Requirements:	
Institutional and Training requirements:	Appointment of a designated Environmental Control Officer (ECO) on site. Appointment of an External Environmental Auditor (EEA) to conduct monthly site inspections and audits. Appropriate hazardous waste management will form part of the environmental awareness and training course.
Monitoring:	Solid waste management to be monitored by the EEA during the monthly site visits and to be reported on in the environmental performance assessment reports.

6.15 Access Creation and Disruption	
Objectives:	To minimise the disruption of traffic on public roads.
Activities:	• Construction/upgrade of the access road. • Transportation of blocks off site.
Impact:	The movement of heavy vehicles along the district road accessing the site may result in some disruption to traffic on the road. This is likely to be largely of nuisance value.
Mitigation Measure:	Increased traffic, especially heavy vehicle traffic, has the potential to draw complaints from nearby residents. The Site Agent is expected to address any complaints received. The Site Agent shall comply with all the applicable local, regional and national by-laws with regard to road safety and transport. He shall instruct his drivers and plant operators that vehicles will be expected to comply with all road ordinances, such as speed limits, roadworthiness, load securing / covering. Site vehicles should be permitted access only within the demarcated construction sites or on existing roads, as would be required to complete their specific tasks. Site vehicle traffic should be limited to specific access roads to prevent unnecessary damage to the natural environment.
Responsibility:	Site Agent
Permit Requirements:	None
Institutional and Training requirements:	Appointment of a designated Environmental Control Officer (ECO) on site. Appointment of an External Environmental Auditor (EEA) to conduct monthly site inspections and audits.
Monitoring:	Will be monitored through a public complaints register.

6.16 Procurement of Goods and Services	
Objectives:	To maximise the benefits to the local economy through the procurement of goods and services locally if practical.
Activities:	• Mining operations (General)
Benefit:	The local economy with the Study Area and further afield within the Umzimvubu Local Municipality stands to benefit significantly through the supply of materials or specialist services.
Measures to enhance benefit:	A **targeted procurement policy** to be implemented at the mine whereby goods and services should be sourced locally if possible. "Local" meaning the study area, followed by the Umzimvubu Municipality and finally by the Eastern Cape Province.
Responsibility:	Site Agent
Permit Requirements:	None
Institutional and Training requirements:	None
Monitoring:	None required

6.17 Employment and Training	
Objectives:	To maximise the social and economic benefits to the local residents through employment and training.
Activities:	• Recruitment of labour • Training
Benefit:	The local community stand to benefit significantly from the provision of jobs and the implementation of a staff training programme.
Measures to enhance benefit:	Staff (both skilled and unskilled) should be sourced from the great Kei Municipality if possible. A training programme should be put in place to train unskilled labour into skilled positions.
Responsibility:	Site Agent
Permit Requirements:	None Required
Institutional and	Implementation of a Staff Training Programme.

Training requirements:	
Monitoring:	Will be monitored via the Social and Labour Plan

6.18 Additional Mitigation Measures

6.18.1 Community Relations

The Site Agent shall erect and maintain information boards at the start of the road construction site. Such boards shall include contact details for complaints by members of the public.

The Site Agent shall keep a "Complaints Register" on Site. The Register shall contain all contact details of the person who made the complaint, information regarding the complaint itself, and measures taken to address the complaint.

A **Project Steering Committee** must be set up with the community to assist the Mine Owner / Site Agent with employment issues and liaison with communities.

A **Community Liaison Officer** must be appointed from the local community. The CLO will be responsible for channelling any complaints from the community through to the Site Agent, in will participate in resolving these issues.

6.18.2 Staff Safety and Education

All staff shall be given a health and safety induction course before beginning work on the site. Part of the induction course will be to make the staff aware of the potential dangers associated with the mining process and the potential hazards around the mine / quarry.

The contractor is required to produce a **Health and Safety Plan** (HSP) as per the requirements of the Occupation Health and Safety Act and Regulations. The HSP must include general community safety in the vicinity of the mine / quarry, as well as measures to minimise the nuisance factors, such as dust and noise.

The Site Agent must maintain a suitable First Aid Kit at the site office and will have a list of the emergency service contact numbers readily available.

Telephone numbers of emergency services, including the local fire fighting service and HAZMAT / ZORBIT, shall be posted conspicuously in the office near the telephone.

No unauthorised firearms are permitted on Site.

All operations on site must be undertaken according to the Mine Health and Safety Act No. 29 of 1996 and ensure the safety, health and welfare of the staff on site.

6.18.3 Work Stoppage

The DME shall have the right to order work to be stopped in the event of significant infringements of the Environmental Specifications. Work will only be allowed to restart once the situation is rectified in compliance with the specifications.

6.18.4 Existing Services and Infrastructure

The Site Agent shall ensure that existing services (road, rail, pipelines, power lines and telephone services) are not disrupted or damaged.

Activities below overhead powerlines must be carefully monitored to ensure that they do not cause damage to those powerlines, or impact on the safety of employees. Suitable hazard/ warning signage must be deployed in the vicinity of the powerlines.

7 MONITORING OF THE EMP

In order to ensure that the Environmental Management Plan is effectively implemented, it is important that regular external audits of the Environmental Management Plan are conducted.

An External Environmental Auditor (EEA) will be appointed by the DRT to undertake **monthly site inspections and Biannual Performance Assessments** in compliance with DME's requirements. DRT shall arrange that these external audits do take place and that a system for addressing any problems identified during these audits, is formulated. The relevant documentation shall be kept and shall be available to the DME and the public.

The following items will require monitoring and recording during construction:

Table 7.1 Summary of Compliance Monitoring during Construction and Closure.

ITEM	STANDARD	FREQUENCY	RESPONSIBILITY	REPORTING
CONSTRUCTION PHASE				
1. General environmental performance on site and compliance with legal requirements.	Environmental Management Plan; Environmental Management Specifications; Condition of Authorisation by DEDEA (ROD); Conditions of Authorisation by DME.	Monthly Site Inspections; Biannual DME Performance Assessments	External Environmental Auditor	Monthly compliance checklists to Contractor; Client and Consultants; Quarterly Audit Reports to DEDEA; Biannual Performance Assessments to DME
2. Water Consumption	DWAF Permit Requirements	Ongoing – Daily records should be kept.	Contractor	Reported to DEDEA, DWAF, Client, Consultant and Contractor during Quarterly Audits.
3. Water Quality	DWAF Water Quality Standards	Quarterly	External Environmental Auditor	Reported to DEDEA, DWAF, Client, Consultant and Contractor during Quarterly Audits.
CLOSURE PHASE				
4. Compliance with DME – approved closure plan for borrowpits	DME-approval closure plan for borrowpits	On closure of borrowpits	External Environmental Auditor	Results will be reported in a Closure Report submitted to DME, Client, Consultants and Contractor.

8 ENVIRONMENTAL AWARENESS PROGRAMME

In order to ensure that the EMP and all conditions of authorisation are properly implemented it will be necessary to undertake extensive environmental awareness on site. The awareness programme must be extended to all levels of personnel on site from the Site Agent and Resident Engineer as far as casual labourers. It is imperative that the contractor and his supervisory staff "buy-in" to the environmental awareness programme in order for it to be a success.

The environmental awareness programme should be co-ordinated by the EEA, although it will be the responsibility of the contractor to ensure that the programme is extended down to all levels of the workforce through "toolbox talks" and induction programmes.

Items to receive specific emphasis in the awareness programme will include:

- Conservation of Energy;
- Water conservation and recycling;
- Protection of water resources from contamination and pollution;
- Prevention of erosion;
- Reduction of Dust and Noise;
- Preservation of soil and prevention of contamination;
- Protection of indigenous flora and fauna;
- Eradication of Alien Plant Species;
- Protection of sites of cultural heritage significance;
- Handling, storage and disposal of solid waste;
- Handling, storage and disposal of hazardous waste; and
- General health and safety issues.

An initial training / awareness session will be held with senior supervisory staff down to foremen level. This will be conducted by the EEA and will be held with senior supervisory staff down to foremen level. This will be conducted by the EEA. A register will be kept of all staff members attending the session.

It will be the responsibility of the Environmental Representative[3] on site to ensure that all staff members (permanent and temporary) receive the required training in environmental management. Examples of "toolbox talks" to be conveyed to site staff are included in APPENDIX J.

[3] The Environmental Representative will be a member of the contractor's site staff who is tasked with the day-to-day implementation and monitoring of the EMP.

9 DECOMMISSIONING AND CLOSURE

9.1 Environmental and Mine Closure Objectives

9.1.1 Mine Closure

The **Overall Environmental Objective** for mine closure is as follows:

"To render the mining area[4] in a safe and environmentally acceptable condition on completion of the mining, rehabilitation and closure activities."

Specific **Environmental Goals** include:

- "To return the mining area, as closely as possible, to its former condition and landuse through the shaping and landscaping of the surface and through the reestablishment of indigenous vegetation".
- "To minimise the residual impacts through ensuring that erosion is controlled, slopes are stable, vegetation cover is established and the area is left in a condition which does not pose a safety hazard to humans, livestock and indigenous fauna".
- "To minimise the visual impacts of the mine on closure through the avoidance of exposed faces and slopes and the through the reestablishment of the indigenous vegetation".
- "To obtain the necessary Mine Closure Certificate from the Department of Minerals and Energy"

9.1.2 Management of Impacts

The objectives and goals for the management of impacts are detailed in Section 6.

9.1.3 Socio-Economic Conditions

The specific objective related to the Socio-Economic Conditions is as follows:

"To contribute significantly and meaningfully to the economic and social development of the study area and the Umzimvubu Municipality."

Specific goals include:

- "To maximise the benefits to the local economy through the provision of jobs and support of local service providers and suppliers wherever possible."

[4] The mining area is defined as everything within the boundaries of the perimeter fence including the haul roads and any other surface which was disturbed as a result of the mining operations.

- "To institute a training programme for all staff members."

- "To encourage further economic development through exploring partnerships with local individuals and groups in the establishment of further beneficiation businesses."

9.2 Responsibilities

The Applicant shall be responsible for the complete rehabilitation of the site, including borrowpit slopes, floor, spoil sites, access roads, haul routes etc. Where re-vegetation is not successful, these affected areas will be re-seeded and replanted until such time as a cover in excessive of 80% has been achieved.

9.3 Rehabilitation Plan and Programme

The Applicant / Site Agent, in conjunction with the EEA, shall develop a comprehensive plan for rehabilitation of the entire site, including the associated workshops, site camps etc. This plan must meet the approval of the DME.

