

higher education & training Department: Higher Education and Training REPUBLIC OF SOUTH AFRICA



Together , Turning Every Workplace Into A Training Space

### Proposed Development of Further Education Training College (FET) in Nkandla (Site A), Kwa-Zulu Natal

## DRAFT

## **BASIC ASSESSMENT REPORT**

DEA Reference: 14/12/16/3/3/1/1033

**PREPARED BY:** 



DECEMBER 2013

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### environmental affairs

Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number: 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. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- 3. 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.
- 4. Where applicable tick the boxes that are applicable in the report.
- 5. An incomplete report may be returned to the applicant for revision.
- 6. 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.
- 7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
- 8. No faxed or e-mailed reports will be accepted.
- 9. The signature of the EAP on the report must be an original signature.
- 10. The report must be compiled by an independent environmental assessment practitioner.
- 11. 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.
- 12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- 13. 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.

- 14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
- 15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

### **SECTION A: ACTIVITY INFORMATION**

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

NO X

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

#### 1. **PROJECT DESCRIPTION**

#### a) Describe the project associated with the listed activities applied for

Proposed Development of Further Education Training College (FET) in Nkandla A, Kwa-Zulu Natal.

## b) Provide a detailed description of the listed activities associated with the project as applied for

| Listed activity as described in GN R.544, 545 and 546  | Description of project activity  |  |  |
|--|--|--|--|
| Example:<br>GN R.544 Item 11(3): The construction of a<br>bridge where such construction occurs<br>within a watercourse or within 32 metres of a<br>watercourse, measured from the edge of a<br>watercourse, excluding where such<br>construction will occur behind the<br>development setback line. | A bridge measuring 5 m in height and 10m in<br>length, no wider than 8 meters will be built<br>over the Orange river |  |  |
| GN R.544 Item 23(i):   | The transformation of approximately 10 hectares  |  |  |
| The transformation of undeveloped, vacant or   | of land for the development of accommodation   |  |  |
| derelict land to:  | and education facilities for a new Further   |  |  |
| residential, retail, commercial, recreational,   | Education Training (FET) college in Nkandla (site  |  |  |
| industrial or institutional use, inside an urban   | A).  |  |  |
| area, and where the total area to be transformed   |  |  |  |
| is 5 hectares or more, but less than 20 hectares.  |  |  |  |
| GN R.544 Item 11: The construction of:   | The applicant proposes to construct the new FET  |  |  |
| (x) buildings exceeding 50 square metres in  | college within 32m from the wetland.   |  |  |
| size; or   |  |  |  |
| (xi) infrastructure or structures covering 50  |  |  |  |
| square metres or more  |  |  |  |
| where such construction occurs within a  |  |  |  |
| watercourse or within 32 metres of a   |  |  |  |
| watercourse, measured from the edge of a   |  |  |  |
| watercourse, excluding where such  |  |  |  |

| construction will occur behind the development    |   |
|---|---|
| setback line.                                     |   |
| GN R. 544 Item 18: The infilling or depositing of | The proposed FET college will result in either  |
| any material of more than 5 cubic metres into,    | the excavation of material from the watercourse |
| or the dredging, excavation, removal or moving    | and may also include infilling of that system.  |
| of soil, sand, shells, shell grit, pebbles or     |   |
| rock of more than 5 cubic metres from:            |   |
| (i) a watercourse;                                |   |
| excluding where such infilling, depositing,       |   |
| dredging, excavation, removal or moving;          |   |
| (a) is for maintenance purposes undertaken in     |   |
| accordance with a management plan agreed to       |   |
| by the relevant environmental authority; or       |   |
| (b) occurs behind the development setback         |   |
| line.   |   |

#### 2. FEASIBLE AND REASONABLE ALTERNATIVES

*"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 as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) 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 realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

#### a) Site alternatives

Please Note: There is only one Site Alternative for the proposed project. Other site alternatives will not be considered as these sites were chosen as there is a lack tertiary facilities within the identified areas.

| Alternative 1 (preferred alternative) |                |                 |  |
|---------------------------------------|----------------|-----------------|--|
| Description                           | Lat (DDMMSS)   | Long (DDMMSS)   |  |
| Nkandla A Campus                      | 28° 37′46.81″S | 31° 05′ 02.64″E |  |
| Alt                                   | ernative 2     |                 |  |
|                                       |                |                 |  |
|                                       |                |                 |  |
| Alternative 3                         |                |                 |  |
|                                       |                |                 |  |
|                                       |                |                 |  |

In the case of linear activities:

#### Alternative:

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity Alternative S2 (if any)
- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S3 (if any)

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

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.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

#### b) Lay-out alternatives

| Alternative 1 (preferred alternative) |                |                 |  |
|---------------------------------------|----------------|-----------------|--|
| Description Lat (DDMMSS) Long (DDMMSS |                |                 |  |
| Nkandla A - Layout A                  | 28° 37′46.81″S | 31° 05′ 02.64″E |  |

| Latitude (S): | Longitude (E): |  |  |
|---------------|----------------|--|--|
|               |                |  |  |
|               |                |  |  |
|               |                |  |  |
|               |                |  |  |
|               |                |  |  |
|               |                |  |  |

| AI                   | ternative 2    |                 |
|----------------------|----------------|-----------------|
| Description          | Lat (DDMMSS)   | Long (DDMMSS)   |
| Nkandla A - Layout B | 28° 37′46.81″S | 31° 05′ 02.64″E |
| AI                   | ternative 3    |                 |
| Description          | Lat (DDMMSS)   | Long (DDMMSS)   |
| Nkandla A - Layout C | 28° 37′46.81″S | 31° 05′ 02.64″E |

#### Nkandla A – Layout A Description:

This option will occupy approximately 18. 4 hectares as illustrated in the map below:



Figure 1: Map showing alternative layout A for the proposed Nkandla A FET College

This layout alternative will consist of the following:

- Administration building;
- 2 X Computer rooms;
- 8 X Classroom blocks with toilet facilities;
- A single storey library resource / elearning centre;
- An 8 module classroom block with toilet facility;
- A 14 classroom block (no toilet facility);
- A lecture theatre;
- A multipurpose hall;
- A workshop / training hall;
- A kitchen;
- Double storey student hostels;
- Covered walkways and access ramps;

- 10 Module classroom (no toilet facility);
- 16 Module classroom (4 storey with toilet facility);
- 20 Module classroom (4 storey no toilet facility);
- 4 storey student hostels;
- Supplies storeroom;
- Guard house;
- Pump house;
- Covered carports;
- Generator house;
- 2 X Computer classroom and 6 X classroom with toilet facilities;
- Large library resource / e-learning centre (double storey);

- Boarding master / matrons house;
- Open masonary workshop shed;
- General Workshop;
- Simulator rooms;
- Student centre & large student centre;
- Staff housing;

#### Nkandla A – Layout B Description:

- Boarding Master / Matrons house;
- Parking courts;
- Tennis court, soccer pitch and recreation areas;
- New roads.



Figure 2: Map showing alternative layout B for the proposed Nkandla A FET College

This layout alternative will consist of the following:

- Administration building;
- 2 X Computer rooms;
- 8 X Classroom blocks with toilet facilities;
- A single storey library resource / elearning centre;
- An 8 module classroom block with toilet facility;
- A 14 classroom block (no toilet facility);
- A lecture theatre;
- A multipurpose hall;
- A workshop / training hall;
- A kitchen;
- Double storey student hostels;

- Covered walkways and access ramps;
- 10 Module classroom (no toilet facility);
- 16 Module classroom (4 storey with toilet facility);
- 20 Module classroom (4 storey no toilet facility);
- 4 storey student hostels;
- Supplies storeroom;
- Guard house;
- Pump house;
- Covered carports;
- Generator house;
- 2 X Computer classroom and 6 X classroom with toilet facilities;

- Large library resource / e-learning centre (double storey);
- Boarding master / matrons house;
- Open masonary workshop shed;
- General Workshop;
- Simulator rooms;
- Student centre & large student centre;

#### Nkandla A – Layout C Description:

- Staff housing;
- Boarding Master / Matrons house;
- Parking courts;
- Tennis court, soccer pitch and recreation areas;
- New roads.

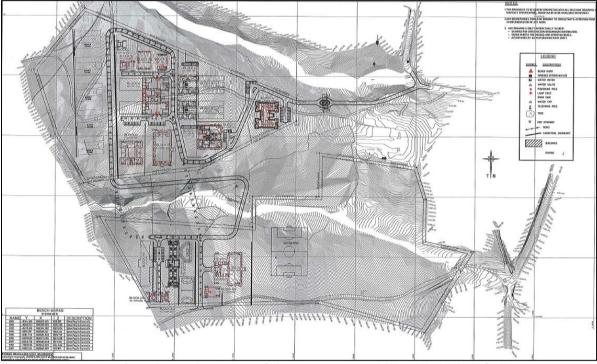


Figure 3: Map showing alternative layout C for the proposed Nkandla A FET College

This layout alternative will consist of the following:

- Administration building;
- 2 X Computer rooms;
- 8 X Classroom blocks with toilet facilities;
- A single storey library resource / elearning centre;
- An 8 module classroom block with toilet facility;
- A 14 classroom block (no toilet facility);
- A lecture theatre;
- A multipurpose hall;
- A workshop / training hall;
- A kitchen;
- Double storey student hostels;

- Covered walkways and access ramps;
- 10 Module classroom (no toilet facility);
- 16 Module classroom (4 storey with toilet facility);
- 20 Module classroom (4 storey no toilet facility);
- 4 storey student hostels;
- Supplies storeroom;
- Guard house;
- Pump house;
- Covered carports;
- Generator house;
- 2 X Computer classroom and 6 X classroom with toilet facilities;

- Large library resource / e-learning centre (double storey);
- Boarding master / matrons house;
- Open masonary workshop shed;
- General Workshop;
- Simulator rooms;
- Student centre & large student centre;

#### c) Technology alternatives

- Staff housing;
- Boarding Master / Matrons house;
- Parking courts;
- Tennis court, soccer pitch and recreation areas;
- New roads.

