



**mineral resources**

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

**NAME OF APPLICANT:**

**TRANSWORLD ENERGY AND MINERAL RESOURCES SA (PTY) LTD (TEM)**

**REFERENCE NUMBER:**

**EC30/30/5/1/1/2/10025 PR**

# **ENVIRONMENTAL MANAGEMENT PLAN**

**SUBMITTED  
IN TERMS OF SECTION 39 AND OF REGULATION  
52 OF THE MINERAL AND PETROLEUM  
RESOURCES DEVELOPMENT ACT, 2002,  
(ACT NO. 28 OF 2002) (the Act)**

## **STANDARD DIRECTIVE**

Applicants for prospecting rights or mining permits, are herewith, in terms of the provisions of Section 29 (a) and in terms of section 39 (5) of the Mineral and Petroleum Resources Development Act, directed to submit an Environmental Management Plan strictly in accordance with the subject headings herein, and to compile the content according to all the sub items to the said subject headings referred to in the guideline published on the Departments website, within 60 days of notification by the Regional Manager of the acceptance of such application. This document comprises the standard format provided by the Department in terms of Regulation 52 (2), and the standard environmental management plan which was in use prior to the year 2011, will no longer be accepted.

**IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED.**

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**1 REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation**

1.1 The environment on site relative to the environment in the surrounding area.

The proposed prospecting right area (PRA) is one of five (5) resource blocks which comprise the Xolobeni Mineral Sands Project (Xolobeni). The Xolobeni area is located between the Mzamba and Mtentu Rivers, along the east coast of South Africa.

The Kwanyana PRA area (hereafter referred to as “Kwanyana Block”) extends along the coast bordered by the Mnyameni River along the northern boundary and the Kwanyana River to the south.

The description of the proposed Kwanyana Block has been extracted from the specialist reports compiled with respect to the Xolobeni Mineral Sands Project in 2007.

### **Kwanyana Block PRA**

The Xolobeni area is comprised of a series of coastal dune blocks dissected by eight estuaries into five sub-deposits.

#### *Topography*

The topography is controlled largely by the Msikaba sandstone that has a shallow dip to the east. The underlying granites are less resistant and where they crop out along the western edge of the coastal ridge due to faulting, the rocks weather preferentially resulting in the undulating topography and incised drainage lines. The 'Berea' red sand dune ridge rises to heights of approximately 70m to 94m above mean sea level. A platform of eroded and transported red sand occurs along some sections of the coast at approximately 15m to 20m between the eastern limit of the dune ridge and the younger, vegetated coastal dunes which reach 20m to 60m in height. Some localized seasonal wetlands have formed behind the coastal dunes.

#### *Soil*

The soil forms for the Kwanyana Block generally comprise grey, calcareous fine sands of the Namib Form. These regic sands overlie Berea Red Formation sandy clays.

### *Land Use*

The current land use within the entire Xolobeni area is grazing and subsistence-farming (maize and madumbis). Areas that are unsuitable for cultivation (i.e. soil depth too shallow or slope too steep) are grazed extensively.

### *Flora*

The area falls within Veld Type 1(d) Dune Forest (Acocks, 1975) or 1. Coastal Forest (Low & Rebelo, 1996) but is comprised of three main plant communities including Dune Forest, Coastal Grassland and Wetlands, the latter including estuaries and rivers as well as marshes. A total of 374 plant species were recorded for the area.

The Dune Forest within the Kwanyana Block is well developed but has been impacted by anthropogenic activities. It forms a closed canopy along a narrow strip flanking the littoral zone, reaching heights of 8-10m in parts in dune valleys but reduced in height on the crests of the dunes. Species composition is mixed, but is dominated by tree species. Shrubs are prominent along the outer margins where sunlight penetrates. Climbers rise into the canopy and grow along the margins.

The field layer is mostly devoid of plants, which mostly grow where some light penetrates the canopy and along the outer margins. This is where the presence of the fern *Microsorium scolopendrium*, the grasses *Oplismenus hirtellus* and *Panicum deustum*, a sedge *Cyperus albostriatus* and a few forbs including *Dietes sp. cf grandiflora*, *Isoglossa woodii* and *Barleria obtusa* were recorded.

Most of the remaining Kwanyana Block area consists of Coastal Grassland with a wide range of grass species. There was also an abundance of forbs along the edge of the Dune Forest and the Coastal Grassland. A weed, *Ambrosia artemesiifolia* was widespread in the grasslands in disturbed areas.

Bushclumps and scattered shrubs occurred in the grassland, some of which are remnants of the former extent of the Dune Forest.

### *Fauna*

The fauna of the area was very impoverished although birds were quite common. The bird composition included mostly Black-eyed Bulbuls (*Pycnonotus barbatus*), of a total of 30 species, including the Fish Eagle (*Haliaeetus vocifer*) which were recorded.

No threatened or rare bird species were recorded within the Kwanyana Block.

The presence of eight (8) mammal species were recorded, including the Vervet Monkey (*Cercopithecus aethiops*), Hottentot Golden Mole (*Amblysomus hottentotus*), Common Molerat (*Cryptomys hottentotus*), Large-spotted Genet (*Genetta tigrina*), Water Mongoose (*Atilax paludinosus*), White-tailed Mongoose (*Ichneumia albicauda*), Cape Clawless Otter (*Aonyx capensis*) and Blue Duiker (*Philantomba monticola*) listed as Vulnerable in the South African Red Data Book - Mammals (Friedmann & Daly 2004). Two (2) reptiles and four (4) amphibian species were recorded, none of which are rare or threatened.

### *Wetlands*

Wetlands were widespread in valleys between the sand covered hills or pseudo dunes, mostly forming tributaries of larger streams and rivers. Mostly cultivated, the wetlands exhibited a mosaic of plant communities according to the length of time the area has lain fallow. In marshy areas canals have been dug to divert the water around fields to prevent waterlogging. Many crops had been planted including Taro Root (*Colocasia esculenta*), Sweet Potato (*Ipomoea batatas*), vegetables and maize (*Zea mays*), depending on the moisture content of the soil. Bananas (*Musa sapientum*) clumps were occasionally also present.

Plants recorded in and around the wetlands were diverse. Grasses mostly *Digitaria natalensis*, *Cymbopogon validus*, *Imperata cylindrica*, *Hemarthria altissima* and in wetter areas *Phragmites australis* were common.

Sedges and forbs were also common in the wetland areas.

Large stands of *Kniphofia spp.* and *Watsonia spp.* grew where no cultivation has taken place in relatively recent times.

### *Estuaries*

The Mnyameni and Kwanyana River Estuaries form part of the boundary of the Kwanyana Block.

