



ESKOM GENERATION

Proposed Installation of an Additional 500m³ Bulk Storage Fuel Oil Tank at Grootvlei Power Station, Mpumalanga Province

Draft Basic Assessment Report

DEA EIA Ref. No: 12/12/20/2358
NEAS Ref. No: DEAEIA/0000418/2011

Issue Date: 6 January 2011
Revision No.: 1
Project No.: 10937

DRAFT BASIC ASSESSMENT REPORT

Date:	6 January 2011
Document Title:	Draft Basic Assessment Report – Installation of an additional 500m ³ Bulk Storage Fuel Oil Tank at the Grootvlei Power Station, Mpumalanga Province
Author:	Lucy Chimoyi; Shaun Taylor
Revision Number:	1
Checked by:	Kelly Tucker
Approved:	
For:	Eskom Holdings Limited
<i>"COPYRIGHT IS VESTED IN SIVEST IN TERMS OF THE COPYRIGHT ACT (ACT 98 OF 1978) AND NO USE OR REPRODUCTION OR DUPLICATION THEREOF MAY OCCUR WITHOUT THE WRITTEN CONSENT OF THE AUTHOR"</i>	

Details and Experience of EAP

In line with Section 22(2) of the Environmental Impact Assessment Regulations 2010 in Government Notice (GN) No. R543 which requires that a basic assessment must include the Environmental Assessment Practitioner (EAP) who prepared the report; and the expertise of the EAP to carry out basic assessment procedures, the brief is outlined below. For comprehensive curriculum vitae of the EAPs, please refer to Appendix H.

- SiVEST is the independent Environmental Consulting company (EAP), Kelly Tucker is the lead environmental consultant for the proposed development. Kelly has nine years experience in the environmental impact assessments and fills the role of a project leader. Kelly has led several large EIA's. Projects include full Environmental Impact Assessments as well as Basic Assessments (please refer to Appendix H for a comprehensive curriculum vitae). Examples of projects conducted include: Environmental Impact Assessment Process for three proposed Wind Farm Developments in the Northern Cape Province for Mainstream Renewable Power SA.
- Medupi Power Station, Eskom Generation – Environmental management on site during the construction phase.
- 400KV Transmission Powerline which is 150km in length for the Botswana Power Corporation in Botswana
- Arcelor Mittal Steel Capacity Expansion Project at the existing Plant, South of Johannesburg, South Africa.
- Eskom Transmission: Mercury – Garona 400kV Transmission Line, a distance of approximately 570 km.
- Eskom Generation: Steelpoort Pumped Storage Scheme Project.
- EIA for the New-Multi Products Pipeline – a 500km mixed use Fuel Pipeline from Durban to Johannesburg for Transnet. Kelly was project Manager for the social aspect of this process.

Shaun Taylor has four years experience as an environmental assessment practitioner and has completed numerous basic assessments, various exemption and amendment applications, compiled environmental management plans and conducted environmental auditing (Please refer to Appendix H for a comprehensive curriculum vitae). Examples of projects undertaken to date include:

- Basic Assessment for Portion 318 Erand A.H. Light Industrial Development
- Basic Assessment for Holding 1 Withok Light Industrial Development
- Basic Assessment for Blue Hills Holdings 1 & 2 Commercial Development
- Basic Assessment for Mostyn Park 11Kv power cable crossing under a river
- Basic Assessment for Weltevreden 202 IQ Office Park Development
- Basic Assessment for Carlswald Shopping Centre Billboard Development

- Basic Assessment for Braodacres Shopping Centre Billboard Development

Executive Summary

Grootvlei Power Station, located at Mpumalanga Province, within the Dipaseleng Local Municipality is proposing to install an additional (7th) bulk storage fuel oil tank (referred to in the report as the proposed tank) with a capacity of 500 m³. The purpose of this installation is to avert the risk of fuel supply interruptions which would be as a result of service delivery and worker strikes, which frequently occur. This is in addition to supplying additional fuel oil to assist the Power Station in meeting increasing energy demand generally. The assurance of supply will ultimately assist the Power Station in safeguarding and sustaining its generation capacity. The proposed tank will therefore secure the fuel demands of Grootvlei Power Station.

Eskom Generation has appointed SiVEST to undertake a Basic Assessment (BA) process for this proposed installation. A Basic Assessment is required in accordance with the Environmental Impact Assessment (EIA) Regulations 2010 promulgated in terms of Sections 24(2) and 24D of the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended, in Government Notice (GN) No. R543. The proposed development triggers activity No. 42 listed in GN No. 544. SiVEST have been appointed as the independent environmental consultant undertaking the Basic Assessment process on behalf of Eskom as per Section 17 of the National Environmental Management Act (No. 107 of 1998) (NEMA), Environmental Impact Assessment Regulations.

This application considered two types of feasible alternatives. The assessment of feasible and reasonable alternatives is a legal requirement for any environmental application for authorisation. Two location alternatives and two design alternatives have been proposed by Eskom, and are presented in the report.

The two location alternatives are referred to as Alternative S1 and Alternative S2. Alternative S1 is located at co-ordinates S 26° 46.082': E 28° 29.891'. Alternative S2 is located at the co-ordinates S 26° 46.096': E 28° 29.901'. The bund area of Location Alternative S1 will cover an area of 256.3 m² and will hold a capacity of 588.8 m³. The bund area of Location Alternative S2 will cover an area of 329.12 m² and will hold a capacity of 750 m³.

The two design alternatives include Alternative A1 and Alternative A2 (Design Alternatives).

Design Alternative A1 considers a vertical or "stand-up" bulk storage fuel oil tank design. The stand-up bulk storage fuel oil tank will have a diameter of 8 m and a height of 12 m. This will be a single tank that will hold 500 m³. The physical footprint of the proposed tank will be 50 m². The tank material will be made up of a steel grade material (ASTM-A36). The bunded area for the stand-up tank will hold 110%

of the capacity. The bund wall will be 2.3m tall, accommodating a capacity of at least 110% of the capacity of the fuel oil tank. The bunded area will hold approximately 588.8 m³.

Design Alternative A2 considers a horizontal or “lay-down” bulk storage fuel oil tank design. Two tanks of a capacity of 250 m³ each are considered for this alternative. The lay-down bulk storage fuel oil tank design for each tank will have a diameter of 4 m and a length of 20 m. It is estimated that the bunded area will be 2.3 m in height and will accommodate at least 110% capacity of the fuel oil tank. Alternative A2 will hold approximately 759 m³.

The following specialist studies were conducted for the proposed development:

- Biodiversity
- Surface Water
- Geohydrology
- Agriculture & Soils Potential
- Heritage
- Noise
- Geotechnical
- Social
- Risk

Based on the specialist studies undertaken for the proposed development, no fatal flaws were identified.

In light of the technical information, the environmental investigation undertaken through the Basic Assessment process and the specialist assessments conducted, it is the opinion of Environmental Assessment Practitioner that the preferred Alternative should be Location Alternative S1 and Design Alternative A1, provided that the mitigation measures and specialist recommendations stipulated in this BA are implemented.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

DEA File Reference Number:

12/12/20/2358

NEAS Reference:

DEA/EIA/0000418/2011

Application Number:

Date Received:

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.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report 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. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. 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.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
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. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
11. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

	NO ✓
--	------

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:
Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail¹:

Grootvlei Power Station is a coal fired power station (approximately 538.9 hectares in size). Within the Power Station there are 6 coal fired units rated at 200 MW each with a total installed capacity of 1 200 MW. The different drum boilers are fired with pulverised fuel (PF) via individual coal milling plants. The fuel oil is used to start up and shut down these boilers.

The fuel oil plant supplies oil to the burners of all six boiler units via a common 4 inch supply duct. The used fuel oil returns to the fuel oil plant via a 5 inch circulation duct. Oil tankers deliver fuel oil on a daily basis to the station to supply the existing 6 tanks. It is not anticipated that the additional fuel oil tank will increase the amount of fuel oil delivered daily, as the additional tank will function primarily as a back up fuel oil tank should the need arise. The additional tank will need to be supplied initially but ongoing fuel oil supply to this tank will be minimal. The fuel oil is predominantly supplied by Sasol from any of their two supply depots, namely Sasol Refinery and Sasol Depot. The fuel is trucked to the station.

The fuel oil in Grootvlei Power Station is stored in six storage tanks. Five tanks have a capacity of 97 m³ and one with a capacity of 75 m³. The total existing capacity at the Grootvlei Power Station is therefore, 560 m³. Each tank is fitted with an outflow heater, located inside the take-off of each tank. Each tank is fitted with a drain line that features an isolating valve for draining sediment that accumulates at the bottom of the tanks, this sediment will be handled on site.

Grootvlei Power Station is proposing to install an additional (7th) bulk storage fuel oil tank (referred to in the report as the proposed tank) with a capacity of 500 m³. After the additional proposed fuel oil tank has been installed, the total capacity will be 1 060 m³.

The 7th proposed tank will be linked to the other six existing tanks and will therefore; similarly be linked to the 4 inch supply duct and the 5 inch circulation discharge line as with the other six existing tanks. The 7th proposed tank will be manufactured off-site but assembled on-site. A site establishment and construction lay-down area will be designated for the assembly and installation of the proposed tank. A contractor's yard will also be required during the construction phase of the proposed development. The site for this construction lay-down area has not yet been identified, but will be within the boundary of the Grootvlei Power Station.

A Basic Assessment is required in accordance with the Environmental Impact Assessment (EIA) Regulations 2010 promulgated in terms of Sections 24(2) and 24D of the National Environmental

¹ Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

Management Act (No. 107 of 1998) (NEMA), Environmental Impact Assessment Regulations. The proposed development triggers an activity listed in GN No. 544. The relevant activity and corresponding proposed development components are listed below.

Government Notice No. R544 - Listing Notice 1 of 2010		
No.	Activity Description	Corresponding project component
42	<i>The expansion of facilities for the storage, or storage and handling, of a dangerous good, where the capacity of such storage facility will be expanded by 80 cubic metres or more.</i>	The proposed development would entail the capacity expansion of the existing six above ground storage fuel oil tanks at the Grootvlei Power Station by installing the proposed 7 th bulk storage fuel oil tank with a capacity of 500m ³ .