# Alternative 1 (preferred alternative) Alternative 2 Alternative 3

#### d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

| Alternative 1 (preferred alternative) |               |  |  |  |
|---------------------------------------|---------------|--|--|--|
|                                       |               |  |  |  |
|                                       | Alternative 2 |  |  |  |
|                                       |               |  |  |  |
|                                       | Alternative 3 |  |  |  |

#### e) No-go alternative

If the development does not occur, no new college facility will be built. This will result in a lack of benefit to the local communities both with respect to job opportunities and procurement. The necessary elements of educational facilities will not be in place for the intake of students at the start of the 2014 academic year as defined in the tender clarifications. There will be no construction related impacts and the wetland and surrounding open space will remain in its existing condition.

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

### SITE ALTERNATIVES

There is only one site alternative for the proposed project; therefore Paragraphs 3-13 below will not be repeated.

#### 3. PHYSICAL SIZE OF THE ACTIVITY

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

#### Alternative:

Alternative A1<sup>1</sup> (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)

or, for linear activities:

#### Alternative:

Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any) Size of the activity:

| 100 000 m <sup>2</sup> |
|------------------------|
| 100 000 m <sup>2</sup> |
| 100 000 m <sup>2</sup> |

Length of the activity:

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

#### Alternative:

Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)

#### 4. SITE ACCESS

Does ready access to the site exist?

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

Describe the type of access road planned:

Access to the site will be obtained from the existing road as illustrated in figure 3 in red. New internal roads will be constructed within the proposed site as illustrated in Figure 1, Appendix A.

#### Size of the site/servitude:

| 210 000 m <sup>2</sup> |
|------------------------|
| 210 000 m <sup>2</sup> |
| 210 000 m <sup>2</sup> |



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



Figure 4: Map showing the existing access road to the proposed FET site in red and the proposed site boundary in orange

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 (Refer to figure 3).

#### 5. 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 accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- 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).

#### 6. LAYOUT/ROUTE PLAN

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:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

#### 7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- 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 infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

#### 8. 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 report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

#### 9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 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.

### 10. ACTIVITY MOTIVATION

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

| 1. Is the activity permitted in terms of the property's existing land use rights?  | YES<br>X  | Please explain         |
|--|-----------|------------------------|
| The land is vacant and is owned by the local municipality and has been educational infrastructure developments.  | allocated | d for future           |
| 2. Will the activity be in line with the following?  |           |                        |
| (a) Provincial Spatial Development Framework (PSDF)  | YES<br>X  | Please explain         |
| As part of the KZN Provincial Growth and Development Stagey, Education is a social necessity. The strategic objective 2.2 of the strategy refers to the provision of tertiary education systems for the youth. There is a critical urgency to deal with education challenges in the Province. As part of the KZN PSDF, Nkandla is located in the Quatenary node, which should provide service to the local economy and community needs. Furthermore, Nkandla is located in an area identified as an economic support area, where skills development is a priority. This activity is therefore in line with the PSDF. |           |                        |
| (b) Urban edge / Edge of Built environment for the area  | YES<br>X  | Please explain         |
| The proposed FET College will not affect the Urban Edge.   |           |                        |
| (c) Integrated Development Plan (IDP) and Spatial<br>Development Framework (SDF) of the Local Municipality<br>(e.g. would the approval of this application compromise<br>the integrity of the existing approved and credible<br>municipal IDP and SDF?).   | YES<br>X  | Please explain         |
| The Nkandla 2012 IDP identifies the need for FET Colleges in Nkandla. SDF will not be compromised by the proposed development.   | The inte  | grity of the IDP and   |
| (d) Approved Structure Plan of the Municipality  | YES<br>X  | Please explain         |
| Unknown at this stage. This project is aimed at improving the education status of the local community through the provision of further education colleges in the Nkandla area. The local municipality will be requested to provide comment in this regard to the proposed activity.  |           |                        |
| (e) An Environmental Management Framework (EMF)<br>adopted by the Department (e.g. Would the approval of<br>this application compromise the integrity of the existing<br>environmental management priorities for the area and if<br>so, can it be justified in terms of sustainability<br>considerations?)   | YES<br>X  |                        |
| There is no EMF for the area; however, the IDP identifies the need for FET colleges in Nkandla.  |           |                        |
| (f) Any other Plans (e.g. Guide Plan)  | YES       | NO<br>X Please explain |
| Not Applicable   |           |                        |

|     | approved SDF agreed to by the relevant environmental<br>authority (i.e. is the proposed development in line with the<br>projects and programmes identified as priorities within the<br>credible IDP)?  | YES<br>X  |                    |
|-----|--|-----------|--------------------|
|     | IDP recognises that the FET college is needed in this area, it is a perfore considered in future planning initiatives in the area.   | ermanen   | t structure and is |
|     | Does the community/area need the activity and the associated<br>land use concerned (is it a societal priority)? (This refers to<br>the strategic as well as local level (e.g. development is a<br>national priority, but within a specific local context it could be<br>inappropriate.)  | YES<br>X  |                    |
|     | project is needed because education facilities are required for the a cation and skills for the community.   | rea in or | der to enhance     |
|     | Are the necessary services with adequate capacity currently<br>available (at the time of application), or must additional<br>capacity be created to cater for the development?<br>(Confirmation by the relevant Municipality in this regard must<br>be attached to the final Basic Assessment Report as<br>Appendix I.)  | YES<br>X  | Please explain     |
| The | local municipality will be requested to provide confirmation during th   | e comm    | ent period.        |
|     | Is this development provided for in the infrastructure<br>planning of the municipality, and if not what will the<br>implication be on the infrastructure planning of the<br>municipality (priority and placement of services and<br>opportunity costs)? (Comment by the relevant Municipality in<br>this regard must be attached to the final Basic Assessment<br>Report as Appendix I.)   | YES<br>X  | Please explair     |
|     | IDP recognises that the FET college is needed in this area, it is a performance of the second | ermanen   | t structure and is |
| 7.  | efore considered in future planning initiatives in the area.<br>Is this project part of a national programme to address an<br>issue of national concern or importance?   | YES<br>X  | Please explain     |
| Enh | ancing the education and skills of the community if of importance.   |           |                    |
|     | Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)   | YES<br>X  | Please explair     |
|     | proposed site is located near the town of Nkandla and therefore the<br>pured as this will add to the various educational institutions in the are   |           | -                  |

| 9. Is the development the best practicable environmental option for this land/site?   | YES<br>X                                  |               | Please explair      |
|---|---|---------------|---------------------|
| A number of factors were considered in the selection of the site for the p<br>as geological conditions, topography, presence of rivers and wetlands, p<br>resources, biota, etc.  |   |               |                     |
| 10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?   | YES<br>X                                  |               | Please explair      |
| Negative impacts will mainly be experienced during the construction pha<br>Environmental Management Programme (EMPr) attached as Appendix<br>provision for management as well as mitigation measures to be implement<br>construction and operational phases of the project. The provision of edu<br>a necessity thus this benefit outweighs any negative impacts.   | G to this l<br>ented duri                 | Reporting bot | makes<br>th the     |
| 11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?   | YES<br>X                                  |               | Please explai       |
| It is possible that another education institution could be developed in the the education of the area.  | area in t                                 | he futu       | ure to add to       |
| 12. Will any person's rights be negatively affected by the proposed activity/ies?   |   | NO<br>X       | Please explai       |
| Persons' rights will be positively affected through the provision of education mainly occur during the construction phase of the project.   | tion. Nega                                | ative ir      | npacts will         |
| 13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?  |   | NO<br>X       | Please explai       |
| The project will not impact the urban edge.   |   |               | 1                   |
|   | 1/50                                      |               |                     |
| 14. Will the proposed activity/ies contribute to any of the 17<br>Strategic Integrated Projects (SIPS)?   | YES<br>X                                  |               | Please explai       |
| Strategic Integrated Projects (SIPS)?   |   |               | Please explai       |
| <ul> <li>Strategic Integrated Projects (SIPS)?</li> <li>SIP 14: Higher education infrastructure <ul> <li>Infrastructure development for higher education, focusing on led accommodation, libraries and laboratories, as well as ICT connet.</li> <li>Development of university towns with a combination of facilities recreation and transport.</li> </ul> </li> </ul>  | X<br>ectivity.<br>from resi               | dence         | dent<br>, retail to |
| <ul> <li>Strategic Integrated Projects (SIPS)?</li> <li>SIP 14: Higher education infrastructure <ul> <li>Infrastructure development for higher education, focusing on legaccommodation, libraries and laboratories, as well as ICT connection</li> <li>Development of university towns with a combination of facilities</li> </ul> </li> </ul>  | X<br>ectivity.<br>from resi               | dence         | dent<br>, retail to |
| <ul> <li>Strategic Integrated Projects (SIPS)?</li> <li>SIP 14: Higher education infrastructure <ul> <li>Infrastructure development for higher education, focusing on led accommodation, libraries and laboratories, as well as ICT connet.</li> <li>Development of university towns with a combination of facilities recreation and transport.</li> <li>Potential to ensure shared infrastructure such as libraries by un</li> </ul> </li> </ul> | X<br>eture roon<br>ectivity.<br>from resi | dence<br>FETs | dent<br>, retail to |

| 16. Any other need and desirability considerations related to the proposed activity?  | Please explain   |  |
|---|------------------|--|
| N/A   |                  |  |
| 17. How does the project fit into the National Development Plan for 2030?   | Please explain   |  |
| The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by enhancing the capacity of the state, one way to do this is through provision of education for society.  |                  |  |
| 18. Please describe how the general objectives of Integrated Environmental N set out in section 23 of NEMA have been taken into account.  | lanagement as    |  |
| This project considers socio-economic factors (heritage, and the value of the project regarding education and skills) along with specialist studies investigating potential effects on terrestrial and aquatic environments. As independent Environmental Assessment Practioners, our task is to balance the impacts and suggest appropriate mitigation measures with the aim of minimising negative impact and enhancing benefits while promoting sustainable development. |                  |  |
| 19. Please describe how the principles of environmental management as set or of NEMA have been taken into account.  | out in section 2 |  |
| The principles of NEMA have been taken into account through the consideration of benefits of the FET college in terms of social factors as well as sustainable developm specialists to identify possible impacts and mitigation measures allows for the propose to go forward in a manner than will have minimal impact on the environment.   | nent. The use of |  |

