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CASE ID: 2134



# PETROLEUM AGENCY SOUTH AFRICA

## ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

Submitted in support of application for a exploration  
right



**Applicant:** Msix (Pty) Ltd  
**District:** Magisterial district of Ukhahlamba, Eastern Cape Province  
**Mineral:** Natural Gas  
**Version:** 1  
**Date:** December 2009

## PREAMBLE

Please note that Msix follows a uniform approach to all their natural gas projects. This approach enables us, as a small upcoming entrepreneur to manage our commitments and actions more effectively. Therefore you will find that the approach to the exploration as well as to the Environmental Management Plan is aligned between the various applications, as also some of the standard mitigation measures. Please be ensured that we have compiled each of these documents separate and each document and process has received the attention it deserves. Further to this please do not hesitate to contact Msix for any further explanations, changes, or additional information.

### CHECKLIST: PREPARATION OF AN EMPR IN SUPPORT OF EXPLORATION RIGHT APPLICATION

Item	Covered (Yes/No)	Comment
The submission of the EMPR must be stipulated timeframes of 120 days from the date of the acceptance letter by the Agency as per section 79(4)(b) of the MPRDA.	Yes	120 day date is on 28 August 2009
Baseline information concerning the affected environment should be established, to determine protection, remedial measures and environmental management objectives as required by section 39(3)(a).	Yes	Please refer to par 5
Have the investigation, assessment and evaluation of the impacts of proposed exploration operations been conducted on the environment, socio-economic conditions of directly affected people and heritage resources as required by section 39(3)(b)?	Yes	Please refer to par 7 for the investigation, assessment and evaluation of impacts
Was an environmental awareness plan to inform the workforce of environmental risks been developed as per section 39(3)(c)? This should be supported by allocation of roles and responsibilities for all identified actions to be undertaken during the implementation of the EMPR.	Yes	Please refer to par 8.5 for the environmental awareness plan

Item	Covered (Yes/No)	Comment
Is there a clear description of the manner in which the applicant intends to remedy, control and manage pollution or environmental degradation as per section 39(3)(d)(i-ii)?	Yes	Please refer to par 8.3 and 8.4
Demonstration of how the applicant intend to comply with waste management standard and practices for both domestic, general and hazardous wastes materials as required under section 39(3)(d)(iii).	Yes	Please refer to par 4.2.8 and 8.3
Rehabilitation and closure plans with clear environmental objectives as per Regulations 61 & 62 of the MPRDA.	Yes	Please refer to par 4.2.9 and 8
Public participation process - consult with all interested and affected parties (attach proof of notification, notes from meetings and results of such consultation — as required by section 79(4)(a). Concerns should be addressed adequately and where applicable, working agreements with affected parties (e.g. holders of prospecting/mining rights) are attached to the EMPR.	Yes	Please refer to par 6
Overlaps with other issued rights (prospecting & mining) - either as part of consultation process, applicants are required to consult and identify potential environmental risks and liabilities between the two parties which may arise from prospecting or exploration activities, parties are advised to develop and sign working agreements in this regard.	No	No overlapping communicated to applicant by either PASA or DMR.
The applicant must give an undertaking by means of signature on the report indicating that he/she understand the conditions of the EMPR and thereby agree to the execution and implementation of the EMPR, giving effect to section 38(2).	Yes	Please refer to par 10
The applicant must make financial provision for rehabilitation and management of negative environmental impacts, thereby giving a clear calculation and breakdown of issues considered	Yes	Please refer to par 9



Item	Covered (Yes/No)	Comment
as per section 41(1).		
The applicant must give full description of the proposed exploration and its associated activities e.g. the anticipated number of drill holes, extent of surface area to be disturbed, facilities and structures to be erected on site, (the impacts of such activities shall also be tied to the above financial provision).	Yes	Please refer to par 4.2
Consideration of any other applicable statutory environmental legislations with the EMPR implementation e.g. the National Environmental Management Act 107 of 1998, National Water Act 36 of 1998, National Heritage Resources Act 25 of 1999, etc.	Yes	Please refer to par 3
The applicant must also indicate the frequency of monitoring and performance assessment reporting of the EMPR to the Agency as required by Regulation 55 of the MPRDA.	Yes	Please refer to par 8.6
The applicant must also consider inclusion of other environmental issues on the EMPR as prescribed under Regulations 51-52 of the MPRDA.	Yes	The report has been compiled in terms of the Regulations.
The applicant should remember that an EMPR would only be approved in terms of section 39(4) by the Minister provided: It complies with all other requirements reading with section 39(4) and furthermore) in case there is recommendation for EMPR approval, the applicant shall be required to lodge a financial provision "based on an advised methodology" before it's approved.	Noted	



# EXECUTIVE SUMMARY

## Background Information and Project Motivation

Msix (Pty) Ltd seeks to explore for natural gas in Eastern Cape Province, South Africa. The proposed area of exploration is situated to the north of Sterkstroom and just south of Jamestown.

Exploration for coal bed methane will be carried out in phases:

- Phase 1: Desktop Study
- Phase 2: One Well Spot Test Drilling
- Phase 3: Collation of Results and Evaluation
- Phase 4: Pre-Feasibility and Feasibility

The application for an exploration right was lodged with the Petroleum Agency South Africa in terms of regulations as set out in section 79, 80, 81 and 82 of the Mineral and Petroleum Resources Development Act, 2002. The Petroleum Agency South Africa (PASA) accepted the application on 28 August 2009 and required that public consultation be conducted and an environmental management programme be developed.

Coal bed methane or CBM, is an abundant fossil energy resource which is found in association with nearly all coal beds where it is formed as a by-product of the coal formation process. The methane gas is adsorbed within the structure of the coal and is kept there by overburden and hydraulic pressure. CBM can be extracted by pumping water out of the coal bed thereby reducing the pressure and allowing the gas to escape to the surface. The purpose of the exploration will be to explore for CBM in the Eastern Cape Province area.

CBM could provide South Africa with a significant source of cleaner alternative energy & can be used in applications such as cooking, heating and the generation of electricity. At the moment, about 87 percent of South Africa's energy is generated using coal. Short term projections of the electricity supply and demand indicate a shortfall in peak electricity generation capacity by 2006 and in the country's base-load capacity by 2010. CBM exploration efforts are thus strategically important in identifying and assessing potential sources of natural gas which could provide alternative energy sources to address South Africa's growing demand. In addition methane gas provides a cleaner form of energy than coal and oil as it gives off less carbon dioxide per unit of energy released while producing more heat per gram than other complex hydrocarbons.

A coalbed methane industry would create jobs, attract billions of rand in investment, reduce fuel imports and create new industries.

### Project Description

The proposed exploration programme will be carried out in four phases. The first phase involves a desktop study in order to identify target sites for exploration drilling. This will include a review of available information, the creation of geological and financial models and the identification of target sites for the sampling of the coal bed methane resource.

The second phase of exploration will require the drilling of one well test spot borehole to a depth of between 200 and 700 m. Construction activities shall be conducted during daylight hours only (normally between 06h00 and 18h00 Mondays to Fridays), unless under special circumstances in which case the permission of the landowners must be obtained. Drilling at each site is likely to take about 3 weeks. The footprint of disturbance for an exploration rig and equipment is generally less than 1 000 m<sup>2</sup> and sites will be accessed using existing farm roads where available.

Phase three will deal with the collation of the results and the evaluation thereof. Assuming the targeted coal seams are encountered during drilling, cores will be raised to the surface and sections inserted into sampling canisters. The samples will be taken to a laboratory for testing and analysis. Once the drilling and sampling of a borehole is complete the hole will be sealed using cement. If the site is to be used in the future the hole will be capped with a borehole plinth. On completion of the drilling and sampling, all equipment will be removed and the compacted surfaces will be scarified. Soils that have been contaminated with oils or greases will be remediated in-situ. Natural vegetation re-establishment will be monitored and supplemented as necessary.

The fourth and last phase will be the pre-feasibility phase and determining the feasibility of the proposed project.

### Environmental Impact Assessment and Management Programme

This report was prepared in terms of legislation applicable to a project of this nature, i.e.:

- No. 28 of 2002: Mineral and Petroleum Resources Development Act (MPRDA)
- No. 36 of 1998: National Water Act (NWA)
- No. 107 of 1998: National Environmental Management Act (NEMA)



- No. 39 of 2004: NEMA: Air Quality Act (AQA)
- No. 45 of 1965: Atmospheric Pollution Prevention Act (APPA)
- No. 10 of 2004: NEMA: Biodiversity Act
- No. 84 of 1998: National Forest Act
- No 25 of 1999: National Heritage Resources Act
- SANS 1929 of 2005: South African National Standards, Ambient air quality – Limits for common pollutants, 2005
- GN No. R.527 of 23 April 2004: Mineral and Petroleum Resources Development Regulations
- GN No. 704 of 4 June 1999: Regulation on use of water for mining and related activities aimed at the protection of water resources
- GN No. R.385, 386 and 387 of 2006: Environmental Impact Assessment Regulations

The Environmental Impact Assessment (EIA) was performed through a desk top study utilising the following information:

- State of the Environment reports (where available) and Strategic Environmental Assessments
- Review of reports done for similar projects in other areas
- Review of existing environmental reports for the study area
- Environmental Potential Atlas data from the Department of Water and Environmental Affairs
- Integrated Development Plan of the District and Local Municipality
- Topo-cadastral, geological and soil maps covering the exploration area at scales ranging from 1:50 000 to 1:250 000
- Reference material as listed in Section 9 of this report

### Conclusions

No impacts of high significance have been identified for exploration activities within the proposed exploration application area. The current assessment is however limited by the fact that target drilling sites will only be identified in Phase 2 of the exploration programme. An environmental site assessment of each target site must be conducted to ensure that site specific impacts are kept to a minimum. There needs to be flexibility in the relocation of the sites in order to ensure that sensitive sites are avoided as far as possible. Given the limited number of drill sites, the potentially small area of disturbance and the short duration of activities at any particular site there is no environmental reason why the proposed exploration activities should not continue.

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## LIST OF ABBREVIATIONS

BID	Background Information Document
CBM	Coal Bed Methane
CGS	Council for Geoscience
DME	Department of Minerals and Energy
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
IAP	Interested and Affected Party
MPRDA	Mineral and Petroleum Resources Development Act 28 of 2002
MSD	Material Safety Data
PASA	Petroleum Agency South Africa

## GLOSSARY

Adsorbed	Accumulated on the surface of a solid.
Camp site	The demarcated area at which drilling employees are accommodated while working at a drilling site. The area includes the cooking and ablution facilities.
Diagenesis	The physical, chemical or biological alteration of sediments into sedimentary rock at relatively low temperatures and pressures that can result in changes to the rock's original mineralogy and texture.
Drilling site	The demarcated area within which all drilling and sampling machinery, vehicles and equipment operate while excavating a borehole.
Exploration area	The Eastern Cape area in which, Msix has lodged an exploration right application for coal bed methane with the Petroleum Agency SA.
Exploration activities	Includes all drilling, sampling and related activities that may be undertaken at a drilling site.
Exploration right	As defined in the Mineral and Petroleum Resources Development 28 of 2002.
Fracking	Colloquial term in the petroleum industry for creating fractures in rock near the bottom of a well. It usually requires pumping a fluid into the well at high pressure.



## 1 APPLICANT DETAILS

Name of Project:	Application for an Exploration Right for Natural Gas
Reference No.:	30/5/2/3/2/137 ER
Name of Report:	Environmental Impact Assessment & Environmental Management Programme
Name of Applicant:	Msix (Pty) Ltd
Responsible Person:	Gabriel Amos / Lizinda Grobbelaar
Postal Address:	PO Box 13509 Sinoville, Pretoria, 0129
Telephone:	012 543 9093
Facsimile:	012 543 9610
E-mail:	<a href="mailto:Lizinda@gmail.com">Lizinda@gmail.com</a>
Land Owners:	Full list of title deeds included in application document. See Annexure B for a list of land owners

## 2 INTRODUCTION

Msix (Pty) Ltd is proposing to explore for coal bed methane around the Molteno area in the Eastern Cape Province, South Africa. The exploration project lies between Aliwal North (in the north) and Sterkstroom (in the south).

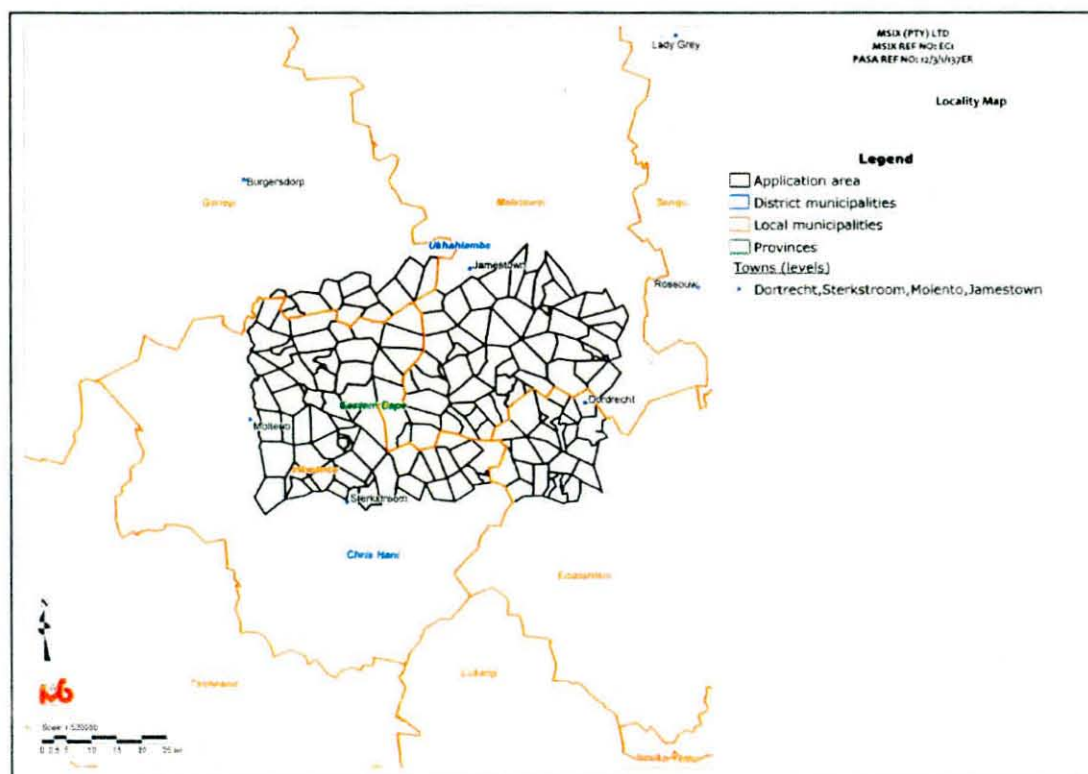


Figure 1: Regional Location of the Exploration Right Application Area

Coal and coal bed methane (CBM) are abundant, complimentary, fossil energy resources found in many areas of the world, including South Africa. CBM is a natural gas, which is found in association with nearly all coal beds where it is formed as a by-product of the coal formation process by both maturation and burial processes (coalification and diagenesis). The methane gas is adsorbed within the structure of the coal and is bound to the cleats and pores within the coal by a combination of molecular and hydraulic pressures. Groundwater within the coal bed contributes to this pressure. CBM can be released by drilling into the coal seam, pumping out the water, thereby releasing the pressure and encouraging the gas to flow to the surface. In some cases various forms of stimulation such as fracking may be required to encourage gas flow. The escaping gas is then captured for use.

Methane is a relatively clean form of energy and can be used to generate electricity or provide heat for domestic and industrial purposes. Once extracted methane can be easily contained and safely used in many applications.

The exploration process is a phased, iterative process and includes the evaluation of all available data, the creation of geological models and culminates in the drilling of boreholes at identified target sites. Exploration for CBM requires an exploration right in terms of Section 79 of the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA).

The application for an exploration right was lodged with the Petroleum Agency South Africa in terms of regulations as set out in section 79, 80, 81 and 82 of the Mineral and Petroleum Resources Development Act, 2002. The Petroleum Agency South Africa (PASA) accepted the application on 28 August 2009 and required that public consultation be conducted and an environmental management programme be developed.

In accordance with the conditions defined by PASA, the results of the consultation with affected parties and the environmental management programme must be submitted to PASA on or before 28 December 2009.

### 3 METHODOLOGY

#### 3.1 Terms of Reference

Msix (Pty) Ltd undertake to meet the requirements of informing an environmental authorization decision from PASA for exploration for coal bed methane in the proposed exploration area. In accordance with Section 79, (4) of the MPRDA the applicant of an exploration right is required to submit an environmental management programme in terms of



Section 39 of the Act. The EIA and EMP Reports are structured as a consolidated document and the results of the public consultation are included within this document. The EMP Report has been compiled in accordance with Section 39 of Act as well as the Draft Environmental Management Plan Guideline Document for Petroleum Exploration and Production (PASA, 2006).

### 3.2 Environmental Impact Assessment

This report was prepared in terms of legislation applicable to a project of this nature, i.e.:

- No. 28 of 2002: Mineral and Petroleum Resources Development Act (MPRDA)
- No. 36 of 1998: National Water Act (NWA)
- No. 107 of 1998: National Environmental Management Act (NEMA)
- No. 39 of 2004: NEMA: Air Quality Act (AQA)
- No. 45 of 1965: Atmospheric Pollution Prevention Act (APPA)
- No. 10 of 2004: NEMA: Biodiversity Act
- No. 84 of 1998: National Forest Act
- No 25 of 1999: National Heritage Resources Act
- SANS 1929 of 2005: South African National Standards, Ambient air quality – Limits for common pollutants, 2005
- GN No. R.527 of 23 April 2004: Mineral and Petroleum Resources Development Regulations
- GN No. 704 of 4 June 1999: Regulation on use of water for mining and related activities aimed at the protection of water resources
- GN No. R.385, 386 and 387 of 2006: Environmental Impact Assessment Regulations

The Environmental Impact Assessment (EIA) was performed through a desk top study utilising the following information:

- State of the Environment reports (where available) and Strategic Environmental Assessments
- Review of reports done for similar projects in other areas
- Review of existing environmental reports for the study area
- Environmental Potential Atlas data from the Department of Water and Environmental Affairs
- Integrated Development Plan of the District and Local Municipality
- Topo-cadastral, geological and soil maps covering the exploration area at scales ranging from 1:50 000 to 1:250 000
- Reference material as listed in Section 9 of this report

### 3.3 Public Consultation

The following methodology has been utilized:

#### 3.3.1 Identification of Interested and Affected Parties

As per the requirements of the MPRDA, Msix has undertaken to notify and consult with land owners and affected parties. Opportunities for interested and affected parties to register were created through advertisements and notices, as well as search title deed information and contact details. A background information document (BID) was developed which explained the locality, application and process being followed, this document was made available to interested and affected parties who registered. Registered interested and affected parties were also requested to note potential interested and affected parties that could/should be contacted as part of the process.

- **Advertisements and Notices:** Advertisements were placed in a local newspaper
- **Searches on national databases for land owner contact details:** Additional to the advertisements and notices placed, the project team utilized national databases such as the deeds office, Masters office, ITC, Cipro company database and others to obtain land owners contact details.
- **Written notices - Background Information Document:** A background information document (BID) explaining the project and the exploration right application process was compiled. The BID included a response sheet, which provided persons with the opportunity to register as IAPs and provide comment, raise issues and concerns and ask questions. The sheet also requested that the respondent list additional persons that might be interested in the project.
- **Telephone calls:** Where contact details were sourced, I&APs were called to send application information, BID and a request to register through to the parties.

#### 3.3.2 Registration of IAPs

All I&APs that could be traced were registered on an I&AP database / list. All information regarding the application, availability of reports, etc is distributed to I&APs on this list.



### 3.3.3    Compilation of Issues and Responses

I&APs are invited to submit comments on the application, these issues and comments raised by Interested and Affected Parties are included in the Issues and Response table. If issues are received after the submission date of this report, these will be forwarded to the Agency.

### 3.3.4    Review of Draft Report

The draft Environmental Impact Assessment and Environmental Management Programme Report for the project is made available to all interested and affected parties for review in parallel to the submission of the document to PASA. Comments received on the report are forwarded to Petroleum Agency as an addendum.

## **4 PROJECT DESCRIPTION**

The proposed exploration work programme will be carried out in 4 phases.

### **4.1 Location**

The project farms are situated in the Eastern Cape Province, and falls within the registration district of Ukhahlamba and Chris Hani District Municipal areas. Four towns mark the four edges of the project area. In the North, Jamestown is situated just outside the area, while Dordrecht is situated on the inside of the eastern boundary of the area. Sterkstroom border the project area in the south, and Molteno borders the western side of the project area.