- Kwanyana Estuary

The perennial herb *Incema (Juncus kraussii)* formed a dense sward along the right hand bank of the estuary amongst which a few scattered Black Mangrove (*Bruguiera gymnorrhiza*) grew as well as the Mangrove Fern (*Acrostichum aureum*). Sandbanks along the margin of the estuary are colonized by the halophytic grass *Sporobolus virginicus* with grasses such as *Aristida junciformis* and *Stenotaphrum secundatum* higher up the slope. Plant species typical for Dune Forest occur near the mouth but beyond the frontal dunes are largely absent with grassland extending to the *Juncus*. Wetland conditions occur along the bank of the estuary with grasses. Sedges and forbs were also recorded along the banks.

Mixed vegetation occurs along the bank upstream including many woody species such as *Bridelia micrantha*, *Voacanga thouarsii*, *Acacia natalitia*, and, among rocks, *Ficus glumosa*. *Syzygium cordatum* was common along the bank.

- Mnyameni Estuary

A tributary to the Mnyameni River enters the estuary from the north, approximately half way upstream of the mouth. Between this confluence and the mouth of the estuary a flat tidal floodplain bordered by the steep slopes of a large dune was covered by a stand of Mangroves behind which a sedge marsh was present. Here the largest stand of White Mangroves *Avicennia marina* between the Mzamba and Mtentu Rivers was recorded, growing in deeper water with smaller Black Mangroves *Bruguiera gymnorrhiza* behind under

shallower conditions, followed by sedges further back perhaps under less saline conditions.

Upstream of the confluence a stand of *Juncus kraussii* dominated the bank with an extensive sedge and grass wetland between it and the slopes of the pseudo dunes.

In contrast only a few Mangroves, mostly *Bruguiera* but also an *Avicennia* was recorded along the right hand bank, growing amongst *Juncus kraussii*. The latter grew intermittently in a narrow zone along the water's edge upstream of the Mangroves with trees, shrubs and other plants forming a narrow zone behind the *Juncus*.

Seepage zones were common along the steep banks above the estuary dominated by grasses and sedges. At the mouth Dune Forest extended to the sand banks with typical constituent species.

### **Surrounding Land**

The Kwanyana Block and surrounding land is located within an area referred to as the Pondoland Centre of Endemism (PCE). It covers an area of 1880 km<sup>2</sup>, extending from the Mtumvuna River at Port Edward, to the Kei River and extending inland from the sea for approximately 16km.

The PCE is internationally recognised as a botanical 'hotspot' of plant endemism, and is regarded as the second most species rich floristic region in Southern Africa. According to the Mbizana Local Municipality Integrated Development Plan (IDP) review (2011/2012), proposals have been tabled for the entire coastal area to be declared a National Conservation Park.

The conservation value of the inland areas is regarded as significantly lower than the coastal areas due to anthropogenic activities.



The land adjacent to the Xolobeni area is comprised of arable, grazing, wetland and wilderness areas.

The Mkambati Wildlife Reserve and Marine Sanctuary is situated to the south of the Xolobeni area, while the Umtamvuna Nature Reserve is located approximately 6km to the north.

The Mbizana IDP recognizes the Tourism Development Areas as identified in the Wild Coast Spatial Development Framework and aims to develop these.

### **Marine Area to the east of Kwanyana Block**

The adjacent offshore area to the east of the Kwanyana Block falls within the Pondoland Marine Protected Area (MPA), declared in terms of section 77(2)(x)(i), of the Marine Living Resources Act, 1998 (Act No. 18 of 1998) (MLRA).

The MPA stretches some 90km along the coastline from the southern head of the Mzamba River (31° 06.6'S; 030° 10.5'E), until the northern head of the Mzimvubu River (31° 37.4'S; 029° 33.2'E) and including the banks of the tidal portions of the Mnyameni, Sikombe, Mtentu, Msikaba, Mkweni, Mboyti, Mzintlava, Mntafufu and Nkodusweni Rivers. The MPA extends approximately 10-15 km out to sea to the 1000 m isobaths.

The Pondoland MPA lies within the Natal Bioregion, forming a transition zone between sub-tropical and warm-temperate ecosystems.

The area has a high diversity of marine organisms and high level of endemism. There is a wide range of marine and coastal habitats within this area, which includes what are considered to be some of South Africa's most pristine estuaries. The area is also the core distribution area of overexploited line-fish (inshore fish commonly caught by fishing rod), including red steenbras and black musselcracker. It also forms an important habitat for a number of intertidal

invertebrates (e.g. brown mussels, oysters and limpets), many of which have been subjected to extensive harvesting in the past.

The MPA is divided into two (2) offshore Controlled Zones, one (1) offshore Sanctuary Zone, five (5) inshore Controlled Zones, four (4) inshore Sanctuary Zones, seven (7) estuarine Controlled Zones and two (2) estuarine Sanctuaries. The Sanctuary Zones or 'no-take' zones serve to allow marine species and ecosystems to exist in a natural state, to protect heavily exploited fish resources and to enhance eco-tourism opportunities. All forms of fishing are prohibited within these zones.

The Controlled Zones serve to allow controlled and monitored exploitation of marine species.

The holders of commercial, recreational and subsistence fishing permits granted in terms of section 13 of the MLRA are only permitted to fish within the Controlled Zone if permission to do so is granted by the Minister in terms of section 43(3) of the Act.

1.2 The specific environmental features on the site applied for which may require protection, remediation, management or avoidance.

The Mnyameni and Kwanyana River estuaries and the wetland areas are considered to be sensitive areas within the Kwanyana Block.

However, due to the fact that the prospecting activities will comprise merely information gathering and stakeholder consultation to establish the environmental baseline and socio-economic conditions of the study area, protection, remediation, management or avoidance of sensitive habitats will not be required.

1.3 Map showing the spatial locality of all environmental, cultural/heritage and current land use features identified on site.

The following maps are included in this report:

- Figure 1.1: Geological Map;
- Figure 1.2: Hydrological Map;
- Figure 1.3: Soils Map;
- Figure 1.4: Land Use Map; and
- Figure 1.5: Wetlands Map
- Figure 1.6: Location of Graves in Kwanyana Block