#### 11. 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             |
|---|---|------------------|
| Constitution of the Republic of South Africa<br>(No. 108 of 1996)                                       | National and Provincial   | 18 December 1996 |
| National Environmental Management Act<br>(No. 107 of 1998)  | National: Department of<br>Environmental Affairs (DEA)                            | 27 November 1998 |
|   | Provincial: Gauteng Department of<br>Agriculture and Rural Development<br>(GDARD) |                  |
| Environmental Impact Assessment<br>Regulations, 2010, promulgated in terms<br>of Section 24(5) of NEMA. | National and Provincial   | 02 August 2010   |
| National Water Act (No. 36 of 1998)   | National and Provincial   | 26 August 1998   |
| National Environmental Management:<br>Biodiversity Act, 2004 (No. 10 of 2004)                           | National and Provincial   | 07 June 2004     |
| National Environmental Management<br>Waste Act (Act 59 of 2008)   | National and Provincial   | 10 March 2009    |
| National Heritage Resources Act (No. 25 of 1999)  | National and Provincial   | 28 April 1999    |

| Occupational Health & Safety Act (No. 85<br>of 1993)                     | National and Provincial | 23 June 1993      |
|--|-------------------------|-------------------|
| South African Schools Act (No. 84 of 1996)                               | National and Provincial | 6 November 1996   |
| The Basic Education Laws Amendment Act<br>(No. 15 of 2011)               | National and Provincial | 19 September 2011 |
| Higher Education Amendment Act (No. 39<br>of 2008)                       | National and Provincial | 04 February 2009  |
| Further Education and Training Colleges<br>Amendment Act (No. 1 of 2013) | National and Provincial | 18 March 2013     |

#### 12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

#### a) Solid waste management

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

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

| YES |                   |
|-----|-------------------|
| Х   |                   |
| Le  | ess than          |
|     | 100m <sup>3</sup> |
|     |                   |

Solid waste will be produced during the construction phase. The waste will be temporarily stored in designated skips on site and will then be taken off site by an appointed waste contractor to the closest registered landfill site.

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

Disposed at nearest landfill site.

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

| Munici | pal landfi | Il sites. |
|--------|------------|-----------|
| mannor | parianan   |           |

Will the activity produce solid waste during its operational phase?

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

| YES<br>X | NO                            |
|----------|-------------------------------|
| Le       | ess than<br>100m <sup>3</sup> |

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

Solid waste during the operational phase will be temporarily stored on site in the allocated waste/ skip enclosure. The waste will be collected by the local municipality's designated waste contractor. Any other solid waste not collected by the designated municipal contractor will be taken off site to the closest registered landfill site.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

The waste will either collected by a municipal appointed waste contractor or taken to the closest registered landfill site. The Nkandla Municipal waste department will be contacted 035 833 2000 to identify the closest landfill site.

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

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 NEM:WA? Should any hazardous waste in the forms of oils rags, cement bags etc, be produced during either the construction or operational phase, the waste will be temporarily stored in a designated hazardous skip and the temporary storage will not exceed 35m<sup>3</sup> at any given time.

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

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. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

#### b) Liquid effluent

Facility name:

Contact person: Postal address: Postal code: Telephone:

E-mail:

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

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?

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?

If YES, provide the particulars of the facility:

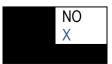
Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

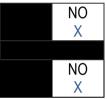
Cell:

Fax:

#### c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities? If YES, is it controlled by any legislation of any sphere of government?







NO



If YES, the applicant must 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:

Types of emissions include exhaust emissions and dust associated with construction phase activities. These emissions generated into the atmosphere will be temporary and limited to the construction phase, as the project is not anticipated to produce any emissions during the operation phase. It is recommended that all construction vehicles are regularly serviced and kept in good working condition to minimise exhaust emissions. Furthermore a water cart / truck must be used as a dust suppression measure to reduce the dust related impacts.

#### d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

#### e) Generation of noise

Will the activity generate noise?

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:

An increase in noise levels is expected during the construction phase due to construction vehicles and machinery. Mitigation measures included in the Environmental Management Programme (EMPr) attached as Appendix G to this Report.

#### 13. WATER USE

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

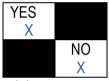
| Municipal |  |  |  |
|-----------|--|--|--|
|           |  |  |  |

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:

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

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

A Water Use License Application (WULA) will be submitted to the Department of Water Affairs. The Basic Assessment Process and the WULA Process will run concurrently. See Appendix J1.



NO

Х

YES

Х

#### 14. ENERGY EFFICIENCY

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

N/A

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

N/A

## LAYOUT ALTERNATIVES

There are three layout alternatives for the proposed project. Paragraph 3 will only be repeated. Paragraphs 4-13 below will not be repeated because the information is the same as above for the site alternative.

#### 3. PHYSICAL SIZE OF THE ACTIVITY

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

#### Alternative:

Alternative A1<sup>2</sup> (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)

or, for linear activities:

#### Alternative:

Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any) Size of the activity:

| 100 000 m <sup>2</sup> |
|------------------------|
| 100 000 m <sup>2</sup> |
| 100 000 m <sup>2</sup> |

Length of the activity:

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

#### Alternative:

Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)

#### Size of the site/servitude:

| 210 000 m <sup>2</sup> |
|------------------------|
| 210 000 m <sup>2</sup> |
| 210 000 m <sup>2</sup> |

<sup>&</sup>lt;sup>2</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

### 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 B and indicate the area, which is covered by each copy No. on the Site Plan.

Please note that this section will just be completed once for the entire site.

Section B Copy No. (e.g. A): N/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?



If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

| Property                          | Province                 | Kwa-Zulu Natal                   |
|-----------------------------------|--------------------------|----------------------------------|
| description/physi<br>cal address: | District<br>Municipality | Uthunugulu District Municipality |
|                                   | Local Municipality       | Nkandla                          |
|                                   | Ward Number(s)           | 5                                |
|                                   | Farm name and<br>number  | Farm 87 Nkandla                  |
|                                   | Portion number           | N/A                              |
|                                   | SG Code                  | N0GU2300000008700000             |

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

#### Current land-use zoning as per local municipality IDP/records:

The land is currently vacant, grassland. The site is used for grazing by local residents. The site is zoned as Agriculture.

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 |
|----|
| Х  |

### SITE ALTERNATIVES

There is only one site alternative for the proposed project; therefore Paragraphs 1-6 below will not be repeated.

#### 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

| Alternative S1:          |              |             |  |
|--------------------------|--------------|-------------|--|
|                          | 1:10 – 1:7,5 | 1:7,5 – 1:5 |  |
|                          | Х            | Х           |  |
| Alternative S2 (if any): | -            |             |  |
|                          |              |             |  |
|                          |              |             |  |
| Alternative S3 (if any): |              |             |  |
|                          |              |             |  |
|                          |              |             |  |
|                          |              |             |  |

#### 2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline2.4 Closed valley2.7 Undulating plain / low hillsX2.2 Plateau2.5 Open valley2.8 Dune2.3 Side slope of hill/mountainX2.6 Plain

#### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

|  | Alternative S | S1: Alternative<br>(if any): | s2 | Alternative (if any): | <b>S</b> 3 |
|--|---------------|------------------------------|----|-----------------------|------------|
| Shallow water table (less than 1.5m deep)                  | NC<br>X       |                              |    |                       |            |
| Dolomite, sinkhole or doline areas                         | NC            |                              |    |                       |            |
| Seasonally wet soils (often close to water bodies)         | YES<br>X      |                              |    |                       |            |
| Unstable rocky slopes or steep slopes with loose soil      | NC<br>X       | )                            |    |                       |            |
| Dispersive soils (soils that dissolve in water)            | NC<br>X       |                              |    |                       |            |
| Soils with high clay content (clay fraction more than 40%) | NC<br>X       | )                            |    |                       |            |
| Any other unstable soil or geological feature              | NC<br>X       |                              |    |                       |            |
| An area sensitive to erosion                               | NC<br>X       |                              |    |                       |            |

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.

#### 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 with scattered aliens <sup>E</sup><br>X | Natural veld with<br>heavy alien<br>infestation <sup>E</sup><br>X | Veld dominated<br>by alien species <sup>E</sup><br>X |
|--|---|--|
|  |   |  |

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.

#### 5. SURFACE WATER

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

| Perennial River              | YES<br>X |
|------------------------------|----------|
| Non-Perennial River          |          |
| Permanent Wetland            | YES<br>X |
| Seasonal Wetland             |          |
| Artificial Wetland           |          |
| Estuarine / Lagoonal wetland |          |

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

According to the wetland delineation report (Figure 4, Appendix D), two perennial spring fed water courses were identified within the development area, one formed the northern site border and the other passed through the southern portion of the site. A hillside seep permanent wetland area was associated with the southern watercourse.

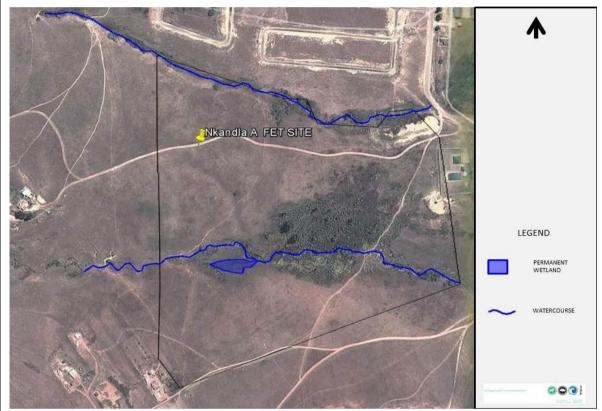


Figure 5: Map showing the wetland and wetland on site

The topography of the site is undulating, with the watercourses evident within deeply incised valleys. The site has an east facing aspect and a moderate gradient. The undulating topography of the site is more conducive to the formation of active narrow water courses as opposed to extensive wetland areas.