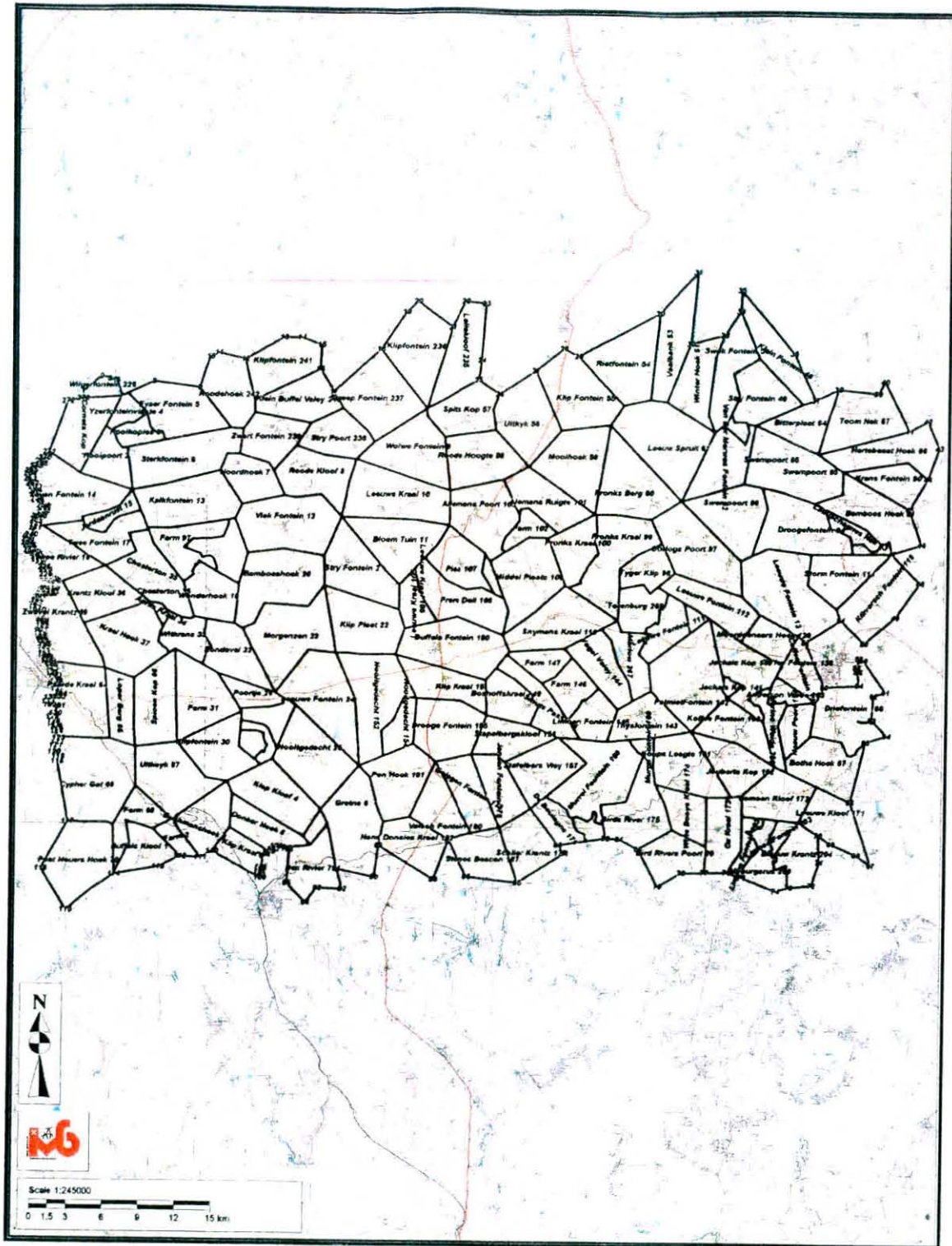


Figure 2: Application area

The major land use activities in the area are privately and communally owned with various farming activities. The surface ownership is attached as Annexure B.



#### 4.2 Detailed Project Description

It is envisaged that the phases of work will consist of four phases:

- **Phase 1: - Desktop Study (Month 0—6):** Msix will acquire data from all test boreholes drilled by past prospectors in their search for coal. Once assembled, this information will be professionally analyzed and used to determine the quantum of additional data (gravity, seismic, borehole as appropriate), which may be required to effectively manage the technical development risk. Once the aforementioned data has been acquired the farms will be incorporated into the current Msix exploration work programme by:
  - Utilizing state of the art geology mapping software and generate subsurface maps that will spatially identify the thickness, gas content, rank, thermal maturity, ash content and permeability of the coals underlying the prospect.
  - Utilizing the maps to determine the ideal locations in which to drill five-spot test wells.
  - Completing this portion of the Exploration Work Programme within six (6) months of obtaining an Exploration Right.
  
- **Phase 2: - Five-spot test drilling (month 6 to 18):** With these maps in hand, Msix will further test the geological merit by drilling 'five-spot' test wells. In each of these five-wells, Msix will drill one well and if the first drilling proves to be viable, a further four (4) wells approximately 200 meters apart will be drilled, completing the five-spot test wells. These wells will be drilled using standard practices for wells drilled in coal-bed methane projects that are successfully producing. The applicant will:
  - Drill wells to a depth sufficient to penetrate all known coal seams
  - All wells will have diameters no less than 4 ¼ inches;
  - Msix will survey the coals using electric logs commonly used in the oil and gas industry;
  - Case the wells with steel lining;
  - Cement the casing into the drill hole
  - Perforate the lining in the highest quality coal seams;
  - Fracture stimulate the wells as needed;
  - Install pumping equipment to remove water from the wells; and
  - Install metering equipment to measure the volumes of water and methane produced from the wells.

Msix will then begin de-watering the coal in the wells carefully monitoring water and methane production in order to ascertain the level at which gas flows freely. Msix will carefully measure the amounts of methane and water produced from the wells and determines the commercial viability of the coal-bed methane of the application area. Msix will complete this portion of the Exploration Work Programme within eighteen (18) months of obtaining an Exploration Right.

- **Phase 3: - Collation of Results and Evaluation (Month 18 to 24):** Msix will evaluate the results of previous phases.
- **Phase 4: - Pre-Feasibility and Feasibility (Month 24 to 36):** After completing the five-spot test evaluation, if Msix determines that the exploration area is capable of producing commercial amounts of coal-bed methane, Msix will embark upon a full-scale development project that will drill additional wells near the five-spot test wells. Msix will begin this development phase within six (6) months of completing its evaluation of the five-spot test wells and will continue until the prospect has been developed to a level that will sustain the designed production rate. Further drilling will take place to sustain the gas field draw down rate. The development wells will be drilled and completed using the same practices described above. However, Msix may determine that other technology may be useful in the development of the prospect and reserves the right to use any such technology that it finds useful. The intention of the exploration programme is that once wells drilled on the prospect lands are determined to be capable of producing methane in commercial quantities, converting the methane to liquids, generating electricity, or any other means of consumption which Msix may find commercial will be employed.

#### 4.2.1 Requirements during the Exploration Programme

- **Access to land:** Access will be negotiated on an ad hoc basis with the land owners involved as soon as potential target sites are identified. A written land access agreement will be signed between Msix and the land owner. The agreement will deal with the location and expected duration, access to the sites including possible additional access routes, right to drill boreholes and remove core, establishment of temporary structures, water use and consideration.
- **Personnel Requirements:** Drilling rigs will be managed by a site supervisor who would be simultaneously responsible for all drilling operations. The number of employees required to operate a drill rig is variable but is normally not more than 10 persons for a deep hole. The rig will be run on a double shift basis and will operate 24 hours a day.
- **Housing and Infrastructure Requirements:** Driller's accommodation is normally at a camp site adjacent to the drilling site and will be arranged on an ad hoc basis with the land owner. All access and accommodation on farms will be conducted in terms of a written agreement with the land owner. Tented or caravan accommodation is normal in South Africa for drillers. A local site office may be established in one of the areas convenient to the exploration sites. However, most of the test work will be conducted from an on-site caravan or the samples will be transported to a laboratory. Drilling sites will, be accessed using existing farm tracks and roads where available. It may however, be necessary to



create additional access routes to specific sites and this will be done in terms of a written agreement with the land owner.

- **Water Use:** The drilling activity will release groundwater which will be pumped to a storage dam. All other non-potable water requirements of the project will be supplied from this storage dam. Potable water will be obtained locally through an agreement with the land owner or brought to site via containers. Approximately 5 000 litres of water per day is envisaged to be the average water requirement per drilling site, if drilling conditions are reasonably good and the formation is solid. The water requirements are however dependent on the site specific conditions. If faults or cracks are encountered during drilling, significant increases in water losses could be expected for short periods of time. The water used in drilling forms a sludge which will be collected in a sludge pond for later disposal at an appropriately licensed facility. The daily water requirements for the operation of the drilling rig will fall within the water volumes permitted by the General Authorizations (No. 1191 in the Government Gazette No. 26187 published on 26 March 2004) issued by the Department of Water Affairs and Forestry for the taking of water from a resource. No water use license will thus be required for the exploration project.
  
- **Waste Management:** All waste generated at the drilling site will be collected in plastic or steel drums and removed from site and disposed at an appropriate waste facility. Hazardous waste will be collected and stored separately, and disposed of at an appropriate registered facility. Chemical toilets will be provided for the employees and the sewage disposed of at the nearest waste tip or sewage facility, or as required by the local authority.
  
- **Rehabilitation:** Msix will aim to rehabilitate all drill sites, access routes as well as temporary camp sites as close as possible to the condition pre-exploration, at all times complying with the land access agreement signed with the land owners.

Area	Action
Camp site	The area where the camp site was situated will be cleared of all foreign material, and the top soil will be restored where it was removed.
Access roads	All access roads will be restored where it was removed
Waste materials	All waste materials will be collected and stored in an appropriate manner. The containers will be removed off-site and disposed of at the nearest appropriate facilities.
Hazardous waste	All hazardous waste will be kept separate in appropriate containers. The containers will be removed off-site and disposed

Area	Action
	of at the nearest appropriate facility.
Plants & Vegetation	All plants and vegetation disturbed by the exploration activities will be re-established. This will include the areas where temporary accommodation was established, any access roads where the current roads were not sufficient, as well as any drilling site
Drilling wells	On completion of the drilling activities, boreholes with production potential will be sufficiently capped. Wells that do not have production potential will be sealed and closed
Drill site	The drill site will be cleared of all incidental chemicals, oils and other imported materials. The top soil will be repaired and vegetation will be re-established
Sludge	During the drilling operations, a sludge pond will be created. This pond will be pumped out and the sludge will be disposed of at the nearest appropriate waste facility.

#### 4.3 Motivation for the Project

The District has a comparative advantage in agriculture (including forestry) and services (construction, retail trade services and community services). This is despite the strong growth in the finance, manufacturing and transport sectors.

The District economy is driven by the community services sector, trade (and services) sector and agriculture. The transport sector achieved the highest growth rate of 4.3% between 1996 and 2005, which is highly indicative of the strategic location advantage that the district enjoys in terms of rail and road transport, and as a distribution centre for the former Transkei area. The finance and trade sectors have also grown significantly at 3.8% pa and 3% respectively. Whilst the mining and electricity sectors experienced a negative growth, agriculture and manufacturing outputs have been positive although nominal.

CBM exploration efforts are strategically important in identifying and assessing potential sources of natural gas which could provide alternative energy sources to address South Africa's growing demand. In addition methane gas provides a cleaner form of energy than coal and oil. Methane has a very low heat of combustion and produces more heat per gram than other complex hydrocarbons while giving off less carbon dioxide per unit of energy released.



Mining activities in South Africa have already resulted in and are still resulting in the release of large amounts of methane gas into the atmosphere. This is resulting in significant losses of an energy resource and the uncontrolled release of a greenhouse gas. Extraction of CBM prior to mining will enable this energy resource to be utilised and consequently reduce the emissions of greenhouse gases.

CBM gas can be used in many commercial and industrial applications, including but not limited to:

- Power generation (ESKOM or independent power producers);
- Town gas;
- Manufacture of fertiliser;
- Glass and metal manufacture;
- Sasol Synfuels;
- Steel Reduction; and
- Compressed natural gas.

## **5 DESCRIPTION OF THE AFFECTED ENVIRONMENT**

### **5.1 Regional Setting**

The farms are situated in the Eastern Cape Province. It falls within the magisterial district of Ukhahlamba. Four towns mark the four edges of the project area. In the North, Jamestown is situated just outside the area, while Dordrecht is situated on the eastern boundary of the area. Sterkstroom borders the project area in the south, and Molteno borders the western side.

The Ukhahlamba District Municipality (UDM), one of the four Provincial ISRDP nodes, is a landlocked district occupying the north-eastern portion of the province, bordered by Lesotho and by the Northern Cape and Free State provinces, and by the Eastern Cape districts of Chris Hani, Alfred Nzo and OR Tambo.

### **5.2 Land Tenure**

The majority of the land within the exploration area is privately owned land. The title deed information obtained from the office of the Surveyor General was included with the exploration right application, submitted to PASA. Please consult this documentation for detailed information pertaining to land tenure. A list of the land owners is attached as Annexure B.

5.3 Geology

5.3.1 Geological Setting

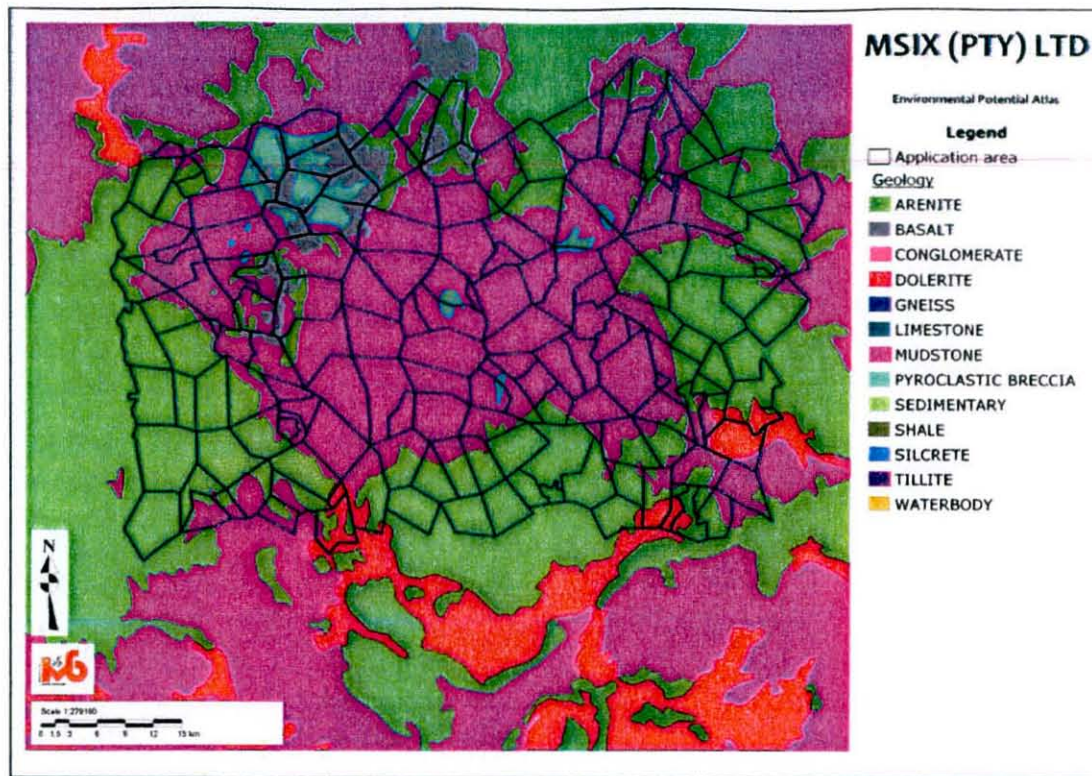


Figure 3: Geology

The surface geology of the proposed project farms consist mainly of Mudstone and Arenite with traces of Dolerite, Pyroclastic breccia and Basalt. See the map above.





### 5.5.2 Temperatures

Summer temperatures from 30 degrees C to an average minimum of 15 degrees C. Winter temperatures from 15C to as low as – 5C. The lowest ever temperature in South Africa was recorded in this municipality – 18,6 degrees Celcius. Extreme winter temperatures with snow is common is north-westly with southeasterly to south-westerly winds prevailing during winter months.

Climate trends associated with the Red Apedal Soils, indicates that an annual rain fall of 834 mm can be expected, while the small margin between a minimum of 804 mm and a maximum of 865 mm gives the impression that the average is a reliable statistic.

## **5.6 Topography**

UDM is predominantly mountainous and vegetated by grassland, with areas of semi-arid Karoo and Highveld from the west to a central portion and areas of high rainfall to the east. The area of Chris Hani is characterized by irregular topography, gradating towards the south through the rolling slopes down from the Drakensberg Mountains in the North. The southwestern areas are mostly covered by the Karoo, while the remaining section is composed mostly of the eastern grassland area with extensive drainage basins in the areas of Emalahleni and Intsika Yethu. The lowlands with mountains make up the north eastern side of the project area and the Hills and Lowlands for the small north western corner. Running across the area from side to side, is the escarpment and the low mountains. The central southern area consists of a small section of undulating lowlands with hills. See map below.

Inkwanca municipality area is characterized by low lands with steep slopes and mountains in the north and north-west. Gradience range from approximately 1100m of Sterkstroom to 2200m in the Stormberg area. Slopes of less the 5% on 20% of the land in the Molteno area with more gentle slopes in the Sterkstroom Region, especially to the south.



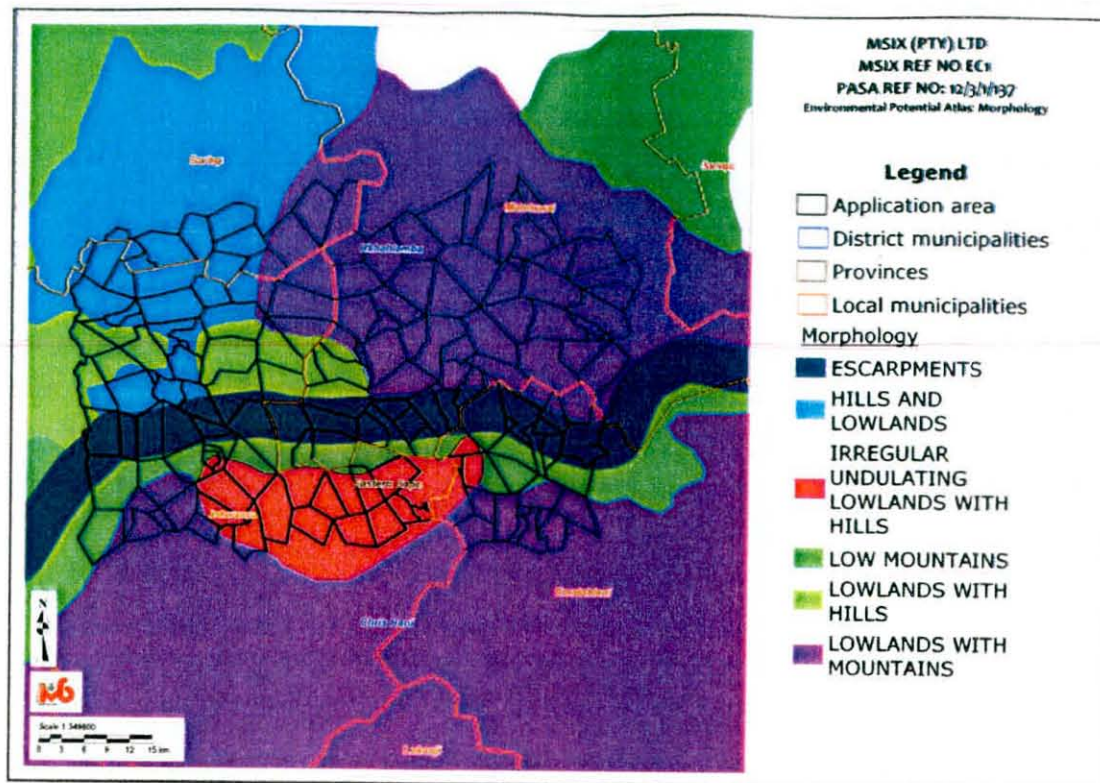


Figure 5: Topography

The District is part of what is described as gradual “step” topography. The “steps” are formed by the Winterberg mountain range in the south and the Stormberg range north of Sterkstroom.

The Stormberg Mountain range runs from east to west dividing the area into the high lying Stormberg plateau in the north and the generally lower altitude area in the south. The Winterberg range with an altitude of 2 370 m above sea level extends into the southernmost section of the area. The altitude of the Compassberg to the west of the Stormberg range is 2 502 m, whereas the Stormberg plateau is  $\pm 1\ 800$  m above sea level. The altitude of the lower lying area in the Cofimvaba District is  $\pm 600$  m above sea level. The greater part of the area, however, lies between 500 m and 1000 m above sea level.

## 5.7 Land Use and Land Capability

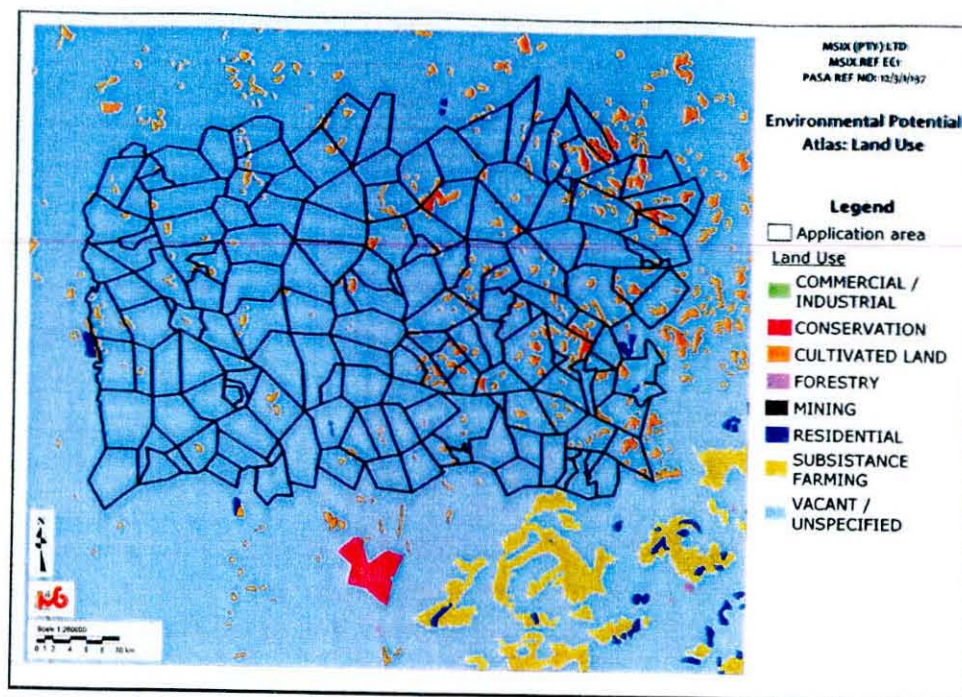


Figure 6: Land use

64% of land in the Eastern Cape is used for stock farming, including beef cattle, sheep, goats and game. Crops are farmed on 20% of the land and include maize, vegetables, pineapples and citrus. Commercial forestry makes up 5% of land use and only 1% of land is set aside for conservation. However, the ENPAT data indicates that majority of the project area is listed as vacant or unspecified land. Small scattered areas of cultivated land do exist, but from the data, it is evident that this is not a commercial agricultural area.