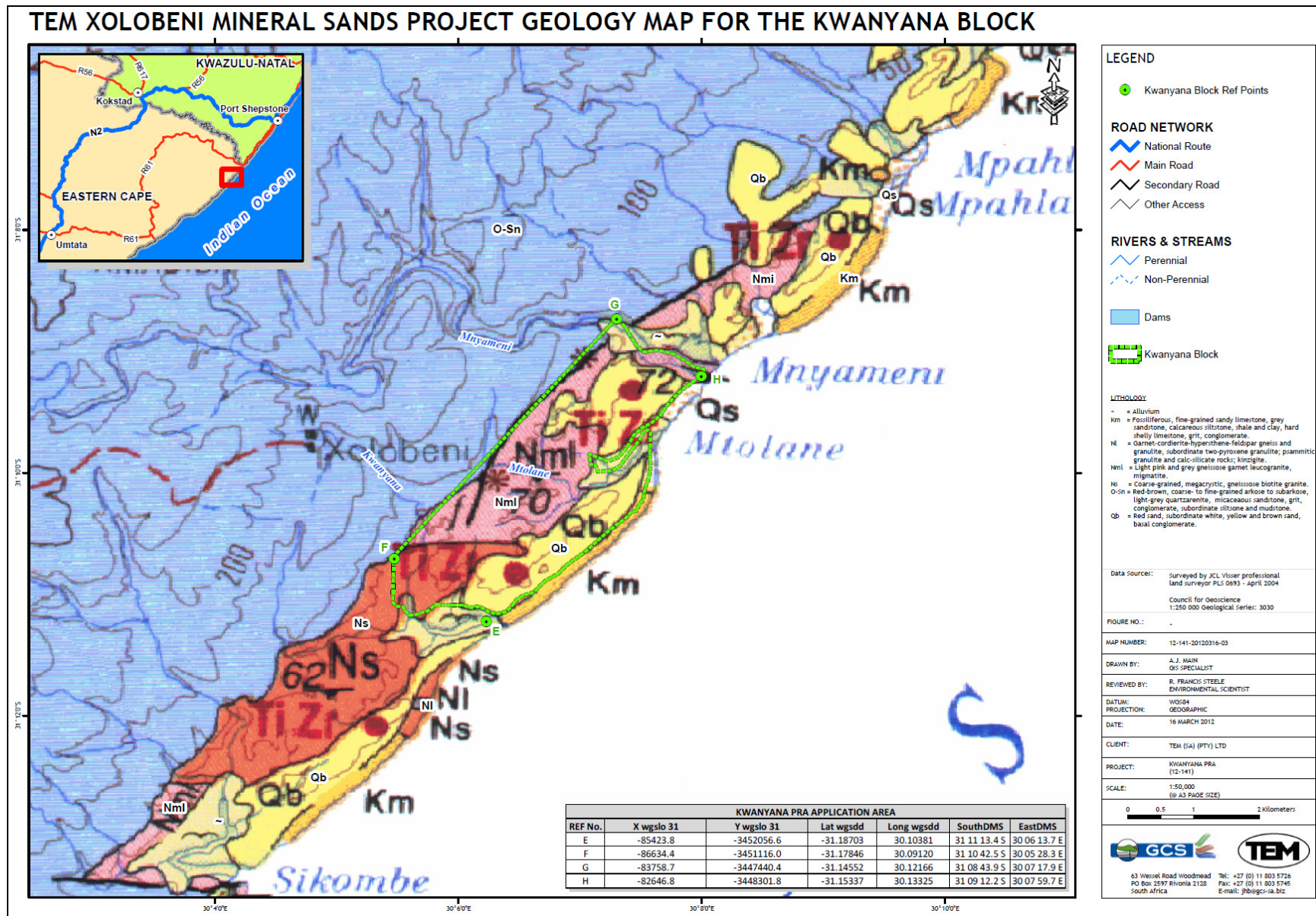


Figure 1.1: Kwanyana Block: Geological Map

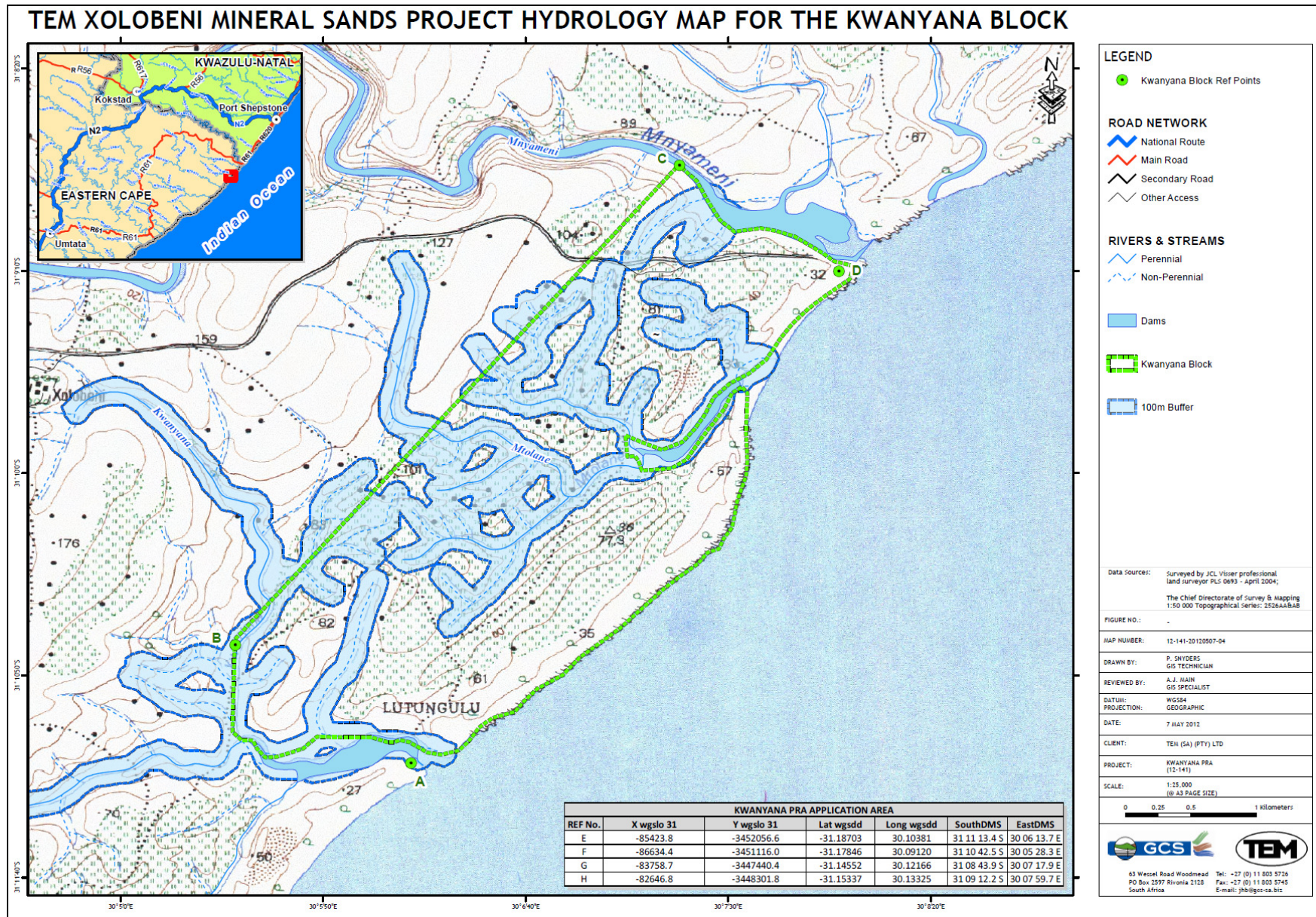


Figure 1.2: Kwanyana Block: Hydrology Map

