



mineral resources

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Date:

EC30/5/1/3/3/2/1(0447)EM
7 July 2010

South African Heritage Resources Agency
P.O. Box 758
GRAHAMSTOWN
6140

ATTENTION: MR. T. LUNGILE

Case ID: 2178

Sir

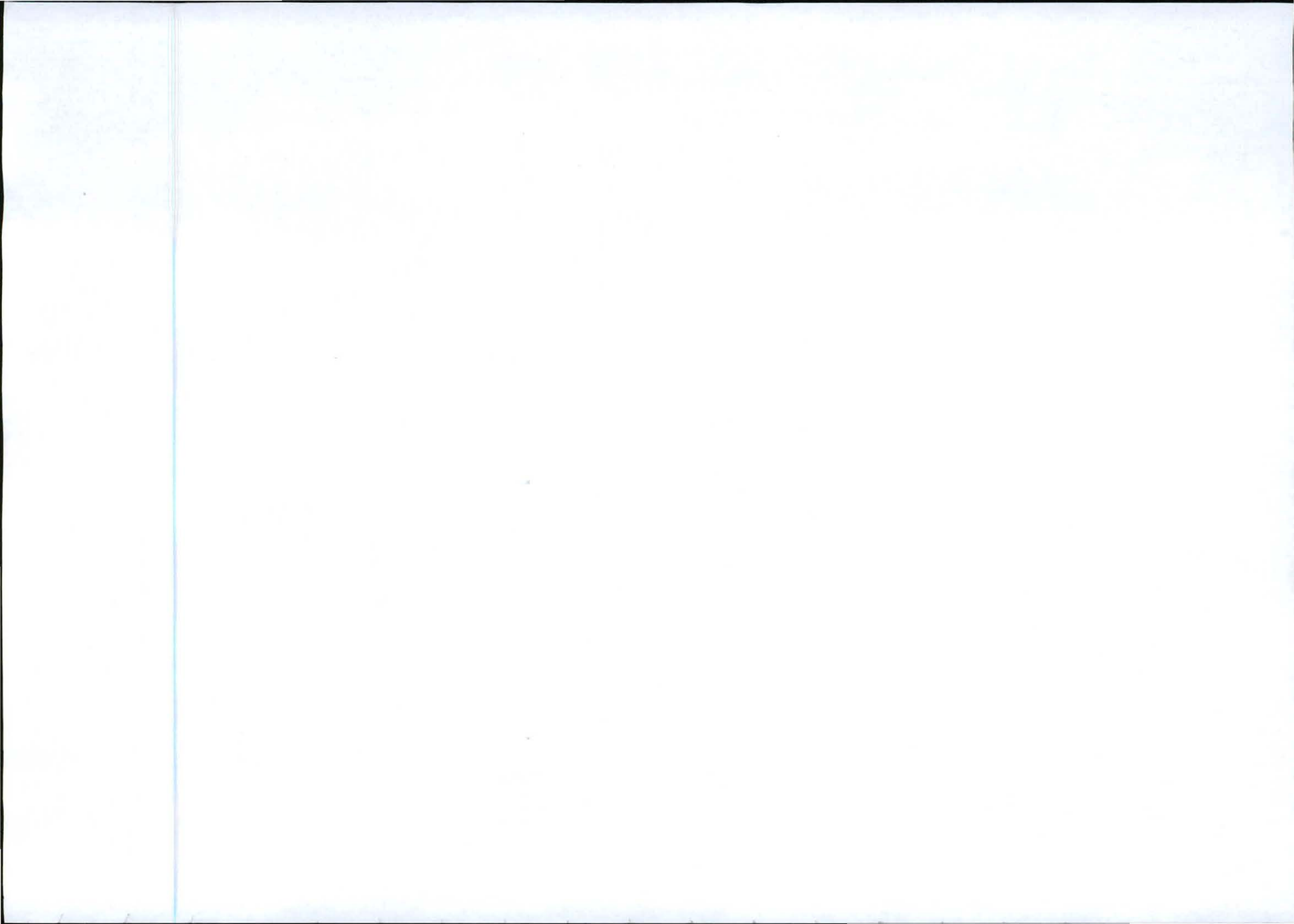
**CONSULTATION IN TERMS OF SECTION 40 OF THE MPRDA OF 2002: BORROW
PIT FOR TOLENI ACCESS ROAD, DIVISION OF MOUNT FRERE, EASTERN CAPE**

1. Attached herewith, a copy of the Environmental Management Plan received from Eastern Cape Department of Roads and Public Works.
2. Any written comments or requirements your department may have in this regard can be forwarded to this office no later than **4 September 2010**. Failure to do so, will lead to the assumption that your department has no objection(s) or comments with regard to the said documents. Comments may be submitted at your earliest convenience in order to reduce the turnaround time for the application process.
3. Consultation in this regard has also been initiated with other relevant State Departments.
4. Please use the reference number (EC) 30/5/1/3/3/2/1(0447) EM in all future correspondence.
5. Your co-operation is appreciated.

Sincerely,

REGIONAL MANAGER

EASTERN CAPE



BURROW PIT MINING PERMIT FOR TOLENI ACCESS ROAD

ENVIRONMENTAL MANAGEMENT PROGRAMME

May 2010

PREPARED ON BEHALF OF:

**Department of Roads and Transport
Eastern Cape Province**

COMPILED BY

USK Consulting

Environmental & Waste

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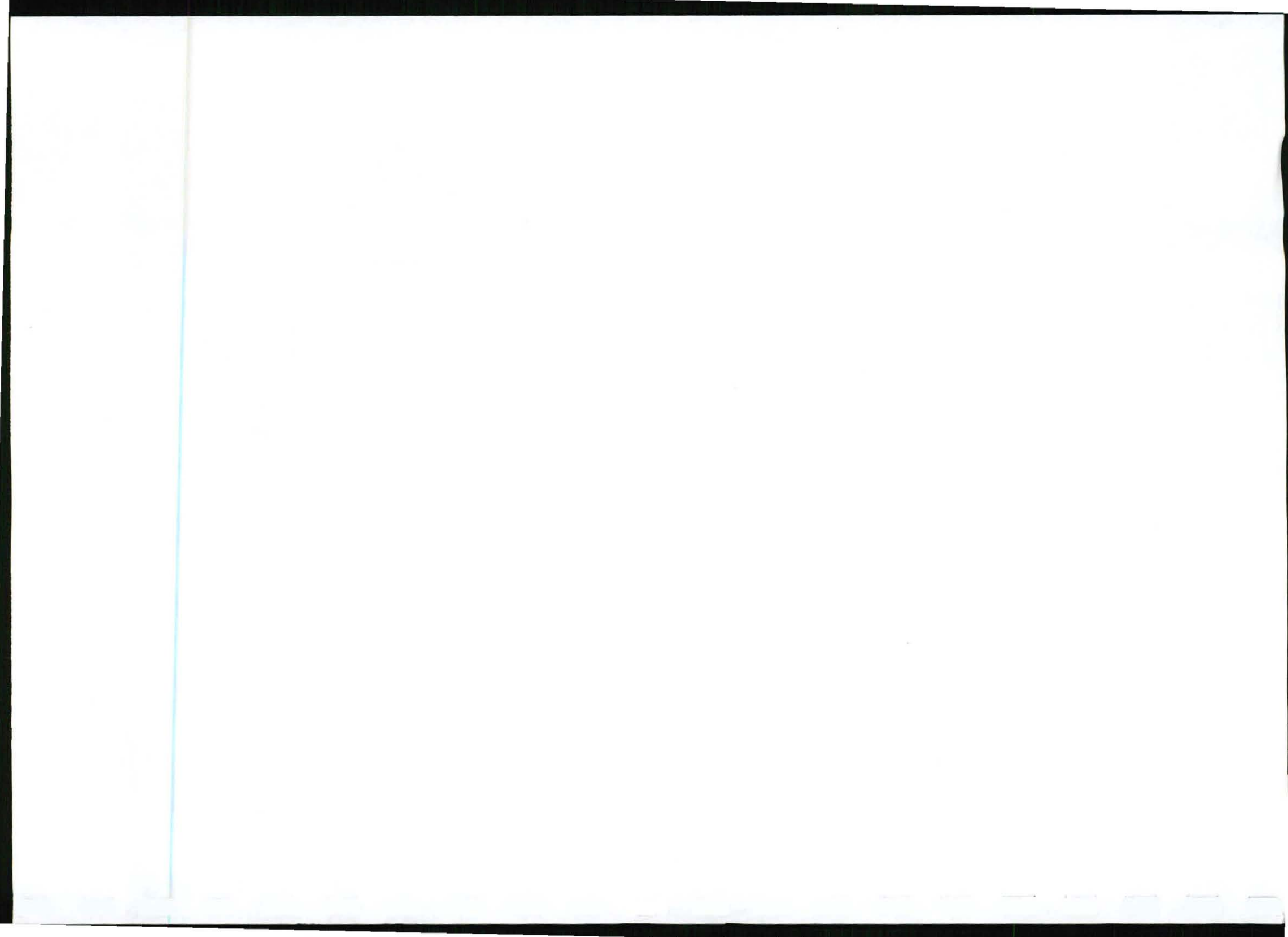
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2010-06-30
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Application received in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) EASTERN CAPE REGION
30 JUN 2010
Print Name: S. KALULE
Signature: [Handwritten Signature]
DEPARTMENT OF MINERALS AND ENERGY

D/2010/06/30/001
EC 30/15/12/2/0487 MP



**ENVIRONMENTAL MANAGEMENT PLAN REQUIRED AS PART OF
AN APPLICATION FOR MINING PERMIT FOR TOLENI ACCESS
ROAD**

CONTENTS

Chapter	Description	Page
1	INTRODUCTION	1-1
	1.1 Purpose of this Document	1-1
2	PROJECT BACKGROUND	2-2
	2.1 Name and address of Applicant	2-2
	2.2 Name and address of land owner and title deed description	2-2
	2.3 Regional setting of project	2-2
	2.4 Details of the proposed project	2-3
3	DESCRIPTION OF THE RECEIVING ENVIRONMENT	3-5
	3.1 Location of the study area	3-5
	3.2 Current land use and zoning	3-5
	3.3 Neighbouring land uses	3-5
	3.4 Infrastructure on site	3-6
	3.5 Climate	3-6
	3.6 Topography	3-6
	3.7 Drainage	3-6
	3.8 Vegetation	3-6
	3.9 Fauna	3-8
	3.10 Heritage value	3-8
4	CONSIDERATION OF ENVIRONMENTAL IMPACTS	4-9
	4.1 Assessment Criteria	4-9
	4.2 Construction and Operation Phase Impacts	4-10
	4.3 Decommissioning phase	4-1
	4.4 Post-closure phase	4-1



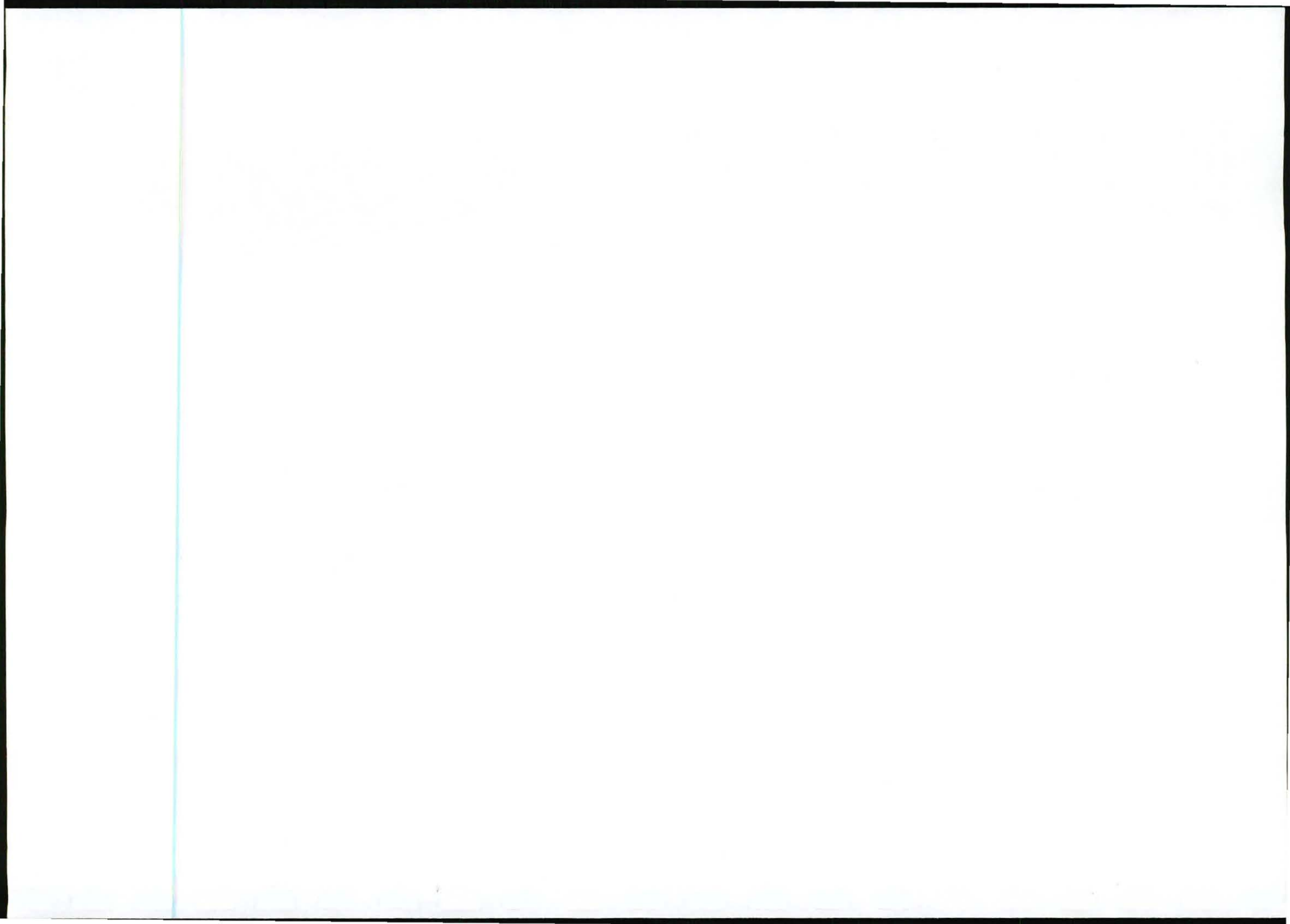
5	MOTIVATION FOR THE PROPOSED PROJECT	5-3
	5.1 Benefits of the project	5-3
	5.2 Consideration of project alternatives	5-3
6	DETAILED DESCRIPTION OF PROPOSED PROJECT	6-4
	6.1 Surface infrastructure	6-4
	6.2 Construction phase	6-4
	6.3 Operational phase	6-5
	6.4 Decommissioning phase	6-5
7	ENVIRONMENTAL MANAGEMENT PROGRAMME	7-1
	7.1 Roles and responsibilities	7-1
	7.2 Construction and Operational phase	7-2
	7.3 Decommissioning phase	7-7
	7.4 Proposed timetable, duration and sequence	7-9
	7.5 Financial provision for rehabilitation	7-9
8	CONCLUSIONS AND RECOMMENDATIONS	8-1
	8.1 Conclusions	8-1
	8.2 Recommendations	8-1
9	REFERENCES AND SUPPORTING DOCUMENTATION	2

APPENDICES

APPENDIX 1:	Photographs
APPENDIX 2:	Locality Map
APPENDIX 3:	Site Layout Plan
APPENDIX 4:	Proof of surety for the rehabilitation of the Burrow pit
APPENDIX 5:	Public Participation documents

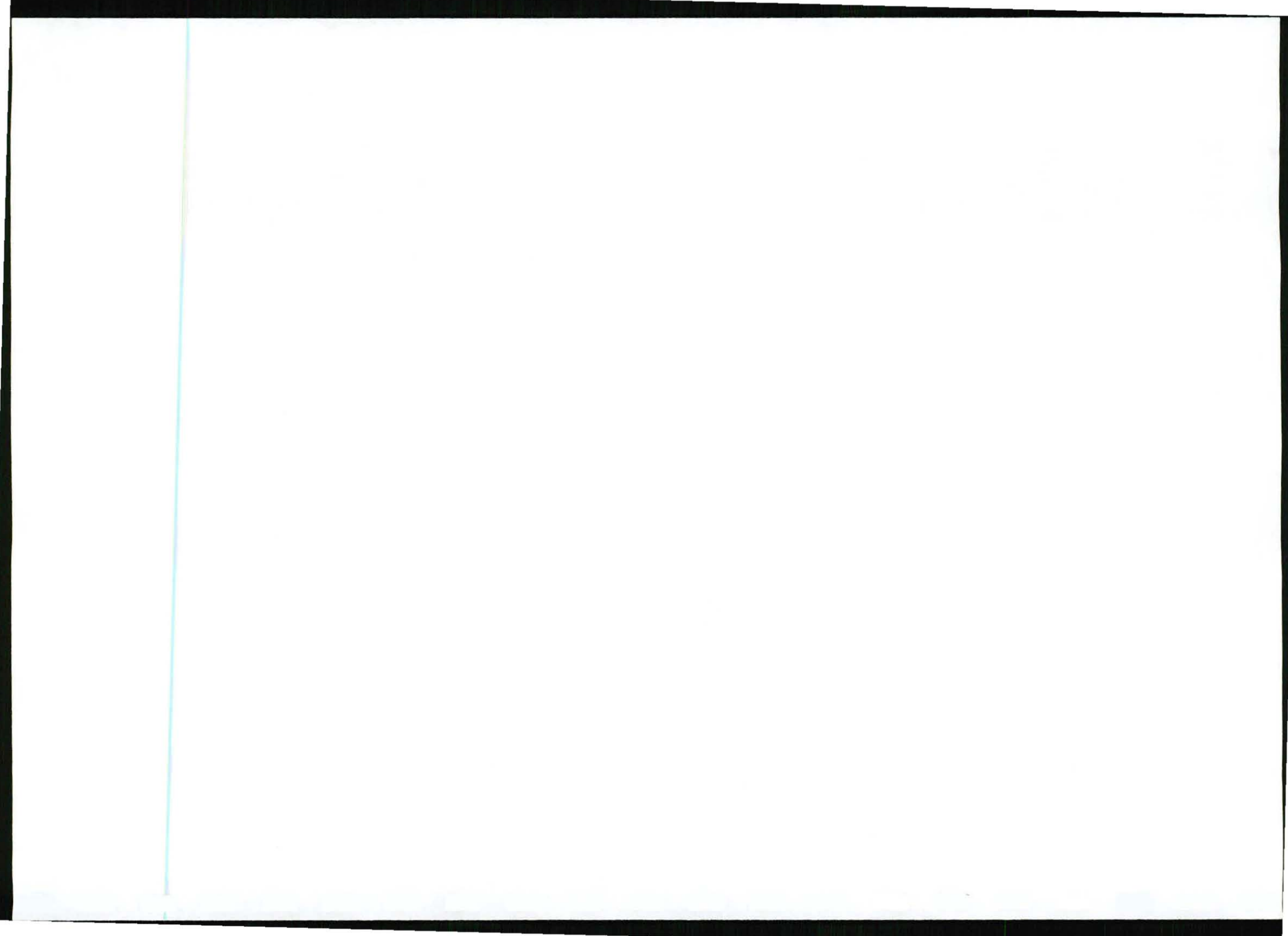
ABBREVIATIONS

DME	Department of Mineral and Energy
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
I&APs	Interested & Affected Parties
STEP	Subtropical Thicket Ecosystem Planning Project



REPORT DETAILS

REFERENCE:	AD855613
REPORT TITLE:	Burrow Pit Mining Permit for Toleni access road.
SUBMISSION DATE:	June 2010
CLIENT:	Department of Roads and Transport Ray Craib Crescent, Beacon Bay, East London, 5241 Private Bag X0023, Bisho, 5605 Contact Person: Mr. Unathi Dyubula Tel: 043 604 7494, Fax: 043 643 4292
PREPARED BY:	USK Consulting 23 Ray Craib Crescent, Beacon Bay, East London, 5241 Contact person: Mr Steve K. Kalule Tel: 043 748 5545 Fax: 043 748 1114 Email: kkalule@uskconsulting.com
SIGNED:	
APPROVER:	
STATUS	Final Report



1 INTRODUCTION

USK Consulting Cc was appointed by the Department of Roads and Transport as the Environmental Consultants for the development of the Environmental Management Plan (EMP) for mining of an existing Borrow Pit and any associated activities (hereafter referred to as "**the Project**"). This application will be in accordance with Minerals and Petroleum Resources Development Act, (MPRDA) (Act 28 of 2002).

The proposed borrow pit is located at Toleni and will be used for the mining of decomposing dolerite material required for the upgrading of Toleni access road which is in close proximity to the mining site. The mining activity will be short term corresponding to the road construction. The mining concerned falls within the criteria "said Act in respect of any activity to remove any mineral for the construction and maintenance of dams, harbours, **roads**, railway lines and for purposes incidental thereto" and is on behalf of Department of Roads and Transport. For the reason it qualifies for exemption from complying with the sections 16, 20, 22, 27 of the MPRDA (Act 28 of 2002). It is however required under the Section 106 of MPRDA, 2002 that the department makes provision for Environmental Management Programme and Financial Surety.

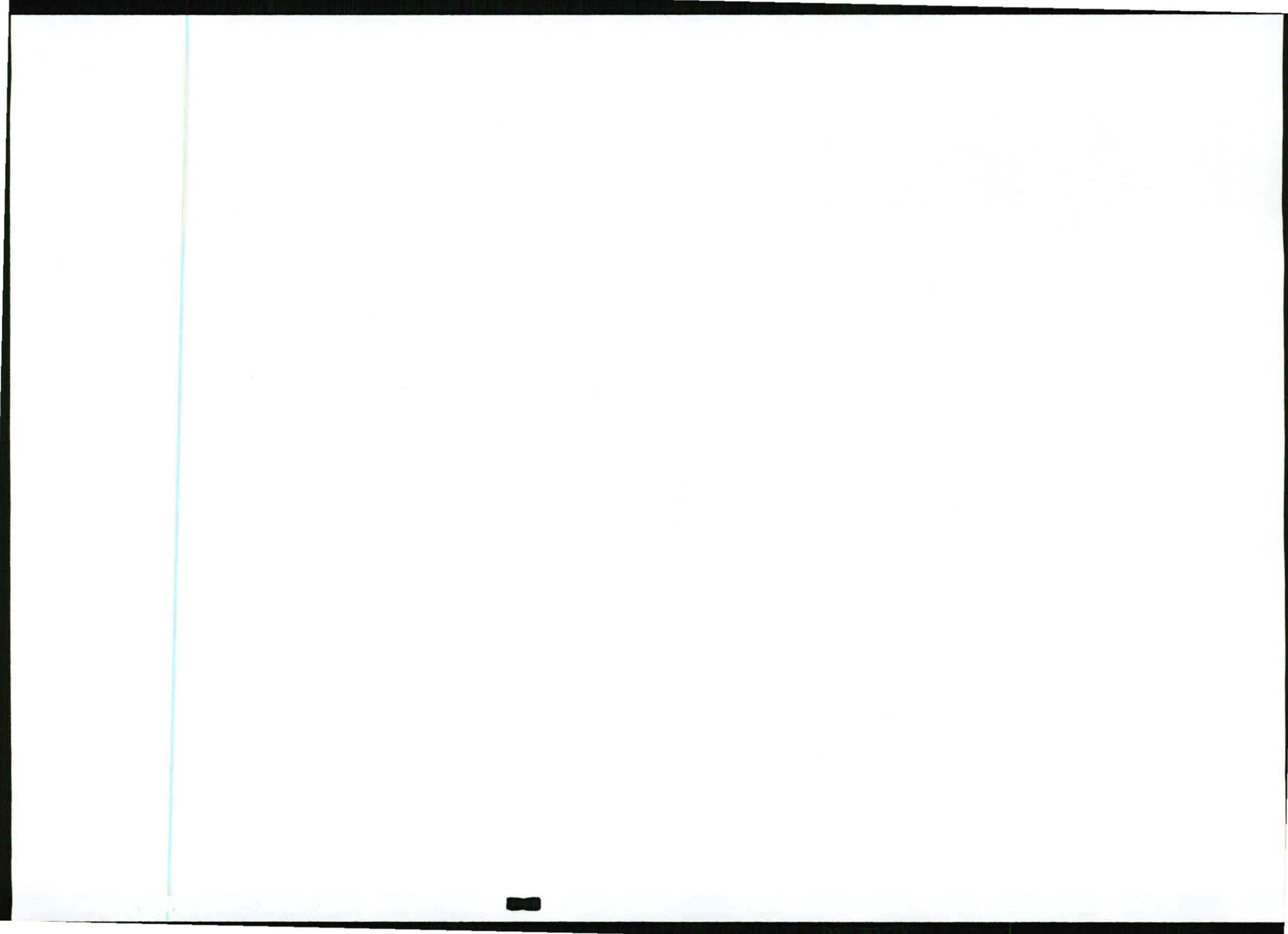
The proposal involves excavating of a new working face on an area less than 1, 5 hectares to be operated for a period of probably less than a year and hence the application made is for a **MINING PERMIT**. The working face will then be rehabilitated and re-vegetated following its operation

1.1 Purpose of this Document

This document aims to fulfil the requirements and directives of the Minerals and Petroleum Resources Development Act (Act 28 of 2002), and constitutes the Environmental Management Plan (EMP) required as part of a mining permit application for the Project.

This EMP aims to:

- Explain the need for, and the overall benefits of the proposed mining activities;
- Describe baseline environmental conditions at the site;
- Describe how the negative environmental impacts will be managed, and the positive impacts maximised; and
- Indicate what resources will be made available to implement the Environmental Management Programme (EMPr) and final rehabilitation plan.



2 PROJECT BACKGROUND

2.1 Name and address of Applicant

Name: Department of Roads and Transport
Address: Private Bag X2300
Bisho
5605
Contact Person: Mr Unathi Dyubula
Telephone: 043 604 7494
Fax: 043 643 4292

2.2 Name and address of land owner and title deed description

The land parcel where the burrow pit is located is owned by Umzimvubu Local Municipality.

Name: Umzimvubu Local Municipality
Address: Private Bag X9020
Mount Frere
5090
Contact Person: Mr. T. G. Notha (Municipal Manager)
Telephone: 043 732 1464
Title Deed Description: Umzimvubu Local Municipality
Magisterial District: Mouth Frere

2.3 Regional setting of project

2.3.1 Magisterial district

The area falls within the Mt Frere magisterial district of the Eastern Cape.

2.3.2 Direction and distance to neighbouring towns

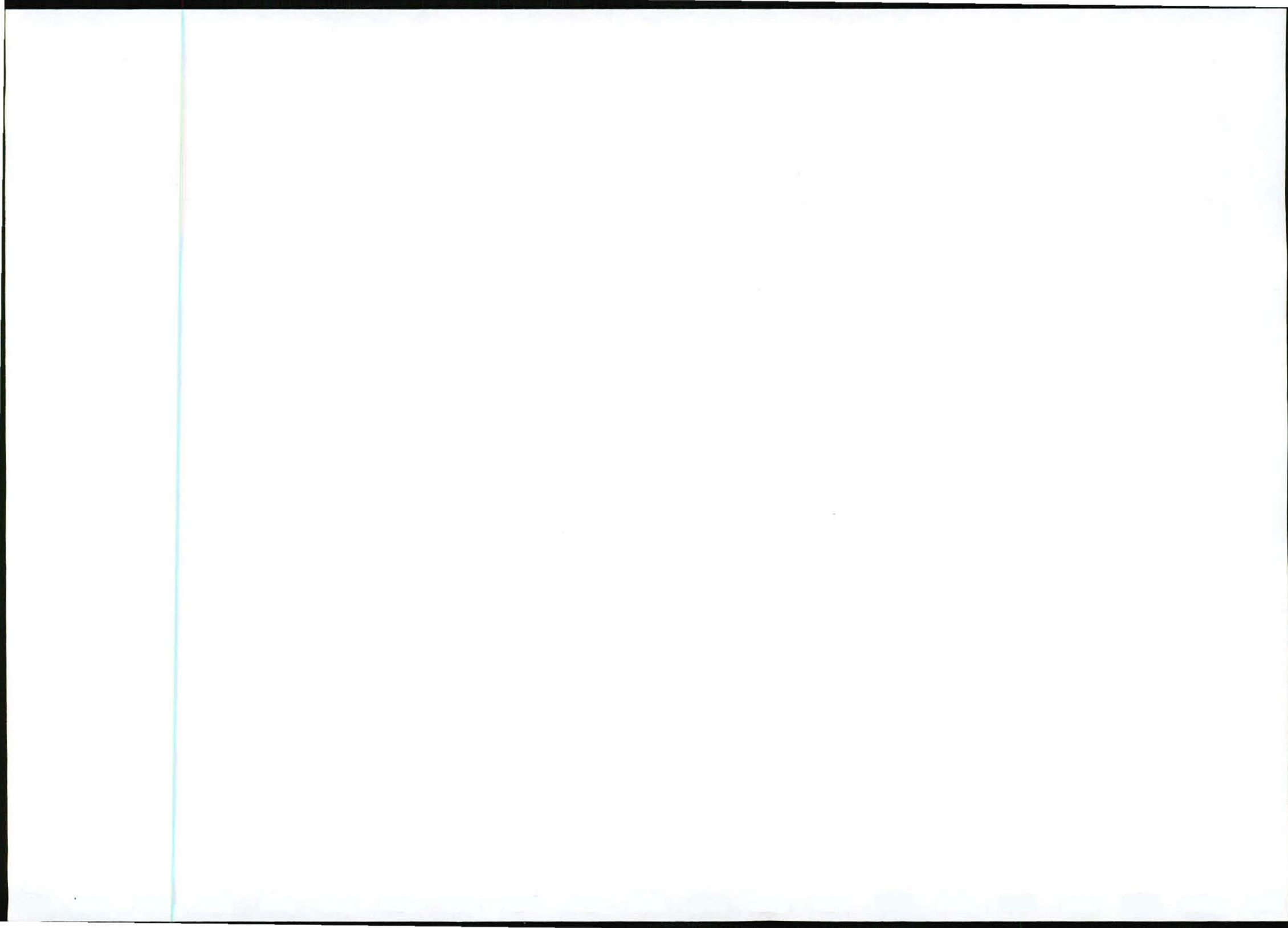
The project site is located at Toleni which is roughly 10-12 km before Mount Frere when using the N2 National road. The borrow pit is located between Hohane and KwaHala, about 300m west of the proposed road for reconstruction. (See Figure 1. for the locality map.)

2.3.3 Surface infrastructure

There are no buildings on or immediately adjoining the project site except for few houses located about 100m from the site.

2.3.4 Presence of servitudes

The site is located in a rural community under ownership of Umzimvubu local Municipality. There are no known servitudes for the site.



2.3.5 Land tenure and use of immediately adjacent land

The borrow pit is located in the rural community and land uses close to the site include residential, maize cultivation and schools.

2.3.6 Name of river catchment in which land is situated

The site for the proposed mining falls within Umzimvubu river catchment. Ngcibira river and associated intermediate streams are located to the west of the barrow pit, further west of the area is the Thina River.

2.4 Details of the proposed project

2.4.1 Mineral deposit

Table 1: Minerals and respective quantities to be mined from the quarry

MINERAL CLASSIFICATION	QUANTITY (m ³)
Dolerite (decomposed)	1800

The main product will be the dolerite and will be used as construction material for the Toleni access road to be upgraded.

2.4.2 Proposed mining method

Material will be excavated mechanically by means of an excavator and dozer. No blasting will be required, and it is not anticipated that any screening will be necessary at the borrow pit. Mining will be phased. The site will be worked on progressively from the eastern extremity in a south easterly direction. It is anticipated that each finished phase will be rehabilitated prior to mining the next phase or the entire rehabilitation process will commence immediately following the mining operation.

2.4.3 Proposed mining Programme

The proposal is that a phased approach will be used during the operation of the borrow pit. Old faces of the borrow pit will be redeveloped and reopened and mining operations undertaken sequentially and in phases based on the subdivided borrow pit areas.

2.4.4 Phased rehabilitation

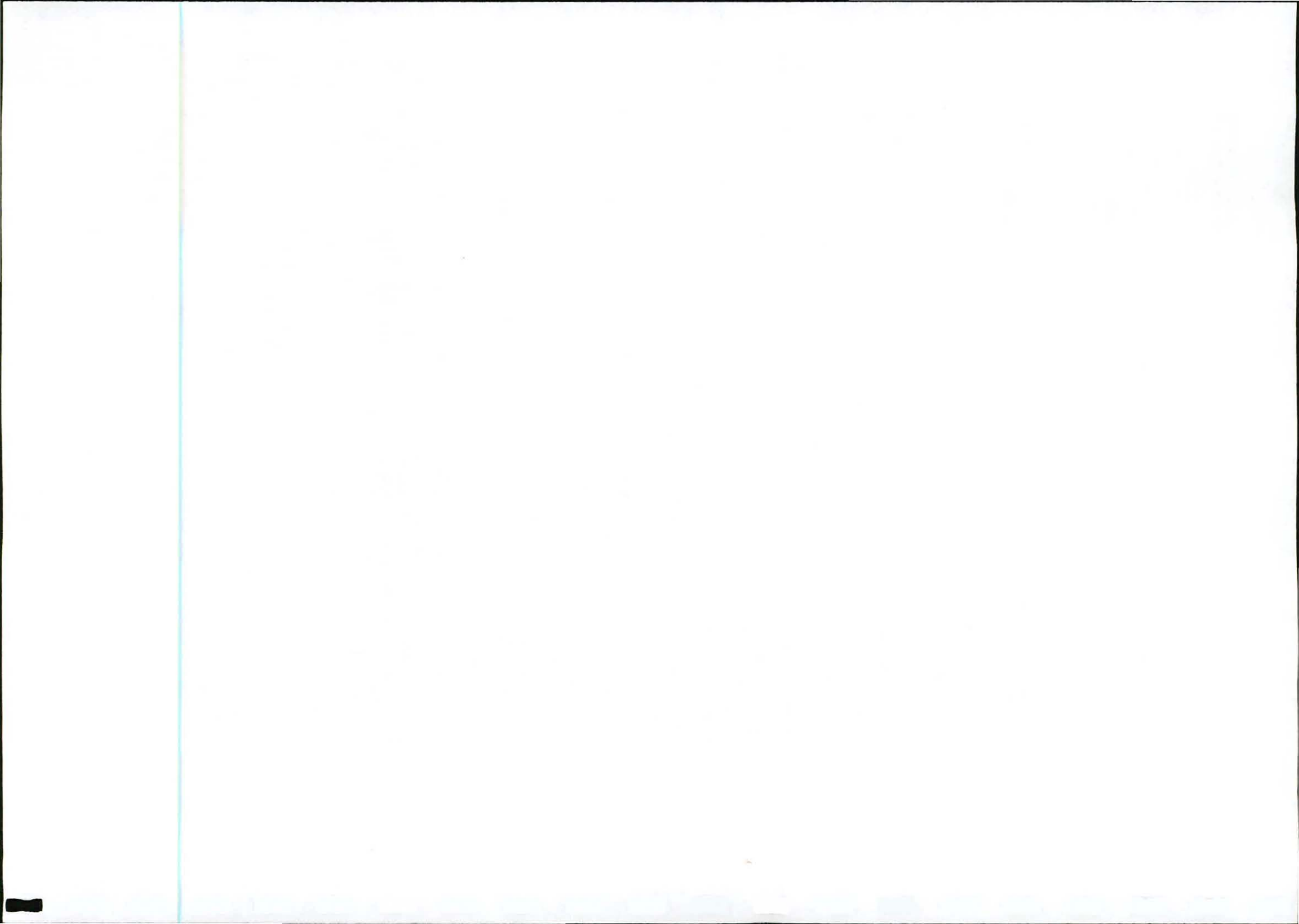
Note should be made that the rehabilitation programme for the project will follow a similar pattern as the mining work programme and hence rehabilitation/re-vegetation will be phased accordingly. On closure of operations at phase A, the rehabilitation programme for the working faces of phase A will be commencing immediately. The total outcome of the phased approach to rehabilitation is that total face of the quarry will be rehabilitated timeously and this will minimise any further impacts such as soil erosion.