The North-Western portion of the Inkwanca municipal area, i.e. the area surrounding Molteno are generally classified as non-arable with limited potential.



## 5.8 Ecology

### 5.8.1 Vegetation

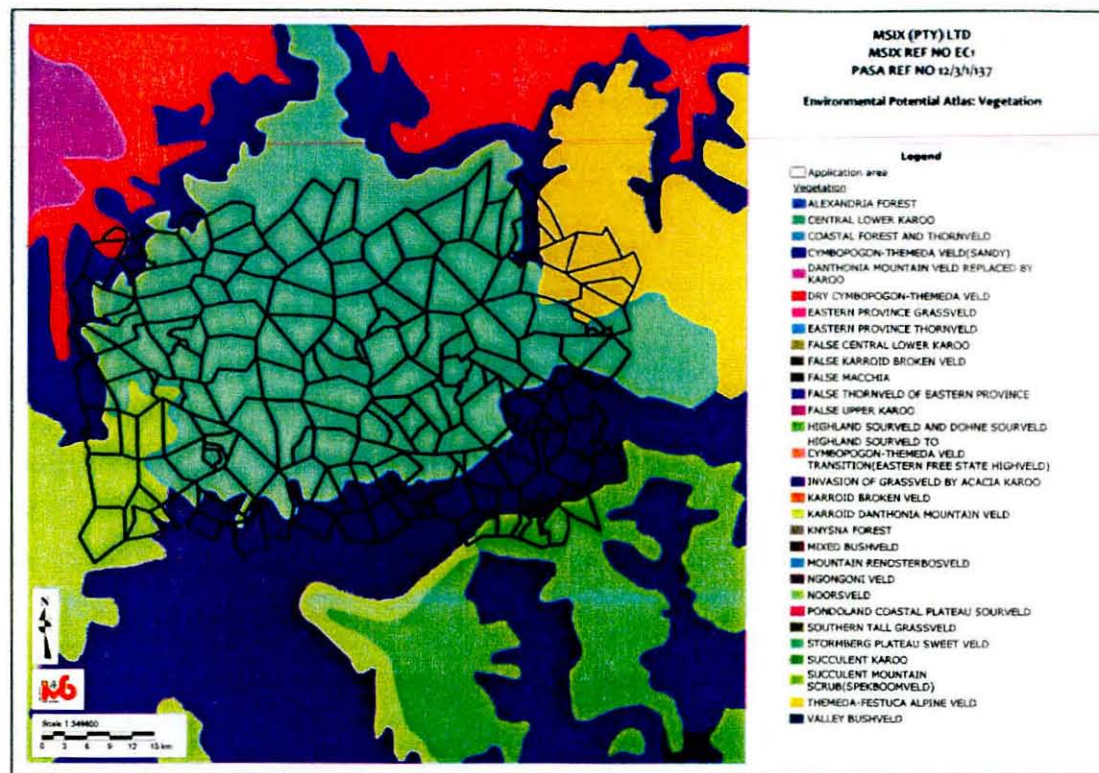


Figure 7: Vegetation types

The vegetation in the proposed exploration area consists mainly of noorsveld. Small portions are made up of cymbopogon-thmeda veld, and grass veld areas invaded with acacia karoo. The South Western corner of the project area presents a section of Karroid Danthonia Mountain veld.

### 5.8.2 Inkwanca Municipal area vegetation

Vegetation in the study area is typical of Grassland Biome, which is a characteristic on the high central plateau of South Africa. A single layer of grasses dominates rasselands, however, the amount of cover depends on rainfall and the degree of grazing. The study area is characterized by the South-eastern Mountain Grassland, which dominates most of the area, Subarid Thorn Bushveld and Moist Upland Grassveld in the southern region, Eastern Mixed Nama Karoo and Dry Sandy Highveld Grassland in the small portions of the northern region.

**SOUTH-EASTERN MOUNTAIN GRASSLAND**

Key Environmental Parameters: This sweet grassland type is important land owing to suitable winter grazing. However, injudicious, selective grazing can convert it to sourveld or result in the invasion of karriod of Fynbos elements.

Economic Uses: Mainly grazing for sheep and cattle.

**DRY SANDY HIGHVELD GRASSLAND**

Key Environmental Parameters: This grassland merges with the bordering Kalahari Thornveld to the west. Ackocks mapped the area west of Wesselsbron as Kalahari Thorveld, probably due to the sandy soils of Kalahari origin, but floristically and structurally the vegetation today is Dry Grassland.

Economic Uses: The erratic summer rainfall makes this a high-risk area for agronomy. Crops, such as maize, have replaced the grazing for which this area is better suited.

**EASTERN MIXED NAMA KAROO**

Key Environmental Parameters: The north east region of Eastern Mixed Nama Karoo is the only Karoo type in which fire is important in shaping the communities. This type has the highest rainfall of all the Karoo types and thus ecotonal to grassland. As a result it is very sensitive to grazing pressure and, depending on stcking density and rainfall conditions may resemble either grassland or Karoo.

**EASTERN MIXED NAMA KAROO**

Key Environmental Parameters: The north east region of Eastern Mixed Nama Karoo is the only Karoo type in which fire is important in shaping the communities. This type has the highest rainfall of all the Karoo types and thus ecotonal to grassland. As a result it is very sensitive to grazing pressure and, depending on stocking density and rainfall conditions, may resemble either grassland or Karoo.

Economic Uses: It is too dry for crop production; however, this is the prime sheep and goat grazing area, producing much wool and meat. Irrigation along the Orange River is important; some of the dams on the range River occur in this vegetation type.

**MOIST UPLAND GRASSLAND**

Key Environmental Parameters: This vegetation type is often evident on disturbed, ploughed or heavily overgrazed and degraded sites, indicating the secondary status of many of the representative plant communities. Poor grazing management of these grasslands encourages unpalatable grasses and the invasion of herbaceous weeds.

Economic Uses: The area is mainly used for grazing, though crop farming (maize) and forestry are also important economic activities. Hiking trails are popular in the Eastern Cape.



### SUBARID THORN BUSHVELD

Key Environmental Parameters: Fire and grazing are ecological processes within this vegetation type. This summer rainfall grassland, which is invaded by Sweet Thorn Acacia Karroo.

Economic Uses: The economic uses of this vegetation are mainly grazing.

### 5.8.3 Fauna

#### MAMMALS

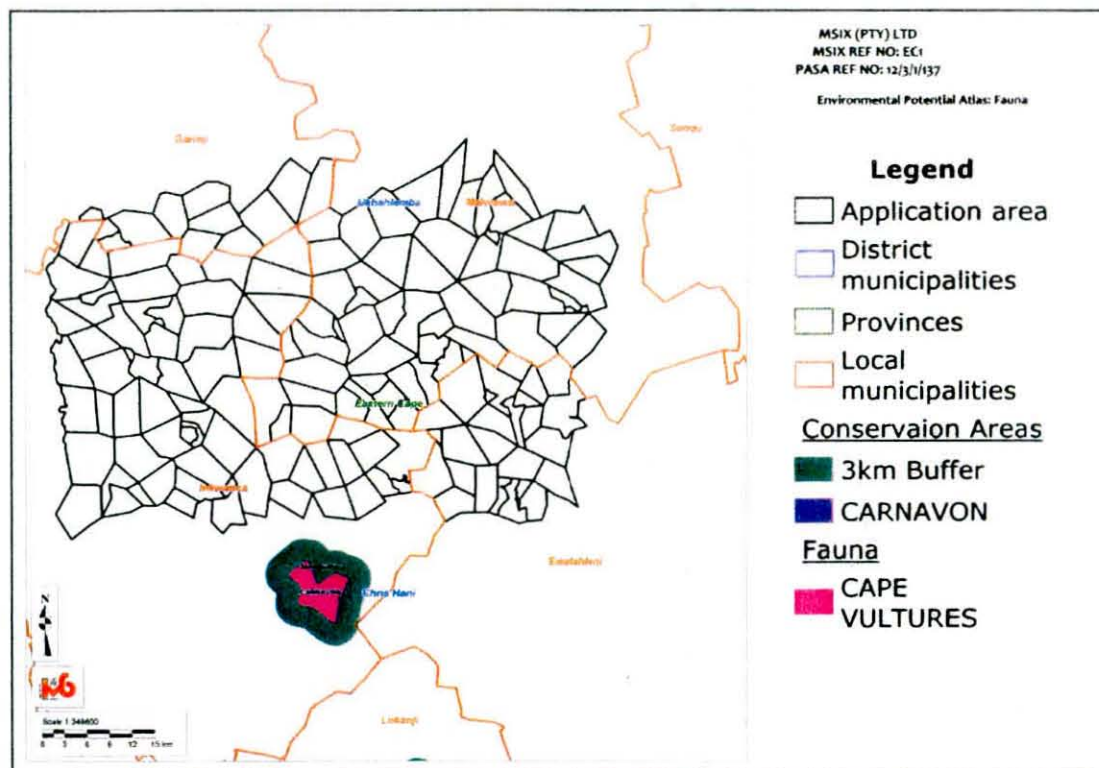


Figure 8: Sensitive fauna

The list below consists of threatened large to medium sized mammals that might be present in the proposed application area. (Smithers, 1986)

Table 1: Specie list

Latin Name	Name	Status
Proteles cristatus	Aardwolf	Rare
Felis nigripes	Black-footed cat	Rare
Felis serval	Serval	Rare
Panthera pardus	Leopard	Rare
Philantomba monticola	Blue duiker	Rare

Latin Name	Name	Status
Mellivora capensis	Honey badger	Vulnerable
Felis lybica	African wild cat	Vulnerable
Orycteropus afer	Aardvark	Vulnerable
Manis temminckii	Pangolin	Vulnerable
Felis nigripes nigripes	Small-spotted cat	Rare

## 5.9 Protected Areas and Sensitive Sites

There is one wetland in the whole project area. The Buffelsfontein Pan is situated in the centre of the project area. Apart from this single wetland, there are no other formal or potentially sensitive or protected areas in the project area.

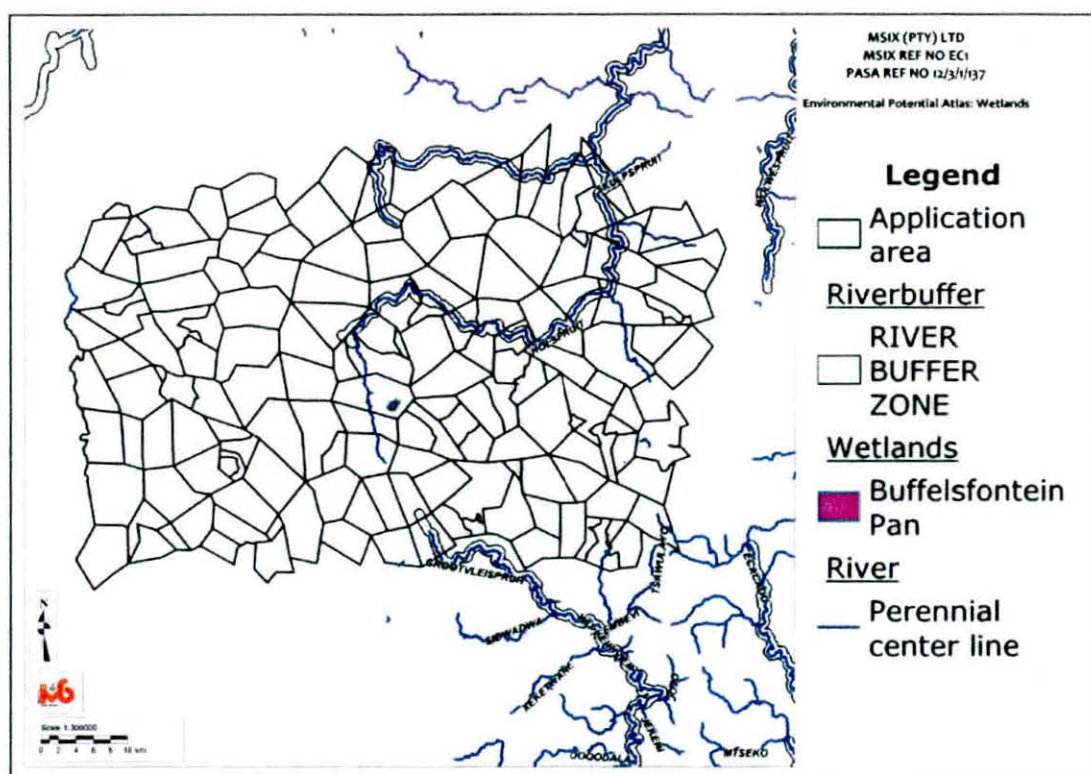


Figure 9: Wetlands

## 5.10 Surface Water and Rivers

The Kuilspruit & Holspruit original in the northern central areas of the project area and flow toward the north east. The Grootvlei spruit starts in the south and flows away from the project area.



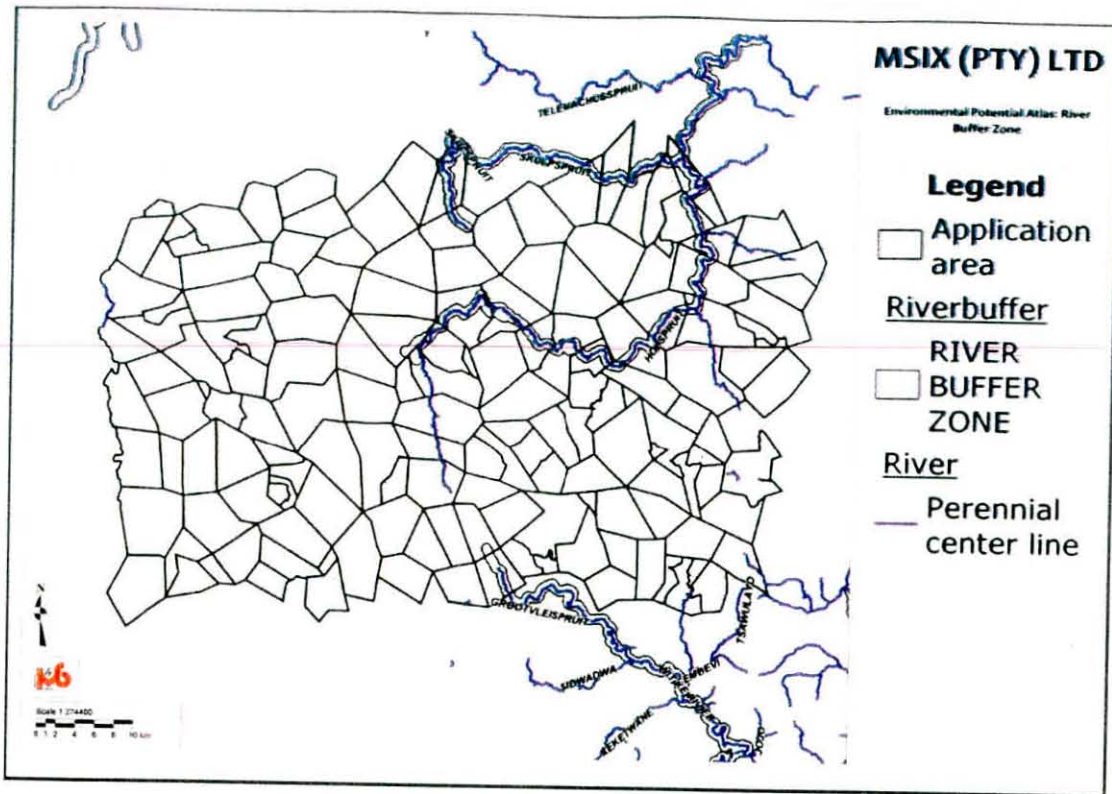


Figure 10: River Buffer Zones

There is one wetland in the whole project area. The Buffelsfontien Pan is situated in the centre of the project area.

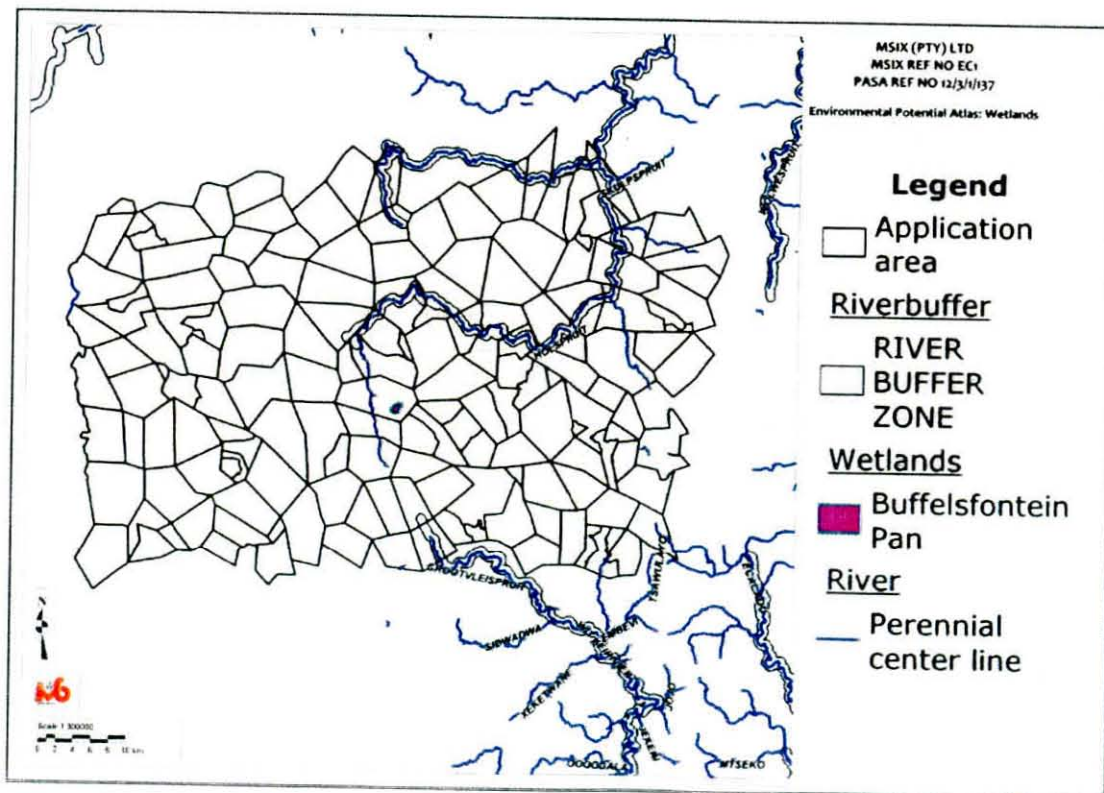


Figure 11: Wetlands in proposed exploration area

### 5.11 Air Quality

The Eastern Cape Province does not appear to be a priority area as far as air quality is concerned, as is evidenced by the number and type of industries in the Province. Monitoring of air quality in the Eastern Cape Province is performed on a fragmented basis as no co-ordinated monitoring network exists. Monitoring is currently concentrated in and around the Port Elizabeth area, as was recently started in the East London area as well. No comprehensive assessment of air quality in the Province is therefore possible. Where data exist, only very limited assessments of localised air quality could be done. Available data indicate that both sulphur dioxide and nitrogen dioxide levels in the Port Elizabeth area are below World Health Organisation guidelines (WHO, 1999). Monitoring of particulate matter in specific areas (Motherwell, Coega) has shown some exceedances of both South African and United States Environmental Protection Agency (US-EPA) guidelines. However, construction activities taking place in the vicinity of the monitoring could have contributed to this (Guastella, 2003).

### 5.12 Noise

Farms within the exploration area are mostly privately owned and generally quiet. No major noise sources apart from the general road traffic, was identified in the area.

### 5.13 Cultural Heritage

No known culturally significant areas exist within the project area. The map below indicates that a Cape Vulture colony does however occur to the south of the project area.

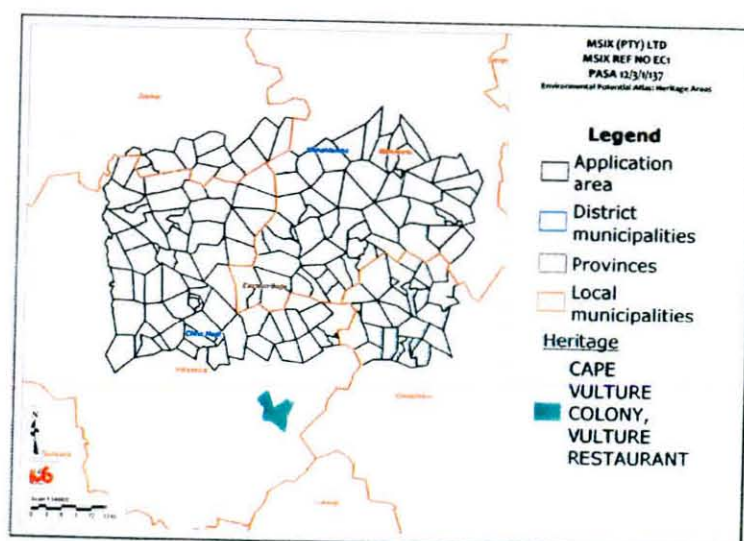


Figure 12: Heritage



## 5.14 Social and Economic Environment

The Eastern Cape Province represents an amalgamation of a number of areas, which previously had been artificially separated into three nominally independent sovereign states; the *Transkei* and *Ciskei* Republics, and the *Republic of South Africa*.

The project area is located in the north-eastern sector of the Eastern Cape.

The quality of life in rural villages is generally low. It is marked by poverty and a lack of access, services and amenities. It is characterized by the following:

- Most people are unemployed and rely on social grants and remittances from family members working elsewhere
- The economy revolves around the pension payment day every month
- Agriculture is restricted to a low-level maize production for own use
- Livestock is farmed in the traditional manner and not commercially. The livestock is of a low quality with little value. In most areas grazing land is overgrazed and invaded by alien vegetation.