The following points must be taken into account when drawing up the **Rehabilitation Plan and Programme**:

- The Plan should be flexible – where measures are found to be inefficient, the plan shall be modified.

- The Applicant shall be responsible for successful rehabilitation and re-vegetation of the site, for a minimum period of 2 years after mining has ceased.

- The Plan shall include the eradication of young invasive, exotic species that may have become established during the construction period, in impacted areas and in rehabilitated areas.

- The growth of invasive exotic species shall be monitored during the 24 month period following decommissioning / closure.

- The Plan shall include grass seed mixes applicable to summer and winter;

- The Plan shall include suitable fertilisers and application rates.

- Successful re-vegetation means ≥ 80 % of the seeded area is covered with trees / grass / groundcover.

- Where there is insufficient topsoil to cover an area to specified depth, the Site Agent shall import suitable topsoil.

9.4 Additional Requirements

Environmental Management associated with the decommissioning of this project will ensure that the following items are addressed at closure and during the maintenance / liability period:

- All cleared sites are rehabilitated with indigenous grass species.
- All visible alien plants are removed from disturbed sites.
- The borrowpits conform to the designed closure specifications, including drainage, slope stability, topsoiling and tree / grass planting.
- All site infrastructure will be removed and those areas will be ripped and then covered with a 30mm thick layer of topsoil. Those areas will then be hydroseeded with a mix of grasses indigenous to the area.
- The site must remain fenced with warning signs erected to caution the general public of the altered state of the environment in the area. Drainage structures must also be left intact.
- Overburden (decomposed rock) will be, where possible, placed over any exposed rock. This will be covered with a layer of topsoil no less than 30cm deep.
- The topsoil will be hydroseeded at an appropriate time of the year (spring to early – mid summer). Sufficient grass cover will be maintained on the stockpiles during the operational life span of the mine until such a time that the waste material is used in the rehabilitation of the mine face. The long term nature of the mining operation requires that the waste stockpile area be rehabilitated during the mine life and then used for rehabilitation measures at the end of the mine life.
- The borrowpit areas will be fenced with a stockproof fence to prevent access by livestock until such time that the vegetation has been allowed to recover. No dangerous faces which present a safety threat to communities will be left.
- All closure objectives prescribed by the DME must be met before retention monies will be released back to the applicant.
- The requirements detailed in Regulations 56, 57, 60, 61 and 62 pertaining to Site Closure must be fulfilled. They include the following key actions:
    - Identify and assess all residual and latent environmental impacts;
    - Undertake a performance assessment and an environmental risk report; and
    - Compile a **Closure Plan** and apply for a **Closure Certificate**.

10 FINANCIAL PROVISION

The contract makes provision for the profiling and earthworks required for the rehabilitation of the borrowpits as well as the fencing, final landscaping and revegetation.

The rehabilitation cost schedules for the borrowpits has been included into APPENDIX F. The calculation assumes that site establishment will been required. An average rehabilitation cost of roughly R85,000.00 (including VAT) per borrowpit was determined. The total provision required for the three borrowpits would be no less than R420,000.00.

The contract documentation makes allowance for rehabilitation of borrowpits with provisional amounts indicated for earthworks, topsoiling and hydroseeding. The amount allowed for in the document is R1.2m

Security for the financial provision will be provided by the South African National Roads Agency Limited (SANRAL) who will retain a fixed percentage of the total contract value in retention money until the issuing of the completion certificate. One of the conditions for completion is obtaining DME approval for the final shaping of the borrowpits. The retention money specified in the contract document is R1.5m, half of which (R750,000.00) will be retained until the end of the defects liability period.

A letter of financial provision confirming this amount is included in APPENDIX G.

11 UNDERTAKING BY THE APPLICANT

The Client, the Department of Roads and Transport, has undertaken to comply with the requirements of the Environmental Management Plan. A signed copy of the undertaking is included in APPENDIX H.

APPENDIX A:

Application form and DEA Record of Decision [PENDING]

DEPARTMENT OF ECONOMIC AFFAIRS, ENVIRONMENT AND TOURISM, PROVINCE OF THE EASTERN CAPE

PROVINCE OF THE EASTERN CAPE

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2006 (Version 1)

Kindly note that:

1. This application form is to be completed for both the Basic Assessment process and the Scoping & EIA process.
2. This application form is current as of 3 July 2006. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. The application must be completed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. It is in the form of a table that can extend itself as each space is filled with typing.
4. Selected boxes must be indicated by a cross, and when the form is completed electronically, must also be highlighted.
5. Incomplete applications may be returned to the applicant for revision.
6. The use of "not applicable" in the form must be done with circumspection if it is used in respect of material information that is required by the competent authority for assessing the application, and may result in the rejection of the application as provided for in the regulations.
7. This application together with all the relevant attachments must be handed in at the offices of the relevant competent authority as detailed below.
8. No faxed or e-mailed applications will be accepted. Only hand delivered or posted applications will be accepted.
9. The application must be completed by an independent environmental practitioner.
10. Unless protected by law, all information filled in on this application will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this application on request, during any stage of the application process.

DEPARTMENTAL CONTACT DETAILS

Head Office –Bhisho (General Enquiries)	**Alfred Nzo Region**	**Amathole Region**
Director: Environmental Impact Management Department of Economic Affairs, Environment & Tourism Private Bag X0054 Bhisho 5605 Bhisho Business Village Block C No. 5 Siwane Street Bhisho Tel: [040] 609 4712/4704 Fax: [040] 609 4700	Regional Manager: Environmental Affairs Dept of Economic Affairs, Environment & Tourism P/b x3513 Kokstad, 4700 170 Hope Street Kokstad Tel: [039] 727 3257 Fax: [039] 727 3282	Regional Manager: Environmental Affairs Dept of Economic Affairs, Environment & Tourism Private Bag X9060 East London, 5200 Medical Centre, cnr Oxford & St James Streets, East London Tel: [043] 742 0360 Fax: [043] 742 0323
Cacadu/Nelson Mandela Metro Region	**Chris Hani/Ukhahlamba Region**	**OR Tambo Region**
Regional Manager: Environmental Affairs Dept of Economic Affairs, Environment & Tourism Private Bag X5001 Greenacres, 6057 Collegiate House, cnr Belmont Terrace & Castle Hill Central Port Elizabeth Tel: [041] 508 5800 Fax: [041] 585 1958	Regional Manager: Environmental Affairs Dept of Economic Affairs, Environment & Tourism PO Box 9636, Queenstown, 5320 Old Royal Hotel, 104 Cathcart Road Queenstown Tel: [045] 808 4000 Fax: [045] 838 3981	Regional Manager: Environmental Affairs Dept of Economic Affairs, Environment & Tourism Private Bag X5029 Mthatha, 5100 Old Radio Transkei Building, Cnr Victoria & York Roads Mthatha Tel: [047] 531 1191 Fax: [047] 531 2887

APPLICATION FORM

DEPARTMENT OF ECONOMIC AFFAIRS, ENVIRONMENT AND TOURISM, PROVINCE OF THE EASTERN CAPE

(For official use only)

File Reference Number:	
Responsible Officer:	
Date Received:	

SITE IDENTIFICATION AND LINKAGE

Please indicate all the Surveyor-general 21 digit site (erf/farm/portion) reference numbers for all sites (including portions of sites) that are part of the application.

N	*O*	*T*		*A*	*P*	*P*	*L*	*I*	*C*	*A*	*B*	*L*	*E*						
R	*O*	*A*	*D*		*R*	*E*	*S*	*E*	*R*	*V*	*E*		*A*	*N*	*D*				
S	*T*	*A*	*T*	*E*		*L*	*A*	*N*	*D*										

(if there are more that 10, please attach a list with the rest of the number)
(These numbers will be used to link various different applications, authorisations, permits etc. that may be connected to a specific site)

1. Background information

Project applicant:	South African National Roads Agency Limited		
Trading name (if any):	Not applicable		
Contact person:	Mr M Kaiser		
Physical address:	NRA House, Southern Life Gardens, 70 Second Avenue, Newton Park, Port Elizabeth		
Postal address:	NRA House, Southern Life Gardens, 70 Second Avenue, Newton Park, Port Elizabeth		
Postal code:	6045	**Cell:**	-
Telephone:	(041) 3983200	**Fax:**	(041 398 3211)
E-mail:	kaiserm@nra.co.za		

Project consultant:	Terreco Consulting		
Contact person:	Jo Daneel		
Postal address:	P O Box 19829, TECOMA		
Postal code:	5214	**Cell:**	0824935646
Telephone:	043 7211502	**Fax:**	043 7211535
E-mail:	daneelj@terreco.co.za		
Professional affiliation(s) (if any)	IAIA		

Landowner:	Not applicable (Road Reserve)		
Contact person:			
Postal address:			
Postal code:		**Cell:**	
Telephone:		**Fax:**	
E-mail:			

In instances where there is more than one landowner, please attach a list of landowners with their contact details to this application.

Local authority in whose jurisdiction the proposed activity will fall:	UMZIMVUBU LOCAL MUNICIPALITY		
Contact person:	The Municipal Manager: Mr Thobela Notha		
Postal address:	Private Bag X9020, Mount Frere		
Postal code:	5090	**Cell:**	-
Telephone:	(039) 255 0166	**Fax:**	(039) 255 1893
E-mail:	-		

In instances where there is more than one local authority involved, please attach a list of local authorities with their contact details to this application.

Project title:	REHABILITATION OF NATIONAL ROUTE 2 (N2): SECTION 20 FROM THE NGWELENI RIVER TO BROOKES NEK: EASTERN CAPE (30.8KM)
Property description:	**State Land (Road Reserve)**
	(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.
Town(s) or district(s):	**Mount Ayliff – Umzimvubu Local Municipality**
Physical address:	**Not applicable – existing gravel and surfaced roads.**
	In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.
Current land-use zoning:	**Not applicable – existing gravel and surfaced district road.**
	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?	YES	~~NO~~
Must a building plan be submitted to the local authority?	YES	~~NO~~

Locality map:

A locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be at least 1:50 000. 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;
- 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.

Owners consent:

In line with the requirements of the EIA regulations, letters of consent of all landowners or a detailed explanation by the applicant explaining why consent is not possible must be attached to the back of this document as Appendix B.
NOT REQUIRED – WORK IS GENERALLY WITHIN THE ROAD RESERVE

2. Activities applied for

An application may be made for more than one listed or specified activity that, together, make up one development proposal. All the listed activities that make up this application must be listed.