2.4.5 Planned production rate

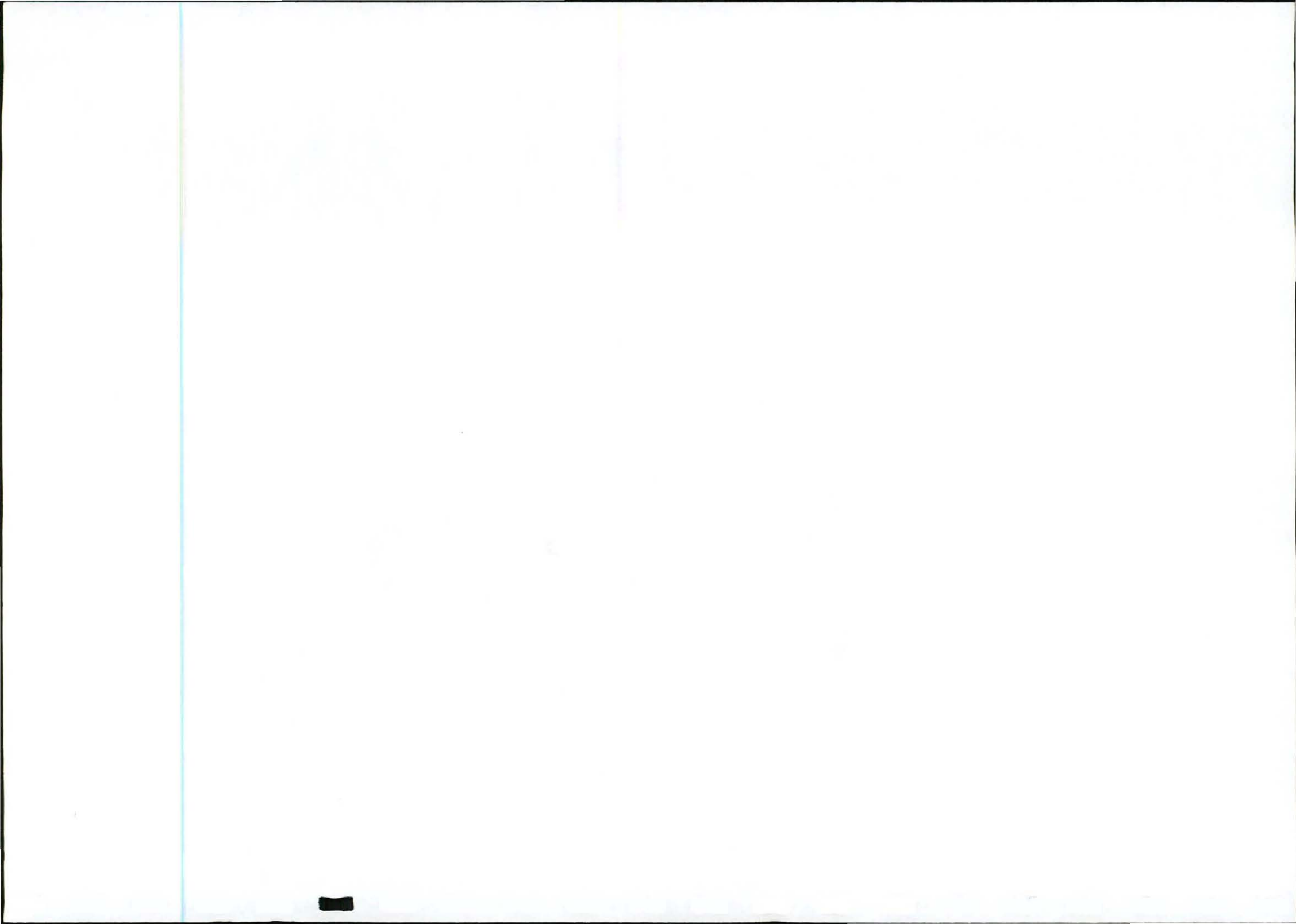
It is envisaged that the project will be operated at relatively steady rates over several months. The estimated total amount of material to be mined will be 1800m³ for the mining period.

2.4.6 Planned life of mine

Mining will be done for the purpose of providing Dolerite material for upgrading Toleni access road. Therefore the lifespan will correspond to the construction period and required material for the



project. The project will commence only once authorisation has been obtained. Mining will then cease, and the site subsequently rehabilitated.



3 DESCRIPTION OF THE RECEIVING ENVIRONMENT

3.1 Location of the study area

Toleni is Located along the N2 national road to the town Mt frère, approximately 10km before Mt Frere and Within Umzimvubu Local municipality. The borrow pit is located at coordinates 30° 57' 817"S, 28°54'297"E between KwaHala and Hohane, and about 300m east of the proposed Toleni access road. (See Fig. 1; showing the Topographic Map of Toleni showing the borrow pit site.)

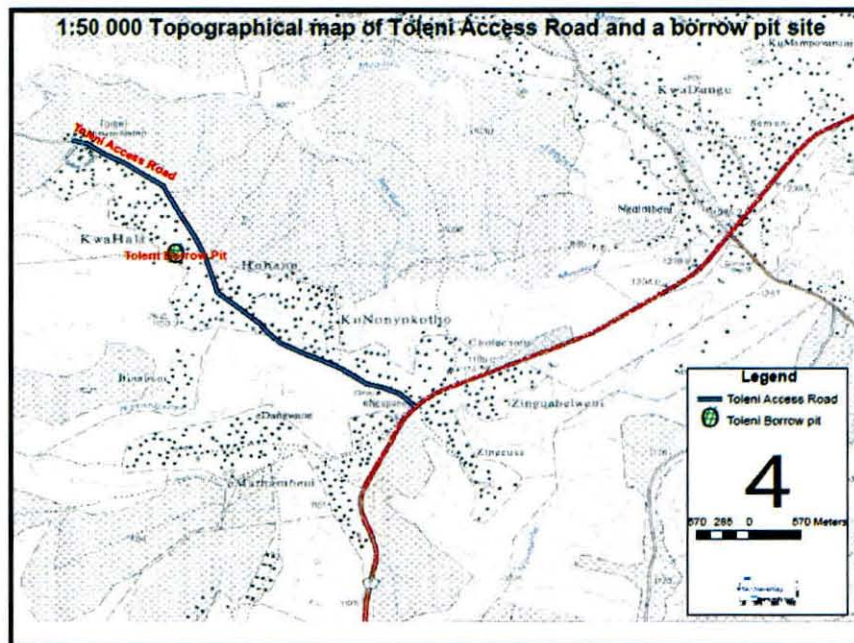


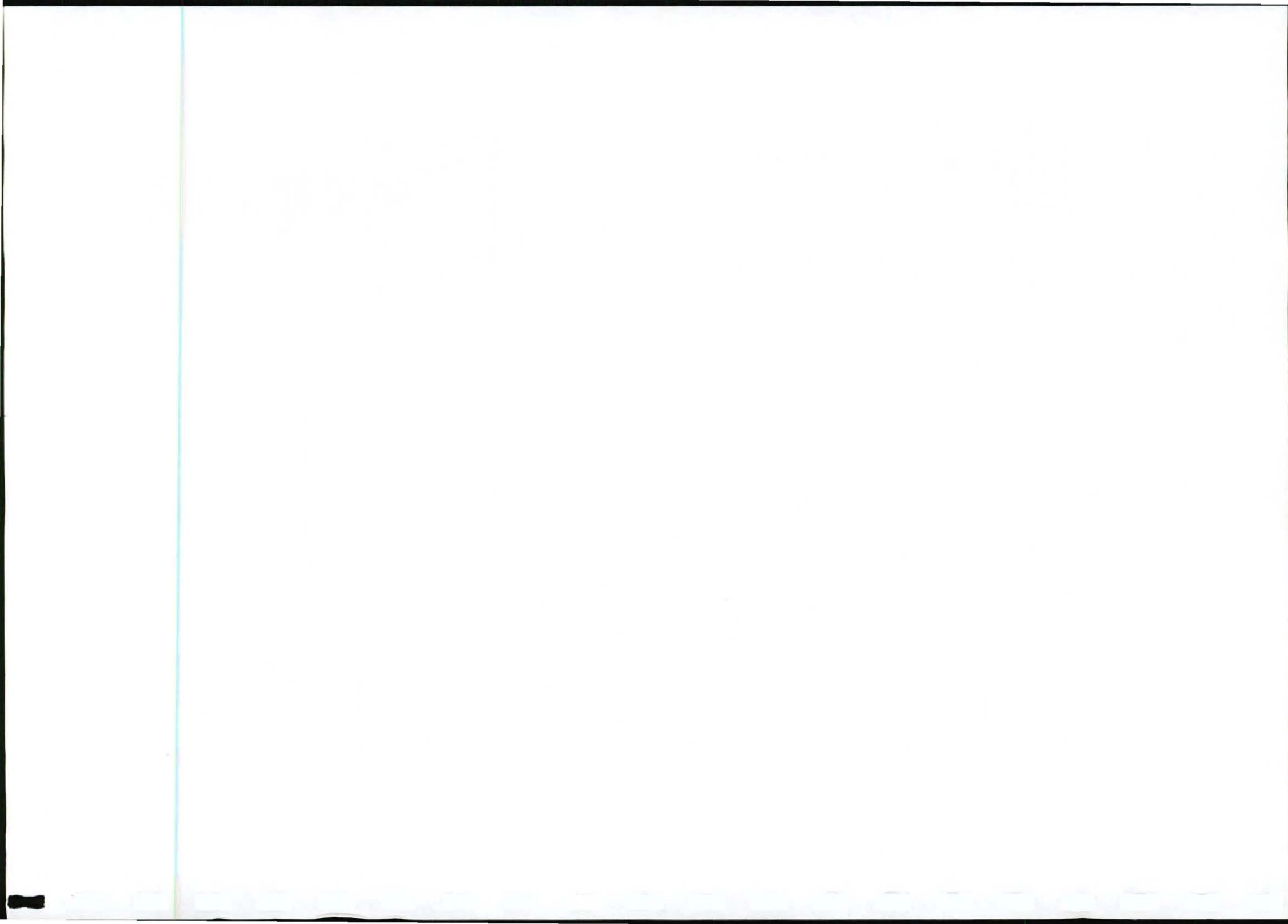
Figure 1: 1:50 000 topographic map showing the location of the borrow pit and Toleni access road.

3.2 Current land use and zoning

The host site is a rural settlement and land uses of the surrounding area include agricultural and residential, however presently the area surrounding the site is not actively utilised for any agricultural purposes and no agricultural infrastructure is evident on the site and there are no residents immediately adjoining the site. The site has previously been utilised for mining which has resulted to degradation at the vicinity.

3.3 Neighbouring land uses

The areas surrounding the study site is a rural community, consisting of the villages Dangwana, Hohane, KwaHala and Ngcibira. Land uses includes residential, schools, and agricultural (maize cultivation as well as goat and cattle herding).



3.4 Infrastructure on site

3.4.1 Housing

There are no buildings on or in very close proximity to the project site.

3.4.2 Access and roads

Access can be gained via the proposed Toleni Access road beginning at the signboard to and Dangwana off the N2 national road. There are also internal roads leading to the borrow pit that could be used.

3.4.3 Eskom and Telephone lines

Known Eskom lines that supply the residents of Toleni runs along the access road and into the residents. There are no ESKOM or Telephone lines above the site, however the power lines runs in close proximity to the burrow pit site.

3.4.4 Water supply and Sanitation

There is no municipal water supply on the project site.

There is no municipal sewage service on the project site. The surrounding community is rural with no municipal sewage service

3.5 Climate

The study area fall within Umzimvubu Municipal area in a region with mainly summer rainfall and a mean annual precipitation ranging between 620-816mm. Weather extremes tornados, thunderstorms and flood; and snow, mist and frost, are less common. The Temperature in the region ranges from 7 to 10 °C winter and from 15 to 20 °C in summer and the average MAT is 14.7 °C.

3.6 Topography

The topography of the study area is characterised by plateau ranging from 1000m to 1140 above sea level. The area is generally mountainous and the site is located at altitude 1120m toward a steep valley of Ngcibira river further west.

3.7 Drainage

Most surface drainage from the project site flows into the intermediate streams then into Ngcibira River and the Thina river further west of the site. The drainage basin of Umzimvubu Municipality is mainly Umzimvubu River basin. See the layout diagram attached as **Appendix 4**.

3.8 Vegetation

The site for the proposed mining falls within the vegetation Classified as East Griqualand Grassland. **Figure 2** below illustrates the vegetation types in Umzimvubu Municipality.



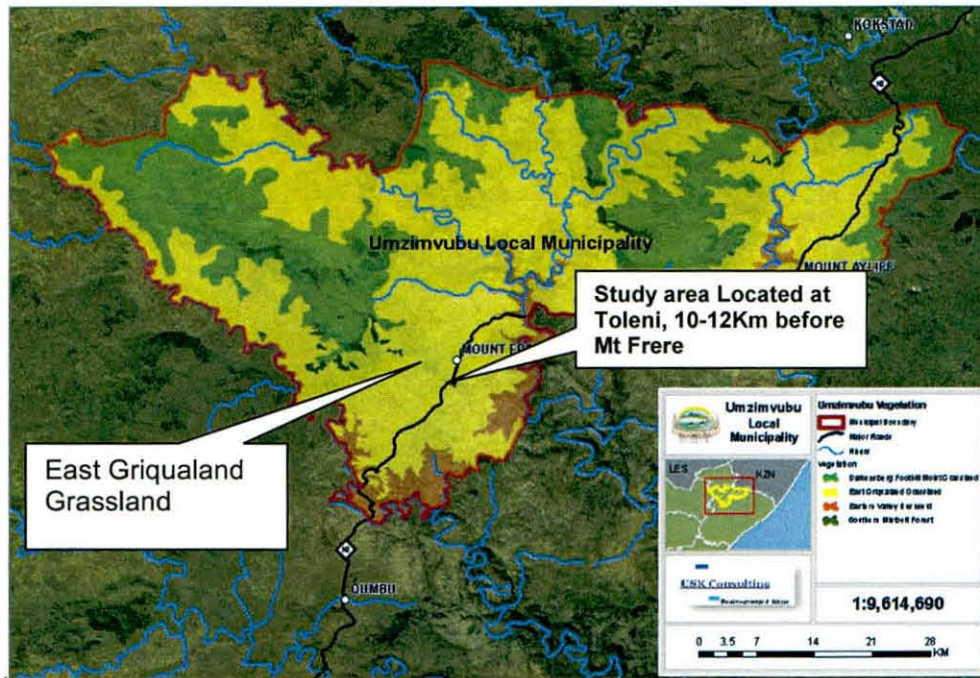


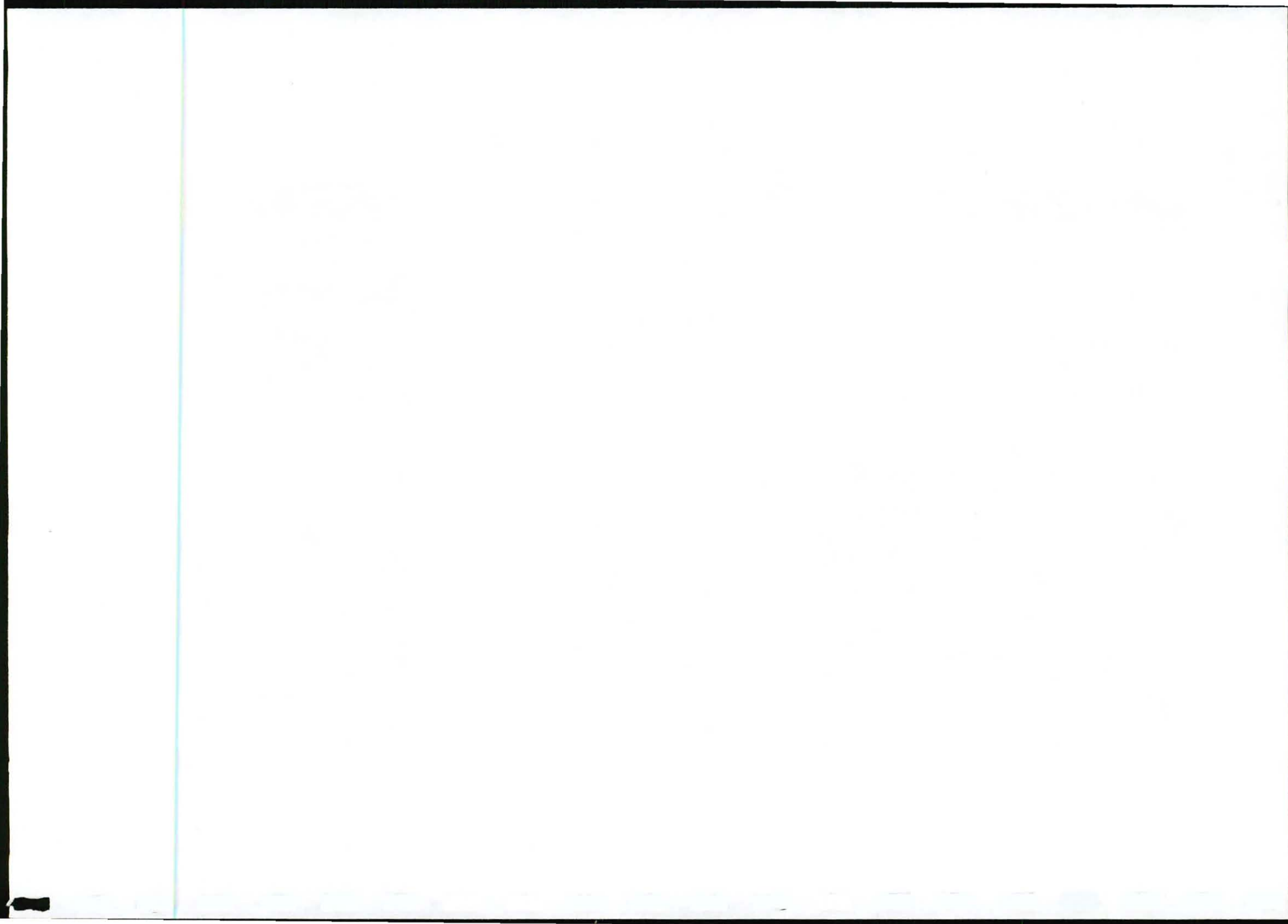
Figure 2: Vegetation types around the project area (Source: Umzimvubu Municipality IDP, 2009/2010).

The type of vegetation occurring at the site, as classified in the new national vegetation map undertaken by SANBI (Mucina & Rutherford) is East Griqualand Grassland; which is also the most common vegetation type found in Umzimvubu municipality. East Griqualand Grassland is dominated by grass and herbaceous species with occasional patches of shrubs. Species occurring in this vegetation include *Diheteropogonfilifolius*, *Elionurusmuticus*, *Eragrostiscapensis*, *Eragrostischloromela*, *Eragrostiscurvula*, *Eragrostisplana*, *Eragrostisracemosa*, *Heteropogoncontortus*, *Michrochloacaffra*, *Monocymbiumceressiiforme*, *Panicumnatalense*, *Rendliaaltera*, *Sporobolusafricanus*, *Themedatriandra*, *Trachypogonspicatus*, *Tristachyaleucothrix*, *Agrostislachnantha*, *Helichrysumsimillimum*, *Senecioretorsus*, *Oxalis depressa* and *Protearoupelliaesubsp. roupelliae*. (Mucina & Rutherford, 2006) and well as the endemic *Alchemillaincurvata*, *Argyrolobiumsericosemium*, *Diasciaesterhuyseniae*, *Stachysrivularis*, *Brachystelmamolaventii*, *Dioscorea brownie*, *Ornithogallumbaurii*, *Delospermawiuinii* (Umzimvubu Municipality IDP, 2009/2010).

The vegetation at the mining site is highly disturbed with low vegetation cover and very few plant species which include grasses and herbs as well as a shrub species (see Fig. 3).



Figure 3: Illustrates the vegetation at the proposed borrow pit site for mining.



3.8.1 Conservation Status

This vegetation type, as described in the Umzimvubu Municipality IDP, 2009/2010 is classified as vulnerable in terms of its conservation status with only 0.2% of the targeted 23% under conservation. Transformation of East Griqualand Grassland vegetation within Umzimvubu has mostly been through cultivation for maize and urban development. Maize cultivation, cattle and goat farming and rural settlements seems to be the common activities in the community where the borrow pit is located.

3.8.2 Alien vegetation

Henderson (2001) notes that "*Alien plants are a massive threat to the ecological functioning of natural systems and to the productive use of land.*"

Alien plants that might be found invading and threatening this vegetation type include *Acacia dealbata* and *A. Mearnsii*. Others are shown in the table below.

Table : Alien plant species that might be found on the site. "Category" refers to the Weed and Invader status according to the Conservation of Agricultural Resources Act, 1983.

GENUS	SPECIES	COMMON NAMES / DESCRIPTION	CATEGORY
<i>Cestrum</i>	<i>laevigatum</i>	Ink Berry / tree	1
<i>Lantana</i>	<i>camara</i>	Lantana / shrub	1
<i>Cortaderia</i>	<i>sp</i>	Pampas grass	1

3.9 Fauna

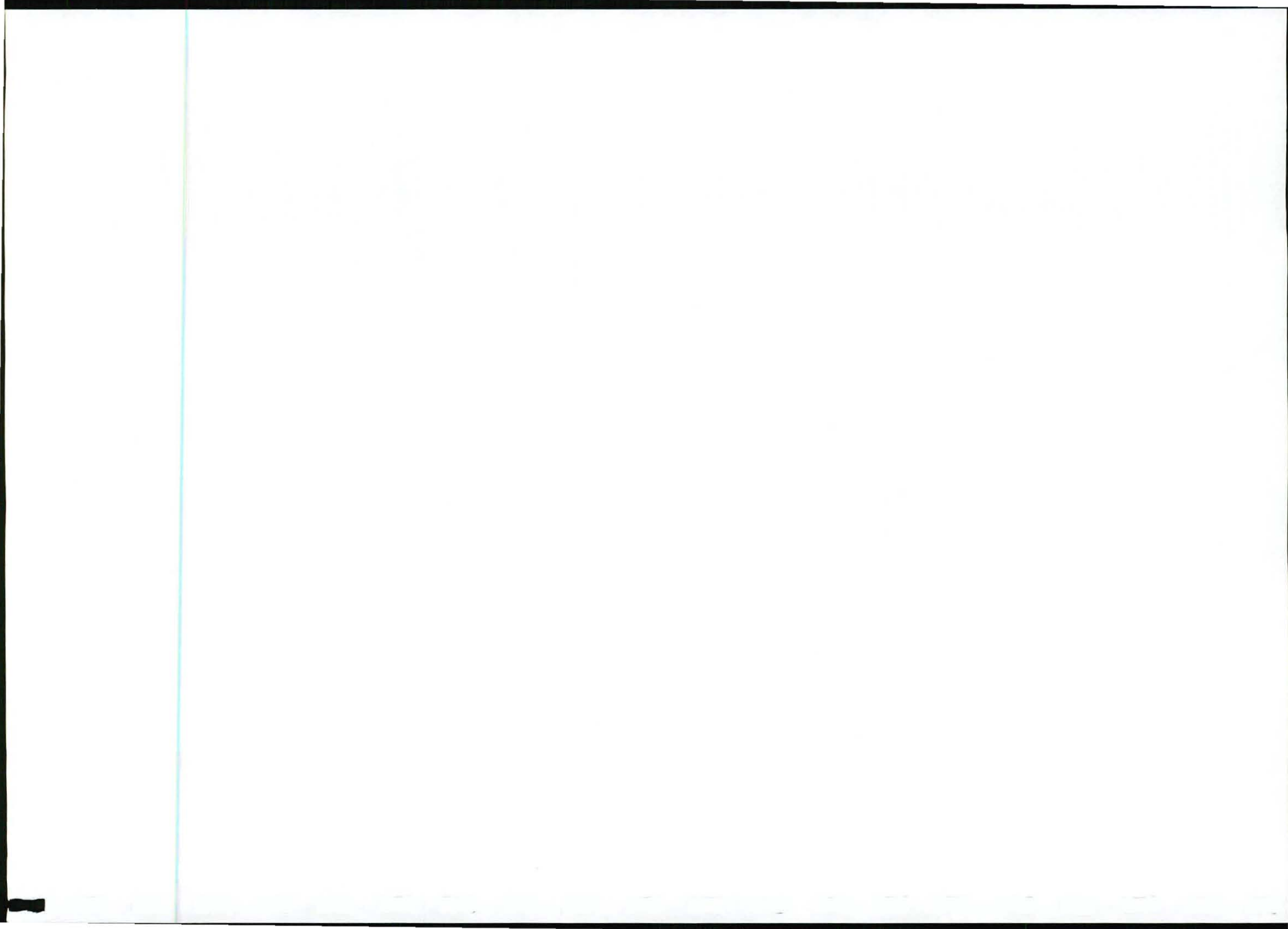
The site is located in the rural area and commonly found are domestic animals including cats and dogs. There is also cattle and sheep farming. Because of the high density of cats and dogs in the area, as well as the presence of human settlements, there is expectedly a low diversity of mammals in the area, with mostly small rodents.

Bird species that may be sighted in the area include the critically endangered Grey Crowned Crane which is common in the East Griqualand Grassland vegetation as well as other common bird species.

No rare or endangered species were observed on site.

3.10 Heritage value

No sites of archaeological, palaeontological or cultural importance are known to occur in the vicinity of the proposed project site. There is however often a possibility of unearthing artefacts during earthwork and clearing operations.



4 CONSIDERATION OF ENVIRONMENTAL IMPACTS

4.1 Assessment Criteria

This section briefly describes anticipated impacts associated with the different project phases, namely the construction phase, the operational phase, the decommissioning phase, and the post-closure phase. These impacts are described in terms of their extent, duration, intensity and probability as elaborated on below. The details of the impacts for the construction, operational decommissioning and post closure phases are described under **Sections**.

Figure : Assessment criteria for the evaluation of impacts

Criteria	Category	Description
Extent or Spatial influence (This describes the size of the area over which the envisaged impacts may be realised)	National Scale (N)	Within South Africa
	Provincial Scale (P)	Within the Eastern Cape
	Regional Scale (R)	Within the region of the burrow pit and associated roads
	Local Scale (L)	Within the boundaries of the community and immediate vicinity.
Intensity of impacts	Very High (VH)	When the impacts affect the environment in such a way that the physical, ecological, social, cultural and economic functions and processes cease.
	High (H)	When the impacts affect the environment in such a way that the physical, ecological, social, cultural and economic functions and processes continue but in a permanently altered manner.
	Medium (M)	When the impacts affect the environment in such a way that the physical, ecological, social, cultural and economic functions and processes are altered, but return to normal state in due course.
	Low (Low)	When the impacts affect the environment in such a way that the physical, ecological, social, cultural and economic functions and processes are not altered.
Duration of Impacts	Permanent (P)	The impact is permanent.
	Long Term (L)	Impacts persist long after closure/decommissioning of activity.
	Medium term (M)	The impacts persist through the duration of the activity.
	Short Term (S)	Impacts persist for less than the duration of the activity
Probability (the indication of the likelihood of the impact actually occurring)	Definite (D)	Will definitely occur regardless of mitigation measures.
	High (H)	Most like to occur
	Medium (M)	Not likely
	Low (L)	Very low

4.1.1 Status/ significance of impact

This is an indication of whether the impact is negative (a 'cost'), positive (a 'benefit') or neutral. This is derived by taking into account the temporal and spatial scales and intensity of impacts. All impacts are assigned significance assuming that the mitigation measures outlined in Section 7 of this report are properly implemented.

Figure : Definition of Significance Ratings

Significance Rating	Level of Criteria Required
High	Where the impacts would influence the decision to proceed with the proposed activity regardless of any mitigation measures.
Moderate	Where the impacts would influence the decision to proceed with the proposed activity unless they are effectively mitigated.
Low	Where the impacts would not have any influence on the

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on previously disturbed areas. Furthermore, "good housekeeping" and sound environmental practice will be applied when preparing the site.

4.2.4 Land Capability

Land capability (i.e. arable/ agriculture/ grazing) would be temporarily altered by the mining activities. Once the rehabilitation/ re-vegetation programme has been successfully implemented the site is likely to exhibit increased land capability through improved vegetation cover and removal of any alien vegetation. Due to its temporary nature and local extent, given the fact that the site has already experienced disturbance due to previous mining, grazing and other activities, this impact is considered of low significance.

Mitigation

Measures outlined in Section 7.2.4 will be implemented to minimise any negative construction phase impacts. Appropriate rehabilitation and re-vegetation of the site will be undertaken in order to return the site to a satisfactory condition. It should be noted that the re-vegetation programme will focus on the introduction of natural vegetation and that this will mitigate against reversion of the land use back to alien invasive plants. This re-vegetation could increase the land capability of the area.

4.2.5 Vegetation

The natural vegetation is highly disturbed at the site due to browsing and grazing, construction activities and previous mining operations. Any pockets of natural/ pristine vegetation occurring on site are in a poor state. The impacts of clearing operations are considered to be of low significance due to the low intensity, extent and duration of the impact.

Mitigation

Measures outlined in Section 7.2.6 will be implemented to minimise any negative construction phase impacts. Areas to be stripped will be kept to a minimum. Furthermore, appropriate rehabilitation and re-vegetation of the site will be undertaken in order to return the site to a satisfactory condition. It should be noted that the re-vegetation programme will focus on the introduction of natural vegetation

4.2.6 Animal life

Given the level of disturbance of the area, the inherent mobility of fauna as well as the low animal diversity, impacts on animal life and subsequent loss of habitat are considered to be of low significance.

Mitigation

Measures outlined in Section 7.2.7 will be implemented to minimise any negative construction phase impacts. Any animals encountered during clearing operations will be removed and released in an area away from the operations.

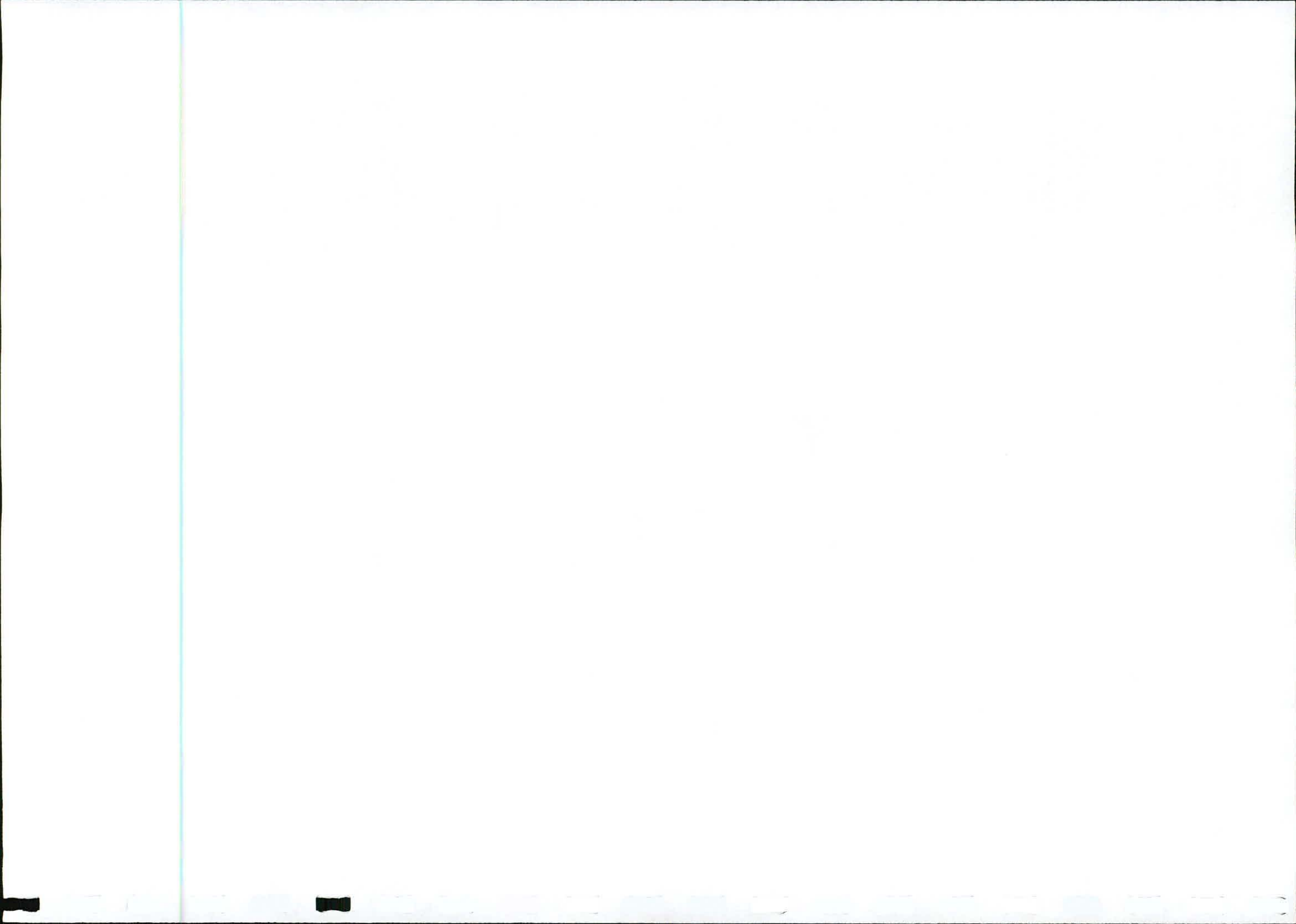
4.2.7 Surface Water/Water courses

The borrow pit is located in the area facing but not in close proximity to Ngcibira river and intermediate streams. The areas of the drainage system and any other watercourses are to be designated as No Go areas for the project. Accordingly the potential for sedimentation of watercourses is quit marginal. Ponding of water and run off with negligible impacts could occur on site. Existing surface water would be handled in such a way that outflow does not cause severe erosion. Furthermore, with mitigatory measures in place, mining operations would not alter catchment yield of watercourse or impact significantly on the water quality. This impact is therefore of low - medium significance.