Because of this, many families have resettled elsewhere in nearby towns, other larger urban centers in the Eastern Cape, Cape Town and Gating. However, this is not to say that they have given up their rural lifestyle. In many instances the link to the rural areas remains. In the rural areas of the former RSA, it is found that farm workers are forced off farms. They move to nearby towns. As most of them have cattle, it puts pressure on the Commonage of these towns, which has resulted in most towns having inadequate grazing on their Commonage.

Four Local municipalities play a role in the proposed exploration area nl:

### 5.14.1 Inkwanca Local Municipality

The Inkwanca Municipal Area, comprising approximately 3583<sup>2</sup>km is situated 60km north-west of Queenstown. The towns of Molteno and Sterkstroom comprise the urban component of the municipal area with Molteno being the administrative district.

The Inkwanca Municipal area is characterized by a large commercialized farm land with large scale cattle, sheep, goat and game farming. The area is suitable for this type of agriculture given its harsh climate conditions, rainfall and vegetation characteristics.

The rural population comprises a small portion of the total population in the study area and most of the residents are urbanized with high proportional urban population figures.

## POPULATION /AGE

Table 2: Population and Age statistics

Age	Rural	Molteno	Nomonde	Masakhe	Sterkstroom	Total
0-9	813	277	1786	1131	119	4127
10-19	552	400	2437	1542	219	5151
20-55	1908	803	4030	2422	417	9580
56+	135	177	563	430	85	1389
<b>Total</b>	<b>3408</b>	<b>1657</b>	<b>8817</b>	<b>5525</b>	<b>840</b>	<b>20247</b>

Approximately 50% of the population is within the economic active group, aged 20 – 64. 17% of the population lives in the rural area, indicating high level of urbanization. Molteno has the greatest population concentration, comprising approximately 50% of the total population or 10474..

Table 3: Households and Population

Category	Families	Population
Rural	1148	3408
Molteno	2569	10474
Sterkstroom	1758	6365
<b>Total</b>	<b>5475</b>	<b>20247</b>

Total of 5475 families reside in the study area. This constitutes an average family size of approximately 4 persons. Molteno represents the highest family sizes in the municipal area with the rural area the lowest at approximately 3 persons per family. Population distribution between the urban and rural area clearly demonstrates high level of urbanization and high level of commercial farming activities.

### 5.14.2 Gariep Local Municipality

The Gariep Local Municipality covers the following areas:

- Steynsburg
- Venterstad
- Burgersdorp



**AGE**

Table 4: Age profile

Age	Number of People
0-4	3038
5-9	3573
10-14	3903
15-19	3553
20-24	2699
25-29	2243
30-34	1889
35-39	1922
40-44	1604
45-49	1519
50-54	1275
55-59	1027
60-64	968
65-69	732
70-74	560
75-79	364
80-84	271
85+	162
<b>Total</b>	<b>31302</b>

**EMPLOYMENT**

Table 5: Employment status

Male	Employed	3495
	Unemployed	1876
	Not economically active	3654
Female	Employed	2149
	Unemployed	2518
	Not economically active	5173

### 5.14.3 Maletswai Local Municipality

The Maletswai Local Municipality covers the following areas:

- Aliwal North
- Jamestown

*Table 6: Gender ratio's*

Male	17502
Female	19798
<b>Total</b>	<b>37300</b>

*Table 7: Household Size*

Number of people per house	Number of Households
1	1628
2	1798
3	1512
4	1453
5	1122
6	727
7	463
8	296
9	198
10+	286



## 6 RESULTS OF PUBLIC CONSULTATION

This section presents a summary of the issues that have been identified by stakeholders during the EIA process. Stakeholder consultation is an ongoing process and more issues are expected to be raised as the project progresses.

The application area includes 101 farms and covers an area of 57,806.13 ha. With the help of the Deeds Office, the Masters Office, Cipro Company Registration as well as the different agricultural unions the information of the owners was sourced.

### 6.1.1 Identification of Interested and Affected Parties

As per the requirements of the MPRDA, Msix has undertaken to notify and consult with land owners and affected parties. Opportunities for interested and affected parties to register were created through advertisements, as well as search title deed information and contact details. A background information document (BID) was developed which explained the locality, application and process being followed, this document was made available to interested and affected parties who registered. Registered interested and affected parties were also requested to note potential interested and affected parties that could/should be contacted as part of the process.

#### **ADVERTISEMENTS AND NOTICES**

An advertisement was placed in the The Herald newspaper requesting potential interested and affected parties to register with the public participation office to obtain additional information. Please refer to Annexure C for a copy of the advertisements.

#### **SEARCHES ON NATIONAL DATABASES FOR LAND OWNER CONTACT DETAILS**

Additional to the advertisements and notices placed, the project team utilized national databases such as the deeds office, Masters office, ITC, Cipro company database and others to obtain land owners contact details. These contact details were called to make contact with land owners. In some cases this was successful in others the contact details were either old or incorrect.

#### **WRITTEN NOTICES - BACKGROUND INFORMATION DOCUMENT**

A background information document (BID) explaining the project and the exploration right application process was compiled. The BID included a response sheet, which provided persons with the opportunity to register as IAPs and provide comment, raise issues and concerns and

ask questions. The sheet also requested that the respondent list additional persons that might be interested in the project. A copy of the Background Information Document is attached as Annexure D.

#### **TELEPHONE CALLS**

A number of potential interested and affected parties were contacted telephonically and informed of the project. Parties were then forwarded the BID in order for them to register as interested and affected party.

#### 6.1.2 Registration of IAPs

Details of all persons and organizations that were contacted and to who information was made available are included in the IAP database/list. Those whom returned the response sheet were registered as IAPs and receive further information regarding the project. Please refer to Annexure E for details.

#### 6.1.3 Compilation of Issues and Responses

Issues and concerns relating to the application for an exploration right for coal bed methane in the application area have been captured by means of discussions brought about by the Background Information Document made available, advertisements placed and telephonic conversations held with I&APs. These issues and comments raised by Interested and Affected Parties are included in the Issues and Response table attached as Annexure E. The above mentioned situation is evident in the issues that have been raised:

- Job opportunities
- Impacts on Groundwater sources
- Impact on land use activities
- Bush clearing and impact on environmental sensitive areas



## 7 ENVIRONMENTAL IMPACT ASSESSMENT

### 7.1 Potential Impacts

#### 7.1.1 Geology and topography

It is highly unlikely that drilling into, and extracting a small core from, the coal seams will impact on the geological strata in any significant manner. The boreholes will be sealed with cement following completion of drilling.

#### 7.1.2 Soils, land use and land capability

The potential impact of the proposed mining operation on the existing soils, land capability and land use are described collectively. Given the short duration (3 weeks per hole) and limited extent (1,000 m<sup>2</sup>) of the exploration drilling, the impact is likely to be low estimated to be low and of local extent.

It is important however to note that exposed soil is often prone to erosion by water and the necessary attention to rehabilitation of disturbed areas will be given after completion of the drilling at each position. Re-vegetation of exposed areas for long-term dust and water erosion control is commonly used and is the most cost-effective option. Plants used for re-vegetation should be indigenous to the area, hardy, fast-growing, nitrogen-fixing, provide high plant cover, be adapted to growing on exposed and disturbed soil (pioneer plants) and should easily be propagated by seed or cuttings. Prior to drilling the topsoil will be stripped and stockpiled in a dedicated area for use during rehabilitation after completion of drilling. Incidental hydrocarbon spillages could potentially impact on the soils and the necessary procedures for rehabilitation will be put in place. The soils in the working areas and along access roads will be compacted through vehicle movement, and will be ripped after drilling is completed.

#### 7.1.3 Biodiversity

Damage or destruction of the vegetation, habitat and the loss of plant and faunal species of conservation concern could result from exploration activities. However, given the short duration (3 weeks per hole) and limited extent (1,000 m<sup>2</sup>) of the exploration drilling, the impact is likely to be low estimated to be low and of local extent. The following important principles will however be applied with site selection:

- No site within 50m of any drainage line, 100m of a major stream / river

- No sites within sensitive areas such as wetlands
- 50m from large trees

Poaching of fauna and flora will be prohibited and the importance of conserving the natural resources will be communicated to the employees on a regular basis. Thus, provided that sufficient rehabilitation is performed after drilling, the impact on the biodiversity is considered to be low and of low significance.

#### 7.1.4 Surface and groundwater resources

The main potential impacts of exploration activities on surface and water include the contamination of the resource(s) as a secondary impact resulting from soil contamination or erosion. Since the primary impact is considered to be moderate to low and easily mitigated, there is no major concern that the exploration activities will result in any significant risk to water resources.

Water use will be limited to the possible extraction of water from existing boreholes for the operation of the drilling rig. The amount of water extracted will be limited and not in contravention of the conditions defined in the General Authorisation issued by the Department of Water Affairs and Forestry (No 1191 published in the Government Gazette no. 26187 dated 26 March 2004).

Drilling will create a small connection between geological strata that may be a conduit for water movement. This is unlikely to have a residual impact as unsuccessful boreholes will be sealed with cement. Successful exploration boreholes that are to be revisited will be lined, and any water carrying zones sealed off, thereby preventing the transmission of ground water from upper aquifers to those lower in the sequence and especially from those in the coal seams.

No exploration activities must be allowed within 100m of the main streams and rivers, or within 50m of any other drainage line (non- perennial tributaries).

#### 7.1.5 Air quality

The impact on air quality and air pollution of fugitive dust is dependent on the quantity and drift potential of the dust particles (USEPA, 1996). Large particles settle out near the source causing a local nuisance problem. Fine particles can be dispersed over much greater



distances. Fugitive dust may have significant adverse impacts such as reduced visibility, soiling of buildings and materials, reduced growth and production in vegetation and may affect sensitive areas and aesthetics. Fugitive dust can also adversely affect human health. Sensitive receptors include landowners, farm workers and local communities.

Potential sources of dust include the drilling process, increased vehicle movement on unpaved roads. Dust emission will vary from day to day depending on the level of activity, and the prevailing meteorological conditions. However, as drilling is a wet process, minimal impact is expected. Thus, given the short duration and low level of activity expected during exploration, no significant adverse impacts are anticipated on the sensitive receptors. Impact of fugitive dust emissions on employees on site could however be significant and the necessary protective equipment must be provided to employees.

The release of gas from exploration boreholes is of concern if the boreholes are not sealed sufficiently on completion of drilling. Boreholes that are to be used for further investigation are to be capped when there are no drilling activities taking place. Boreholes not to be used in the future are to be sealed, with a significant impermeable cement seal which ensures that no gas will escape.

#### 7.1.6 Ambient noise

Typical noise rating levels produced by a drill rig varies between 87 and 92 dBA. According to SANS Code of Practice 10103:2004, "The Measurement and Rating of Environmental Noise with Respect to Land Use, Health, Annoyance and Speech Communication", it is highly probable that the noise is annoying, or otherwise intrusive to the community, or a group of persons, if the rating level of the ambient noise under investigation exceeds the residual noise by 7 dBA or more. Sensitive receptors include landowners, farm workers, and local communities.

#### 7.1.7 Heritage and cultural resources

Provided that all known heritage resources are avoided and clearly demarcated (fenced) to prevent any damage, there will be no impact associated with the exploration activities. In the unlikely event that heritage resources are encountered during drilling, the exploration activities will be ceased immediately and the incident reported to an approved archaeologist for his advise.

### 7.1.8 Socio-economic aspects

Positive impacts of the exploration project will include the creation of employment and the stimulation of the local economy through the purchase of supplies. These impacts will be of low significance as employment opportunities are limited and temporary and would have a minimal impact on the development of the local and regional economies. The potential negative impacts associated with the exploration project include:

- Impact on land use activities
- Communities – noise, dust
- Poaching
- Fire creation

**Msix is a historically disadvantaged company entering the Gas exploration industry. The shareholders and board of directors consist of HDSA's and women entering the gas exploration industry. Although the company is new in the industry, they are utilising a network of specialists to mentor and advise on the aspects of gas exploration to ensure their further skills development and secure establishment as a business in the industry. The company, being an HDSA and women owned and controlled company believe in the development of HDSA and especially women in the mineral and petroleum industries through mentorships, procurement opportunities, skills development, career-path development and talent management programmes.**

## 7.2 Risk Assessment

The system used for ranking of the risks associated with the proposed exploration project is outlined below:

### EXTENT

Site:	Impact limited to drill site
Local:	Impact limited to site and surrounding area
Region:	Impact affecting broader area

### DURATION

Short-term:	Impact only present over short term, e.g. during exploration
Long-term:	Impact only present over long-term (permanent)

### PROBABILITY OF OCCURRENCE

Low:	Unlikely that impact will occur
Medium:	Impact may occur



High: Impact will definitely occur  
 Undefined: Cannot be determined

### IMPACT SIGNIFICANCE

None: Hardly any discernable impacts to occur  
 Low: Small impact or disturbance over a small area  
 Medium: Limited impact expected and / or disturbance over a small area  
 High: Detrimental impact expected and / or disturbance over a large area

Table 8: Risk assessment table

Nature of Impact	Extent	Duration of Impact	Probability of Occurrence	Significance	
				Without Mitigation	With Mitigation
Geology and Soils	Site	Short-term	Low	Low	None
Land Use and Land Capability	Site	Short-term	Medium	Low	None
Fauna and Flora	Site	Short-term	High	Low	None
Hydrology / Surface Water	Local	Short-term	Medium	Low	None
Geohydrology	Local	Short-term	Medium	Low	None
Air Quality	Local	Short-term	High	Medium	Low
Noise	Local	Short-term	High	Medium	Low
Heritage and Cultural Resources	Site	Short-term	Low	Low	Low
Socio-Economic	Region	Short-term	High	Medium	Low

## 8 ENVIRONMENTAL MANAGEMENT PROGRAMME

### 8.1 Environmental Objectives

#### 8.1.1 Operational (short-term) objectives

- To limit erosion and impact on the topsoil
- To prevent impact on the biodiversity in the area
- To prevent the deterioration of water quality
- To prevent impacts to cultural and heritage resources
- To limit the impact on landowners and surrounding communities

#### 8.1.2 Long-term (post-exploration) objectives

- To rehabilitate disturbed areas to sustainable end land use, as close as possible to the original conditions
- Promote the rapid re-establishment of natural vegetation and restoration of site ecology

### 8.2 Environmental Management Plan

The Environmental Management Plan (EMP) is a tool that will facilitate appropriate environmental management during the exploration project and describes the environmental management measures required to minimise the environmental impacts.

Every effort will be taken by the Contractor(s) to minimise the impact of their exploration activities on the environment and on the affected parties. Should the Contractor(s) be in non-compliance with any of the forthcoming Environmental Management Measures and/or Procedures, a detailed motivation for non-adherence to the requirement must be compiled, based on a detailed risk assessment. The alternative management measures proposed by the Contractor (s) must be detailed and the potential impact quantified.



### 8.2.1 Topsoil conservation

- Topsoil will be removed prior to drilling and placed on a dedicated stockpile area within the working area.
- Topsoil will be placed separately from overburden (subsoil and rocky material).
- Strip and stockpile herbaceous vegetation, overlying grass and other fine organic matter along with the topsoil.
- Store stripped topsoil in an approved location and in an approved manner for later reuse in the rehabilitation process.
- Topsoil will be used for rehabilitation of the sump area as well as the drilling area after completion of drilling.

### 8.2.2 Storm water and erosion controls

The Contractor shall take reasonable measures to control the erosive effects of storm water runoff and shall take all reasonable measures to limit erosion and sedimentation due to the construction activities:

- The Contractor shall implement appropriate measures (berms, drains, trenches) to prevent overland flowing water from causing erosion.
- Any erosion channels developed during the exploration period or during the vegetation establishment period shall be backfilled and compacted, and the areas restored to the pre-construction condition or to a condition better than the pre-construction condition.
- Stabilisation of cleared areas to prevent and control erosion shall be actively managed. The method of stabilisation shall be determined in consultation with the Site Manager.
- Traffic and movement over stabilised areas shall be restricted and controlled, and damage to stabilised areas shall be repaired and maintained to the satisfaction of the Site Manager.
- Design slopes aimed at the prevention of soil erosion, of efficient storm water control, of the eventual re-establishment of vegetation and of ultimately achieving aesthetically acceptable landscapes.
- Plan for cut and fill slopes not exceeding a gradient of 1(V):3(H) wherever possible. In general, slopes steeper than 1(V):3(H) or slopes where the soils are by nature dispersive or sandy, must be stabilised.

- Re-establish grass cover as soon after topsoiling as soon as possible to prevent the erosion of the limited amounts of topsoil organic matter, clay and silt.

#### 8.2.3 Contaminated water

The Contractor will set up a contaminated water management system, and a Method Statement is required in this regard. The Method Statement will state the collection facilities, which are to be used to prevent pollution, as well as the method of disposal of the contaminated water.

- All water management systems (clean and dirty water) will be designed for the 1:50 year flood event to prevent dirty water spillages from the dirty water system to the clean water system and visa versa.
- Contaminated water may under no circumstances be released to the natural environment.

#### 8.2.4 Sensitive landscapes

- No exploration activities (including drilling, vehicle movement and sumps) may take place within a distance of 100m from any water resource or wetland area. No activities will take place within 50m of any floodplain areas or drainage lines.
- Access into wetland areas or other sensitive landscapes will be prevented by ensuring access remains on demarcated road systems.
- Training and awareness programmes must be implemented as part of the overall HSEC strategy to all employees and subcontractors regarding the importance and protection of sensitive environments and adherence to the EMP.

#### 8.2.5 Fauna and flora

- No poaching or undue destruction of fauna and flora will be allowed.
- Natural trees, shrubs and grass species will be retained as far as possible.
- The works area will be limited to an area of 1,000m<sup>2</sup>. No natural vegetation outside the works area will be damaged.
- The Contractor will control the movement of all vehicles and plant including that of his suppliers so that they remain on designated routes.
- Fires during autumn and winter should be controlled.
- A philosophy of limited interference would apply to the remaining natural areas, as well as the rehabilitated areas. Vehicle movement will be restricted to existing roads or along the boundaries of cultivated fields.



### 8.2.6 Noise

- The Contractor shall limit noise levels, e.g. install and maintain silencers on machinery.
- Construction activities shall be conducted during daylight hours only (normally between 06h00 and 18h00 Mondays to Fridays), unless under special circumstances in which case the permission of the landowners must be obtained.
- Noise zones (during construction and operational phases) will be clearly demarcated by means of signs at the entrance and exit to the noise zone. Workers within a noise zone will be required to wear personal protective equipment (PPE) such as ear plugs.

### 8.2.7 Dust

- The Contractor shall take all reasonable measures to minimize the generation of dust as a result of exploration activities.
- Appropriate dust suppression measures shall be used when dust generation is unavoidable, e.g. dampening with water/spray trucks.
- Erosion control measures such as intercept drains, contour bank canals, grassed waterways and toe berms would be implemented where required.
- During drilling and rehabilitation activities, the necessary PPE must be provided to the employees.
- Mitigation measures that will be applied to vehicles include adherence to all road regulations, e.g. speed limits and ensuring headlights are on all the time to increase visibility.

### 8.2.8 Cultural and historical resources

- Ensure the awareness of employees and subcontractors on the importance of protecting natural and cultural heritage resources.
- Under no circumstances shall archaeological or palaeontological objects or material be destroyed, damaged, excavated, altered, defaced or otherwise disturbed without the necessary permits.
- Identified heritage resources will be avoided and clearly demarcated and fenced to prevent any damage.
- Regular visit to these sites will be included in the environmental monitoring programme to establish any impacts on the identified sites. In the case of any

impacts, appropriate mitigation measures must be established and implemented immediately.

- Should any archaeological or palaeontological objects or material be detected during the exploration activities, this will be reported to the Site Manager immediately.
- Exploration activities must stop immediately when finding cultural and historical resources.
- Any findings will be reported immediately to an archaeologist, who will then provide further guidance on any additional requirements.

#### 8.2.9 Rehabilitation

- After completion of the exploration activities, the disturbed areas will be shaped (levelled), ripped, treated and re-vegetated as soon as possible.
- The final rehabilitated area will be designed such as to ensure a free-draining landform.
- All disturbed (and other specified) areas associated with the exploration activities, including temporary access routes and roads, compacted during construction must be ripped and/or scarified.
- Do not rip and/or scarify areas under wet conditions, as the soil will not break up.
- Allow for a maintenance period of one year following practical completion, unless otherwise specified.

#### 8.2.10 Socio-economic issues

Socio-economic mitigation measures during the exploration project will include the following:

- Employ local residents wherever possible.
- Ensure that the drivers of exploration vehicles adhere to traffic regulations.
- Ensuring that all contractors are aware of the location of all service infrastructure (such as pipeline, electricity transmission & distribution lines, etc.) and heritage resources and that such infrastructure is not disturbed or damaged.
- Limit exploration activities to daylight hours and to weekdays.
- Agreement with the landowners will be reached on access and compensation procedures prior to entering on their sites.



Msix is a historically disadvantaged company entering the Gas exploration industry. The shareholders and board of directors consist of HDSA's and women entering the gas exploration industry. Although the company is new in the industry, they are utilising a network of specialists to mentor and advise on the aspects of gas exploration to ensure their further skills development and secure establishment as a business in the industry. The company, being an HDSA and women owned and controlled company believe in the development of HDSA and especially women in the mineral and petroleum industries through mentorships, procurement opportunities, skills development, career-path development and talent management programmes.

#### 8.2.11 Health and safety

- The Mine Health and Safety Act, 1996 (Act 29 of 1996) will apply during the exploration project and the contractor will develop a suitable and sufficiently documented health and safety plan prior to commencement of the project.
- Exploration will be managed with the express intention of preventing accidents from happening, but will have emergency facilities available in the event of an accident occurring. An emergency contingency plan will be developed by the contractor and implemented during exploration.
- Drilling will be limited to daylight hours.
- A list of contact numbers and their relatives will be kept in the site office in case of emergency.
- A first aid kit will be kept on site.

#### 8.2.12 Fire prevention

- Fire fighting equipment, including fire-extinguishers and fire beaters, are to be kept at both the drilling and camp sites.
- Contact details of the landowners (including neighbouring farms), as well as the local fire department must be kept at both the drilling and camp sites.
- The making of fire for cooking, warmth or any other purposes, except in the demarcated eating area at the camp site, is to be prohibited.
- An emergency procedure will be developed in conjunction with the landowners and the local fire department – also refer to Emergency Procedures for surface fires in section 8.4.1.