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant or notice) :	Describe each listed activity:
Government Notice No R. 386 (21st April 2006)	**1(m)**	**Any purpose in the 1:10 year floodline of a river or stream, or within 32 metres from the bank of a river or stream where the floodline is unknown, excluding purposes associated with existing residential use, but including (i) canals; (ii) channels (iii) bridges (iv) dams; and (v) weirs.**
	4	**The dredging, excavation, infilling, removal or movement of soil, sand or rock exceeding 5 cubic meters from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.**
	7	**The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters but less than 1000 cubic meters at any one location or site.**
	12	**The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur in a critically endangered ecosystem listed in terms of section 52 of the National Environmental**

		Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
	15	**The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.**

Please note that any authorisation that may result out of this application will only cover activities applied for. Omissions may render any authorisation that is based on incomplete information to be nil and void.

3. Type of application

3.1 Application for Basic Assessment

Is this an application for conducting a basic assessment (as defined in the regulations)?	YES	NO
If, YES, is a basic assessment report attached?	YES	NO

If, NO, please indicate when the basic assessment report will be submitted:

3.2 Application for Scoping and Environmental Impact Assessment (EIA)

Is this an application for Scoping and EIA (as defined in the regulations)?	NOT APPLICABLE
If, YES, is a Scoping Report and Plan of Study for EIA attached?	

If, NO, please indicate when the Scoping Report and Plan of Study for EIA will be submitted:

NOT APPLICABLE

The scoping report and/or the plan of study for EIA will be submitted	NOT APPLICABLE
After consultation with the competent authority:	
A consultation with the competent authority is hereby requested:	NOT APPLICABLE

4. Declarations

4.1 The independent Environmental Assessment Practitioner

I, JOANNE LEE DANEEL, declare under oath that I –

- act as the independent environmental practitioner in this application ;
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2006;
- have and will not have no vested interest in the proposed activity proceeding;
- have no, and will not engage in, conflicting interests in the undertaking of the activity;
- undertake to disclose, to the competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2006;
- will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- will keep a register of all interested and affected parties that participated in a public participation process; and
- will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.

Signature of the environmental practitioner:

TERRECO ENVIRONMENTAL cc

Name of company:

31/05/2010

Date:

Signature of the Commissioner of Oaths:

Date: 31/05/10

Designation:

Official stamp (below)

NINA CHIKUMBIRIKE
Ex Officio Commissioner of Oaths
Practising Attorney
33 Tecoma Street, East London
Republic Of South Africa

4.2 The Applicant

I, MBULELO SIMON PETERSON ,declare under oath that I -

- Am, or represent, the applicant in this application;
- appointed the environmental assessment practitioner as indicated under point 4.1 above to act as the independent environmental assessment practitioner for this application;
- will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
- will be responsible for the costs incurred in complying with the Environmental Impact Assessment Regulations, 2006, including but not limited to –
  - costs incurred in connection with the appointment of the environmental assessment practitioner or any person contracted by the environmental assessment practitioner;
  - costs incurred in respect of the undertaking of any process required in terms of the regulations;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the regulations;
  - costs in respect of specialist reviews, if the competent authority decides to recover costs; and
  - the provision of security to ensure compliance with conditions attached to an environmental authorisation, should it be required by the competent authority;
- will ensure that the environmental assessment practitioner is competent to comply with the requirements of these regulations;
- am responsible for complying with the conditions of any environmental authorisation issued by the competent authority;
- hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the applicant or environmental assessment practitioner is responsible in terms of these regulations; and
- will not hold the competent authority responsible for any costs that may be incurred by the applicant in proceeding with an activity prior to an appeal being decided in terms of these regulations.

Signature of the applicant:

SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED

Name of company:

02 JUNE 2010

Date:

(Lt Col 76450626 BT)

Signature of the Commissioner of Oaths:

02 June 2010

Date:

Ex-Officio Lt Col

Designation:

Official stamp (below):

MICHAEL CHARLES KAISER
NRA HOUSE, 70 2nd AVENUE NEWTON PARK
Commissioner of Oaths for
Rep. Of South Africa
Ex-Officio Lt. Colonel SANDF
No 76450626 BT

APPENDIX A: LOCALITY PLAN

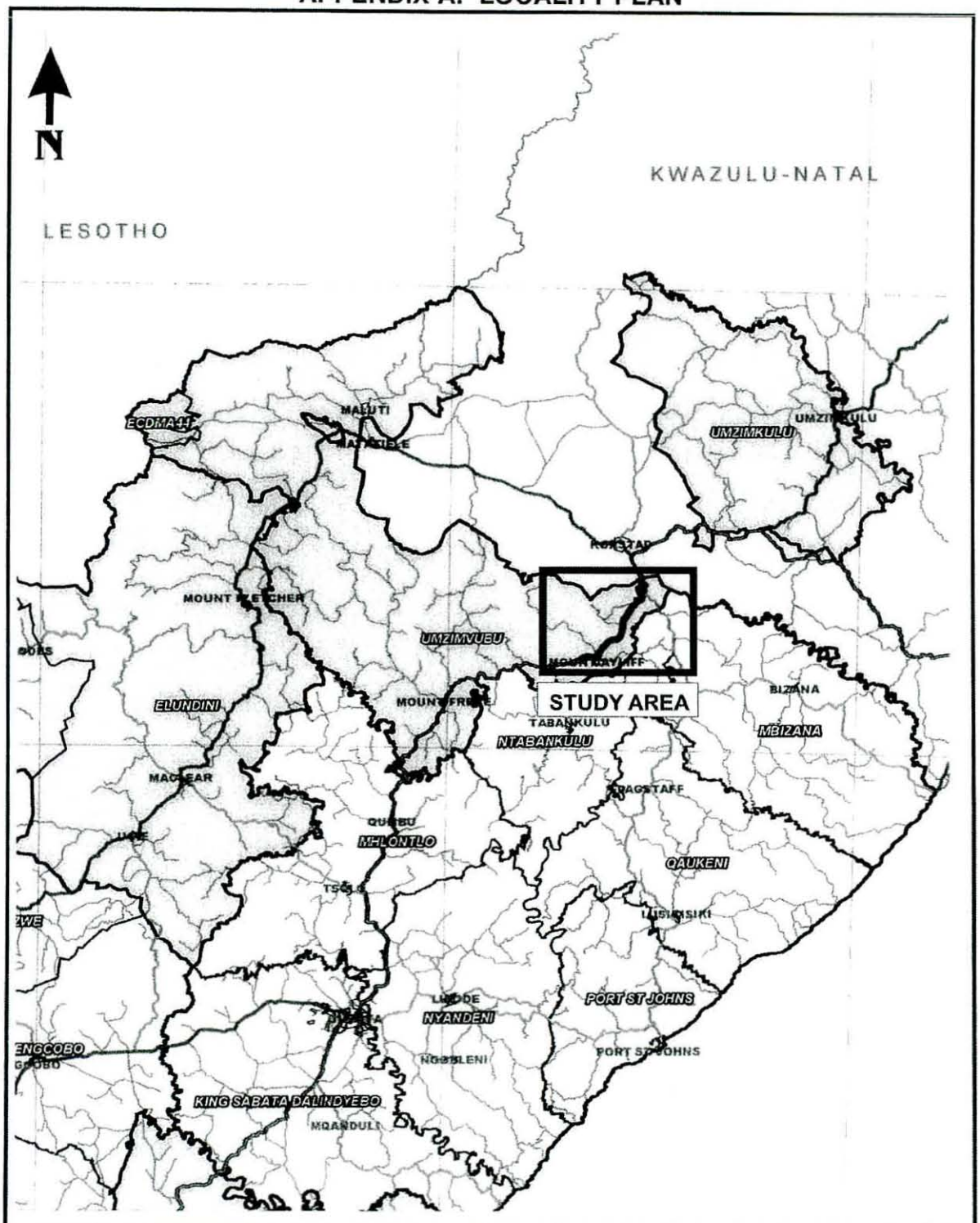

FIGURE 1.1: LOCALITY PLAN

PROJECT: UPGRADE OF THE N2: SECTION 20 (NGCWELENI TO BROOKES NEK) EASTERN CAPE PROVINCE	TERRECO cc	Scale: NTS Date: MAY 2010

APPENDIX B: LETTER OF CONSENT

Not Applicable – State Land

APPENDIX B:

Cultural Heritage Impact Assessment

HERITAGE IMPACT ASSESSMENT OF BORROW PITS AND CUTTINGS, N2 REHABILITATION BETWEEN MOUNT AYLIFF AND BROOKES NEK, UMZIMVUBU LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE, SOUTH AFRICA

Assessment and report by

eThembeni Cultural Heritage

Box 20057 Ashburton 3213
PIETERMARITZBURG South Africa
Telephone 033 326 1136
Facsimile 086 672 8557
082 655 9077 / 082 529 3656
thembeni@iafrica.com

For TERRECO Environmental cc

Telephone Jo Daneel 043 721 1502

28 February 2010

Management summary

eThembeni Cultural Heritage was appointed by TERRECO to undertake a heritage impact assessment of borrow pits and road cuttings associated with the rehabilitation of the N2 between Mount Ayliff and Brookes Nek in the Eastern Cape Province, in terms of the National Heritage Resources Act No 25 of 1999. Two eThembeni staff members inspected the area on 25 February 2010, and completed a controlled-exclusive surface survey and a database and literature search.

- **Observations**

Places, buildings, structures and equipment

An occupied homestead is located close to and south west of Borrow pit 443-1. It has high heritage significance at the community specific and local level for its social value.

- **Recommended mitigation measures**

Places, buildings, structures and equipment

The final rehabilitated face of the borrow pit may not be closer than fifty metres from the existing fenced area of the occupied homestead.

Recommended monitoring

None.

Conclusion

We recommend that the development proceed with the proposed heritage mitigation and have submitted this report to the South African Heritage Resources Agency in fulfilment of the requirements of the National Heritage Resources Act.

If permission is granted for the development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and notify SAHRA should any heritage resources, as defined in the Act, be discovered during the course of development activities.

Table of contents

List of figures

List of tables

Specialist competency

Len van Schalkwyk is accredited by the Cultural Resources Management section of the Association of South African Professional Archaeologists to undertake heritage impact assessments in South Africa.

Mr van Schalkwyk has a master's degree in archaeology (specialising in the history of early farmers in southern Africa) from the University of Cape Town and 20 years' experience in heritage management. He has worked on projects as diverse as the establishment of the Ondini Cultural Museum in Ulundi, the cultural management of Chobe National Park in Botswana and various archaeological excavations and oral history recording projects. He was part of the writing team that produced the KwaZulu-Natal Heritage Act 1997. He has worked with many rural communities to establish integrated heritage and land use plans and speaks good Zulu.