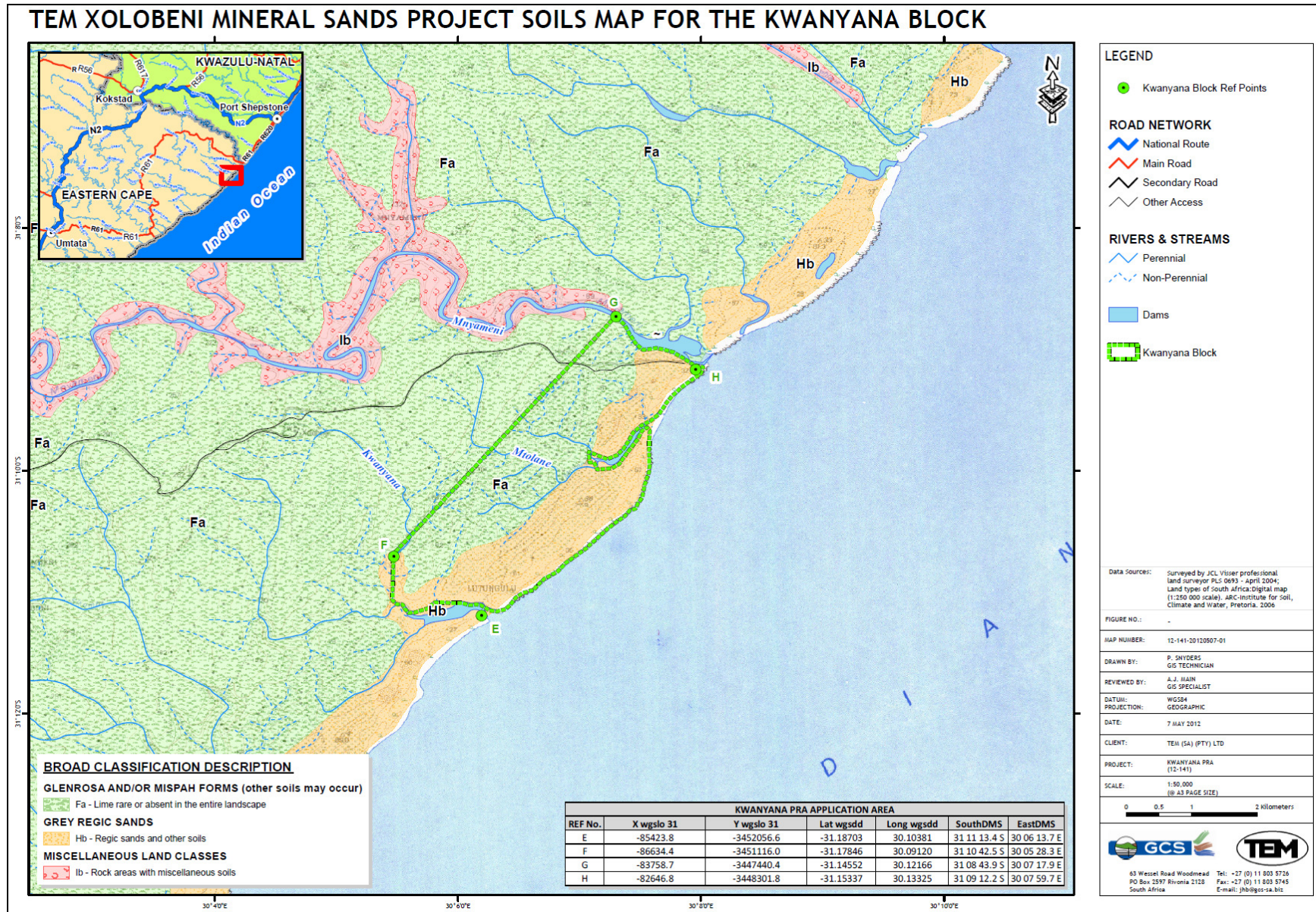


Figure 1.3: Kwanyana Block: Soils Map

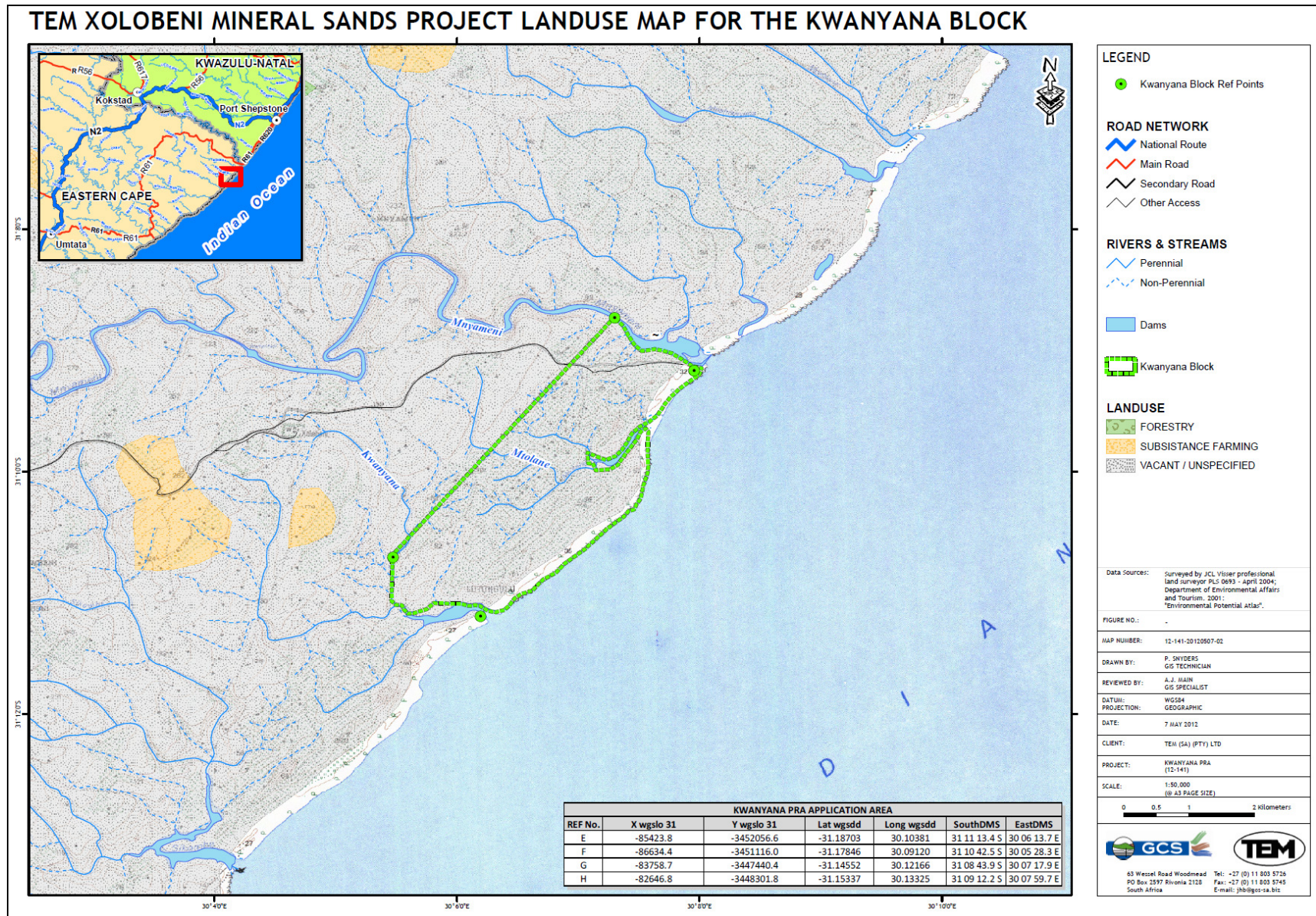


Figure 1.4: Kwanyana Block: Land Use Map