The purpose of the installation of the proposed tank is to avert the risk of fuel supply interruptions which may be as a result of service delivery and worker strikes which may occur. This is in addition to the existing six tanks, supplying additional fuel oil to assist the Power Station in meeting increasing energy demand. The assurance of supply will ultimately assist the Power Station in safeguarding and sustaining its generation capacity. The proposed tank will therefore contribute towards securing the fuel demands of Grootvlei Power Station.

2. FEASIBLE AND REASONABLE ALTERNATIVES

According to section 1 of GN 543 “**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that feasible and reasonable alternatives have not been considered to a reasonable extent.

The assessment of feasible and reasonable alternatives is a legal requirement for any environmental application for authorisation. The factors validating the selection of alternatives are as follows:

- Firstly, from a location perspective, the bulk storage fuel oil tank must be in close proximity (approximately 150 m) to the existing fuel oil tank infrastructure for safety and feasibility

reasons, and for optimised and efficient operational benefits. Placing the proposed tank in a location further away from the existing infrastructure will create safety risks to workers in the Power Station. The further the proposed tank is from the existing tank infrastructure, the greater the chance of encountering other existing infrastructure at the power station, such as roads and existing services. The further the proposed tank is from the existing tank infrastructure will also result in a greater environmental footprint impact and the potential increased risk of an incident that could impact on the environment. Bearing these factors in mind, two feasible location alternatives have been identified for assessment.

- From a design perspective, it is possible that different alternative tank designs can be evaluated for the proposed tank. Some tank designs (Design Alternative A2 - a horizontal or "lay-down" bulk storage fuel oil tank design), will have a greater footprint and therefore a greater environmental impact, compared to others. For this reason, alternative tank designs will be considered.

The alternatives that will be carried forward in the environmental assessment of the proposed tank are:

1. Location Alternatives

A site selection process was undertaken whereby four alternative locations were preliminarily identified with the intent on narrowing down potential locations for the proposed tank to two locations that were more suitable. The initial four sites that were considered were situated at the following co-ordinates: from a location perspective, the bulk storage fuel oil tank must be in close proximity (approximately 150 m) to existing tanks.

Potential Alternative Location 1 – S 26° 46.032': E 28° 29.852'

Potential Alternative Location 2 – S 26° 46.096': E 28° 29.901'

Potential Alternative Location 3 – S 26° 46.093': E 28° 29.912'

Potential Alternative Location 4 – S 26° 46.082': E 28° 29.891'

A ranking procedure was carried out whereby various criteria were evaluated in terms of the suitability of the site location. The cumulative score of the ranked criteria were rated to give an overall suitability rating. The ranking criteria are explained in the below tables 1 and 2. The alternative locations are explained in Table 3 below.

Table 1: Ranking Criteria

Suitability Criteria	Ranking
Low	1
Medium	2
High	3

Table 2: Rating and Suitability

Overall Suitability	Rating
Not Suitable	13-19
Low Suitability	20-26
Medium Suitability	26-32
High Suitability	33-39

Table 3.: Site Selection Table

<u>Potential Location Alternative</u>	<u>Criteria</u>	<u>Suitability Ranking</u>	<u>Reason</u>	<u>Overall Suitability</u>
Potential Alternative Location 1	Proximity to Existing Tanks	1	Potential alternative location situated approximately 120 m from existing tanks	<u>32 - Medium Suitable</u>
	Proximity to Tank Infrastructure	1	Potential alternative location situated approximately 120 m from existing infrastructure	
	Proximity to Services (Roads)	2	Potential alternative location situated approximately 40 m from nearest road	
	Tank Accessibility	3	Potential alternative location easily accessible due to open area	
	Space Availability	3	Sufficient space availability	
	Biodiversity	3	Area transformed – no effect on biodiversity	
	Surface Water	3	Area transformed. No nearby surface water features	
	Soils and Agricultural Potential	3	No agricultural potential	
	Noise	3	Activity will not generate additional noise in this location	
	Social	3	No additional social impacts foreseen at this location	
	Heritage	3	No sites, features or objects of cultural heritage significance identified in the area	
	Geotechnical	2	Certain geotechnical constraints may be encountered	
	Geohydrology	2	May impact on groundwater in this location	
Potential Alternative Location 2	Proximity to Existing Tanks	3	Potential alternative location situated approximately 10 m from existing tanks	<u>33 - High Suitability</u>
	Proximity to Tank Infrastructure	3	Potential alternative location situated approximately 10 m from existing infrastructure	
	Proximity to Services (Roads)	2	Potential alternative location situated approximately 30 m	

			from nearest road	
	Tank Accessibility	1	Accessibility limited due to existing surrounding buildings	
	Space Availability	2	Fair space availability	
	Biodiversity	3	Area transformed – no effect on biodiversity	
	Surface Water	3	Area transformed. No nearby surface water features	
	Soils and Agricultural Potential	3	No agricultural potential	
	Noise	3	Activity will not generate additional noise in this location	
	Social	3	No additional social impacts foreseen at this location	
	Heritage	3	No sites, features or objects of cultural heritage significance identified in the area	
	Geotechnical	2	Certain geotechnical constraints may be encountered	
	Geohydrology	2	May impact on groundwater in this location	
Potential Alternative Location 3	Proximity to Existing Tanks	3	Potential alternative location situated approximately 20 m from existing tanks	33 – High Suitability
	Proximity to Tank Infrastructure	3	Potential alternative location situated approximately 20 m from existing infrastructure	
	Proximity to Services (Roads)	2	Potential alternative location situated approximately 40 m from nearest road	
	Tank Accessibility	1	Accessibility limited due to existing surrounding buildings	
	Space Availability	2	Fair space availability	
	Biodiversity	3	Area transformed – no effect on biodiversity	
	Surface Water	3	Area transformed. No nearby surface water features	
	Soils and Agricultural Potential	3	No agricultural potential	
	Noise	3	Activity will not generate additional noise in this location	
	Social	3	No additional social impacts foreseen at this location	

	Heritage	3	No sites, features or objects of cultural heritage significance identified in the area	
	Geotechnical	2	Certain geotechnical constraints may be encountered	
	Geohydrology	2	May impact on groundwater in this location	
Potential Alternative Location 4	Proximity to Existing Tanks	3	Potential alternative location situated approximately 5 m from existing tanks	37 - High Suitability
	Proximity to Tank Infrastructure	3	Potential alternative location situated approximately 5 m from existing infrastructure	
	Proximity to Services (Roads)	3	Potential alternative location situated approximately 5 m from nearest road	
	Tank Accessibility	3	Potential alternative location easily accessible due to open area	
	Space Availability	3	Good space availability	
	Biodiversity	3	Area transformed – no effect on biodiversity	
	Surface Water	3	Area transformed. No nearby surface water features	
	Soils and Agricultural Potential	3	No agricultural potential	
	Noise	3	Activity will not generate additional noise in this location	
	Social	3	No additional social impacts foreseen at this location	
	Heritage	3	No sites, features or objects of cultural heritage significance identified in the area	
	Geotechnical	2	Certain geotechnical constraints may be encountered	
	Geohydrology	2	May impact on groundwater in this location	

As explained above the Alternative Locations 1 and 3 have been discarded for further investigation. The reason for potential alternative location 1 being discarded from further investigation and was due to this location being too far from the existing tanks and tank infrastructure.

Potential alternative location 1 and 3 were slightly less suitable in terms of their position to existing

infrastructure, these alternatives were therefore eliminated for further detailed investigation.

Potential alternative locations 2 and 4 were then selected as the most suitable location alternatives that could be considered for the proposed development. The two location alternatives will be referred to as:

- **Alternative S1 (previously referred to as Potential Alternative Location 4 - Preferred):**
Alternative S1 is located at the co-ordinates S 26° 46.082': E 28° 29.891'. Alternative S1 is situated north west of the existing nearby toilet buildings and north of the existing tank infrastructure. The distance to the existing tank infrastructure is approximately 5 m to the nearest tank. The general description of the site has a flat topography and is transformed by anthropogenic activities. This alternative is located adjacent to the existing road and is easily accessible for emergency vehicles and filling tanks.
- **Alternative S2 (Potential Alternative Location 2):**
Alternative S2 is located at the co-ordinates S 26° 46.096': E 28° 29.901'. Alternative S2 is situated to the south of the nearby existing toilet buildings and to the east of the existing tank infrastructure. The distance to the existing tank infrastructure is approximately 10 m to the nearest tank. The general description of the site has a flat topography and is transformed by anthropogenic activities. This alternative is bound by existing infrastructure and buildings, such as toilets. The accessibility to this alternative for emergency vehicles and filling tanks is limited by the presence of this existing infrastructure and buildings as previously mentioned.

It is important to note why Alternative S1 is the preferred alternative location. Reasons include the following:

- From a suitability point of view, the area considered for Location Alternative 1 is preferred in that it is ideally located in close proximity to the existing tank infrastructure (pipes, pumps, nearby existing tanks etc.).
- From a safety perspective, there is sufficient space for vehicular access at Alternative S1. In the case of emergencies, fire truck and other emergency vehicles can gain direct access to the proposed bulk storage fuel oil tank. Alternative S2 is bound by existing infrastructure and buildings, such as toilets. The accessibility to this Alternative S2 for emergency vehicles and filling tanks is limited by the presence of this existing infrastructure and buildings as previously mentioned.
- From an operational perspective, direct access for fuel delivery trucks will be possible. Ease of access will allow operational aspects to function more efficiently than if the proposed tank is located in a less easily accessible location. Alternative S2 is bound by existing infrastructure and buildings, such as toilets. The accessibility to this Alternative S2 for emergency vehicles and filling tanks is limited by the presence of this existing infrastructure and buildings as previously mentioned.
- From a capital expenditure point of view, since the preferred location is ideally situated near existing infrastructure, the expenses of purchasing piping and other associated materials and equipment will be kept to a minimum, as so will the localisation of any impacts during construction and operation..
- In consideration of the specialist studies conducted, the impact of both location alternatives will be highly similar or if not identical. Hence, there is no particular preference from a biophysical and social specialist point of view.
- With the motivation provided above, Alternative S1 is preferred from an environmental footprint/impact, suitability, safety, operational and capital expenditure point of view thereby rendering it the more feasible and reasonable alternative. Hence from a location perspective, Alternative S1 is the preferred alternative.

2. Design Alternatives

Two design alternatives were proposed to be evaluated for the proposed fuel oil storage tank.

