allowed. The contractor shall access site and deliver materials via existing public roads.	E, ECO	Ongoing
	The Contractor, all suppliers and sub-contractors must not utilize roads other than the ones decided upon with the Engineer. When necessary, the Contractor shall distribute flyers to drivers as they leave the site indicating the required routing.	E, ECO	Ongoing
<b>A.2. Establishment of Construction Camp</b>			
<b>A.2.1 Layout</b>	The location, extent and layout of the contractor's camp must be approved by the Engineer prior to any work commencing.	E	Site Establishment
	Any particular sensitive areas should be demarcated a "no go" or restricted access areas.	E, ECO	Throughout
<b>A.2.2 Ablutions</b>	Temporary chemical toilets shall be provided by an approved company. Such toilets shall be made available for all site staff both at the camp site and on site as directed by the Engineer. Toilets must be outside the 1:100 year floodline of any watercourse or water body. Where the floodline is not known, their location shall be directed by the Engineer.	E, ECO	Ongoing
	The construction of "long drop" toilets is forbidden.	E, ECO	Ongoing
	Under no circumstances may open areas or the surrounding bush or degraded and built up areas be used as a toilet facility	E, ECO	Ongoing
<b>A.3. Establishing Storage Areas</b>			
<b>A.3.1 General Substances and Materials</b>	Storage and contractors camp areas will only be allowed within the existing site which is already disturbed. Choice of location for storage areas must take into account prevailing winds, distance to water bodies and general on-site topography. All Contractor's storage and camp areas are to be approved by the Engineer.	E, ECO	Ongoing
	The use and storage of all materials shall be controlled. Care shall be taken to ensure that fuels and chemicals do not leach into the ground. Adequate spillage containment measures shall be implemented, such as cut off drains, berms etc. Fuel and chemical storage containers shall be set on a concrete plinth and within a containment bund. The necessary firefighting equipment shall be maintained on site to deal with any fire incidents.	E, ECO	Ongoing



Activity	Mitigation Measures	Responsible Party	Frequency
	All potentially polluting materials shall be stored as far away from oncoming traffic and from drainage inlets as is possible. Where instructed, the contractor shall divert drainage from storage areas way from drainage inlets and / or drainage inlets shall be closed.	E, ECO, C	Ongoing
<b>A.3.2 Hazardous Substances and Materials</b>	Hazardous substances / materials are those that are potentially: poisonous, flammable, carcinogenic or toxic. Examples include diesel, petroleum, oil, bituminous products, cement, solvent based paints, lubricants, explosives, drilling fluids, pesticides, herbicides, LPG. All potentially hazardous materials shall be stored as far away from oncoming traffic and from drainage inlets as is possible.	E, ECO, C	Ongoing
	Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases or escapes. The Contractor shall submit a method statement and plans for the storage of hazardous materials and emergency procedures.	E, ECO	Once-off
	Hazardous storage and refuelling areas must be bunded with an impermeable liner to protect groundwater quality. The Contractor shall submit a method statement to the Engineer for approval.	E, ECO, C	Once-off
	The containment capacity shall be equal to the full amount of material stored. Drainage from containment bunds shall be controlled by single and tightly fitting timber bungs that shall be hammered into outlets. Containment bunds shall only be drained after inspection by the Site Supervisory personnel.	E, ECO	Ongoing
	Fuel tanks must meet relevant specifications and be elevated so that leaks may be easily detected.	E, ECO	Once-off
	Storage areas containing hazardous substances / materials must be clearly signed.	E, ECO	Once-off
	It is very important that the proximity of houses, schools etc. is taken into account when deciding on storage areas for hazardous substances.	E, ECO	Once-off
	Staff dealing with these materials / substances must be aware of their potential impacts and follow the appropriate safety measures.	E, ECO	Ongoing
<b>A.4. Materials Management –Sourcing</b>			
<b>A.4.1 Source of Materials</b>	The Contractor shall prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners etc.), and submit these to the Engineer for approval prior to delivery to site.	E, ECO, C	Once-off
<i>Materials must be sourced in a legal and sustainable way to prevent off-site environmental degradation.</i>	Where possible, a signed document from the supplier of natural materials should be obtained confirming that they have been obtained in a sustainable manner and in compliance with relevant legislation.	E, ECO	Ongoing
	Where materials are borrowed (mined), proof must be provided of authorisation to utilise these materials from the landowner / mineral rights owner and the Department of Minerals and Energy.	E, ECO	Ongoing
<b>A.5. Education of Site Staff on General and Environmental Conduct</b>			
<b>A.5.1 Environmental Education and Awareness</b>	Ensure that all site personnel have a basic level of environmental awareness training. The Contractor must submit a proposal for this training to the ECO for approval. Topics covered should include:  - What is meant by “environment”?	ECO, C	During staff induction and ongoing.

Activity	Mitigation Measures	Responsible Party	Frequency
<i>These points need to be made clear to all staff on site before the project begins.</i>	<ul style="list-style-type: none"> <li>- Why the environment needs to be protected and conserved.</li> <li>- How construction activities can impact on the environment.</li> <li>- What can be done to mitigate against such impacts.</li> <li>- Awareness of emergency and spills response provisions.</li> <li>- Social responsibility during construction. E.g. being considerate to local residents.</li> </ul> Translators are to be used where necessary.		
	The Engineer / environmental control officer should be on hand to explain more difficult / technical issues and to answer questions. The use of pictures and real-life examples is encouraged as these tend to be more easily remembered. Use should be made of environmental awareness posters on site.	E, ECO	During staff induction
	Construction workers should be made aware that they are not to make excessive noise (e.g. Shouting / hooting) when the site is near to commercial / residential areas. The need for a "clean site" policy also needs to be explained to the construction workers.	ECO	During staff induction
<b>A.5.2 Worker Conduct on Site</b>	A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff.	ECO	During staff Induction and ongoing
	Workers need to be made aware of the following general rules: No alcohol / drugs to be present on site. No firearms allowed on site or in vehicles transporting staff to / from site, (unless used by security personnel). Prevent excessive noise. Prevent unsocial behaviour. Bringing pets onto the site is forbidden. No harvesting of firewood from the site or from the areas adjacent to it. Construction staff are to make use of the facilities provided for them, as opposed to ad-hoc alternatives. (e.g. fires for cooking and the use of surrounding bush as a toilet facility are forbidden). Trespassing on private / commercial properties adjoining the site is forbidden. Driving under the influence of alcohol is prohibited. Other than pre-approved security staff, no workers shall be permitted to live on site.	ECO	During staff Induction and ongoing
<b>A.6. Dust / Air Pollution</b>			
<i>Establishment of the camp site, and related temporary works can reduce air quality</i>	Vehicles travelling along the access roads must adhere to speed limits to avoid creating excessive dust.	E, ECO	Ongoing.
	Camp construction / haulage road construction – areas that have been stripped of vegetation must be dampened periodically to avoid excessive dust.	E, ECO	Ongoing and monthly audits
	The Contractor must make alternative arrangements (other than fires) for cooking and / or heating requirements. LPG gas cookers may be used provided that all safety regulations are followed.	E, ECO	Ongoing and monthly audits
<b>A.7. Soil Erosion</b>			
<i>The stripping of vegetation during preliminary</i>	No unnecessary stripping of vegetation shall be undertaken. The time that stripped areas are left open to exposure should be minimised wherever possible. Care should be taken to ensure that lead times are not excessive.	E, ECO	Ongoing and monthly audits
	Wind screening and stormwater control should be undertaken to prevent soil loss from the site.	E, ECO	Ongoing and monthly audits