### TEM XOLOBENI MINERAL SANDS PROJECT WETLANDS MAP FOR THE KWANYANA BLOCK

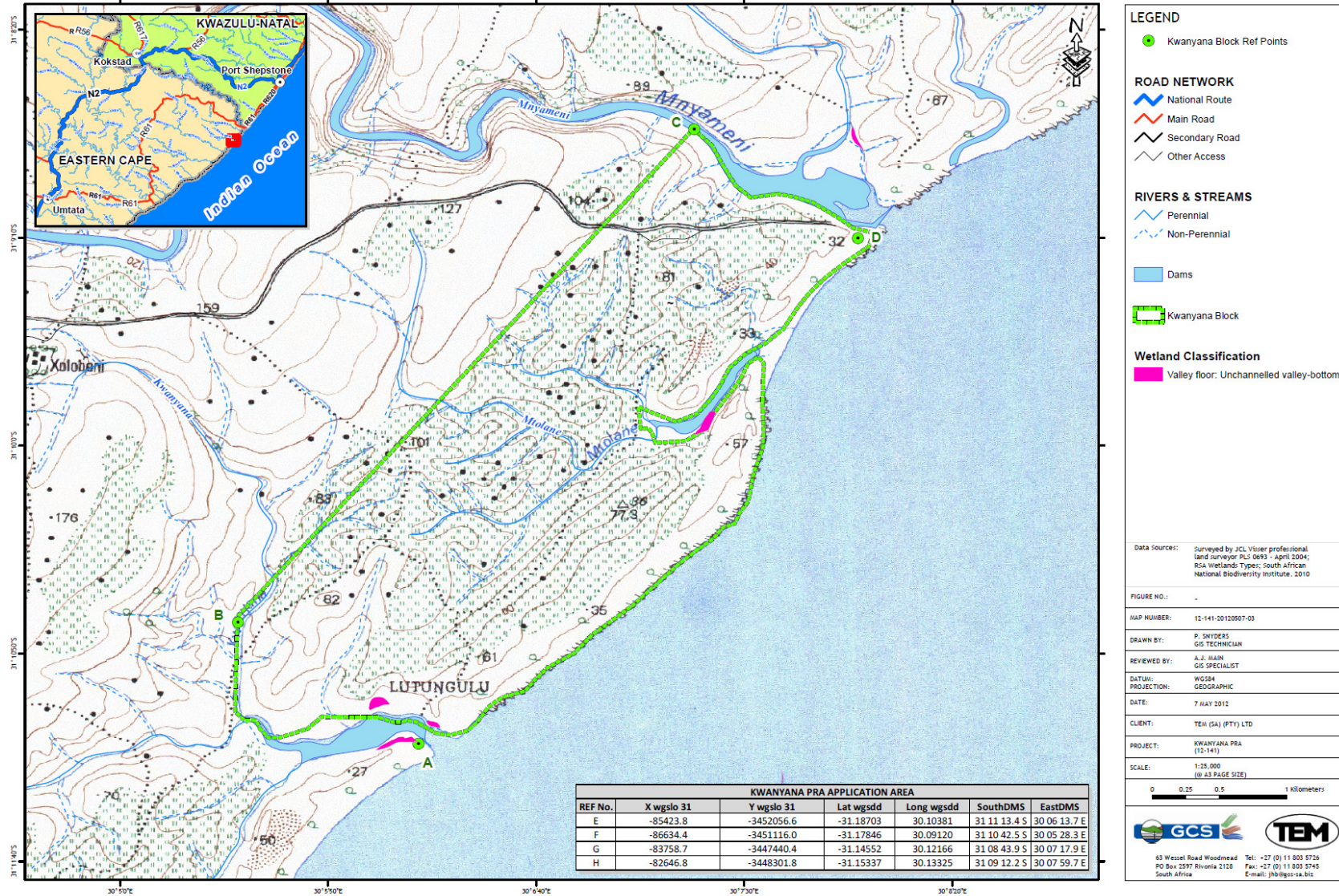


Figure 1.5: Kwanyana Block: Wetland Map (Using available cadastral data)