First Design Alternative (Alternative A1):

It is proposed that the first design alternative to be evaluated considers a vertical or “stand-up” bulk storage fuel oil tank design. The stand-up bulk storage fuel oil tank will have a diameter of 8 m and a height of 12 m and have a capacity of 500 m³. The physical footprint of the proposed tank will be 50 m². The tank material will be made up of a steel grade material (ASTM-A36). The bunded area for the stand-up tank will hold 110% of the capacity. It is estimated that the bund wall will be 2.3m tall, accommodating a capacity of at least 110% of the capacity of the fuel oil tank. The bunded area will hold approximately 588.8 m³.

The piping to link the tank to existing tanks is as follows

- Supply line from offloading station to new tank approximate 50 m length 100NB, A 106 grade B
- Discharge line from the new tank to LP pump suction approximate 50 m length 100NB, A 106 grade B
- Piping for fire protection system approximate 50 m length and 80 NB Carbon Steel to nearest tie in point.
- Drainage will be to a nearby storm water drain currently being used by the existing nearby fuel oil tanks. The stormwater drainage system for Grootvlei Power Station is a closed-system, Drainage from within Grootvlei Power Station drains to a skimming plant where the water is treated and re-used within the Power Station

Second Design Alternative (Alternative A2):

The second design alternative to be evaluated considers a horizontal or “lay-down” bulk storage fuel oil tank design. Two 250 m³ lay-down tanks are considered for this alternative. The lay-down bulk storage fuel oil tank design for each tank will have a diameter of 4 m and a length of 20 m. It is estimated that the bunded area will be 2.3 m in height and will accommodate at least 110% capacity of the fuel oil tank. Alternative A2 will hold approximately 759 m³.

The two design alternatives will be referred to as:

- Alternative A1 – Stand-up 500 m³ Bulk Storage Fuel Oil Tank (Preferred)
- Alternative A2 – Two Lay-down 250 m³ Bulk Storage Fuel Oil Tanks

It is important to note why Alternative A1 is the preferred alternative bulk storage fuel oil tank design. Key reasons include the following:

- A stand-up bulk storage fuel oil tank design will occupy a smaller development area (physical footprint) in that the bunded area surrounding the tank will need to accommodate the diameter (8 m) and not the length (12 m) of the proposed fuel oil tank. The physical footprint will therefore be smaller implementing Alternative A1, than a lay-down fuel oil tank (Alternative A2) which would require a bunded area that accommodates the length of the proposed fuel oil tank. As such, the impacted area for the stand-up fuel oil tank (Alternative A1) will be smaller than the lay-down fuel oil tanks (Alternative A2).
- From an operational perspective, the smaller development area or footprint of the stand-up fuel oil tank means that there is more space for operational manoeuvrability around the proposed tank than there would be for the lay-down fuel oil tank design.

3. No-Go Alternative

The No-Go alternative entails maintaining the status quo, which is essentially the non-occurrence of the proposed development. In this case, it would mean that an additional bulk storage fuel oil tank will not be installed and the capacity of the existing storage tanks will not be increased and will remain as the current status quo. The existing receiving environment will therefore not be affected by the proposed development and it will remain in its current state. The No-Go alternative will be assessed and will serve as the baseline against which the impacts of the other alternatives are assessed.

Should the construction and operation of the proposed additional fuel oil tank not proceed, Grootvlei Power Station is at risk of not meeting its electricity supply requirements should the fuel capacity at the Power Station not be re-enforced, due to potential strikes.

Paragraphs 3 – 13 below should be completed for each alternative.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. 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.

List alternative sites, if applicable.

Alternative:	Latitude (S):		Longitude (E):	
	°	'	°	'
Alternative S1 ² (preferred)	26°	46.082'	28°	29.891'
Alternative S2 (if any)	26°	46.096'	28°	29.901'
No-Go	n/a	n/a	n/a	n/a

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

² "Alternative S.." refer to site alternatives.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

- Alternative S1 (preferred location alternative)
- Alternative S2
- Alternative A1³ (preferred activity alternative)
- Alternative A2
- No-Go Alternative

Size of the activity:

256.3 m ²
329.12 m ²
50 m ²
160 m ²
n/a

or, for linear activities:

Alternative:

- Alternative S1 (preferred location alternative)
- Alternative S2
- Alternative A1⁴ (preferred activity alternative)
- Alternative A2
- No-Go Alternative

Size of the activity:

n/a

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

- Alternative S1 (preferred location alternative)
- Alternative S2
- Alternative A1⁵ (preferred activity alternative)
- Alternative A2
- No-Go Alternative

Size of the activity:

256.3 m ²
329.12 m ²
50 m ²
160 m ²
n/a

5. SITE ACCESS

Does ready access to the site exist?

YES ✓	
n/a	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

n/a

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6. SITE OR ROUTE PLAN

³ "Alternative A.." refer to activity, process, technology or other alternatives.

⁴ "Alternative A.." refer to activity, process, technology or other alternatives.

⁵ "Alternative A.." refer to activity, process, technology or other alternatives.

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

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 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 trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 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):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

See **Appendix A** for the following list of maps

- Appendix A1 – Site Plan
- Appendix A2 – Locality Map (1:50 000 Topographical Map)
- Appendix A3 – Google Site Locality

7. 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 under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

See **Appendix B** for Colour Photographs. Colour photographs were taken at:

- Centre of the site
- Alternative S1 (Preferred)
- Alternative S2
- Other relevant features on the site

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C 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.

See **Appendix C** for a detailed illustration of the proposed development. The facility illustration has been provided for the Location Alternatives that have been assessed.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 20 million
What is the expected yearly income that will be generated by or as a result of the activity?	R 500 000
Will the activity contribute to service infrastructure?	<input type="checkbox"/> NO ✓
Is the activity a public amenity?	<input type="checkbox"/> NO ✓
How many new employment opportunities will be created in the development phase of the activity?	10 people
What is the expected value of the employment opportunities during the development phase?	R 408 000
What percentage of this will accrue to previously disadvantaged individuals?	80% (R 326 400)
How many permanent new employment opportunities will be created during the operational phase of the activity?	2 people
What is the expected current value of the employment opportunities during the first 10 years?	R 5.76 million
What percentage of this will accrue to previously disadvantaged individuals?	80% (R 4.6 million)

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

NEED:		
1.	Was the relevant provincial planning department involved in the application?	YES ✓
<p>The relevant provincial planning department is the Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET). MDEDET were notified of the application to for a basic assessment for the proposed development on the 28th July 2011. MDEDET are a key commenting authority in the project. Proof of communication can be found in Appendix E.</p> <p>The relevant planning framework for this application is the Gert Sibande Integrated Development Program (GSIDP, 2011) and the Gert Sibande Spatial Development Framework (GSSDF). A local level municipal framework for the Dipaleseng Local Municipality is not yet available at present. Nonetheless, according to the GSIDP (2011), a key issue in terms of electricity is the current electrical capacity which remains a challenge at a provincial level as there is limited capacity to cater for new developments. The GSIDP (2011) mentions that Eskom is addressing the issue by enhancing capacity. This can be evidenced in this application with a view to ensuring and securing the supply of the Grootvlei Power Station.</p> <p>The GSIDP (2010) further mentions that a key issue in addressing priority areas for electricity is to ensure capacity to accommodate new developments. Lack of or stunted electricity supply therefore stands as an obstacle to development for the District area. This application will therefore contribute towards addressing this issue to some extent.</p>		

2.	Does the proposed land use fall within the relevant provincial planning framework?		NO✓
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		
	Bearing in mind that the Grootvlei Power Station has already been transformed and the site for the proposed development falls within the boundaries of the Grootvlei Power Station, the current land use of the site will not change and hence, will not affect the relevant provincial planning framework and surrounding land uses in terms of zoning issues. The proposed development therefore, already compliments the existing land use.		
	Should the proposed development not be undertaken, the potential short-term benefits of local employment creation and participation in the local economy by the contractor would not accrue to the local community should the work force originate from the immediate area. Although, the creation of employment expected to be generated by this development is considered to be very low, this potential significant impact needs to be considered.		

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

BENEFITS:			
1.	Will the land use / development have any benefits for society in general?	YES✓	
2.	Explanation: As mentioned in section 9 above, the primary reason for installing the proposed additional 7th fuel oil tank is a risk adverse approach to service delivery and worker strikes which frequently occur which could result in interruption of fuel oil supply to the station; and is in addition to supplying fuel to assist the Power Station in meeting daily energy demand. The proposed additional 7th fuel oil tank will therefore securely allow the fuel demands of the six boilers and consequently, generate power for users of the network. Assured supply of energy to the wider network will ensure there is		

	adequate supply to the grid, which will ultimately benefit the communities, businesses and services providers that are dependant on the electricity supply.		
	Service delivery strikes are frequent and thus motivated the Grootvlei Power Station to install the proposed additional 7 th fuel oil tank, ensuring supply of fuel oil will therefore benefit the economic development of the District Municipality by allowing business, commercial and industrial operations to continue allowing the economy to persist.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES✓	
4.	<p>Explanation: Grootvlei Power Station generates electricity which feeds into the national grid. The local communities are dependent on electricity supplied by the national grid. The proposed development will aid in securing electricity supply by Grootvlei Power Station, hence benefiting local communities as well.</p> <p>The construction phase is likely to create a limited number of jobs. It is estimated that temporary jobs would be available to the local population during the construction period as job creation is a priority objective of the Gert Sibande District Municipality and Dipaleseng Local Municipality. Eskom gives preference to companies complying with BEE requirements, thus ensuring that previously disadvantaged people will get opportunity.</p> <p>The contribution to the local economy through creating employment opportunities at the individual and enterprise level would bring a considerable short-term benefit to the local community</p>		

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
The Constitution of the Republic of South Africa Act 108 of 1996	The Constitutional Court	1996
National Environmental Management Act (No. 107 of 1998) (NEMA), as amended	Department of Environmental Affairs (DEA)	1998
EIA Regulations 2010 promulgated (June 2010) in terms of Section 24 (5) of NEMA. These were amended on the 10 December 2010.	Department of Environmental Affairs (DEA)	2010 (June)
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) DEA	Department of Environmental Affairs (DEA)	2004
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	Department of Environmental Affairs (DEA)	2004
National Water Act (No. 36 of 1998)	Department of Water Affairs (DWA)	1998
National Heritage Resources Act (No. 25 of 1999)	South African Heritage Resources Authority (SAHRA)	1999
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	Department of Environmental Affairs (DEA)	2008
Occupational Health and Safety Act (Act 85 of 1993)	Department of Labour	1993
SANS 10131: 2004 - <i>Aboveground</i>	South African Bureau of Standards	2004

<i>Storage Tanks for Petroleum Products</i>	(SABS)	
Hazardous Substances Act 15 of 1973	Department of Health	1973
Local Government: Municipal Systems Act 32 of 2000	Dept. of Traditional and Local Government Affairs	2000
Development Facilitation Act 67 of 1995	Development Planning & Management Unit	1995
Minerals and Petroleum Resources Development Act (Act No 28 of 2002)	Department of Mineral and Energy Affairs	2002
National Veld and Forest Fire Act (Act No 101 of 1998)	DWA	1998
Mpumalanga Nature Conservation Act 10 of 1998	Eastern Transvaal Parks Board	1998
District By-Laws	Gert Sibande District Municipality	n/a
Local By-Laws	Dipaleseng Local Municipality	n/a

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

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

YES ✓	NO
-------	----

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

8m ³

How will the construction solid waste be disposed of (describe)?