Mitigation

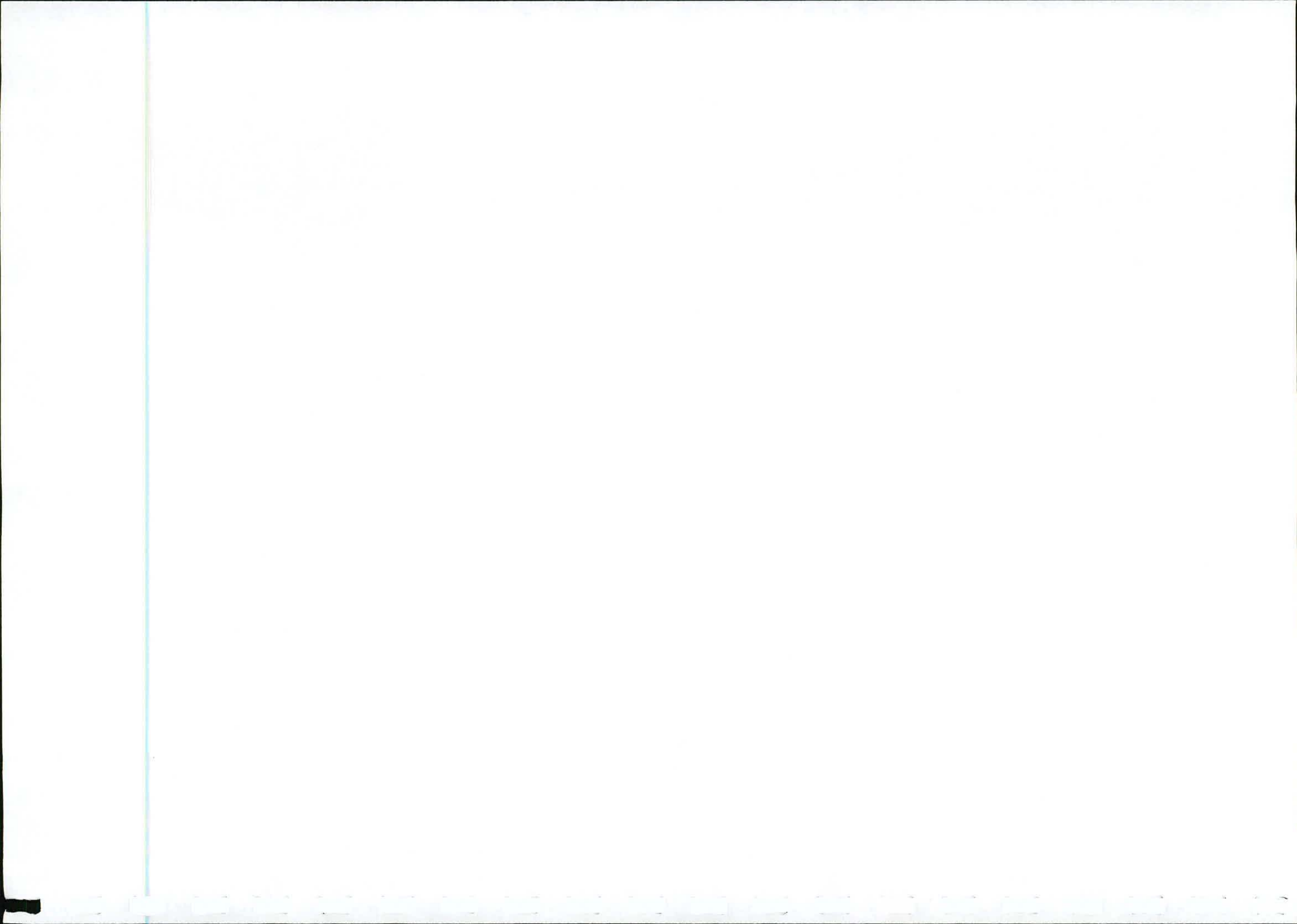
Mitigation measures include:

- Construction activities including camps, are to be located at least 20 metres from streams and on areas of gradients not exceeding 1:6;



Mitigation

In addition to the measures outlined in Section 7.2.1 6 the community will be contacted prior to onset of activities on site. They will be informed of the anticipated timeframes, possible inconveniences as well as supplied with contact numbers of the relevant parties should they have any queries or complaints.



4.3 Decommissioning phase

Due to the smaller scale of the Decommissioning Phase activities, its associated impacts have not been assessed to the same level as those for the Construction and Operational Phases. Projected impacts on the biophysical and social environment are expected to be negligible and could be considered an improvement on the status quo.

Envisaged adverse impacts for this phase of the Project are few, and are mainly associated with the scaling down of works, removal of temporary structures and implementation of the rehabilitation/ re-vegetation programme. These include:

- **Topography and soils:** Filling of the mined area with spoil material, shaping of the slopes and rehabilitation would constitute a positive impact, of high significance for the environment.
- **Air quality:** Dust will be generated from slope shaping activities as well as general vehicle activities in the project area. Due to the small scale of activities during this phase, this is considered to be of low- negligible significance.
- **Noise:** Vehicular activities on site will generate noise. The intensity of such an impact is considered low. The short duration of the decommissioning activity, suggest that noise will be of low- negligible significance during this phase.
- **Vegetation:** Rehabilitation of slopes will involve seeding which, pending the success of the re-vegetation programme could constitute a positive impact of high significance for the environment.
- **Surface water:** Rehabilitation and appropriate shaping of slopes and removal of stockpiled material will decrease the likelihood of erosion. This impact is considered of low- negligible significance.

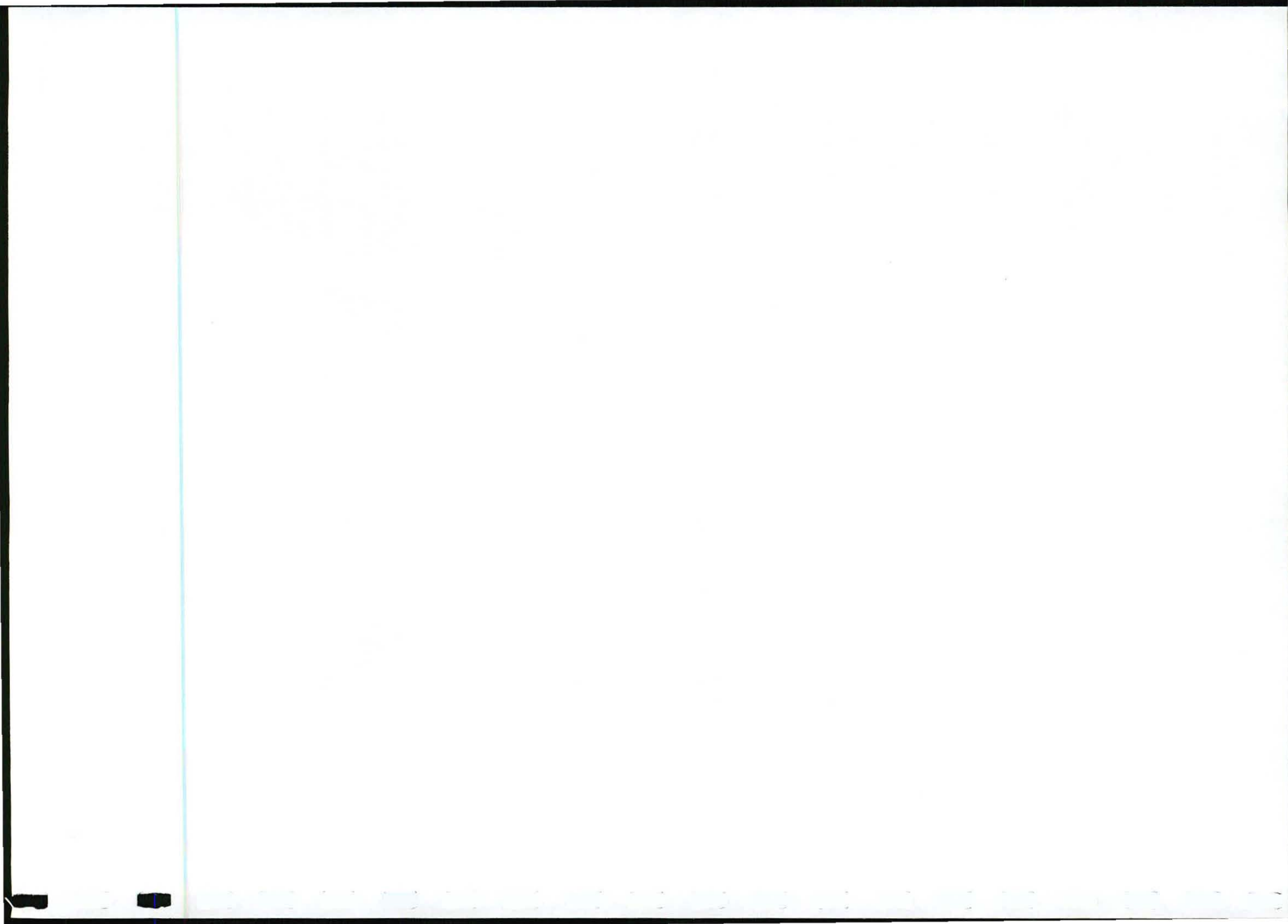
The overall assessment of the environmental impacts caused by this decommissioning stage is that the negative impacts are likely to be of low- negligible significance relative to previous activities.

See Section 7.3 for management/ mitigatory measures as well as details of the actions to be undertaken as part of the rehabilitation/ re-vegetation programme.

4.4 Post-closure phase

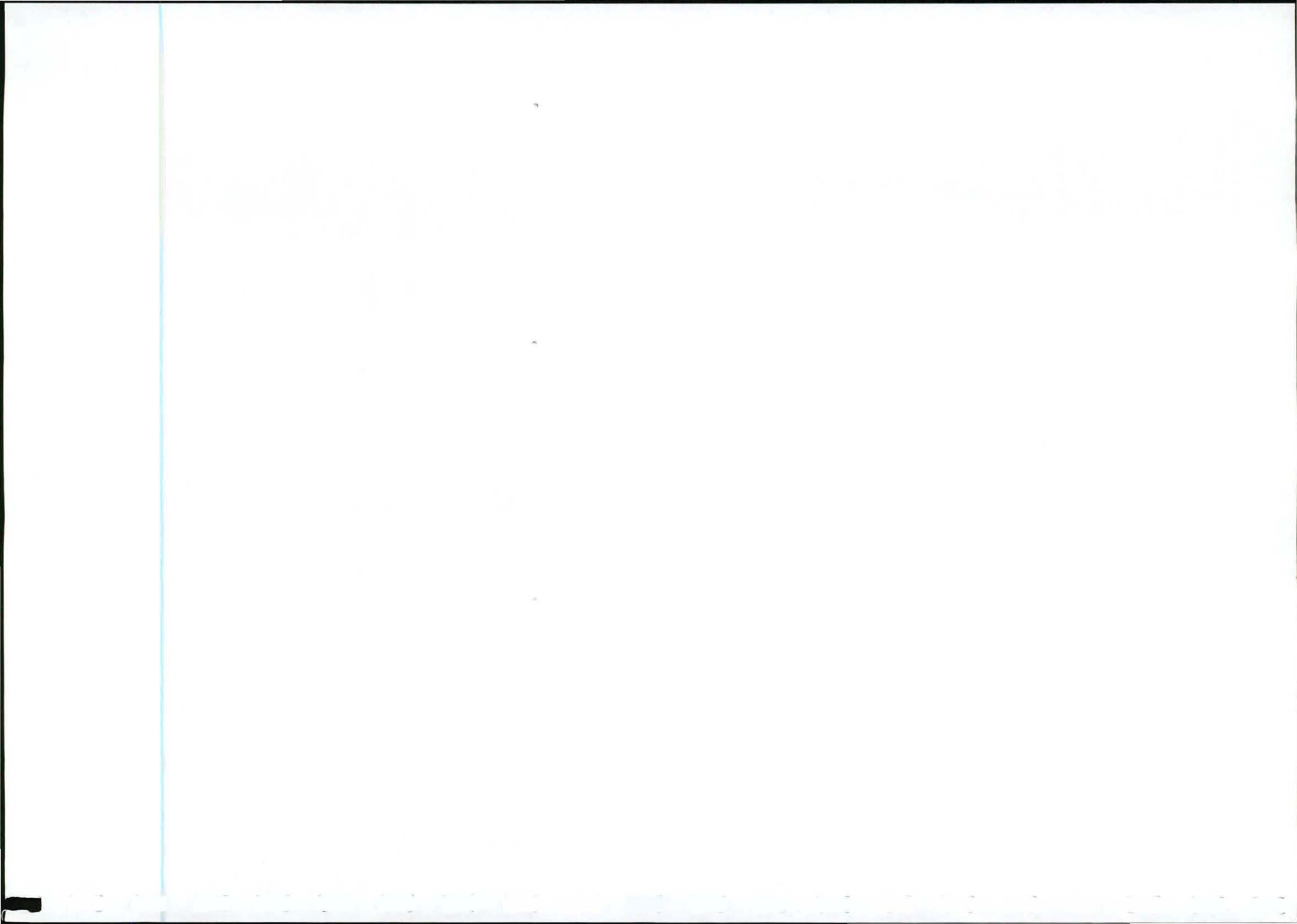
Provided that the rehabilitation steps proposed in this EMP are adhered to, possible post-closure impacts would be limited and generally of low-negligible significance. These impacts would primarily relate to:

- **Face subsidence:** There may be some subsidence in the levels of the face of any shaped areas/ slopes should depressions be inundated after the first heavy rains of the season. This will be mitigated by seeding and watering of the shaped face immediately after reshaping of the slope. This impact is considered of low significance.
- **Surface water:** The possibility exists that following heavy rains, limited pooling in the area may occur. This impact is considered of low significance.
- **Visual aspects:** The site, once rehabilitated would have a pleasing aesthetic. However this would largely be dependent on the success of the re-vegetation programme. Furthermore, the strict regulation of mining and prohibition of illegal mining at the site could reduce the significance of this impact. In general this impact could be considered of moderate, positive significance.



- **Land potential/ land use:** The rehabilitation activities undertaken will constitute an improvement in the environmental status of the site. The fact that the site would be re-vegetated using indigenous elements, restricted to prevent misuse of the land, could possibly represent the most significant positive impact for the environment.

The overall assessment of the environmental impacts likely during this stage is that they are of low significance, provided the mitigatory measures are effectively implemented. Moreover, rehabilitation and re-vegetation with indigenous elements can constitute an improvement on the status quo with an associated impact of moderate positive significance.



5 MOTIVATION FOR THE PROPOSED PROJECT

5.1 Benefits of the project

The material excavated from the borrow pit will be used to provide dolerite material required for the proposed upgrading of Toleni access road. The site will then be revegetated and restored according to guiding regulation to acceptable standard. The access road is located in close proximity to the borrow pit and will service the areas of Hohane, KwaHala, and Dangwane for the improvement of transportation to and from these areas. The project is also expected to generate employment opportunities for the community as labour will also be sourced from the community. Better transportation in the community will also entail better local administration, improved potential for economic growth and standard of living.

5.1.1 Estimate of expenditure required to bring the mining activity into production.

The construction phase of the mining operation is small in comparison to the operational activities and the associated expenses will be minimal.

5.1.2 Estimate of total annual expenditure at full production.

A total of R750,000 will be spent on the opening, mining, and closing of the borrow pit. Financial provision for rehabilitation in terms of regulation 56 of the MPRDA, 2002 (Act 28 of 2002) will be provided as part of this total expenditure for the mining project.

5.1.3 Estimate of labour force at full production.

A labour force of approximately 4-7 would be required for full utilisation of the borrow pit. During recruitment of labour the contractor will strive to uphold the principles of employment equity. It is anticipated that normal working hours would be kept.

5.1.4 Estimate of the multiplier effect on the local, regional and national economy

This mining activity is crucial, particularly in terms of providing a cheaper source of construction material. The multiplier effect of the mining would be significant to the proponent, but not necessarily to the economy of the area.

5.2 Consideration of project alternatives

The suitability of the materials and the economics of transporting this material to proposed road have defined the proposed borrow pit site location. The site was selected taking into consideration the existing budget and transportation costs from borrow pits in distant location. Other sources in the area were considered. However, these were ruled out, due to their remote location and resultant associated transportation costs.



6 DETAILED DESCRIPTION OF PROPOSED PROJECT

This Section describes the surface infrastructure and Construction and Operational phase activities.

6.1 Surface infrastructure

6.1.1 Access

No new road construction is expected for the provision of access to the borrow pit site as there is an existing access road servicing it. The existing internal road could need repair/upgrading depending on the status quo at the time of opening the quarry.

6.1.2 Site buildings

Minimal infrastructure would be required for the activities. This infrastructure would be temporarily located at the borrow pit site and would include a portable toilet. Temporary maintenance facilities may be required, but no residential facilities would be required. No permanent camp would be required however; temporary storage containers may be located on site.

All areas used for the location of facilities at the burrow pit site, including stockpiling areas, would be subject to the rehabilitation programme outlined in this document.

6.1.3 Water and waste management

Water utilisation would be carefully controlled. Although requirements for the various operations are unknown at this stage, management guidelines for both water and waste are outlined in Section 7 of this report.

6.1.4 Disturbances to natural water courses

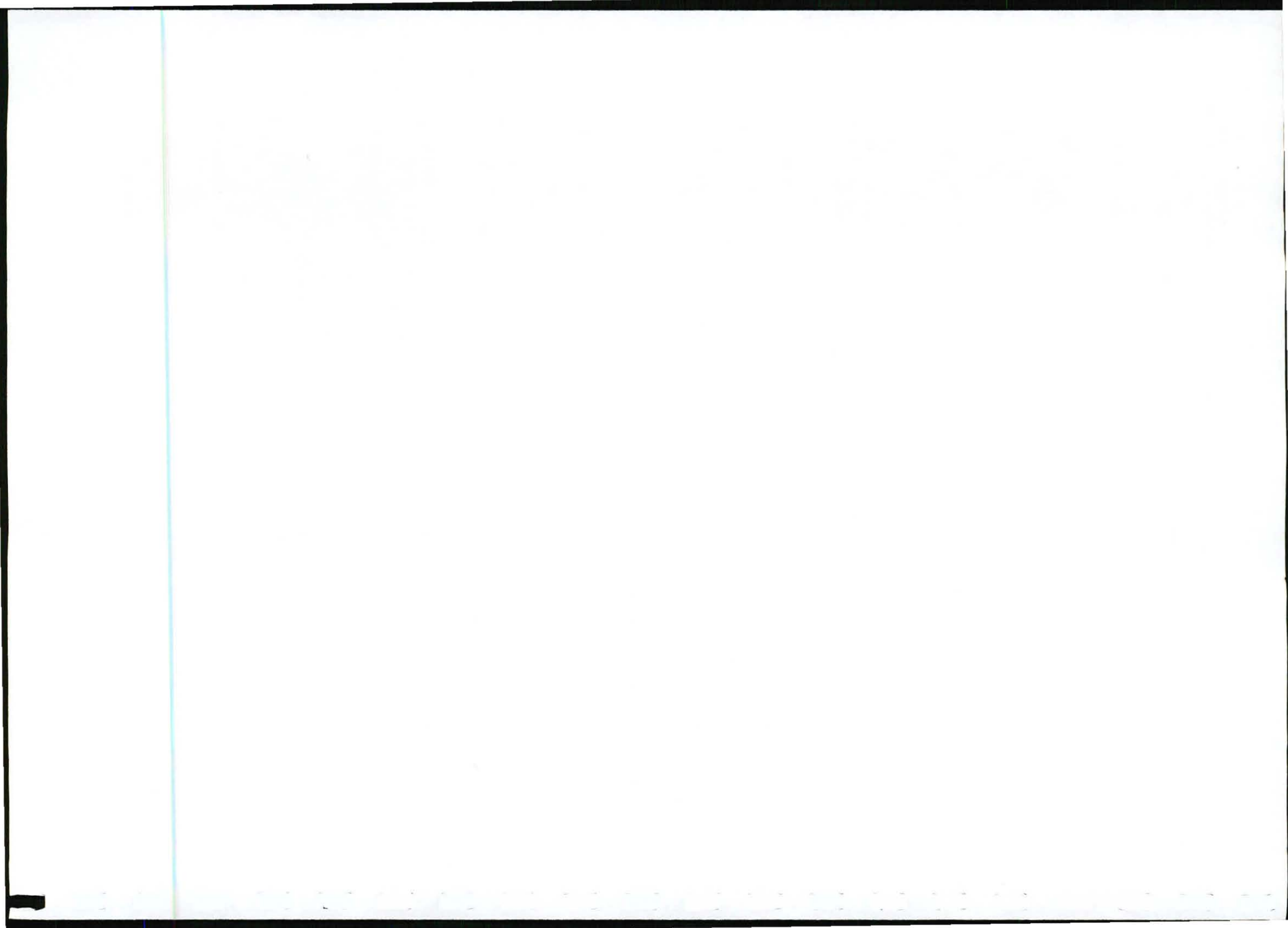
The mining activity will not be of a large scale and the site is not in very close proximity to the nearest stream. Areas close to the drainage system west of the proposed site are to be marked "NO GO". No activity is permitted in these areas at any stage of the project. Abstraction of water from any water course shall not be permitted, unless special permission has been granted by DWAF and/or DME.

6.2 Construction phase

The construction phase of a mining activity would typically include all those steps required to bring the operation to the point where excavation can commence. It would entail the establishment of temporary site facilities, security facilities, ablution facilities and maintenance facilities (where required). The exact location of these facilities is unknown, however existing disturbed areas will be utilised where possible.

This will include the following activities for the proposed quarry1:

- The boundaries of the borrow will be clearly pegged out, and pegs will remain in place until operations have been completed;
- Topsoil and overburden will be removed from the footprint as follows.
 - The upper 150- 300 mm topsoil, together with the grass will be stripped. Topsoil will be stockpiled in heaps no higher than 2 m, located in disturbed areas where possible.



- Basic stormwater facilities would be constructed to ensure that there is no concentrated runoff and concomitant erosion. Detailed stormwater management guidelines are provided in Section 7 of this report; and
 - The access roads to the quarry will be upgraded.
-

6.3 Operational phase

The following operational activities apply to the borrow pit operation:

- The material would be loaded directly onto haul vehicles. Vehicles would utilise the existing access road at the quarry;
 - The borrow pit would be excavated by means of ripping (using excavators and dozers) and loading with a front end-loader.
 - No blasting will be undertaken;
 - No crushing or screening will be undertaken at the quarry site;
 - The excavated material will be transported directly to, and placed alongside, the road sections to be upgraded, thereby not requiring stockpiling of material at the borrow pit site; and
 - The pit will be mined from the extreme south side of the borrow pit moving south easterly. All access to the banks of the borrow pit will be from within the borrow itself, so as to reduce the risk of erosion on the side slopes.
-

6.4 Decommissioning phase

The decommissioning of the mining will involve cessation of operations. The following remediation activities will be undertaken:

- Shaping of the final working face. The final face will be sloped to a 1:3 gradient using overburden generated in the mining process. This requires minimal reshaping as a mining gradient of approximately 1:3 has been applied during the operational phase.
- Slopes will be dressed with the original topsoil that has been stockpiled.
- Slopes will be seeded with a grass mix, left for re-invasion of indigenous vegetation and watered regularly.
- All equipment will be removed from the borrow pit area.
- Access tracks will be scarified and seeded.



7 ENVIRONMENTAL MANAGEMENT PROGRAMME

This Environmental Management Programme (EMPr) details the environmental actions to be taken prior to, during and after the operation of the project. The EMPr aims to promote proactive management of the environmental implications of exploitation of this source as well as management of rehabilitation as part of closure of the project site. In terms of the Minerals and Petroleum Resources Development Act, (No 28 of 2002), the EMPr, is legally binding and shall be adhered to.

7.1 Roles and responsibilities

Roles and responsibilities have been defined in terms of the implementation of the environmental specifications. It should however be noted that the applicant for mining authorisation, namely the Department of Roads and Transport, is responsible for overall operation and rehabilitation of the site. Department of Roads and Transport has the obligation to reach agreement with the Director: Mineral Development concerning the implementation of pollution control measures. Furthermore, the relevant closure process as contemplated in section 43(3)(d) of the Mineral and Petroleum Resources Development Act, (No 28 of 2002) shall be the responsibility of Department of Roads and Transport after cessation of operations at the site

7.1.1 Environmental Control Officer (ECO)

Department of Roads and Transport should ensure the appointment of an Environmental Control Officer (ECO) to ensure and monitor the implementation of the environmental specifications for the construction, operation, and closure/decommissioning of the project.

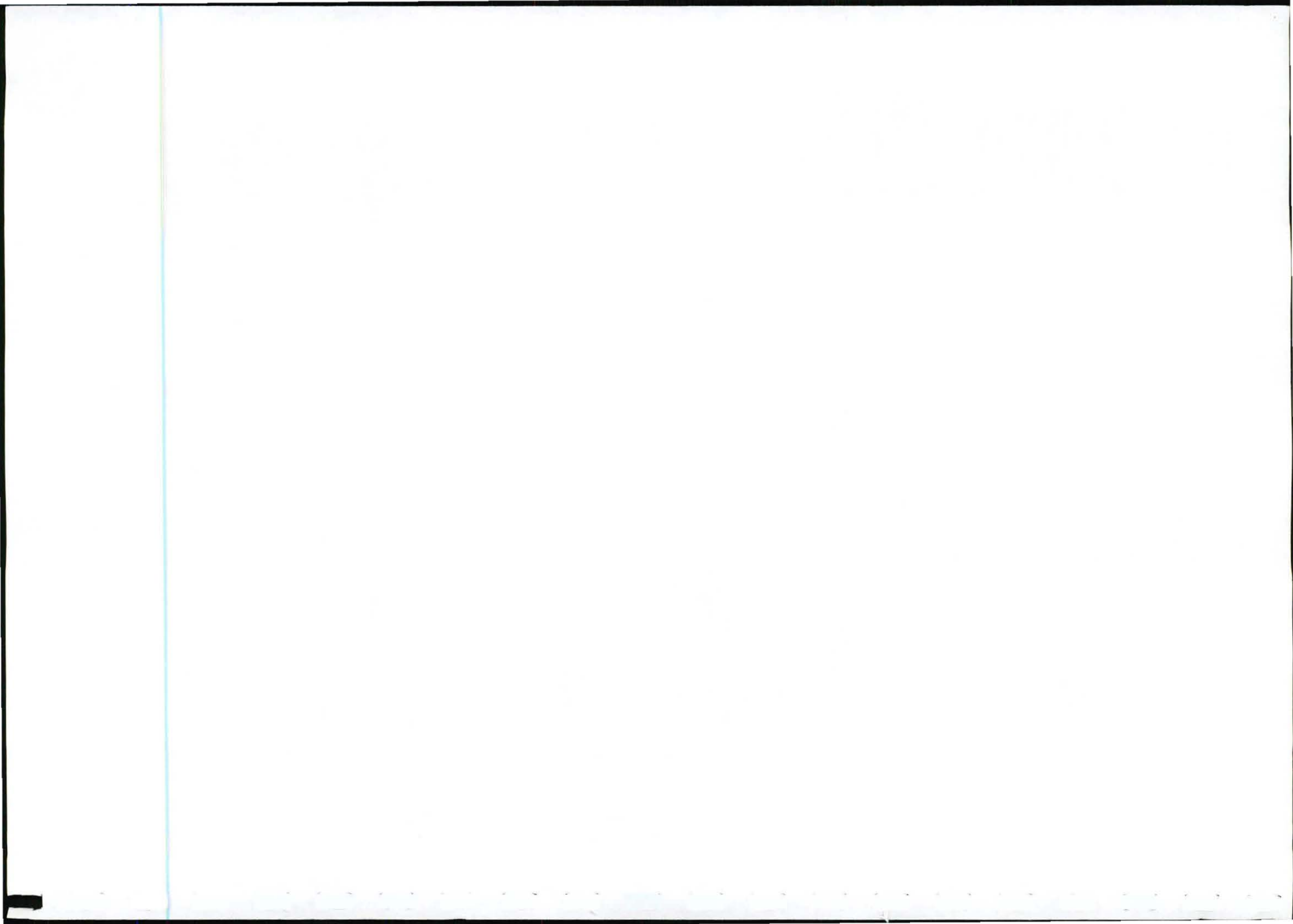
The ECO will have the following responsibilities:

- To advise the applicant on the interpretation and enforcement of the Environmental Specifications;
- To supply environmental information;
- To demarcate particular sensitive areas, No Go areas and pass specific environmental instructions through the applicant, to the personnel on site, concerning works in these areas;
- To undertake regular performance monitoring inspections and communicate the findings thereof to DME and the Project Manager.
- To undertake a closure inspection once the mine area has been fully rehabilitated.

7.1.2 Project Manager

The Department of Roads and Transport (the Applicant) will be the project managers and their responsibilities will include:

- Complying with the Environmental Specifications contained in the Environmental Specification as well as this document;
- Being familiar with the EMP;
- Undertaking all the issues, specifications and requirements of the Act, and the Minister in respect to the project;
- Ensuring environmental awareness among his employees and sub-contractors so that they are fully aware of, and understand, the Environmental Specifications and the need for them.
- Undertaking rehabilitation of all areas affected by construction activities to restore them to their original states, as determined by the ECO and Engineer.
- Undertaking the required works within the designated working areas.



This EMP adopts a chronological approach to the presentation of the different management requirements. The requirements for the operational phase, construction, decommissioning and closure phase are dealt with in **Sections , 7.3 and 7.4** respectively.

7.2 Construction and Operational phase

The following sections detail actions that are to be taken in order to prevent or reduce those adverse impacts, which have been deemed significant and worthy of preventative action. Any variations to the following measures shall be discussed and approved by DME and the Engineer.

It should be noted that, considering the Construction and Operational Phase impacts are so similar, management measures for these phases have been consolidated into one section to avoid repetition.

7.2.1 Geology

Not applicable.

7.2.2 Topography

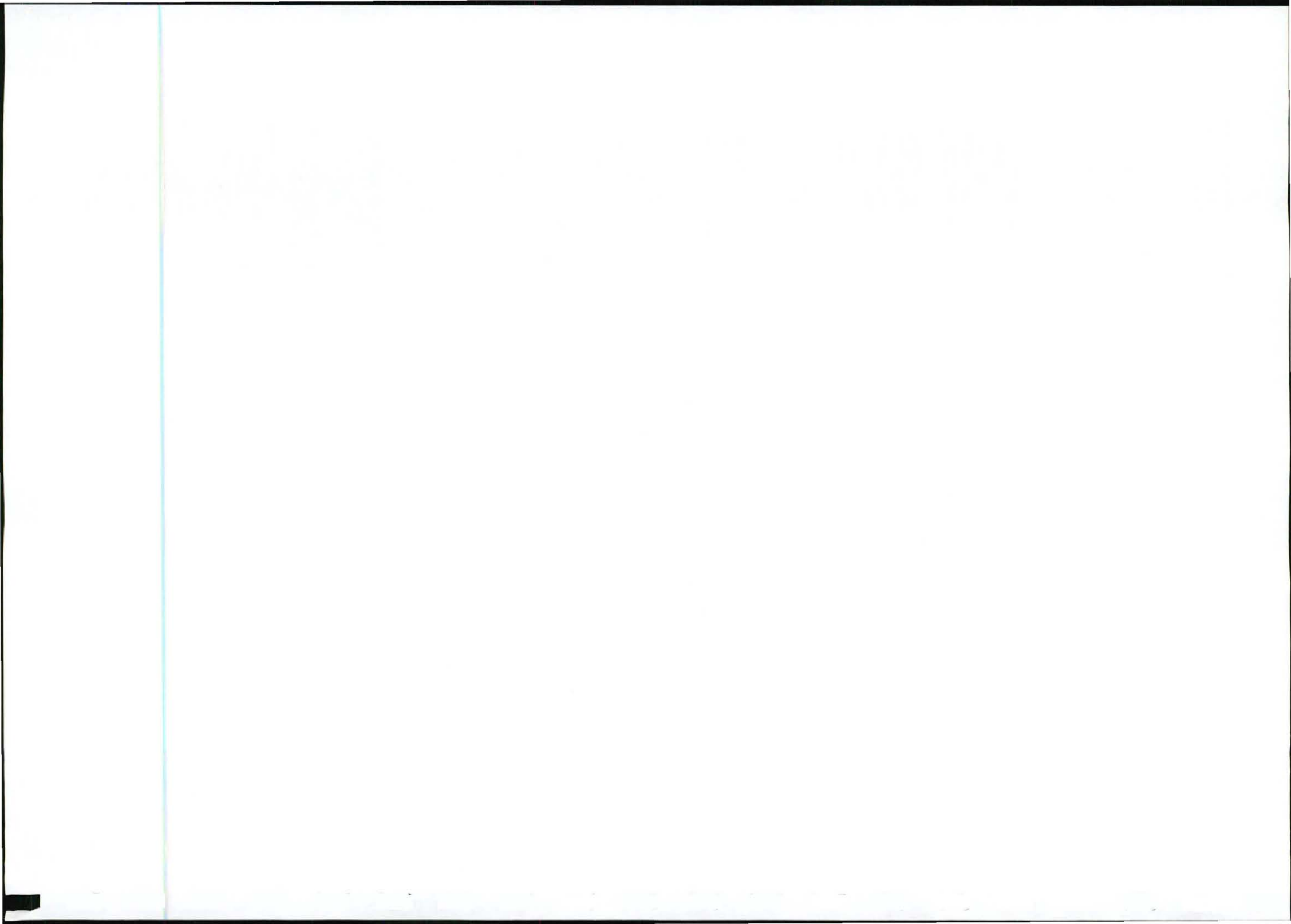
The following shall be completed/ undertaken where possible:

- The mining area shall be clearly demarcated in the requisite fashion (using wooden pegs, permanent beacons etc). All corners and edges shall be clearly visible and mining and preparations shall only be undertaken from within this area.
- The natural contours of the land are to be retained in the development of the quarry area and restoration thereof is to be maximised during rehabilitation.
- All stockpiling of topsoil is to be undertaken in a co-ordinated manner and consolidated so as to minimise the number of stockpiles.
- The borrow pit will be mined to a depth of approximately 2m below the natural ground level in the south eastern extent over an area of approximately 1,5 ha. Should material be available at greater depths, excavation thereof and method shall be approved by the ECO.
- Mining shall not create dangerously steep slopes; preferably gradients shall be no steeper than 1:3.
- Flatter sections shall be mined in preference to slopes.
- A buffer strip of at least 5m shall be maintained between the adjacent road

7.2.3 Soils

The following shall be undertaken to ensure the responsible clearing, stockpiling and re-instating of topsoil:

- Topsoil is to be stripped from all the working areas prior to commencing work. Topsoil shall be removed to a depth of 150 - 300 mm over the footprint of the borrow pit. Grass shall not be stripped separately, but shall be stripped and stockpiled together with the topsoil.
- Topsoil is to be stockpiled, for use in subsequent rehabilitation, in designated areas as approved by the Project manager and or the ECO. If required, stormwater diversion berms shall be constructed to protect the topsoil stockpile. Stockpiles shall not exceed 2 m in height or have slopes exceeding 1:1 and shall be located in previously disturbed areas
- All stockpiles are to be consolidated in one area.