Mr van Schalkwyk left his position as assistant director of Amafa aKwaZulu-Natali, the provincial cultural heritage authority, to start eThembeni. During the past ten years he has directed more than 800 heritage impact assessments throughout South Africa, as well as in Mozambique.

Beth Wahl has a BA Honours African Studies (first class), with archaeology and sociology majors, and has completed various Masters courses in Heritage and Tourism at the University of KwaZulu-Natal. She is a member of the Association of Southern African Professional Archaeologists (ASAPA).

Ms Wahl has undertaken more than 800 heritage impact assessments and monitoring projects throughout South Africa. She was an excavator and logistical coordinator for Glasgow University Archaeological Research Division's heritage programme at Isandlwana Battlefield; has undertaken numerous rock painting surveys in the uKhahlamba / Drakensberg mountains, northern KwaZulu-Natal, the Cederberg and the Koue Bokkeveld in the Cape Province; and was the principal excavator of Scorpion Shelter in the Cape Province, and Lenjane and Crystal Shelters in KwaZulu-Natal.

Ms Wahl has undertaken surveys and monitoring of archaeological sites, excavation of a human skeleton and subsequent community liaison, and written a heritage management plan for Catalina Bay in the iSimangaliso Wetland Park World Heritage Site. She compiled the first cultural landscape management plan for the Mnweni Valley, northern uKhahlamba/Drakensberg, and undertook an assessment of and made recommendations for cultural heritage databases and organisational capacity in parts of Lesotho and South Africa for the Global Environment Facility of the World Bank for the Maloti Drakensberg Transfrontier Conservation and Development Area. She developed the first cultural heritage management plan for the uKhahlamba Drakensberg Park World Heritage Site, following UNESCO recommendations for rock art management in southern Africa.

Declaration of independence

We declare that Len van Schalkwyk, Beth Wahl and eThembeni Cultural Heritage have no financial or personal interest in the proposed development, nor its developers or any of its subsidiaries, apart from in the provision of heritage assessment and management consulting services.

1. Introduction and legislation

eThembeni Cultural Heritage was appointed by TERRECO to undertake a heritage impact assessment of borrow pits and road cuttings associated with the rehabilitation of the N2 between Mount Ayliff and Brookes Nek in the Eastern Cape Province, in terms of the National Heritage Resources Act No 25 of 1999. Section 38(1) of the Act requires such an assessment in case of:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50 m in length;
- any development or other activity which will change the character of a site—
  - (i) exceeding 5 000 m² in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- the re-zoning of a site exceeding 10 000 m² in extent; or
- any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

The Act defines a heritage resource as any place or object of cultural significance i.e. of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This includes, but is not limited to, the following wide range of places and objects:

- living heritage as defined in the National Heritage Council Act No 11 of 1999 (cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationships);
- ecofacts (non-artefactual organic or environmental remains that may reveal aspects of past human activity;
- places, buildings, structures and equipment;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds;
- sites of significance relating to the history of slavery in South Africa;
- movable objects, but excluding any object made by a living person;
- battlefields; and
- traditional building techniques.

Furthermore, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of—

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.

A 'place' is defined as:

- a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- an open space, including a public square, street or park; and
- in relation to the management of a place, includes the immediate surroundings of a place.

'Structures' means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

'Archaeological' means –

- material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Palaeontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. Amafa aKwaZulu-Natali and / or the South African Heritage Resources Agency will only issue a permit for the alteration of a grave if they are satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned. eThembeni adheres to the following procedures:

- Notification of the impending removals (using appropriate language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from Amafa aKwaZulu-Natali and / or the South African Heritage Resources Agency;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

2. Terms of reference

A Heritage Impact Assessment must address the following key aspects:

- the identification and mapping of all heritage resources in the area affected;
- an assessment of the significance of such resources in terms of heritage assessment criteria set out in regulations;
- an assessment of the impact development on heritage resources;
- an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- plans for mitigation of any adverse effects during and after completion of the proposed development.

3. Nature of proposed activities (information provided by the client)

TERRECO Environmental has been appointed to provide environmental services for the rehabilitation of the N2: Ngcweleni River (near Mount Ayliff) to Brookes Nek. The client is the South African National Roads Agency Limited.

The project involves the improvement and rehabilitation of the N2 highway between the Ngcweleni River and Brookes Nek, within the Umzimvubu Local Municipality. The N2 is one of the most important economic routes in the country carrying an extremely high number of heavy vehicles. The existing road pavement was originally constructed in the 1970s and currently is generally in a poor condition. The rehabilitation of the route is required to reduce ongoing maintenance costs and to improve the safety of road users and vehicle operating costs.

The rehabilitation will most probably take the form of reworking and cement stabilisation of the existing road pavement and construction of appropriate overlays to strengthen the pavement structure. All the proposed roadworks will generally be contained within the limits of the existing road reserve. Widening of the existing road formation is anticipated at selected locations to allow for additional climbing / passing lanes. Major intersections will be improved as part of the works. It is likely that the road will only be widened by up to five metres, and will remain within the current road reserve.

The existing side drains will be cleared and the gradient corrected. It is not anticipated that any work will be done on major bridge structures and river crossings. Improved erosion control measures may be installed at the outlet of some of the existing pipe culverts. Material for concrete and layer works will be sourced from new and existing borrow pits located along the route. Existing borrow pits will be rehabilitated with spoil material where possible and all material sources will undergo rehabilitation on closure and left in a safe and stable condition. Hard rock will be sourced from a commercial source.

All borrow pits will be permitted by the Department of Minerals and Energy as required under the Minerals and Petroleum Resources Development Act No 28 of 2002.

4. Site access, description and environmental issues (information provided by the client)

Figure 1 below is a locality plan of the proposed road upgrades in the Eastern Cape Province. Locations for each borrow pit and the proposed road cuttings follow in Table 1.

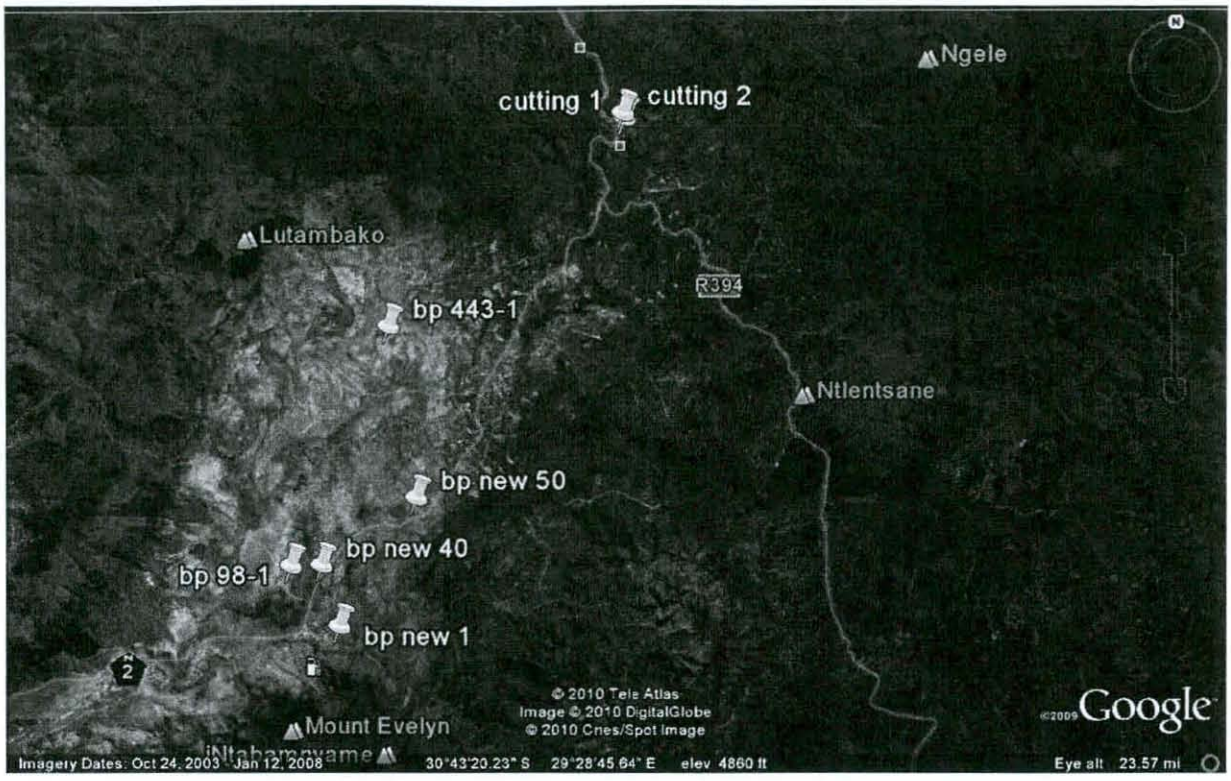

Figure 1. Locality of the proposed borrow pits and road cuttings between Kokstad and Mount Ayliff in the Eastern Cape Province, South Africa.

NAME	MATERIAL	SURROUNDING LANDSCAPE	LOCATION
Borrow pit new 1	Shale	Existing borrow pit on edge of Mount Ayliff townlands, next to school. Large scale dumping of waste.	S30 48.188 E29 22.661
Borrow pit 98-1	Shale	Existing borrow pit surrounded by rural subsistence agriculture. No nearby occupied homesteads.	S30 47.068 E29 21.544
Borrow pit new 40	Dolerite	Existing borrow pit next to N2 road.	S30 47.046 E29 22.227
Borrow pit new 50	Dolerite	Existing borrow pit next to N2 road.	S30 45.730 E29 24.325
Borrow pit 443-1	Shale	Existing borrow pit surrounded by rural subsistence agriculture. Occupied homestead nearby.	S30 42.493 E29 23.658
Cutting 1	N/A	Expansion of road within existing road reserve.	S30 38.551 E29 28.737
Cutting 2	N/A	Expansion of road within existing road reserve.	S30 38.467 E29 28.703

Table 1. Locations and descriptions of the borrow pits and proposed road cuttings associated with the road upgrade.

5. Methodology

Two eThembeni staff members inspected the area on 25 February 2010. We completed a controlled-exclusive surface survey, where 'sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1978[1]).

We consulted various provincial databases, including historical, archaeological and geological sources and sourced a concise account of South Africa's pre and postcolonial history (available on request). We assessed the value and significance of heritage resources, as defined in the National Heritage Resources Act 1999 and the criteria contained in Appendix A. Culturally significant landscapes were assessed according to the criteria in Appendix B.