Building rubble will be utilized for backfilling on site in areas that require rehabilitation, All metals will be recycled. Other wastes will be classified, quantified and disposed of at registered landfill sites. All waste will be managed in line with the Grootvlei Power Stations existing Waste Management Procedure.

Where will the construction solid waste be disposed of (describe)?

N/A for building rubble
Metals - MRS Scrap Holdings, Standerton,
Non-hazardous wastes - Platkop Landfill Site permit number :16/2/7/C221/D494/Z3/P461
Should there be any Hazardous wastes (expected to be minimal) - Holfontein 16/2/7/C212/y121/p3.
All Waste will be managed in line with the Grootvlei Power Stations existing Waste Management Procedure.

Will the activity produce solid waste during its operational phase?

YES ✓	
-------	--

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

0.5m ³

How will the solid waste be disposed of (describe)?

Metals - MRS Scrap Holdings, Standerton,
Non hazardous wastes - Platkop Landfill Site permit number :16/2/7/C221/D494/Z3/P461 Should there be any Hazardous wastes (expected to be minimal) - Holfontein 16/2/7/C212/y121/p3
All Waste will be managed in line with the Grootvlei Power Stations existing Waste Management Procedure.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Metals - MRS Scrap Holdings, Standerton,
 Non hazardous wastes - Platkop Landfill Site permit number :16/2/7/C221/D494/Z3/P461 Should there be any Hazardous wastes (expected to be minimal) Hazardous wastes - Holfontein 16/2/7/C212/y121/p3
 All Waste will be managed in line with the Grootvlei Power Stations existing Waste Management Procedure.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? NO

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? NO

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

Will the activity produce any effluent that will be treated and/or disposed of on site? NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? NO

If yes, provide the particulars of the facility:

Facility name:	n/a		
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Eskom subscribes to ZLED (Zero Liquid Effluent Discharge)

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere? NO

If yes, is it controlled by any legislation of any sphere of government? NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Emissions will not be produced by the operation of the proposed activity.

When the fuel oil is supplied to the proposed tank, the re-fuelling hose is fitted to the tank by a lock in valve and will not generate or release any emissions.

However, during construction phase, a relative amount of emissions will be produced by construction vehicles. Vehicles must be regularly serviced in order to limit gaseous emissions.

Strong winds may intensify the generation of dust associated with earthworks and the movement of vehicles and equipment during construction. Dust generated during site clearance in the construction phase must be mitigated through dust control measures which must include dust suppression with water and to control the speeds of construction vehicles on site to reduce dust, chemical suppressants/binding agents could also be used.

Ultimately, given the relatively small scale of the proposed development, the dust emissions will be of low concentration and predicted to be insignificant should appropriate mitigation measures be employed in the implementation of the Environmental Management Plan (EMP). The EMP is attached to Appendix F.

11(d) Generation of noise

Will the activity generate noise?

YES ✓	
n/a	n/a

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

A Noise Impact Study for a Basic Assessment was conducted for the proposed development. The Noise Impact Study can be found in Appendix D.

Construction Phase Noise Impacts

According to the noise study, it is anticipated that noise may be generated during construction phase as a result of the following activities:

- Site establishment (site office, stores/material depot, workshops);
- Excavation operations (foundations for buildings and other infrastructure, compaction of sub soil and surface levels, trenches for cabling and piping etc);
- General construction activities (concrete mixing, building, steel work, concrete vibration);
- General vehicle movement (on-site movement, delivery of materials and construction equipment).

The impact from these construction noises will depend on the type of activities taking place, the number of activities taking place at the same time, type of equipment used.

Operation Phase Noise Impacts

During the operation phase, the road noise is not expected to increase as the amount of fuel oil deliveries is not expected to increase on a daily basis. Regular deliveries will continue to take place for the existing fuel oil tanks as these will be used for the daily operation of Grootvlei Power Station. Since the proposed fuel oil tank will only be used as an emergency storage tank, the tank will only be filled when required. The amount of fuel oil tank deliveries will not increase significantly on a monthly basis and hence there will be not significant increase in road noise impacts as a result.

Delivery of fuel will be predominantly supplied by Sasol via mobile road tanker trucks from one of their two supply depots, namely Sasol refinery and Sasol depot.

The operational phase of the proposed development will potentially involve the following noise generating activities:

- Maintenance and cleaning;

These aspects are considered to be insignificant, as the operational noise generated by the fuel oil tank is unlikely to add to an increase in the overall noise level generated by Grootvlei Power Station as it already generates a certain level of noise. The noise regime will not exceed the industrial standards.

12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	water board	groundwater	river, stream, dam or lake	✓ other – the existing power station water treatment plant will be the water source for the proposed development.	the activity will not use water
-----------	-------------	-------------	----------------------------	---	---------------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

N/A	
	NO ✓

Does the activity require a water use permit from the Department of Water Affairs?

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The proposed activity will require pumps to transfer the fuel oil into the proposed tank. These pumps will need electricity to operate. The delivery trucks generally use their own power generated from their own engines. No energy efficient systems will be implemented.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

The proposed activity will require pumps to transfer the fuel oil into the proposed tank. These pumps will need electricity to operate. The delivery trucks generally use their own power generated from their own engines. No energy efficient systems will be implemented.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. 1
(e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? YES✓

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address: Grootvlei Power Station 458 IR

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

Grootvlei

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning: Agricultural

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? NO✓

Must a building plan be submitted to the local authority?

	NO ✓
--	------

Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. 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)

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50	–	1:20	–	1:15 – 1:10	1:10	–	1:7,5 – 1:5	Steeper than 1:5
	1:20		1:15			1:7,5			

Alternative S2 (if any):

Flat	1:50	–	1:20	–	1:15 – 1:10	1:10	–	1:7,5 – 1:5	Steeper than 1:5
	1:20		1:15			1:7,5			

Alternative S3 (if any):

n/a									
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

Plain

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)		NO		NO	n/a	n/a
Dolomite, sinkhole or doline areas		NO		NO	n/a	n/a

Seasonally wet soils (often close to water bodies)	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	n/a	n/a
Unstable rocky slopes or steep slopes with loose soil	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	n/a	n/a
Dispersive soils (soils that dissolve in water)	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	n/a	n/a
Soils with high clay content (clay fraction more than 40%)	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	n/a	n/a
Any other unstable soil or geological feature	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	n/a	n/a
An area sensitive to erosion	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	n/a	n/a

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

A Geohydrological Study was conducted for the proposed development. The Geohydrological Study can be found in Appendix D. A summary of the findings is included in the Environmental Impact Statement Section D: Impact Assessment Paragraph 3.

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

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

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

If any of the boxes marked with an “^E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

A Biodiversity Study was conducted for the proposed development. The Biodiversity Study can be found in Appendix D. A summary of the findings is included in the Environmental Impact Statement Section D: Impact Assessment Paragraph 3.

5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Land use	Description on influence and impact by the application
----------	--

Natural area✓	This area will not influence the proposed development nor will it be impacted as the proposed alternative locations are over a minimal area and are located at least 500 m from the natural area. The proposed tank is proposed to be constructed at the core of the Power Station block, which is already transformed.
Low density residential✓	This area will not influence the proposed development nor will it be impacted as the proposed alternative locations are over a minimal area and are located at least 800 m from the low density residential area.
Power station✓	The proposed development is for the Grootvlei Power Station
Spoil heap or slimes dam ^A ✓	The spoil heaps and slimes dams form part of the Grootvlei Power Station. The occurrence of these features will not influence the application. The proposed development will not be impact on the spoil and slimes dams.
Dam or reservoir✓	This area will not influence the proposed development nor will it be impacted as the proposed alternative locations are over a minimal area and are located at least 500 m from the dam resevoir.
Railway line ^N ✓	This area will not influence the proposed development nor will it be impacted as the proposed alternative locations are over a minimal area and are located at least 500 m from the railway line.
River, stream or wetland✓	This area will not influence the proposed development nor will it be impacted as the proposed alternative locations are over a minimal area and are located at least 500 m from the river.

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

N/A - This area will not influence the proposed development nor will it be impacted as the proposed alternative locations are over a minimal area and are located at least 500 m from the railway line.		
If YES, specify:n/a		

If any of the boxes marked with an "A" are ticked, how will this impact / be impacted upon by the proposed activity?

N/A - The spoil heaps and slimes dams form part of the Grootvlei Power Station. The occurrence of these features will not influence the application. The proposed development will not be impact on the spoil and slimes dams.		
If YES, specify:n/a		

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:n/a		
If YES, specify:n/a		

6. CULTURAL/HISTORICAL FEATURES

<p>Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?</p>	NO ✓
<p>If YES, explain:</p>	NO ✓
<p>If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.</p>	
<p>Briefly explain the findings of the specialist:</p>	<p>A Heritage Study was conducted for the proposed development. The Heritage Study can be found in Appendix D.</p> <p>In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed by SiVEST Environmental Division to conduct an assessment to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area that would disqualify it from being used for the construction of the fuel oil tank, or would require the implementation of mitigation measures.</p> <p>From the available information it was determined that the no heritage sites were identified within the footprint of the site or the Grootveli power Station:</p> <ul style="list-style-type: none"> ▪ Pre-colonial archaeological sites dating to the Late Iron Age have been identified to occur in the region of study area. ▪ Colonial period or historic period heritage manifest in a wide variety – farmsteads, infrastructure and cemeteries. <p>The areas that have been identified for the proposed construction of the bulk storage fuel oil tank is located inside the grounds of the power station would have already been heavily impacted on during the construction and operational activities of the already existing Grootvlei Power Station.</p> <ul style="list-style-type: none"> ▪ As no sites, features or objects of cultural heritage significance were identified in the study sites, there would be no impact from the proposed development. <p>Therefore, from a heritage point of view it is recommended that the proposed development be allowed to continue. It is requested that should archaeological sites or graves be exposed during construction work, construction work must stop immediately and the finding should be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made, and appropriate authorisation be obtained.</p>
<p>Will any building or structure older than 60 years be affected in any way?</p>	NO ✓
<p>Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?</p>	NO ✓

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

Please refer to Appendix G for Site Notices, Advertisements, Advert tearsheets, Proof of Site Notices, Background Information Documents (BID) and Interested and Affected Parties (I&AP) Database.