- A buffer zone of at least 5 m will be maintained between any topsoil stockpile and the edge of the excavations so as to prevent collapse of the working face.
- Topsoil stockpiles shall not be compacted or contaminated in any way, including oil, diesel, refuse or any other material, which may inhibit vegetation growth.
- Topsoil stockpiles shall not be covered with any material that could encourage composting or kill off seed/ vegetation (only hessian covers are permitted where erosion by wind or water could pose a problem).
- The time between removal of topsoil and overburden and the working of the quarry is to be kept to a minimum.
- Overburden shall be stockpiled separately from topsoil, in stockpiles not exceeding 2m.
- Stockpiles shall not be placed within any natural drainage channels where damming of water or washaways could result
- No vehicles are allowed to traverse areas outside of the demarcated area. All access to, clearing of, and topsoil removal is to be undertaken from within the borrow pit footprint.
- Stripping of areas shall be phased.
- No target material is to be stockpiled beyond the quarry footprint.
- Dust suppression and erosion prevention measures are to be implemented in summer, during windy conditions and as required.
- Erosion prevention measures on slopes could include soil stabilisation by mulching or live staking.
- Erosion prevention at stockpiles shall include covering when necessary.
- Topsoil and overburden shall be replaced as soon as mining of areas is complete.
- It should be noted that mining during the rainy season has inherent risks associated with washaways, instability of slopes, increased erosion and sedimentation. Accordingly, mining during the rainy season should be avoided.

7.2.4 Land capability

As the site will be rehabilitated, future land capability is increased. Measures to be implemented that could maximise this potential include:

- The extent of disturbance of areas shall be restricted by limiting clearing to only the area necessary for mining of the site as well as minimising the removal of indigenous vegetation.
- Vehicle movements shall be confined to existing tracks and to within the mining area.
- Stockpiles are to be located on existing areas of disturbance.
- All people, equipment and machinery are to remain within the boundaries of the working area.

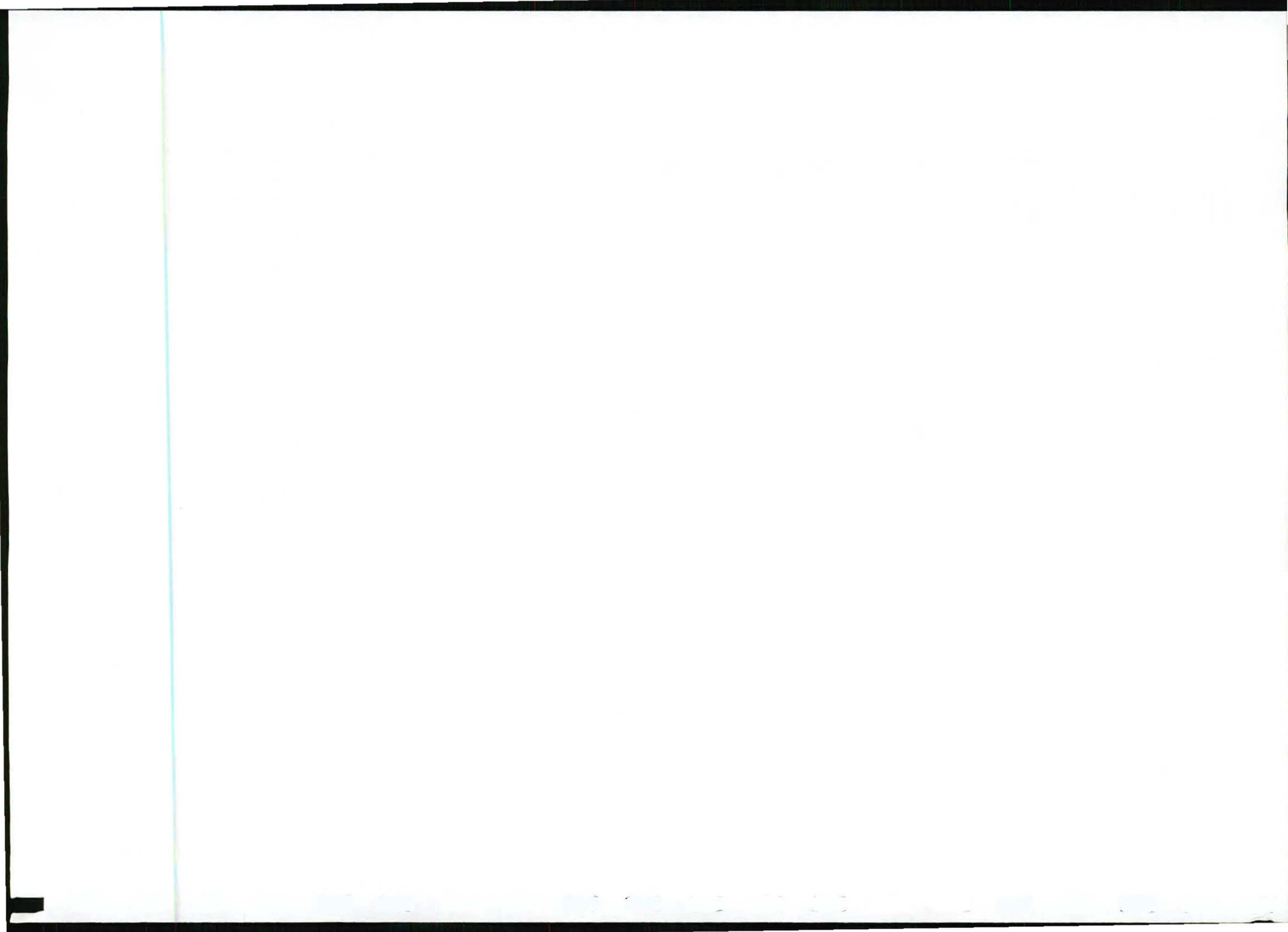
7.2.5 Land use

Not applicable.

7.2.6 Natural vegetation

The following actions shall be taken so as to minimise impacts on the local vegetation:

- The mining site boundaries are to be clearly demarcated with wooden stakes. No activity beyond this area is to be permitted.
- Any clearing required beyond the demarcated borrow pit area, shall be confirmed with the Project manager and/or ECO prior to its undertaking.



- The surrounding vegetation is not to be used for any purpose.
- All alien vegetation is to be removed from the site for the duration of activities at the project, including the rehabilitation phase. This vegetation can be removed by hand or mechanical means. Root material is to remain, to bind the soil. Larger trees can be cut and the stump treated with approved herbicides or Garlon. Cleared alien material shall be removed and disposed of off of site at a site approved by the Project manager and/or ECO.
- All indigenous vegetation removed shall be mulched and mixed into the soil stockpiles, this would serve as a bonding agent as well as supplement the seed base for future re-vegetation.
- Prior to the clearing of the access track within project area, the ECO is to examine the route and identify those plants worthy of transplanting. The project manager must implement the transplanting of these plants as directed by the ECO.
- All spoiling of indigenous vegetation is to be kept to an absolute minimum.
- Seeding of the worked areas will be undertaken during the rehabilitation phase, as detailed in **Section .**
- No open fires are allowed within the project area or its surrounds.
- No vehicle may move beyond the designated work areas.
- Any clearing required beyond the demarcated project area shall be confirmed with the Project manager and/or ECO and DME, prior to its undertaking.
- The surrounding vegetation is not to be used for firewood.

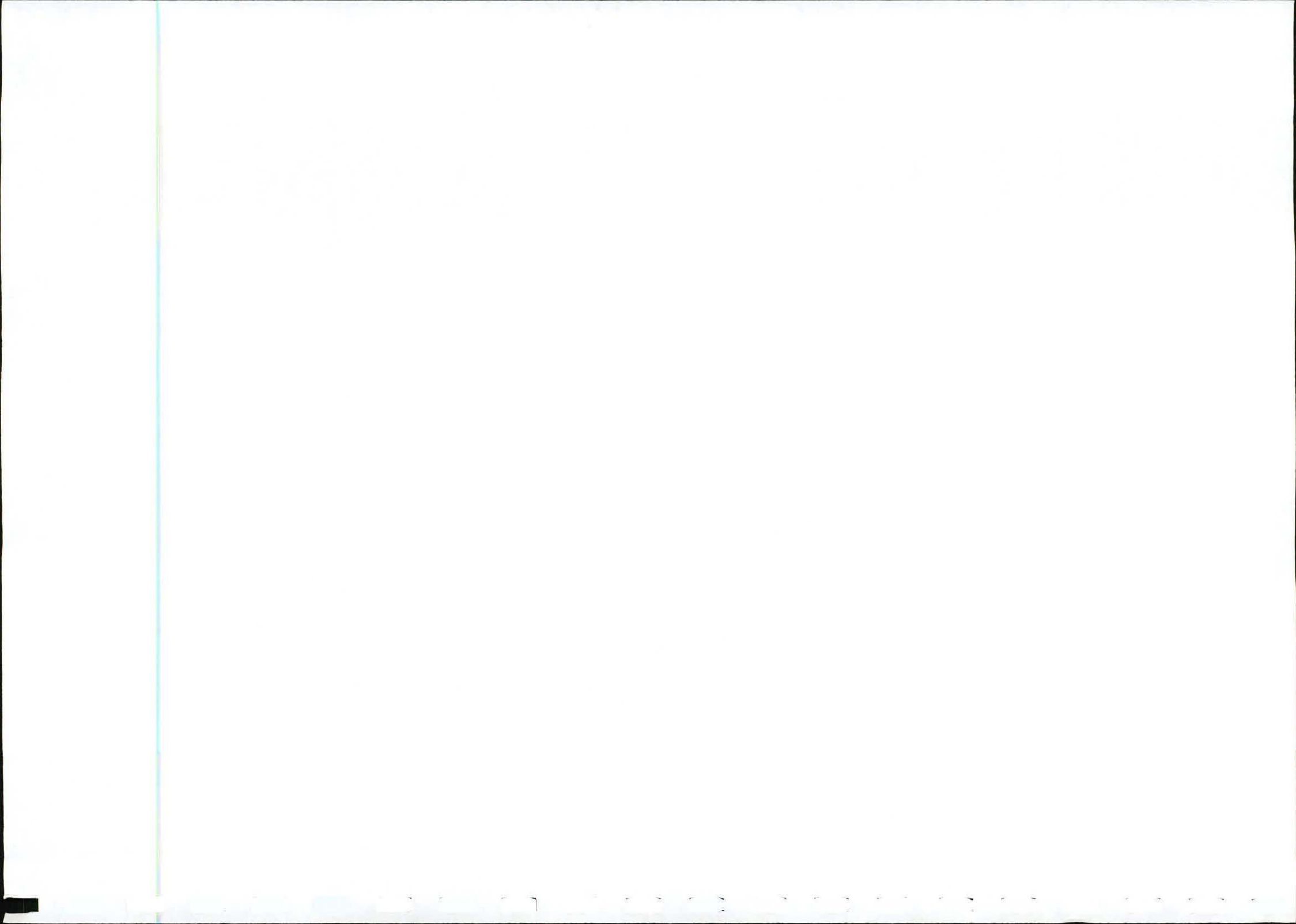
7.2.7 Animal life

- No domestic or wild creatures shall be brought into the project area.
- No domestic or wild creatures are to be caught, poached, snared or killed.

7.2.8 Surface water

No specific mitigatory actions required, as there are no natural watercourses in the vicinity. Temporary and permanent drainage works may however be required to prevent erosion by sheetflow and run off during borrow operations. Accordingly the following should be implemented where necessary:

- Cognisance of drainage paths and sheetflow shall be taken during planning of the project operations.
- Construction of a berm/ ridge or cut off drain at the top of the mined slopes to intercept or divert stormwater away from the mining area.
- Stone pitching could be constructed in drainage channels to create roughness and decrease the velocity of stormwater flows.
- Straw bales could be used to intercept sediment and decrease the velocity of stormwater flows.
- Berms/ cut off drains, stormwater diversion trenches are to be built where required, and in particular considered at the access road if required.
- Erosion of stockpiles by water shall be prevented by the inclusion of mulch in the material. This could comprise of mulched vegetation or imported straw or hay.
- Stockpiles shall be covered with hessian should erosion pose a problem.
- The pit shall be shaped in such a way that run off and sheetflow is controlled and erosion is not exacerbated.



7.2.9 Ground water

There are no significant impacts identified however mitigation measure may include:

- Use of drip trays in event of spillage of chemicals or fuels from the machinery being used on the site;
- All repair and refuelling of vehicles must be done off the premises of the project.

7.2.10 Air quality

Generation of nuisance dust must be minimised during the construction, operation and decommissioning of the project. The control of dust in the area is to be achieved as follows:

- Watering is to be undertaken when and where necessary.
- Machine operators are to operate in a responsible manner, using the appropriate dust masks.
- Carting Vehicles operating in and around the quarry are to observe safe speed limits (i.e. 40 km/h).
- Appropriate dust control measures are to be implemented in summer, during dry and windy conditions and when necessary i.e. dust suppression by dampening or the addition of binding agents. No oils shall be used for dust suppression.
- Stockpiles are to be covered during windy conditions to prevent wind blown dust.
- Truck load-bodies are to be covered when hauling material in windy conditions.
- Fires are not permitted.

7.2.11 Noise

Control of noise pollution is to be achieved through the following:

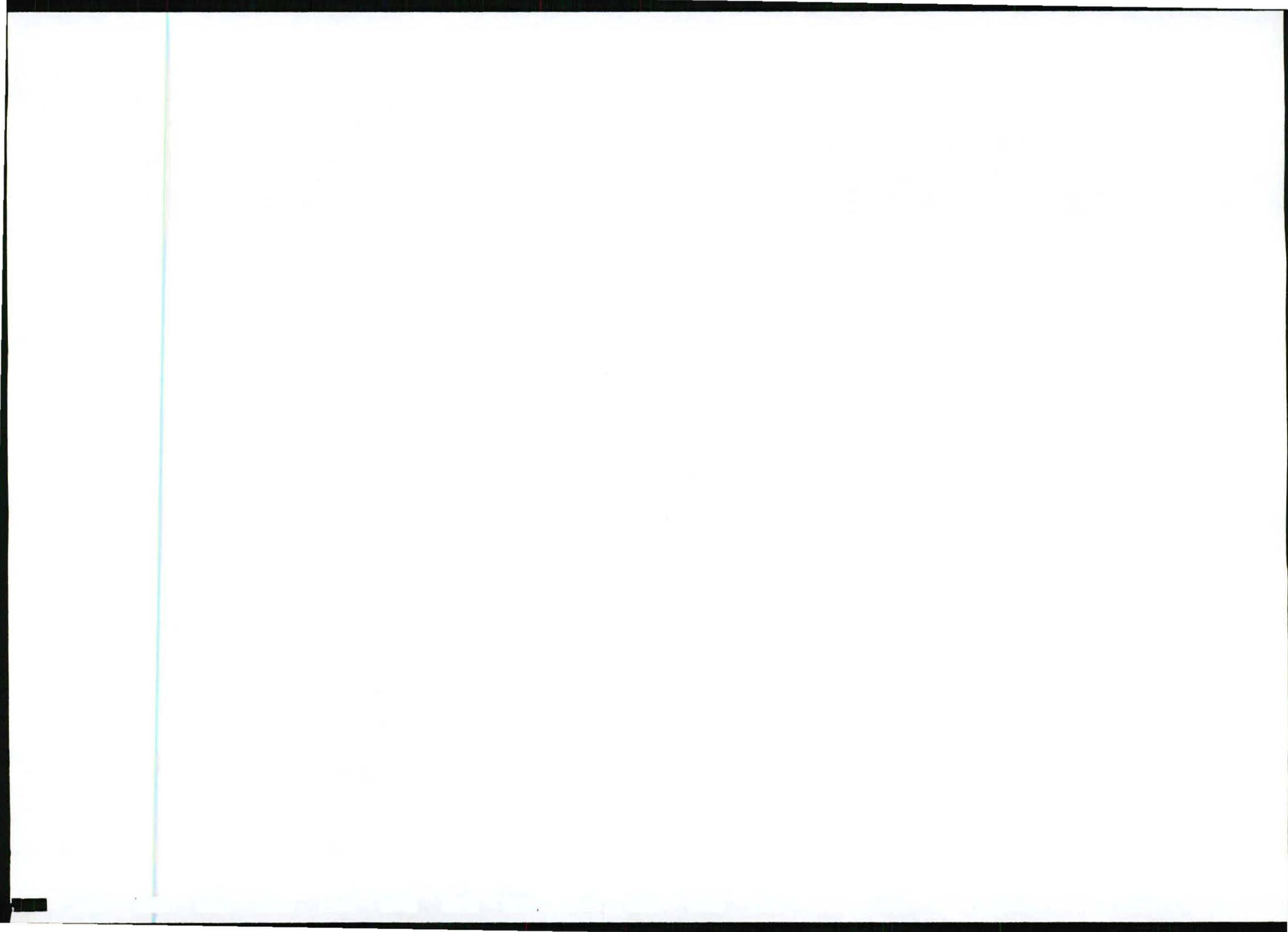
- Normal work hours are to be adhered to unless specifically instructed by the Engineer.
- No noises in excess of 85db are to be generated, as specified in Regulation 55 of the Environment Conservation Act.
- All machinery is to be well serviced, and equipped with well functioning, complete silencer systems.
- Machinery is not to be left running unless for a specific purpose.
- Machine operators are to use the appropriate noise protection devices.
- Advanced warning is to be given to the surrounding communities prior to any particularly noisy activities taking place.
- No blasting is permitted on site.
- No work is to be undertaken on a Weekends and Public Holidays.

7.2.12 Sensitive landscapes

No particular measures required over and above "good housekeeping".

7.2.13 Visual aspects

- When planning layout of the camp consideration should be given to the sensitive location of obtrusive structures as well as the use and location of bright lights;
- Stockpiles shall not exceed 2 m in height or have slopes exceeding 1:1. All stockpiling is to be planned and co-ordinated so as to reduce stockpile numbers, and minimise their visual impact;



- No litter will be allowed on-site. All domestic waste is to be collected daily, and disposed of at the closest approved landfill site;
- A vegetation screen must be left between the project area and any access routes or residential area not directly associated with the project. This would serve as a visual barrier and minimise the visual impact of the clearing and borrow operations; and
- No natural features are to be defaced, damaged or marked, for whatever purpose, during the course of the contract.

7.2.14 Access/ traffic safety

- Only existing access road is to be used. All personnel shall limit their movements to these roads only;
- Access tracks at the mining site are to be established with minimal clearing of vegetation;
- All gates are to be closed at all times;
- All roads are to be maintained;
- Dust suppression and erosion prevention measures are to be implemented where required;
- Vehicles operating in and around the project are to observe safe speed limits (ie 40km/h). All drivers are to be notified of the speed limit and educated regarding safe driving practice;
- Only licensed heavy vehicle drivers shall be permitted to drive trucks on public roads;
- Sign-posting and signalmen are to be considered at the intersection with the access road; and
- All loads are to be secured on vehicles. Should any spillage occur, it shall be cleared immediately to the satisfaction of the Project Manager and/or ECO.

7.2.15 Archaeological/cultural findings

The following measures are to be adhered to during all excavating operations:

- The operators of machinery are to halt all excavation operations should any graves or items of archaeological or cultural importance be detected or unearthed. In such a case, the Project Manager and/or ECO, DME and South African Heritage Resources Association SAHRA are to be notified immediately.
- In the case of unearthing graves, or archaeological or cultural items, no digging operations are to continue and reasonable measures to protect the remains shall be implemented until approval has been received from the Project Manager and/or ECO. The area is to be fenced and no trespassers allowed in the vicinity.

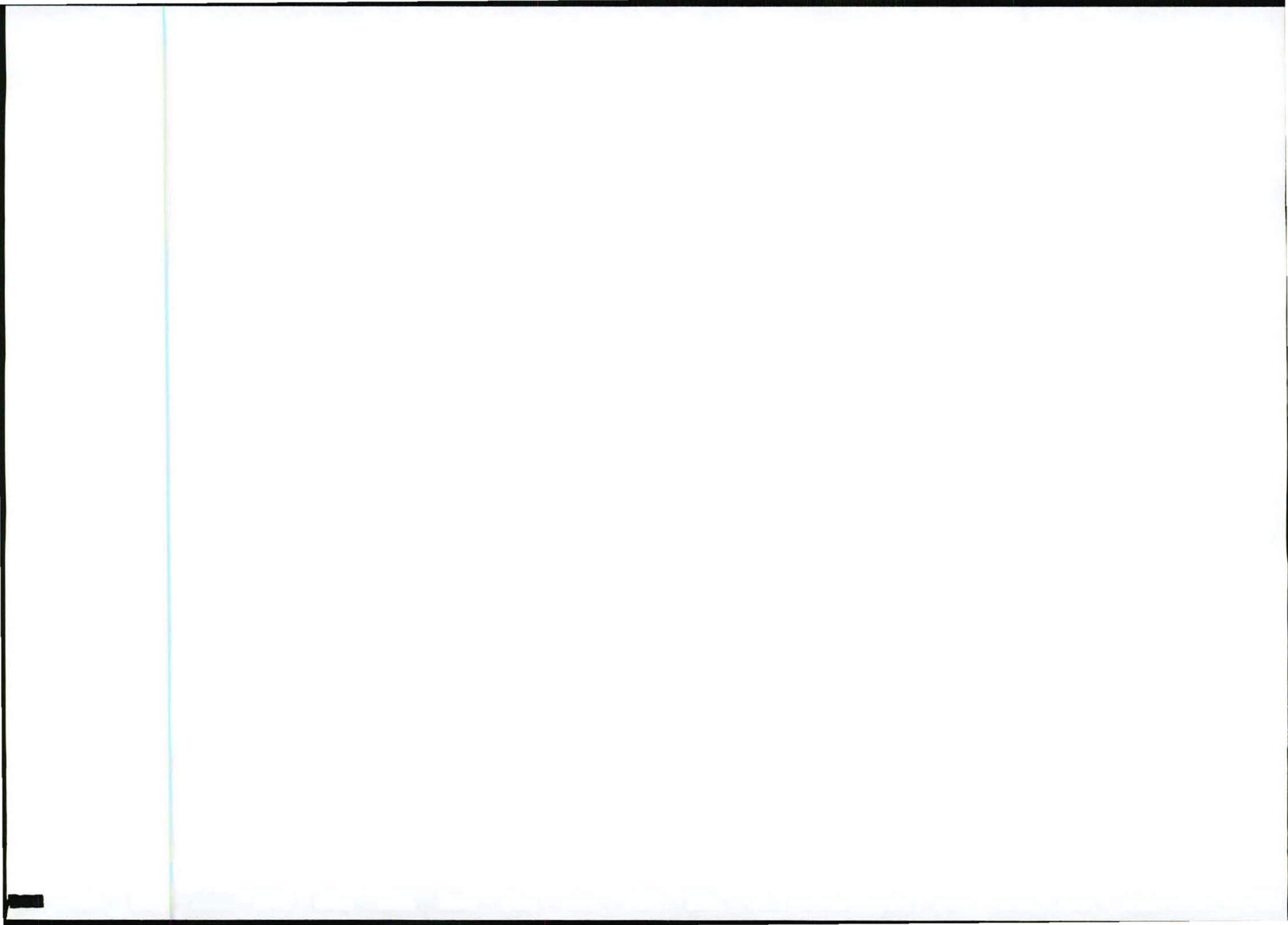
7.2.16 Regional socio-economic issues

As a means of maximising the benefits of this Project to the local community, the following are to be undertaken:

- The use of formerly disadvantaged local residents in the labour force is to be maximised where possible.
- Labour intensive practises are to be utilised where practical.
- Services and supplies from local companies are to be utilised where practical.

7.2.17 Interested and affected parties

- All adjacent land owners are to be informed of the project activities prior to commencement of activities.
- A mechanism is to be set in place for the reporting of complaints and to deal with queries.



- No unauthorised personnel shall be permitted on site.

7.2.18 Maintenance/ housekeeping

The following housekeeping and maintenance measures, which are considered good practice, are to be implemented:

- All vehicles are to be serviced regularly and kept in good working order. No leaking machinery shall operate on site.
- Maintenance and servicing of vehicles is to be undertaken off site. In emergency situations, critical maintenance may be performed however the ground is to be protected for spillage of hydrocarbons using a plastic sheet or drip tray.
- Drip trays are to be provided for all stationery plant.
- A contaminated water management system is to be implemented. All water contaminated with any substance shall be disposed of via this system, including water contaminated with diesel, oil, grease and paint.
- A solid waste management system is to be implemented and waste disposed of on a regular basis.
- All waste bins provided are to have lids and be scavenger proof.
- No littering is permitted and no waste is to be disposed of on site via burying or burning.
- No washing of vehicles and machinery is permitted on site.
- Washing and ablutions are to be conducted, by personnel, in the facilities provided. To this end appropriately sited chemical toilets are to be provided.
- Chemical toilets shall be secured against toppling in high winds.
- Chemical toilets shall be serviced regularly.
- No smoking shall be permitted in the vicinity of fuel storage areas.
- Material for the treatment of minor hydrocarbon spills as well as fire fighting equipment shall be readily available on site.
- Fire fighting equipment shall be provided and a Fire Officer appointed.
- Emergency procedures for fire fighting, accidental leaks and spillage as well as medical emergencies shall be communicated to all personnel. Furthermore, telephone numbers of emergency services shall be posted on site and communicated to personnel.

7.3 Decommissioning phase

7.3.1 Closure objectives

The project will be closed in such a manner so as to mitigate any likely or possible future impacts, be they environmental, or social in nature.

7.3.2 Closure plan and remediation activities

Figure lists the main rehabilitation actions to be undertaken:

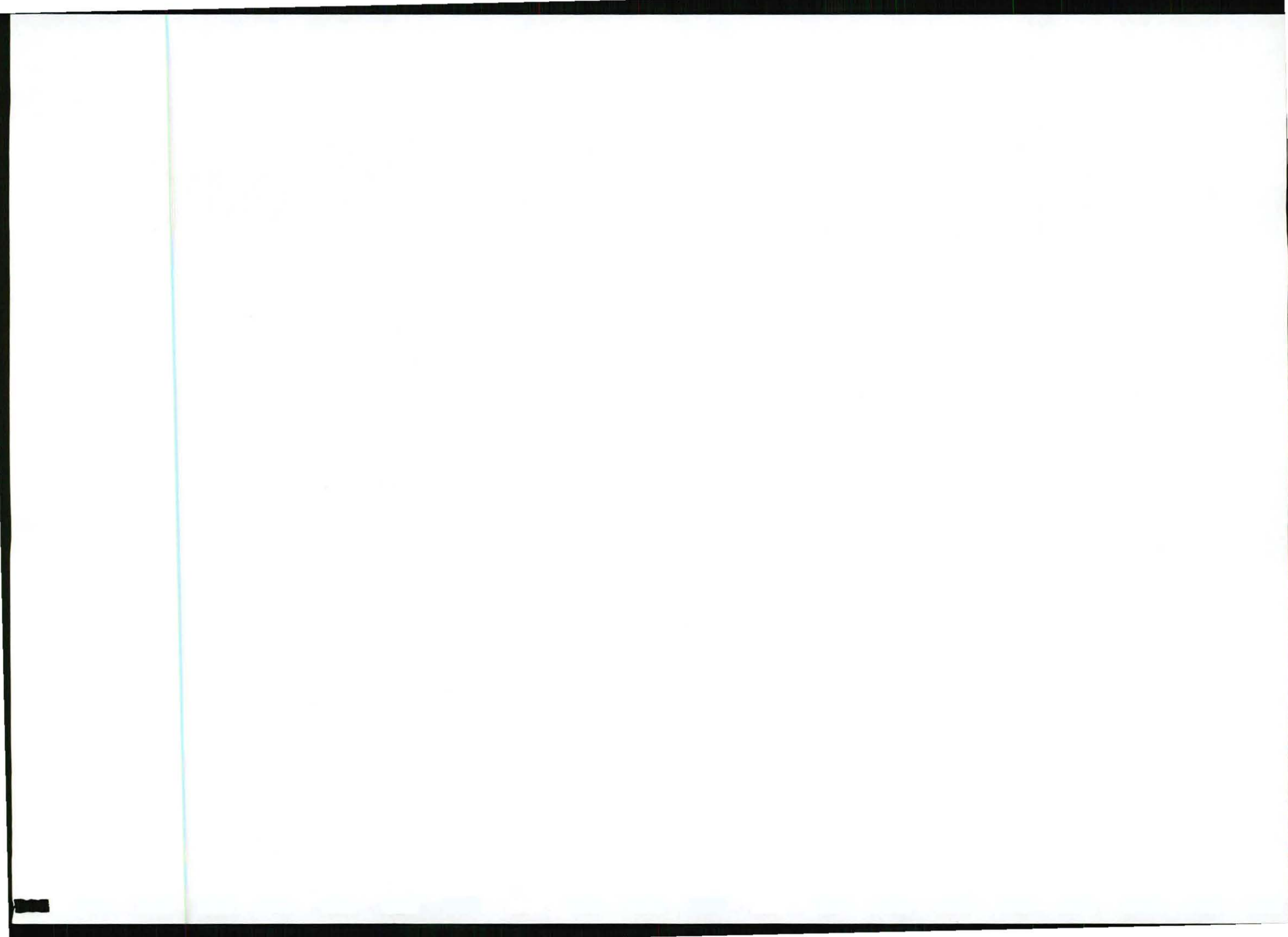
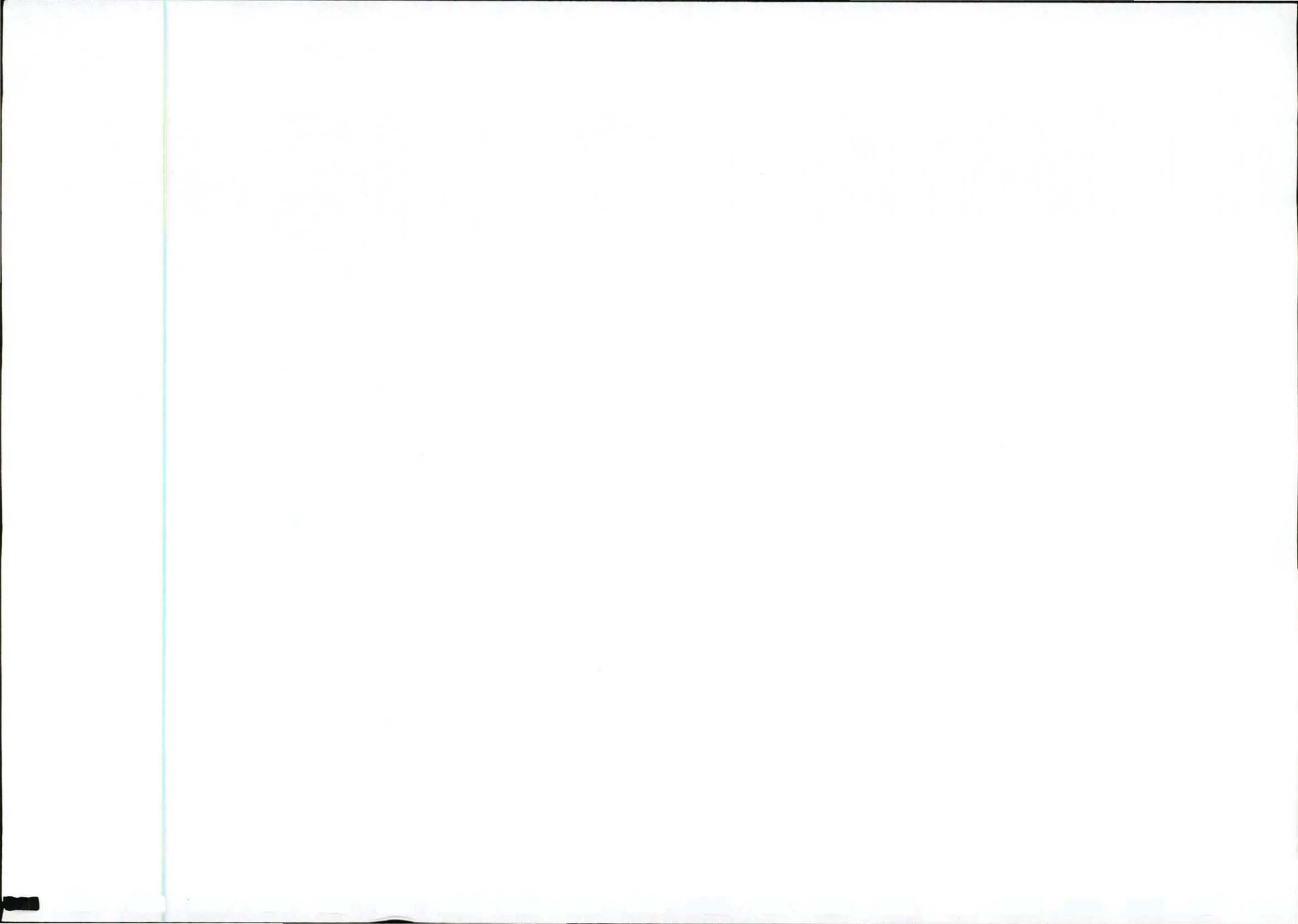