Activity	Mitigation Measures	Responsible Party	Frequency
<i>activities on site greatly increases the risk of erosion.</i>	Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied during the set up phase. I.e. topsoil is to be conserved while providing access to the site and setting up the camp.	E, ECO	Daily monitoring during site establishment
<b>A.8. Stormwater</b>			
<i>Serious financial and environmental impacts can be caused by unmanaged stormwater.</i>	During site establishment, storm water culverts and drains are to be located and covered with metal grids to prevent blockages if deemed necessary by the Engineer.	E / ECO	Ongoing and monthly audits
	Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.	E, ECO	Ongoing and monthly audits
<b>A.9 Water Quality</b>			
<i>Incorrect disposal of substances and materials and polluted run-off can have serious negative effects on groundwater quality.</i>	Storage areas that contain hazardous substances must be bunded with an approved impermeable liner.	E, ECO	Ongoing and monthly audits
	Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimise pollution risk and reduced bunding capacity.	E, ECO	Ongoing and monthly audits
	A designated, bunded area is to be set aside for vehicle washing and maintenance. Materials caught in this bunded area must be disposed of to a suitable waste site or as directed by the Engineer.	E, ECO	Ongoing and monthly audits
	Provision should be made during set up for all polluted runoff to be treated to the Engineer's approval before being discharged into the stormwater system. (This will be required for the duration of the project)	E, ECO	Ongoing and monthly audits
<b>A.10. Conservation of the Natural Environment</b>			
<b>A.10.1 Fauna and Flora</b>  <i>Alien plant encroachment is particularly damaging to natural habitats and is often associated with disturbance to the soil during construction activities. Care must be taken to conserve existing plant and animal life on and surrounding the site.</i>	No vegetation may be cleared without prior permission from the Engineer.	E, ECO	Ongoing
	Trees that are not to be cleared should be marked beforehand with danger tape. The ECO must be given a minimum of 3 days' notice of site clearance operations in order that affected vegetation can be marked before the Contractor begins clearing the site.	E, ECO	Ongoing during site establishment
	Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. (Particular attention must be paid to imported material).	E, ECO	Ongoing
	Disturbance to birds (owls in particular), animals and reptiles and their habitats should be minimized wherever possible.	E, ECO	Ongoing
	The alien vegetation that occurs on site must be eradicated and management measures must be put in place to control the spread of these plants during construction and rehabilitation.	E, ECO	Ongoing

Activity	Mitigation Measures	Responsible Party	Frequency
<b>A.10.2 Sensitive Habitats</b>  <i>Alien plant encroachment is particularly damaging to natural habitats and is often associated with disturbance to the soil during construction activities. Care must be taken to conserve existing plant and animal life on and surrounding the site.</i>	Areas which are identified by the Engineer or the ECO as being ecologically sensitive and which are adjacent to any construction work are to be suitably demarcated to prevent damage by machinery and labour. Temporary danger tape should be used and should be moved in phases as the construction progresses from one area to the next.	E, ECO	Ongoing
	No excavation for infill materials must be undertaken in identified sensitive areas, watercourses and within 1:100 year flood lines.	E, ECO	Ongoing
<b>A.11. Set up of Waste Management Procedures</b>			
	The excavation and use of rubbish pits on site is forbidden.	E, ECO	Ongoing
	Burning of waste is forbidden.	E, ECO	Ongoing
	A fenced area must be allocated for waste sorting and disposal.	E, ECO	Ongoing
	Individual skips for different types of waste (e.g. "household" type refuse, building rubble, etc.) should be provided.	E, ECO	Ongoing
<b>A.12. Social Impacts – Visual &amp; Noise</b>			
<b>A.12.1 Public Participation</b>  <i>It is important take notice of the needs and wishes of those living or working adjacent to the site. Failure to do so can cause disruption to work and increase costs due to delays.</i>	During the set up phase of the project, the Contractor needs to make contact with people that are Interested in or Affected by the development (I&AP's). These parties will usually have been identified by the environmental consultant that was assigned to the project. If this wasn't the case, the I&AP's can be identified as those who either: - Live close by to the site - Work close by to the site - Will have their services / infrastructure affected by the project - Have a general interest in the project -The Councillor of the ward in which the construction is taking place.	E, ECO, C	During site establishment
<b>A.12.2 Noise Impacts</b>	Construction vehicles and all machinery are to be fitted with standard silencers prior to the beginning of construction.	ECO	Prior to moving onto site.
	Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) will be used as per operating instructions and maintained properly during site operations.	ECO	Monitoring throughout the duration of the project.

Activity	Mitigation Measures	Responsible Party	Frequency
<b>A.12.3 Visual Impacts</b>	Storage facilities and other temporary structures on site should be located as such that they have as little visual impact on local residents as possible.	E, ECO	During site establishment
	In areas where the visual environment is particularly important, screening in the form of shade cloth or other suitable materials may be required on site, prior to the beginning of construction.	E, ECO	During site establishment
<b>A.13. Cultural Environment / Heritage</b>			
	Vegetation clearing, bulk earthworks and excavations operations must be monitored during the site preparation and construction phases of the project. Should any archaeological remains be uncovered during these operations (chance finds) in the form of graves, old rubbish dumps, and foundations etc. must be brought to the attention of the South African Heritage Resources Agency (SAHRA). Test excavations (and possibly) systematic archaeological sampling may be required subject to the issuing of a permit by SAHRA before construction will be allowed to proceed.	E, ECO, C	During site establishment and ongoing throughout construction
	Should any human remains be disturbed, exposed or uncovered during excavations for the proposed project, these should immediately be reported to SAHRA. Burial remains should not be disturbed or removed until inspected by the archaeologist.	E, ECO, C	During site establishment and ongoing throughout construction
	Prior to the commencement of construction, all staff need to know what possible archaeological or historical objects of value may look like, and to notify the Engineer / Contractor should such an item be uncovered.	E, ECO	During site establishment
	Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or paleontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).	E, ECO	During site establishment
<b>A.14. Security and Safety</b>			
<b>A.14.1 Fencing</b>	Secure the site in order to reduce the opportunity for criminal activity in the locality of the construction site. This will involve the use of security fencing, controlling access to storage and camp areas and the use of security guards.	E, ECO	During site establishment and ongoing
	Potentially hazardous areas such as trenches are to be clearly marked.	E, ECO	Ongoing
<b>A.14.2 Lighting</b>	Lighting on site in storage and camp areas is to be set out to provide maximum security and to enable easier policing of the site, without creating a visual nuisance to local residents or businesses. Care shall be taken in positioning lights to ensure that it does not create glare for oncoming traffic.	E, ECO	During site establishment and ongoing
<b>A.14.3 Risks Associated with Materials on Site</b>	Material stockpiles or stacks, such as pipes, must be stable and well secured to avoid collapse and possible injury to site workers / local residents.	ECO	Ongoing
	Flammable materials must be stored as far as possible from the road edge and site offices.	ECO	Ongoing
	Firefighting equipment should be present on site at all times as per the Occupational Health and Safety Act (OHSA).	ECO	Ongoing
	Obstruction to drivers' line of site due to stockpiles and stacked materials must be avoided, especially at intersections and sharp corners.	ECO	Ongoing
	No materials are to be stored in unstable or high risk areas such as on floodplains, on steep slopes, or immediately adjacent to road drains.	ECO	Ongoing
	All IAP's should be notified in advance of any known potential risks associated with the construction site and the activities on it. Examples of these are: - stringing of power lines - blasting	ECO	Ongoing