Geographic coordinates were obtained with a handheld Garmin nuvi 500 global positioning unit. Photographs were taken with a Nikon Coolpix S200 digital camera. A statement of independence and a summary of our ability to undertake this heritage impact assessment are available on request.

The assumptions and limitations of this heritage impact assessment are as follows:

- We have assumed that the description of the proposed project, provided by the client, is accurate.
- We have assumed that the public consultation process undertaken as part of the Environmental Impact Assessment is sufficient and adequate and does not require repetition as part of the heritage impact assessment.
- Soil surface visibility was moderate to good. Heritage resources might be present in densely vegetated areas and we remind the client that the Act requires that a developer cease all work immediately and notify SAHRA should any heritage resources, as defined in the Act, be discovered during the course of development activities.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from SAHRA is required to disturb a heritage resource.

6. Observations

No development activities associated with the proposed project had begun at the time of our visit, in accordance with heritage legislation. We assessed the following categories of heritage resources:

Living heritage

Although the general area is one that includes elements of living heritage, no such places will be affected by the proposed borrow pits and road cuttings.

Ecofacts

None were identified within the proposed development areas.

Places, buildings, structures and equipment

An occupied homestead is located close to and south west of Borrow pit 443-1. It has high heritage significance at the community specific and local level for its social value.

[1] King, T. F. 1989. The archaeological survey: methods and uses. Quoted in Canter, L. W. 1996. Environmental impact assessment. Second Edition. New York: McGraw-Hill, Inc.

Places to which oral traditions are attached or which are associated with living heritage

Although the general area is one that includes elements of living heritage, no such places will be affected by the proposed borrow pits and road cuttings.

Historical settlements and townscapes

None were identified within the proposed development areas.

Landscapes and natural features

None were identified within the proposed development areas.

Geological sites of scientific or cultural importance

None were identified within the proposed development areas.

Archaeological and palaeontological sites

None were identified within the proposed development areas.

Graves and burial grounds

None were identified within the proposed development areas.

Movable objects excluding any object made by a living person

None were identified within the proposed development areas.

Battlefields

None were identified within the proposed development areas.

Traditional building techniques

None were identified within the proposed development areas.

7. Recommended mitigation measures

Places, buildings, structures and equipment

- Borrow pit 443-1

The final rehabilitated face of the borrow pit may not be closer than fifty metres from the existing fenced area of the occupied homestead.

8. Recommended monitoring

None.

9. Summary of findings in terms of the National Heritage Resources Act 1999 Section 38(3)

- The identification and mapping of all heritage resources in the area affected

One place (an occupied homestead).

- An assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations

The place has high heritage significance at the community specific and local level for its social value.

- An assessment of the impact of development on such heritage resources

The proposed development can avoid permanent impact on the place provided the recommended mitigation measures are implemented.

- An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development

Not applicable if the proposed mitigation measures are implemented.

- The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources

The client has undertaken such consultation in terms of statutory requirements and retains the relevant documentation.

- If heritage resources will be adversely affected by the proposed development, the consideration of alternatives

The final rehabilitated face of the borrow pit may not be closer than fifty metres from the existing fenced area of the occupied homestead.

- Plans for mitigation of any adverse effects during and after completion of the proposed development

If permission is granted for development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and notify SAHRA should any heritage resources, as defined in the Act, be discovered during the course of development activities.

10. Conclusion

We recommend that the development proceed with the proposed heritage mitigation and have submitted this report to the South African Heritage Resources Agency in fulfilment of the requirements of the National Heritage Resources Act. According to Section 38(4) of the Act the report shall be considered timeously by the Council which shall, after consultation with the person proposing the development, decide –

- whether or not the development may proceed;
- any limitations or conditions are to be applied to the development;
- what general protections in terms of this Act apply, and what formal protections may be applied to such heritage resources;
- whether compensatory action shall be required in respect of any heritage resources damaged or destroyed as a result of the development; and
- whether the appointment of specialists is required as a condition of approval of the proposal.

Relevant staff members may be contacted at the SAHRA Cape Town head office (Mary Leslie telephone 021 462 4502; mleslie@sahra.org.za).

APPENDIX A

SIGNIFICANCE AND VALUE OF HERITAGE RESOURCE SITES

The following guidelines for determining site significance were developed by the South African Heritage Resources Agency in 2003. We use them in conjunction with tables of our own formulation (see that for the Southern African Iron Age, below) when considering intrinsic site significance and significance relative to development activities, as well as when recommending mitigatory action.

Type of Resource
Place
Structure
Archaeological Site
Palaeontological Site
Geological Feature
Grave

Type of Significance

1. Historical Value

It is important in the community, or pattern of history

- Importance in the evolution of cultural landscapes and settlement patterns
- Importance in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, Province, region or locality.
- Importance for association with events, developments or cultural phases that have had a significant role in the human occupation and evolution of the nation, Province, region or community.
- Importance as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period

It has strong or special association with the life or work of a person, group or organisation of importance in history

- Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, Province, region or community.

It has significance relating to the history of slavery

- Importance for a direct link to the history of slavery in South Africa.

2. Aesthetic Value

It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group

- Importance to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.
- In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

3. Scientific Value

It has potential to yield information that will contribute to an understanding of natural or cultural heritage

- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.
- Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.

It is important in demonstrating a high degree of creative or technical achievement at a particular period

- Importance for its technical innovation or achievement.

4. Social Value

It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

Degrees of Significance
Rarity

It possesses uncommon, rare or endangered aspects of natural or cultural heritage

- Importance for rare, endangered or uncommon structures, landscapes or phenomena.

Representivity

It is important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, Province, region or locality.

Sphere of Significance	High	Medium	Low	
International	☐	☐	☐	
National	☐	☐	☐	
Provincial	☐	☐	☐	
Regional	☐	☐	☐	
Local	☐	☐	☐	
Specific Community	☐	☐	☐	----------

What other similar sites may be compared to this site?

.....
.....
.....
.....
.....
.....

Southern African Iron Age

	Significance		
	- low	- medium	- high
Unique or type site			Yes
Formal protection			Yes
Spatial patterning	?Yes	?Yes	?Yes
Degree of disturbance	75 – 100%	25 – 74%	0 – 24%
Organic remains (list types)	0 – 5 / m²	6 – 10 / m²	11 + / m²
Inorganic remains (list types)	0 – 5 / m²	6 – 10 / m²	11 + / m²
Ancestral graves			Present
Horizontal extent of site	< 100m²	101 – 1000m²	1000 + m²
Depth of deposit	< 20cm	21 – 50cm	51 + cm
Spiritual association			Yes
Oral history association			Yes
➢ Research potential			High
➢ Educational potential			High

Please note that this table is a tool to be used by qualified cultural heritage managers who are also experienced site assessors.

APPENDIX B

THE MANAGEMENT OF CULTURAL LANDSCAPES

The Cultural Landscape Foundation[2] defines cultural landscapes as follows:

A cultural landscape is a geographic area that includes resources and natural resources associated with a historic event, activity, or person. Sometimes cultural landscapes are the result of one person or group of people acting upon the land. Other times they are the result of an idea one person or a group had and then created at that time. Cultural landscapes can range from thousands of acres of rural lands to a small homestead with a front yard of less than one acre. They include grand estates, farmland, public gardens and parks, college campuses, cemeteries, scenic highways and even industrial sites.

Four general types of Cultural Landscapes, not mutually exclusive, are:

- Historic Sites
- Historic Designed Landscapes
- Historic Vernacular Landscapes
- Ethnographic Landscapes

Cultural Landscapes can:

- Be man-made expressions of visual and spatial relationships.
- Serve as texts and narratives of cultures.
- Be valuable expressions of regional identity.
- Be works of art that are part of our national heritage.
- Exist in relationship to their ecological contexts.

What are cultural landscapes? by Alice E. Ingerson, Institute for Cultural Landscape Studies[3]

Virtually all landscapes have cultural associations, because virtually all landscapes have been affected in some way by human action or perception. Therefore, the Institute for Cultural Landscape Studies does not use the phrase "cultural landscape" to mean a special type of landscape. Instead, we use "cultural landscape" to mean a way of seeing landscapes that emphasizes the interaction between human beings and nature over time. ICLS also works with many other organizations, some of which have contrasting or even conflicting definitions of "cultural landscape":

individual, special, aesthetic, collective, representative, useful, cultural, related to the arts (consciously designed objects), ideas of enduring value related to the everyday beliefs and practices of a group of people, the work of landscape architects or garden designers, scenery portrayed in a painting or photograph, or that is seen as worth painting or photographing, the land that can be seen from a single vantage point (usually larger than a "site", smaller than a "region"), "nearly everything we see when we go outdoors" — Peirce Lewis 1979

[2] Though professional techniques for identifying, documenting, and managing cultural landscapes have evolved rapidly in the past 30 years, the results of the professionals' work often fails to reach the general public. Consequently, many of the places in which we live, work, and play often change considerably—sometimes over years and sometimes overnight! The Cultural Landscape Foundation is the only not-for-profit foundation in America dedicated to increasing the public's awareness of the importance and irreplaceable legacy of cultural landscapes. Through education, technical assistance, and outreach, the Cultural Landscape Foundation aims to broaden the support and understanding for cultural landscapes nationwide in hopes of saving our priceless heritage for future generations. The CLF achieves this mission by: (1) heightening the awareness of those who impact cultural landscapes; (2) assisting those groups and organizations who are working to increase the appreciation and recognition of cultural landscapes; and, (3) developing educational tools for young people to better connect them to their cultural landscape environs.

[3] From the website of the Institute for Cultural Landscape Studies of the Arnold Arboretum (http://www.icls.harvard.edu), © The President and Fellows of Harvard College. The Institute for Cultural Landscape Studies was formed in 1997 to support the emerging community of professionals and volunteers who manage and interpret landscapes with a significant history of human use, particularly in the northeastern United States. These practitioners work with a wide variety of places, from historic gardens and public parks to urban streetscapes, broad agricultural or industrial regions, and conservation or ecological reserves. These landscapes are neither static nor self-contained. Managing them requires active experimentation and continuous learning, to understand how past events and decisions produced today's landscapes, and how today's decisions and events are already producing tomorrow's landscapes. The Institute for Cultural Landscape Studies worked with nonprofit organizations, public agencies, and colleges and universities to capture place-based knowledge about cultural landscapes, and to respond to emerging issues.