Figure : Rehabilitation activities to be undertaken

ACTIVITY	DETAILS								
Worked faces	Working faces will be shaped to follow the natural contours where possible and sloped to a maximum gradient of 1:3. Gentle slopes are to be created. The base and all cut slopes of the quarry are to be returned to a stable state and rehabilitated. All spoil from roadworks as well as overburden shall be placed in excavations and appropriately shaped in preparation for topsoiling and revegetation.								
Site clean up	All temporary structures are to be removed from site. Metal shall be removed from site and scrapped. All contaminated soil and material shall be removed and disposed of via the solid waste management system. Fencing shall remain unless agreed otherwise by SAFCOL/ MTO.								
Erosion prevention/ stabilisation of landform	Erosion prevention measures shall be instated in all areas that run risk of erosion as well as at the access road. Permanent drainage works shall be constructed in areas where natural drainage is to occur and in any areas where ponding is likely. Erosion of areas to be seeded shall be prevented by the addition of mulch or straw to the soil to act as a binding agent. All slopes shall be stabilised and benched appropriately.								
Rehabilitation programme	The mining operation will be phased as per the proposed mining programme therefore rehabilitation will be phased following each mining phase. At the end of each mining operation. Phase, areas will be rehabilitated including all worked quarry faces; areas cleared for stockpiling; and access tracks. Rehabilitation and revegetation would focus on the establishment of acceptable ground cover i.e. grass, which would be conducive to the reintroduction of indigenous elements, either naturally or through future importation of seed should it be necessary.								
Topsoil reinstatement	The formation of a distinctive interface between reintroduced topsoil and the <i>in-situ</i> , worked sub-soil is to be avoided. Accordingly, a primary layer of topsoil is to be laid, and "mixed" into the existing <i>in situ</i> material, either mechanically or by hand, as follows: <ul style="list-style-type: none"> • 40 mm primary topsoil layer to be "mixed" into the upper layer of the worked areas • A secondary and final layer (110 mm) of topsoil is to be placed over the "mixed" layer. 								
Compaction	The reinstated topsoil is not to be compacted and accordingly shall not be driven over.								
Fertiliser	Topsoil is to be augmented with a fertiliser (Organic 9:7:8 fertiliser or equivalent) applied at a rate of 300 kg/ha. Fertiliser is to be raked into the surface topsoil by hand, at the time of seeding.								
Seed application	Seeding will be undertaken, at the start of the growing season (i.e. Oct/ Nov), on the worked faces as well as the floor of the quarry, as decided by the ECO and Engineer. The grassing programme will commence immediately after operation of the quarry is completed, and the topsoil has been reinstated. Due to the small area to be seeded at a rate of 40kg/ha, seeding shall be conducted by hand, followed by a light raking of the soil (cover of no more than 5-7mm) and gentle but thorough watering. The following hardy grass seeding mixture, is to be hand sown after being well mixed: <p style="margin-left: 40px;"><u>Seed mixture:</u></p> <table style="margin-left: 80px; border: none;"> <tr> <td>Couch grass (<i>Cynodon dactylon</i>)</td> <td style="text-align: right;">10 kg/ha</td> </tr> <tr> <td>Teff (<i>Eragrostis tef</i>)</td> <td style="text-align: right;">10 kg/ha</td> </tr> <tr> <td>Weeping love grass (<i>Eragrostis curvula</i>)</td> <td style="text-align: right;">10 kg/ha</td> </tr> <tr> <td>Rye grass (<i>Lolium multiflorum</i>)</td> <td style="text-align: right;">10 kg/ha</td> </tr> </table> <p>Tree planting is encouraged, however Pine shall not be used.</p>	Couch grass (<i>Cynodon dactylon</i>)	10 kg/ha	Teff (<i>Eragrostis tef</i>)	10 kg/ha	Weeping love grass (<i>Eragrostis curvula</i>)	10 kg/ha	Rye grass (<i>Lolium multiflorum</i>)	10 kg/ha
Couch grass (<i>Cynodon dactylon</i>)	10 kg/ha								
Teff (<i>Eragrostis tef</i>)	10 kg/ha								
Weeping love grass (<i>Eragrostis curvula</i>)	10 kg/ha								
Rye grass (<i>Lolium multiflorum</i>)	10 kg/ha								
Mulching	The application of 400 mm mulch layer over the seeded area is encouraged. The feasibility of this will be confirmed by the ECO and Engineer and will depend on local availability.								
Watering	The first watering session is to be gentle but extremely thorough (using a tanker and fine spray), ensuring at least the upper 50 mm of topsoil is saturated. Thereafter watering is to be undertaken every third day for a period of 2 months. Watering is to be conducted preferentially towards the end of the day. Watering of the seeded area shall ensure the soil is sufficiently moist (50 mm of saturation), but shall prevent run-off and channelling. Water used shall be free for pollutants and shall be carried from an approved source.								
Draining	The site shall be gently sloped to encourage natural drainage, so as to prevent erosion in the area.								
Weeds	Any weeds that may become established during the rehabilitation period are to be removed.								



Maintenance	<p>A maintenance period of 12 months will commence upon completion of the 2 months watering. This period shall include the monitoring of the success of the revegetation programme and shall focus on the monitoring of slope stability, erosion, drainage, levels of alien infestation etc. The contractor would also be responsible for monitoring the level of reestablishment/ growth of pioneer/ indigenous elements on site. Should it be deemed necessary, indigenous seed/ plants shall be introduced on site to encourage invasion by these elements. Should evidence of incomplete or "patchy" seeding materialise during the maintenance period, the contractor would have to repeat the exercise at his own cost. Once the vegetation has established, the contractor will not be responsible for ensuring the survival of the vegetation during the maintenance period.</p> <p>A photographic record of the project shall be kept.</p>
-------------	---

7.4 Proposed timetable, duration and sequence

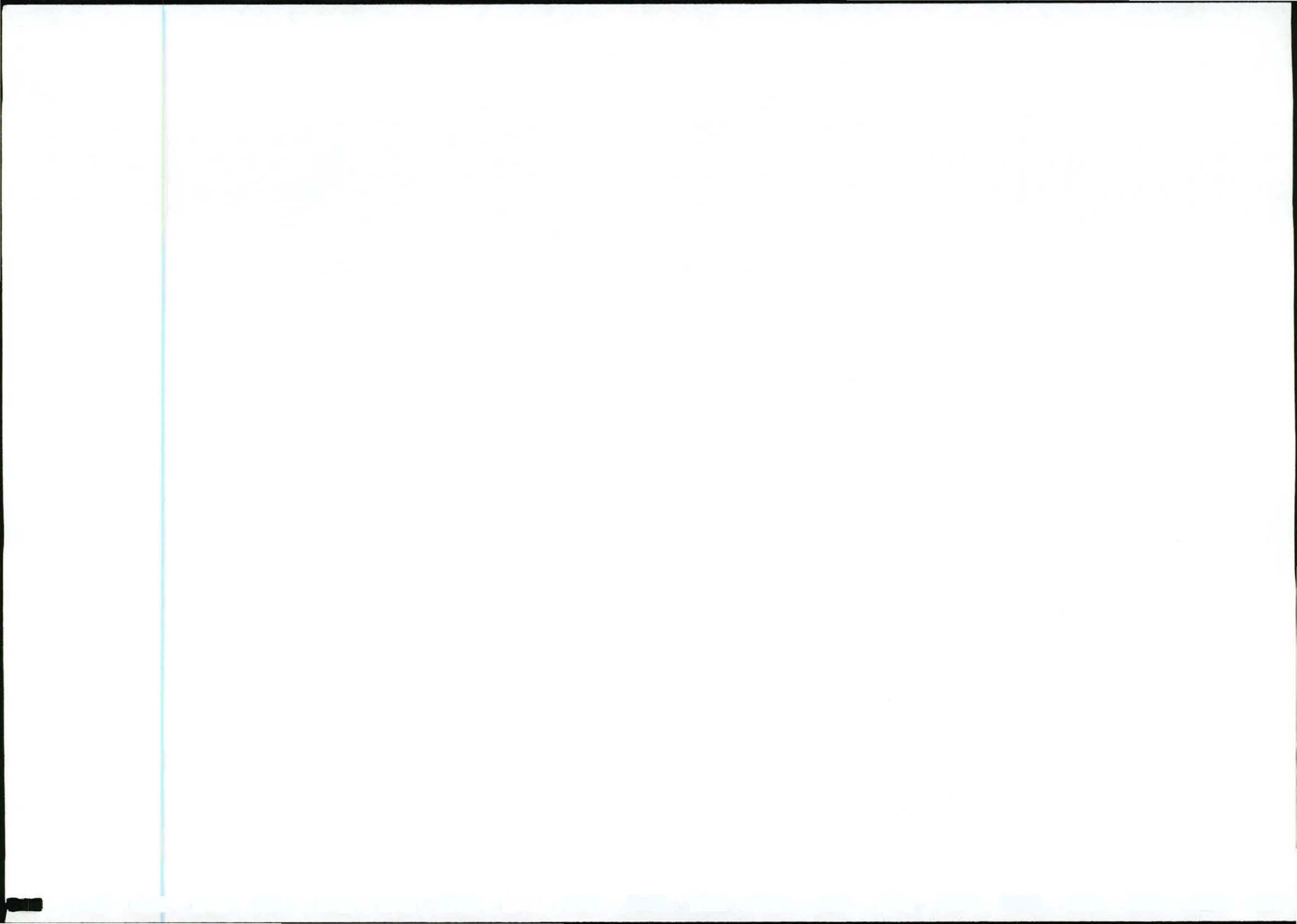
Figure outlines the proposed programme for the operation of the quarry.

Figure : Proposed programme for the operation of quarry1.

ACTIVITY	TIMEFRAME
Submit EMPR	June 2010
Authorisation by DME	To be determined by DME
Construction commences	Upon authorisation by DME
Duration of Operations	Less than a year
Close application	Once mining has been discontinued and the rehabilitation measures have been successfully completed, a closure report will be submitted to DME. (180 days after completion)

7.5 Financial provision for rehabilitation

In integrated Environmental Management and requirement of the Department of Minerals and Energy, the proponent should set aside sufficient funds to rehabilitate all areas that have disturbed by the activity (this mining project). The proponent of this project is aware of this requirement and an amount of R750 000 has initially been set aside for mining of the borrow pit and part of this amount will be used for the rehabilitation of the areas disturbed by the mining operations and full closure /decommissioning of the site. The site will be rehabilitated following the mining operation and in accordance with the described specification.



8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

This EMP defines and explains those activities associated with the opening, operation, closure and rehabilitation of the proposed Borrow pit mining for material supply required for Toleni access road. Furthermore environmental management tools have been provided, to mitigate any negative and enhance any positive impacts associated with mining of this site.

Table 8-1 shows a summary of the potential impacts, and their significance after mitigation. As shown most of the impacts associated with the construction and operational phase of the mining activities are generally considered to be of low - medium significance due to their temporary nature and scale. In particular however, the following impacts can be noted:

- Impact of removal of topsoil during the construction phase (low-moderate significance)
 - Impact of removal of soil and material during the operational phase (moderate significance)
 - Visual impact of mining operations (low- moderate significance)
 - Impact on I&APs (low- moderate significance)
-

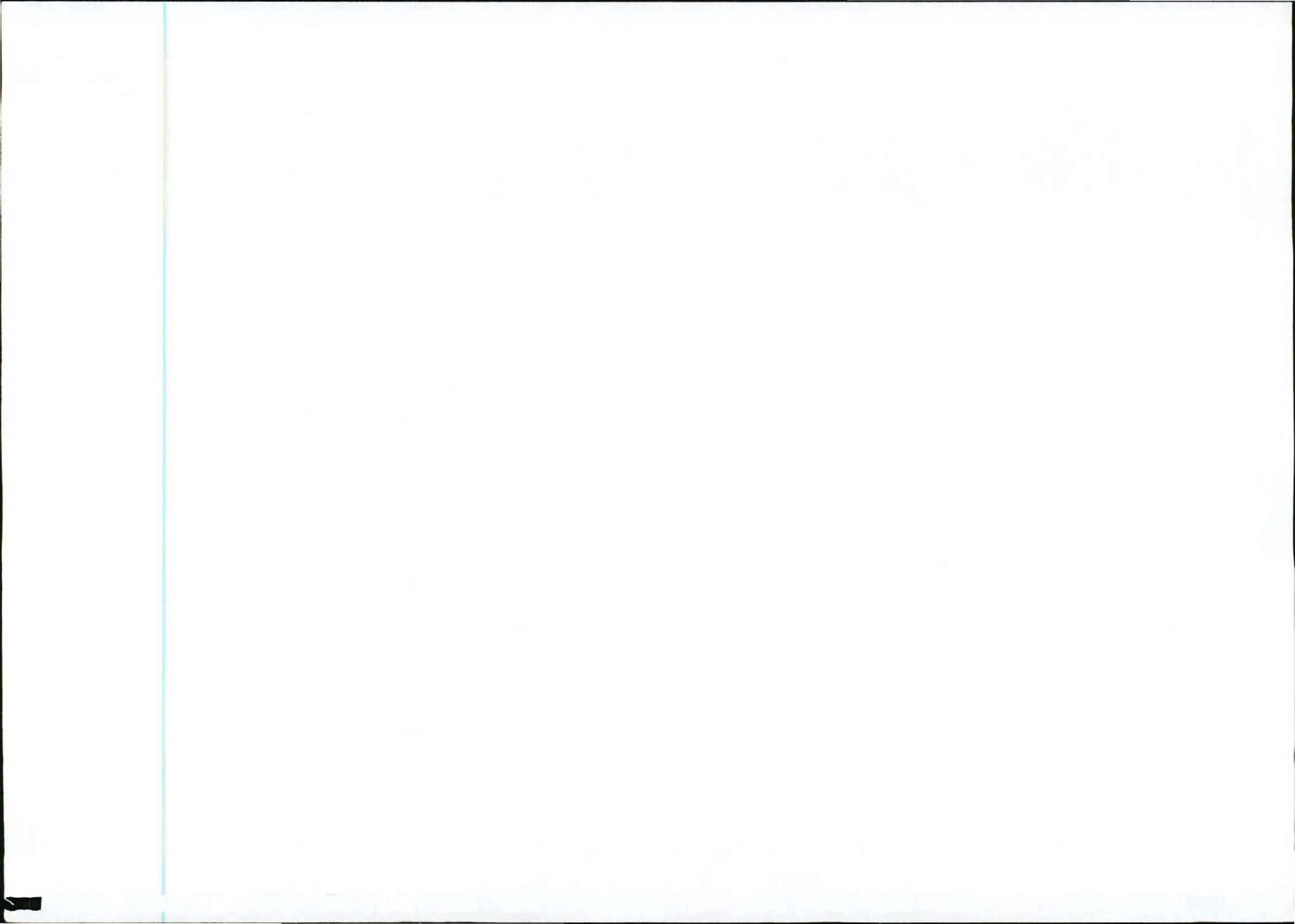
8.2 Recommendations

- The potential impact of the various Construction and Operational Phase impacts identified, if managed correctly in terms of the EMP (outlined in Section 7) and closure objectives, can be reduced to acceptable levels. Furthermore, continued adherence to the EMP, together with the implementation of the closure plan, and sound environmental management of the site, will ensure no potentially permanent, significant impacts/ long term impacts result due to exploitation of the borrow pit source. Moreover, positive impacts related to the rehabilitation of the site will result.
- We recommend that the Department of Road and Transport ensures the use of the specifications in this EMP to immediately rehabilitate the working face to, as feasibly as possible, an environmentally acceptable condition.
- In closing, we recommend that the proposed mining site be approved for the supply of material for the Toleni access construction proposed by the Department of Roads and Transport.



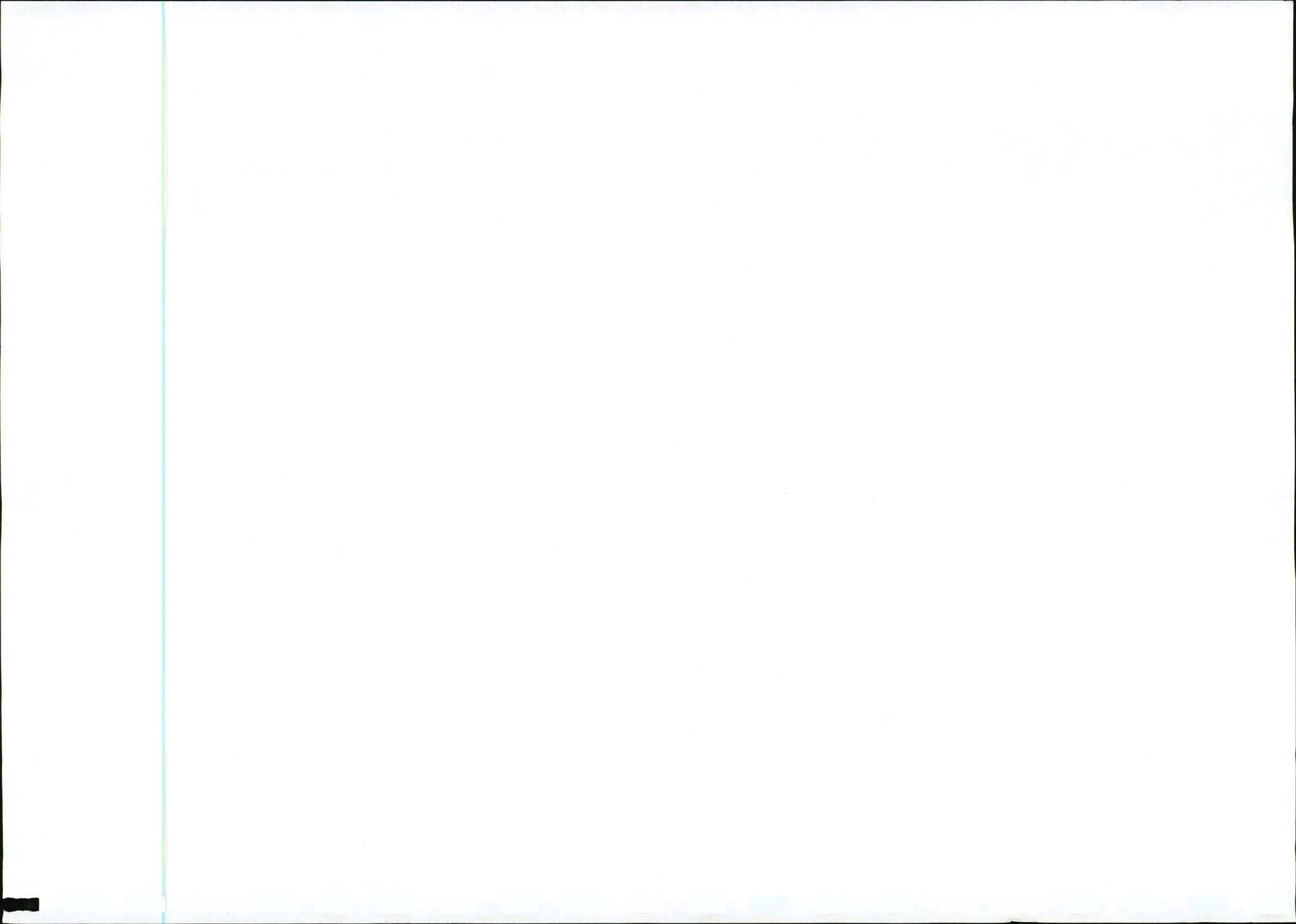
9 REFERENCES AND SUPPORTING DOCUMENTATION

1. Acocks, J.P.H. 1975. *Veld Types of Southern Africa, 2nd Edition. Memoirs of the Botanical Survey of South Africa No. 40.*
2. Department of Minerals and Energy (1992). 'Aide-Memoire': for the preparation of Environmental Management Programme reports for prospecting and mining, Pretoria, Republic of South Africa.
3. *Sub-Tropical Thicket Ecosystem Plan Programme (STEP) Handbook, 2003*
4. Van Oudtshoorn, F. & van Wyk, E. (1999). *Guide to Grasses of Southern Africa. Briza Publications, Cape Town, South Africa.*
5. Weather Bureau, Department of Environmental Affairs. 1986. *Climate of South Africa*



APPENDICES

- APPENDIX 1: Photographs
- APPENDIX 2: locality Map
- APPENDIX 3: Site Layout Plan
- APPENDIX 4: Proof of surety for the rehabilitation of Burrow pit
- APPENDIX 5: Public Participation documents
Site notice



**Appendix 1
Photographs**

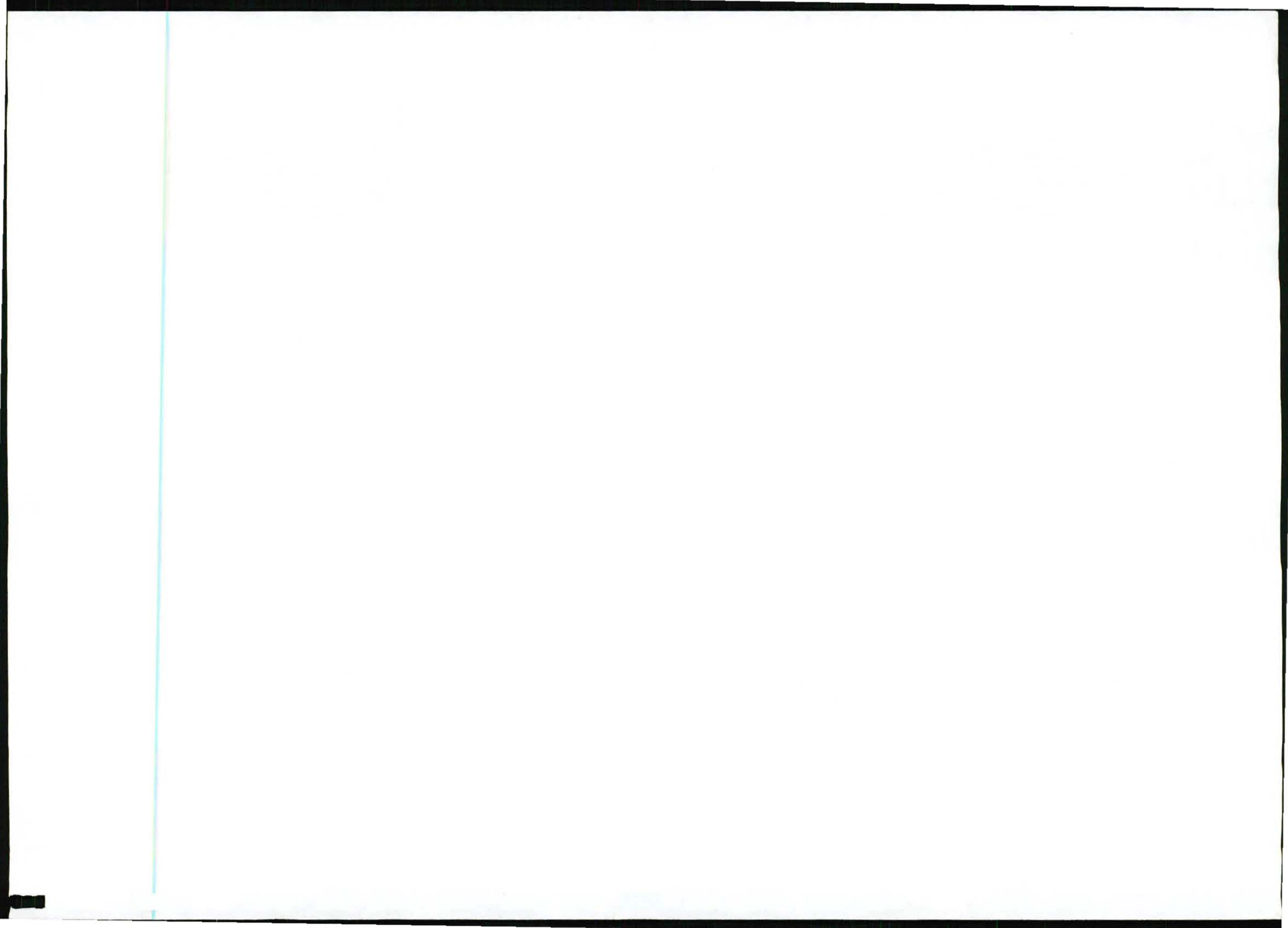
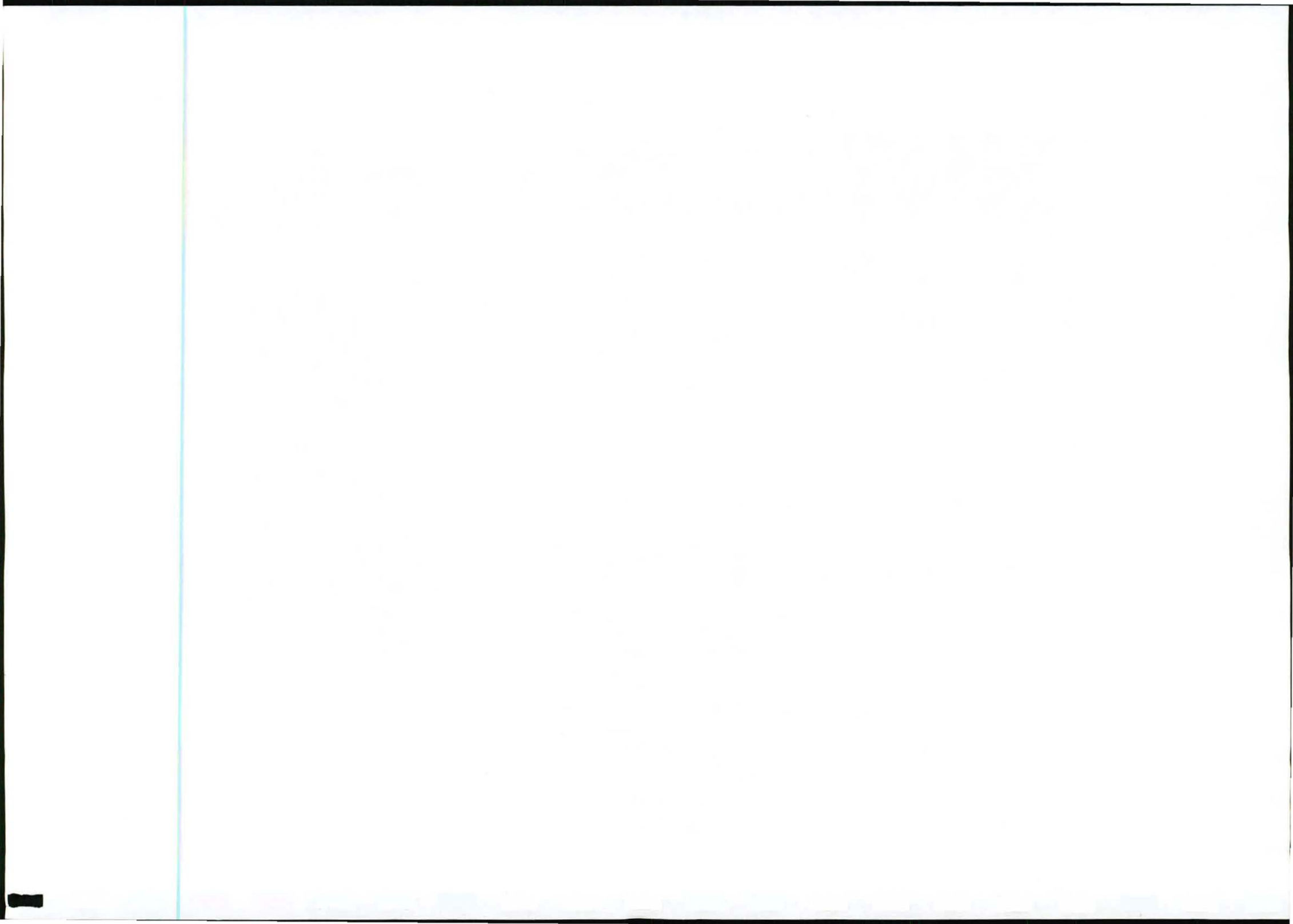




Figure 1-5: Top row: View of the burrow pit area from (1) the road, northwest of the site (2) from above the older mining face, facing south across the burrow pit area.

Second row: Shows the faces of the burrow pit, the established vegetation below and the general slope

Third row: The mining face gets dangerously steep north west of the site



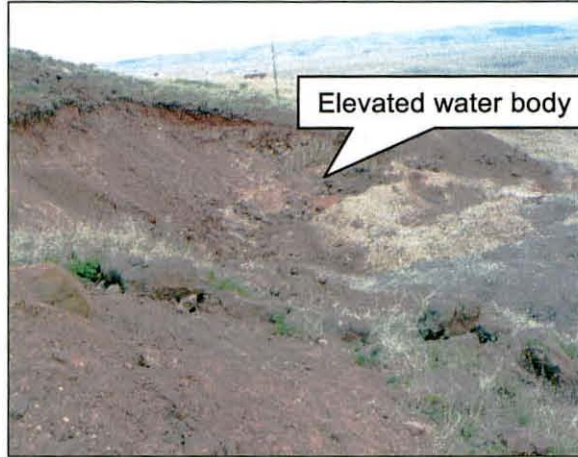
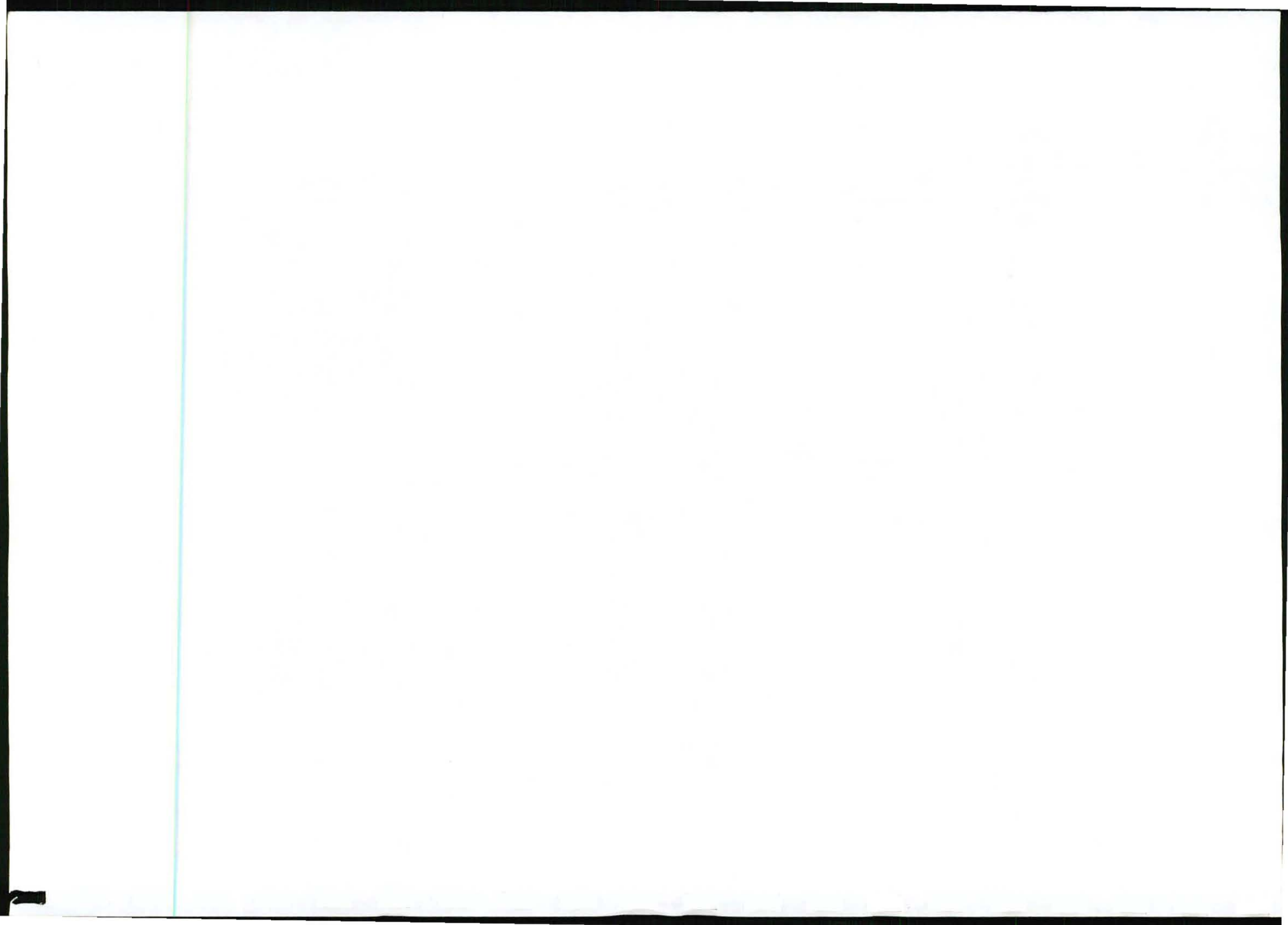


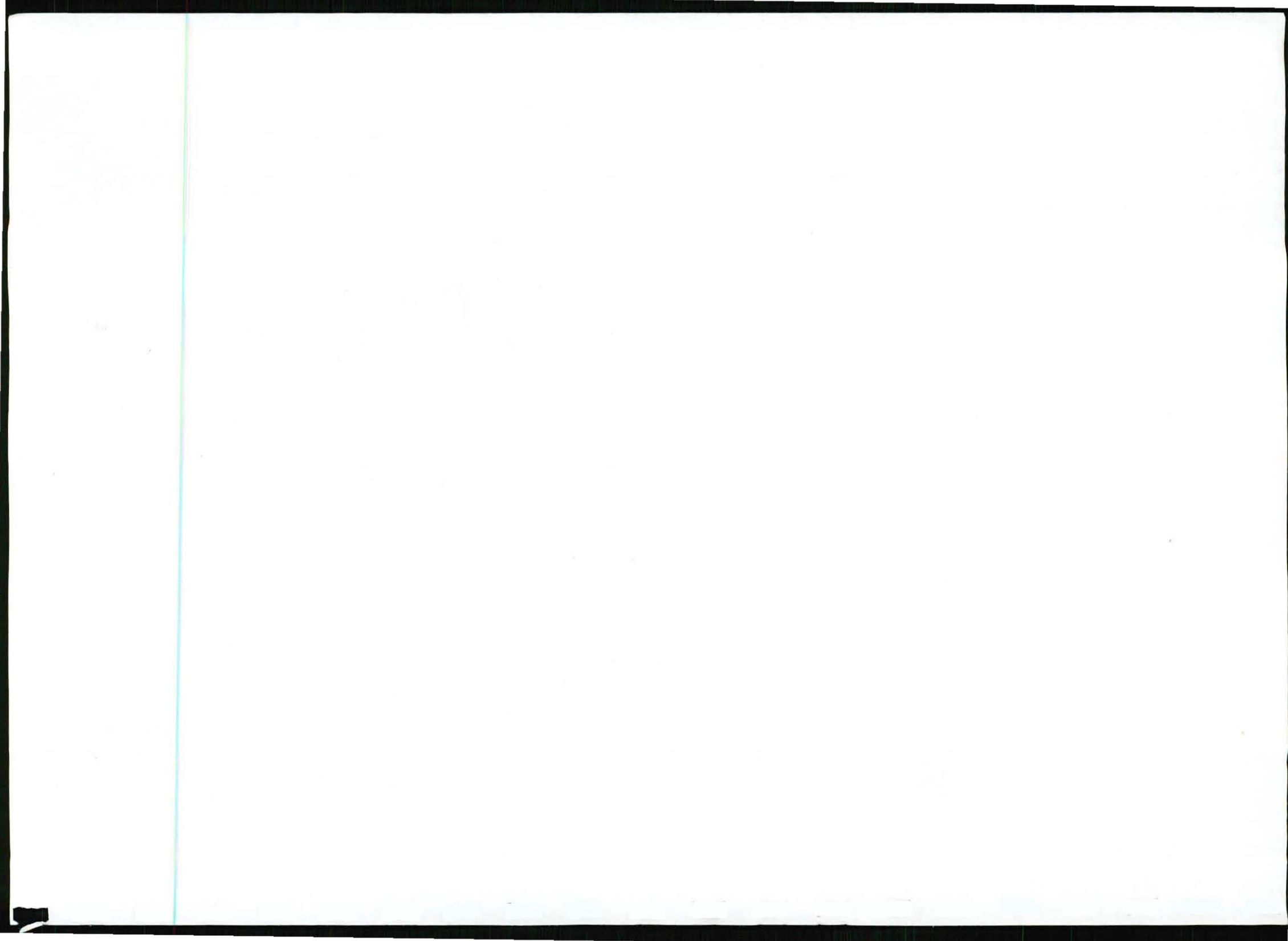
Figure 6-9: 1st and 2nd row shows the recently mined section with lower vegetation cover and stagnant water.