Activity	Mitigation Measures	Responsible Party	Frequency
	- earthworks / earthmoving machinery on steep slopes above houses / infrastructure - risk to residences along haulage roads / access routes		
<b>SECTION B. MANAGEMENT OF CONSTRUCTION ACTIVITIES AND WORKFORCE</b>			
<b>B.1. Access to Site</b>			
<b>B.1.2 Maintenance of Access</b>	Contractors should ensure that access roads are maintained in good condition by attending to potholes, corrugations and stormwater damage as soon as these develop	E, C	Ongoing
	Staff must be employed to clean surfaced roads adjacent to construction sites where materials have been spilt.	ECO	Ongoing
	Cognisance of vehicle weight / dimensions must be taken when using access constructed out of certain materials (e.g. paved surfaces / cobbled entranceways).	E	Ongoing
	Unnecessary compaction of soils by heavy vehicles must be avoided. Construction vehicles must be restricted to demarcated access, haulage roads and turning areas. All compacted soils must be rehabilitated in accordance with the Engineer's instruction.	ECO	Ongoing
<b>B.2. Maintenance of Construction Camp</b>			
<b>B.2.1 Surfaces</b>	The Contractor must monitor and manage drainage of the camp site to avoid standing water and soil erosion.	C, ECO	Ongoing
	Run-off from the camp site must not discharge into adjacent areas.	C, ECO	Ongoing
<b>B.2.2 Ablutions</b>	Chemical toilets are to be maintained in a clean state and should be moved to ensure that they adequately service the work areas.	ECO	Weekly
	The Contractor is to ensure that open areas or the surrounding bush are not being used as a toilet facility.	ECO, C	Ongoing
	These facilities and associated waste is to be removed upon completion of the construction phase and disposal must take place at a registered waste site.	E	After Completion
<b>B.2.3 Camp Waste Disposal</b>	A registered chemical waste company is to be used to remove waste from chemical toilets on site.	ECO	Ongoing
	The Contractor shall ensure that all litter is collected from the work, eating and camp areas daily.	ECO, C	Daily
	Bins and/or skips should be emptied regularly and waste should be disposed of at a registered landfill site. Waybills for all such disposals are to be kept by the Contractor for review by the Engineer / ECO.	ECO	Weekly
<b>B.2.4 Eating Areas</b>	Eating areas should be regularly serviced and cleaned to ensure the highest possible standards of hygiene and cleanliness.	ECO	Daily
<b>B.2.5 Housekeeping</b>	The Contractor shall ensure that his camp and working areas are kept clean and tidy at all times.	C	Ongoing
<b>B.3. Staff Conduct</b>			
<b>B.3.1 Environmental Education and Awareness</b>	The Contractor must monitor the performance of construction workers to ensure that the points relayed during their induction have been properly understood and are being followed. If necessary, the ECO and / or a translator should be called to the site to further explain aspects of environmental or social behavior that are unclear.	ECO, E	Ongoing
	Safety representatives, managers, and workers must be trained with regards to all applicable safety standards and regulations, which must be enforced.	E	Once off

Activity	Mitigation Measures	Responsible Party	Frequency
<b>B.3.2 Worker Conduct on Site</b>	The rules that are explained in the worker conduct section (Refer to section A.5.2 of this EMP) must be followed at all times.	ECO	Ongoing
<b>B.4. Dust / Air Pollution</b>			
<i>The main causes of air pollution are dust from vehicle movements and stockpiles, vehicle emissions and fires.</i>	Vehicles travelling within the site area must adhere to speed limits as prescribed by the Engineer, so as to avoid producing excessive dust.	E	Ongoing
	The Contractor will dampen all exposed soil surfaces including access roads, works areas and camp areas with a water bowser or sprinklers as necessary, to minimise dust problems. Mitigation will be especially significant during extended dry periods or due to particular operations such as soil stripping, blasting or excavation at which times damping down shall take place on a continual basis. If dust is unavoidable, screening will be required utilising wooden supports and shade cloth.	E, C, ECO	Ongoing
	Vehicles and machinery are to be kept in good working order and to meet manufacturer's specifications for safety, fuel consumption etc.	ECO	Ongoing
	Should excessive emissions be observed, the Engineer will instruct the offending vehicle to be removed from the site until the problem has been rectified.	E, ECO	Ongoing
	No fires allowed on site except for the burning of firebreaks.	E, ECO	Ongoing
	Stockpiles may cause dust and therefore must be managed in accordance with the guidelines in Materials Management in section A.4 and B.9.	E, ECO	Ongoing
	Cooking will only be permitted in designated areas by the Engineer. Only gas operated cookers will be permitted. All food preparation areas shall be operated to hygienic standards and shall be regularly inspected by the Environmental Control officer. The Contractor must further ensure that any grass or weed vegetation left in a natural state and adjacent to cooking areas shall be cut to prevent fires, especially during the dry months.	ECO, C	Ongoing
	.Existing vegetation will assist in screening the site, control dust and help prevent soil erosion. All existing vegetation on and adjacent to the development shall be retained unless otherwise instructed by the Engineer.	ECO, E	Ongoing
<b>B.5. Soil Erosion</b>			
<b>B.5.1 Topsoil Stripping and Stockpiling</b>	Once an area has been cleared of vegetation, the top layer (nominally 200mm) of soil should be removed and stockpiled in a designated area.	ECO	Ongoing
	Subsoil and topsoil stockpiles will be moved to areas of final utilisation as soon as possible to avoid unnecessary erosion. Topsoil stockpiles will be kept separate from other stockpiles, shall not be compacted, and shall not exceed 2 metres in height. Stockpiles not utilised within three months of the initial stripping process (or prior to the onset of seasonal rains) will be seeded with appropriate grass seed mixes, including indigenous grasses normally found in local grasslands, to further avoid possible erosion. Species of grasses and application rates should be recommended or approved by the ECO.	ECO	Ongoing
	It is critical that Stockpiling shall not occur within the low lying areas and drainage lines that are likely to be subject to inundation. Stockpiles shall be kept free of any contaminants whatsoever, including paints, building rubble, cement, chemicals, oil, etc. Weed control of the stockpiles is required throughout the period of storage to avoid the creation of a weed seed bank and the spreading of weed seeds to adjacent land. The control of any weeds prior to soil replacement is particularly	ECO	Ongoing