The National Park Service and the National Register of Historic Places, as well as organizations that look to these agencies for management models and standards, use the operational definition of "cultural landscape" from the 1996 Secretary of the Interior's . . . Guidelines for the Treatment of Cultural Landscapes:

a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Historic landscapes, unlike works of art, have to function as contemporary environments — we have literally to enter and become involved with them. — Catherine Howett 1987

Much public discussion about cultural landscapes is about preserving special or historic places. Yet the definition of "special" varies over time, among different cultures, and in different places. A landscape valued by one group may be simply invisible, or even offensive, to another. Next to an official historic district may be a neighborhood that is not eligible for any special treatment but has deep meaning and associations for the people who live there. Mobile homes may be critical to a farm economy, though they jar the sensibilities of visitors expecting to see only white clapboard houses and wooded hillsides from a "scenic overlook" in a state forest. The historic district and the ordinary neighborhood, working farms and protected forests, are all cultural landscapes.

Even when landscape preservation standards are broadened to include a wide range of landscape types, strict preservation is not always an appropriate stance. Designers and communities may also choose to transform existing landscapes or create new ones. Managing cultural landscapes thus involves planning for positive change as well as preventing negative change.

APPENDIX C:

Borrowpit Development Plans

APPENDIX D:

Signed Forms of Community Consultations

TERRECO cc
Geotechnical, Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: SANDILE MAQAM

RELATIONSHIP TO PROJECT: IN MY LOCATION

BORROWPIT No: Borrowpit 443-1

CONTACT DETAILS

TEL:		FAX:	
CELL:	0827467375	EMAIL:	
ADDRESS:	SIPOLINDINI A/A INARD 02 Mount Ayliff		

COMMENTS/CONCERNS:

AKUKHO BUHGO ZI ERUMBE-
-NI EMKHARI.

THINA SINGAVUMELA
UKUQESHWA

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: S. Maqam. DATE: 19-03-2020

TERRECO cc
Geotechnical, Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: MONTSAPHO MAQAM

RELATIONSHIP TO PROJECT: TSE MDAKIENI YAM

BORROWPIT No: Borrowpit 443-1

CONTACT DETAILS

TEL:		FAX:	
CELL:	0742700166	EMAIL:	
ADDRESS:	SIPOCINENI AREA INARD OF MOUNT AYLIFF		

COMMENTS/CONCERNS:

ACUKHO MGOZI EKUBHU-
-MDENI EMKHARI

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: N. MoqoM

DATE: 19-03-2016

TERRECO cc
Geotechnical, Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: MACOSELELA MPAKUMPAKU

RELATIONSHIP TO PROJECT: IKUFUPHI NOMZI NAM

BORROWPIT No: Borrowpit 443-1

CONTACT DETAILS

TEL:	0736001714	FAX:	
CELL:		EMAIL:	
ADDRESS:	SIPOCINENI A/A INKARD 02 MOUNT AYLIFF		

COMMENTS/CONCERNS:

AKUKHO MGOZI EKURHUMBE-MI INKAKARI

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: M Mpaku MPaku

DATE: 19 March 2010

TERRECO cc
Geotechnical Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: MXOLISI MATIKA (WARD COUNCILLOR)

RELATIONSHIP TO PROJECT: IN MY WARD

BORROWPIT No: Borrowpit 443-1

CONTACT DETAILS

TEL:	0342546000	FAX:	0342540303
CELL:	0824673750	EMAIL:	
ADDRESS:	SIPOLINENI AA Mount AYLIFF KWARDOL		

COMMENTS/CONCERNS:

The community of Sipolweni have no problem in digging of Borrow Pit as there is no danger or threat for the community

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: _____ DATE: 19-03-2010

TERRECO cc
Geotechnical, Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: VELAPHI MPAKUMPAKU

RELATIONSHIP TO PROJECT: I/CU FUPHI MUMZI IKHAYA

BORROWPIT No: Borrowpit 443·1

CONTACT DETAILS

TEL:		FAX:	
CELL:		EMAIL:	
ADDRESS:	SIPOLUFEMI A/A IKHAYA 02 - Mount Ayliff		

COMMENTS/CONCERNS:

ALUKHO BUMGO ZI

ELURHU MBEMI THEMIAKI

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: V. Mpaku Mpaku DATE: 19-03-2010

TERRECO cc
Geotechnical, Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: Mathile Nogula

RELATIONSHIP TO PROJECT: Isendaweni yam

BORROWPIT No: Borrowpit 443 - 1

CONTACT DETAILS

TEL:		FAX:	
CELL:	0766792393	EMAIL:	
ADDRESS:	SIPOLILIFEMI AREA IMARD 02 MOUNT AYLIFF		

COMMENTS/CONCERNS:

Akukho bunjozi etwembeni ikwari Sicela ukuqeshwa

Emsebenzini xa ukhona.

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: M. Nogula

DATE: 19-03-2010

TERRECO cc
Geotechnical, Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: MTHETHELELI NTSENGWANE

RELATIONSHIP TO PROJECT: WARD COUNCILLOR

BORROWPIT No: BORROWPIT AT MOUNT AYLIFF

CONTACT DETAILS

TEL:	0392546000	FAX:	0392540033
CELL:	0824673916	EMAIL:	N/A
ADDRESS:	251 SAWMILL ST MT AYLIFF 4735		

COMMENTS/CONCERNS:

I as a ward clr of ward 07 Umzimvubu LM have no objection to the use of Borrow Pit in Mt Ayliff as it is going to benefit our community in terms of job creation. I only appeal that dongas will be filled after use for the purpose of security.

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: _____ DATE: 2020/03/21

UMZIMVUBU MUNICIPALITY
WARD 07
251 SAWMILL ST.
MT AYLIFF, 4735

TERRECO cc
Geotechnical, Environmental and Waste Management

SCOPING QUESTIONNAIRE

PROJECT: Rehabilitation of National route 2(N2), Ngcweleni River to Brookes Nek

NAME: Mt Ayliff Hospital J.S.S.

RELATIONSHIP TO PROJECT: A School Next to the Borrow Pit

BORROWPIT No: Borrowpit at Mount Ayliff

CONTACT DETAILS

TEL:	N/A	FAX:	N/A
CELL:	0825551027	EMAIL:	ndedwan.gxarisa@yahoo.com
ADDRESS:	P.O. Box 197 Mount Ayliff		

COMMENTS/CONCERNS:

For the purposes of development, we support this project but as the S.G.B - Mt Ayliff Hospital J.S.S we have concerns as this borrow pit is a strong hazard to our learners because the previous project could not maintain their rehabilitation plan and the pits were left unattended, we had dams which were very deep and our learners were drowning. We reported to our distnct municipality and they assisted in trying to close the dams.
Our recommendation is, can't you fence the pit before using it. to avoid similar injuries as stated above.

I hereby give my consent for the borrowpit near to my house to be mined for material for use in the Rehabilitation of N2 Ngcweleni to Brookes Nek.

SIGNATURE: _____ DATE: 2010/03/20

THE PRINCIPAL
MOUNT AYLIFF
HOSPITAL SCHOOL
BOX 197 MOUNT AYLIFF 4735
082 734 4406 / 082 745 4171

APPENDIX E:

Impact Assessment Tables

APPENDIX E: IMPACT TABLES

CONTENTS

1 CONSTRUCTION AND OPERATION PHASE IMPACTS

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
1.1 Soil Compaction and Erosion ***Activities:*** • Clearing and Grubbing • Stripping of topsoil • Creation of stormwater drainage systems ***Description:*** The compaction of soil may occur during the site preparation phase as a result of operating heavy machinery. Compaction of soil may result in the loss of soil viability which will affect the ability of the vegetation to recover. Compacted soil decreases infiltration and therefore increases the amount of surface runoff which will contribute to the rate of erosion. The removal of vegetation cover and exposure of underlying soil will increase the risk of erosion, particularly on steeper slopes. Erosion may result in the loss of viable topsoil and downstream impacts on the receiving water bodies.	Surface Disturbance	Negative Direct	M	M	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	M	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M/H	M	S	L	H	H	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
			M	M	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	M	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
1.2 Soil Pollution ***Activities:*** • Operation of machinery ***Description:*** The operation of heavy machinery during the stripping and clearing of the borrowpit may result in spillages of hydraulic oils due to breakdowns or spillages of diesel during refuelling in the field. Spillages may result in the pollution of soil which could affected soil viability.	Hazardous Waste	Negative Direct	M	S	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	M	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	S	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	S	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	S	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION PROTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low
BORROWPIT NEW 1	BORROWPIT 98-1	BORROWPIT NEW CUTTING 40	BORROWPIT NEW CUTTING 50	BORROWPIT 443-1

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
1.3 Air Pollution ***Activities:*** • Clearing and Grubbing • Stripping of topsoil • Creation of stormwater drainage systems • Stripping of overburden • Excavating and loading of material • Transportation of material ***Description:*** Vehicle emissions (exhaust emissions) will be generated by the operation of plant on site. Dust will be generated from the use of machinery during the stripping of vegetation, topsoil and overburden. Exposed surfaces will contribute to atmospheric dust particularly during high wind conditions. Excessive exposure to dust will impact on human health. Lower levels may be considered of nuisance value. The impact on Public Health and Safety is discussed under Section 1.10 below.	Emissions to Air (Gaseous) Emissions to Air (Particulate – Dust)	Negative Direct	M/H	S	S	D	H	M	MEDIUM NEGATIVE	MEDIUM / LOW NEGATIVE
			M/L	S	S	D	H	M	MEDIUM / LOW NEGATIVE	MEDIUM / LOW NEGATIVE
			M	S	S	D	H	M	MEDIUM NEGATIVE	LOW NEGATIVE
			M/L	S	S	D	H	M	MEDIUM / LOW NEGATIVE	MEDIUM / LOW NEGATIVE
			M	S	S	D	H	M	MEDIUM NEGATIVE	LOW NEGATIVE
1.4 Surface Water Pollution (Dirty Water Runoff and Pollutants) ***Activities:*** • Clearing and Grubbing • Stripping of topsoil • Stripping of overburden. • Creation of stormwater drainage systems • Topsoil and overburden stockpiles. • General mining activities ***Description:*** Without proper management, runoff from exposed soil surfaces and stockpiles is likely to become highly sedimented (ie carry a high sediment load). The compaction of surfaces and the creation of hard, impermeable surfaces will increase the amount of runoff generated. Stormwater runoff will ultimately enter the nearby drainage lines. High levels of turbidity are known to affect certain aquatic organisms. Permanent water bodies downstream may be negatively impacted by the pulse of sediment although this would be diluted to some extent by runoff from other catchment areas. Spillages if hydrocarbons (such as hydraulic oils) may enter into surface water bodies if washed off site.	Release to water (diffuse)	Negative Direct	L	M	L	U	H	H	LOW NEGATIVE	LOW NEGATIVE
			M	M	L	P	H	H	MEDIUM –LOW NEGATIVE	LOW NEGATIVE
			M	M	L	P	H	H	MEDIUM – LOW NEGATIVE	LOW NEGATIVE
			M/H	M	L	P	H	H	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
			M	M	L	P	H	H	MEDIUM NEGATIVE	LOW NEGATIVE