Public Participation Process

Having submitted the application forms for the proposed development to the Department of Environmental Affairs (21 July 2011), the DEA and NEAS reference numbers were obtained and the public participation process was initiated in August 2011. The following reference numbers were received:

NEAS Reference Number	DEA/EIA/0000418/2011
DEA Reference Number	12/12/20/2358

The public participation activities undertaken for the proposed development are outlined in Table 2 below.

Activity	Date
Erecting Site Notices	26th August 2011
BID distributed (English, Afrikaans and Zulu BID distributed by email to I&AP's on the database and by hand to local communities)	23rd September 2011, 5th October 2011
EIA Notification Newspaper Advertisements <ul style="list-style-type: none"> • Daily Sun • Nigel\Heidelberg Rekord 	<ul style="list-style-type: none"> • 2nd September 2011 • 13th September 2011
Public Availability of DBAR (40 Day Review Period) and Invitation to Public Meetings\Open Days Newspaper Advertisements <ul style="list-style-type: none"> • Balfour Herald • Daily Sun • Nigel\Heidelberg Rekord 	<ul style="list-style-type: none"> • 06 January 2012 • 06 January 2012 • 17 January 2012

While undertaking the Basic Assessment process it became apparent that a Risk Assessment specialist study was required. The initial project schedule was pushed out to accommodate the inclusion of the Risk Assessment Report. Therefore the draft Basic Assessment report was not made available to the public for review on the 13th October 2011. The public meeting and open day, that was scheduled to take place on the 1st November 2011, were also subsequently postponed.

The new dates for the public review period will be from the Friday, 06 January 2012, to Tuesday, 14 February 2012 (a 40 day review period). Advertisements will be placed in the Nigel and Heidelberg Rekord and in the Daily Sun in January 2012 notifying the public of the availability of the draft Basic Assessment report. Public notices will also be erected to inform the public of the availability of the draft Basic Assessment report. The draft Basic Assessment report will be made available at the Balfour Public Library and at the reception area of Grootvlei Power Station from the Friday, 06 January 2012, to Tuesday, 14 February 2012.

The new date for the Public Meeting and Open day is the 31st January 2012. This public meeting will be held at the Old Eskom Hall, Grootvlei. The Open Day will run from 16:00 to 17:00 and the Public Meeting will commence at 17:00.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

Please refer to Appendix G for Site Notices, Advertisements, Advert tearsheets, Proof of Site Notices, Background Information Documents (BID) and Interested and Affected Parties (I&AP) Database.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

Please refer to Appendix G for Site Notices, Advertisements, Advert tearsheets, Proof of Site Notices, Background Information Documents (BID) and Interested and Affected Parties (I&AP) Database.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

It has been determined that one (1) Key Stakeholder Workshop, one (1) Public Meeting and one (1) Open Day will be sufficient for the public participation process for this proposed development.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

Please refer to Appendix E for the Comments and Responses Report.

6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

- Department of Environmental Affairs (DEA)
- Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET)
- Dipaleseng Local Municipality (to be provided opportunity to give input. Details will be included in final BA)
- Gert Sibande District Municipality (to be provided opportunity to give input. Details will be included in final BA)
- Department of Agriculture, Forestry & Fisheries (DAFF – to be provided opportunity to give input. Details will be included in final BA)
- Department of Labour (to be provided opportunity to give input. Details will be included in final BA)

List of authorities from whom comments have been received:

Letter of Acknowledgement and acceptance of Basic Assessment application form received from DEA (12th August 2011). Letter of Acknowledgement and acceptance of Basic Assessment amendment application form received from DEA (6th September 2011).

Please refer to Appendix G for the list of authorities and contact details of the authorities informed. Correspondence from the authorities is also contained herein.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority. Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

<input type="checkbox"/>	<input checked="" type="checkbox"/> NO ✓
--------------------------	--

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Having carried out the distribution of BID's via email to stakeholders and I&AP's, as well as having placed newspaper advertisements notifying stakeholders of the EIA processes, no comments or responses have been received as yet.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

None at present.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

None at present.

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

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Alternative S1 (Preferred)

Potential Impacts - Construction Phase

For this section, no knowledge gaps were identified by the specialist studies. Findings are presented below.

Direct impacts

Direct impacts can result from a number of activities taking place over the construction phase. The direct potential impacts as a result of activities can be categorised according to those identified by the specialist studies (where applicable) that were carried out during the assessment phase.

POTENTIAL DIRECT IMPACTS ON BIODIVERSITY

Please refer to Appendix D for the Biodiversity Study. Two direct potential impacts on biodiversity may occur. These include:

- Potential loss of habitat for both Red Data species and general species utilising the site.
- The proposed development would result in potential loss of species richness and edge effect.

However, it is important to note that because the site is heavily transformed, potential impacts of the proposed development are expected to not be applicable in terms of the above. In order to mitigate these potential impacts from occurring, the following measures must be employed:

- Construction site office and laydown areas must be clearly demarcated and no encroachment of these areas must occur beyond demarcated areas.
- The use of pesticides and herbicides in the study area must be discouraged as these impacts on important pollinator species of indigenous vegetation.
- Soils must be kept free of petrochemical solutions that may be kept on site during construction. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.

POTENTIAL DIRECT IMPACTS ON SURFACE WATER

No potential direct impacts from a surface water perspective. Please refer to Appendix D for the Surface Water Study.

POTENTIAL DIRECT IMPACTS ON GEOHYDROLOGY

No potential direct impacts from a geohydrological perspective. Please refer to Appendix D for the Surface Water Study.

POTENTIAL DIRECT IMPACTS ON AGRICULTURE AND SOILS

Please refer to Appendix D for the Soil and Agricultural Study. Potential direct impacts during the construction phase of the proposed development that may occur include:

- Erosion impacts
- Soil and land use contamination
- General storage of hazardous substances and materials

The following mitigation measures must be employed for erosion impacts:

- It is recommended that construction only be undertaken during permitted weather conditions.
- If heavy rains are expected activities should be put on hold to reduce the risk of erosion.
- If additional earthworks are required than any steep or large embankments that are expected to be exposed during the 'rainy' months should be armoured with fascine (stabilization like structures) structures.
- If earth works are required then storm water control and wind screening must be undertaken to prevent soil loss from the site.

The following mitigation measures must be employed for soil and land use contamination impacts:

- Ensure that the mixing /decanting of all materials should take place on a tray or impermeable surface.
- Waste generated from these should then be disposed of at a registered landfill site.
- Ensure all storage tanks are designed and managed in order to prevent pollution of drains, groundwater and soils.
- Construct appropriate storm water collection areas and interceptors at storage tanks, and other associated potential pollution activities. These drains and stormwater collection areas must be connected to the existing stormwater management system.
- Ensure that use and storage of fuels and chemicals that could potentially leach into the ground is controlled. Adequate spillage containment measures shall be implemented, such as cut off drains, etc. Fuel and chemical storage containers shall be set on a concrete plinth. The containment capacity shall be equal to the full amount of material stored, plus 10%.
- Appoint appropriate contractors to remove any residue from spillages from site.

- Handling, storage and disposal of excess or containers of potentially hazardous materials shall be in accordance with the requirements, regulations and acts, listed in Section 10 above.
- Ensure that used oils/lubricants are not disposed of on/near the site, and that contractors purchasing these materials understand the liability under which they must operate. The Environmental Control Officer will be responsible for reporting the storage/use of any other potentially harmful materials to the relevant authority.
- Ensure that potentially harmful materials are properly stored in a dry, secure environment, with concrete or sealed flooring. The Construction manager will ensure that materials storage facilities are cleaned / maintained on a regular basis, and that leaking containers are disposed of in a manner that allows no spillage onto the bare soil or surface water. The management of such storage facilities and means of securing them shall be agreed.

The following mitigation measures must be employed for the general storage of hazardous substances and materials:

- The selection of the site for the storage of materials needs to consider the prevailing winds, distance to water bodies and general on-site topography. These areas need to be demarcated and fenced if necessary.
- Fire prevention facilities must be present at all storage facilities. It is important that the storage areas for hazardous chemicals are positioned away from sensitive areas and high risk areas (where applicable). The persons undertaking construction shall maintain storage of all potentially polluting materials, and shall undertake potentially polluting operations as far away as practically possible from drainage areas, and topsoil/subsoil stockpiles. The Contractor will ensure that additional supervisory time is spent to monitor such works. Such materials/operations include (but are not limited to) the batching, storing of cement, concrete and mortar, petrol, oil and chemical storage and transfer, washing, ablution and toilet facilities and plant storage.

Hazardous materials to be stored on site are those that are potentially poisonous, flammable, carcinogenic or toxic. These materials include diesel, petroleum, oil, bituminous products; cement; solvent based paints; lubricants; explosives; drilling fluids; pesticides and herbicides and Liquid Petroleum Gas (LPG). Material Safety Data Sheets (MSDS's) shall be readily available on site for chemicals and hazardous substances to be used on site. MSDS's should also include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes.