#### 8.2.13 Ablution facilities

- Chemical toilets will be provided by the Contractor on the drilling and camp sites.
- Washing facilities (showers) will be provided by the Contractor at the camp site.
- The exact location of the toilets shall be approved by the Site Manager prior to establishment.
- All portable toilets shall be secured to the ground to prevent them toppling over due to wind.
- The contractor must ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from site.
- Discharge of waste from toilets into the environment is strictly prohibited.
- Drinking and washing water must be available close to the toilets.

#### 8.2.14 Camp site

- A camp site will be established on the farm where drilling takes place. No other camp sites may be established without the prior permission of the Site Manager or the landowner.
- The Contractor will designate an appropriate eating area for his employees at the camp site.
- Chemical toilets will be provided by the Contractor at the camp sites.
- Washing facilities (showers) will be provided by the Contractor at the camp site.
- The Contractor will provide sufficient waste bins with lids at the camp site – also refer to Waste Management Procedure in section 8.3.3.
- Fire fighting equipment, including fire-extinguishers and fire beaters, are to be kept at the camp sites.

### **8.3 Environmental Procedures**

#### 8.3.1 Handling, use and storage of materials

The Contractor will ensure that any delivery drivers are informed of all procedures and restrictions (including "no go" areas) that need to be complied with on site. The Contractor will ensure that these delivery drivers are supervised during off-loading by someone with an adequate understanding of the requirements of the site procedures.



Materials will be appropriately secured to ensure safe passage between destinations. Loads including, but not limited to sand, stone chip, fine vegetation, refuse, paper and cement, will have appropriate cover to prevent them spilling from the vehicle during transit. The Contractor will be responsible for any clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.

All manufactured material will be stored within the Contractor's camp, and out of the rain. All lay down areas outside of the construction camp will be subject to the Site Engineer's approval.

Hazardous chemical substances used during construction will be stored in secondary containers. The relevant Material Safety Data Sheets (MSDS) will be available on Site. Procedures detailed in the MSDS will be followed in the event of an emergency situation. For potentially hazardous substances that are to be stored on site, the Contractor will provide a Method Statement detailing the substances/materials to be used, together with the storage, handling and disposal procedures of the materials.

### 8.3.2 Hydrocarbon management

Hydrocarbons (petrol, diesel, oils/lubricants) must be managed in the following manner:

- All oil and other petroleum products must be stored in a bunded area with a containment capacity of the product being stored plus 10%.
- Decanting facilities must be available for decanting purposes at all times. Decanting facilities must be bunded appropriately to prevent spillages. Decanting must be done in such a way that no spillages occur whilst filling or emptying any containers. All portable diesel bowsers shall be used, filled, pumped, emptied, decanted and transported in such a way to prevent spillages of any kind.
- The maintenance of any petroleum liquid (e.g. oil, petrol and diesel) and grease supply pipes must be done in such a manner as to prevent any spillages to the environment.
- All machines, equipment and tanks (including mobile compressors and diesel bowsers) that have got the potential to leak oil shall be inspected and kept in good condition at all times. Leaking equipment will be repaired immediately or removed from the Site.
- Drip trays will be provided for stationary plant (such as compressors) and for "parked" plant (such as diesel bowsers, vehicles).
- The handling of drip trays and management of volume of oil levels in drip trays will be such that they will not overflow into the environment. If any spillages of oil did occur,

it shall be cleaned immediately after the spillage occurred. Also refer to Spill Management Procedure in section 8.3.4.

- Under no circumstances will the selling of empty drums for other uses be allowed.

### 8.3.3 Waste management

The Contractor will take full responsibility for the management of waste in his/her area of responsibility and that the waste management procedure as described below is implemented effectively. He/she will ensure that no littering or illegal disposal of waste takes place in his/her area of responsibility and that all employees and/or subcontractors reporting to him/her are aware of the waste management procedure and are adequately trained to implement the procedure.

The following classifications of waste will be used during the exploration project:

- General waste – compactable and non compactable
- Hazardous (hydrocarbons / chemicals) waste
- Sewage effluent (chemical toilets)

The general and hazardous waste streams will be segregated and disposed of in appropriate designated receptacles. All waste will be disposed off-site, including sewage effluent at approved landfill sites or sewage works (chemical toilets).

General principles for the management of waste include:

- No on-site burying, dumping or burning of any waste materials, vegetation litter or refuse shall occur.
- All solid waste shall be disposed of off site at appropriate landfill sites.
- Appropriate waste disposal facilities will be provided on site. These will be removed on a regular basis.
- The disturbed areas will be cleared of all rubble, rubbish and unused products on an ongoing basis.
- Hydrocarbons and/or chemicals required during the drilling will be stored in secured bunded areas. Accidental spillages will be cleaned as per the guidelines stipulated in the Material Safety Data Sheet (MSDS) of the spilled product.
- All used oil generated on site shall be pumped to appropriate storage tanks for removal and safe disposal and/or recycling.
- Suitable spill kits and absorbent materials shall be available at all times for the containment and clearing of any spills.



- In the event of spillage or pollution the incident must be reported immediately to ensure prompt action is taken.
- Any chemicals shall be disposed of as stipulated in the particular product's MSDS. This includes the destruction of containers if prescribed.

#### 8.3.4 Spill management

##### **DEFINITIONS**

- Minor Risk Incident - Minor spills are those which can be controlled, contained and cleaned up with the help of the people on site. Minor effects on biological or physical environment. Minor short to medium term damage to small area of limited significance.
- Major Risk Incident - Significant spills are those in which human hazard is evident, the spill cannot be contained and / or has led to contamination of a water resource and / or other sensitive location e.g. drain. Moderate short to medium term damage, widespread with some impairment of ecosystem function, possible fire hazard, explosion or danger to health.
- Emergency - Means an accidental situation involving the release or imminent release of dangerous goods or other substances that could result in serious adverse effects to the health and/or safety of persons or the environment. An emergency may be the result of human cause or natural occurrences including, but not limited to, process upsets, controlled reaction, fires, explosions, threats, structural failures, floods, storms, etc.
- Dangerous Goods - Means goods that include explosives, compressed and liquefied gasses, flammable and combustible materials, as well as radioactive materials.
- Hazardous Substance - Includes any toxic, harmful, corrosive, irritant or asphyxiate substance, or mixture of such substance for which an occupational exposure limit is prescribed, or which could create a hazard to human health or the environment.
- MSDS - Means Material Safety Data Sheet of the product or substance

##### **SPILL MANAGEMENT PROCEDURE**

###### **Minor Risk Incident**

- Assess the situation and determine the hazard and extent of the spill, taking into account the quantity of the spillage and the danger of the substance. Refer to MSDS of the substance spilled to identify hazard.

- Contact the Site Manager, detailing the substance, quantity, severity, location and possible environmental impact.
- Demarcate the area where the substance was spilled.
- Contain the spill with the correct control measures i.e. sand, spill-sorb, bunding, spill-kits, etc. Refer to the MSDS of the substance spilled for correct handling and control of the spill.
- The Site Manager must contact the relevant person(s) to attend to the situation.

#### Major Risk Incident or Emergency

- Assess the situation and determine the hazard and extent of the spill, taking into account the quantity of the spillage and the danger of the substance. Refer to MSDS of the substance spilled to identify hazard.
- Raise the alarm and evacuate the area.
- Contact the Site Manager, detailing the substance, quality, severity, location and possible environmental impact.
- Demarcate the area where the substance was spilled.
- If possible try to contain the spill with the correct control measures i.e. bunding, etc. Ensure not to endanger anyone or yourself by doing this. Refer to MSDS of the substance spilled for correct handling and control of the spill.
- The Site Manager must contact the relevant person(s) to attend to the situation.

### **8.4 Environmental Emergency Plan**

An environmental incident is defined as "an unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed".

Some environmental emergencies have been identified that could during the exploration project, in the event of which immediate remedial action must be undertaken, namely:

- Occurrence of surface fires, including veld fires.
- Compromising of dirty water management structures such as berms.
- Hydrocarbon spills or leaks from machinery on the surface.

#### 8.4.1 Surface fires

In the event of a fire, the procedure to be followed is provided in Section 18 of the National Veld and Forest Fires Act, 1998 (Act 101 of 1998). The said Act provides for the



notification of relevant affected parties, access to land on which a fire is burning for the purpose of extinguishing it, and requires that the fire protection officer of the area be informed, as well as those of surrounding areas to which the fire may spread. An emergency procedure will be developed in conjunction with the landowners and the local fire department to ensure in the event of a surface fire, the requirements of the National Veld and Forest Fires Act will be met.

#### 8.4.2 Compromising of surface or groundwater protection measures

All compromised berms and other surface or groundwater protection measures will immediately be repaired and stabilised to avoid further contamination of clean areas with dirty water and the impacts associated therewith. Also refer to Spill Management Procedure in section 8.3.4.

#### 8.4.3 Hydrocarbon spills or leaks from machinery

All areas affected by spills of hydrocarbons will be remedied immediately. Soil rehabilitation by land farming, or other means will be initiated immediately, and the necessary measures will be taken to ensure that pollution of surface water and groundwater does not occur. Also refer to Spill Management Procedure in section 8.3.4.

### **8.5 Environmental Awareness**

The successful implementation of the EMP is dependent on training and awareness of all personnel working on the drilling site. The environmental awareness plan aims at:

- promoting general environmental awareness amongst all employees;
- informing all personnel of environmental policies, procedures and programmes applicable to the exploration activities;
- providing general training on the implementation of environmental management actions; and
- providing job specific environmental training to ensure the protection of the environment.

The environmental awareness training programme will include:

Aspect	Output	Responsibility	Timeframe
Formal appointment of Project Environmental Officer	Appointment	Msix Project Manager	2 months prior to commencement of on site activities
Identification of environmental risks associated with each job	List of environmental risks per job category	Project Environmental Officer	1 month to prior commencement of on site activities
Preparation of detailed Environmental Emergency Procedures and Environmental Code of conduct	Environmental Code of conduct  Environmental Emergency Procedures	Project Environmental Officer	Prior to exploration project start-up
Environmental induction of new employees  Induction to include:  Typical and specific environmental risks  Emergency Procedures (Spillage of a fuel, oil, lubricant or any other chemical substance, surface fires)	Induction manual  Proof of induction completed per employee	Project Environmental Officer	Prior to commencement of exploration  Ongoing for each new employee appointed
Signed Emergency Procedures and Code of conduct by all inducted employees	Signed copy of documents on HR file	Project Environmental Officer  Human Resource Manager	Ongoing for each new employee appointed
Training on the implementation of emergency procedures where necessary	Proof of training conducted	Project Environmental Officer  Human Resource Manager	Prior to on site activities and thereafter once per month for the duration of the exploration



Aspect	Output	Responsibility	Timeframe
			programme
Job specific training on addressing specific job-related risks and emergencies	Proof of training conducted	Project Environmental Officer  Human Resource Manager	On arrival of new employees and thereafter once per month for the duration of the exploration programme
Conduct monitoring checks and audits on employees' knowledge and performance of environmental risks and emergencies	Monitoring & Audit checklists  Completed checklists	Project Environmental Officer  Project Manager	Monitoring checks – once per month Audit – Once every three months

## 8.6 Environmental Monitoring and Auditing

Internal environmental inspections / audits will be performed on a monthly basis to ensure compliance with this EMP. In the event that there is any non-compliance, an action plan to rectify the situation will be developed in conjunction with the Contractor and implemented as per the stipulated timeframes. Management of the action plan will be documented and are therefore auditable during the annual EMP performance assessment.

Assessment of the rehabilitation undertaken and the performance against this EMP will be by all stakeholders, namely the Site Manager, the drilling contractor and the surface owner and will be done immediately after drilling operations was ceased on site. This assessment will be documented and signed-off by all parties.

Annual external audits will be performed by a qualified environmental specialist, which will be submitted to the Petroleum Agency SA, and will serve the purpose of the required EMP performance assessment.

## 8.7 Roles and Responsibilities

The Contractor will be fully responsible to ensure compliance with this EMP. He/she will report directly to the Site Manager.

The Site Manager (CoAL representative) is a qualified geologist, with the express capability of managing a project of this nature and complexity. It will be his responsibility to ensure that the Contractor complies with the requirements of this EMP, and that the environmental monitoring and auditing are performed as stated in section 8.6.

## 9 FINANCIAL PROVISION

The amount that is necessary for the rehabilitation of damage caused by the exploration activities for both pre-mature and final closure is estimated below. For the pre-mature closure estimate an assumption was made that at any particular time a maximum of one drill site will be active. Rehabilitation of drilling sites will be ongoing as part of the exploration activities and a similar assumption is therefore applicable to final closure. The quantum for both pre-mature and final closure would therefore be the same, the calculation of which is given below.

*Table 9: Rehabilitation Calculation*


Activities	Unit	Quantity	Rate	Cost
<b>Drill Sites</b>				
Sealing of boreholes with concrete	Boreholes	2	R 200.00	R 400.00
Contouring & ripping of levelled areas	m <sup>2</sup>	200	R 3.00	R 600.00
Remediation of contaminated soil	m <sup>2</sup>	50	R 80.00	R 4,000.00
Seeding	m <sup>2</sup>	100	R 1.00	R 100.00
Disposal of wastes				R 2,000.00
<b>Access Roads</b>				
Ripping of compacted areas	m <sup>2</sup>	300	R 3.00	R 900.00
Seeding	m <sup>2</sup>	300	R 1.00	R 300.00
<b>Camp Sites</b>				
Removal of infrastructure				
Ripping of compacted areas	m <sup>2</sup>	200	R 3.00	R 600.00
Seeding	m <sup>2</sup>	200	R 1.00	R 200.00
<b>Management Costs</b>				
Rehabilitation management	Hrs	12	R 350.00	R 4,200.00
<b>Monitoring and Maintenance</b>				
Follow-up monitoring	Hrs	6	R 350.00	R 2,100.00
Physical weed removal	Labourer	1	R 100.00	R 100.00
Planting / seeding, application of fertilizer	m <sup>2</sup>	300	R 1.00	R 300.00
<b>Total (excl VAT)</b>				<b>R 15,800.00</b>



**10 UNDERTAKING**

I, **Gabriel Amos**, the undersigned and duly authorised thereto **Msix (Pty) Ltd**, have studied and understand the content of the environmental management programme and hereby duly undertake to adhere to the conditions as set out therein including any amendments approved by the Petroleum Agency SA, as well as the requirements of the Mineral and Petroleum Resources Development Act (No 28 of 2002) and the regulations thereto.

Signed at **Pretoria** this **20<sup>th</sup>** day of **December** 2009.



GABRIEL NELSON AMOS

Designation: DIRECTOR

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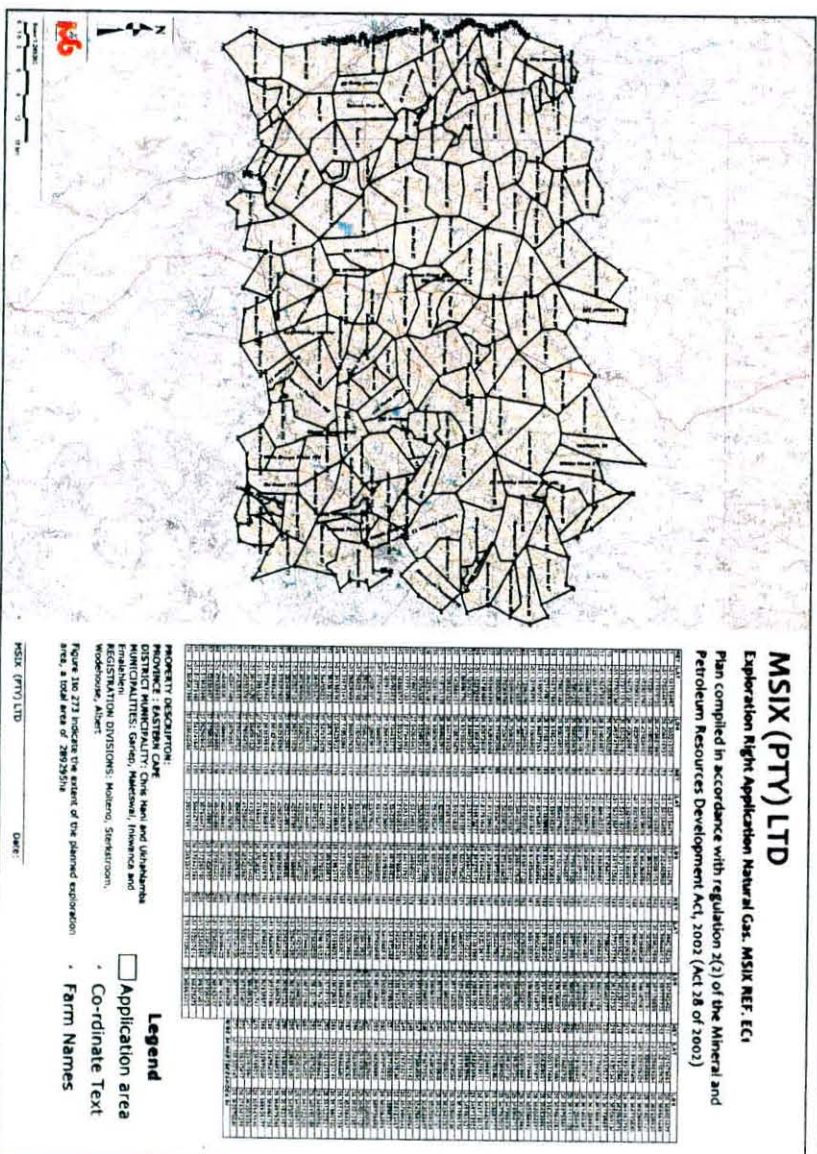
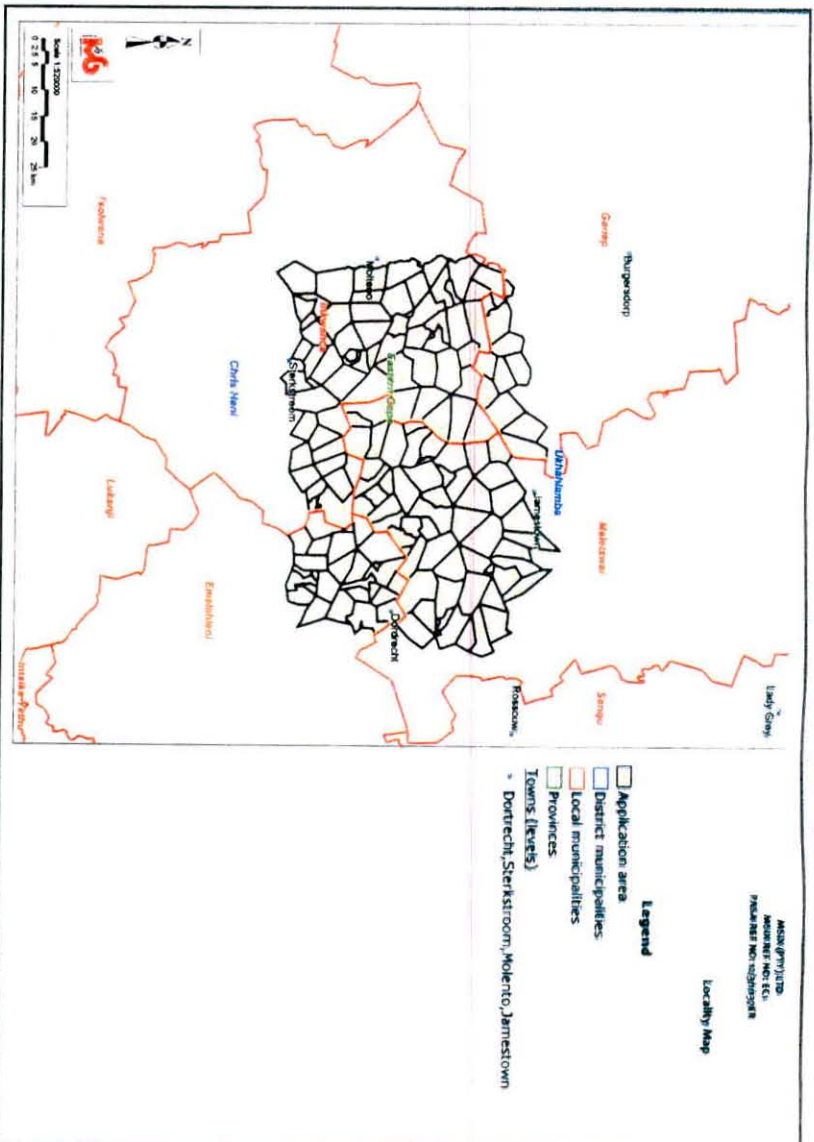


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# ANNEXURE A: LOCALITY MAP AND APPLICATION AREA





# ANNEXURE B: LIST OF LAND OWNERS

Property	Registered Owner	Contact person
Paarde Kraal 70	Plaaslike Oorgangsraad- Molteno	Municipal Manager
Koups Leegte 161, Jouberts Kop 164	A J Macaskill Pty Ltd	The Director
Paarde Kraal 64	Alexander David Allan Bruce	Alexander, DAB
Kaal Hoek 37	Amaqoma Trust	The Trustee
Coffee Fontein 138	Anderson Frieda Philipina- Trustees	The Trustee
PalmietFontein 144	Argyros Trust	The Trustee
Blaauw Krantz 204	Badenhorst Johanetta	Badenhorst, J
Bamboes Hoek 91	Bamboeshoek Trust	The Trustee
Swempoot 69	Bekker Hester Johanna Maria	Bekker, HJM
Nooitgedacht 25	Bekker Jan Lodewyk	Bekker, JL
Klap Kloof 4 (FARM 4)	Bekker Johannes Marthinus	Bekker JM
Boshoffskraal 149	Bell William Luke	Bell WL
Nooitgedacht 26	Berg Cornelius Johannes Van Den	Van Den Berg CJ
Farm 146, Farm 148	Birch Ernest Molteno	Birch SE
Blaauw Krantz 206	Bloukrans Trust	The Trustee
Vaalbank 53	Bosch Werner	Bosch W
Swempoot 65	Botha Andre	Botha A
Roode Hoogte 58, Allemans Poort 104	Botha Theunis Jacobus	Botha TJ
Bitterplaat 64, Stry Fontein 50, Swempoot 66	Botha Van Niekerk Trust	The Trustee
Oorlogs Poort 97	Bradfield Alan Fred	Bradfield AF
Kikvorsch Fontein 118	Bradfield Gavin David	Bradfield GD
Storm Fontein 115, Tyger Klip 98	Bradfield Gordon Graham	Bradfield GG
Thysfontein 143, PalmietFontein 145, Jackals Kop 142	Bradfield Keith Harold Selwyn	Bradfield KHS
Vlak Fontein 12	Broster Charles John	Broster CJ
Chesterton 35	Bruyn Johannes Hendrik De	De Bruyn JH
Morgenzon 23	Bruyn Petrus Johannes Jacobus De	De Bruyn PJJ
Jansen Fontein 178, Klip Plaat 22, Buffels Fontein 150, Boshoffskraal 150	Buffelsfontein Trust	The Trustee