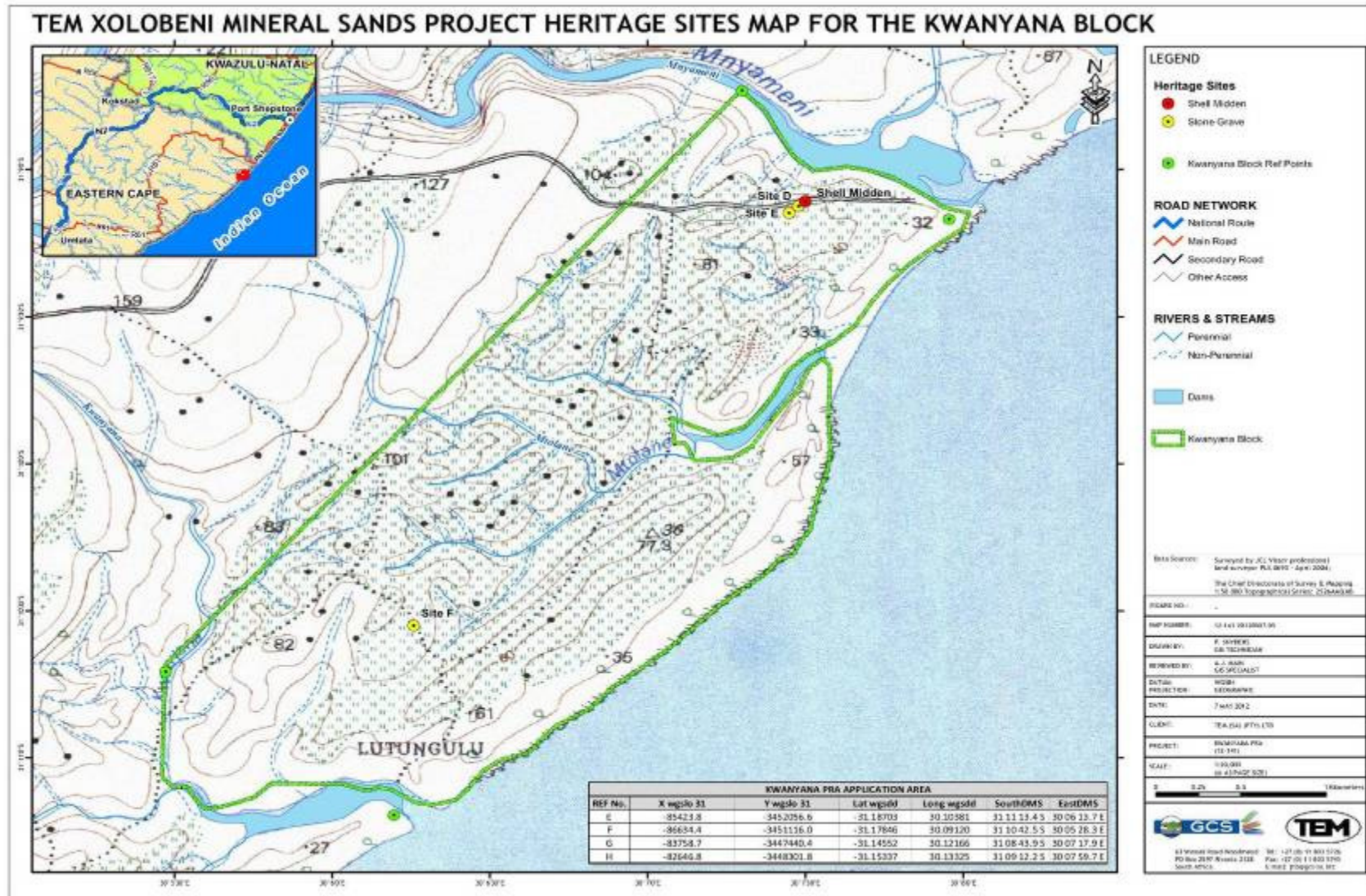


Figure 1.6: Location of Graves in Kwanyana Block

1.4 Confirmation that the description of the environment has been compiled with the participation of the community, the landowner and interested and affected parties,

The description of the environment was obtained from the specialist reports compiled in support of the Mining Right Application for the Xolobeni area in 2007.

This application was subject to public participation in the form of newspaper advertisements; the distribution of pamphlets/flyers (in Xhosa and English), the distribution of Background Information Documents (BIDs) in (English) via fax, telephone and email; public meetings.

For the purposes of this PRA, public consultation has been undertaken in the form of:

- Pre-consultation meetings that were held with various stakeholders during the weeks of 09 – 18 May 2012. These meetings led to the confirmation of Public Participation meetings that took place at Umgungundlovu and Amadiba Tribal Authority on the 24 May 2012 and at Bizana Youth Centre on the 25 May 2012.
- Ongoing registration of Interested and Affected Parties. This information was used to update the existing Xolobeni data base and generate an issues trail of comments received.

The description of the environment will be further updated in the event that a prospecting right is granted by the DMR, through the commissioning of the various proposed environmental and socio-economic baseline studies (Refer to section 2.1 of this report).

## **2 REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed prospecting operation on the environment, socio- economic conditions and cultural heritage.**

### **2.1 Description of the proposed prospecting operation.**

#### **2.1.1 The main prospecting activities (e.g. access roads, topsoil storage sites and any other basic prospecting design features )**

**During the prospecting period only specialist assessments will be conducted, no mining related activity will take place and no infrastructure will be constructed.**

Baseline investigations were undertaken in 2007 and 2008 with respect to the Mining Right Application for the Xolobeni Area. A list of these reports is attached as Appendix C of this report. These studies will be used to support the specialist investigations to be undertaken during the prospecting period. The specialist investigations undertaken include:

- Surface Water (Surface Water Monitoring);
- Groundwater (Hydrogeological Assessment);
- Aquatic Ecology (Biomonitoring of Mnyameni and Kwanyana Estuaries bordering the Kwnayana Block);
- Fauna and Flora (Surveys of the Kwanyana Block);
- Soils (Fertility and Migration within the Kwanyana Block);
- Air Quality (Assessment of the Xolobeni Area and Impact Assessment for related road realignment);
- Heritage (Heritage Impact Assessment of Xolobeni Area);
- Noise (Ambient Noise Levels and Traffic Noise Impact Assessment for Xolobeni);
- Traffic (Traffic Impact Assessment for Xolobeni Project);
- Visual (Visual Impact Assessment for Xolobeni Area); and
- Socio-economic.

The prospecting work to be undertaken will comprise the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Socio-economic work will report on the current social and economic conditions of the immediate community as well as keep the community informed of developments within the Xolobeni project. Environmental and socio-economic investigations will include the collection of baseline data and analysis of data covering the following activities:

- ***Soil fertility sampling and migration:***

Soil fertility tests will be done concurrently with soil/dune migration studies. Soil migration studies measure the rate at which grassland is lost to the dunes. These will be done on a quarterly basis for the duration of the prospecting period.

- ***Surface Water and Groundwater Monitoring:***

Water monitoring will be conducted on a quarterly basis and an annual water quality report will be compiled.

- ***Bio-monitoring of the estuaries:***

Bio-monitoring will be done bi-annually (winter and summer assessment) and an annual bio-monitoring report will be compiled for the duration of the prospecting period.

- ***Flora and rehabilitation studies:***

Flora studies will be undertaken on a bi-annual basis (high and low rainfall seasonal assessment) for the duration of the prospecting period.

- ***Fauna Survey:***

A faunal (wet and dry season) survey will be undertaken to update the baseline data gathered in 2007.

- ***Socio-economic studies***

Social assessments will comprise two studies spaced eighteen (18) months apart that will serve to keep the affected community informed of

significant developments and to identify any social issues which may become prevalent over time.

- ***Air Quality Monitoring***

Air quality monitoring will be undertaken monthly during the prospecting period. An annual air quality monitoring report will be produced at the end of each year of the prospecting period.

- ***Noise Assessment***

A baseline noise survey will be undertaken for the Kwanyana Block and will be done once-off.

- ***Traffic Survey:***

A traffic survey will be undertaken for the Kwanyana Block, and will be done once off..

In conclusion: No actual prospecting activities are planned for the prospecting period. The collection of data and establishment of the baseline conditions on the areas will not be invasive and will not create any adverse environmental impacts.

### **2.1.2 Plan of the main activities with dimensions**

No invasive prospecting activities are planned for the three year prospecting period being applied for.

The only possible invasive activity to be undertaken will be soil sampling. Soil sampling will be conducted within predetermined areas of the PRA area. It is, however, considered to be minimally invasive.

### 2.1.3 Description of construction, operational, and decommissioning phases

N/A. No construction, operation or decommissioning is planned for the prospecting period.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

The following specialist studies will be completed during the prospecting period:

- Surface Water (Surface Water Monitoring);
- Groundwater (Hydrogeological Assessment);
- Aquatic Ecology (Biomonitoring of Mnyameni and Kwanyana Estuaries bordering the Kwnayana Block);
- Fauna and Flora (Surveys of the Kwanyana Block);
- Soils (Fertility and Migration within the Kwanyana Block);
- Air Quality (Assessment of the Xolobeni Area and Impact Assessment for related road realignment);
- Heritage (Heritage Impact Assessment of Xolobeni Area);
- Noise (Ambient Noise Levels and Traffic Noise Impact Assessment for Xolobeni);
- Traffic (Traffic Impact Assessment for Xolobeni Project);
- Visual (Visual Impact Assessment for Xolobeni Area); and
- Socio-economic.