Activity	Mitigation Measures	Responsible Party	Frequency
	important, as otherwise the replaced soil will provide an ideal opportunity for the weeds to germinate. Weeds will need to be manually pulled or chemically controlled, depending on their emergence density.		
<b>B.5.2 Exposed Surfaces</b>	Vegetation clearance and soil stripping shall be phased to ensure that large areas do not remain exposed for long periods. The Contractor may only clear and strip sufficient land to facilitate earthworks for a week after clearance / stripping.	ECO, E, C	Ongoing
	Topsoiling and re-vegetation shall commence immediately after the completion of an activity and at an agreed distance behind any particular work front.	ECO, C	As each activity is completed.
	Side tipping of spoil and excavated materials shall not be permitted – all spoil material shall be exposed of as directed by the Engineer.	E, ECO	Ongoing
	Battering of all banks shall be such that cut and fill embankments are no steeper than previous natural slopes unless otherwise permitted by the Engineer. Cut and fill embankments steeper than previous ground levels shall be revegetated immediately on completion of trimming or shall be protected against erosion using bio-engineered stabilisation measures – deep-rooted vegetation such as <b>Vetiver Grass is effective to stabilise steeper embankments.</b>	E, ECO	As the cut and fill is completed.
	All embankments, unless otherwise directed by the Engineer, shall be protected by a cut off drain to prevent water from cascading down the face of the embankment and causing erosion.	E, ECO	Immediately after the creation of the embankment / stripping of vegetation
<b>B.6. Stormwater</b>			
<b>B.6.1 General Principles</b>  <i>Construction activities frequently result in diversions of natural water flow resulting in concentration of flow and an increase in the erosive potential of the water. Measures in this section are aimed at reducing the erosive potential of stormwater.</i>	The Contractor shall not in any way modify nor damage the banks or bed of streams, rivers, wetlands, other open water bodies and drainage lines adjacent to or within the designated area, unless required as part of the construction project specification. Where such disturbance is unavoidable, modification of water bodies should be kept to a minimum in terms of: - Removal of riparian vegetation - Opening up of the stream channel	E, ECO	Ongoing
	A Stormwater Management Plan or method statement for use during and after construction must be provided.	E, ECO	Once off
	All precautions shall be taken to avoid pollution of any kind to the rivers and streams during construction.	E, ECO, C	Ongoing
	Earth, stone and rubble is to be properly disposed of so as not to obstruct natural water pathways over the site. These materials must not be placed in stormwater channels, streams, rivers, drainage lines or attenuation ponds.	E, ECO, C	Ongoing
	There should be a periodic checking of the site's drainage system to ensure that the water flow is not obstructed.	E, ECO	Ongoing
	The use of high velocity stormwater pipelines should be avoided in favour of open, high friction, semi-permeable channels wherever feasible.	E, ECO	Ongoing
	A number of smaller stormwater outfall points should be constructed rather than a few large outfall points.	E, ECO	Ongoing
	Stormwater outfalls should be designed to reduce flow velocity and avoid stream bank and soil erosion.	E	Once off



Activity	Mitigation Measures	Responsible Party	Frequency
<b>B.6.4 Un-channelled Flow</b>	During construction, un-channelled flow must be controlled to avoid soil erosion. Where large areas of soil are left exposed, rows of straw / hay or bundles of cut vegetation should be dug into the soil in contours to slow surface wash and capture eroded soil. The spacing between rows will be dependent on slope.	E, ECO	As surface becomes exposed.
<b>B.7. Water Quality</b>			
<i>Water quality may be affected by the incorrect handling of substances and materials. Managing soil erosion, polluted run-off from vehicle and plant washing as well as wind dispersal of dry materials into rivers and watercourses is also detrimental to water quality.</i>	Mixing / decanting of all chemicals and hazardous substances must take place either on a tray or on an impermeable surface. Waste from these activities must then be disposed of to a suitable waste site.	E, ECO	Ongoing
	Chemicals or hazardous substances must not be allowed to contaminate the soil or ground water on site. Should this occur, the Engineer will instruct appropriate clean up measures that will be undertaken at the Contractor's expense.	E, ECO	Ongoing
	Care must be taken to ensure that run-off from vehicle or plant washing does not enter the ground water. Wash water must be passed through a three-chamber SOG trap prior to being discharged as effluent to a regular municipal sewer.	E, ECO	Ongoing
	Site staff shall not be permitted to use any stream, river, other open water body or natural water source adjacent to or within the designated site for the purposes of bathing, washing of clothing or for any construction or related activities. Municipal water (or another source approved by the Engineer) should instead be used for all activities such as washing of equipment or disposal of any type of waste, dust suppression, concrete mixing, compacting etc.	E, ECO	Ongoing
	No abstraction of water from any streams in the vicinity or elsewhere is permitted without a Water Use License (WUL) from the Department of Water Affairs (DWA). Alterations to river banks also require a license from DWA. The flow must also not be impeded.	E, ECO	Ongoing
	All stockpiles and machinery shall be stored outside the 1:100 year floodline. The ablution facilities must not be located within the 100m of any surface water features. Appropriate structures should be put in place to prevent the scouring and eroding of banks.	E, ECO	Ongoing
	Accidental spillages in or near a watercourse shall be cleared immediately and the spilled material shall be taken to the nearest registered landfill site capable of receiving such spills. In the event of an accidental spillage, DWA shall be contacted immediately on (018) 397 9547.	E, ECO	Ongoing
	The construction of long drops is forbidden.	E, ECO	Ongoing
	All construction workers must undergo Environmental Awareness training. Fines should be implemented if anyone is found capturing or consuming aquatic fauna.	E, ECO	Ongoing
	Emergency contact numbers should be clearly displayed at the Contractors Camp and should be referred to in order to deal with spillages and contamination of aquatic environments.	E, ECO	Ongoing
<b>B.8. Conservation of Natural Environment</b>			
<b>B.8.1 Fauna and Flora</b>	Only trees that have NOT been marked beforehand are to be removed.	E, ECO	During site establishment
	As the work front progresses the Contractor is to check that vegetation clearing has the prior permission of the Engineer and that the prior permission from DWA is obtained.	E, ECO, C	Ongoing
	Gathering of firewood, fruit, muthi plants, crops or any other natural material on site or in areas adjacent to the site is prohibited. Any individual caught collecting	E, ECO	Ongoing