Hydromorphic soil conditions were only noted within the hillside seep associated with the southern water. The water courses on site were active and flow was contained within incised channels. There was little evidence of extra channel inundation and watercourse morphology conducive to the development of hydromorphic soil conditions. (SDP, 2013)

#### 6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that 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:

| Natural area                      |        |  |
|-----------------------------------|--------|--|
| Low density residential and rural |        |  |
| housing                           |        |  |
|                                   | School |  |

| Retail commercial & warehousing | River, stream or wetland |
|---------------------------------|--------------------------|
|                                 |                          |
|                                 |                          |
|                                 | Graveyard                |
|                                 |                          |

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

If any of the boxes marked with an "<sup>An</sup>" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

If any of the boxes marked with an "<sup>H</sup>" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

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

| Critical Biodiversity Area (as per provincial conservation plan)             | YES |    |
|--|-----|----|
|  | Х   |    |
| Core area of a protected area?   |     | NO |
|  | -   | Х  |
| Buffer area of a protected area?   |     | NO |
|  |     | Х  |
| Planned expansion area of an existing protected area?                        |     | NO |
|  |     | Х  |
| Existing offset area associated with a previous Environmental Authorisation? |     | NO |
|  |     | Х  |
| Buffer area of the SKA?  |     | NO |
|  |     | Х  |

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

The site falls within a Critical Biodiversity Area 3 (R0 as indicated on the map attached in Appendix A), however the majority of the site consisted of sourveld grassland. The grassland present was heavily

grazed and recently burnt. Helichrysum sp. and Senecio sp herbs we common amongst the graminoids. Portions of the grassland was invaded by R. cuneifolius and L. camara. A significant section of the central area of the site was heavily invaded by numerous exotic species including Solanum mauritianum, Eucalyptus grandis, Acacia mearnsii, Conyza albida in addition to R. cuneifolius and L. camara (Fig. 8). Because of the recent burn, identification of dominant grasses was difficult, however it is assumed that species such as Sporbolus africana, S. pyramidalis and A. junciformis are common. Nearer the watercourses Cymbopogon excavatus was noted. C. spicata, F. sur and A. sieberiana were the only indigenous woody species noted on site.

### LAYOUT ALTERNATIVES

There are three layout alternatives for the proposed project. However, Paragraphs 1-6 will not be repeated because the information is the same as above for the site alternative.

#### 7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

A site visit was undertaken by the heritage specialist and there was no evidence of any cultural or historical elements on the site. As such, an exemption letter was submitted to AMAFA / SAHRA for this proposed activity (Appendix D).

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

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

NO X NO X

NO

Х

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

#### 8. SOCIO-ECONOMIC CHARACTER

#### a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

#### Level of unemployment:

The following information was obtained from *Quantec I reference as Quantec Research (Pty) Ltd.* (2012, May 14). RSA Regional Indicators . Lynnwood, Gauteng, South Africa.

| Region   | P5D08M06:<br>Nkandla<br>Local<br>Municipality |  |
|--|---|--|
| Concept  |   |  |
| IT000: Employed - Formal and informal - Total (Number) | 8140  |  |
| UT000: Unemployed (Number)                             | 8923  |  |
| UT001: Unemployment rate (Percentage)                  | 52%   |  |

#### Economic profile of local municipality:

The following information was obtained from *Quantec I reference as Quantec Research (Pty) Ltd.* (2012, May 14). RSA Regional Indicators . Lynnwood, Gauteng, South Africa.

|           | P5D08M06:    |
|-----------|--------------|
|           | Nkandla      |
|           | Local        |
| Geography | Municipality |
| Industry  |              |

| 0: Total   | 643.4947318    |  |
|--|----------------|--|
| PA: Agriculture, forestry and fishing [SIC: 1]   | 29.57373866    |  |
| PB: Mining and quarrying [SIC: 2]  | 2.292890982    |  |
| SC: Manufacturing [SIC: 3]   | 23.4952677     |  |
| SD: Electricity, gas and water [SIC: 4]  | 9.216971365    |  |
| SE: Construction [SIC: 5]  | 30.23276425    |  |
| TF: Wholesale and retail trade, catering and   |                |  |
| accommodation [SIC: 6]   | 58.93582468    |  |
| TG: Transport, storage and communication [SIC: 7]  | 46.95373164    |  |
| TH: Finance, insurance, real estate and business service   | S              |  |
| [SIC: 8]   | 105.2540375    |  |
| TI: Community, social and personal services [SIC: 92, 95   |                |  |
| 99, 0]   | 156.2761783    |  |
| TJ: General government [SIC: 91, 94]   | 181.2633267    |  |
| According to the 2012 Nkandla IDP, The economy of Nka<br>controlled from outside as most of the people work outsid<br>those earning income within are spending outside the are<br>income sources are as follows:<br><ul> <li>Subsistence Agriculture - 16%</li> <li>Informal Sector - 13%</li> <li>Local Wages - 0.5%</li> <li>Migrant Remittances - 20%</li> <li>Government Grants - 50%</li> </ul> | e the area and |  |

#### Level of education:

| The        | following      | inform  | nation      | was d     | obtained    | from         | the   | following | g | source: |
|------------|----------------|---------|-------------|-----------|-------------|--------------|-------|-----------|---|---------|
| Statistics | s South Africa | . (2013 | , 11 01). C | Census 20 | 11. Pretori | ia, Gauteng, | South | Africa    |   |         |
|            |                | _       |             | _         | Grade       |              |       |           |   |         |

|         | No<br>schooling | Some<br>primary | Completed primary | Some<br>secondary | Grade<br>12/Std<br>10 | Higher | Other | Unspecified | Not<br>applicable | Grand<br>Total |
|---------|-----------------|-----------------|-------------------|-------------------|-----------------------|--------|-------|-------------|-------------------|----------------|
| KZN286: |                 |                 |                   |                   |                       |        |       |             |                   |                |
| Nkandla | 16287           | 35091           | 5667              | 24789             | 12927                 | 2514   |       | 42          | 17097             | 114414         |

#### b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development and construction phase of the activity/ies?

What is the expected value of the employment opportunities during the development and construction phase?

What percentage of this will accrue to previously disadvantaged individuals?

How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?

|   | R130 million        |  |  |  |
|---|---------------------|--|--|--|
| • | R 129 564 250       |  |  |  |
|   |                     |  |  |  |
|   | YES                 |  |  |  |
|   | X                   |  |  |  |
|   | YES                 |  |  |  |
|   | X                   |  |  |  |
|   | 360                 |  |  |  |
|   |                     |  |  |  |
| ) | R6.5 million        |  |  |  |
|   | 750/                |  |  |  |
|   | 75%                 |  |  |  |
| 2 | 58                  |  |  |  |
|   | <b>D</b> 04 005 450 |  |  |  |
| • | R 81 625 478        |  |  |  |
|   | 750/                |  |  |  |
|   | 75% or more         |  |  |  |

#### 9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

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

| Systematic Biodiversity Planning Category   |  | If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan  |  |  |  |
|---|--|---|--|--|--|
| Critical<br>Biodiversity<br>Area (CBA)<br>X |  | <b>CBA 3:</b><br>Areas that are the most optimal solution to meet<br>the required biodiversity conservation targets<br>while avoiding high cost areas as much as<br>possible (Category driven primarily by process) |  |  |  |

The site falls within a CBA 3. Refer to Appendix D for the Ecological Survey.

The majority of the site consisted of sourveld grassland. The grassland present was heavily grazed and recently burnt. *Helichrysum* sp. and *Senecio* sp herbs we common amongst the graminoids. Portions of the grassland was invaded by *R. cuneifolius* and *L. camara*. A significant section of the central area of the site was heavily invaded by numerous exotic species including *Solanum mauritianum*, *Eucalyptus grandis*, *Acacia mearnsii*, *Conyza albida* in addition to *R. cuneifolius* and *L. camara* (Fig. 8). Because of the recent burn, identification of dominant grasses was difficult, however it is assumed that species such as *Sporbolus africana*, *S. pyramidalis* and *A. junciformis* are common. Nearer the watercourses *Cymbopogon excavatus* was noted. *C. spicata*, *F. sur* and *A. sieberiana* were the only indigenous woody species noted on site.

#### b) Indicate and describe the habitat condition on site

|                   | Percentage of<br>habitat   | Description and additional Comments and<br>Observations   |
|-------------------|----------------------------|---|
| Habitat Condition | condition<br>class (adding | (including additional insight into condition, e.g. poor<br>land management practises, presence of quarries, |

|   | up to 100%) | 100%) grazing, harvesting regimes etc).   |  |  |  |
|---|-------------|---|--|--|--|
| Natural   | 30%         | The majority of the site consisted of sourveld grassland.<br>The grassland present was heavily grazed and recently<br>burnt.  |  |  |  |
| Near Natural<br>(includes areas with<br>low to moderate level<br>of alien invasive<br>plants) | 0%          |   |  |  |  |
| Degraded<br>(includes areas<br>heavily invaded by<br>alien plants)                            | 50%         | Helichrysum sp. and Senecio sp herbs we common<br>amongst the graminoids. Portions of the grassland was<br>invaded by <i>R. cuneifolius</i> and <i>L. camara</i> . A significant<br>section of the central area of the site was heavily invaded<br>by numerous exotic species including Solanum<br>mauritianum, Eucalyptus grandis, Acacia mearnsii, Conyza<br>albida in addition to <i>R. cuneifolius</i> and <i>L. camara</i> . Because<br>of the recent burn, identification of dominant grasses was<br>difficult, however it is assumed that species such as<br><i>Sporbolus africana, S. pyramidalis</i> and <i>A. junciformis</i> are<br>common. Nearer the watercourses <i>Cymbopogon</i><br><i>excavatus</i> was noted. <i>C. spicata, F. sur</i> and <i>A. sieberiana</i><br>were the only indigenous woody species noted on site. |  |  |  |
| Transformed<br>(includes cultivation,<br>dams, urban,<br>plantation, roads, etc)              | 20%         | There are gravel roads / tracks noted on site. Grazing was also noted on site.  |  |  |  |

#### Complete the table to indicate: c)

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

| Vegetation Type            | Ecosystems Status |
|----------------------------|-------------------|
| Northern Zululand Sourveld | Vulnerable        |

| Terrestrial Ecosystems                         |                        | Aquatic Ecosystems |  |      |      |           |    |  |
|--|------------------------|--------------------|--|------|------|-----------|----|--|
| Ecosystem threat                               | Critical<br>Endangered |                    | Wetland (including rivers, depressions, channelled and |      |      |           |    |  |
| status as per the<br>National<br>Environmental | Vulnerable<br>X        | unchann            | eled wetlands, flats, pans, and artificial             | Esti | uary | Coastline |    |  |
| Management:                                    |                        |                    | wetlands)  |      |      |           |    |  |
| Biodiversity Act (Act                          | t Least<br>Threatened  | YES                |  |      | NO   |           | NO |  |
| No. 10 of 2004)                                |                        | Х                  |  |      | Х    |           | Х  |  |

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

#### Vegetation:

The site falls within the Savanna Biome and is characterised by the Northern Zululand Sourveld. The Northern Zululand Sourveld vegetation type is found in the KwaZulu-Natal Province and Swaziland: From the Lusthof area in Swaziland southwards with scaterred patches in northern Zululand in the surrounds of Hlomohlomo, east of Louwsburg, Nongoma and the vicinity of Ulundi including Nkandla. In the Hluhluwe-iMfolozi Park it occurs at highest altitudes in the park (Mucina and Rutherford, 2006).