### 2.1.4 Listed activities (in terms of the NEMA EIA regulations)

Listing Notice 1: Government Notice No 544, published in Government Gazette No. 33306, dated 18 June 2010:

**Activity 19:**

Any activity which requires a prospecting right or renewal thereof in terms of sections 16 and 18 respectively of the Mineral And Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

All activities listed in the above listing notice require a Basic Assessment and Public Participation process in terms of NEMA in order to apply for environmental authorisation from the regional Environmental Affairs department (Department of Environmental Affairs and Development Planning).

At present however, Activity 19 is not in effect yet.

## **2.2 Identification of potential impacts**

### **2.2.1 Potential impacts per activity and listed activities.**

N/A. No actual prospecting activities will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Completion of the specialist studies will determine if there will be any potential impacts.

### **2.2.2 Potential cumulative impacts.**

N/A. No actual prospecting activities will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Completion of the specialist studies will determine if there will be any cumulative impacts.

### **2.2.3 Potential impact on heritage resources**

N/A. No actual prospecting activities will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Completion of the specialist studies will determine if there will be any potential impacts.

### **2.2.4 Potential impacts on communities, individuals or competing land uses in close proximity.**

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case.)

N/A. No actual prospecting activities will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Some of the members of the communities in close proximity to the proposed prospecting area indicated that they are not in favour of any mining activity on their land. Kindly refer to the minutes of the public meetings held and the issues trail contained in the Public Participation Report submitted as an annexure to this EMP.



### **2.2.5 Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties**

No actual prospecting activities will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Kindly refer to the minutes of the public meetings held and the issues trail contained in the Public Participation Report submitted as an annexure to this EMP.

### **2.2.6 Confirmation of specialist report appended.**

No specialist studies have been conducted yet. The prospecting period will consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Refer to section 2.1 in this EMP which lists the specialist studies that will be undertaken.

### 3 REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts.

#### 3.1 Assessment of the significance of the potential impacts

##### 3.1.1 Criteria of assigning significance to potential impacts

The environmental impacts identified were assessed based on the following criteria:

- Occurrence:
  - probability of occurrence (how likely is it that the impact may occur?), and
  - duration of occurrence (how long may it last?).
- Severity
  - magnitude (severity) of impact (will the impact be of high, moderate or low severity?), and
  - scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site)

The significance of the environmental impacts were determined by ranking each criteria using the values in Table 3.1 and applying the formula described thereafter.

**Table 3.1 Ranking Scale**

PROBABILITY: P	DURATION: D	SCALE: S	MAGNITUDE: M
5 – Definite/don't know	5 – Permanent	5 – International	10 - Very high/don't know
4 – Highly probable	4 - Long-term (ceases with the operational life)	4 – National	8 – High
3 – Medium probability	3 - Medium-term (5-15 years)	3 – Regional	6 – Moderate
2 – Low probability	2 - Short-term (0-5 years)	2 – Local	4 – Low
1 – Improbable	1 – Immediate	1 – Site only	2 – Minor
0 – None		0 – None	

Once the above factors had been ranked for each impact, the environmental significance of each was assessed using the following formula:

$SP = (\text{magnitude} + \text{duration} + \text{scale}) \times \text{probability}$

- The maximum value is 100 significance points (SP). Environmental effects were rated as either of high, moderate or low significance on the following basis:
- More than 60 significance points indicated high (H) environmental significance.
- Between 30 and 60 significance points indicated moderate (M) environmental significance.
- Less than 30 significance points indicated low (L) environmental significance.

### **3.1.2 Potential impact of each main activity in each phase, and corresponding significance assessment**

No invasive prospecting will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Therefore no impacts are envisaged.

### **3.1.3 Assessment of potential cumulative impacts.**

No invasive prospecting will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Therefore no impacts are envisaged.

### **3.2 Proposed mitigation measures to minimise adverse impacts.**

No mitigation is considered necessary because no invasive prospecting will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

#### **3.2.1 List of actions, activities, or processes that have sufficiently significant impacts to require mitigation.**

No invasive prospecting will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Therefore no impacts are envisaged that will require mitigation.

#### **3.2.2 Concomitant list of appropriate technical or management options**

(Chosen to modify, remedy, control or stop any action, activity, or process which will cause significant impacts on the environment, socio-economic conditions and historical and cultural aspects as identified. Attach detail of each technical or management option as appendices)

No invasive prospecting will take place.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Therefore no technical or management options are applicable.

### **3.2.3 Review the significance of the identified impacts**

(After bringing the proposed mitigation measures into consideration).

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Therefore no impacts are envisaged which require mitigation.

#### **4 REGULATION 52 (2) (d): Financial provision.**

The applicant is required to-

##### **4.1 Plans for quantum calculation purposes.**

(Show the location and aerial extent of the aforesaid main mining actions, activities, or processes, for each of the construction operational and closure phases of the operation).

N/A: No construction or decommissioning activities are applicable.

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Establishment of the quantum for the prospecting phase is therefore not applicable.

##### **4.2 Alignment of rehabilitation with the closure objectives**

(Describe and ensure that the rehabilitation plan is compatible with the closure objectives determined in accordance with the baseline study as prescribed).

N/A: No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

Therefore no rehabilitation plan is provided, as it is not applicable.

##### **4.3 Quantum calculations.**

(Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation 54 (1) in respect of each of the phases referred to).

No quantum calculation is necessary, as no infrastructure will be constructed during the proposed prospecting period of three years.

The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

#### **4.4 Undertaking to provide financial provision**

(Indicate that the required amount will be provided should the right be granted).

N/A: No quantum calculation is necessary and therefore no undertaking is provided.

## **5 REGULATION 52 (2) (e): Planned monitoring and performance assessment of the environmental management plan.**

### **5.1 List of identified impacts requiring monitoring programmes.**

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

The methodology proposed for conducting the ground-and surface water studies as well as air quality studies will include monthly monitoring and annual reports.

However, no monitoring programmes are required for conducting the specialist assessments.

### **5.2 Functional requirements for monitoring programmes.**

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

No monitoring programmes are required for conducting the specialist assessments.

### **5.3 Roles and responsibilities for the execution of monitoring programmes.**

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

No monitoring programmes are required for conducting the specialist assessments, and therefore no roles and responsibilities can be linked to the execution thereof.



**5.4 Committed time frames for monitoring and reporting.**

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

No monitoring programmes are required for conducting the specialist assessments.

## **6 REGULATION 52 (2) (f): Closure and environmental objectives.**

### **6.1 Rehabilitation plan**

(Show the areas and aerial extent of the main prospecting activities, including the anticipated prospected area at the time of closure).