Activity	Mitigation Measures	Responsible Party	Frequency
	animal species shall be removed from the site for the duration of the contract and criminal proceedings may be pursued.		
	No animals will be allowed to be caught (hunted), collected and consumed on site, or in surrounding areas, or removed from site by the Contractor or his personnel or sub-contractors. Any individual caught collecting animal species shall be removed from the site for the duration of the contract and criminal proceedings may be pursued. An infringement shall be deemed to have occurred for each trap or snare found, each person caught hunting and each animal caught.	E, ECO	Ongoing
	Immediate rehabilitation of stripped areas and ongoing removal of alien plant species by weeding must take place. This will significantly reduce the amount of time and money that must be spent on alien plant management during rehabilitation.	E, ECO	Ongoing
	Only the minimum area required for construction works will be utilised by the Contractor. The Contractor shall limit his personnel as well as sub-contractors to the immediate vicinity of the works. Personnel caught outside the vicinity of the works shall receive a written warning for a first occurrence. Should they be caught again after the initial warning they shall be removed from the site for the remainder of the contract.	E, ECO, C	Ongoing
<b>B.9. Materials Management</b>			
<b>B.9.1 Stockpile Management</b>	Stockpiles should not be situated such that they obstruct water pathways.	E, ECO, C	Ongoing
	Stockpiles should not exceed 2m in height unless otherwise permitted by the Engineer.	E, ECO, C	Ongoing
	If Stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or cloth, (short timeframe) depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases.	E, ECO, C	Ongoing
	Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding. Method to be approved by the engineer.	E, ECO	Ongoing
<b>B.9.2 Handling of Hazardous Materials</b>	All concrete mixing must take place on a designated, impermeable surface.	ECO	Ongoing
	In order to prevent concrete trucks being washed off-site in an uncontrolled manner, the chutes of all vehicles transporting concrete to the site must be washed on site. Water and concrete from washing shall be directed into an excavated sump which shall be situated within an area to be paved. Material washed into the sump may be excavated and used within the paving works or must be transported to an approved dump site.	ECO	Ongoing
	No vehicles transporting, placing or compacting asphalt or any other bituminous product may be washed on site.	ECO	Ongoing
	Lime and other powders must not be mixed during excessively windy conditions.	ECO	Ongoing
	All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of / removed from the site.	ECO	Ongoing
	All vehicle maintenance requiring the draining of oils or hydraulic fluids shall occur off-site and within the plant hire company / contractor's premises.	ECO, C	Ongoing
	Hazardous substances / materials are to be transported in sealed containers or bags. All empty bags shall be retained for inspection prior to being removed to an appropriately licensed hazardous waste landfill site. Receipts from the landfill site will be required for inspection.	ECO	Ongoing
	Spraying of herbicides / pesticides must not take place under windy conditions and must comply with OHSAs specs and all other chemical handling laws.	ECO	Ongoing

Activity	Mitigation Measures	Responsible Party	Frequency
	The emergency numbers shall be clearly displayed at the Contractor's camp and should be consulted should any accidents or spillages of hazardous substances and / or materials take place. The Contractor is to outline a method statement for the dealing of accidents or spillages of hazardous materials. This statement must be handed to the Engineer as well as to DWA should the incident occur near to a body of water.	E, ECO, C	Ongoing
<b>B.10 Waste Management</b>			
<b>B.10.1 On-Site Waste Management</b>  <i>"Refuse" refers to all construction waste such as rubble, asphalt millings, cement bags, waste cement, timber, cans, other containers, wire and nails, as well as household and office waste.</i>	Refuse must be placed in the designated skips / bins which must be emptied regularly. These should remain within demarcated areas and should be designed to prevent refuse from being blown out by wind.	ECO	Ongoing
	In addition to the waste facilities within the construction camp, provision must be made for waste receptacles to be placed at intervals along the work front.	ECO	Ongoing
	Littering on site is forbidden and the site shall be cleared of litter at the end of each working day.	ECO	Daily
	Recycling is to be encouraged by providing separate receptacles for different types of waste (paper, plastic, cans, glass etc.) and making sure that staff are aware of their uses.	ECO	During site establishment
<b>B.10.2 Waste disposal</b>			
<b>(i) Non-hazardous Waste</b>	All non-hazardous waste must be removed from the site and transported to a registered landfill site.	E, ECO	Ongoing
	Waybills proving disposal at each site shall be provided for the Engineer's inspection.	E, ECO, C	Checked at each site meeting.
	Construction rubble shall be disposed of in pre-agreed, demarcated spoil dumps that have been approved by the Engineer, or at registered disposal sites.	E, ECO	Ongoing
	Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor. Care must be taken to avoid contamination of soils and water, pollution and nuisance to adjoining areas. Receipts from the disposal company must be made available for inspection.	ECO	Weekly and prior to temporary site closure.
<b>(ii) Hazardous Waste</b>	Hazardous waste disposal must be carried out by an approved waste Contractor. Waybills for this should be provided.	ECO	Ongoing
	All hazardous waste must be removed from the site and transported to a registered hazardous landfill site.	ECO	Ongoing
	A sump (earth or other) must be created for concrete waste. This is to be de-sludged regularly and the cement waste is to be removed to an approved landfill site.	E, ECO	Ongoing
<b>B.11. Social Impacts</b>			
<b>B.11.1 Disruption of</b>	Contractor's activities and movement of staff to be restricted to designated construction areas.	E	Ongoing

Activity	Mitigation Measures	Responsible Party	Frequency
<b>Infrastructure and Services</b>  <i>Regular communication between the Contractor and Interested and Affected Parties (I&amp;AP's) is important for the duration of the contract.</i>	Should the construction staff be approached by members of the public or other stakeholders, they should assist them in locating the Engineer or Contractor, or provide a number on which they may contact the Engineer or Contractor.	ECO, E, C	Ongoing
	The conduct of the construction staff when dealing with the public or other stakeholders shall be in a manner that is polite and courteous at all times. Failure to adhere to this requirement may result in the removal of staff from the site by the Engineer.	E	Ongoing
	Disruption of the flow of traffic for road users must be minimized. The current number of traffic lanes must be available for traffic during peak hour flows.	E	Ongoing
	The Contractor is to inform neighbours in writing of disruptive activities at least 24 hours beforehand. This can take place by way of leaflets placed in the post boxes giving the Engineer's and Contractor's details or other method approved by the Engineer.	C, E	At least 24 hours prior to the activity taking place.
<b>B.11.2 Visual Impacts</b>	Lighting on the construction site should be pointed downwards and away from oncoming traffic and nearby houses.	ECO	Ongoing
	The site must be kept clean to minimise the visual impact of the site.	ECO	Weekly
	If screening is being used, this must be moved and re-erected as the work front progresses.	ECO	Ongoing
<b>B.11.3 Noise</b>	Machinery and vehicles are to be kept in good working order for the duration of the project to minimize noise nuisance to neighbours. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from site to be repaired.	C, ECO	Ongoing
	Notice of particularly noisy activities must be given to residents / businesses adjacent to the construction site. Examples of these include: - noise generated by jackhammers - drilling - dewatering pumps	E, ECO	At least 24 hours prior to the activity taking place.
	Noisy activities must be restricted to the times given in the Project Specification or General Conditions of Contract. Working hours are to be from 07h00 – 17h00 unless otherwise approved in writing by the DEA.	E	Ongoing
<b>B.11.4 Communication with Interested and Affected Parties (I&amp;AP's)</b>	The Contractor is responsible for on-going communication with those people that are interested in / affected by the project.	C	Ongoing
	A complaints register should be housed at the site office. This should be in carbon copy format, with numbered pages. Any missing pages must be accounted for by the Contractor. This register is to be tabled during monthly site meetings.	ECO	Monthly
	I&AP's need to be made aware of the existence of the complaints book and the methods of communication available to them.	E, ECO	Ongoing
	Queries and complaints are to be handled by: - documenting details of such communications - submitting these for inclusion in complaints register - bringing issues to Engineer's attention immediately - taking remedial action as per Engineer's instruction	E, ECO	Ongoing
	Selected staff are to be made available for formal consultation with I&AP's in order to: - explain construction process - answer questions	E, ECO	Ongoing
<b>12. Cultural Environment</b>			