Property	Registered Owner	Contact person
Stry Fontein 49	C A Schmidt Familie Trust	Schmidt CA
Botha Hoek 67, Hartebeest Hoek 68, Toom Nek 68, Uitkeyk 67	C J M Schmidt Familie Trust	Schmidt CJM
Drooge Fontein 156, Snymans Kraal 111	Cansten Trust	The Trustee
Chesterton 36, Farm 98	Cheetahs Prop Trust	The Trustee
Farm 147, Thysfontein 144, Murrel Fontein 160	Cloete Bernard Mark	Cloete BM
Cornets Kop 1	Coetzee Hugo Amos	Coetzee HA
Nooitgedacht 27	Coetzer Louis Johannes	Coetzer LJ
Gelegen Fontein 179, Jansen Fontein 179, Valsch Fontein 181, Stones Beacon 187	Coldstream Trust	The Trustee
Ox Kraal 173	Conference Of The Methodist Church Of Southern Africa	
Cypher Gat 69	Country View Trust	The Trustee
Hans Donsies Kraal 183	Creese Arthur Charles	Creese AC
Bloem Tuin 12, Leeuwe Kraal 105, Frere Dell 108	Daly John Vivian Stretton	Daly JVS
Leeuwe Kloof 172	David Osborne Family Trust	Osborne D
Botha Hoek 68, Toom Nek 67, Uitkeyk 71	Dempsey Johannes Jacobus Rossouw	Dempsey JJR
Bamboeshoek 20, Morgenzon 24	Den Haag Boerdery C C	De Haag, J
Swak Fontein 50	Diederik Van Pletzen Familie Trust	Van Pletzen D
Coffee Fontein 141, Moorddenaars Hoek 140, Coffee Fontein 139	Dordrecht Communal Prop Assoc	Chairperson
Cornets Kop 1, Yzerfonteinvlakte 4	E M Familie Boerdery B K	Director
Kikvorsch Fontein 115	Elliott Duncan George	Elliott DG
Pen Hoek 181, Drooge Fontein 155	Festival Farms Trust	The Trustee
Zwavel Krantz 42	George Jaxa Familie C C	Jaxa G
Zeven Fontein 15, Stafelbers Vley 161	Geyer Lourens Stefanus	Geyer LS
Zwavel Krantz 43	Glenmilner Communal Prop Assoc	Chairperson
Lemoen Kloof 173	Goosen Hendrik Petrus	Goosen HP
Leeuwe Kraal 10	Gouws Andre Martin	Gouws AM

Property	Registered Owner	Contact person
Bloem Tuin 11	Gouws Hanlie	Gouws H
Storm Fontein 114	Greeff Frederika Jacoba B-E	Greeff FJB
Kikvorsch Fontein 117	Greyling Daniel Jacobus	Greyling DJ
Zeven Fontein 16, Sterkfontein 6, Rooipoort 2, Eyser Fontein 5	Greyvensteyn Barend Johannes De Klerk	Greyvensteyn BJD
Valsch Fontein 180, Stones Beacon 188	Groot Vley Trust	The Trustee
Vaalbank 55	H W Van Pletzen Trust	Van Pletzen HW
Koffee Fontein 164	Hangklip Valley Trust	The Trustee
Snymans Kraal 110	Harvey Family Trust	Harvey, J
Botha Hoek 69, Bamboes Hoek 92, Toom Nek 69, Uitkeyk 72,	Hattingh Casper Adriaan	Hattingh CA
Sterkfontein 7	Hattingh Stefanus Daniel	Hattingh SD
Klipfontein 32	Heerden Hugh Smith Van	Van Heerden HS
Klipfontein 31	Heerden Johan Van	Van Heerden J
Chesterton 36	Heerden Stephanus Cornelius Van	Van Heerden SC
Klip Kraal 15	Heerden Willem Pieter Jacobus Van	Van Heerden WPJ
Koups Leegte 163, Jouberts Kop 163	Henning Gert Frans Johannes	Henning GFJ
Jouberts Kop 165	Henning Maria Christina Gertruida	Henning MCG
Smuts Pass 148, Limoen Fontein 145	Highland Farm Trust	The Trustee
Rietfontein 54	Human Elsabe	Human E
Kaal Hoek 38	Jaxa Ndithini Johnson	Jaxa NJ
Snymans Kraal 113	Jonker Eva Catherina	Jonker EC
Snymans Kraal 112	Jonker Willem Daniel	Jonker WD
Bitterplaat 65	Jordaan Alwyn Francois	Jordaan AF
Swempoort 71	Jordaan Casper Adriaan	Jordaan CA
Klipfontein 30	Jordaan Ruben Jacobus Hosia	Jordaan RJH
Roode Hoogte 60	Jordaan Theunis Botha-Trustees	Jordaan TB
Klipfontein 236	Klerk Pieter Barker De	De Klerk PB
Stafelbers Vley 160	Klopper Coenraad Christoffel	Klopper CC
Rietfontein 57	Kotze Andrina Wilhelmina	Kotze AW
Bamboeshoek 21, Morgenzon 25	Kruger Hans Jurgens	Kruger HJ



Property	Registered Owner	Contact person
Eyser Fontein 6	Kruger Jacob Jan Hendrik	Kruger JJH
Zwavel Krantz 39	Kruger Johanna Hendrika	Kruger JH
Swak Fontein 51	Labuschagne Casper Johannes	Labuschagne CJ
Stry Fontein 52	Labuschagne Christian Boshoff	Labuschagne CB
Bamboes Hoek 93	Labuschagne Johannes Jacobus Petrus	Labuschagne JJP
Hartebeest Hoek 69	Labuschagne Stephanus Petrus Johannes	Labuschagne SPJ
Bamboes Hoek 94, Labuschagnes Nek 93	Lange Christoffel Rudolph De	De Lange CR
Kikvorsch Fontein 116	Larter Adrian Allan	Larter AA
Bamboes Hoek 95	Larter Everitt Percival	Larter EP
Leeuwe Kraal 11	Lategan Theunis Petrus	Lategan TP
Leliekloof 235	Leliekloof Trust	The Trustee
Paarde Kraal 65	Linde Jasper Van Der	Van Der Linde J
Paarde Kraal 66	Loperberg Trust	The Trustee
Zwavel Krantz 40	Lubbe Eugene Stuart	Lubbe ES
Driefontein 168, Coffee Fontein 140, Coffee Fontein 140	Macpherson Elizabeth Adeline B-E	Macpherson EA
Paarde Kraal 67	Marx Gert Petrus	Marx GP
Zwavel Krantz 41	Masizakhe Small Farmers Assoc	Chairperson
Morgenzon 26, Rondavel 32, Poortje 26	Mcnaughton & Ellis Prop Holdings Pty Ltd	Mcnaughton, W
Frere Dell 109	Methodist Church Of Southern Africa	
Lemoen Kloof 172	Miles Kevin Peter	Miles KP
Kaal Hoek 39	Mokoena Communal Prop Assoc	Chairperson
Middel Plaats 110	Moorcroft Gavin George	Moorcroft GG
Pen Hoek 183	Moorcroft George John	Moorcroft GJ
Ox Kraal 174	Mortlock Lionel Ronald	Mortlock LR
Pen Hoek 182, Hans Donsies Kraal 184	Mortlock Paul Edgar	Mortlock PE
Lemoen Kloof 174	Mortlock Peter Fredrick	Mortlock PF
Paarde Kraal 68	Mun Molteno	Municipal

Property	Registered Owner	Contact person
		Manager
Myburgsrus 259	Myburg Alex Andria	Myburg AA
Limoen Fontein 204	Myburg Gerhard Wilhelm	Myburg GW
Klipfontein 241	Nel Stephanus Gerhardus Johannes	Nel SGJ
Allemands Poort 105, Middel Plaats 109	Newlands Trust	The Trustee
Stry Fontein 51, Swak Fontein 53	Niekerk Anna Catharina Van	Van Niekerk AC
Krans Fontein 90	Niekerk Herman Van	Van Niekerk H
Torenborg 269	Nottingham Trust	The Trustee
Swempoot 96	Oelofse Louis Jacobus	Oelofse LJ
Snymans Kraal 115, Jackals Kop 141	Oelofse Petrus Johannes- Trustees	Oelofse PJ
Oorlogs Poort 101	Oelofse Willem Pieter Jacobus	Oelofse WPJ
Klipfontein 237	Olivier Jan Hendrik-Trustees	Olivier JH
Roodehoek 242, Klein Buffel Valey 240, Zwart Fontein 239	One Vision Inv 373 Pty Ltd	The Director
Cornets Kop 1	Paul Lynton George	Paul LG
Paarde Kraal 69, Cypher Gat 70	Phillips Ivor Leroy	Phillips IL
Klipfontein 239	Plessis Frans Jacob Du	Du Plessis FJ
Witte Booys Kraal 176	Plessis Jan Du	Du Plessis J
Swempoot 67	Pletzen Carel Christian Van	Van Pletzen CC
Swak Fontein 52	Pletzen Diederik Johannes Van	Van Pletzen DJ
Rietfontein 59	Pletzen Jan Hendrik Van	Van Pletzen JH
Vaalbank 56	Pletzen Jan Jacobus Van	Van Pletzen JJ
Rietfontein 55	Pletzen Jan Van	Van Pletzen J
Vaalbank 54	Pletzen Jannie Van	Van Pletzen J
Krans Fontein 91, Swempoot 73	Pletzen Petrus Nicolaas Van	Van Pletzen PN
Spits Kop 57	Predikantskop Trust	The Trustee
Moordenaars Hoek 139	Preez Willem Erasmus Du	Du Preez WE
Chesterton 35	Pretorius Sarel Jacobus Johannes	Pretorius SJJ
Leeuwe Kraal 12	Quinton David William	Quinton DW
Stafelbers Vley 157, Stapelbergskloof 156	R A G D Stretton Farming C C	The Managing Member



Property	Registered Owner	Contact person
Vlak Fontein 13, Coffee Fontein 139, Coffee Fontein 141	Republiek Van Suid-Afrika	Molteno District Officer
Moorddenaars Hoek 142	Rockberry 13 C C	The Managing Member
Oorlogs Poort 99	Roodt Ernest Albert	Roodt EA
Naauw Poort 165, Koffee Fontein 165	Rooyen Constantyn Andreas Beyers Van	Van Rooyen CAB
PalmietFontein 143	Sauer Catharina Aletta	Sauer CA
Roodehoek 242	Sauer Nicolaas Everhardus	Sauer NE
Stafelbers Vley 158, Birds River 175, Murrel Fountain 159, De Boulogne 177	Scheepers Lawrence Spies	Scheepers LS
Nooitgedacht 28, Klein Fontein 49	Schmidt Casper Adriaan	Schmidt CA
Stry Fontein 54, Klein Fontein 48	Schmidt Christiaan Jacobus Michael	Schmidt CJM
Botha Hoek 72, Nooitgedacht 29, Toom Nek 71, Uitkeyk 68, Bitterplaat 66	Schmidt Gerhardus Mathys	Schmidt GM
Botha Hoek 70, Toom Nek 70, Uitkeyk 70	Schoeman Johannes Hendrik	Schoeman JH
Hartebeest Hoek 66, Bitterplaat 67, Swempoort 68	Schutte Izak Johannes	Schutte IJ
Swempoort 70	Schutte Izanne	Schutte I
Naauw Poort 166	Scott Thomas Holding	Scott T
Roode Kloof 8, Klipfontein 238	Sherwood Trust	The Trustee
Botha Hoek 71, Toom Nek 72, Uitkeyk 69	Slabbert Leriema Maria	Slabbert LM
Roode Kloof 9	Smit Emmerentia Fredrika	Smit EF
Botha Hoek 73, Hartebeest Hoek 67	Smit Izak Schalk	Smit IS
Roode Kloof 10, Zwart Fontein 240	Smit Thenis Jacobus	Smit TJ
Krantz Kloof 36	Stephko Trust	The Trustee
Paarde Kraal 71, Cypher Gat 71	Straaten Jakobus Alwyn Van	Van Straaten JA
Cypher Gat 72	Straaten Thomas Van	Van Straaten T
Vlak Fontein 14, Bloem Tuin 15	Stretton James George	Stretton JG
Bamboeshoek 22, Bloem Tuin 13, Klip Plaat 24	Stretton John Henry	Stretton JH
Middel Plaats 112	Stretton Natasha Anne	Stretton NA
Klip Plaat 25, Farm 147, Snymans Kraal 114	Stretton Rowan George	Stretton RG

Property	Registered Owner	Contact person
Bloem Tuin 14, Pisa 107	Stretton William Sancroft	Stretton WS
Nooitgedacht 31, Nooitgedacht 30	Strydom Johannes Jacobus	Strydom JJ
Klipfontein 242	Swanepoel Alwyn Pieter	Swanepoel AP
Murrel Fountain 161	Tennant Stuart Dennison	Tennant SD
Kaal Hoek 40	Thople Inv 15 C C	The Managing Member
Nooitgedacht 152, Nooitgedacht 154	Timm Jill Elizabeth Collie	Timm JEC
Limoen Fontein 203, Blaauw Krantz 205	Toit Christo Charl Du	Du Toit CC
Paarde Kraal 72, Cypher Gat 73, Jansen Fontein 180, Stafelbers Vley 159, Birds River 176, Naauw Poort 164, Hans Donsies Kraal 182, Stones Beacon 189, De Boulogne 175, Koups Leegte 164, Witte Booys Kraal 174, Koffee Fontein 163, Jouberts Kop 162, Jackals Kop 140	Transnet Ltd	Property Manager
Wolwe Fontein 10, Leliekloof 238, Spits Kop 58	Turn Around Inv 47 Pty Ltd	The Director
Wonderhoek 18, Anderson Vrede 263, Leeuwe Fontein 112, Leeuwe Fontein 111, Uitkyk 56, Klip Fontein 55, Leeuw Spruit 61, Van Der Merwes Fontein 62, Swempoort 65, Pronks Berg 60, Mooihoek 59, Alemans Ruigte 101, Farm 102, Pronks Kraal 100, Pronks Kraal 99, Vogel Valey 144, Marlow 267, Jackals Kop 141, Leeuwe Kraal 105, Winter Hoek 51, Farm 31, Schiler Krantz 177, Limoen Fontein 203, Merino Weide 256, Gretna 6, Hex Rivier 7, Witkrans 33	Unknown	The owner
Spioen Kop 66, Aprils Kraal 34, Loper Berg 65, Twee Fontein 17, Twee Rivier 16	Unknown	The owner
Leeuwe Fontein 13, Post Houers Hoek 70, Farm 68, Buffels Kloof 1, Farm 2, Bushmanshoek 3, Klip Kraal 9, Donker Hoek 8, Rooikopies 5, Leeuwe Fontein 24, Bird Rivers Poort 20, Stry Poort 238, Streep	Unknown	The owner



Property	Registered Owner	Contact person
Fontein 237, Stry Fontein 2		
Vaalbank 58	Vaalbank Trust	The Trustee
Leliekloof 236	Valley Of Art C C	The Managing Member
Leeuwe Kloof 171	Van Niekerk Trust	Van Niekerk G
Allemands Poort 103, Roode Hoogte 61	Venter Christoffel Rudolf	Venter CR
Moorddenaars Hoek 141, Jouberts Kop 166, Jackals Kop 143	Venter Desmond	Venter D
Cornets Kop 1, Rooipoort 3	Venter Gabriel Andries	Venter GA
Wilgerfontein 226, Jordansrus 15	Venter Johannes Arnoldus	Venter JA
Oorlogs Poort 98	Venter Willem Pretorius	Venter WP
Sterkfontein 8	Verster Jacobus Cornelius	Verster JC
Cornets Kop 1, Zeven Fontein 14	Viljoen Dorrington Testamentere Trust	Viljoen D
Wolwe Fontein 11, Middel Plaats 111	Vorster Kotie	Vorster K
Wolwe Fontein 9	Vries Gert Stefanus De	De Vries GS
Roode Hoogte 59	Vuuren John Josewa Jansen Van	Janse Van Vuuren JJ
Oorlogs Poort 100	W P Venter Landgoed C C	Venter WP
Vaalbank 57, Rietfontein 58, Rietfontein 56	Wagenaar Hendrik Johannes	Wagenaar HJ
Klein Buffel Valey 241	Walt Hendrik Baltazar Van Der	Van Der Walt HB
Murrel Fountain 160, Birds River 177, De Boulogne 176, Witte Booy's Kraal 175, Koups Leegte 162	Wege Callaghan Business 2 C C	Callaghan W
Klein Buffel Valey 242	Wentzel Schalk Willem	Wentzel SW
Storm Fontein 116, Bamboes Hoek 96, Labuschagnes Nek 95, Droogfontein 95	Wiehahn Cecil John	Wiehahn CJ
Bamboes Hoek 97, Labuschagnes Nek 94	Wiehahn Colleen Florence Norah	Wiehahn CFN
Droogfontein 94	Wiehahn Grant John	Wiehahn GJ
Palmietfontein 142	Wilson Hartland Alexander	Wilson HA

Property	Registered Owner	Contact person
Farm 97, Kalkfontein 13, Vlak Fontein 15, Morgenzon 27, Klip Plaat 23, Rondavel 33, Noordhoek 7	Wonderhoek Farms Pty Ltd	The Director
Leliekloof 237	Wonderpoort Trust	The Trustee
Stry Fontein 53, Swempoort 72	Yeko Kwenzekile Wiseman	Yeko KW



# ANNEXURE C: ADVERTISEMENTS AND NOTICES

**APPLICATION FOR EXPLORATION RIGHT  
PUBLIC PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful occupiers of the land and any other interested and affected party, which is the subject of the application".

**PROPONENT:** Msix Pty) Ltd

**PROJECT:** Msix Gas Exploration Rights

**MAGISTERIAL DISTRICT:** Molteno, Albert and Wodehouse

**AFFECTED FARMS :** Alemans Ruigte 101, Allemans Poort 103, Anderson Vrede 263, Aprils Kraal 34, Bamboes Hoek 91, Bamboeshoek 20, Bird Rivers Poort 20, Birds River 175, Bitterplaat 64, Blaauw Krantz 204, Bloem Tuin 11, Boshoffskraal 149, Botha Hoek 67, Buffels Fontein 150, Buffels Kloof 1, Bushmanshoek 3, Chesterton 35, Chesterton 35, Coffee Fontein 138, Coffee Fontein 138, Cornets Kop 1, Cypher Gat 69, De Boulogne 175, Donker Hoek 8, Driefontein 168, Drooge Fontein 155, Droogefontein 94, Eyser Fontein 5, Farm 102, Farm 146, Farm 147, Farm 2, Farm 31, Farm 68, Farm 97, Frere Dell 108, Gelegen Fontein 179, Gretna 6, Hans Donsies Kraal 182, Hartebeest Hoek 66, Hex Rivier 7, Jackals Kop 140, Jackals Kop 141, Jansen Fontein 178, Jordaanrust 15, Jouberts Kop 162, Kalkfontein 13, Kikvorsch Fontein 115, Klap Kloof 4, Klein Buffel Valey 240, Klein Fontein 48, Klip Fontein 55, Klip Kraal 15, Klip Kraal 9, Klip Plaat 22, Klipfontein 236, Klipfontein 241, Klipfontein 30, Koffee Fontein 163, Koups Leegte 161, Kraal Hoek 37, Krans Fontein 90, Krantz Kloof 36, Labuschagnes Nek 93, Leeuw Spruit 61, Leeuwe Fontein 111, Leeuwe Fontein 112, Leeuwe Fontein 13, Leeuwe Fontein 24, Leeuwe Kloof 171, Leeuwe Kraal 10, Leeuwe Kraal 105, Leeuwe Kraal 105, Lelielokloof 235, Lemoen Kloof 172, Lemoen Fontein 145, Lemoen Fontein 203, Loper Berg 65, Marlow 267, Merino Weide 256, Middel Plaats 109, Mooihoek 59, Moordenaars Hoek 139, Morgenzon 23, Murrel Fontein 160, Murrel Fountain 159, Myburgsrus 259, Naauw Poort 164, Nooitgedacht 152, Nooitgedacht 154, Nooitgedacht 25, Noordhoek 7, Oorlogs Poort 97, Ox Kraal 173, Paarde Kraal 64, Palmietfontein 142, Pen Hoek 181, Pisa 107, Poortje 26, Post Houers Hoek 70, Pronks Berg 60, Pronks Kraal 100, Pronks Kraal 99, Rietfontein 54, Rondavel 32, Roode Hoogte 58, Roode Kloof 8, Roodehoek 242, Rooikopies 5, Rooipoort 2, Schiler Krantz 177, Smuts Pass 148, Snymans Kraal 110, Spioen Kop 66, Spits Kop 57, Stafelbers Vley 157, Stapelbergskloof 156, Sterkfontein 6, Stones Beacon 187, Storm Fontein 114, Streep Fontein 237, Stry Fontein 2, Stry Fontein 49, Stry Poort 238, Swak Fontein 50, Swempoort 65, Swempoort 65, Swempoort 96, Thysfontein 143, Toom Nek 67, Torenburg 269, Twee Fontein 17, Twee Rivier 16, Tyger Klip 98, Uitkeyk 67, Uitkyk 56, Vaalbank 53, Valsch Fontein 180, Van Der Merwes Fontein 62, Vlak Fontein 12, Vogel Valey 144, Wilgerfontein 226, Winter Hoek 51, Witkrans 33 Witte Booy's Kraal 174, Wolwe Fontein 9, Wonderhoek 18, Yzerfonteinvlakte 4, Zeven Fontein 14, Zwart Fontein 239 and Zwavel Krantz 39

Land owners, lawful occupants and interested and / or affected parties are given the opportunity to access more information on the proposed activities and to give comments. Please submit your name, contact information and comments and/or requirements in writing before 14 January 2010 to:

Msix (Pty) Ltd  
PO Box 13509, Sinoville, 0129  
Ms Fransis de la Rosa  
Tel: (012) 543 9093  
Fax: (012) 543 9610  
E-mail: [fransis@naledidev.co.za](mailto:fransis@naledidev.co.za)

*Background Information Documents available on request*

REF NR: EC1M6



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11010

**APPLICATION FOR EXPLORATION RIGHT PUBLIC PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful occupiers of the land and any other interested and affected party, which is the subject of the application".