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

No infrastructure will be constructed and no mining activities will take place during the prospecting period.

A rehabilitation plan is therefore not required as the prospecting area will not be disturbed.

### **6.2 Closure objectives and their extent of alignment to the pre-mining environment.**

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

No infrastructure will be constructed and no mining activities will take place during the prospecting period.

The pre-mining environment will therefore not be impacted upon, and closure objectives are not applicable.

### **6.3 Confirmation of consultation**

(Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties).

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

No infrastructure will be constructed and no mining activities will take place during the prospecting period.

All the stakeholders that were consulted as part of the public participation process were informed that only specialist studies will be conducted during the Prospecting period.

## **7 REGULATION 52 (2) (g): Record of the public participation and the results thereof.**

### **7.1 Identification of interested and affected parties.**

Various stakeholder groups were identified for the project and included the following:

- Amadiba Tribal Authorities;
- Umgungundlovu Tribal Authorities;
- Local communities;
- Local municipality and ward councillors;
- Provincial and National Authorities;
- All Interested and Affected Parties (I&APs) registered on the Xolobeni stakeholder database; and
- General Public.

Kindly refer to the Public Participation Document, submitted as annexure to this EMP.

### **7.2 The details of the engagement process.**

#### **7.2.1 Description of the information provided to the community, landowners, and interested and affected parties.**

Preceding the public meetings held on the 24<sup>th</sup> and 25<sup>th</sup> of May 2012, the following stakeholder groups were identified and pre consultation meetings were held with the following stakeholders: The Amadiba Tribal Authority; the Umgungundlovu Tribal Authority; Mayor of Mbizana Local Municipality; the Mbizana Chamber of Commerce. Meetings were also held to secure the venues for the dates of the 24<sup>th</sup> and 25<sup>th</sup> of May 2012 .

The method of notification that was used included placement of adverts in newspapers, the distribution of background information documents (BIDs) and pamphlets, placement of site notices, door-to-door notification, bulk SMS notification and announcement in local area.

All Interested and Affected Parties (I&APs) registered on the Xolobeni stakeholder database were informed.

On the documentation distributed to the public, the comment period for the process was initially provided as the 25<sup>th</sup> of May 2012. The comment period was extended to the 31<sup>st</sup> of May 2012 in order to give the public more time to comment.

Kindly refer to the Public Participation Document, submitted as annexure to this EMP for a copy of the BID, Pamphlet, Advertisements and Site Notices, and more details regarding the public notification methodology, and proof thereof.

#### **7.2.2 List of which parties identified in 7.1 above that were in fact consulted, and which were not consulted.**

Kindly refer to the Public Participation Document, submitted as annexure to this EMP for a copy of the BID, Pamphlet, Advertisements and Site Notices.

BID's were distributed to the Interested and Affected Parties (I&APs) on the existing Xolobeni Project database, which had an email address. BID's were also sent via registered mail to people who had a postal address, kindly refer to proof of registered letters sent.

A simplified version of the Background Information Document was developed and is referred to as the pamphlet. The pamphlet was translated to Xhosa. The pamphlets were distributed to members of the community by Kaleo Consulting. Approximately 1500 pamphlets were distributed (approximately 1200 in Xhosa, and 300 in English).

Advertisements were placed in the following publications: Talk of the Town, PE Herald, Daily Dispatch, Die Burger, and the Weekend Post.

Site notices were also placed in the vicinity of the proposed prospecting area.

### **7.2.3 List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.**

The issues trail details the views of the parties regarding the cultural, socio-economic and biophysical environment.

There were conflicting opinions regarding the project, there were groups who were against any mining related activities due to the sensitive nature of the area, and groups that welcomed the opportunity for development of the area through means of job creation, infrastructure development and community upliftment.

Kindly refer to the Public Participation Document, submitted as annexure to this EMP for the views of the public.

### **7.2.4 List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation.**

The issues trail details the potential impacts of the proposed prospecting right application of the parties regarding the cultural, socio-economic and biophysical environment.

For most part the issues that were raised regarding the potential impacts were more relevant if a mining right were applied for and not a prospecting right.

Kindly refer to the Public Participation Document, submitted as annexure to this EMP.

#### **7.2.5 Other concerns raised by the aforesaid parties.**

The issues trail details the views of the parties regarding the cultural, socio-economic and biophysical environment.

Concerns were raised over the structure and appointment of the Xolco members and directors.

Kindly refer to the Public Participation Document, submitted as annexure to this EMP.

#### **7.2.6 Confirmation that minutes and records of the consultations are appended.**

Minutes recorded during the meetings for the proposed were compiled.

Kindly refer to the Public Participation Document, submitted as annexure to this EMP.

Voice recordings of the three public meetings held are also available on request.

#### **7.2.7 Information regarding objections received.**

Kindly refer to the Public Participation Document, submitted as annexure to this EMP, for the objections received.

**7.3 The manner in which the issues raised were addressed.**

Issues raised during the three public meetings held were addressed during the meeting.

All other issues raised were included and addressed in the issues trail.



## **8 SECTION 39 (3) (c ) of the Act: Environmental awareness plan.**

### **8.1 Employee communication process**

(Describe how the applicant intends to inform his or her employees of any environmental risk which may result from their work).

Should the application be approved qualified specialists will be appointed to carry out the specialist studies described in section 2.1 of this EMP

### **8.2 Description of solutions to risks**

(Describe the manner in which the risk must be dealt with in order to avoid pollution or degradation of the environment).

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

### **8.3 Environmental awareness training.**

(Describe the general environmental awareness training and training on dealing with emergency situations and remediation measures for such emergencies).

N/A. No prospecting will take place. The prospecting period will merely consist of the collection and establishment of the baseline environmental and socio-economic data over three (3) full annual cycles.

However, all full time staff and contractors are required to attend an induction session prior to commencing with any work.

Environmental and social issues and aspects related to the proposed prospecting operation will be addressed in induction sessions. All environmental and social impacts and aspects identified and their mitigatory measures will be discussed, explained and communicated to employees.

**9 SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment.**

**9.1 The annual amount required to manage and rehabilitate the environment.**

(Provide a detailed explanation as to how the amount was derived)

N/A: No rehabilitation will be required.

No infrastructure will be constructed and no mining activities will take place during the prospecting period.

The pre-mining environment will therefore not be impacted upon, and rehabilitation activities are not applicable.

**9.2 Confirmation that the stated amount correctly reflected in the Prospecting Work Programme as required.**

N/A: No rehabilitation will be required.

No infrastructure will be constructed and no mining activities will take place during the prospecting period.

The pre-mining environment will therefore not be impacted upon, and and rehabilitation activities are not applicable.

**10 REGULATION 52 (2) (h): Undertaking to execute the environmental management plan.**

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises EIA and EMP compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Environmental management plan as proposed.

<b>Full Names and Surname</b>	Andrew Lashbrooke
<b>Identity Number</b>	661125 5039 08 1

**-END-**