Activity	Mitigation Measures	Responsible Party	Frequency
<b>B.12.1 Protection of Cultural Environment</b>	Possible items of historical or archaeological value include old stone foundations, tools, clayware, jewelry, remains, fossils, graves, etc. Should something of this nature be uncovered, the Research and Professional Services Division of SAHRA should be contacted and work should be stopped immediately.	ECO, E, C	Ongoing
	No structures older than 60 years or parts thereof are permitted to be demolished, altered or extended without a permit from.	ECO, E, C	Ongoing
	No activities are allowed within 50m of a site which contains rock art.	ECO, E, C	Ongoing
<b>SECTION C: POST CONSTRUCTION ACTIVITIES</b>			
<b>C.1 Construction Camp</b>			
<b>C.1.1 Construction Camp Rehabilitation</b>	All structures comprising the construction camp are to be removed from site.	E	Project completion
	The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint and fuel etc. and these should be cleaned up.	E, ECO	Project completion
	All compacted surfaces within the construction camp area should be deep ripped, all temporary hard surfaces shall be removed, all imported materials removed, and the area shall be rehabilitated in accordance with the Engineer's instruction.	E	Project completion
	The Contractor must arrange the cancellation of all temporary services.	C, E	Project completion
<b>C.2 Vegetation</b>			
<b>C.2.1 Reinstatement of Vegetation</b>	All areas that have been disturbed by construction activities (including the construction camp area) must be cleared of alien vegetation.	E, ECO	Project completion
	Open areas are to be re-planted as per the re-vegetation specification.	E, ECO	Project completion
	All vegetation that has been cleared during construction is to be removed from site or used as mulch as per the re-vegetation specification, except for seeding alien invasive vegetation which must be destroyed.	E, ECO	Project completion
	The Contractor is to water and maintain all planted vegetation until the end of the defects liability period and is to submit a method statement regarding this to the Engineer.	E, ECO, C	Project completion
	The rehabilitation of the disturbed site needs to be staged, and the initial re-vegetation stage will not resemble the original vegetation at all as its primary function is stabilization. The initial effort will provide the building-blocks for a sustainable system that can follow a successional process.	E, ECO	Project Completion
<b>C.3 Land Rehabilitation</b>			
<b>C.3.1 Land Rehabilitation</b>	All surfaces hardened due to construction activities are to be ripped and imported materials thereon removed.	ECO	Project completion
	All rubble is to be removed from the site to an approved disposal site as approved by the Engineer. Burying of rubble on site or in the surrounding area is prohibited.	E, ECO	Project Completion
	The site is to be cleared of all litter.	ECO	Project completion
	Surfaces are to be checked for waste products from activities such as concreting or asphaltting and cleared in a manner approved by the Engineer.	E, ECO	Project Completion

Activity	Mitigation Measures	Responsible Party	Frequency
	The Contractor is to check that all watercourses are free from building rubble, spoil and waste materials.	C, E, ECO	Project Completion
	All rehabilitated areas should be monitored for a period of six months after completion of construction activities to ensure the establishment of vegetation cover. Alien vegetation monitoring should also be undertaken during this period.	E, ECO	Project Completion
<b>C.4 Materials and Infrastructure</b>			
<b>C.4.1 Removal of Barriers, Remediation of Damage</b>	Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the Engineer.	C, E, ECO	Project Completion
	All residual stockpiles must be removed to spoil or spread on site as directed by the Engineer.	C, E, ECO	Project Completion
	All leftover building materials must be returned to the depot or removed from the site.	C, E, ECO	Project Completion
	The Contractor must repair any damage that the construction works has caused to neighbouring properties.	C, E, ECO	As per the Engineer's instructions
<b>C.5 Noise Monitoring</b>			
	In the event that measurements indicate exceedence of the acceptable noise limits, appropriate noise control measures should be investigated, so as to reduce the noise levels in those areas to the legislated or required levels.	E	Project Completion
<b>C.5 General</b>			
<b>C.5.1 General Remediation</b>	A meeting is to be held on site between the Engineer, ECO and Contractor to approve all remediation activities and to ensure that the site has been restored to a condition approved by the Engineer.	C, E, ECO	On completion of construction and maintenance phases.
	All areas where temporary services were installed are to be rehabilitated to the satisfaction of the Engineer and the ECO.	C, E, ECO	On completion of construction
	Temporary roads must be closed and access across these blocked.	C, E, ECO	On completion of construction

## 8. OPERATIONAL PHASE

### 8.1. ENVIRONMENTAL ASPECTS AND IMPACTS

The following aspects must be monitored as per appropriate management of the facility:

- Housekeeping/ Nuisance factors
- Odour and Emissions
- Health and Safety
- Litter and Waste Management
- Stormwater
- Traffic
- Noise

- Used Oil Storage

## 8.2. HOUSEKEEPING

### ***Nature of impact: Housekeeping (Proper environmental management at the Rockdale Transfer Station)***

**Description of aspect (activity/ies causing impact):** Poor housekeeping can result in nuisance factors which could lead to health, visual, and odour issues. Waste, particularly food waste and grass, have a high potential for odour. Poor facility design and operational methods could lead to nuisance to adjacent landowners. Furthermore rodents and flies could be a nuisance at waste transfer stations which could easily spread into becoming a nuisance to adjacent landowners.

#### ***Mitigation measures:***

- Proper facility design can significantly reduce odour problems. The facility design requirements as outlined in Section 4.1 of this EMPr should be implemented prior to commencement of any activities proposed as part of the facility upgrade;
- Good housekeeping” measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste;
- The Site manager must implement a pest control program at least every quarter. Biological or mechanical Pest control measures to be implemented. The best biological and mechanical rodent control measures as recommended by BirdLife Africa includes:
  - Barn Owls as a Biological control measure. Barn Owls can be attracted to cities by putting up owl nest boxes; and
  - Rat Zappers as a Mechanical control measure. With this method rodents are enticed into a trap in which they are killed by a quick but powerful electrical shock.
- Waste skips should be positioned carefully with respect to distance from adjacent landowners and type of adjacent land uses.
- Waste skips should be sealed with lids to reduce odours and to prevent wind-blown litter issues.
- “First-in, first-out” waste handling practices should be implemented on site to ensure that wastes are only kept on site for short periods.
- Wastes from the tipping floor should be removed at the end of each operating day so that these surfaces can be swept clean and washed down.
- Good housekeeping” measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.
- Water misting and/or deodorizing systems could be implemented.
- Activities which generate the most noise should be conducted between standard business hours (8:00 to 17:00);
- The area’s Environmental Health Division should be contacted to carry out targeted vector control measures if necessary.
- The hosing down of the working area is strongly discouraged. In terms of minimizing the amount of water wastage, employees are required to use a bucket system using water and disinfectant to clean sorting area.

Staff must be trained on proper housekeeping to ensure that the facility is well maintained.

**Responsibility:** Operational Manager

**Timeframes within which the measures must be implemented:** Ongoing

### 8.3. ODOUR AND EMISSIONS

**Description of aspect (activity/ies causing impact):** Waste, particularly food waste and grass, has a high potential for odour. Poor facility design and operational methods could lead to nuisance to adjacent landowners.

Emissions from heavy vehicles transporting wastes, as well as emissions from vehicles used by local waste entrepreneurs will impact on air quality

**Mitigation measures:**

- Proper facility design can significantly reduce odour problems.
- “First-in, first-out” waste handling practices should be implemented on site to ensure that wastes are only kept on site for short periods.
- Wastes from the tipping floor should be removed at the end of each operating day so that these surfaces can be swept clean and washed down.
- Good housekeeping” measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.
- Water misting and/or deodorizing systems could be implemented.
- Dust control measures to be implemented during the construction of stormwater reticulation system and installation of grease trap. Use of water to suppress dust should be considered carefully, as there is a risk of surface water contamination on site.
- All heavy vehicles to be kept in good working order and serviced regularly.
- A record of complaints regarding odours must be maintained on site.