PROponent: Msix (Pty) Ltd

PROJECT: Msix Gas Exploration Rights REGISTRATION DIVISION: Maclear

AFFECTED FARMS: Ballyran 279, Boshard Ho 135, Beau Ravall 223, Ben Damah 235, Brigne 378, Brownlad 173, Buterik 133, Clemonline 225, Egefa 227, Fairlight 223, Farm 237, Farm 237, Farm 378, Farm 384, Frankstaad 134, Geryvale 377, Goorgruy 105, Gordon 171, Henderson 263, High Field 176, Hope 141, Hulley Hill 137, Lodano 238, Many Vales 266, North Brock 222, Orpen 178, Overbank 100, Platou 147, Ronacombe 174, Rania 278, Ribhoek 172, Riverside 179, Riverside 219, Rosendal 238, Round Hill 101, Rushion 177, Sausure 221, Sheeprun 103, Snerk 146, Somerton 234, Stockstrom 104, Spithoven 268, Sunny Slope 224, Talleyrand 218, The Falls, 138, The Granary 145, Thomson 140, Tshisa 139, View Hill 228, Vipan 136, Wicoonster 220, Wethersburg 287, Wimboden, 226, Wizard Vale 228 and Woodstock 175

Liquid owners, lawful occupants and interested and/or affected parties are given the opportunity to access more information on the proposed activities and to give comments. Please submit your name, contact information and comments and/or requirements in writing before 14 January 2010 to:

Msix (Pty) Ltd  
PO Box 13508  
Sinoville, 0129  
Ms Franke de la Rosa  
Tel: (012) 543-8093  
Fax: (012) 543-9610  
E-mail: [fransje@natediv.co.za](mailto:fransje@natediv.co.za)

Background Information Documents available on request.  
Ref. no. EC7M8

**APPLICATION FOR EXPLORATION RIGHT PUBLIC PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful

11010

**APPLICATION FOR EXPLORATION RIGHT PUBLIC PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful occupants of the land and any other interested and affected party, which is the subject of the application".

PROponent: Msix (Pty) Ltd

PROJECT: Msix Gas Exploration Rights REGISTRATION DIVISION: Maclear

AFFECTED FARMS: Apples Doral 1135, Aardapples Rust 1125, Afpunsi 221, Agesciz 338, Alba 1153, Albany 227, Arduba 1154, Ardunvurchan 1115, Ardtonlach 116, Aulbea 1149, Avondstroom 1087, Bald Hills 348, Ballynogue 1030, Beestekraal 1123, Berroan 1102, Bernmore 270, Bloemberg 330, Blusump Vale 296, Borve 1103, Boschjes Punt 1145, Boschjeskloof 1133, Boshaville 1028, Brand Wecht 1093, Caverna 350, Craighish 1159, De Wal Rust 200, Orealfontein 1120, Du Plessis Bank 1094, Durnhall 382, Eenzame 1088, Ealkobeni 116, Evanceville 383, Eylan 349, Farm 1037, Farm 1038, Farm 1039, Farm 1040, Farm 1041, Farm 1045, Farm 1048, Farm 1049, Farm 1050, Farm 1084, Farm 1085, Farm 1090, Farm 1092, Farm 1096, Farm 1098, Farm 1129, Farm 1130, Farm 1144, Farm 117, Farm 178, Farm 179, Farm 180, Farm 185, Farm 187, Farm 189, Farm 190, Farm 191, Farm 194, Farm 195, Farm 198, Farm 202, Farm 203, Farm 205, Farm 206, Farm 207, Farm 208, Farm 210, Farm 211, Farm 212, Farm 213, Farm 214, Farm 215, Farm 219, Farm 225, Farm 237, Farm 238, Farm 240, Farm 241, Farm 244, Farm 247, Farm 254, Farm 255, Farm 257, Farm 259, Farm 259, Farm 261, Farm 262, Farm 271, Farm 274, Farm 275, Farm 278, Farm 279, Farm 282, Farm 283, Farm 284, Farm 285, Farm 287, Farm 300, Farm 303, Farm 308, Farm 310, Farm 311, Farm 312, Farm 315, Farm 317, Farm 318, Farm 319, Farm 322, Farm 323, Farm 324, Farm 325, Farm 326, Farm 327, Farm 331, Farm 351, Farm 352, Farm 353, Farm 354, Farm 358, Farm 358, Farm 357, Farm 368, Farm 369, Farm 370, Farm 371, Farm 372, Farm 373, Farm 375, Farm 376, Farm 377, Farm 40, Fennelers Flnd 363, Francis Van 288, Geldt Moekora Kloof 1126, Glergeer Kestod 1155, Glibo Callum 1117, Glyn 296, Glen Simoni 333, Glen Cole 257, Glen Thomson 363, Glen-Rowan, Olyn, 1031, Goedu! Vortrou 1097, Goedgedecht 315, Green Hill 368, Greenfield

Liquid owners, lawful occupants and interested and/or affected parties are given the opportunity to access more information on the proposed activities and to give comments. Please submit your name, contact information and comments and/or requirements in writing before 14 January 2010 to:

Msix (Pty) Ltd  
PO Box 13508  
Sinoville, 0129  
Ms Franke de la Rosa  
Tel: (012) 543-8093  
Fax: (012) 543-9610  
E-mail: [fransje@natediv.co.za](mailto:fransje@natediv.co.za)

Background Information Documents available on request.  
Ref. no. EC7M8

**APPLICATION FOR EXPLORATION RIGHT PUBLIC PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful

11010

**APPLICATION FOR EXPLORATION RIGHT PUBLIC PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful occupants of the land and any other interested and affected party, which is the subject of the application".

PROponent: Msix (Pty) Ltd

PROJECT: Msix Gas Exploration Rights REGISTRATION DIVISION: Elliot, Maclear

AFFECTED FARMS: Aasvogelkop 80, Bamboo 43, Bang Hoek 74, Cypress Grove 51, Dijkeltin 85, Farm 15, Farm 16, Farm 17, Farm 18, Farm 19, Farm 50, Farm 61, Farm 62, Farm 71, Farm 81, Graaf Water 244, Grassdale 48, Groot See Cow Get 54, Groenhoek 52, Groene Nek, Groot Doornhoek 17, Haas Fontein 47, Heesjes Kraal 22, Heesjesfontein 68, Hightlands 72, Klein Doornhoek 20, Kip Fountain 40, Klooffontein 283, Leeuwen Kull 86, Lentonius 88, Modderbut 78, Modderfontein 58, Nieuwe Plaats 221, Onverwagt 83, Oud Kip 44, Ruitfontein 18, Roman Fountain 87, See Cow Get 56, Seven Fountain 57, Spreewijkloof 59, Stepeberg Kraal 83, Stockpels 284, Straay Kloof 49, Tol Kop 84, Vush Fountain 224, Wolterrede 222, Wilde Paarde Hoek 75, Wilge Kloof 48, Zandfontein 58 and Zaverfontein 53

Land owners, lawful occupants and interested and/or affected parties are given the opportunity to access more information on the proposed activities and to give comments. Please submit your name, contact information and comments and/or requirements in writing before 14 January 2010 to:

Msix (Pty) Ltd  
PO Box 13509  
Sinoville, 0129  
Ms Franke de la Rosa  
Tel: (012) 543-8093  
Fax: (012) 543-9610  
E-mail: [fransje@natediv.co.za](mailto:fransje@natediv.co.za)

Background Information Documents available on request.  
Ref. no. EC3M8

11010

**APPLICATION FOR EXPLORATION RIGHT PUBLIC PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful occupants of the land and any other interested and affected party, which is the subject of the application".

PROponent: Msix (Pty) Ltd

PROJECT: Msix Gas Exploration Rights REGISTRATION DIVISION: Albert, Molteno, Moraisburg and Queens-town

AFFECTED FARMS: Aasvogelkop 80, Bamboo 43, Bang Hoek 74, Cypress Grove 51, Dijkeltin 85, Farm 15, Farm 16, Farm 17, Farm 18, Farm 19, Farm 50, Farm 61, Farm 62, Farm 71, Farm 81, Graaf Water 244, Grassdale 48, Groot See Cow Get 54, Groenhoek 52, Groene Nek, Groot Doornhoek 17, Haas Fontein 47, Heesjes Kraal 22, Heesjesfontein 68, Hightlands 72, Klein Doornhoek 20, Kip Fountain 40, Klooffontein 283, Leeuwen Kull 86, Lentonius 88, Modderbut 78, Modderfontein 58, Nieuwe Plaats 221, Onverwagt 83, Oud Kip 44, Ruitfontein 18, Roman Fountain 87, See Cow Get 56, Seven Fountain 57, Spreewijkloof 59, Stepeberg Kraal 83, Stockpels 284, Straay Kloof 49, Tol Kop 84, Vush Fountain 224, Wolterrede 222, Wilde Paarde Hoek 75, Wilge Kloof 48, Zandfontein 58 and Zaverfontein 53

Land owners, lawful occupants and interested and/or affected parties are given the opportunity to access more information on the proposed activities and to give comments. Please submit your name, contact information and comments and/or requirements in writing before 14 January 2010 to:

Msix (Pty) Ltd  
PO Box 13509  
Sinoville, 0129  
Ms Franke de la Rosa  
Tel: (012) 543-8093  
Fax: (012) 543-9610  
E-mail: [fransje@natediv.co.za](mailto:fransje@natediv.co.za)

Background Information Documents available on request.  
Ref. no. EC3M8

11010

In the High Court of South Africa (Eastern Cape, Port Elizabeth) in the matter of: ROBB DRUMMOND FINEMORE, Identity no 701102-5230-08-7 First Applicant and CATHERINE JEANNE FINEMORE, Date of birth 23 August 1960 Second Applicant  
Case no. 3383/09

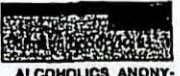
**CHANGE OF MATRIMONIAL PROPERTY SYSTEM**

On Tuesday, 2 February 2010 at 9.30am application will be made in the High Court of South Africa, (Eastern Cape, Port Elizabeth), in terms of Section 21 of the Matrimonial Property Act, Act No 88 of 1984, for an order declaring that with effect from the date of registration by the Registrar of Deeds, Cape Town, of the present matrimonial property system of the Applicants will cease to be one in community of property and become one out of community of property with exclusion of accrual and authorizing the Registrar of Deeds, Cape Town, to register a Notarial Contract to be entered into between the Applicants.

Any interested party may make representations in writing in this regard to the Registrar of the High Court (Eastern Cape, Port Elizabeth) and such an interested party may send a copy of such representations to the Attorney for the Applicants or may appear in Court on the date of the hearing.

The proposed Notarial Contract is available for inspection at the offices of the Registrar of the High Court and at the Offices of the Applicants' Attorney.

JACQUES DU PREZ  
Applicant's Attorney  
86 Mangold Street  
Newtown Park  
Port Elizabeth  
6045  
Phone: (041) 365-2232/30  
Fax: (041) 364-3605  
E-mail: [jdp.law@vodanet.co.za](mailto:jdp.law@vodanet.co.za)  
Ref: J Du Prez/116854



**ALCOHOLICS ANONYMOUS**  
24-hour help line:  
Information-office hours:  
041-4527328; e-mail: [saape@intekom.co.za](mailto:saape@intekom.co.za)

**ANIMAL WELFARE FUNDRAISING SHOPPE**  
Cnr 5th Avenue and Newton Street, (next to Tony's). Business hours: Mon - Fri 09:00 - 16:00, Sat 09:00 - 12:00, Phone 041-365-4660. We also need donations eg: Clothing, ornaments, boots, records, etc. Can collect any donations.

**ASSOCIATION FOR THE PHYSICALLY DISABLED**: We offer on-site training and sheltered employment to people with



372-1555 or R2-574

**WELL.** Haupt Street. factory warehouse. Ideal for manufacture or distributing. 6 Allocations. (041) 367-082-355-2949.

**HOUSE / Show.** / Storage. Second furniture. Available to buy or rent. Call 082-852-1906

**TBOURNE ROAD** 00. 30 sq m. 4 Huge offices. Secure entrances. Suitable professional usage. Tel: 082-852-1906

**8170**

to be pleased Office Park - High spec office. Secure premises with fitted security and secure parking available. Only 3 plots: 2 x 80m<sup>2</sup> from 3.1 x 40m<sup>2</sup> R3 900. Call Henneke on (041) 144, or on 082-188 4th.

**9**

**ROTORG**

**9070**

Nissan LWB. car/home 082-301-8787  
R4 1995. 4km. R38 000. Call 2-4504

**TOBUS - 1980 2.1i** /C, with professional conversion. RWC. in condition. Price 10. Call 082-373-

**9640**

076-887-8660 any wanted running or der R15 000.

78-013-2027. Cars/boats/caravans for sale. Under R20 000.

481-0082. Cars 7's - up to R23 000. 082-776-4495.

908-4908 wanted bakkies under 10.

**10**

**BUSINESS**

**10020**

AR Guesthouse for partnership. David 3-2717

**10030**

COMMERCIAL: to buy or sell a car? Contact us now! 372-850-4613 / Call: 173-4367

**PARTICIPATION PROCESS**

Notice is given, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), for the "Consultation with the landowners or lawful occupiers of the land and any other interested and affected party, which is the subject of the application".

PROPOSITOR: Msix (Pty) Ltd

**PROJECT:** Msix Gas Exploration Rights MAgISTERIAL MAgISTERIAL AFFECTED FARMS: Bad Spruit A2, Boler Fontein 187, Braamfontein 80, Buisfontein 81, Dam Fontein 100, Dank Fontein 141, Drie Fontein 103, Dwaalfontein 140, Ezob Klip 138, Ezob Klip 139, Goede Hoop 193, Hoop Welcrvul 71, Houdhaai Klip 189, Kalk Fontein 231, Kapok Fontein 199, Kapok Kraal 210, Klein Hoek 229, Kleinfontein 139, Klip Fontein 101, Klip Ploot 85, Kopies fontein 228, Kraalfont 7, Kuitfontein 142, Laerwe Vley 188, Lovers Bank 10, Mool Plaat 190, Oliva Fontein 72, Orange Fontein 63, Orangu Grove Annex 64, Poydra Verlies 190, Patrys Fontein 78, Ploegjeskraal 286, Pooiplo 192, Ruyiga Fontein 82, Siebers Fontein Outspan 70, The Paarl 69, Tiger Hoek 102, Tjars Fontein 68, Van Bank 101, Wael Kroep 230, Walgedag 83, Welgfontein 207 and Wonder Plaat 192

Land owners, lawful occupants and interested and/or affected parties are given the opportunity to access more information on the proposed activities and to give comments. Please submit your name, contact information and comments and/or requirements in writing before 14 January 2010 to: Msix (Pty) Ltd PO Box 13509 Sinoville, 0129 Ms Francis de la Rosa Tel: (012) 543-9083 Fax: (012) 543-9010 E-mail: fransis@naledidev.co.za Background Information Documents available on request. Ref. no. EC2M6

Won 266, Golf Maskers Klip 1126, Clergier Kasteel 1156, Gifke Calcium 1117, Ghun 295, Glen almond 333, Glen Cole 17, Glen Thomson 383, Glenwood, Glyn 1031, Goedgoud 1097, Goedgoud 315, Green Hill 366, Greenfields 1032, Grootte Fontein 1121, Houtzee 347, Houtzee Nest Hoek 197, Home 204, Hope 308, Kevils Hoek 1148, Kiliemoy 388, Kintale, 1033, Klein Tefelberg 385, Konings Kroon 1160, Kort Veld 222, Kwadi Plaat 1126, Lommemoor 349, Lande Kroon 1142, Lerne 380, Liberton 375, Long Hope 100, Longverbyf 302, Lora 1158, Meidenhaad 333, Marinus 1043, Marydele 201, Matuana 307, Meadows 352, Moyburg Rust 1100, Middelplaat 223, Middlorge 388, Morgan slar 1042, Mount Joy 1050, Murchison 350, Mylohoights 362, Narrow Vale 353, Nekke 361, Newcastle, Ongepung 233, Onrust 1157, Orbe Dale 360, Orp 219, Orpa 272, Paardekraal 289, Pendera Form 39, Pendera 1143, Piet Rietal 379, Piet rietal 250, Pine Grove 228, Pretoria Rust 285, Ramfontein 361, Rathsien 384, Redorta 344, Rietal 346, Riel Fontein 1141, Riet Veld 1138, Rietvlei 292, Rietvlei 384, Rocky Park 374, Rondavel 1138, Rondavel Hoek 232, Rooiploot 1181, Selgar 1101, Sands 335, Schoedplaat 348, Schoonheid 1119, Steelsloam 288, Solzok 1134, Sijfontein 291, Sunflower Valley 334, Sunnyside 314, Teynult 1131, Teaboorn 1146, The Wilows 1122, Trompsburg Reef 307, Tulp 386, Tomar 1140, Trugle River Myl Nat 1150, Two Streams 194, Uijwou 1147, Umgena 351, Umgwalana 1151, Umgena Flats, Union 1034, Vastrap, Verkuil 1035, Versam 347, Vereschuur 224, Vlie Mole 343, View Hill 276, Vreda 108, Wedlands 234, Waterval 267, Welboken 1162, Welgevonden 220, Wheeloof 364, Zuur Melkfontein 1124 and Zuurvlei 1152

Land owners, lawful occupants and interested and/or affected parties are given the opportunity to access more information on the proposed activities and to give comments. Please submit your name, contact information and comments and/or requirements in writing before 14 January 2010 to: Msix (Pty) Ltd PO Box 13509 Sinoville, 0129 Ms Francis de la Rosa Tel: (012) 543-9083 Fax: (012) 543-9010 E-mail: fransis@naledidev.co.za Background Information Documents available on request. Ref. no. EC2M6

**MURDOCH STREET INVESTMENTS (PTY) LIMITED** Applicant and GAUGE TOOLS & DIES (PTY) LIMITED (Registration no. 2003/020084/07) (Principal Place of Business: 7 Kohler Road, Perseverance, Port Elizabeth) Respondent Case no. 3578/2009

**COURT ORDER**

Having heard Advocate Schubert, Counsel for the Applicant and having read the documents filed of record.

IT IS ORDERED:

1. That the Respondent be and is hereby provisionally wound up in the hands of the Master of the High Court.
2. That a rule nisi do hereby issue calling upon the Respondent and all interested persons to appear and show cause, if any, to the Court on Tuesday, 19 January 2010 at 09h30 or so soon thereafter as the matter may be heard, why the Respondent should not be finally wound up.
3. That this Order be served:
  - 3.1 On the Respondent at its principal place of business at 7 . Kohler Street, Perseverance, Port Elizabeth;
  - 3.2 On the South African Revenue Services;
  - 3.3 On the employees of the Respondent;
  - 3.4 By one publication in each of the Eastern Province Herald and Die Burger (Doo-Kaap) newspapers.
4. That the costs of this application be costs in the liquidation.

By order of the Court  
**UE SCHOLTZ**  
pp Registrar  
**GOLDBERG & DE VILLIERS**  
13 8rd Street Central Port Elizabeth Phone (041) 501-0818 Ref: C-Moodler/C-Stewart/CLMURD3000

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**12010**

**VIGNE & HOWARD**  
ESTABLISHED 1924 TELEPHONE 385 1674

**PUBLIC AUCTION**

Thursday, 17 December 10.00am at 17 Havelock Street, Central  
Oak Bar & 3 Oak Stools; 5 Drawer Partridgewood Desk; Edwardian Oak Extension Dining Table; Cane Pallo table and 6 chairs; Teak lead glazed bookcase; Cane dressing table and stool; Blackwood dropside table; Daybed; Upholstered rocker; Buffet sideboard; Chest-of-drawers; Beds; Coffee and side tables; glassware, crockery, ornaments, etc. etc.  
**NOW ON VIEW.**

041-385-4444. We also need donations eg: Clothing, ornaments, boots, records, etc. Can collect any donations.

**ASSOCIATION FOR THE PHYSICALLY DISABLED:** We offer on-site training and sheltered employment to people with disabilities as well as placement in the open market. Our workshop do bulk enveloping; packing; assembling; soldering etc. Our industrial sewing section manufactures: Protective wear, clothing and leather items. Wheelchair and assistive device sales, repairs and service at competitive rates. Volunteers and pwrts are welcome to visit us at 55 Paterson Road, P.E., phone 041-484-5426 e-mail: apds@isirica.com

**AL-ANON:** For families of problem drinkers. Phone 3801357. Central and Western suburbs, 484-3232.

**AURORA SPECIAL CARE CENTRE:** Needs volunteers to recondition greeting cards. We get together on Wednesday afternoons. You need to be able to cut and glue neatly. We also need a co-ordinator to oversee the project. Preferable a male who can do the cutting or a strong lady, if you would like to join us for a fun afternoon of hard work, tea and handshie and help our worthy cause please phone Wendy at Aurora on 041-3066180.