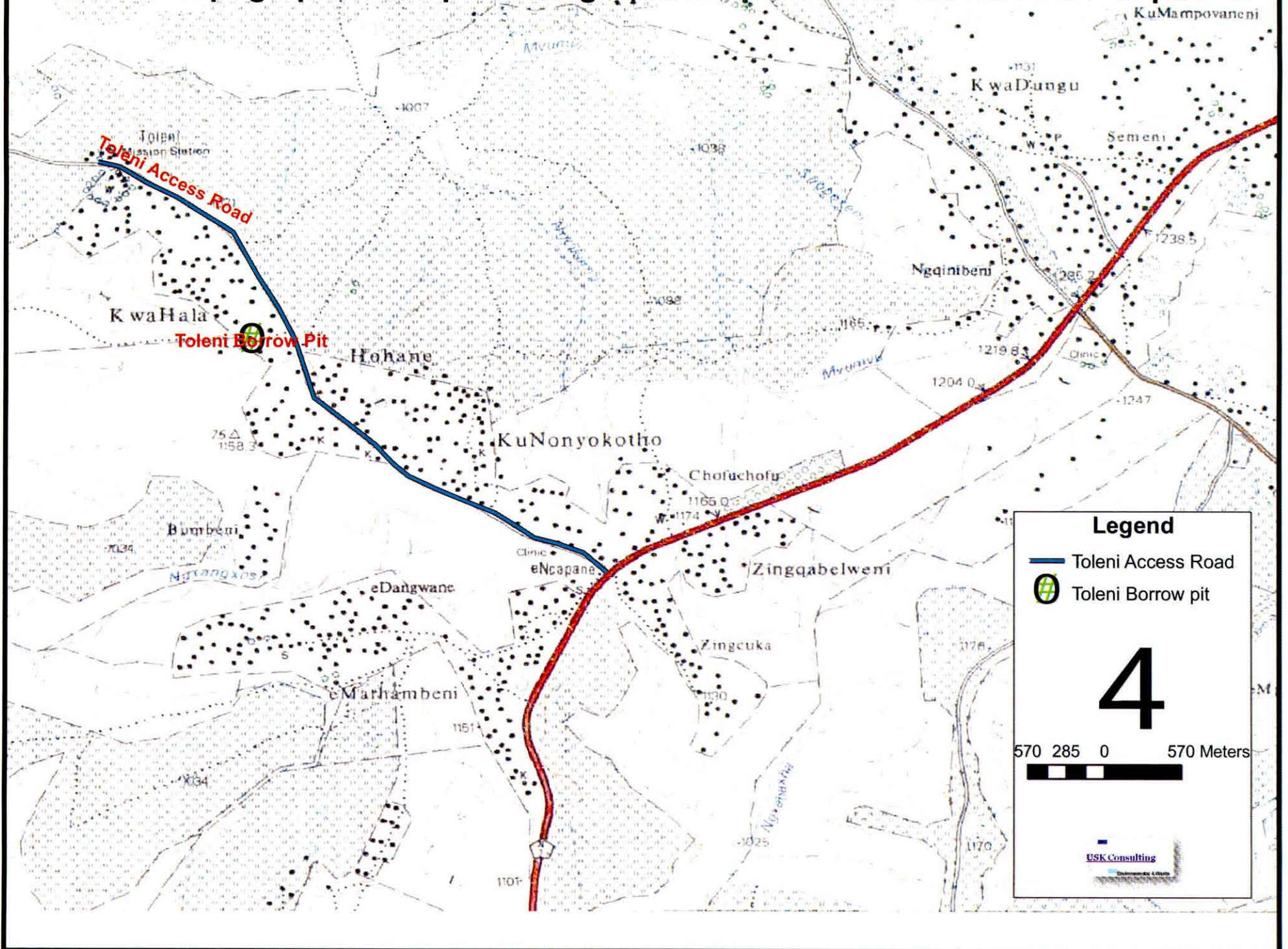
Figure 10-11: Shows the section to the north with the access road, human and animal path above a steep face and settlements in close proximity to the burrow pit area

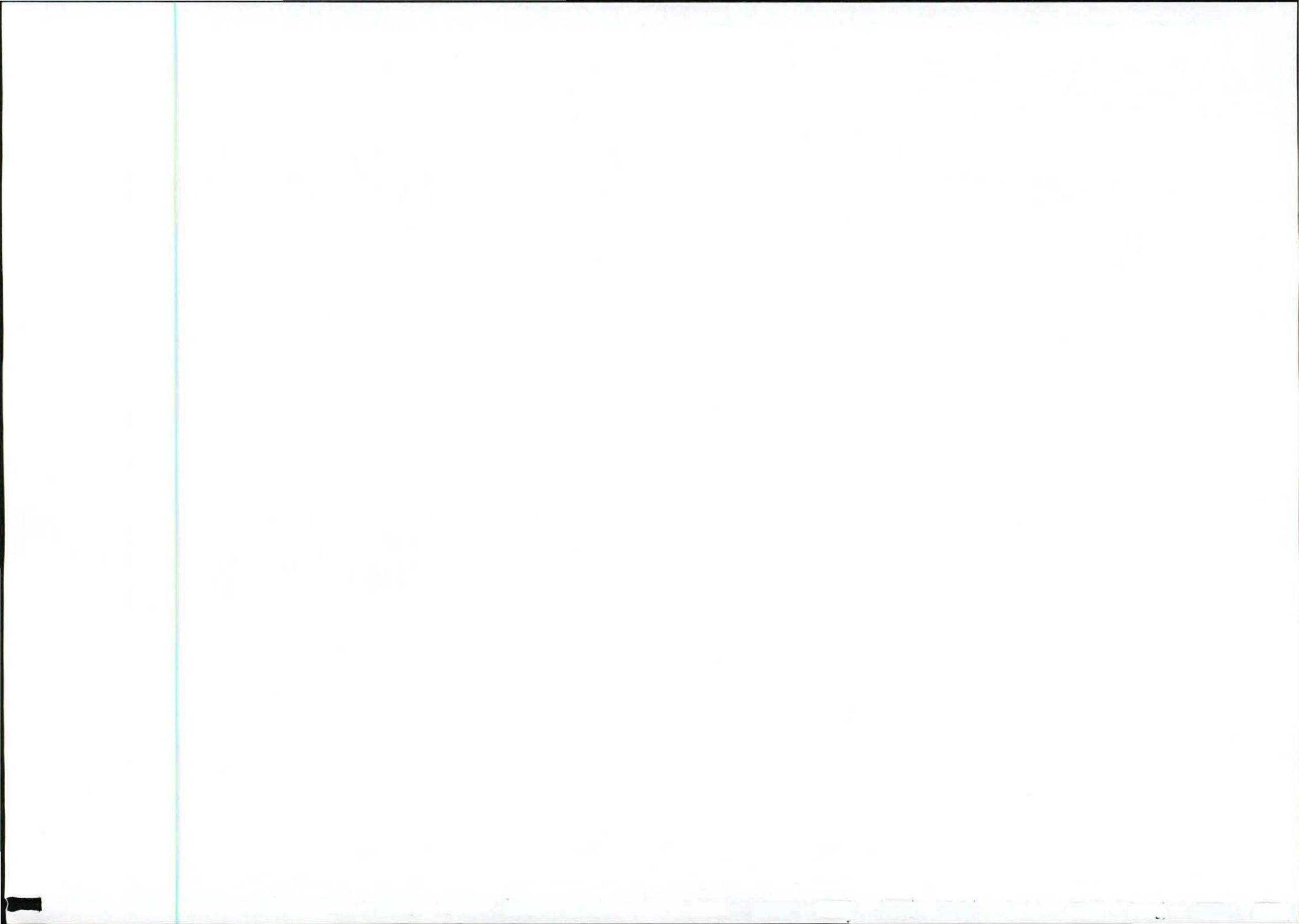


APPENDIX 2
Locality Map

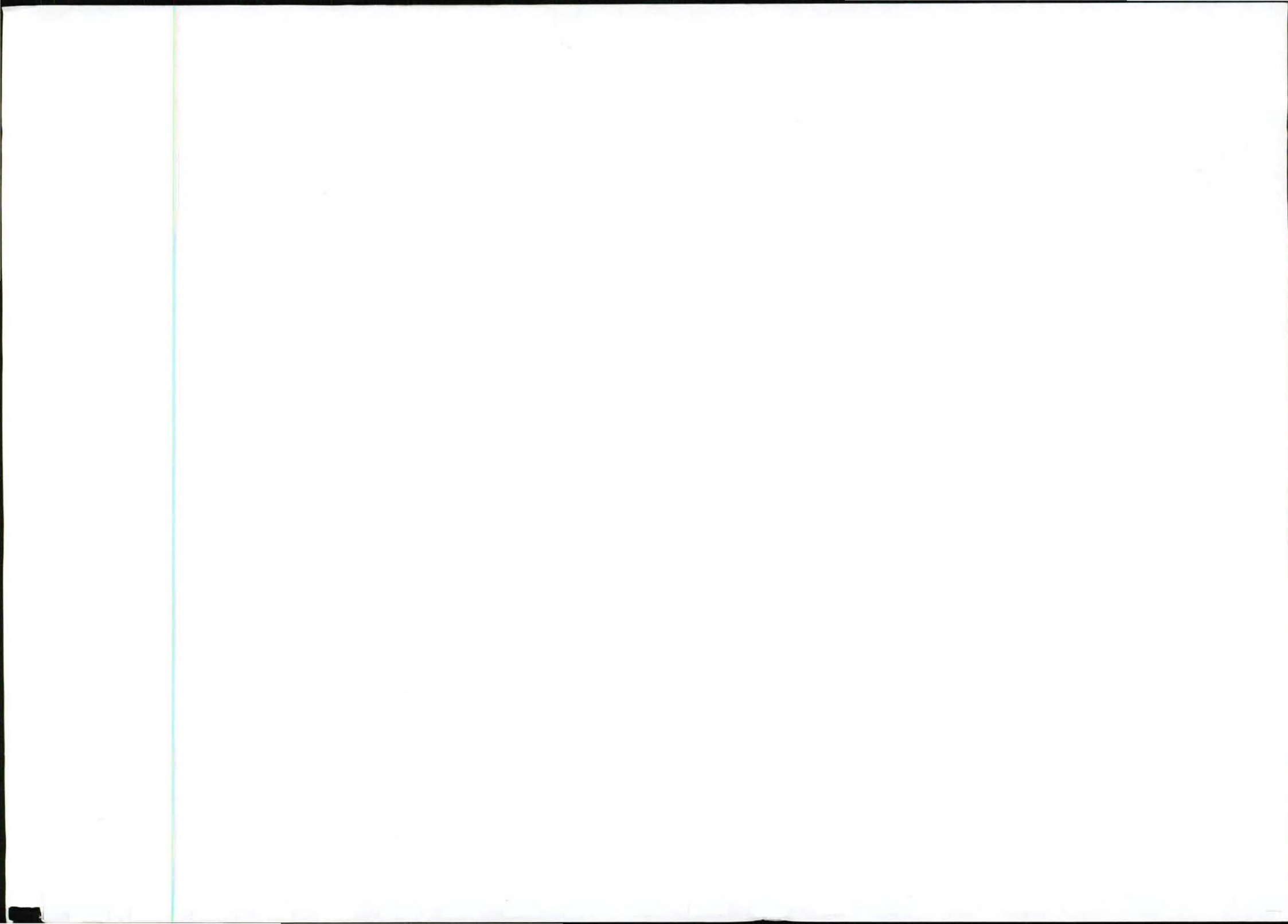


1:50 000 Topographical map showing Toleni Access Road and the borrow pit site

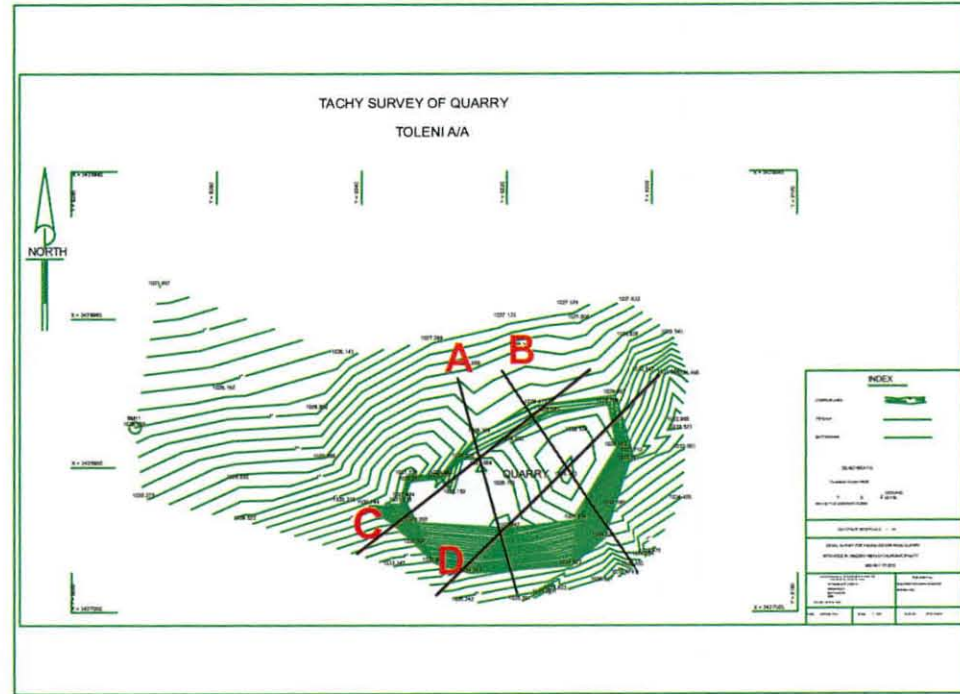
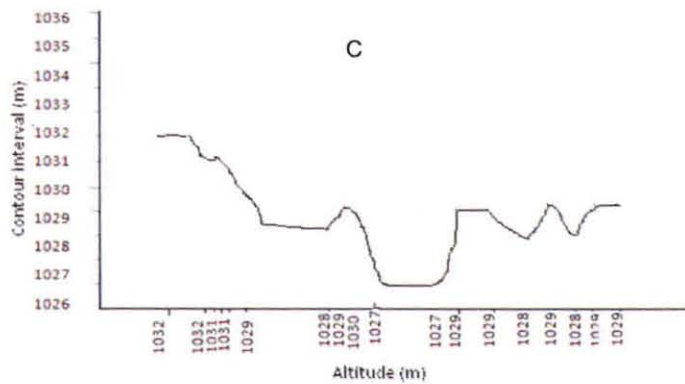
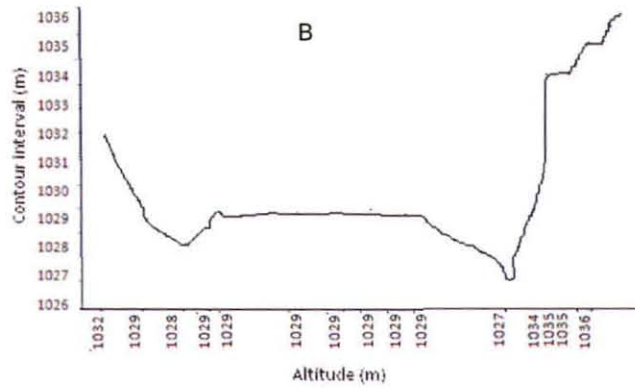
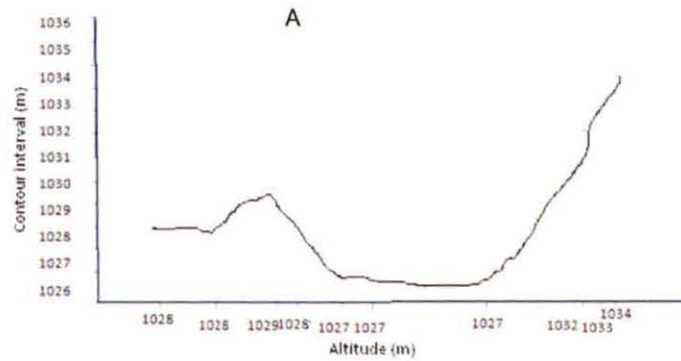




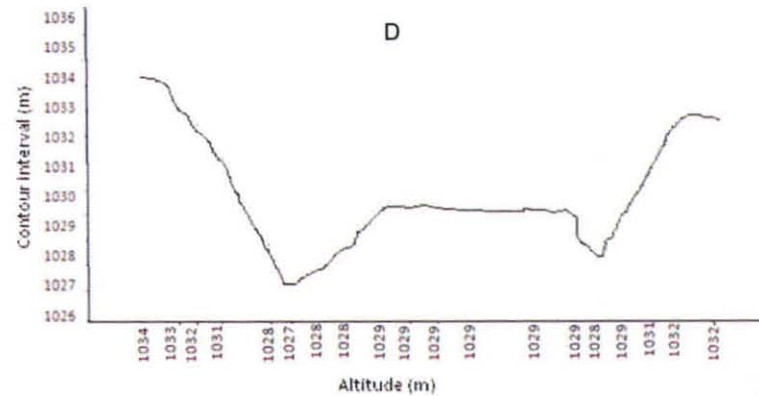
APPENDIX 3
Site Layout Plan

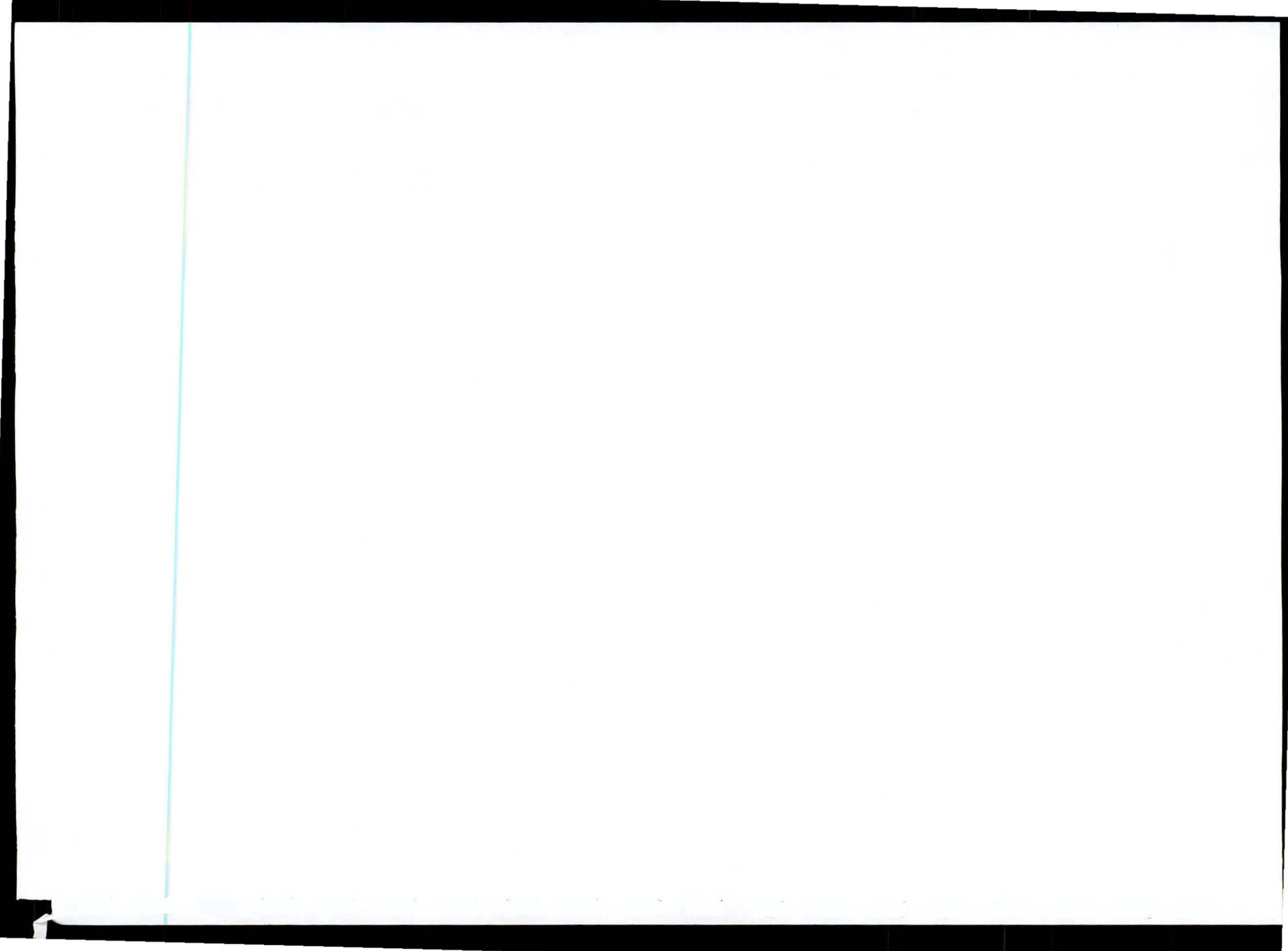


Locality plan and cross sections for Toleni Borrow pit



— Current Ground Level





APPENDIX 4
Proof of surety for the rehabilitation of Burrow Pit





Province of the
EASTERN CAPE
ROADS & PUBLIC WORKS

Memorandum: Roads & Public Works – 27 Ray Crab Crescent– Beacon Bay-East London- Eastern Cape – 5605 –
Republic of South Africa – Tel:+27 (0)43 748 2850 – Fax: 043 748 2216 / 086542 4826 –
Email:mvuyisi.goxa@do.ecptov.gov.za

5th May, 2010
Ref No. AD 855613

The Regional Manager
Department of Minerals and Energy
Eastern Cape Province
Private Bag X6076
Port Elizabeth
6000

Dear Sir/Madam,

**COVERING LETTER FOR AN APPLICATION FOR THE AUTHORIZATION OF USE A BORROW PIT
FOR THE CONSTRUCTION OF TOLENI ACCESS ROAD**

Introduction

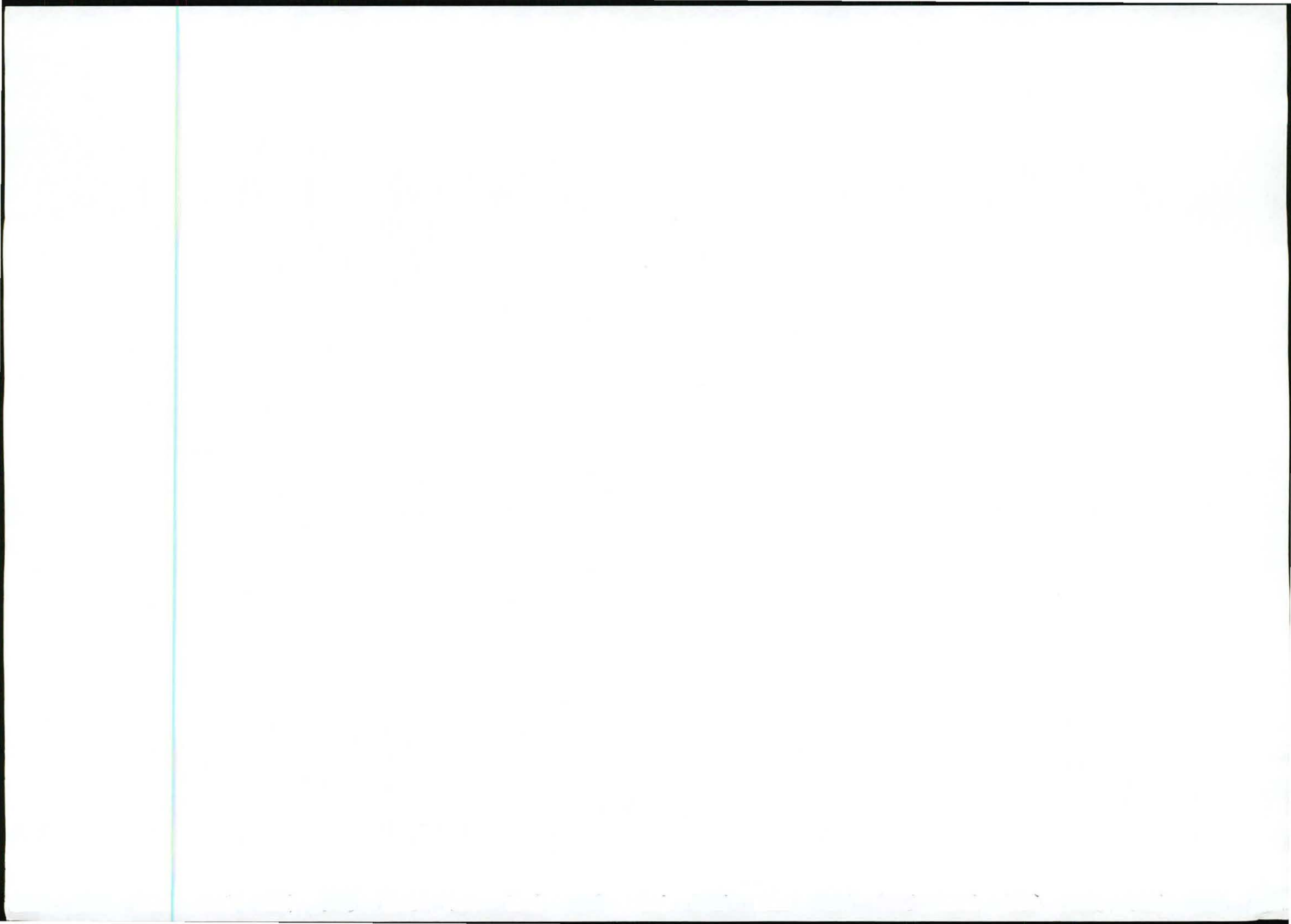
The Eastern Cape Department of Roads and Transport is planning to undertake the reconstruction of a 5 Km gravel road from the Dungwana signboards off the N2, ending at Toleni Trading centre, in Umzimvubu local Municipality, in Alfred Nzo District municipality. In order to facilitate this process, the Department has appointed as Independent Environmental Assessment Practitioners to undertake the Environmental Impact Assessment Process, required for authorisation of the construction of the road in terms of the National Environmental Management Act (NEMA) Act, 1998 (Act No. 107 of 1998), and the use of the associated borrow pit in terms of the Mineral and Petroleum Resources Development Act (MPRDA) respectively.

Requirements for application

In terms of Government Gazette notice number 26501, re: Exemption of Organs of State from certain provisions of the Mineral and Petroleum Resources Development Act (MPRDA), 2002, we understand the Department of Roads and Transport is exempted from completing certain requirements for application for mining permits, however still required to submit the following:

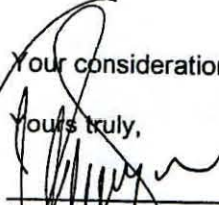
1. **Covering Letter:** This document serves to confirm that this borrow pit as indicated in the Environmental Management Plan and layout maps shall be used by and for the purposes of Eastern Cape Department of Roads and Transport, and only for the mining of gravel material for the construction of the Toleni Access Road.
2. **Environmental Management Programme and Plan** – Environmental Management Plan and Scoping Report terms of section 39 of the MPRDA detailing the location, project description and assessment of environmental impacts has been prepared by USK Consulting is attached hereto.
3. **Financial Guarantee:** A financial provision for the rehabilitation or management of negative environmental impacts required. In terms of section 41 of the MPRDA, the amount of **R750,000.00** has been put aside

**COVERING LETTER FOR AN APPLICATION FOR THE AUTHORIZATION OF USE A BORROW PIT
FOR THE CONSTRUCTION OF TOLENI ACCESS ROAD**



Your consideration of this application will go along way in facilitating our service delivery.