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION POTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
1.5 Habitat Degradation and Loss ***Activities:*** • Clearing and Grubbing ***Description:*** The preparation of the site will involve the clearing of vegetation. The sites are currently degraded grasslands or are largely devoid of any vegetation cover as a result of previous mining activities. The site preparation will effectively result in the complete transformation of site in terms of plant and animal habitat. The vegetation assessment indicated that the vegetation type affected by the mining areas is not unique and is in fact well represented in the surrounding areas. One may therefore assume that the loss of the vegetation on the footprint of the mining area will not have a significantly detrimental impact on the vegetation type as a whole. Notwithstanding this, an effort should be made to minimize the area of impact and to reestablish the vegetation as close to the original condition as possible, following completion of the mining operations.	Surface Disturbance	Negative Direct	L	L	S	D	H	M	MEDIUM –LOW NEGATIVE	LOW NEGATIVE
			L	L	S	D	H	M	MEDIUM – LOW NEGATIVE	LOW NEGATIVE
			M	L	S	D	H	M	MEDIUM NEGATIVE	LOW NEGATIVE
			L	L	S	D	H	M	MEDIUM – LOW NEGATIVE	LOW NEGATIVE
			L	L	S	D	H	M	MEDIUM – LOW NEGATIVE	LOW NEGATIVE
1.6 Spread of invasive alien species ***Activities:*** • Clearing and Grubbing ***Description;*** The removal of indigenous vegetation and the creation of disturbed surfaces is an open invitation for the invasion of alien plant species. Numerous Category I and II alien invader species have been recorded in the area. Invasive alien plants effectively out compete many of the indigenous species and ultimately lead to a loss of biodiversity. This impact must be managed throughout the life of mine through the implementation of a detailed alien plant eradication programme.	Surface Disturbance	Negative Direct	M	L	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	L	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
1.7 Public Nuisance – Traffic Disruption ***Activities:*** • Accessing the Site • Fencing of the Site • Transportation of Materials. ***Description:*** Accessing the borrowpits may result in some disruption to traffic along the gravel public roads. This will be short-lived and of low significance. Fencing of the site may impact on pedestrian movement across the site.	Creation/disruption of access	Negative Direct	M	S	S	P	P	L	MEDIUM - LOW NEGATIVE	LOW NEGATIVE
			L	S	S	P	P	L	LOW NEGATIVE	LOW NEGATIVE
			L	S	S	P	P	L	LOW NEGATIVE	LOW NEGATIVE
			L	S	S	P	P	L	LOW NEGATIVE	LOW NEGATIVE

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION PROTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low
BORROWPIT NEW 1	BORROWPIT 98-1	BORROWPIT NEW CUTTING 40	BORROWPIT NEW CUTTING 50	BORROWPIT 443-1

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
Considering that the site do not form part of an obvious thoroughfare nor is there any evidence of well used paths, this impact is unlikely to be significant.			L	S	S	P	P	L	LOW NEGATIVE	LOW NEGATIVE
1.8 Public Nuisance – Dust Generation ***Activities:*** • Accessing the borrowpit • Clearing and Grubbing • Stripping of topsoil • Creation of stormwater drainage systems • Stripping of overburden • Excavating and loading materials • Transportation of materials ***Description:*** Dust will be generated from the use of machinery to construct roads and platforms, during the stripping of vegetation, topsoil and overburden and during mining activities. Exposed surfaces will contribute to atmospheric dust particularly during high wind conditions.	Emissions to air - particulate	Negative Direct	H	M	L	L	M	M	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
			M/L	M	L	L	M	M	MEDIUM - LOWNEGATIVE	LOW NEGATIVE
			M	M	L	L	M	M	MEDIUM NEGATIVE	LOW NEGATIVE
			M	M	L	L	M	M	MEDIUM NEGATIVE	LOW NEGATIVE
			H	M	L	L	M	M	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
1.9 Public Nuisance – Noise ***Activities:*** • Accessing the site • Clearing and grubbing • Stripping of Topsoil • Stripping of Overburden • Creations of stormwater drainage systems. • Excavation and loading of materials • Transportation of materials ***Description:*** During the site establishment phase, noise will be generated primarily by heavy earthmoving machinery as the mining area is stripped of topsoil and overburden. As such, the noise levels are likely to be that commonly experienced on any civils construction site. Activities will be limited to normal working hours. The impact of noise on mine workers' health will be addressed by the Mine Health and Safety Plan and will include the use of protective hearing devices.	Noise Disturbance	Negative Direct	M	M	S	D	M	M	MEDIUM NEGATIVE	MEDIUM – LOW NEGATIVE
			M/L	M	S	D	M	M	MEDIUM – LOW NEGATIVE	MEDIUM – LOW NEGATIVE
			M/L	M	S	D	M	M	MEDIUM –LOW NEGATIVE	MEDIUM – LOW NEGATIVE
			M/L	M	S	D	M	M	MEDIUM –LOW NEGATIVE	MEDIUM – LOW NEGATIVE
			M	M	S	D	M	M	MEDIUM NEGATIVE	MEDIUM – LOW NEGATIVE

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION POTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
1.10 Public Health and Safety ***Activities:*** • Accessing the site • Clearing and grubbing • Stripping of Topsoil • Stripping of Overburden • Creations of stormwater drainage systems • Excavation and loading of materials • Transportation of materials ***Description:*** Public health and safety may be at risk as a result of a number of aspects: generation of dust and noise, the operation of heavy earthmoving machinery of site and the creation of excavations and stockpiles. The impacts of noise and dust generation on public health and wellbeing is discussed in the sections above. The erection of the security fence and presence of security staff as well as proper safety signage, will minimize the safety risks posed to nearby residents and other members of the public.	Emissions to air Noise, surface disturbance, changes in landform, topography	Negative Direct	H	M	S	P	M	H	HIGH NEGATIVE	MEDIUM – LOW NEGATIVE
			M/L	M	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M/L	M	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M/L	M	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			H	M	S	P	M	H	HIGH NEGATIVE	MEDIUM – LOW NEGATIVE
1.11 Degradation of landscape value, aesthetic appeal or sense of place ***Activities:*** • Clearing and grubbing • Stripping of Topsoil • Stripping of Overburden • Excavation of material ***Description:*** The site establishment phase will have a visual impact as vegetation and topsoil is stripped. The activities will be visible from some of the surrounding areas. All of the borrowpits are located adjacent to gravel access roads and are therefore highly visible from these roads. All are, however, existing borrowpits with a high visual impact. Considering that the surrounding landuse is largely rural agricultural in nature, the site establishment activities are likely to be noticeable and therefore will be a significant impact on the aesthetic value of the landscape. This will be mitigated somewhat by minimizing cleared areas and by landscaping where possible.	Surface disturbance, change in landform and topography	Negative Direct	M/H	L	L	D	M	M	MEDIUM NEGATIVE	MEDIUM NEGATIVE
			M	L	L	D	M	M	MEDIUM - LOW NEGATIVE	MEDIUM – LOW NEGATIVE
			M/H	L	L	D	M	M	MEDIUM NEGATIVE	MEDIUM NEGATIVE
			M/H	L	L	D	M	M	MEDIUM NEGATIVE	MEDIUM NEGATIVE
			M	L	L	D	M	M	MEDIUM - LOW NEGATIVE	MEDIUM – LOW NEGATIVE

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION PROTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low
BORROWPIT NEW 1	BORROWPIT 98-1	BORROWPIT NEW CUTTING 40	BORROWPIT NEW CUTTING 50	BORROWPIT 443-1

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
1.12 Cultural Heritage ***Activities:*** • Clearing and grubbing • Stripping of Topsoil • Stripping of Overburden • Excavation of Materials ***Description:*** The Heritage Assessment did not reveal any sites of cultural significance (including graves) within the designated mining areas at any of the borrowpits. Notwithstanding this, they might be some identified sites which might be discovered during mine. Due caution must be applied at all times to detect any such sites.	Surface disturbance, change in landform and topography	**Negative Direct**	M	M	S	U	H	H	LOW NEGATIVE	LOW NEGATIVE
			M	M	S	U	H	H	LOW NEGATIVE	LOW NEGATIVE
			M	M	S	U	H	H	LOW NEGATIVE	LOW NEGATIVE
			M	M	S	U	H	H	LOW NEGATIVE	LOW NEGATIVE
			M	M	S	U	H	H	LOW NEGATIVE	LOW NEGATIVE
1.13 Economic Development, income generation and social upliftment ***Activities:*** • Procurement of goods and services • Employment and training ***Description:*** The site establishment phase is likely to require the use of generalized and specialized services. Preference will be given to local service providers and suppliers where possible and to the employment of local labour. Employment of local labour, use of existing SMME's based in the area, and the support of local businesses in the supply of goods and services will benefit the regional economy significantly.	Materials Consumption, recruitment and training	**Positive Direct and Indirect**	M+	M	R	P	M	N/A	MEDIUM POSITIVE	
			M+	M	R	P	M	N/A	MEDIUM POSITIVE	
			M+	M	R	P	M	N/A	MEDIUM POSITIVE	
			M+	M	R	P	M	N/A	MEDIUM POSITIVE	
			M+	M	R	P	M	N/A	MEDIUM POSITIVE	

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION POTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low
BORROWPIT NEW 1	**BORROWPIT 98-1**	**BORROWPIT NEW CUTTING 40**	**BORROWPIT NEW CUTTING 50**	**BORROWPIT 443-1**