The Important taxa in this vegetation type includes species such as Acacia sieberiana, Acacia natalitia, Acacia nilotica, Acacia tortilis, Pleactroniella armata, Gardenia volkensii, Gnidia caffra, Gnidia kraussiana, Agathisanthemum bojeri, Chaetacanthus burchelli, Crossandra fruticulosa, etc. (Mucina and Rutherford, 2006).

The conservation status of this vegetation type is classified as Vulnerable with a national conservation target of 19%. Only about 4% is statutorily conserved, mainly in the Hluhluwe-iMfolozi Park and Ithala Game Reserve. Some 22% already transformed, mainly by cultivation and plantations (Mucina and Rutherford, 2006).

The majority of the site consisted of sourveld grassland. The grassland present was heavily grazed and recently burnt. Helichrysum sp. and Senecio sp herbs we common amongst the graminoids. Portions of the grassland was invaded by R. cuneifolius and L. camara. A significant section of the central area of the site was heavily invaded by numerous exotic species including Solanum mauritianum, Eucalyptus grandis, Acacia mearnsii, Conyza albida in addition to R. cuneifolius and L. camara. Because of the recent burn, identification of dominant grasses was difficult, however it is assumed that species such as Sporbolus africana, S. pyramidalis and A. junciformis are common. Nearer the watercourses Cymbopogon excavatus was noted. C. spicata, F. sur and A. sieberiana were the only indigenous woody species noted on site.

#### Watercourses/ Wetland:

According to the wetland delineation report, two perennial spring fed water courses were identified within the development area, one formed the northern site border and the other passed through the southern portion of the site. A hillside seep permanent wetland area was associated with the southern watercourse.

The topography of the site is undulating, with the watercourses evident within deeply incised valleys. The site has an east facing aspect and a moderate gradient. The undulating topography of the site is more conducive to the formation of active narrow water courses as opposed to extensive wetland areas.

Hydromorphic soil conditions were only noted within the hillside seep associated with the southern water. The water courses on site were active and flow was contained within incised channels. There was little evidence of extra channel inundation and watercourse morphology conducive to the development of hydromorphic soil conditions. (SDP, 2013)

# **SECTION C: PUBLIC PARTICIPATION**

#### 1. ADVERTISEMENT AND NOTICE

| Publication name     | To be confirmed in the final BAR |               |  |
|----------------------|----------------------------------|---------------|--|
| Date published       | To be confirmed in the final BAR |               |  |
| Site notice position | Latitude Longitude               |               |  |
|                      | 28°37'48.24"S                    | 31° 5'14.19"E |  |
|                      | 28°37'56.80"S                    | 31° 5'22.20"E |  |
|                      | 28°37'59.42"S                    | 31° 5'1.38"E  |  |
|                      | 28°38'5.24"S                     | 31° 5'3.01"E  |  |
|                      | 28°37'59.29"S                    | 31° 4'47.15"E |  |
| Date placed          | 03 October 2013                  |               |  |

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

### 2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

| Title, Name and Surname          | Affiliation/ key stakeholder status | Contact details (tel number or e-mail address) |
|----------------------------------|-------------------------------------|--|
| To be confirmed in the final BAR | To be confirmed in the final BAR    | To be confirmed in the final BAR               |
|                                  |                                     |  |
|                                  |                                     |  |

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

### 3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs Summary of response from EAP

No issues received to date. All issues raised by interested and affected parties (I&APs) will be incorporated in the Final Basic Assessment Report.

#### 4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR 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 the Final BAR as Appendix E3.

No comments received to date. All comments received will be incorporated in a Comments and Responses Report which will be attached as Appendix E3 to the Final Basic Assessment Report.

#### 5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

| Authority/Organ<br>of State        | Contact<br>person<br>(Title, Name<br>and<br>Surname) | Tel No         | Fax No       | e-mail                   | Postal<br>address  |
|------------------------------------|--|----------------|--------------|--------------------------|--|
| Uthungulu DAEA                     | TBC  | 0354730400     |              |                          |  |
|                                    |  |                |              |                          | P.O.Box<br>1018,<br>Durban,<br>4000  |
| DWA                                | Colleen<br>Moonsamy                                  | 0313362718     |              | moonsamyc@dwa.gov.za     | 88 Joe Slovo<br>Street (old<br>Field Street,<br>Southern life<br>building, 9th<br>floor, Durban                |
| Dint                               | moonoanty  | 0010002110     |              |                          | 292 Maree  |
| Nkandla Local<br>Municipality      | Mr S B<br>Mthembu                                    | 035 8332000    |              |                          | Road,<br>Nkandla   |
| Uthungulu District<br>Municipality | Mr D P Lubbe   | 0357992501     |              |                          | Uthungulu<br>District<br>Municipality,<br>Uthungulu<br>House,<br>Kruger Road<br>street,<br>Richards<br>Bay CBD |
| Marnolpanty                        | Phumzili   | 0007002001     |              |                          | bay obb  |
| Ward 5 Councillor                  | Dlamini  | 076 1991159    |              |                          |  |
| Nkandla Local<br>Library           | Information rate                                     | 035 8332000    | ioot will be | ploaded onto the CALIDA  | 292 Maree<br>Road,<br>Nkandla  |
| SAHRA / AMAFA                      |  | AFA – Weziwe T |              | ploaded onto the SAHRA v | vensile ior line   |
| KZN Wildlife                       | Dominic<br>Weiners                                   |                |              |                          | P.O.Box<br>13053,  |

|                            |                      |                 |                       | Cascades,<br>PMB 3202                                     |
|----------------------------|----------------------|-----------------|-----------------------|---|
| Department of<br>Transport | Roy Ryan             |                 |                       | P/Bag<br>x9043, PMB,<br>3200                              |
| Eskom                      | Barbara van<br>Geens | 021 980<br>8675 | vangeensb@eskom.co.za | Eskom road,<br>Protea<br>Heights,<br>Brackenseel,<br>7160 |

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

#### 6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation 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. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

## 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. 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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts 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. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Please note: The Significance value of the impacts provided below represents the overall impact score (Please refer to Impact Assessment in Appendix F which describes this fully). The Significance value in the table below refers to the overall impact score BEFORE the proposed mitigations. Please refer to Appendix F for the overall impact scores AFTER the proposed mitigations.

| Activity       | Impact summary                          | Significance | Proposed mitigation  |  |  |  |
|----------------|---|--------------|--|--|--|--|
| Alternative A1 | Alternative A1 and A2                   |              |  |  |  |  |
|                | PRE-CONSTRUC                            | TUION PHASE  |  |  |  |  |
|                | Direct impacts: Loss of wetland habitat | Medium       | The watercourses are spring<br>fed and perennial in nature.<br>Although subjected to several<br>existing disturbances, the<br>watercourses provide ideal<br>breeding grounds for<br>amphibian species. The hill<br>seep associated with the<br>southern water course is likely<br>to provide a significant water<br>filtration function. Loss of the<br>water course areas and<br>wetlands may compromise<br>water quality negatively<br>affecting downstream habitats<br>and users. Mitigation should<br>involve the protection of the<br>water resources and the<br>implementation of a 32m buffer<br>from the edge of the |  |  |  |

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

| Activity | Impact summary   | Significance | Proposed mitigation   |
|----------|--|--------------|---|
|          |  |              | wetland/watercourses is   |
|          |  |              | recommended.  |
|          | Impact on flora due to site preparation  | Medium       | During site preparation, topsoil<br>and subsoil are stripped<br>separately from each other<br>and must be stored separately<br>from spoil material for use in<br>the rehabilitation phase. It<br>should be protected from wind<br>and rain, as well as<br>contamination from diesel,<br>concrete or wastewater. |
|          |  |              | Records of all environmental<br>incidents must be maintained<br>and a copy of these records<br>must be made available to<br>authorities on request<br>throughout the project<br>execution.  |
|          | Impact on fauna during site preparation  | Medium       | During site preparation special<br>care must be taken during the<br>clearing of the works area to<br>minimise damage or<br>disturbance of possibly<br>roosting and nesting sites.   |
|          |  |              | Before construction<br>commences, barricading<br>measures to be utilised should<br>not restrict the movement of<br>the fauna in the area.   |
|          | Impact on Fauna ( Search and Rescue)   | Medium       | A qualified and / or<br>appropriately experienced<br>Zoologist or an experienced<br>person who knows the animals<br>in the region well will identify<br>any possible Red Data fauna<br>on site and the necessary<br>permits to relocate fauna will<br>be obtained if avoidance is not<br>possible.              |
|          |  |              | Training of construction<br>workers to recognise<br>threatened animal species will<br>reduce the probability of fauna<br>being harmed unnecessarily.  |
|          | Indirect impacts:  |              |   |
|          | Cumulative impacts:  |              |   |
|          | CONSTRUCTI   | 1            |   |
|          | <b>Direct impacts:</b><br>Possible erosion on steep slopes<br>and loss of top soil. Compaction<br>of top soil through construction | Medium       | Stabilisation of cleared areas<br>to prevent and control erosion<br>will be actively managed. The<br>method chosen (e.g. watering,  |