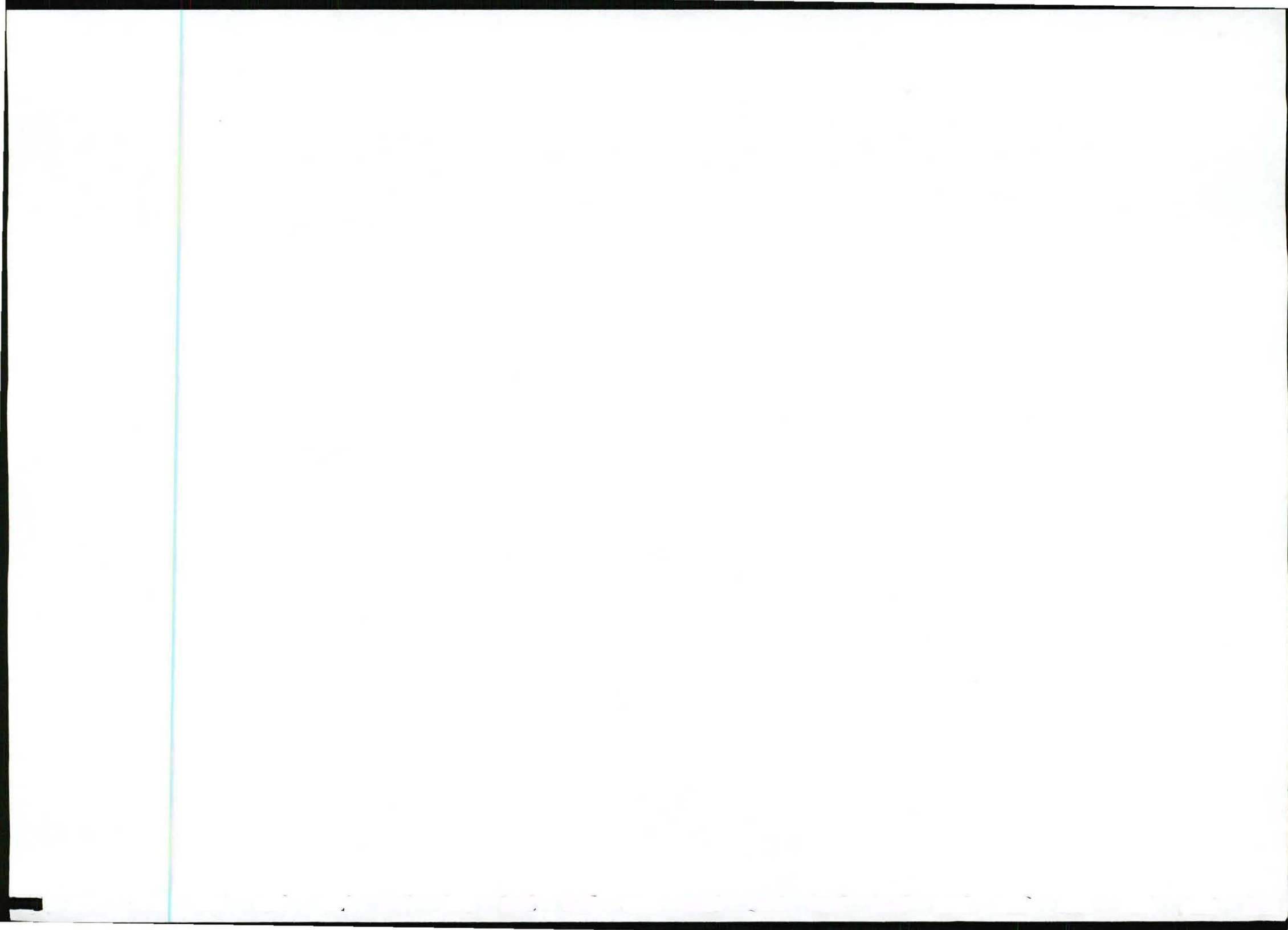
Yours truly,



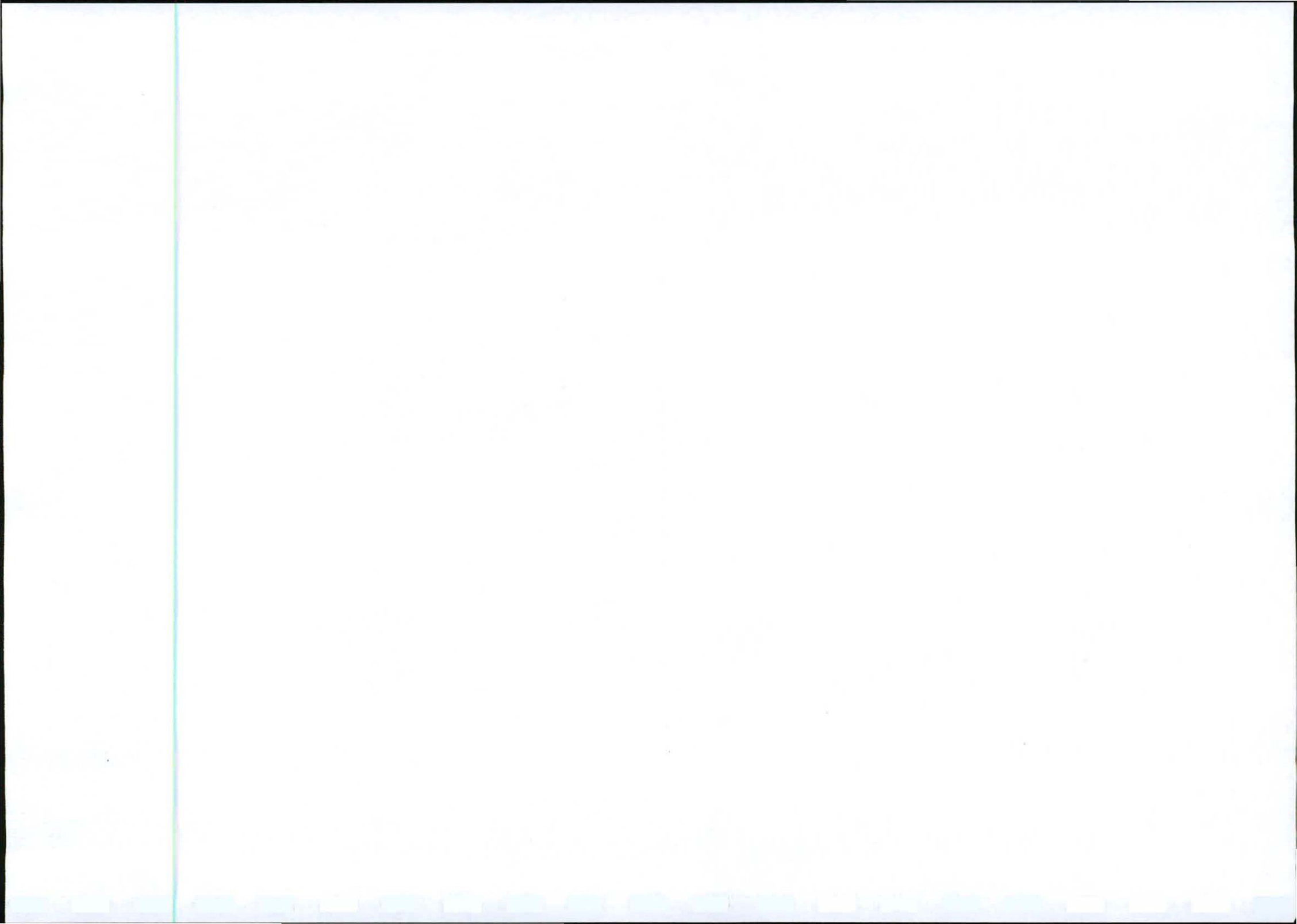
Mr. N. Coxa
Senior Manager:
In-house Road Construction

21/05/2010

**COVERING LETTER FOR AN APPLICATION FOR THE AUTHORIZATION OF USE A BORROW PIT
FOR THE CONSTRUCTION OF TOLENI ACCESS ROAD**



APPENDIX 5
Public Participation Documents



USK Consulting

File No. Draft

PUBLIC PARTICIPATION REPORT

PROPOSED UPGRADING OF TOLENI ACCESS ROAD

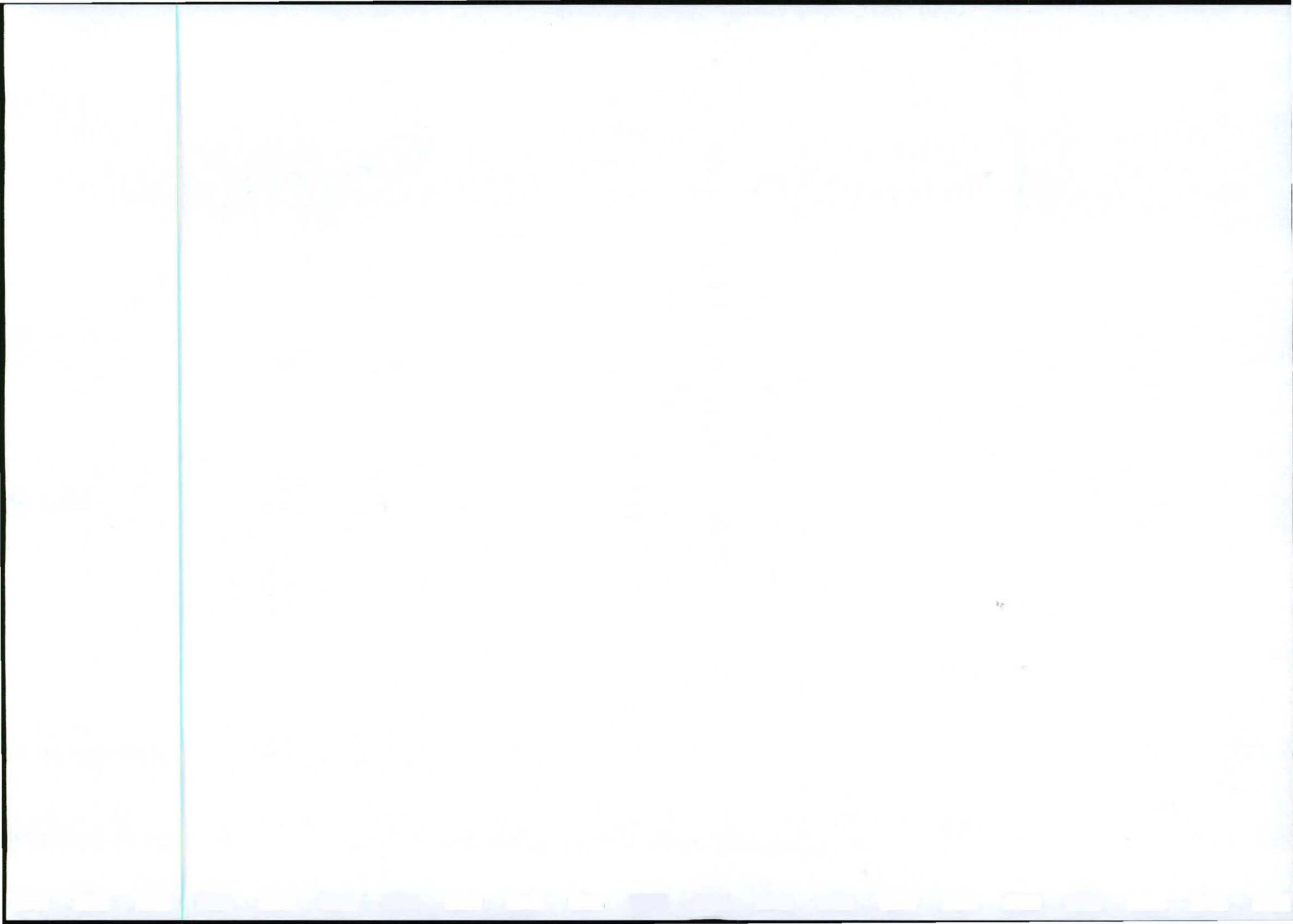
Prepared for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2006

APRIL 2010

PREPARED FOR:
Department of Roads and Transport

PREPARED BY:
USK CONSULTING (ENVIRONMENTAL & WASTE)
Ms. Thuthukile Khumalo

Address 23 Ray Craib Crescent Beacon Bay
 5241, East London
Telephone: +27 43 748 5545
Fax: +27 43 748 1114
Email: kkalule@uskconsulting.com
Web: www.uskconsulting.com





USK Consulting

1 INTRODUCTION

1.1 Public Participation Process

In terms of the Environmental Impact Assessment Regulation promulgated under the section 24 (5) and section 44 of National Environmental Management Act 1998, the EAP must undertake a public participation process. The minimum requirements of a public participation process are as follows:

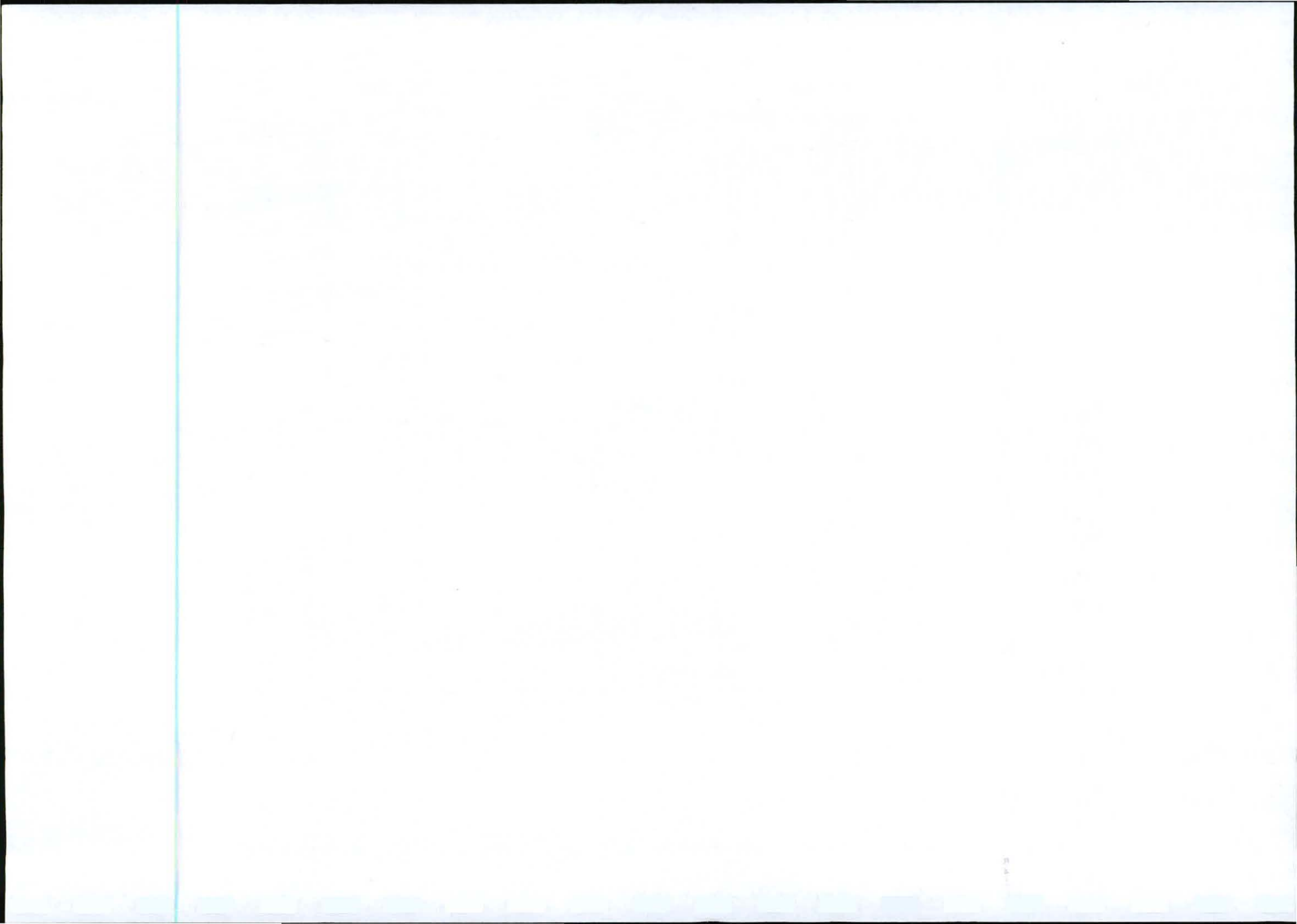
At the minimum the person conducting the public participation must:

1. Give notice of the Application to all interested and affected parties by fixing a notice board at a conspicuous place at the boundary or fence of the site (or an alternative site);
2. Give written notice to the owners and occupiers of land adjacent to the site where the activity is to be undertaken (or any alternative site); the owners and occupiers within 100 metres of the boundary of the site who may be affected by the activity; the municipal councillor of the ward in which the site is located; the municipality and any organ of state which has jurisdiction;
3. Place an advertisement in one local paper or any official Gazette that is published specifically for the purpose of providing public notice of Applications;
4. Place an advertisement in at least one provincial newspaper or national newspaper if the activity may have an impact extending beyond the boundaries of the metropolitan area or local municipality;
5. Open and maintain a register of interested and affected parties;
6. Provide registered interested and affected parties with the opportunity to comment on all written submissions made to the competent; and
7. Ensure that information containing all relevant facts about the Application is made available to the Interested and Affected Parties and that the participation of Interested and Affected Parties is made easy so that they are provided with a reasonable opportunity to comment on the Application.

1.1.1 Public Participation Report

During the basic assessment process, a public participation process was conducted and it followed the above outlined processes and regulatory requirements.

This report outlines the tasks and findings of the public participation process for the proposed upgrading of Toleni access road.



USK Consulting

2 PUBLIC PARTICIPATION DOCUMENTATION

2.1 Site Notices and Newspaper Advertisement

Site notice was placed at a community clinic which is accessible for the communities involved.

Site photo indicates placement of the site notice:

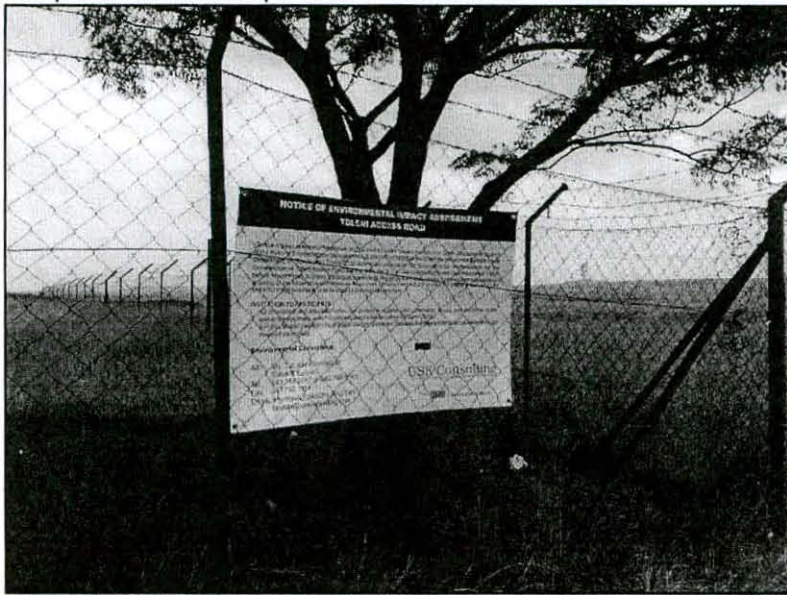
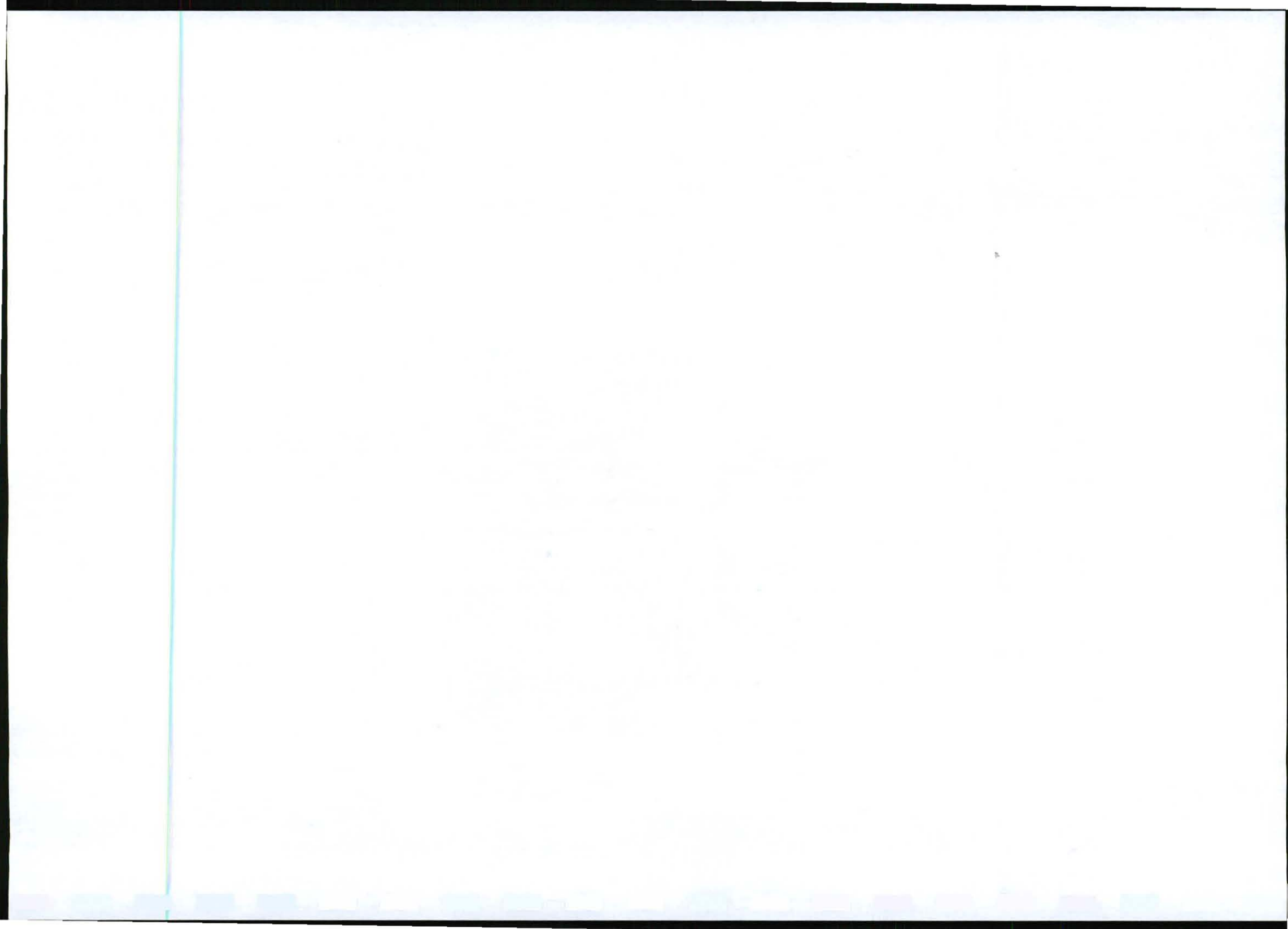


Figure 1 site notice at the community clinic





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NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT TOLANI ACCESS ROAD

Notice is given in terms of Regulation 56(2) published under Government Notice GN R.385 under chapter 5 of the National Environmental Management Act, (Act 107 of 1998), of the Intent the proponent Eastern Cape Department of Roads and Transport to submit an application for Environmental Authorization for the Construction of Tolani Access Road starting from the N-2 at Dangwana signboard (approximately 10Km before Mount Free), to Tolani Trading centre ending. The project will also involve a mining permit application in terms of the Minerals and Petroleum Resources Development Act 28 of 2002 for use of a borrow pit for extraction of gravel material to be used for the road construction.

INVITATION TO PARTICIPATE

- All Interested and Affected Parties are invited to register their comments, issues and concerns in the above development, with the contact persons below before 31 March 2010.
- A Public Meeting will be held at Tolani Trading centre and the date and time will be communicated through the ward councillors.

Environmental Consultant:

Attn: Ms. Thuthukilie Khumalo

USK CONSULTING

Tel: 043 748 5567

Fax 043 748 1114

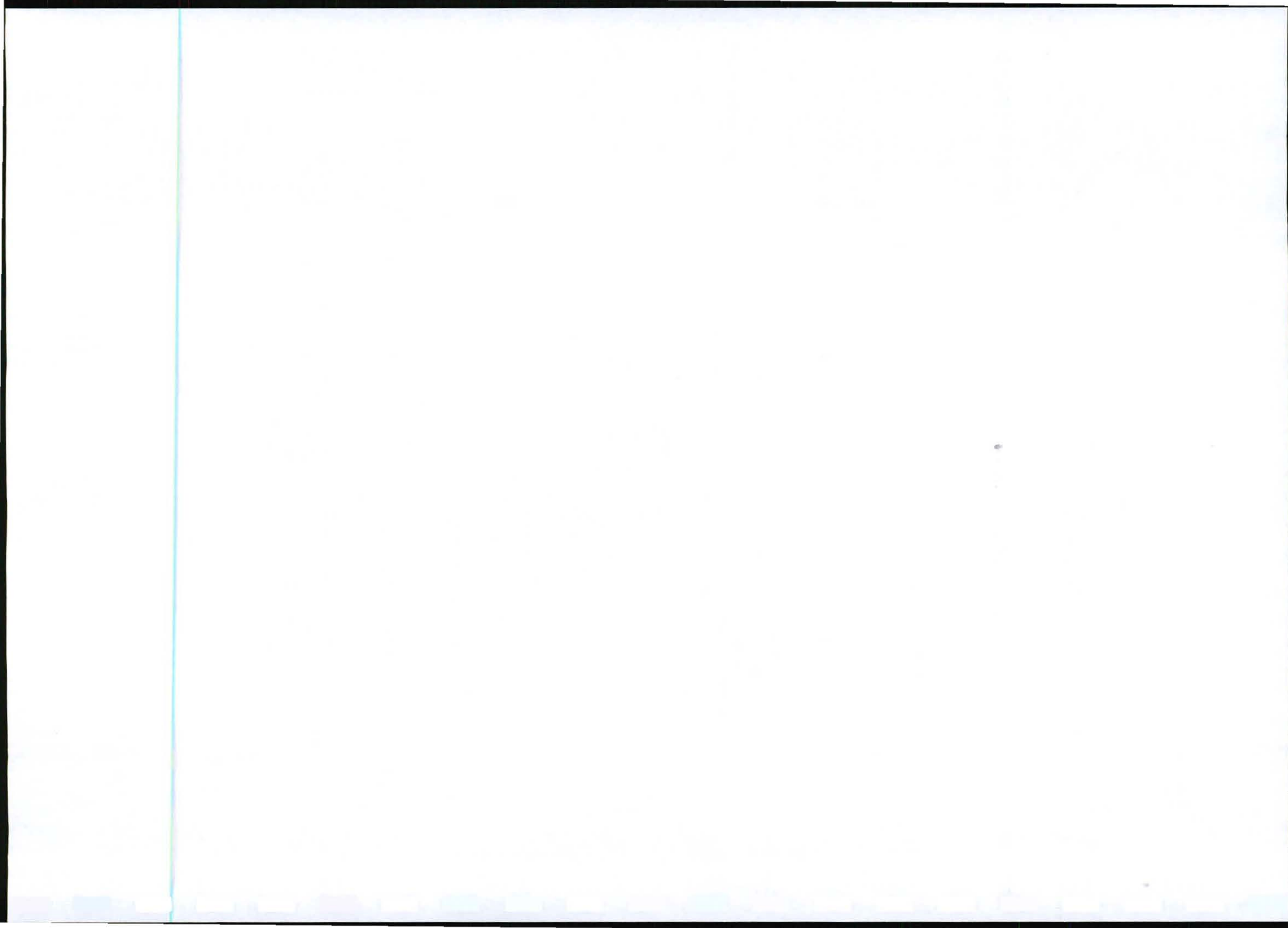
Email: tkhumalo@uskconsulting.com

Figure 2 Details of the Site Notice

2.2 Notification of Landowners and Stakeholders

Communities along and near the proposed route were informed about the public meeting through their ward councillor. Letters of consent will be given to the community members (especially cattle owners and adjoining properties) likely to be affected by the project during another public meeting involving project engineers.

Mr. Abongile Ngqongwa (USK Consulting) emphasized at the meeting that it was important that if anyone had issues and concerns, these issues must be raised either at the meeting or later in writing so that these issues can be included in the basic assessment report.





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2.2.1 Results

Except for some questions regarding the road extent, safety, access to the clinic and other issues, all participants present were in favour of the road construction (see public discussion below).

2.3 Public Meetings

A public meeting/information sharing meeting was conducted in Toleni Community Hall on the 21st April, 2010. Attendance register and minutes from the meeting are presented below.

The meeting was conducted by Mr. Abongile Ngqongwa (USK Consulting).

2.3.1 Public Meeting Agenda and Minutes

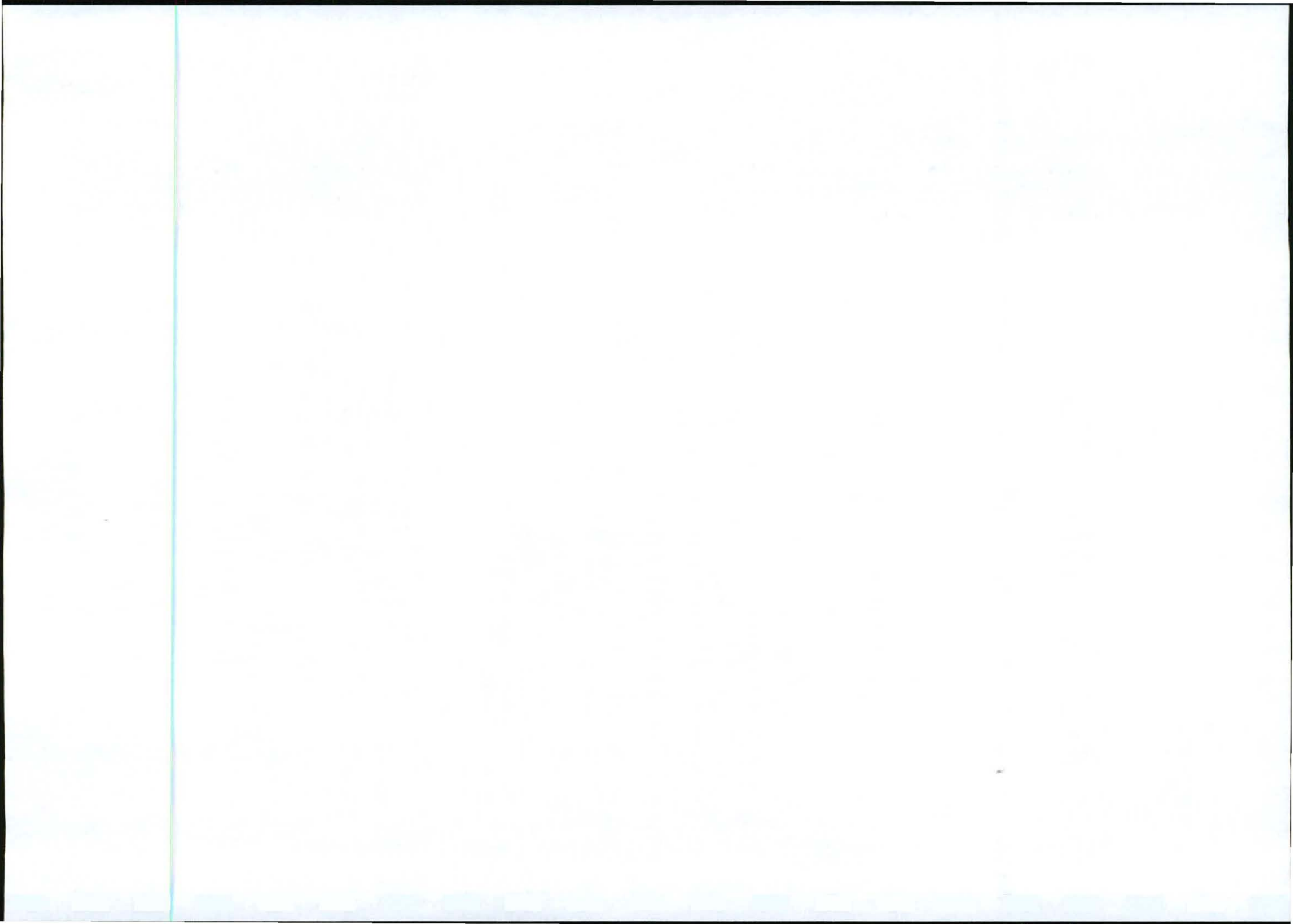
The following summarizes the minutes from the public meeting/information sharing meeting.

CLIENT: Department of Roads and Transport
PROJECT: Upgrading of Toleni Access Road
PURPOSE: Public Participation meeting
PLACE: Toleni Community Hall
DATE: 21 April 2010

NAME	REPRESENTING	TEL
PRESENT		
Abongile Ngqongwa	Usk Consulting	043 748 5545
Cllr M. Maphekula	Umzimvubu Local Municipality (Ward 21)	082 476 3755
Cllr X Lungu	Umzimvubu Local Municipality (Ward 20)	082 467 4010
Luxolweni Community	(See attached Signed Attendance Register)	

AGENDA

1. Welcome and Introduction
2. Attendance Register
3. Project Background Information Document
4. Record Issues / Concerns
5. Closure





USK Consulting

1. OPENING PRAYER

2. WELCOME AND INTRODUCTION

2.1 Chair (councillor Lungu) opened the meeting and welcomed all to the meeting

3. ATTENDANCE REGISTER

3.1 Please see attached attendance register.

3. DOCUMENTS TABLED

3.1 The following documents were tabled at the meeting:

- Agenda
- Background Information Document

4 PROJECT BACKGROUND AND EIA PROCESS

4.1 Mr. Abongile Ngqongwa introduced USK Consulting and provided information on the project background, the Basic Assessment Process and public participation meeting requirement for the Toleni 4.6Km road upgrading project;

4.2 Abongile explained that he was representing USK Consulting, appointed as an Independent Environmental Assessment Practitioner to conduct a basic Assessment for the construction/upgrade of a 4.5 km access road to Toleni proposed by the Department of Road and transport. He also informed the community about the Borrow pit located at Toleni to be used for mining of dolerite material for the road construction. He gave clarity regarding the role of the practitioner with regard to the project.

4.3 Abongile also explained to the community the purpose of the public participation meeting and the role of the community in terms of their knowledge of the area for the road construction. He also highlighted the importance of raising questions and stating any issues and concerns in order to gain clarity with regard this road construction.