- The relevant steps must be taken in terms of section 30 of the National Environmental Management Act 107 of 1998 and section 19 of the National Water 36 of 1998 in the event that an accidental release amounts to an emergency incident or a pollution event as defined in the respective Acts
- Furthermore hazardous storage and refueling areas must be banded with an approved impermeable liner to protect groundwater quality. A Method Statement is required for the filling of and dispensing from fuel storage tanks. All necessary approvals with respect to fuel storage and dispensing (if required on site) shall be obtained from the appropriate authorities.
- The persons undertaking construction should submit a Method Statement and plans for

the storage of hazardous materials and emergency procedures. Should a spill occur within these bunded areas it must be cleaned up, removed and disposed safely from these areas as soon as possible after detection in order to minimize pollution risk and reduced bunding capacity. Materials collected in this area must be disposed of at a suitable waste site. Rain water that accumulates in the bunded area needs to be removed. This rain water must be handled the same way as the existing bunded areas are managed.

- All imported materials (e.g. sand) must be stockpiled within the site boundary / Construction Zone. Sand and excavated material stockpiles should be protected against wind using temporary screens, and from water erosion using tarpaulins where necessary.
- It is likely that most of the cement requirements are to be transported to site as “ready mix”. To prevent spillage onto roads, “ready mix” trucks shall rinse off the delivery shoot into a suitable sump prior to leaving the Site. Cement / concrete shall not be mixed directly on the ground. Dagma boards, mixing trays and impermeable sumps should be used at all mixing and supply points. Unused cement bags are to be stored so as not to be effected by rain or runoff events. Used cement bags shall be stored in weatherproof containers to prevent windblown cement dust and water contamination. Used cement bags shall be disposed of on a regular basis via the solid waste management system, and shall not be used for any other purpose.
- Hazardous chemical substances (as defined in the Regulations for Hazardous Chemical Substances) used during construction shall be stored in secondary containers. The relevant Material Safety Data Sheets (MSDS) shall be available on Site. Procedures detailed in the MSDS shall be followed in the event of an emergency situation.
- No paint products may be disposed of on site.
- All harmful materials must be properly stored in a dry, secure environment, with concrete or sealed flooring and a means of preventing unauthorised entry. The Construction manager shall further ensure that materials storage facilities are cleaned/maintained on a regular basis, and that leaking containers are disposed of in a manner that allows no spillage onto the bare soil. The management of such storage facilities and means of securing them shall be agreed.
- All fuel and oil is to be stored within a demarcated area on site that is bunded and has a concrete or sealed floor. Areas for storage of fuels and other flammable materials shall comply with standard fire safety regulations and may require the approval of the Local Municipal Fire Prevention Officer. Safety and fire prevention precautions must be strictly adhered to. Fuels and oils must be stored in tanks or drums with lids that remain firmly closed and shielded from the elements, and kept under lock and key.

POTENTIAL DIRECT IMPACTS ON HERITAGE RESOURCES

No potential direct impacts from a heritage resource perspective. Please refer to Appendix D for the Heritage Study.

The areas that were identified for the construction of the bulk storage fuel oil tank are located inside the grounds of the power station, and they would have been heavily impacted on during the construction activities.

Importantly, as no sites, features or objects of cultural heritage significance were identified in the study area, there would be no impact from the proposed development.

However, should any archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

POTENTIAL DIRECT NOISE IMPACTS

Please refer to Appendix D for the Noise Impact Study.

The Noise Impact Study concludes that because the proposed facility is further than 500 meters from the closest noise-sensitive development it is unlikely to have a noise impact.

Nevertheless, accordingly, it is anticipated that noise may be generated during construction phase as a result of the following activities:

- Site establishment (site office, stores/material depot, workshops);
- Excavation operations (foundations for buildings and other infrastructure, compaction of sub soil and surface levels, trenches for cabling and piping etc);
- General construction activities (concrete mixing, building, steel work, concrete vibration);
- General vehicle movement (on-site movement, delivery of materials and construction equipment).

The impact from these construction noises will depend on the type of activities taking place, the number of activities taking place at the same time, type of equipment used.

Traffic relating to this construction project is not considered to be an additional noise source of any significance.

As all of these activities are not expected to generate a significant amount of noise and will be taking place within the confines of the power station away from any noise sensitive receptors, no mitigation measures are required and stipulated, however all noise levels generated by the Grootvlei Power Station should be within the industrial noise regulated levels.

POTENTIAL DIRECT GEOTECHNICAL IMPACTS

Please refer to Appendix D for the Geotechnical Study.

Potential direct impacts during the construction phase of the proposed development that may occur primarily relate to soil disturbance during foundation excavation and by heavy duty vehicles and construction equipment that may destabilise the soil and lead to soil erosion. Mitigation measures to address this potential direct impact include:

- Use of berms and drainage channels to direct water away from the construction area
- Limit the exposure time of open foundation excavations and cleared areas to the elements
- Rehabilitate disturbed areas as soon as possible after construction

- Ensure the correct disposal of spoil, either in a registered landfill site or as fill material in other construction activities

POTENTIAL DIRECT SOCIAL IMPACTS

Please refer to Appendix D for the Social Study.

According to the Social Study, the following direct impacts may potentially occur due to the proposed development:

- Economic change processes - The proposed tank would, through its facilitation role as another oil tank in the generation of electricity, contribute to sustainable national electrical production/generation. This could lead to direct formal job opportunities through construction processes at the existing facility and/or through work for contractors, which in turn would have a positive economic impact.

Indirect impacts

Indirect impacts can result from a number of activities taking place. These activities can be categorised according to the specialist studies (where applicable) that were carried out during the assessment phase.

POTENTIAL INDIRECT IMPACTS ON BIODIVERSITY

No potential indirect impacts from a biodiversity perspective. Please refer to Appendix D for the Biodiversity Study.

POTENTIAL INDIRECT IMPACTS ON SURFACE WATER

No potential indirect impacts from a surface water perspective. Please refer to Appendix D for the Surface Water Study.

POTENTIAL INDIRECT IMPACTS ON GEOHYDROLOGY

No potential indirect impacts from a geohydrological perspective. Please refer to Appendix D for the Surface Water Study.

POTENTIAL INDIRECT IMPACTS ON AGRICULTURE AND SOILS

No potential indirect impacts from an agriculture and soils perspective. Please refer to Appendix D for the Agriculture and Soils Study.

POTENTIAL INDIRECT IMPACTS ON HERITAGE RESOURCES

No potential indirect impacts from a heritage resources perspective. Please refer to Appendix D for the Heritage Study.

POTENTIAL INDIRECT NOISE IMPACTS

No potential indirect impacts from a noise perspective. Please refer to Appendix D for the Noise Impact Study.

POTENTIAL INDIRECT GEOTECHNICAL IMPACTS

No potential indirect impacts from a geotechnical perspective. Please refer to Appendix D for the Geotechnical Study.

POTENTIAL INDIRECT SOCIAL IMPACTS

No potential indirect impacts from a social perspective. Please refer to Appendix D for the

Social Study.

Cumulative impacts

Cumulative Impacts describe the cumulative effect of the impacts on the environmental parameter. A cumulative effect/impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question. These activities can be categorised according to the specialist studies (where applicable) that were carried out during the assessment phase.

POTENTIAL CUMULATIVE IMPACTS ON BIODIVERSITY

No potential cumulative impacts from a biodiversity perspective. Please refer to Appendix D for the Biodiversity Study.

POTENTIAL CUMULATIVE IMPACTS ON SURFACE WATER

No potential cumulative impacts from a surface water perspective. Please refer to Appendix D for the Surface Water Study.

POTENTIAL CUMULATIVE IMPACTS ON GEOHYDROLOGY

No potential cumulative impacts from a geohydrological perspective. Please refer to Appendix D for the Geohydrological Study.

POTENTIAL CUMULATIVE IMPACTS ON AGRICULTURE AND SOILS

No potential cumulative impacts from an agricultural and soils perspective. Please refer to Appendix D for the Agriculture and Soils Study.

POTENTIAL CUMULATIVE IMPACTS ON HERITAGE RESOURCES

No potential cumulative impacts from a heritage resources perspective. Please refer to Appendix D for the Heritage Study.

POTENTIAL CUMULATIVE NOISE IMPACTS

No potential cumulative impacts from a noise perspective. Please refer to Appendix D for the Noise Impact Study.

POTENTIAL CUMULATIVE GEOTECHNICAL IMPACTS

No potential cumulative impacts from a geotechnical perspective. Please refer to Appendix D for the Geotechnical Study.

POTENTIAL CUMULATIVE SOCIAL IMPACTS

No potential cumulative impacts from a social perspective. Please refer to Appendix D for the Social Study.

Potential Impacts - Operation Phase

For this section, no knowledge gaps were identified by the specialist studies. Findings are presented below.

Direct impacts

Direct impacts can result from a number of activities taking place during the operation phase. The direct potential impacts as a result of activities can be categorised according to those

identified by the specialist studies (where applicable) that were carried out during the assessment phase.

POTENTIAL DIRECT IMPACTS ON BIODIVERSITY

Please refer to Appendix D for the Biodiversity Study. Impacts associated with the proposed development during operation would typically relate to the fragmentation of habitat and the blockage of ecological linkage with surrounding natural areas. However, as mentioned above, the proposed site is already heavily transformed as a result of anthropogenic activities. Therefore these impacts are expected to be negligible.

Nonetheless, in order to mitigate these potential impacts from occurring, the following measures must be employed:

- No erosion should take place as a result of the development.
- Regular checks of the area should take place for the emergence of invader species.
- Mitigation measures mentioned for the construction phase above must be implemented for any maintenance of the development that may be undertaken during the operation phase.

POTENTIAL DIRECT IMPACTS ON SURFACE WATER

Please refer to Appendix D for the Surface Water Study. Potential direct impacts during the operation phase of the proposed development that may occur primarily relates to the contamination of downstream surface water resources by a major fuel leak or complete failure of the proposed above ground fuel storage tank.

This potential direct impact however is very unlikely to occur. Even so, the following mitigation measures must be considered to avoid any potential impact from occurring:

- Construct a complete sealed concrete bund around the proposed fuel oil tank. This bund must have a capacity of 110% of the bulk storage fuel oil tank.
- Undertake regular checks and maintenance on the bulk storage fuel oil tank and bund.
- Should contaminated water enter the bund, this would then need to be removed from the site, and would need to be recycled off-site as part of the remediation process.

POTENTIAL DIRECT IMPACTS ON GEOHYDROLOGY

Please refer to Appendix D for the Geohydrology Study.