| Activity | Impact summary  | Significance | Proposed mitigation   |
|----------|---|--------------|---|
|          | activities.<br>An increased sediment load within<br>the watercourses may impact on<br>the water quality and habitat<br>quality of the watercourses.     |              | planting, retaining structures,<br>commercial anti-erosion<br>compounds) will be selected<br>according to the site-specific<br>conditions. Construction<br>employees to be restricted to<br>approved access roads and<br>walk ways.<br>Adequate measures to be<br>implemented for soil erosion  |
|          |   |              | and soil contamination as a result of hydrocarbon spills which in turn will impact vegetation on site.  |
|          | Increased Runoff thus affecting<br>the drainage and the ecosystem<br>downstream of the proposed<br>activity - Alternative A1 and A2<br>– Layout A and B | Medium       | Both development proposals<br>will result in large areas of the<br>site being hardpanned.<br>Increased impermeable areas<br>will result in increased runoff,<br>which will be released into the<br>watercourses and wetland<br>area. Increased runoff will<br>increase erosive forces during<br>high flows resulting in bank<br>instability and increase<br>turbidity due to increase<br>suspended sediments. Impacts<br>will have an influence on<br>systems down stream of the<br>site. Mitigation would take the<br>form of suitable stormwater<br>management which reduces<br>flow velocity and maintains<br>acceptable post development<br>flow scenarios. |
|          | Soil contamination, vegetation<br>loss and vegetation disturbance<br>due to fuel and chemical spills.   | Medium       | Employ on site personnel<br>responsible for preventing and<br>controlling potential soil<br>pollution through fuel and oil<br>leaks and spills.<br>Make sure construction   |
|          |   |              | vehicles are maintained and<br>serviced to prevent oil and fuel<br>leaks. Emergency on-site<br>maintenance should be done<br>over appropriate drip trays and<br>all oil or fuel must be disposed<br>of according to waste<br>regulations. Drip-trays must be<br>placed under vehicles and<br>equipment when not in use.   |
|          | Vegetation and habitat disturbance due to the accidental introduction of alien species.   | Medium       | Promote awareness of all<br>personnel.<br>After construction programme,<br>monitoring and control of alien<br>weeds and invaders through  |

| Activity | Impact summary  | Significance | Proposed mitigation  |
|----------|---|--------------|--|
|          |   |              | hand removal; slashing<br>(annuals) or chemical control<br>(perennials). Chemical control<br>may only be done upon<br>approval from the<br>Environmental Control Officer.  |
|          | Vegetation and habitat<br>disturbance due to pollution and<br>littering during construction<br>phase. | Low          | Employ personnel on site<br>responsible for preventing and<br>controlling of litter. Promote<br>housekeeping with daily clean-<br>ups on site.   |
|          |   |              | Before construction<br>commences, construction<br>workers should be educated<br>with regards to littering, <i>ad hoc</i><br>veld fires, and dumping.   |
|          | Damage to plant life outside of the proposed development area   | Low          | No fires are allowed on site.<br>Construction activities should<br>be restricted to the footprint<br>area. All workers must be<br>trained before construction  |
|          | Disturbance to animals  | Low          | commences.<br>Animals residing within the<br>designated area shall not be<br>unnecessarily disturbed.  |
|          |   |              | Before construction starts,<br>construction workers must be<br>educated with regards to<br>littering and poaching.   |
|          |   |              | The Contractor and his/her employees shall not bring any domestic animals onto site.   |
|          |   |              | Toolbox talks should be<br>provided to contractors<br>regarding disturbance to<br>animals. Particular emphasis<br>should be placed on talks<br>regarding snakes.   |
|          | Allow for safe animal passage<br>through and specifically out of the<br>construction site.            | Low          | Construction areas must be<br>demarcated but should allow<br>for the migration of small<br>faunal species out of the<br>construction zone. Fencing<br>types must be selected for<br>minimal disturbance to animal<br>movement corridors (e.g.<br>palisade fencing is preferable<br>to diamond-mesh fencing). |
|          | Dust from movement of construction vehicles and machinery as well as bare surface areas.              | Low          | Dust abatement measures to be implemented for construction activities.   |
|          | Vehicles and construction   |              | Vehicles not to travel faster than 30km on servitude road.   |

| Activity | Impact summary  | Significance | Proposed mitigation   |
|----------|---|--------------|---|
|          | machinery's emissions.<br>Smoke from uncontrolled fires.  |              | Bare areas (i.e. siphon sections) must be watered to minimise dust.   |
|          |   |              | No uncontrolled fires to be allowed on site.  |
|          | Noise associated with construction activities (e.g. vehicle movement, demolition work, generators). | Low          | The provisions of SANS 10103 will apply to all areas within audible distance of residents.  |
|          | generatoroj.  |              | Construction activities<br>generating output levels of 55<br>dB or more will be confined to<br>normal working hours.                |
|          |   |              | Construction work to be restricted to approved working hours.   |
|          |   |              | Construction machinery<br>(especially silencers) to be<br>maintained and kept in working<br>condition.                              |
|          |   |              | No loud music to be played on servitude or at construction camp site.   |
|          | Visual alterations to the area.<br>Visual impact associated with construction camp/s                | Low          | Construction camp to be positioned so as to minimize its visual impacts.  |
|          | Adverse impacts on the landscape character and sense of   |              | Sound housekeeping practices to be enforced.  |
|          | place of the affected area.   |              | Damage to the natural<br>environment should be<br>minimised.  |
|          |   |              | Vegetation should be cut only if absolutely necessary.  |
|          |   |              | The clearing of all sites should<br>be kept to a minimum and<br>surrounding vegetation should<br>as far as possible be left intact. |
|          | Development of FET College  | Medium       | Construction methodology to make provision for  |
|          | Uncontrolled access to servitude.   |              | development of FET College.   |
|          | Construction employees getting injured.   |              | Compliance with Occupational<br>Health and Safety Act (Act No.<br>85 of 1993).  |
|          |   |              | Contractor to provide an<br>Occupational Health and<br>Safety Management Plan to  |

| Activity | Impact summary  | Significance | Proposed mitigation   |
|----------|---|--------------|---|
|          |   |              | the Construction Manager for<br>approval prior to the<br>commencement of works in<br>terms of the Construction<br>Regulations (2003).                         |
|          |   |              | Proper supervision of<br>employees at all times.<br>Employees to be clearly<br>identifiable.  |
|          |   |              | Employees to remain within<br>the servitude and no loitering<br>to be allowed.  |
|          |   |              | Access into and out of the servitude must only be via existing access roads from local public roads.  |
|          |   |              | Contractor to prepare and<br>submit, for approval, a rescue<br>procedure for employees in the<br>case of an injury.   |
|          | Use of veld/ riparian areas for<br>ablution purposes.<br>Land, air and water pollution<br>through poor waste management<br>practises. | Medium       | Sufficient ablution facilities to<br>be provided at the<br>Construction Camp and along<br>construction servitude.<br>Ablution facilities to be<br>maintained. |
|          |   |              | No ablution facilities to be positioned within riparian areas.  |
|          |   |              | Suitable litter receptacles to be positioned strategically across the site at all working areas.  |
|          |   |              | Contractor to submit waste<br>management plan prior to<br>commencement. Such plan to<br>be approved by ECO and<br>enforced by contractor.                     |
|          |   |              | Waste must be separated at<br>source (e.g. containers for<br>glass, paper, metals, plastics,<br>organic waste and hazardous<br>wastes).                       |
|          | Job Creation  | N/A          | Employment creation is a positive impact therefore no mitigation measures are required.   |
|          | Education Provision   | N/A          | The provision of education is a positive impact therefore no mitigation measures are required.  |

| Activity | Impact summary   | Significance | Proposed mitigation  |
|----------|--|--------------|--|
|          | Damage to archaeological sites.<br>Damage to graves.   | Medium       | Should remains and/or<br>artefacts be discovered on the<br>site during earthworks, all work<br>will cease in the area affected<br>and the Contractor will<br>immediately inform the<br>Construction Manager.<br>Should any heritage resources  |
|          |  |              | be exposed during excavation<br>or be found on site, the<br>relevant heritage resource<br>agency (SAHRA) must be<br>informed and a registered<br>heritage specialist must be<br>called to site for inspection.   |
|          |  |              | No person may, without a<br>permit issued by SAHRA or a<br>provincial heritage resources<br>authority –<br>• Destroy, damage, alter,<br>exhume or remove from<br>its original position or<br>otherwise disturb the<br>grave of a victim of<br>conflict, or any burial<br>ground or part thereof<br>which contains such<br>graves;<br>• Destroy, damage, alter,<br>exhume, remove from its<br>original position or<br>otherwise disturb any<br>grave or burial ground<br>older than 60 years<br>which is situated outside<br>a formal cemetery<br>administered by a local<br>authority or;<br>• Bring onto or use at a<br>burial ground or grave<br>referred to in above any<br>excavation equipment, or<br>any equipment which<br>assists in the detection or<br>recovery of metals. |
|          | Indirect impacts:  |              |  |
|          | Cumulative impacts:  |              |  |
|          | OPERATIO   | N PHASE      |  |
|          | <b>Direct impacts:</b> Increased Runoff<br>thus affecting the drainage and<br>the ecosystem downstream of the<br>proposed activity | Medium       | The development proposals<br>will result in large areas of the<br>site being hardpanned.<br>Increased impermeable areas<br>will result in increased runoff,  |

| Activity | Impact summary   | Significance | Proposed mitigation   |  |  |
|----------|--|--------------|---|--|--|
|          |  |              | which will be released into the<br>watercourses and wetland<br>area. Increased runoff will<br>increase erosive forces during<br>high flows resulting in bank<br>instability and increase<br>turbidity due to increase<br>suspended sediments. Impacts<br>will have an influence on<br>systems down stream of the<br>site. Mitigation would take the<br>form of suitable stormwater<br>management which reduces<br>flow velocity and maintains<br>acceptable post development<br>flow scenarios. |  |  |
|          | Indirect impacts:  |              |   |  |  |
|          | <b>Cumulative impacts:</b><br>The proposed development may<br>affect biodiversity through the<br>encroachment of exotic<br>vegetation following soil<br>disturbance, in addition the<br>maintenance of the area would<br>disturb naturalised species within<br>the area. | Medium       | Encroachment of alien<br>vegetation should be<br>monitored regularly and<br>controlled; the area must be<br>kept clear of all invader plants<br>as per the Conservation of<br>Agricultural Resources Act,<br>1983 (Act No 43 of 1983).<br>Rehabilitation measures must<br>be employed until such a time<br>as indigenous species are<br>established.  |  |  |
|          | DECOMMISION  |              |   |  |  |
|          | Please note that no decommissioning and closure phase is expected to take place as the college is a permanent feature. However, if decommissioning will be undertaken a separate Basic Assessment  |              |   |  |  |

permanent feature. However, if decommissioning will be undertaken a separate Basic Assessment Report inclusive of a site decommissioning Environmental Management Programme should be developed and implemented.