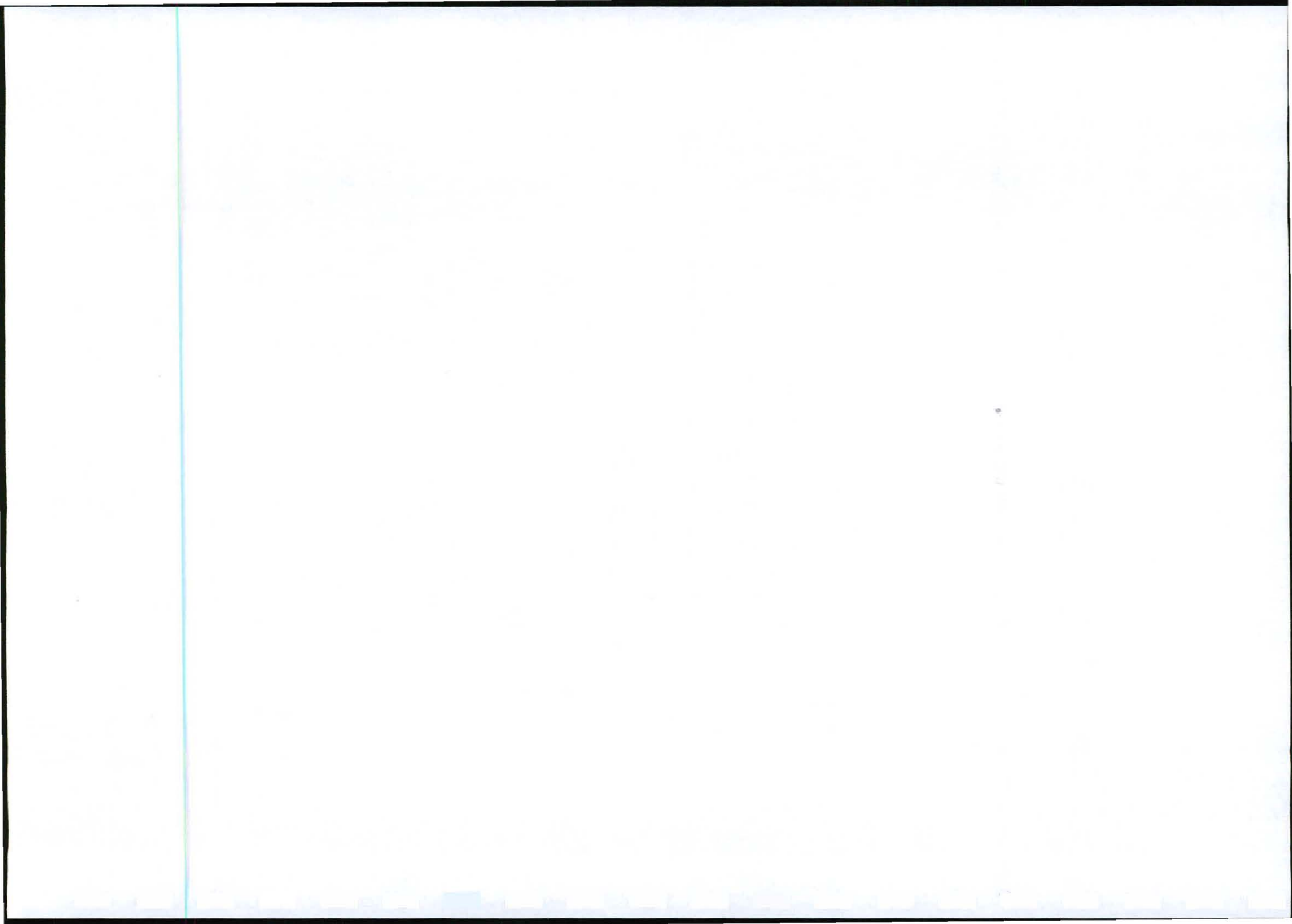


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5 OPEN DISCUSSION

Table 1 Issues and Comments Register

Name	Concern/Comment/Question	Response
Anonymous	Is it possible for the road to also enter at the schools and the clinic since the clinic does not have a drive through and the school buses park on the road and jams the traffic.	As it has been said before, we have no details of the layout of the upgrade
Anonymous	We are also worried about our livestock that are always on the road, can't there be a fence on either side of the road so as to stop the animals from entering the road?	I am sure that these will be taken into consideration in the plans.
	What about the entrances to our homes, can't they make sure that they make small entrance ways to passages and gates.	This question requires the same answer that I have given to the previous question.
	Is the community going to benefit from this project in terms of jobs and when is this upgrade going to start?	This community is going to benefit in general once this road starts working, but during the construction phase, the contractors who will be upgrading the road will have a meeting with you and I am sure that you will be involved. The upgrading can start any time after 2 months from now if everything goes according to plan.
Anonymous	Are the disabled people welcomed in meetings such as these, can they be employed even if they get state grant?	Yes, people with disabilities are welcomed since they are part of this community and since they are human as any human being. I

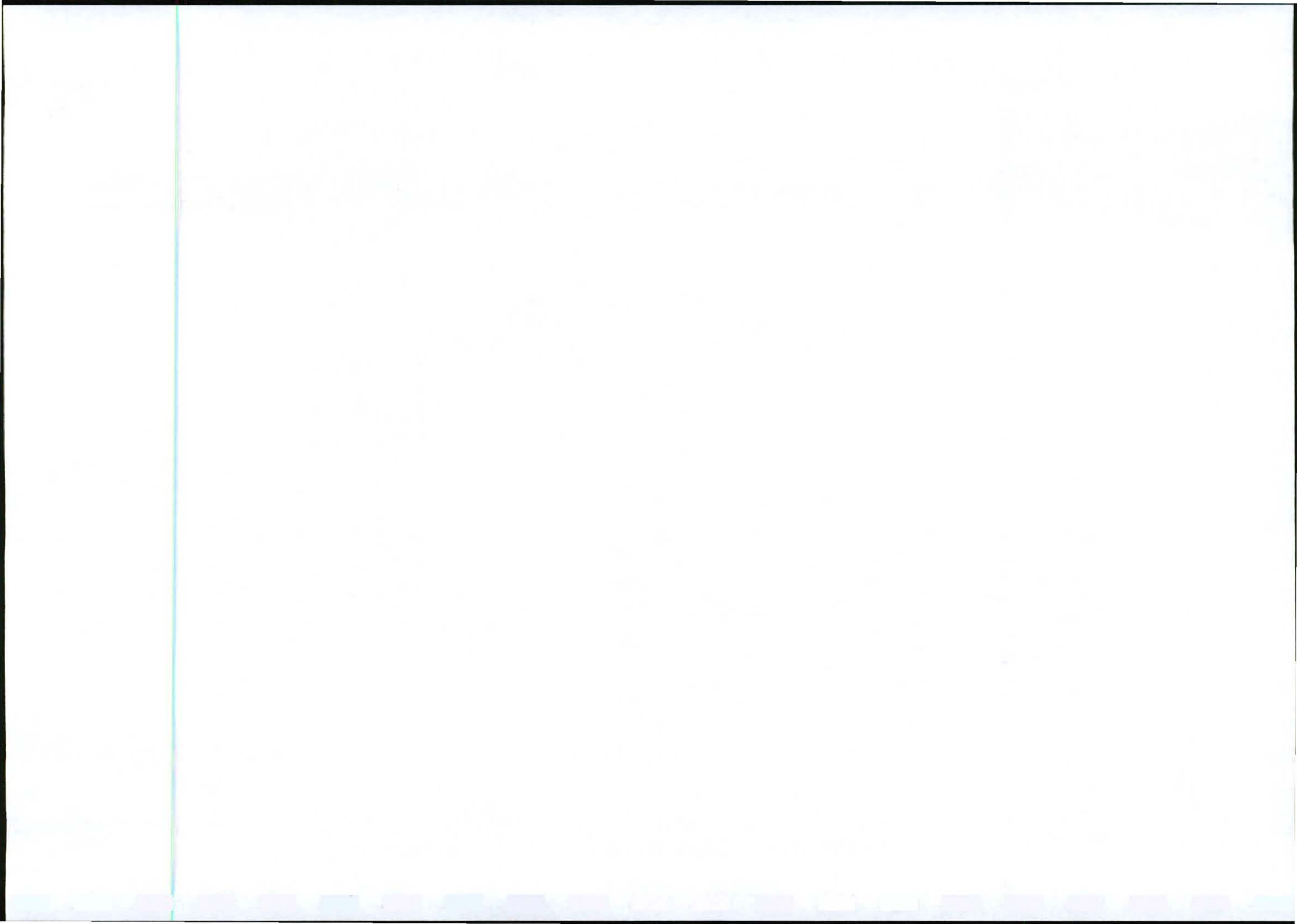




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		believe that they can be employed as long as their job description does not put their health and lives at risk.
Anonymous	Where can we get this document that you are still to compile?	The document will be available in hardcopies and it can be available at a local library if it is available or it can be given to your community leaders or any place that people can be able to access.
Anonymous	We are a bit disappointed that this upgrade of the road is not going to go all the way to Ngcibirha because we people who are down the road fill like we are treated unfairly.	Comment noted
Anonymous	We are just hoping that this is phase one of the upgrade and that phase two will follow whereby the entire road is going to be done.	Comment Noted
Anonymous	We also hope that this project is going to be done up to a level that the other road constructions are done in big towns. We have been promised many things, we had many meetings of this nature and in many projects it ended in these meetings and never saw any construction, we hope this will not be the case here with this project.	Comment noted

2.3.2 Results



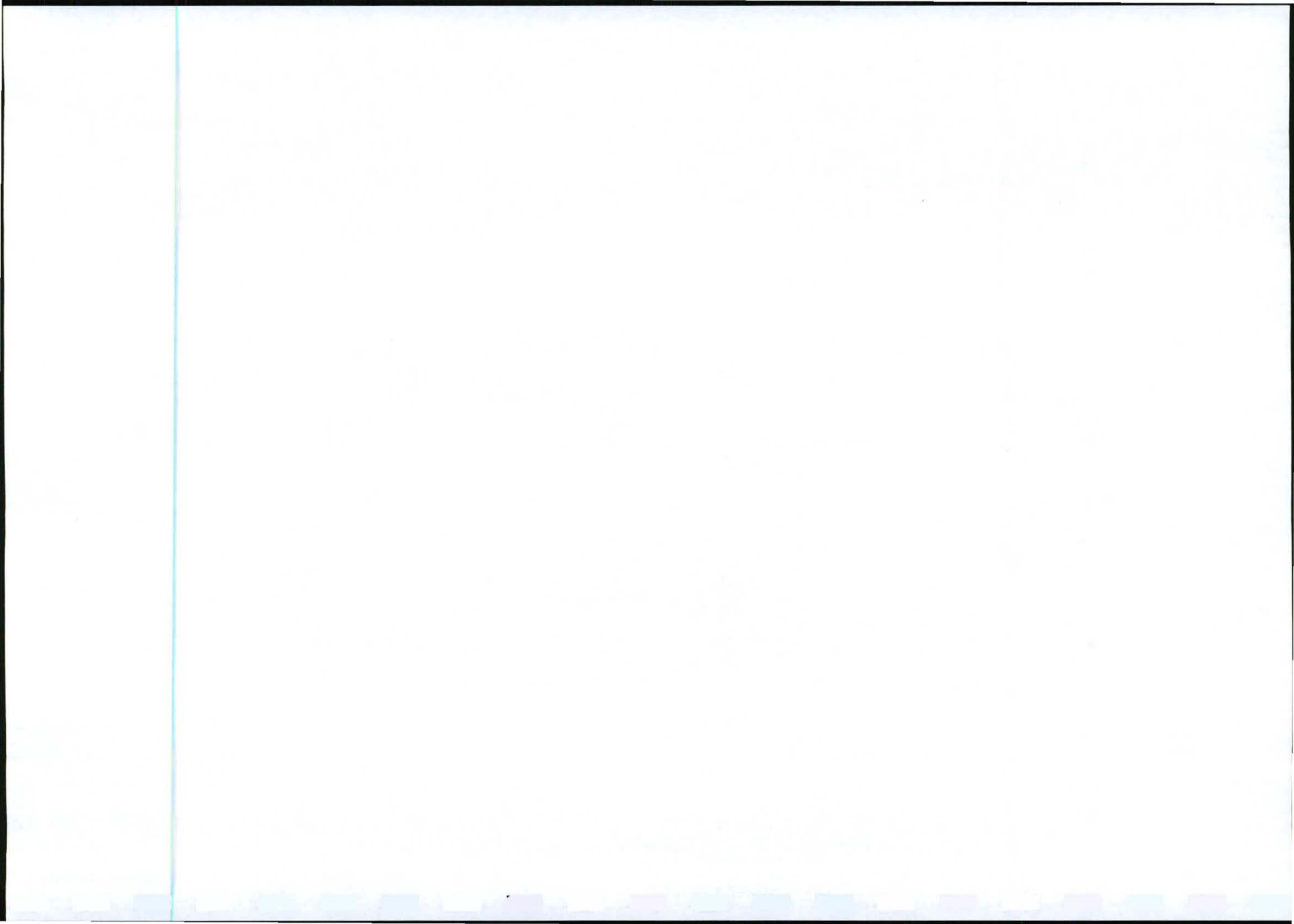


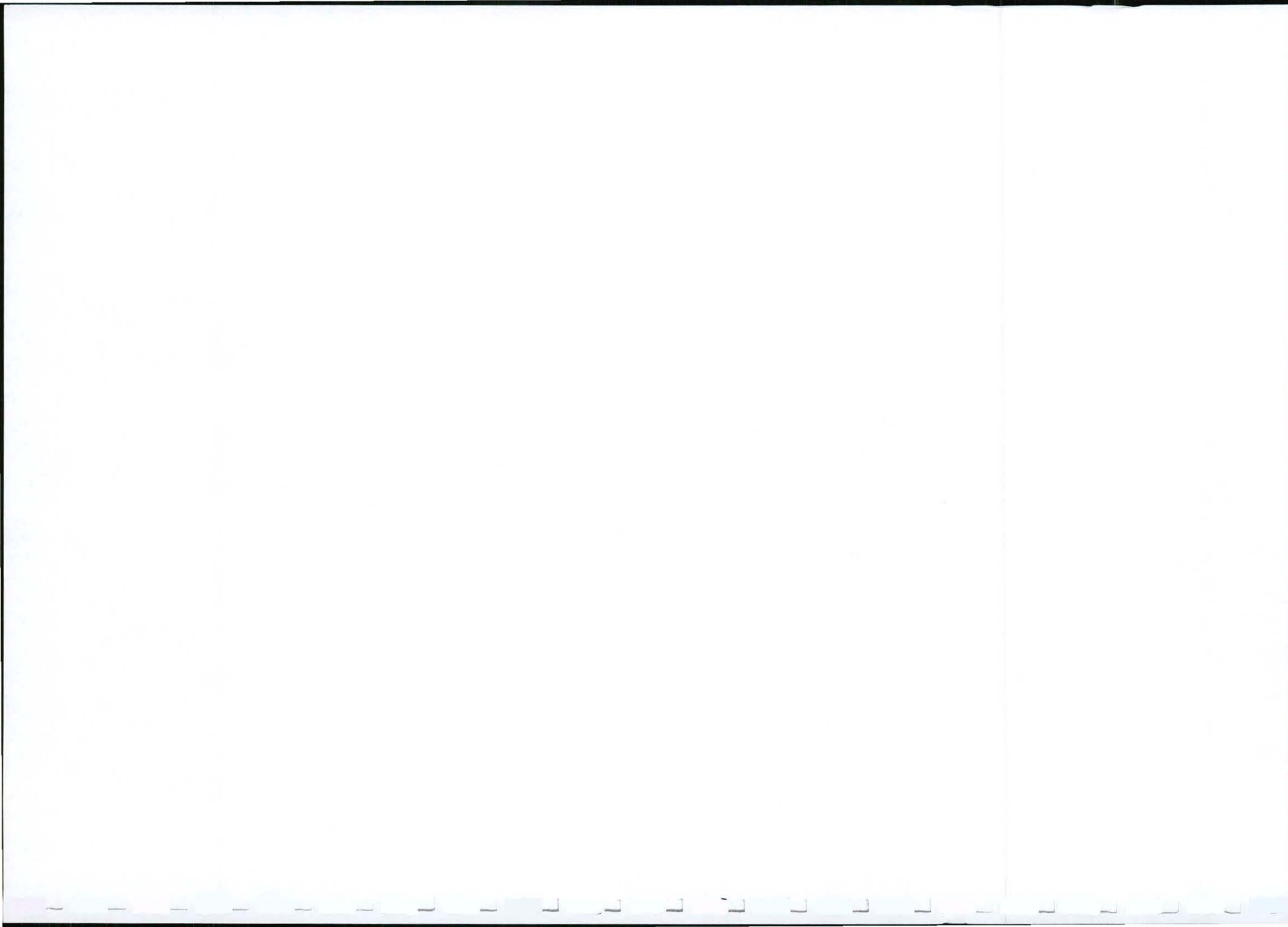
USK Consulting

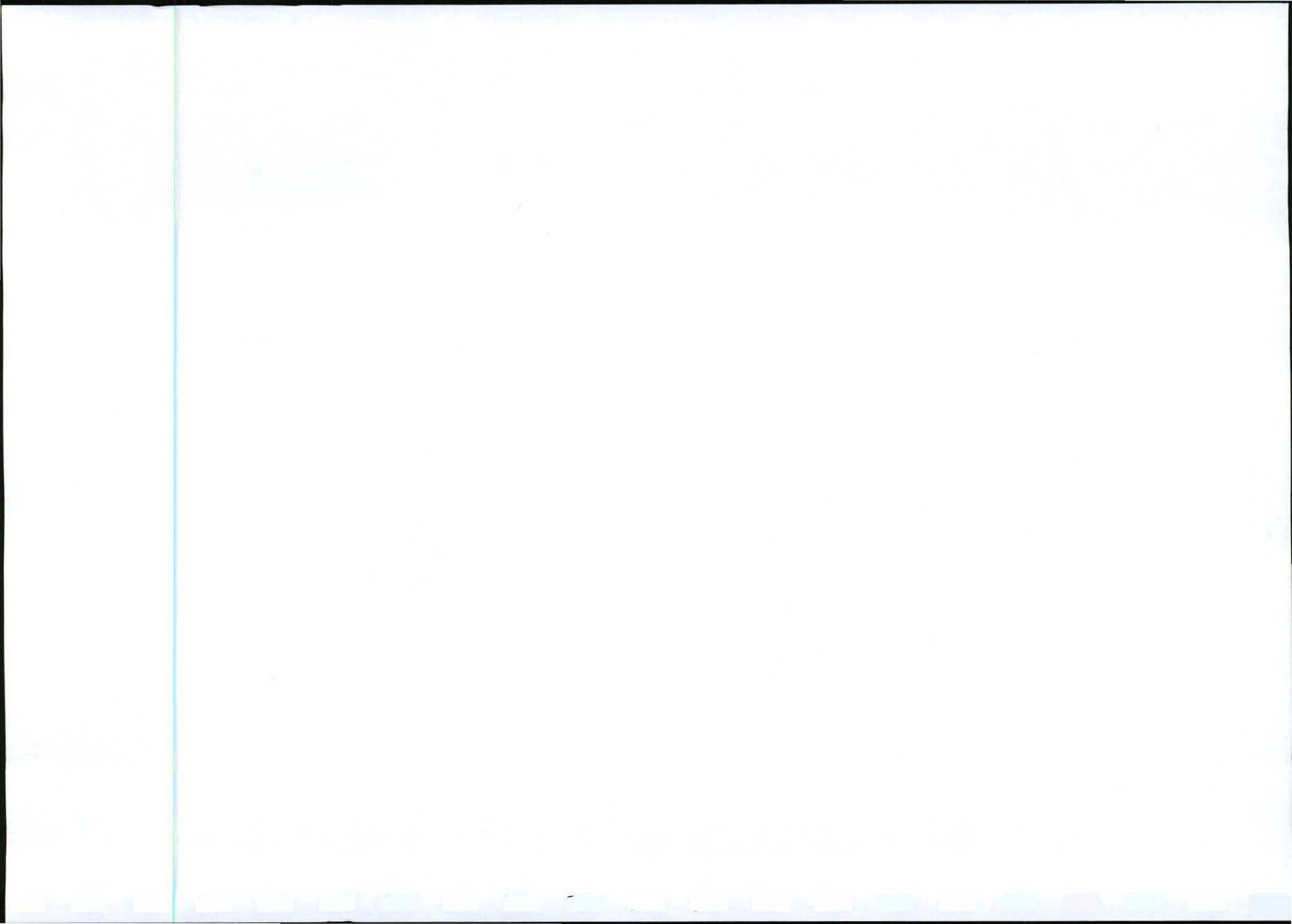
No objections to the proposed road and mining activity were received from the communities involved including landowners present.

However, most were concerned about the safety of school children and livestock; the length and width of the proposed road, employment issues; provision of access to the clinic, their homes and an entrance for buses to the adjoining school as well as other specifications. The community members were concerned that the proposed road will be short, ending only halfway and also wanted to know whether this could be the first phase with the road being extended further in future. There was also a request for another meeting, where engineers could also be present and for access to the Basic Assessment document.




2.3.3 Attendance Register (see attachment)

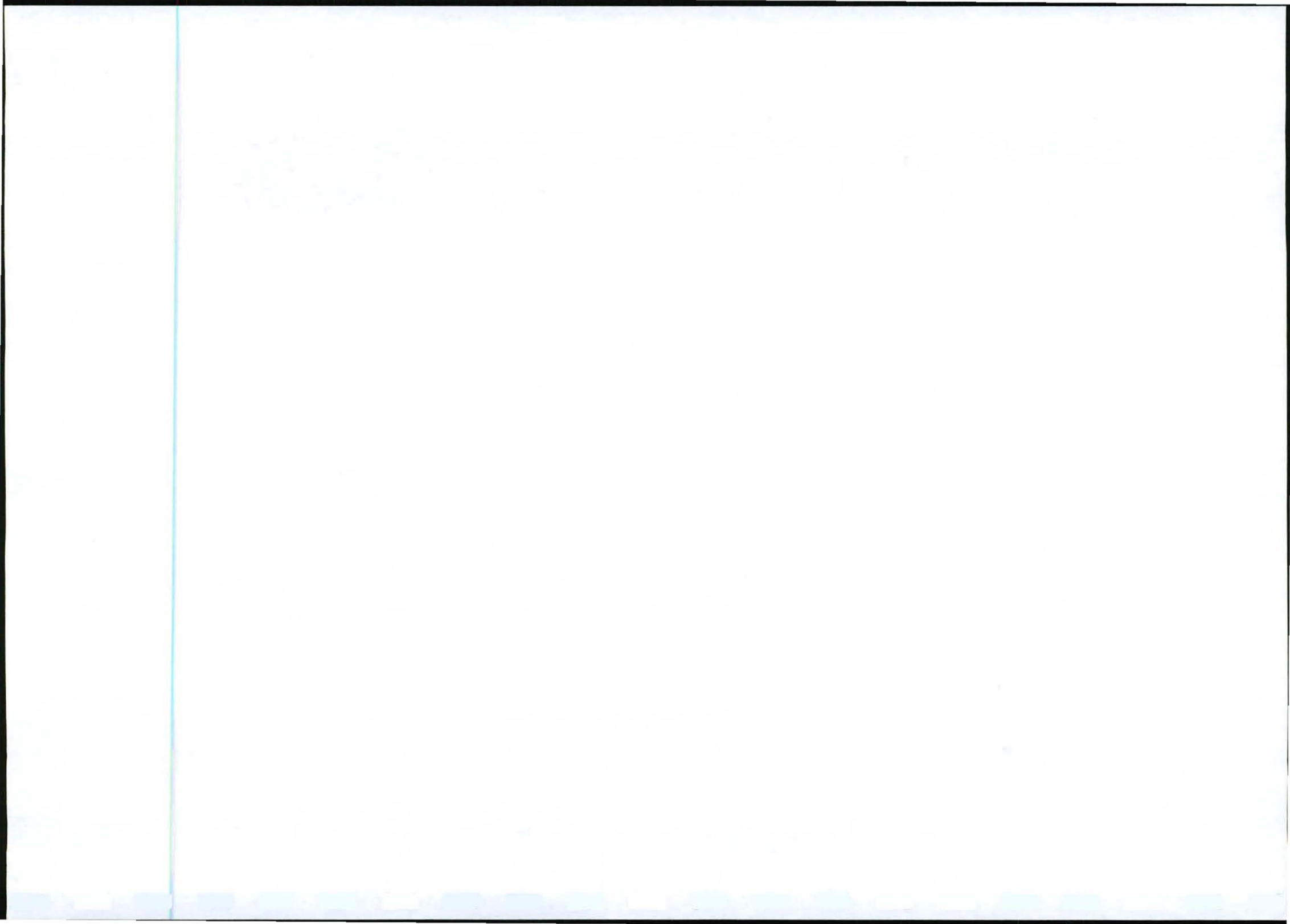








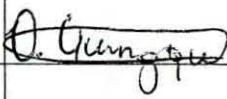



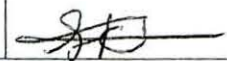
**THOLENI ACCESS ROAD
PUBLIC PARTICIPATION MEETING
Community Hall/Sport Field
Attendance Register
20 April 2010**

	Name (Printed)	Organization	Position	Telephone Number	Fax Number	Email Address	Signature
1	M. MAPEKULA	Municipal Umzimombeni	W/Cmt 21	Cell 082 467 3755	-	-	
2	X. Lungu	U.L.I. M.	W/CUR.20	0824674010	0312550167	-	
3	A. malhumbulu	Dangwane	21-4-2010	0733778756			A-M
4	ST MATA	TOLENI	21-4-2010	0796250680			
5	B. Mpsae	Dangwane	21-4-20	0287390100			
6	G. Kentso	Dangwane					
7	Vuzana	Dangwane					
8	HERMANS	DANGWANA	21,4,200				
9	JARA	DANGWANA	214200				











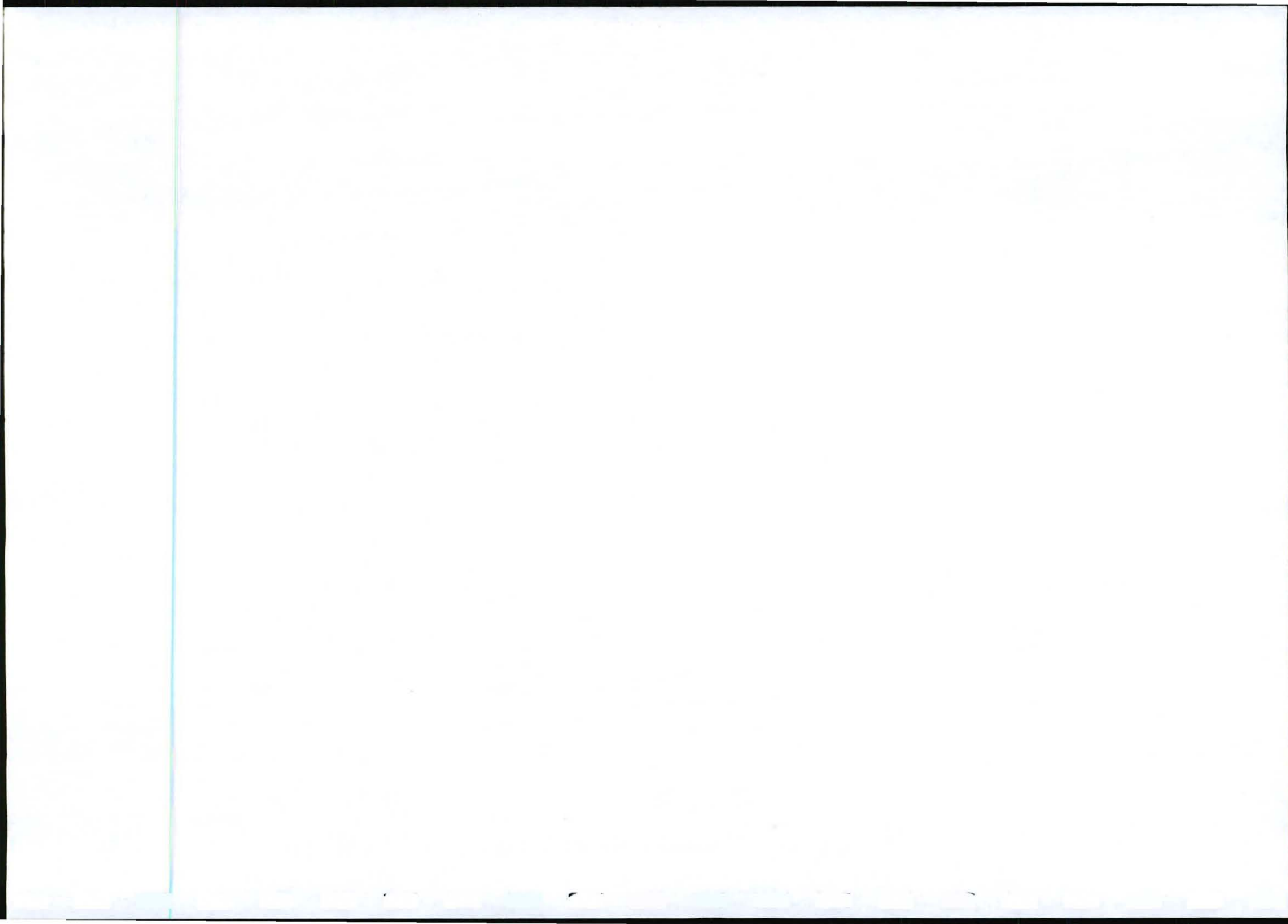
	Name (Printed)	Organization	Position	Telephone Number	Fax Number	Email Address	Signature
10	M. Mshumi			0711662713			M. Mshumi
11	N. Gxobole						N. Gxobole
12	E. Nonkhele						
13	V. Mgibidi			0765723499			V. Mgibidi
14	L. Nxopo			0730823255			L. Nxopo
15	H. Pncamisa			-			H. PE
16	M. Ddele			-			-
17	V. M. B. Kehe						
18	M. M. M. M.			-			-
19	I. Dombula			-			





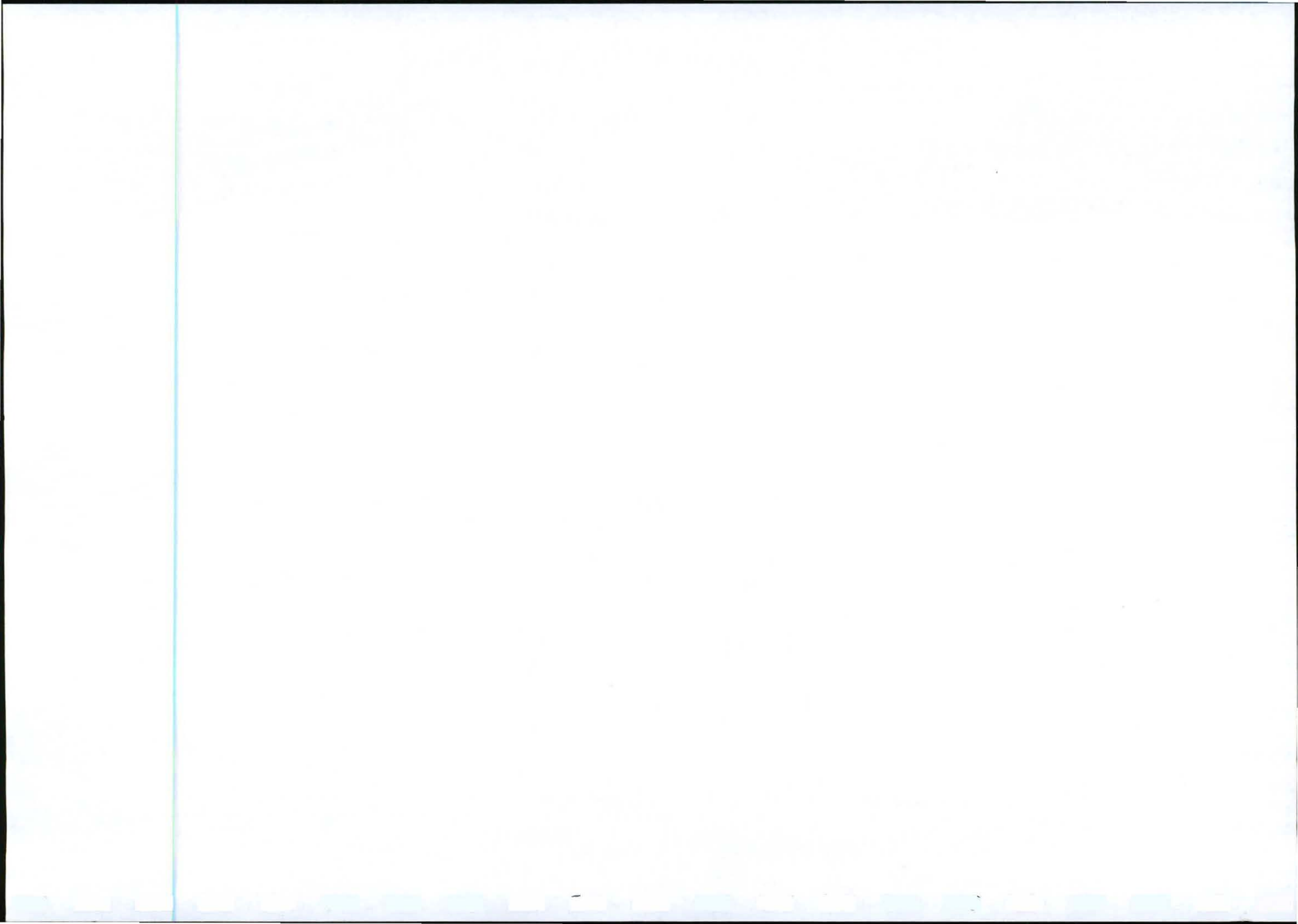
	Name (Printed)	Organization	Position	Telephone Number	Fax Number	Email Address	Signature
20							
21	<i>Timothy</i>						
	S. B. Mwas. Mzumbwa		21	0780117048	-	-	
22							
	<i>Imenda</i>						<i>Imenda</i>
23							
	O. Gungu	-	-	-	-	-	
24							
	John	-	-	-	-	-	
25							
	B. Bafu	-	21	083732929	-	-	BA
26							
	N. Nongindzi, Toleni		21	0744442601	-	-	
27							
	Z. Dado Mzimuubu		21	0739396239	-	-	<i>Z. Dado</i>
28							
	W.S. Befa Toleni		21	N/A	A/A	M/A	
29							
	S. KheThani Toleni		21	0766661992	-	-	



	Name (Printed)	Organization	Position	Telephone Number	Fax Number	Email Address	Signature
30	B. Shushu	-	-	N/A			
31	L. V. Kikilaha	-	-	N/A	-	-	
32	P. PAKA	-	-	N/A	-	-	
33	V. Shushu	-	-	N/A	-	-	
34	V. KheTsiwe	-	-	N/A	-	-	
35	m. m. Mout	-	-	N/A	-	-	
36	M. KALIPA	-	-	N/A	-	-	
37	N. Mantuse	-	-	0737346331	-	-	N. Mantuse
38	n JikinTelo	-	-	0732152299	-	-	n B.
39	M. Dodo	-	-	0722461198	-	-	



	Name (Printed)	Organization	Position	Telephone Number	Fax Number	Email Address	Signature
40	N. MAJEKE	-	-	0781699015	-	-	N. MAJEKE
41	N. Makaula	U.L.M	W/clerk	0724218336	0392551219	namaya.makaula@gmail.com	
42	BZ Naphi	-	wandcomint	0739457666			
43	Z. SHUSHU	-	-	0783950376	-	-	ZS
44	N B BAFE	B.E.C.	B.E.C.	0834658521	-		NB BAFE



**NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT
TOLENI ACCESS ROAD**

Notice is given in terms of Regulation 56(2) published under Government Notice GN R.385 under chapter 5 of the National Environmental Management Act, (Act 107 of 1998), of the Intent the proponent Eastern Cape Department of Roads and Transport to submit an application for Environmental Authorization for the Construction of Toleni Access Road starting from the N-2 at Dangwana signboard (approximately 10Km before Mount Free), to Toleni Trading centre ending. The project will also involve a mining permit application in terms of the Minerals and Petroleum Resources Development Act 28 of 2002 for use of a borrow pit for extraction of gravel material to be used for the road construction.

INVITATION TO PARTICIPATE

- All Interested and Affected Parties are invited to register their comments, issues and concerns in the above development, with the contact persons below before 31 March 2010.
- A Public Meeting will be held at Toleni Trading centre and the date and time will be communicated through the ward councilors.

Environmental Consultant:

Attn: Ms. Thuthukilie Khumalo

USK CONSULTING

Tel: 043 748 5567

Fax 043 748 1114

Email: tkhumalo@uskconsulting.com