Potential direct impacts during the operation phase of the proposed development that may occur mainly relates to spillages resulting from the fuel oil tank on site. The impact on the groundwater system on site will be a negative impact. This is dependent on the nature of the spillage and extent of fuel released. Sensitive receptors (a dam and river) are located 460m to the north east, down gradient of the site. These receptors would be at risk in terms of contamination if spillages were to occur. The shallow groundwater levels (30 metres) on site will result in reduced travel times for contaminants to reach the groundwater level and therefore reduced biodegradation will take place before the contaminant reaches the water level.

The following mitigation measures must be employed for erosion impacts:

- A spillage within a nonbundled area will result in the possible migration of a spillage which may result in contamination of the soil and groundwater both on the site and the surrounding areas. It is recommended that the volume of the bunded area is 110% of the capacity of the fuel tank.
- In the event of a spillage, it is recommended that monitoring takes place at the

boreholes in close proximity to the spillage area as well as selected boreholes downgradient of the spillage, both on site and off site.

- Recommended that a closed system is implemented that manages any spill; this will ensure that the stormwater system can channel this overflow to a management tank.

POTENTIAL DIRECT IMPACTS ON AGRICULTURE AND SOILS

Please refer to Appendix D for the Agriculture and Soils Study. Potential direct impacts during the operation phase of the proposed development that may occur solely relates to the contamination of nearby soil and land use resources caused by a major fuel leak or complete failure of the proposed above ground fuel storage tank.

This potential direct impact however is very unlikely to occur. Even so, the following mitigation measures must be considered to avoid any potential impact from occurring:

- Construct a complete sealed concrete bund around the proposed fuel tank. This bund must have a capacity of 110% of the fuel storage tank.
- Undertake regular checks and maintenance on the fuel storage tank and bund.
- Should contaminated water, this would then need be removed from the site, and would be recycled off-site as part of the remediation process. Contaminated water should not be distributed onto soil and land surfaces and should be disposed of at an approved disposal site.

POTENTIAL DIRECT IMPACTS ON HERITAGE RESOURCES

No potential direct impacts from a heritage resources perspective. Please refer to Appendix D for the Heritage Study.

POTENTIAL DIRECT NOISE IMPACTS

Please refer to Appendix D for the Noise Impact Study.

The Noise Impact Study concludes that because the proposed facility is further than 500 meters from the closest noise-sensitive development it is unlikely to have a noise impact.

Nevertheless, accordingly, it is anticipated that noise may be generated during the operation phase as a result of the following activities:

- During the operation phase, an increase of road noise is not expected due to delivery of fuel to the fuel oil storage tank, as there will not be an increase of fuel oil delivered to the Power Station. Delivery of fuel will be predominately supplied by Sasol via mobile road tankers trucks from one of their two supply depots namely Sasol refinery and Sasol depot.
- Currently the fuel oil storage tank will be implemented on the surface and not underground. Furthermore the maintenance and cleaning of such a tank will be required, each activity contributing to the noise levels in the area.

As all of these activities are not expected to generate a significant amount of noise and will be taking place within the confines of the power station away from any noise sensitive receptors, no special mitigation measures are required and stipulated, except the current station mitigation measures.

POTENTIAL DIRECT GEOTECHNICAL IMPACTS

No potential direct impacts from a geotechnical perspective. Please refer to Appendix D for the Geotechnical Study.

POTENTIAL DIRECT SOCIAL IMPACTS

No potential impacts from a social perspective. Please refer to Appendix D for the Social Study.

Indirect impacts

Indirect impacts can result from a number of activities taking place. These activities can be categorised according to the specialist studies (where applicable) that were carried out during the assessment phase.

POTENTIAL INDIRECT IMPACTS ON BIODIVERSITY

No potential indirect impacts from a biodiversity perspective. Please refer to Appendix D for the Biodiversity Study.

POTENTIAL INDIRECT IMPACTS ON SURFACE WATER

No potential indirect impacts from a heritage resources perspective. Please refer to Appendix D for the Surface Water Study.

POTENTIAL INDIRECT IMPACTS ON GEOHYDROLOGY

No potential indirect impacts from a geohydrological perspective. Please refer to Appendix D for the Geohydrology Study.

POTENTIAL INDIRECT IMPACTS ON AGRICULTURE AND SOILS

No potential indirect impacts from a agriculture and soils perspective. Please refer to Appendix D for the Agriculture and Soils Study.

POTENTIAL INDIRECT IMPACTS ON HERITAGE RESOURCES

No potential indirect impacts from a heritage resources perspective. Please refer to Appendix D for the Heritage Study.

POTENTIAL INDIRECT NOISE IMPACTS

No potential indirect impacts from a noise perspective. Please refer to Appendix D for the Noise Impact Study.

POTENTIAL INDIRECT GEOTECHNICAL IMPACTS

No potential indirect impacts from a geotechnical perspective. Please refer to Appendix D for the Geotechnical Study.

POTENTIAL INDIRECT SOCIAL IMPACTS

No potential indirect impacts from a social perspective. Please refer to Appendix D for the Social Study.

Cumulative impacts

Cumulative Impacts describe the cumulative effect of the impacts on the environmental parameter. A cumulative effect/impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question. These activities can be categorised according to the specialist studies (where applicable) that were carried out during the assessment phase.

POTENTIAL CUMULATIVE IMPACTS ON BIODIVERSITY

No potential cumulative impacts from a biodiversity perspective. Please refer to Appendix D for the Biodiversity Study.

POTENTIAL CUMULATIVE IMPACTS ON SURFACE WATER

No potential cumulative impacts from a surface water perspective. Please refer to Appendix D for the Surface Water Study.

POTENTIAL CUMULATIVE IMPACTS ON GEOHYDROLOGY

No potential cumulative impacts from a geohydrological perspective. Please refer to Appendix D for the Geohydrology Study.

POTENTIAL CUMULATIVE IMPACTS ON AGRICULTURE AND SOILS

No potential cumulative impacts from an agriculture and soils perspective. Please refer to Appendix D for the Agriculture and Soils Study.

POTENTIAL CUMULATIVE IMPACTS ON HERITAGE RESOURCES

No potential cumulative impacts from a heritage resources perspective. Please refer to Appendix D for the Heritage Study.

POTENTIAL CUMULATIVE NOISE IMPACTS

No potential cumulative impacts from a noise perspective. Please refer to Appendix D for the Noise Impact Study.

POTENTIAL CUMULATIVE GEOTECHNICAL IMPACTS

No potential cumulative impacts from a geotechnical perspective. Please refer to Appendix D for the Geotechnical Study.

POTENTIAL CUMULATIVE SOCIAL IMPACTS

No potential cumulative impacts from a social perspective. Please refer to Appendix D for the Social Study.

Alternative S2

Given the close proximity and similarity in nature of the proposed alternative locations as well as the relatively minimal area of potential impact as a result of the proposed development, the direct, indirect and cumulative impacts are in all cases highly similar (if not identical) to that for the preferred alternative (Location Alternative 1) above. As such, please refer to the section above for construction and operation phase direct, indirect and cumulative impacts.

Alternative A1 (Preferred)

All impacts that were originally assessed for the proposed development were done so with a 500m³ fuel oil tank capacity in mind. The same development area was therefore assessed for each alternative location, although the bunded areas do differ slightly. All impacts as identified and related to Alternative S1 are applicable for Alternative A1. Please refer to the section (Alternative S1) above for construction and operation phase direct, indirect and cumulative impacts.

Alternative A2

All impacts that were originally assessed for the proposed development were done so with a

500m³ fuel oil tank capacity in mind. The same development area was therefore assessed for each alternative location, although the bunded areas do differ slightly. All impacts as identified and related to Alternative S1 are applicable for Alternative A2. Please refer to the section (Alternative S1) above for construction and operation phase direct, indirect and cumulative impacts.

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative S1 and A1 (Preferred Location and Design Alternatives)

Impacts that can be expected to occur have been categorised according to those identified by the specialist studies that were carried out during the assessment phase.

POTENTIAL IMPACTS ON BIODIVERSITY

Construction Phase

- Potential loss of habitat for both Red Data species and general species utilising the site, although subsequent to the Biodiversity study this impact is expected to be insignificant as no species were found on the site.
- The proposed development would result in potential loss of species richness and edge effect, although subsequent to the Biodiversity study this impact is expected to be insignificant as no species were found on the site.

However, it is important to note that because the site is heavily transformed, potential impacts of the proposed development are expected to not be applicable in terms of the above.

Operation Phase

The site is heavily transformed; potential impacts of the proposed development are expected to not be applicable.

POTENTIAL IMPACTS ON SURFACE WATER

Construction Phase

None.

Operation Phase

- Contamination of downstream surface water resources by a major fuel leak or complete failure of the proposed above ground fuel storage tank.

POTENTIAL IMPACTS ON GEOHYDROLOGY

Construction Phase

None.

Operation Phase

- Spillages resulting from the fuel oil tank

POTENTIAL IMPACTS ON AGRICULTURE AND SOILS

Construction Phase

- Erosion impacts
- Soil and land use contamination
- General storage of hazardous substances and materials

Operation Phase

- Contamination of nearby soil and land use resources caused by a major fuel leak or complete failure of the proposed above ground fuel storage tank.

POTENTIAL IMPACTS ON HERITAGE

Construction Phase

None.

Operation Phase

None.

POTENTIAL IMPACTS ON NOISE

Construction Phase

None.

Operation Phase

None.

POTENTIAL IMPACTS ON GEOTECHNICAL

Construction Phase

- Soil disturbance during foundation excavation and by heavy duty vehicles and construction equipment that may destabilise the soil and lead to soil erosion.

Operation Phase

None.

POTENTIAL IMPACTS ON SOCIAL

Construction Phase

None.

Operation Phase

- Economic change processes

The duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts as related to the specialist areas as identified above are elaborated here.

BIODIVERSITY

Construction Phase

The duration of the construction phase is expected to be short term (less than a year). However, the proposed site is already heavily transformed as a result of anthropogenic activities. The impacts identified for the construction phase are therefore not expected to occur and can be considered of negligible significance.

Operation Phase

The duration of the operation phase is expected to be long term (more than 10 years). However, the proposed site is already heavily transformed as a result of anthropogenic activities and no vegetation can be found on Location Alternative 1. The impacts identified for the operation phase are therefore not expected to occur and can be considered of negligible significance.

SURFACE WATER

Construction Phase

None.

Operation Phase

The duration of the potential impact of contamination of downstream surface water resources by a major fuel leak or complete failure of the proposed above ground fuel storage tank has been anticipated to last for the medium term (1 to 10 years). The likelihood of this potential impact occurring after mitigation is very unlikely and can be considered of low significance.