#### No-go option

The 'No-Go' alternative means that the proposed development will not take place and the area will retain its status quo. If the development does not occur, no new college facility will be built. This will result in a lack of benefit to the local communities both with respect to job opportunities and procurement. The necessary elements of educational facilities will not be in place for the intake of students at the start of the 2014 academic year as defined in the tender clarifications.

| Activity    | Impact summary                                 | Significance        | Proposed mitigation   |
|-------------|--|---------------------|---|
| Alternative | A3   |                     |   |
|             | PRE-CONSTRUC                                   | TUION PHASE         |   |
|             | <i>Direct impacts:</i> Loss of wetland habitat | Low /<br>Acceptable | The revised layout allows for<br>the maintenance of the entire<br>on site wetland area and the<br>two watercourses with the<br>exception of a necessary<br>crossing. This is positive from<br>both a biodiversity and wetland<br>loss perspective. The 32 meter<br>must be clearly demarcated |

| Activity | Impact summary  | Significance | Proposed mitigation   |
|----------|---|--------------|---|
|          |   |              | and adhered to.   |
|          | Impact on flora due to site preparation   | Medium       | During site preparation, topsoil<br>and subsoil are stripped<br>separately from each other<br>and must be stored separately<br>from spoil material for use in<br>the rehabilitation phase. It<br>should be protected from wind<br>and rain, as well as<br>contamination from diesel,<br>concrete or wastewater. |
|          |   |              | Records of all environmental<br>incidents must be maintained<br>and a copy of these records<br>must be made available to<br>authorities on request<br>throughout the project<br>execution.  |
|          | Impact on fauna during site preparation   | Medium       | During site preparation special<br>care must be taken during the<br>clearing of the works area to<br>minimise damage or<br>disturbance of possibly<br>roosting and nesting sites.   |
|          |   |              | Before construction<br>commences, barricading<br>measures to be utilised should<br>not restrict the movement of<br>the fauna in the area.   |
|          | Impact on Fauna ( Search and Rescue)  | Medium       | A qualified and / or<br>appropriately experienced<br>Zoologist or an experienced<br>person who knows the animals<br>in the region well will identify<br>any possible Red Data fauna<br>on site and the necessary<br>permits to relocate fauna will<br>be obtained if avoidance is not<br>possible.              |
|          |   |              | Training of construction<br>workers to recognise<br>threatened animal species will<br>reduce the probability of fauna<br>being harmed unnecessarily.  |
|          | Indirect impacts:   |              |   |
|          | Cumulative impacts:   |              |   |
|          | CONSTRUCTI  | ON PHASE     |   |
|          | <b>Direct impacts:</b><br>Possible erosion on steep slopes<br>and loss of top soil. Compaction<br>of top soil through construction<br>activities. | Medium       | Stabilisation of cleared areas<br>to prevent and control erosion<br>will be actively managed. The<br>method chosen (e.g. watering,<br>planting, retaining structures,<br>commercial anti-erosion  |

| Activity | Impact summary   | Significance | Proposed mitigation   |
|----------|--|--------------|---|
|          | An increased sediment load within<br>the watercourses may impact on<br>the water quality and habitat<br>quality of the watercourses. |              | compounds) will be selected<br>according to the site-specific<br>conditions. Construction<br>employees to be restricted to<br>approved access roads and<br>walk ways.   |
|          |  |              | Adequate measures to be<br>implemented for soil erosion<br>and soil contamination as a<br>result of hydrocarbon spills<br>which in turn will impact<br>vegetation on site.  |
|          | Increased Runoff thus affecting<br>the drainage and the ecosystem<br>downstream of the proposed - A3                                 | Medium       | Both development proposals<br>will result in large areas of the<br>site being hardpanned.<br>Increased impermeable areas<br>will result in increased runoff,<br>which will be released into the<br>watercourses and wetland<br>area. Increased runoff will<br>increase erosive forces during<br>high flows resulting in bank<br>instability and increase<br>turbidity due to increase<br>suspended sediments. Impacts<br>will have an influence on<br>systems down stream of the<br>site. Mitigation would take the<br>form of suitable stormwater<br>management which reduces<br>flow velocity and maintains<br>acceptable post development<br>flow scenarios. |
|          | Soil contamination, vegetation<br>loss and vegetation disturbance<br>due to fuel and chemical spills.                                | Medium       | Employ on site personnel<br>responsible for preventing and<br>controlling potential soil<br>pollution through fuel and oil<br>leaks and spills.<br>Make sure construction<br>vehicles are maintained and<br>serviced to prevent oil and fuel<br>leaks. Emergency on-site<br>maintenance should be done<br>over appropriate drip trays and<br>all oil or fuel must be disposed<br>of according to waste<br>regulations. Drip-trays must be<br>placed under vehicles and<br>equipment when not in use.  |
|          | Vegetation and habitat disturbance due to the accidental introduction of alien species.  | Medium       | Promote awareness of all<br>personnel.<br>After construction programme,<br>monitoring and control of alien<br>weeds and invaders through<br>hand removal; slashing<br>(annuals) or chemical control   |

| Activity | Impact summary  | Significance | Proposed mitigation  |
|----------|---|--------------|--|
|          |   |              | (perennials). Chemical control<br>may only be done upon<br>approval from the<br>Environmental Control Officer.   |
|          | Vegetation and habitat<br>disturbance due to pollution and<br>littering during construction<br>phase. | Low          | Employ personnel on site<br>responsible for preventing and<br>controlling of litter. Promote<br>housekeeping with daily clean-<br>ups on site.   |
|          |   |              | Before construction<br>commences, construction<br>workers should be educated<br>with regards to littering, <i>ad hoc</i><br>veld fires, and dumping.   |
|          | Damage to plant life outside of the proposed development area   | Low          | No fires are allowed on site.<br>Construction activities should<br>be restricted to the footprint<br>area. All workers must be<br>trained before construction<br>commences.  |
|          | Disturbance to animals  | Low          | Animals residing within the designated area shall not be unnecessarily disturbed.  |
|          |   |              | Before construction starts,<br>construction workers must be<br>educated with regards to<br>littering and poaching.   |
|          |   |              | The Contractor and his/her<br>employees shall not bring any<br>domestic animals onto site.   |
|          |   |              | Toolbox talks should be<br>provided to contractors<br>regarding disturbance to<br>animals. Particular emphasis<br>should be placed on talks<br>regarding snakes.   |
|          | Allow for safe animal passage<br>through and specifically out of the<br>construction site.            | Low          | Construction areas must be<br>demarcated but should allow<br>for the migration of small<br>faunal species out of the<br>construction zone. Fencing<br>types must be selected for<br>minimal disturbance to animal<br>movement corridors (e.g.<br>palisade fencing is preferable<br>to diamond-mesh fencing). |
|          | Dust from movement of construction vehicles and machinery as well as bare surface areas.              | Low          | Dust abatement measures to<br>be implemented for<br>construction activities.   |
|          | Vehicles and construction machinery's emissions.  |              | Vehicles not to travel faster<br>than 30km on servitude road.<br>Bare areas (i.e. siphon   |

| Activity | Impact summary  | Significance | Proposed mitigation  |
|----------|---|--------------|--|
|          | Smoke from uncontrolled fires.                              |              | sections) must be watered to   |
|          |   |              | minimise dust.   |
|          |   |              | No uncontrolled fires to be  |
|          | Nutrie  |              | allowed on site.   |
|          | Noise associated with construction activities (e.g. vehicle | Low          | The provisions of SANS 10103 will apply to all areas within  |
|          | movement, demolition work, generators).                     |              | audible distance of residents.   |
|          |   |              | Construction activities generating output levels of 55   |
|          |   |              | dB or more will be confined to<br>normal working hours.  |
|          |   |              | Construction work to be restricted to approved working hours.  |
|          |   |              | Construction machinery<br>(especially silencers) to be   |
|          |   |              | maintained and kept in working condition.  |
|          |   |              | No loud music to be played on servitude or at construction camp site.  |
|          | Visual alterations to the area.                             | Low          | Construction camp to be  |
|          | Visual impact associated with                               |              | positioned so as to minimize its visual impacts.   |
|          | construction camp/s   |              | Sound housekeeping practices   |
|          | Adverse impacts on the landscape character and sense of     |              | to be enforced.  |
|          | place of the affected area.                                 |              | Damage to the natural  |
|          |   |              | environment should be minimised.   |
|          |   |              | Vegetation should be cut only  |
|          |   |              | if absolutely necessary.   |
|          |   |              | The clearing of all sites should   |
|          |   |              | be kept to a minimum and   |
|          |   |              | surrounding vegetation should  |
|          | Development of FET College                                  | Medium       | as far as possible be left intact.<br>Construction methodology to  |
|          |   | WEUUIII      | make provision for   |
|          | Uncontrolled access to servitude.                           |              | development of FET College.  |
|          | Construction employees getting injured.                     |              | Compliance with Occupational<br>Health and Safety Act (Act No.<br>85 of 1993).                                   |
|          |   |              | Contractor to provide an<br>Occupational Health and<br>Safety Management Plan to<br>the Construction Manager for |
|          |   |              | approval prior to the  |