**Responsibility:** Operational manager

**Timeframes within which the measures must be implemented:** Ongoing

### 8.4. STORMWATER

**Description of aspect (activity/ies causing impact):** All runoff would contain some degree of contamination from activities undertaken at the Rockdale Transfer Station. This has the potential to flow onto adjacent properties and pollute surface and groundwater, if not managed adequately.

**Mitigation measures:**

- Proper stormwater control measures to be implemented and grease trap to be installed.
- All heavy vehicles to be kept in good working order and serviced regularly.

**Responsibility:** Operational manager

**Timeframes within which the measures must be implemented:** Ongoing

### 8.5. LITTER AND WASTE MANAGEMENT

**Description of aspect (activity/ies causing impact):** Littering from open waste skips could occur under windy conditions. Furthermore litter from the tipping floor could spread to adjacent sites under windy conditions. Windblown litter from the



Municipality heavy waste vehicles, and from vehicles or carts or trolleys from local entrepreneurs during transport could have an impact on land uses located further away from the transfer station.

**Mitigation measures:**

- Waste skips should be sealed with lids to reduce odours and to prevent wind-blown litter issues.
- All vehicles transporting waste should not be overfilled and should be adequately covered with netting or another suitable cover to prevent windblown litter impacts.
- Waste should only be collected and delivered to site between normal business hours. A waste collection schedule should be compiled to prevent traffic piling up outside the gates.
- Patrolling nearby access roads to control litter from truck traffic

**Responsibility:** Operational Manager

**Timeframes within which the measures must be implemented:** Ongoing

## 8.6. TRAFFIC

**Description of aspect (activity/ies causing impact):** Heavy waste vehicles travelling to and from site could have an impact on traffic in the area. Waste collected via a non-motorised cart or trolley could obstruct traffic.

Heavy waste vehicles travelling to and from site could have an impact on traffic in the area. Local entrepreneurs will be used to collect recyclable wastes from the site in order to sell these recyclables to recycling companies or buy back centres. This could lead to increased traffic volumes. Waste collected via a non-motorised cart or trolley could obstruct traffic. Furthermore, wastes collected which could not be sold to recycling companies or buy back centres, could be dumped illegally.

**Mitigation measures:**

- The staff shall ensure that vehicles do not block traffic when entering the site or parking along the road verge
- The Operational manager will ensure that all staff abide by the South African Traffic Laws
- The Municipality will ensure that all vehicles owned by them are roadworthy
- Waste should only be collected and delivered to site between normal business hours. A waste collection schedule should be compiled to prevent traffic piling up outside the gates.

**Responsibility:** Operational Manager

**Timeframes within which the measures must be implemented:** Ongoing

## 8.7. NOISE

**Description of aspect (activity/ies causing impact):** Noise generated by heavy truck traffic and tipping of skips could be a source of noise impact in the area. Future waste sorting activities could contribute to current noise impact.

**Mitigation measures:**

- Activities which generate the most noise should be conducted between standard business hours (8:00 to 17:00).
- A record shall be kept of noise complaints received by the public

- Operations must be conducted in accordance with the Noise Control Regulations in terms of the Environment Conservation Act, Act No. 73 of 1989, as amended

**Responsibility:** Operational Manager

**Timeframes within which the measures must be implemented:** Ongoing

## 8.8. HEALTH AND SAFETY

**Description of aspect (activity/ies causing impact):** Rodents and could be a nuisance and a potential health concern at waste transfer stations which could easily spread into becoming a nuisance to adjacent landowners. There is a risk that fires could occur on site as a result of negligence.

Potential Health hazards associated with green waste, which is a potential health hazard for Rockdale Transfer Station Employees, include:

Problem (Infections, Chemicals, Skin)	Cause	Route into the body
Rat Fever (leptospirosis)	Rat Urine	Cuts and abrasions
Tetanus (lockjaw)	Soils and organic material	Deeper cuts and wounds
Botulism	Soils	Ingestion: hand to mouth contact
Problem (Infections, Chemicals, Skin)	Cause	Route into the body
Pasteurella Multocida	Bites	Skin pierced by bites
Pesticide and Insecticide residues	Garden sprays, weed killers etc.	Cuts, abrasions, Hands to mouth contact
Premature Skin Ageing and Skin Cancer	Excessive exposure to strong sunlight	Through unprotected skin

### Mitigation measures:

- Site manager must implement a pest control program at least every quarter.
- Good housekeeping” measures should be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste.
- Removing all waste delivered to the facility by the end of each day and cleaning the receiving floor daily.

Potential Health Hazard – Preventative Measures:

Problem (Infections, Chemicals, Skin)	Preventative Measures
Rat Fever (leptospirosis)	Good House-keeping and good hygiene
Tetanus (lockjaw)	Wear protective clothes e.g. gloves, safety shoes etc.
Botulism	Cover cuts and abrasions, wash hands during breaks
Problem (Infections, Chemicals, Skin)	Preventative Measures
Pasteurella Multocida	Clean any wound quickly and apply antiseptic
Pesticide and Insecticide residues	Wear protective clothing, Good Hygiene practices
Premature Skin Ageing and Skin Cancer	Wear long sleeved clothing Wear hats

- All workers will be supplied with the required Personal Protective Equipment (PPE) as per the Occupational Health and Safety Act (Act No. 85 of 1993). These include amongst other the following:
  - Protective overalls
  - Dust masks
  - Safety goggles

- Gloves
  - Safety boots
  - Gum boots
  - Rain suit
  - Hats
- Burning of any wastes on site is strictly prohibited. In terms of the Atmospheric Pollution Prevention Act (APPA), burning is not permitted for waste disposal.
  - All fire control mechanisms (firefighting equipment) will be routinely inspected by a qualified investigator for efficacy thereof and be approved by local fire services. Such mechanisms will be present and accessible at all times.
  - All staff on site will be made aware of general fire prevention and control methods, and the name of the responsible person to alert to the presence of a fire.

**Responsibility:** Operational Manager

**Timeframes within which the measures must be implemented:** Ongoing

## 8.9. USED OILS

**Description of aspect (activity/ies causing impact):** A special container for the disposal of used oils could be placed on site. A suitably licensed hazardous waste service provider will be appointed and containers that meet all specific requirements will be provided by the service provider. It will be responsibility of the service provider to collect container and replace with empty containers, or to drain filled containers.

**Mitigation measures:**

- A licensed and registered services provider such as the Rose Foundation or Enviroserv should be appointed to collect used oils from site;
- Used oils should be stored on site in safe approved containers as provided by licensed and registered services providers such as the Rose Foundation or Enviroserv;
- Use oil tanks/containers shall be situated in a bunded area the volume of which shall be at least 110% of the volume of the largest tank. The floor of bund shall be smooth and impermeable constructed of concrete or plastic sheeting with impermeable joints with a layer of sand over to prevent perishing. The bund walls shall be formed of well-packed earth with the impermeable lining extending to the crest. The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled fuel and/or fuel-soaked water to be removed.
- A letter of commitment from the oil company indicating that the site, all equipment and secondary containment measures will comply with the applicable SANS and industry standards should be submitted to DEA prior to the commencement of operational activities.