GEOHYDROLOGY

Construction Phase

None.

Operation Phase

The duration of the potential impact of spillages as a result of the proposed above ground bulk storage fuel oil tank has been anticipated to last for the medium term (1 to 10 years). The likelihood of this potential impact occurring after mitigation is very unlikely and can be considered of low significance.

AGRICULTURE AND SOILS

Construction Phase

The duration of erosion related potential impacts are expected to last for the construction phase which is anticipated to be for a short term (less than a year). The likelihood of this potential impact occurring after mitigation is very unlikely and can be considered of low significance.

The duration of soil and land use contamination related potential impacts are expected to last for the construction phase which is anticipated to be for a short term (less than a year). The likelihood of this potential impact occurring after mitigation is very unlikely and can be considered of low significance.

The duration of general storage of hazardous substances and materials related potential impacts are expected to last for the construction phase which is anticipated to be for a short term (less than a year). The likelihood of this potential impact occurring after mitigation is very unlikely and can be considered of low significance.

Operation Phase

The duration of the potential impact of contamination of nearby soil and land use resources caused by a major fuel leak or complete failure of the proposed above ground fuel storage tank is anticipated to be for the medium term (1 to 10 years). The likelihood of this potential impact occurring after mitigation is very unlikely and can be considered of low significance.

HERITAGE

Construction Phase

None.

Operation Phase

None.

NOISE

Construction Phase

None.

Operation Phase

None.

GEOTECHNICAL

Construction Phase

The duration of the potential impact of soil disturbance during foundation excavation and by heavy duty vehicles and construction equipment that may destabilise the soil and lead to soil erosion are expected to last for the construction phase which is anticipated to be for a short term (less than a year). The likelihood of this potential impact occurring after mitigation is very unlikely and can be considered of low significance.

Operation Phase

None.

SOCIAL

Construction Phase

None.

Operation Phase

The duration of the potential impact of economic change processes are expected to last for the operation phase which is anticipated to be for the long term (more than 10 years). Importantly, this impact is positive and mitigation for this impact is not necessary. This impact can be considered of low to medium significance since the scale of the proposed development is minimal and will most likely not result in a large number of employment opportunities as a result.

No-go alternative (compulsory)

Should the No-go alternative be considered, the current transformed environment and vacant locations identified for the proposed development will remain as is. Potential identified impacts that may occur in the construction and operation phase of the proposed development will therefore not take place and the area will be left unused.

It is important to also state that any positive impacts as well as benefits that may result from the proposed development will not occur. The specifically relate to:

- Security of fuel supply to Grootvlei Power Station and security of energy generation as a consequence
- Creating an enabling environment for dependent business, commercial and industrial operations to continue through uninterrupted electricity supply, thereby allowing the economy to persist

- Continuous supply of power to the households and industries in the area
- Creation of limited number of jobs that are favourable towards previously disadvantaged individuals

The purpose for the installation of the proposed bulk storage fuel oil tank is to avert the risk of interrupted fuel supply as a result of service delivery and worker strikes which frequently occur. This is in addition to supplying additional fuel oil to assist the Power Station in meeting increasing energy demand. The assurance of supply will ultimately assist the Power Station in safeguarding and sustaining its generation capacity. The proposed tank will therefore secure the fuel demands of Grootvlei Power Station. Should the construction and operation of the proposed additional fuel oil tank not proceed, this could be detrimental to the Grootvlei Power Station and could possibly hinder Eskom in meeting the electricity demands of the country.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES ✓	
-------	--

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

n/a

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

The following mitigation measures should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of this application:

BIODIVERSITY

- An Environmental Management Programme must be compiled for construction and operation phases. An EMPr has been included with this BA Report and this has been addressed within this EMPr
- Environmental audits must be conducted by an independent party during the construction period.
- Construction site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas. This construction lay down area has not yet been identified, but will be within the footprint of the Grootvlei Power Station.
- Soils must be kept free of petrochemical solutions that may be kept on site during construction.

SURFACE WATER

- Should water enter the bund, this would then need to be removed from the site, and would need to be recycled off-site as part of the remediation process, which is an existing facility and process within the Grootvlei power Station.

GEOHYDROLOGY

- Spillage on a nonbundled area will result in the possible migration of the spillage which may result in contamination of the soil and groundwater both on the site and the surrounding areas. It is recommended that the volume of the bunded area is 110% of the capacity of the fuel tank. Should a spillage occur the spill needs to be directed into the stormwater system and treated.

AGRICULTURE AND SOILS

- Ensure that the mixing /decanting of all chemicals and hazardous materials should take place on a suitable tray or impermeable surface.
- Waste generated from these should then be disposed of at a registered landfill site.
- Ensure all storage tanks are designed and managed to prevent pollution of drains, groundwater and soils.
- Construct separate storm water collection areas and interceptors at storage tanks, and other associated potential pollution activities, or preferably, link the stormwater system to the existing stormwater system that is already in place at the Grootvlei Power Station.

- Ensure that use and storage of fuels and chemicals that could potentially leach into the ground is controlled. Adequate spillage containment measures shall be implemented, such as cut off drains, etc. Fuel and chemical storage containers shall be set on a concrete plinth. The containment capacity shall be equal to the full amount of material stored, plus 10%.
- Appoint appropriate contractors to remove any residue from spillages from site. Handling, storage and disposal of excess or containers of potentially hazardous materials shall be in accordance with the requirements of the above-mentioned Regulations and Acts.
- Fire prevention facilities must be present at all storage facilities. It is important that the storage areas for hazardous chemicals are positioned away from sensitive areas and high risk areas (where applicable). The persons undertaking construction shall maintain storage of all potentially polluting materials, and shall undertake potentially polluting operations as far away as practically possible from drainage areas, and topsoil/subsoil stockpiles. The Contractor will ensure that additional supervisory time is spent to monitor such works. Such materials/operations include (but are not limited to) the batching, storing of cement, concrete and mortar, petrol, oil and chemical storage and transfer, washing, ablution and toilet facilities and plant storage.
- Hazardous materials to be stored on site are those that are potentially poisonous, flammable, carcinogenic or toxic. These materials include diesel, petroleum, oil, bituminous products; cement; solvent based paints; lubricants; drilling fluids; pesticides and herbicides and Liquid Petroleum Gas (LPG). Material Safety Data Sheets (MSDS's) shall be readily available on site for chemicals and hazardous substances to be used on site. MSDS's should also include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes.
- Hazardous storage and refueling areas must be bunded with an approved impermeable liner to protect groundwater quality. A Method Statement is required for the filling of and dispensing from fuel storage tanks should such tanks be required. All necessary approvals with respect to fuel storage and dispensing (if required on site) shall be obtained from the appropriate authorities.
- The persons undertaking construction should submit a Method Statement and plans for the storage of hazardous materials and emergency procedures. Should a spill occur within these bunded areas it must be cleaned up, removed and disposed safely from these areas as soon as possible after detection in order to minimize pollution risk and reduced bunding capacity. Materials collected in this area must be disposed of at a suitable waste site.
- Hazardous chemical substances (as defined in the Regulations for Hazardous Chemical Substances) used during construction shall be stored in secondary containers. The relevant Material Safety Data Sheets (MSDS) shall be available on Site. Procedures detailed in the MSDS shall be followed in the event of an emergency situation.
- The relevant steps must be taken in terms of section 30 of the National Environmental Management Act 107 of 1998 and section 19 of the National Water 36 of 1998 in the event that an emergency situation amounts to an emergency incident or a pollution event as defined in the respective Acts.
- All fuel and oil is to be stored within a demarcated area on site. Areas for storage of fuels and other flammable materials shall comply with standard fire safety regulations and may require the approval of the Local Municipal Fire Prevention Officer. Safety and fire prevention precautions must be strictly adhered to. Fuels and oils must be stored in tanks or drums with lids that remain firmly closed and shielded from the elements, and kept under lock and key.

- Construction of a completely sealed concrete bund must be implemented around the proposed fuel tank. This bund must have a capacity of 110% of the fuel storage tank.
- Regular checks and maintenance must be undertaken on the fuel storage tank and bund for leakage or spillage.

HERITAGE

- Should any archaeological sites or graves be exposed during construction work, it must immediately be reported to the Heritage Resources Authority or a heritage practitioner so that an investigation and evaluation of the finds can be made.

RISK ASSESSMENT

A comprehensive Risk Assessment study was undertaken for the proposed development as per the Eskom Group IRM standards and procedures. Findings from the report indicate that no major risks have been identified that would have a significant impact on Eskom achieving its project objectives.

However, it is necessary that Management give due consideration to:

- Specifically defining and documenting the treatment options under consideration to manage the following high to medium (II) risks:
 - o Unavailability of infrastructure;
 - o Change in scope;
 - o Theft of construction equipment; and
 - o Loss of critical project record information.
- Drawing up and implementing a formal risk treatment plan for all identified risks.
- Regularly maintaining the current risk register in line with the Eskom IRM standards and guidelines. This should be done monthly and through the steering committees structures.

The risk assessment is attached in Appendix D.

Is an EMPr attached?

YES ✓

The EMPr must be attached as Appendix F.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Public Participation Documents

Appendix H: EAP and Specialist C.V.'s



**APPENDIX A:
SITE PLANS AND MAPS**



**APPENDIX B:
SITE PHOTOGRAPHS**



**APPENDIX C:
FACILITY ILLUSTRATION**



**APPENDIX D:
SPECIALIST REPORTS AND DETAILS OF SPECIALISTS AND
DECLARATION OF INTEREST (INCLUDING TERMS OF
REFERENCES)**



**APPENDIX E:
COMMENT AND RESPONSE FORM**



**APPENDIX F:
ENVIRONMENTAL MANAGEMENT PROGRAMME**



**APPENDIX G:
PUBLIC PARTICIPATION DOCUMENTS**



**APPENDIX H:
EAP AND SPECIALIST CVS**



SIVEST Environmental Division

51 Wessels Road, Rivonia. 2128. South Africa
PO Box 2921, Rivonia. 2128. South Africa

Tel + 27 11 798 0600
Fax +27 11 803 7272
Email info@sivest.co.za
www.sivest.co.za

Contact Person: Kelly Tucker
Cell No.: +27 83 652 4017
Email: kelyt@sivest.co.za