| Activity | Impact summary  | Significance | Proposed mitigation   |
|----------|---|--------------|---|
|          |   |              | commencement of works in<br>terms of the Construction<br>Regulations (2003).  |
|          |   |              | Proper supervision of<br>employees at all times.<br>Employees to be clearly<br>identifiable.  |
|          |   |              | Employees to remain within the servitude and no loitering to be allowed.  |
|          |   |              | Access into and out of the servitude must only be via existing access roads from local public roads.  |
|          |   |              | Contractor to prepare and submit, for approval, a rescue procedure for employees in the case of an injury.  |
|          | Use of veld/ riparian areas for<br>ablution purposes.<br>Land, air and water pollution<br>through poor waste management<br>practises. | Medium       | Sufficient ablution facilities to<br>be provided at the<br>Construction Camp and along<br>construction servitude.<br>Ablution facilities to be<br>maintained. |
|          |   |              | No ablution facilities to be positioned within riparian areas.  |
|          |   |              | Suitable litter receptacles to be positioned strategically across the site at all working areas.  |
|          |   |              | Contractor to submit waste<br>management plan prior to<br>commencement. Such plan to<br>be approved by ECO and<br>enforced by contractor.                     |
|          |   |              | Waste must be separated at<br>source (e.g. containers for<br>glass, paper, metals, plastics,<br>organic waste and hazardous<br>wastes).                       |
|          | Job Creation  | N/A          | Employment creation is a positive impact therefore no mitigation measures are required.   |
|          | Education Provision   | N/A          | The provision of education is a positive impact therefore no mitigation measures are required.  |
|          | Damage to archaeological sites.   | Medium       | Should remains and/or artefacts be discovered on the  |
|          | Damage to graves.   |              | site during earthworks, all work  |

| Activity | Impact summary   | Significance      | Proposed mitigation   |
|----------|--|-------------------|---|
|          |  |                   | will cease in the area affected<br>and the Contractor will<br>immediately inform the<br>Construction Manager.   |
|          |  |                   | Should any heritage resources<br>be exposed during excavation<br>or be found on site, the<br>relevant heritage resource<br>agency (SAHRA) must be<br>informed and a registered<br>heritage specialist must be<br>called to site for inspection.   |
|          |  |                   | No person may, without a<br>permit issued by SAHRA or a<br>provincial heritage resources<br>authority –<br><ul> <li>Destroy, damage, alter,<br/>exhume or remove from<br/>its original position or<br/>otherwise disturb the<br/>grave of a victim of<br/>conflict, or any burial<br/>ground or part thereof<br/>which contains such<br/>graves;</li> <li>Destroy, damage, alter,<br/>exhume, remove from its<br/>original position or<br/>otherwise disturb any<br/>grave or burial ground<br/>older than 60 years<br/>which is situated outside<br/>a formal cemetery<br/>administered by a local<br/>authority or;</li> <li>Bring onto or use at a<br/>burial ground or grave<br/>referred to in above any<br/>excavation equipment, or<br/>any equipment which<br/>assists in the detection or<br/>recovery of metals.</li> </ul> |
|          | Indirect impacts:  |                   |   |
|          | Cumulative impacts:  |                   |   |
|          | -  |                   |   |
|          | <b>Direct impacts:</b> Increased Runoff<br>thus affecting the drainage and<br>the ecosystem downstream of the<br>proposed activity | N PHASE<br>Medium | The development proposals<br>will result in large areas of the<br>site being hardpanned.<br>Increased impermeable areas<br>will result in increased runoff,<br>which will be released into the<br>watercourses and wetland<br>area. Increased runoff will   |

| Activity   | Impact summary   | Significance   | Proposed mitigation   |
|--|--|--|---|
| Activity   |  | Significance   | increase erosive forces during<br>high flows resulting in bank<br>instability and increase<br>turbidity due to increase<br>suspended sediments. Impacts<br>will have an influence on<br>systems down stream of the<br>site. Mitigation would take the<br>form of suitable stormwater<br>management which reduces<br>flow velocity and maintains<br>acceptable post development<br>flow scenarios. |
|  | Indirect impacts:  |  |   |
|  | <b>Cumulative impacts:</b><br>The proposed development may<br>affect biodiversity through the<br>encroachment of exotic<br>vegetation following soil<br>disturbance, in addition the<br>maintenance of the area would<br>disturb naturalised species within<br>the area. | Medium   | Encroachment of alien<br>vegetation should be<br>monitored regularly and<br>controlled; the area must be<br>kept clear of all invader plants<br>as per the Conservation of<br>Agricultural Resources Act,<br>1983 (Act No 43 of 1983).<br>Rehabilitation measures must<br>be employed until such a time<br>as indigenous species are<br>established.  |
|  | DECOMMISION  |  |   |
| permanent fea<br>Report inclus<br>developed and<br><b>No-go option</b> |  | vill be undertake<br>ronmental Mana                        | en a separate Basic Assessment<br>agement Programme should be   |
| retain its statu<br>result in a la<br>procurement.                     | alternative means that the proposed d<br>is quo. If the development does not or<br>ck of benefit to the local communit<br>The necessary elements of education<br>e start of the 2014 academic year as de   | ccur, no new col<br>ies both with r<br>nal facilities will | llege facility will be built. This will<br>espect to job opportunities and<br>not be in place for the intake of   |

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

Please see Appendix F.

#### 2. 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 <u>after</u> 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 A1

This alternative is for the construction of a new FET College at the identified site using Layout alternative A1.

The key factors which formed part of evaluating the potential environmental impacts associated with the proposed project included the significance of the impacts likely to result from each of the project life-cycle phases, the receiving environment, the extent of the development footprint as well as the degree to which adverse environmental impacts could be either prevented, minimised, rehabilitated or compensated to a satisfactory level.

This alternative will result in the following positive impacts:

- Job creation;
- Provision of higher education facilitates.

The following negative impacts are however associated with this alternative:

• Potential loss of the drainage line on the proposed site.

The main impacts that may arise from the proposed FET College is the potential damage to the watercourse / wetland habitat, increased stormwater runoff and the destruction of the vegetation. All impacts that have been identified can be mitigated against and or minimised.

All recommendations made by the wetland specialist must be adhered to and the site specific Environmental Management Programme (EMPr) must be implemented to ensure that all potential impacts are mitigated against. The findings of the impact assessment carried out concluded that there is no fatal flaw which prevents the proposed project from proceeding provided that the indicated layouts are further amended to include a 32 m buffer.

#### Alternative A2(preferred alternative)

This alternative is for the construction of a new FET College at the identified site using Layout alternative A2.

The key factors which formed part of evaluating the potential environmental impacts associated with the proposed project included the significance of the impacts likely to result from each of the project life-cycle phases, the receiving environment, the extent of the development footprint as well as the degree to which adverse environmental impacts could be either prevented, minimised, rehabilitated or compensated to a satisfactory level.

This alternative will result in the following positive impacts:

- Job creation;
- Provision of higher education facilitates.

The following negative impacts are however associated with this alternative:

• Potential loss of the drainage line on the proposed site.

The main impacts that may arise from the proposed FET College the potential damage to the watercourse / wetland habitat, destruction of the vegetation and increased stormwater runoff, however all impacts that have been identified can be mitigated against and or minimised.

All recommendations made by the wetland specialist must be adhered to and the site specific Environmental Management Programme (EMPr) must be implemented to ensure that all potential impacts are mitigated against. The findings of the impact assessment carried out concluded that

there is no fatal flaw which prevents the proposed project from proceeding provided that the indicated layouts are further amended to include a 32 m buffer.

#### Alternative A3

This alternative is for the construction of a new FET College at the identified site using Layout alternative A3.

The key factors which formed part of evaluating the potential environmental impacts associated with the proposed project included the significance of the impacts likely to result from each of the project life-cycle phases, the receiving environment, the extent of the development footprint as well as the degree to which adverse environmental impacts could be either prevented, minimised, rehabilitated or compensated to a satisfactory level.

This alternative will result in the following positive impacts:

- Job creation;
- Provision of higher education facilitates.

The following negative impacts are however associated with this alternative:

• Potential loss of the drainage line on the proposed site.

The main impacts that may arise from the proposed FET College is the increased stormwater runoff and the destruction of the vegetation. All impacts that have been identified can be mitigated against and or minimised.

All recommendations made by the wetland specialist must be adhered to and the site specific Environmental Management Programme (EMPr) must be implemented to ensure that all potential impacts are mitigated against. The findings of the impact assessment carried out concluded that there is no fatal flaw which prevents the proposed project from proceeding.

No-go alternative (compulsory)

The 'No-Go' alternative means that the proposed development will not take place and the area will retain its status quo. If the development does not occur, no new college facility will be built. This will result in a lack of benefit to the local communities both with respect to job opportunities and procurement. The necessary elements of educational facilities will not be in place for the intake of students at the start of the 2014 academic year as defined in the tender clarifications.

## 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)?



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).

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.

Based on the information contained in this report, and taking into account the outcome of the impact assessment, opinions and recommendations included in the specialist studies as well as all

supporting documentation it is the recommendation of the practitioner that Environmental Authorisation (EA) be granted by the Department of Environmental Affairs (DEA) for **Alternative S1** and **A3**.

Furthermore the following conditions for inclusion in the EA are recommended:

- Construction should take place during the dry season (i.e. low rainfall period);
- The Environmental Management Programme should form part of the contract with the Contractor appointed by the proponent, as a means of facilitating compliance with environmental specifications and the implementation of mitigation measures;
- Preventative measures avoiding contaminated runoff from the construction area into the watercourses, must be implemented throughout the construction phase; and
- An Independent Environmental Control Officer (ECO) must be appointed by the proponent prior to the commencement of construction activities. The ECO's primary role will be to assess whether construction activities are implemented as per the conditions stipulated in the EA.

Is an EMPr attached?

YES X

NO

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Manogrie Chetty NAME OF EAP

SIGNATURE OF EAP

25 October 2013 DATE

#### **SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps Appendix 1: Locality Map Appendix 2: Site or Route Plan Appendix 3: Sensitivity Map

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference) Appendix 1: Wetland Assessment and Delineation Appendix 2: Ecological Survey Appendix 3: Heritage Impact Assessment Appendix 4: Biodiversity information

#### Appendix E: Public Participation

Appendix 1 – Proof of newspaper advertisements Appendix 2 – Proof of I&AP (Key Stakeholders) Notification Appendix 3 – Comments and Responses Report Appendix 4 – Proof of I&AP (Authorities or Organs of State) Notification Appendix 5 – List of I&APs Appendix 6 - Correspondence and Minutes

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information