**Responsibility:** Operational Manager

**Timeframes within which the measures must be implemented:** Ongoing

## 9. IMPLEMENTATION OF THE EMPR

### 9.1. DOCUMENTATION AND RECORD KEEPING

All records related to the implementation of this EMPr must be kept on site and by the Steve Tshwete Local Municipality. The records must contain the following information *inter alia*:

- Quantity and type of waste received;
- Disposal certificates of disposal of residual waste;
- Emergency incidents;
- Emergency preparedness, contingency plans incidents and corrective measures;
- List of trained staff, contractors and sub-contractors;
- A register of complaints (for *inter alia*. noise and odour), which documents community comments and issues, and the actions taken in response to these complaints; and
- Details of training (including health and safety and environment) as appropriate.

All records shall be available on site at all times, for inspection by auditors and the relevant authorities.

### 9.2. ENVIRONMENTAL AWARENESS AND TRAINING

Environmental awareness training must be held for all staff operating the site. Courses shall be run during normal working hours at a suitable venue provided by the Operational Manager.

The environmental training shall, as a minimum, include the following:

- The importance of conformance with all environmental policies;
- Operational procedures relevant to the site;
- The environmental impacts, actual or potential, of their work activities;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures including emergency preparedness and response requirements;
- Worker conduct on-site;
- Contents of the EMPr; and
- The mitigation measures required to be implemented when carrying out their work activities.

A record of training programmes and training attendance shall be maintained by the Operational Manager and kept on site as per the records management system.

### 9.3. WASTE ACCEPTANCE AND SCREENING

Prior to waste being accepted, it shall be inspected. The transporter shall confirm that it is general waste. The source, vehicle registration and a description of the waste shall be recorded. The site operator shall also ensure that no hazardous wastes (e.g. hazardous liquids, sludges, solids or even sealed drums) enter the site. In the event of hazardous waste being intercepted at the site, it shall be diverted to a hazardous waste landfill and a disposal certificate must be retained as proof of disposal.

Appropriate identification procedures shall be provided and all workers shall be trained in this regard. The site operator must be trained in respect of the correct handling procedures for unacceptable waste and must also have contact numbers for the places where the unacceptable waste can be disposed.

If a waste cannot be identified, the precautionary principle must be applied and the waste shall be regarded as hazardous and managed in that regard.

#### **9.4. SITE SIGNAGE**

The site signage must display the following:

- Facility Name,
- Trading hours,
- Contact Numbers,
- Waste types accepted and not accepted, and
- The Waste License Number.

#### **9.5. SECURITY AND PERIMETER / ACCESS CONTROL**

The site entrance shall comprise a lockable gate which shall be manned during hours of operation.

Additional security, after operating hours and on public holidays, is also required at the site. In addition to the gate, the site shall be fenced and/or secured along its perimeter.

Gates and perimeter fences shall be examined on a daily basis by the site operator to determine/assess its integrity and repair it in the event of any damage.

#### **9.6. EATING AREAS AND ABLUTIONS**

The Operational Manager shall designate eating areas for staff. Sufficient bins as specified shall be available in these areas. The ablation facilities shall be maintained in a clean and orderly state and are to be regularly cleaned to prevent odour and pest problems.

#### **9.7. STAFF CONDUCT**

The Operational Manager shall ensure the following with regards to staff conduct:

- No indiscriminate dumping of litter or waste;
- No burning of fires;
- Acts of excretion and urination are strictly prohibited other than at the facilities provided;
- No alcohol / drugs to be allowed on site;
- No firearms allowed on site or in vehicles transporting staff to / from the site (unless used by security personnel);
- Prevent excessive noise.
- Trespassing on private / commercial properties adjoining the site is forbidden.
- Driving under the influence of alcohol is prohibited.

## 10. EMERGENCY PREPAREDNESS AND CONTINGENCIES

Emergency preparedness and contingency measures must be reviewed and updated on a regular basis to ensure that the procedures in place are still adequate and whether alternative methods should be applied.

General procedures are required for the following:

- Fire;
- And Medical emergency
- (occupational accidents)

## 11. FIRE

A fire evacuation plan needs to be drafted to be as practical as possible in terms of the site layout. The plan shall be approved by the responsible Fire Chief in the area.

Appropriate emergency contact numbers (e.g. Fire Department) must be clearly displayed on site.

Regular fire drills must be implemented and relevant training shall be given as required. All fire-fighting equipment must be clearly signposted and access ensured at all times.

## 12. EMERGENCY

A first aid kit must be kept on site and be accessible to the site employees. The first aid kit must be kept up to date and stock replenished. A responsible and knowledgeable person must be identified to undertake the management of the first aid kit.

Emergency contact numbers for various health services (e.g. hospitals) must be clearly displayed.

All medical emergencies must be recorded in the incidents register with details of who was injured; how they were injured and what action was taken.

An Emergency Response Plan must be prepared and kept on site in a prominent place so that the site operator and site staff have ready access to the relevant information. The Plans must address *inter alia*. power failures, mechanical and electrical break-downs, labour strikes, disruption to the transportation of outward-bound waste, receiving unauthorized wastes, fires, flooding, etc.

## 13. MANAGEMENT AND REVISION OF THE EMPR

This EMPr serves as a guide for minimising impacts during the operational phase of the development. As such, the EMPr can be seen as an adaptive and flexible document, capable of responding to unanticipated events or outcomes. In this regard, the EMPr is to be reviewed and updated on a yearly basis to ensure that the conditions therein are valid and whether additional conditions are required.

The EMPr will also need to be updated with the inclusion of conditions as per the Waste License, once issued by the Department of Environmental Affairs. Review will also take place in the following instances:

- Changes in operational processes;
- Changes in the environment;
- New risks to the environment;

- Changes in legislation; and
- Requests or directions from any competent Authority.

#### **14. AVAILABILITY OF THE EMPR**

Copies of the EMPr must be available on-site. All personnel onsite (including sub-contractors and their staff) must have full access to the document if required.

#### **15. MONITORING AND AUDITING (IF REQUIRED BY THE WASTE LICENCE)**

The aim of operational monitoring and auditing is to assess the waste management operation in order to determine whether it conforms to the design and whether it performs to certain standards.

Monitoring will also identify and give early warnings of problems such as insufficient capacity, odour generation, etc.

**Operational Auditing** includes consideration of *inter alia* site security, site access, traffic control as well as actual waste handling.

**Internal auditing** can be done by managerial staff on a monthly basis. Internal audits are internal self-evaluations.

The frequency of monitoring will be determined by the waste license conditions.

#### **16. DECOMMISSIONING AND CLOSURE**

It is not anticipated that the Rockdale Transfer Station will be closed as it will be required indefinitely by the local community. However, if in the unlikely event that the Station is to be closed, rehabilitation of the Rockdale Transfer Station will be required. All infrastructures will be removed and concrete surfacing will be demolished. The area will be scarified, ripped and seeded. Vegetation establishment should be monitored for a period of six months from the end of the closure phase to ensure the proper establishment of vegetation cover. Alien vegetation control should also be implemented. All monitoring and mitigation measures, as addressed in the construction phase above, should be implemented during closure.