**BARGAIN BOX:** In aid of the Animal Anti-Cruelty League, 9th Avenue Centre, Welmar. Phone 5812852, fax 5811148. Bric-a-Brac and clothing bargains. Donations in kind welcome. Open Monday to Friday 9am to 4.30pm and on Saturdays 9am to 12.30 pm.

**BARGAINS UNLIMITED:** Sponsored by the Altona Bay Council for the Aged, Shop 4, Glenhaze Building, Havelock Street, Central, Open Tues, Wed, Thurs, Sat mornings. Friday all day. Donations in kind very welcome. Phone 585-4489.

**EATING DISORDERS SUPPORT GROUP:** Meets third Monday of each month from 5-6pm, at Life Line No 1 Mile Road, Partridgevale. Phone 041-3739882.

**DISPENSING NOTICE**

Notice in terms of Section 18(5) of the General Regulations published in Government Notice R.510  
Notice is hereby given in terms of the provisions of Section 18(5) of the General Regulations, dated the 10<sup>th</sup> April 2003, made in terms of the Medicines and Related Substances Act No 101 of 1965 (as amended), that it is the intention of DR ZUKISWA ZINGELA, MP0458295, psychiatrist practicing at 50 Cetu Street, Kwamagxaki, Port Elizabeth, to apply to the Director-General, Department of Health, for a licence to dispense medicines. Dated at Port Elizabeth on this 15<sup>th</sup> day of December 2009.

**DISPENSING NOTICE**

Notice in terms of Section 18(5) of the General Regulations published in Government Notice R.510  
Notice is hereby given in terms of the provisions of Section 18(5) of the General Regulations, dated the 10<sup>th</sup> April 2003, made in terms of the Medicines and Related Substances Act No 101 of 1965 (as amended), that it is the intention of DR STEPHANUS VAN WYK, MP0332785, psychiatrist practicing at 50 Cetu Street, Kwamagxaki, Port Elizabeth, to apply to the Director-General, Department of Health, for a licence to dispense medicines. Dated at Port Elizabeth on this 15<sup>th</sup> day of December 2009.

Use the CLASSIFIED INDEX to help you find the headings you are looking for

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**ANNEXURE D:  
BACKGROUND  
INFORMATION DOCUMENT**



October / November 2009

Exploration Right Application

## INTRODUCTION

Msix Mining Development has applied for an Exploration Right in terms of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) on various farms in the Mpumalanga area. As required by the Mineral and Petroleum Resources Development Act an Environmental Management Plan has to be compiled and submitted to the Petroleum Agency SA (the Agency) as part of an application for an Exploration Right.

## WHO IS MSIX MINING DEVELOPMENT (PTY) LTD

MSIX is a mining development consultancy providing a uniquely diverse, fully integrated range of construction and management expertise to clients in every sphere of public and private sector activity. The guiding principle behind this mining development company and the service we offer is simple: We add value to your company's profile! We aim to provide the expertise, creative innovation, commitment, resources and support to enable our clients to progress as swiftly and effectively as possible from where they are today, to where they want to be tomorrow by offering professional BEE partnership in mining development.

## WHERE IS THE PROPOSED EXPLORATION AREA?

The exploration right application that has been launched in terms of the Mineral and Petroleum Resources Development Act is located within the registration divisions of Molteno, Albert and Wodehouse, Eastern Cape Province on the following farms: Allemans Ruijter 101, Allemans Poort 103, Anderson Vrede 263, Aprils Kraal 34, Bamboes Hoek 91, Bamboeshoek 20, Bird Rivers Poort 20, Birds River 175, Bitterplaat 64, Blaauw Krantz 204, Bloem Tuin 11, Boshoffskraal 149, Botha Hoek 67, Buffels Fontein 150, Buffels Kloof 1, Bushmanshoek 3, Chesterton 35, Chesterton 35, Coffee Fontein 138, Coffee Fontein 138, Cornets Kop 1, Cypher Gat 69, De Boulogne 175, Donker Hoek 8, Driefontein 168, Drooie Fontein 155, Drooiefontein 94, Eysler Fontein 5, Farm 102, Farm 146, Farm 147, Farm 2, Farm 31, Farm 68, Farm 97, Freer Dell 108, Gelegen Fontein 179, Greta 6, Hans Donsies Kraal 182, Hartbeest Hoek 66, Hex Rivier 7, Jackals Kop 140, Jackals Kop 141, Jansen Fontein 178, Jordaanrust 15, Jouberts Kop 162, Kalkfontein 13, Kikkvorsch Fontein 115, Klap Kloof 4, Klein Buffel Valey 240, Klein Fontein 48, Klip Fontein 55, Klip Kraal 15, Klip Kraal 9, Klip Plaas 22, Klipfontein 236, Klipfontein 241, Klipfontein 30, Koffie Fontein 163, Koups Leege 161, Kraal Hoek 37, Krans Fontein 90, Krantz Kloof 36, Labuschagnies Nek 93, Leeuw Spruit 61, Leeuwe Fontein 111, Leeuwe Fontein 112, Leeuwe Fontein 13, Leeuwe Fontein 24, Leeuwe Kloof 171, Leeuwe Kraal 10, Leeuwe Kraal 105, Leeuwe Kraal 105, Leliekloof 235, Lemoen Kloof 172, Lemoen Fontein 145, Lemoen Fontein 203, Loper Berg 65, Marlow 267, Merino Weide 256, Middel Plaats 109, Mooihoek 59, Moordenaars Hoek 139, Morgenzon 23, Murrel Fontein 160, Murrel Fountain 159, Myburgsrus 259, Naauw Poort 164, Nootgedacht 152, Nootgedacht 154, Nootgedacht 25, Noordhoek 7, Dorlogs Poort 97, Ox Kraal 173, Paarde Kraal 64, Palmietfontein 142, Pen Hoek 181, Pisa 107, Poortje 26, Post Houers Hoek 70, Pronks Berg 60, Pronks Kraal 100, Pronks Kraal 99, Rietfontein 54, Rondavel 32, Roode Hoogte 58, Roode Kloof 8, Roodehoek 242, Rooikopies 5, Rooipoort 2, Schiller Krantz 177, Smuts Pass 148, Snymans Kraal 110, Spioen Kop 66, Spits Kop 57, Stafelberg Vley 157, Stapelbergskloof 156, Sterkfontein 6, Stones Beacon 187, Storm Fontein 114, Streep Fontein 237, Stry Fontein 2, Stry Fontein 49, Stry Poort 238, Swak Fontein 50, Swempoot 65, Swempoot 65, Swempoot 96, Thysfontein 143, Toom Nek 67, Torenburg 269, Twee Fontein 17, Twee Rivier 16, Tyger Klip 98, UNkeyk 67, UNkyk 56, Vaalbank 53, Valsch Fontein 180, Van Der Merwes Fontein 62, Vlak Fontein 12, Vogel Valey 144, Wilgerfontein 226, Winter Hoek 51, Witkrans 33 Witte Booy's Kraal 174, Wolwe Fontein 9, Wonderhoek 18, Yzerfonteinvlakte 4, Zeven Fontein 14, Zwart Fontein 239 and Zwavel Krantz 39

## WHAT IS A EXPLORATION RIGHT APPLICATION

In terms of the Mineral and Petroleum Resources Development Act, Section 22 of the Act 2002, (ACT 28 OF 2002): to explore for gas. The exploration right application was set there to assist applicants to comply with the act. The area of application is specified in the Environmental Management Programme Report and will be managed accordingly.

## ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

The EMPR will govern how mining will take place to minimize the impact on the environment. To inform this plan specialist studies will be conducted if requested by the Petroleum Agency. It is believed that the mining activity, if managed according to the EMPR recommendations, will have a limited, short term impact on the environment.

## INTERESTED AND AFFECTED PARTIES

You are an interested and affected party to this development. Msix want to ensure that all parties have an opportunity to submit written comments on the proposed development. Please find attached a form, please complete and submit back to Fransis de la Rosa by fax (012) 543 9093 or email: fransis@naledidev.co.za.



## REGISTRATION &amp; COMMENTS FORM — EC 1

This response sheet has been designed to assist you with your comments. The information provided will be used to guide the environmental studies and will contribute to ensuring that an informed decision is taken about the proposed activity. Please complete this form and return it to:

**Naledi Development (Pty) Ltd**

**Fransis de la Rosa** Cell: 082 407 5639 (Email: fransis@naledidev.co.za)

Tel/Fax: 012 543 9093 / 012 543 9610

Title: \_\_\_\_\_ Initials: \_\_\_\_\_ Surname: \_\_\_\_\_

Organisation/ Firm (if applicable): \_\_\_\_\_

Affected portion number / Address: \_\_\_\_\_

Position/ Nature of involvement (e.g. property owner): \_\_\_\_\_

Street address: \_\_\_\_\_

Postal address: \_\_\_\_\_

Tel and area code:

(Work) \_\_\_\_\_ (Home) \_\_\_\_\_

(Cell) \_\_\_\_\_ (Fax) \_\_\_\_\_

(E-mail) \_\_\_\_\_

**COMMENTS / QUESTIONS:**

1. What potential impacts do you foresee?

\_\_\_\_\_  
\_\_\_\_\_

2. What issues and concerns would you like to raise with regard to these anticipated impacts?

\_\_\_\_\_  
\_\_\_\_\_

3. How do you perceive this activity in the study area?

\_\_\_\_\_  
\_\_\_\_\_

4. Are there any role-players that you feel we should consult with (please state their names and contact details)?

\_\_\_\_\_  
\_\_\_\_\_

# ANNEXURE E: I&AP LIST



I&AP Serial	Organisation	Contact person	I&AP category
1	Private person	Alexander, DAB	Affected Party
2	Private person	Badenhorst, J	Affected Party
3	Private person	Bekker JM	Affected Party
4	Private person	Bekker, HJM	Affected Party
5	Private person	Bekker, JL	Affected Party
6	Private person	Bell WL	Affected Party
7	Private person	Birch SE	Affected Party
8	Private person	Bosch W	Affected Party
9	Private person	Botha A	Affected Party
10	Private person	Botha TJ	Affected Party
11	Private person	Bradfield AF	Affected Party
12	Private person	Bradfield GD	Affected Party
13	Private person	Bradfield GG	Affected Party
14	Private person	Bradfield KHS	Affected Party
15	Private person	Broster CJ	Affected Party
16	Wege Callaghan Business 2 C C	Callaghan W	Affected Party
17	Dordrecht Communal Prop Assoc	Chairperson	Affected Party
18	Glenmilner Communal Prop Assoc	Chairperson	Affected Party
19	Masizakhe Small Farmers Assoc	Chairperson	Affected Party
20	Mokoena Communal Prop Assoc	Chairperson	Affected Party
21	Private person	Cloete BM	Affected Party
22	Private person	Coetzee HA	Affected Party
23	Private person	Coetzer LJ	Affected Party
24	Private person	Creese AC	Affected Party
25	Private person	Daly JVS	Affected Party
26	Private person	De Bruyn JH	Affected Party
27	Private person	De Bruyn PJJ	Affected Party
28	Den Haag Boerdery C C	De Haag, J	Affected Party
29	Private person	De Klerk PB	Affected Party
30	Private person	De Lange CR	Affected Party
31	Private person	De Vries GS	Affected Party

I&AP Serial	Organisation	Contact person	I&AP category
32	Private person	Dempsey JJR	Affected Party
33	E M Familie Boerdery B K	Director	Affected Party
34	Private person	Du Plessis FJ	Affected Party
35	Private person	Du Plessis J	Affected Party
36	Private person	Du Preez WE	Affected Party
37	Private person	Du Toit CC	Affected Party
38	Private person	Elliott DG	Affected Party
39	Private person	Geyer LS	Affected Party
40	Private person	Goosen HP	Affected Party
41	Private person	Gouws AM	Affected Party
42	Private person	Gouws H	Affected Party
43	Private person	Greeff FJB	Affected Party
44	Private person	Greyling DJ	Affected Party
45	Private person	Greyvensteyn BJD	Affected Party
46	Harvey Family Trust	Harvey, J	Affected Party
47	Private person	Hattingh CA	Affected Party
48	Private person	Hattingh SD	Affected Party
49	Private person	Henning GFJ	Affected Party
50	Private person	Henning MCG	Affected Party
51	Private person	Human E	Affected Party
52	Private person	Janse Van Vuuren JJ	Affected Party
53	George Jaxa Familie C C	Jaxa G	Affected Party
54	Private person	Jaxa NJ	Affected Party
55	Private person	Jonker EC	Affected Party
56	Private person	Jonker WD	Affected Party
57	Private person	Jordaan AF	Affected Party
58	Private person	Jordaan CA	Affected Party
59	Private person	Jordaan RJH	Affected Party
60	Private person	Jordaan TB	Affected Party
61	Private person	Klopper CC	Affected Party
62	Private person	Kotze AW	Affected Party
63	Private person	Kruger HJ	Affected Party
64	Private person	Kruger JH	Affected Party
65	Private person	Kruger JJH	Affected Party



I&AP Serial	Organisation	Contact person	I&AP category
66	Private person	Labuschagne CB	Affected Party
67	Private person	Labuschagne CJ	Affected Party
68	Private person	Labuschagne JJP	Affected Party
69	Private person	Labuschagne SPJ	Affected Party
70	Private person	Larter AA	Affected Party
71	Private person	Larter EP	Affected Party
72	Private person	Lategan TP	Affected Party
73	Private person	Lubbe ES	Affected Party
74	Private person	Macpherson EA	Affected Party
75	Private person	Marx GP	Affected Party
76	Mcnaughton & Ellis Prop Holdings Pty Ltd	Mcnaughton, W	Affected Party
77	Private person	Miles KP	Affected Party
78	Department of Land Affairs	Molteno District Officer	Affected Party
79	Private person	Moorcroft GG	Affected Party
80	Private person	Moorcroft GJ	Affected Party
81	Private person	Mortlock LR	Affected Party
82	Private person	Mortlock PE	Affected Party
83	Private person	Mortlock PF	Affected Party
84	Molteno Local Municipality	Municipal Manager	Affected Party
85	Molteno Local Municipality	Municipal Manager	Affected Party
86	Private person	Myburg AA	Affected Party
87	Private person	Myburg GW	Affected Party
88	Private person	Nel SGJ	Affected Party
89	Private person	Oelofse LJ	Affected Party
90	Oelofse Petrus Johannes-Trustees	Oelofse PJ	Affected Party
91	Private person	Oelofse WPJ	Affected Party
92	Olivier Jan Hendrik-Trustees	Olivier JH	Affected Party
93	David Osborne Family Trust	Osborne D	Affected Party
94	Private person	Paul LG	Affected Party
95	Private person	Phillips IL	Affected Party
96	Private person	Pretorius SJJ	Affected Party

I&AP Serial	Organisation	Contact person	I&AP category
97	Transnet Ltd	Property Manager	Affected Party
98	Private person	Quinton DW	Affected Party
99	Private person	Roodt EA	Affected Party
100	Private person	Sauer CA	Affected Party
101	Private person	Sauer NE	Affected Party
102	Private person	Scheepers LS	Affected Party
103	C A Schmidt Familie Trust	Schmidt CA	Affected Party
104	Private person	Schmidt CA	Affected Party
105	C J M Schmidt Familie Trust	Schmidt CJM	Affected Party
106	Private person	Schmidt CJM	Affected Party
107	Private person	Schmidt GM	Affected Party
108	Private person	Schoeman JH	Affected Party
109	Private person	Schutte I	Affected Party
110	Private person	Schutte IJ	Affected Party
111	Scott Thomas Holding	Scott T	Affected Party
112	Private person	Slabbert LM	Affected Party
113	Private person	Smit EF	Affected Party
114	Private person	Smit IS	Affected Party
115	Private person	Smit TJ	Affected Party
116	Private person	Stretton JG	Affected Party
117	Private person	Stretton JH	Affected Party
118	Private person	Stretton NA	Affected Party
119	Private person	Stretton RG	Affected Party
120	Private person	Stretton WS	Affected Party
121	Private person	Strydom JJ	Affected Party
122	Private person	Swanepoel AP	Affected Party
123	Private person	Tennant SD	Affected Party
124	A J Macaskill Pty Ltd	The Director	Affected Party
125	One Vision Inv 373 Pty Ltd	The Director	Affected Party
126	Turn Around Inv 47 Pty Ltd	The Director	Affected Party
127	Wonderhoek Farms Pty Ltd	The Director	Affected Party
128	R A G D Stretton Farming C C	The Managing	Affected Party



I&AP Serial	Organisation	Contact person	I&AP category
		Member	
129	Rockberry 13 C C	The Managing Member	Affected Party
130	Thople Inv 15 C C	The Managing Member	Affected Party
131	Valley Of Art C C	The Managing Member	Affected Party
132	Amaqoma Trust	The Trustee	Affected Party
133	Anderson Frieda Philipina-Trustees	The Trustee	Affected Party
134	Argyros Trust	The Trustee	Affected Party
135	Bamboeshoek Trust	The Trustee	Affected Party
136	Bloukrans Trust	The Trustee	Affected Party
137	Botha Van Niekerk Trust	The Trustee	Affected Party
138	Buffelsfontein Trust	The Trustee	Affected Party
139	Cansten Trust	The Trustee	Affected Party
140	Cheetahs Prop Trust	The Trustee	Affected Party
141	Coldstream Trust	The Trustee	Affected Party
142	Country View Trust	The Trustee	Affected Party
143	Festival Farms Trust	The Trustee	Affected Party
144	Groot Vley Trust	The Trustee	Affected Party
145	Hangklip Valley Trust	The Trustee	Affected Party
146	Highland Farm Trust	The Trustee	Affected Party
147	Leliekloof Trust	The Trustee	Affected Party
148	Loperberg Trust	The Trustee	Affected Party
149	Newlands Trust	The Trustee	Affected Party
150	Nottingham Trust	The Trustee	Affected Party
151	Predikantskop Trust	The Trustee	Affected Party
152	Sherwood Trust	The Trustee	Affected Party
153	Stephko Trust	The Trustee	Affected Party
154	Vaalbank Trust	The Trustee	Affected Party
155	Wonderpoort Trust	The Trustee	Affected Party
156	Private person	Timm JEC	Affected Party
157	Private person	Van Den Berg CJ	Affected Party

I&AP Serial	Organisation	Contact person	I&AP category
158	Private person	Van Der Linde J	Affected Party
159	Private person	Van Der Walt HB	Affected Party
160	Private person	Van Heerden HS	Affected Party
161	Private person	Van Heerden J	Affected Party
162	Private person	Van Heerden SC	Affected Party
163	Private person	Van Heerden WPJ	Affected Party
164	Private person	Van Niekerk AC	Affected Party
165	Van Niekerk Trust	Van Niekerk G	Affected Party
166	Private person	Van Niekerk H	Affected Party
167	Private person	Van Pletzen CC	Affected Party
168	Diederik Van Pletzen Familie Trust	Van Pletzen D	Affected Party
169	Private person	Van Pletzen DJ	Affected Party
170	H W Van Pletzen Trust	Van Pletzen HW	Affected Party
171	Private person	Van Pletzen J	Affected Party
172	Private person	Van Pletzen J	Affected Party
173	Private person	Van Pletzen JH	Affected Party
174	Private person	Van Pletzen JJ	Affected Party
175	Private person	Van Pletzen PN	Affected Party
176	Private person	Van Rooyen CAB	Affected Party
177	Private person	Van Straaten JA	Affected Party
178	Private person	Van Straaten T	Affected Party
179	Private person	Venter CR	Affected Party
180	Private person	Venter D	Affected Party
181	Private person	Venter GA	Affected Party
182	Private person	Venter JA	Affected Party
183	Private person	Venter WP	Affected Party
184	W P Venter Landgoed C C	Venter WP	Affected Party
185	Private person	Verster JC	Affected Party
186	Viljoen Dorrington Testamentere Trust	Viljoen D	Affected Party
187	Private person	Vorster K	Affected Party
188	Private person	Wagenaar HJ	Affected Party
189	Private person	Wentzel SW	Affected Party



I&AP Serial	Organisation	Contact person	I&AP category
190	Private person	Wiehahn CFN	Affected Party
191	Private person	Wiehahn CJ	Affected Party
192	Private person	Wiehahn GJ	Affected Party
193	Private person	Wilson HA	Affected Party
194	Private person	Yeko KW	Affected Party
195	Conference Of The Methodist Church Of Southern Africa		Affected Party
196	Methodist Church Of Southern Africa		Affected Party

# ANNEXURE F: ISSUES AND RESPONSE TABLE



Issue	Response
What does exploration mean?	Exploration is an activity defined in terms of the MPRDA and is a right to explore for natural gas on specific properties. In this case it would mean research, data analysis, 1- 5 test boreholes on the whole application area.
How will you disrupt my land use activities, we have had bad experiences with the coal mining companies in the area.	The majority of the exploration will not disrupt any land use activity as it would be research, data-gathering and analysis, feasibility studies. We do however envisage to drill 1 - 5 test boreholes within 200m of each other. The position of these boreholes has not been determined and will only be determined at the end of the first phase. Once we have an idea where the boreholes need to be, we will further engage with that specific land owner to gain access to the property.
If you drill the boreholes do you pump the groundwater out. What effect will this have on my groundwater levels and the irrigation I do out of these sources?	When we do the test boreholes, we need to pump the water out to release the pressure that keeps the gas trapped. This water can be pumped into a dam that you can utilise for irrigation or livestock watering.
When will this activities start?	Once the exploration right is approved, there will be research done for approximately 6 months; thereafter the test boreholes will be drilled.
Will we be informed before you start with the exploration	You will be notified when the exploration right is approved. We will further engage directly with the land-owner where the test boreholes will be drilled.

Issue	Response
What happens when you find gas	Once the test boreholes are complete, we will start with a pre-feasibility study to determine if the project would be financially viable. Only once that has been determined, we will apply for a production right which will entail extensive public participation.
We would like to be further involved and have follow-up meetings to discuss this application, would this be possible even after your deadline to submit reports.	We are always open to have further discussions and meetings regarding the application. If any of the issues are important, you are more than welcome to send it directly to PASA or we would submit them as an addendum to the final document. We want to keep communication channels open.