2 RESIDUAL IMPACTS

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
2.1 Soil Erosion ***Description:*** Soil erosion may result during the post-closure phase as a result of steep slopes, the channelling of stormwater runoff and exposed soils. It is likely that it will take between 2 and 4 years before the vegetation becomes fully established provided fencing is maintained and livestock is prevented from grazing the new growth. The borrowpit is vulnerable to soil erosion during this period. The soils in the region are highly erodible as seen in the surrounding landscape. Larger borrowpits with steeper slopes are more vulnerable to erosion post closure.	Surface Disturbance	Negative Direct	M	L	S	P	M	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M/H	L	S	P	M	H	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
			M/H	L	S	P	M	H	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
			M/H	L	S	P	M	H	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
			M/H	L	S	P	M	H	MEDIUM – HIGH NEGATIVE	LOW NEGATIVE
2.2 Spread of invasive alien species ***Description;*** During the post closure phase, prior to the re-establishment of an indigenous grass cover, the borrowpit is vulnerable to the invasion of alien plant species which thrive on disturbed soils. This will reduce the potential for the site to recover fully.	Surface Disturbance	Negative Direct	M	L	S	P	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	P	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	P	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	P	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	S	P	H	H	MEDIUM NEGATIVE	LOW NEGATIVE
2.3 Public Nuisance – Dust Generation ***Description:*** Windblown dust might be generated from the exposed borrowpits until such time as a reasonable vegetation cover may be established. Wind erosion might, however, hinder vegetation establishment as essential topsoil is removed, and the surface is no longer able to support growth.	Emissions to air - particulate	Negative Direct	M	L	L	L	M	M	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	L	L	M	M	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	L	L	M	M	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	L	L	M	M	MEDIUM NEGATIVE	LOW NEGATIVE
			M	L	L	L	M	M	MEDIUM NEGATIVE	LOW NEGATIVE

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION PROTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low
BORROWPIT NEW 1	BORROWPIT 98-1	BORROWPIT NEW CUTTING 40	BORROWPIT NEW CUTTING 50	BORROWPIT 443-1

POTENTIAL IMPACT	ASPECT	Nature	Severity	Duration	Extent	Probability	Confidence	MITIGATION POTENTIAL	SIGNIFICANCE	
									Without Mitigation	With Mitigation
2.4 Public Health and Safety ***Description:*** The condition in which the borrowpit is left will determine the long – term risk to public health and safety. The community have complained that in the past, the borrowpits have not been rehabilitated and steep or vertical, or unstable faces have been left and water has collected in the base of the borrowpits, posing a risk of drowning, particularly among the children. Borrowpits New 1 and Borrowpit Km 40, are likely to pose the greatest risk as these will effectively be benched, rather than slopes. It is essential that the top 3m are sloped to a 1:3 slope to avoid a sudden vertical drop, and that the borrowpits are cleared marked and fenced to prevent people from stumbling across then inadvertently. BP New 1 is also located in close proximity to the town of Mount Ayliff as well as to a school. This is, however, an existing and recognized borrowpit which has been used by the municipality for some years. BP's 99-1, Km 45 and 443-1 will all be shaped to gentle slopes and will not pose a long term health and safety risk provided water does not collect at the base	Emissions to air Noise, surface disturbance, changes in landform, topography	**Negative Direct**	H	P	S	P	M	M	HIGH NEGATIVE	LOW NEGATIVE
			L	P	S	U	M	H	LOW NEGATIVE	LOW NEGATIVE
			H	P	S	P	M	H	HIGH NEGATIVE	LOW NEGATIVE
			L	P	S	U	M	H	LOW NEGATIVE	LOW NEGATIVE
			L	P	S	U	M	H	LOW NEGATIVE	LOW NEGATIVE
2.5 Degradation of landscape value, aesthetic appeal or sense of place ***Description:*** As can been seen throughout the Transkei, the long term impact of unrehabilitated or poorly rehabilitated mining sites is largely visual / aesthetic. These site are effectively scars on the landscape, exacerbated by soil erosion and the invasion of alien plant species. All of the borrowpits proposed for use on this project are currently existing, and provided the rehabilitation is undertaken correctly, the visual impact will actually be improved as a result of their use on this project.	Surface disturbance, change in landform and topography	**Negative Direct**	M/H	P	L	U	M	M	MEDIUM NEGATIVE	MEDIUM POSITIVE
			M	P	L	U	M	M	MEDIUM - LOW NEGATIVE	MEDIUM POSITIVE
			M/H	P	L	U	M	M	MEDIUM NEGATIVE	MEDIUM POSITIVE
			M/H	P	L	U	M	M	MEDIUM NEGATIVE	MEDIUM POSITIVE
			M	P	L	U	M	M	MEDIUM - LOW NEGATIVE	MEDIUM POSITIVE

SEVERITY: (Refer to Table 5.2) H = High; M = Medium; L = Low	DURATION: (Refer to Table 5.3) S = Short Term; M = Medium Term; L = Long Term; P = Permanent	EXTENT: (Refer to Table 5.3) S = Site; L = Local; R = regional; N = National	PROBABILITY: (Refer to Table 5.3) U = Unlikely; L = Likely; P = Possible; D = Definite	MITIGATION POTENTIAL: (Refer to Table 5.4) H = High; M = Medium; L = Low
BORROWPIT NEW 1	**BORROWPIT 98-1**	**BORROWPIT NEW CUTTING 40**	**BORROWPIT NEW CUTTING 50**	**BORROWPIT 443-1**

APPENDIX F:

Rehabilitation Cost Schedules

Rehabilitation Cost Summary Table for N2 Road Upgrade Project - BPNEW 1

Description	Unit	Quantity	Rate	Amount
Shaping and Topsoiling of the Borrowpit				
D9 Bulldozer	hr	40	R 1 500.00	R 60 000.00
Lowbed Hire (Bulldozer)*	km	300	R 15.00	R 4 500.00
Hydroseeding				
Hydroseeding	ha	1.5	R 5 000.00	R 7 500.00
Fertiliser (0.6t/ha of 2:3:2)	t	1.5	R 2 500.00	R 3 750.00
Seed purchase	kg	20	R 90.00	R 1 800.00
Supervision and Labour				
Site supervisor	hr	60	R 30.00	R 1 800.00
Labour	hr	120	R 16.00	R 1 920.00
Alien vegetation Control				R 0.00
Labour	days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
After Care & Maintenance				
Labour	man days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
Sub Total				**R 90 870.00**
VAT (@14%)				**R 12 721.80**
GRAND TOTAL				**R 103 591.80**

* Assuming machinery can be sourced from Mthatha

Rehabilitation Cost Summary Table for N2 Road Upgrade Project - BP99-1

Description	Unit	Quantity	Rate	Amount
Shaping and Topsoiling of the Borrowpit				
D9 Bulldozer	hr	24	R 1 500.00	R 36 000.00
Lowbed Hire (Bulldozer)*	km	0	R 15.00	R 0.00
Hydroseeding				
Hydroseeding	ha	1.5	R 5 000.00	R 7 500.00
Fertiliser (0.6t/ha of 2:3:2)	t	1.5	R 2 500.00	R 3 750.00
Seed purchase	kg	20	R 90.00	R 1 800.00
Supervision and Labour				
Site supervisor	hr	60	R 30.00	R 1 800.00
Labour	hr	120	R 16.00	R 1 920.00
Alien vegetation Control				R 0.00
Labour	days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
After Care & Maintenance				
Labour	man days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
Sub Total				**R 62 370.00**

VAT (@14%)				**R 8 731.80**
GRAND TOTAL				**R 71 101.80**

* Assuming machinery can be sourced from Mthatha

Rehabilitation Cost Summary Table for N2 Road Upgrade Project - BP KM40

Description	Unit	Quantity	Rate	Amount
Shaping and Topsoiling of the Borrowpit				
D9 Bulldozer	hr	40	R 1 500.00	R 60 000.00
Lowbed Hire (Bulldozer)*	km	0	R 15.00	R 0.00
Hydroseeding				
Hydroseeding	ha	1.5	R 5 000.00	R 7 500.00
Fertiliser (0.6t/ha of 2:3:2)	t	1.5	R 2 500.00	R 3 750.00
Seed purchase	kg	20	R 90.00	R 1 800.00
Supervision and Labour				
Site supervisor	hr	60	R 30.00	R 1 800.00
Labour	hr	120	R 16.00	R 1 920.00
Alien vegetation Control				R 0.00
Labour	days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
After Care & Maintenance				
Labour	man days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
Sub Total				**R 86 370.00**
VAT (@14%)				**R 12 091.80**
GRAND TOTAL				**R 98 461.80**

* Assuming machinery can be sourced from Mthatha

Rehabilitation Cost Summary Table for N2 Road Upgrade Project - BP KM45

Description	Unit	Quantity	Rate	Amount
Shaping and Topsoiling of the Borrowpit				
D9 Bulldozer	hr	24	R 1 500.00	R 36 000.00
Lowbed Hire (Bulldozer)*	km	0	R 15.00	R 0.00
Hydroseeding				
Hydroseeding	ha	1.5	R 5 000.00	R 7 500.00
Fertiliser (0.6t/ha of 2:3:2)	t	1.5	R 2 500.00	R 3 750.00
Seed purchase	kg	20	R 90.00	R 1 800.00
Supervision and Labour				
Site supervisor	hr	60	R 30.00	R 1 800.00
Labour	hr	120	R 16.00	R 1 920.00
Alien vegetation Control				R 0.00
Labour	days	5	R 60.00	R 300.00

Herbicide	ltr	30	R 150.00	R 4 500.00
After Care & Maintenance				
Labour	man days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
Sub Total				**R 62 370.00**
VAT (@14%)				**R 8 731.80**
GRAND TOTAL				**R 71 101.80**

* Assuming machinery can be sourced from Mthatha

Rehabilitation Cost Summary Table for N2 Road Upgrade Project - BP443

Description	Unit	Quantity	Rate	Amount
Shaping and Topsoiling of the Borrowpit				
D9 Bulldozer	hr	24	R 1 500.00	R 36 000.00
Lowbed Hire (Bulldozer)*	km	50	R 15.00	R 750.00
Hydroseeding				
Hydroseeding	ha	1.5	R 5 000.00	R 7 500.00
Fertiliser (0.6t/ha of 2:3:2)	t	1.5	R 2 500.00	R 3 750.00
Seed purchase	kg	20	R 90.00	R 1 800.00
Supervision and Labour				
Site supervisor	hr	60	R 30.00	R 1 800.00
Labour	hr	120	R 16.00	R 1 920.00
Alien vegetation Control				R 0.00
Labour	days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
After Care & Maintenance				
Labour	man days	5	R 60.00	R 300.00
Herbicide	ltr	30	R 150.00	R 4 500.00
Sub Total				**R 63 120.00**
VAT (@14%)				**R 8 836.80**
GRAND TOTAL				**R 71 956.80**

* Assuming machinery can be sourced from Mthatha

TOTAL **R 416 214.00**

APPENDIX G:

Letter of Financial Guarantee