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EC30/5/1/3/3/2/1(0376)EM
16 November 2009

South African Heritage Resources Agency
P.O. Box 758
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ATTENTION: MR. T. LUNGILE

CaseID: 2302

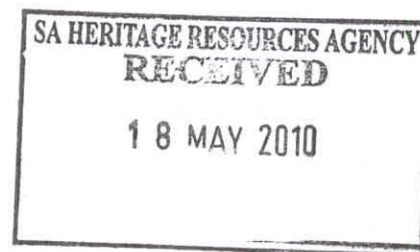
Sir

CONSULTATION IN TERMS OF SECTION 40 OF THE MPRDA OF 2002: SAND AND STONE AGGREGATE; GRAVEL MINING ON THE REMAINDER OF THE FARM SPRINGFIELD 339, DIVISION OF UITENHAGE, EASTERN CAPE

1. Attached herewith, please find a copy of the EMP received from Mthombo Quarries Cc.
2. Please forward any written comments or requirements your department may have in this regard, to this office no later than **12 January 2010**. Failure to do so, will lead to the assumption that your department has no objection(s) or comments with regard to the said documents.
3. Consultation in this regard has also been initiated with other relevant State Departments.
4. Please use the reference numbers as indicated in all future correspondence.
5. Your co-operation is appreciated.

Yours faithfully


**REGIONAL MANAGER
EASTERN CAPE**



376MP



CK 97/39490/23

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**AN ENVIRONMENTAL
MANAGEMENT PLAN FOR THE
PROPOSED SAND AND GRAVEL
QUARRY ON THE REMAINDER
OF THE FARM SPRINGFIELD 339
(SPRINGFONTEIN), TO THE
WEST OF UITENHAGE.**

Prepared For Mthombo Quarries CC

November 2009

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| REGIONAL MANAGER MINERALS AND ENERGY EASTERN CAPE REGION |
| PRIVATE BAG / PRIVAATSAK X8076 |
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| PORT ELIZABETH, 6000 STREEKBESTUURDER MINERALE EN ENERIE |

Report No. G09193

SYNOPSIS

An Environmental Management Plan (EMP) has been produced for the proposed mining activity on the Remainder of the Farm Springfield 339 (Springfontein), located about 9 km north-west of the Uitenhage town centre, in the southern part of the Eastern Cape Province. Sand and gravel adjacent to the Swartkops River are to be exploited by Mthombo Quarries CC. The land in question, as well as the adjacent land to the north, east and west belongs to Mr Albert Muller Harbron of Harbron Quarries. The land to the south (Lower Springfield) belongs to Mr Marius Pitout.

This EMP is aimed at assessing the environmental implications linked to the proposed mining activity adjacent to the Swartkops River, and at providing a management programme for the quarrying operation. Post quarrying rehabilitation, and decommissioning of the mined areas, are also addressed.

This investigation commenced with a thorough desk study and walk-over site inspection, followed by a more detailed field investigation. This process included a biophysical analysis, covering the fauna and flora occurring in the study area. A public participation process was also conducted.

The investigation revealed that the natural environment in the area is neither pristine nor unique, and that the mining area has been subject to a number of previous impacts, including quarrying activity.

Mining of the 1,5 hectare site should ideally take place in four parallel strips, commencing nearest the river (north-east) down to a depth just above the water table (river level), progressing south-westwards with an upward gradient of about 2 degrees. Topsoil and overburden must be removed and stockpiled. The underlying target material will then be exploited, and on completion, rehabilitation will take place with the stockpiled material. The post mining landscape will comprise a very gentle slope commencing near the river, and grading upwards away from the river, thus not detracting too much from the adjacent natural contour profile. No prominent embankments will be left behind, but the river channel will be slightly wider.

In essence, the region has been extensively disturbed by past quarrying activities, and is currently subject to further mining. Mining is, therefore, not out of character in this area. However, mining procedures and rehabilitation recommendations must be adhered to.

In closing, it is recommended that all future mining activity along the Swartkops River be coordinated, so that a uniform vision for the post mining landscape can be achieved. The dynamic nature of the Swartkops River fluvial system must also be borne in mind. Large flood events in this river system have the ability of dramatically altering the existing landscape. Floods could mask quarrying scars by deposition of sand and gravel, but at the same time floods could erode new areas and change the river channel alignment.

AN ENVIRONMENTAL MANAGEMENT PLAN FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER OF THE FARM SPRINGFIELD 339 (SPRINGFONTEIN), TO THE WEST OF UITENHAGE.

1. INTRODUCTION.

1.1 TERMS OF REFERENCE.

This Environmental Management Plan (EMP) has been produced in terms of Section 27 (5) of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002). A Mining Permit has been applied for by Mthombo Quarries CC, for a sand and gravel quarry on the Remainder of the Farm Springfield 339 (Springfontein), located about 9 km north-west of Uitenhage, in the southern part of the Eastern Cape Province. Sand and gravel adjacent to the Swartkops River are to be exploited at this 1,5 hectare site.

This study was conducted at the request of the applicant, Mthombo Quarries CC, represented by Mr Khabu Motloenya, whose contact details are as follows:

Mr Khabu Motloenya (ID Number 610416 5704 085)

Address: 6553 Titijanzimle Street, Despatch.

Contact Telephone: 073 160 1051

1.2 OBJECTIVES OF THE INVESTIGATION.

The objectives of the investigation were to:

a) Meet the requirements and directives of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as specified by the Department of Minerals and Energy.

b) Establish the feasibility of the proposed mining activity, bearing the prevailing baseline environmental factors in mind.

c) Provide a functional environmental management plan for the effective mining of sand and gravel within an environmentally acceptable ambit, including decommissioning and rehabilitation aspects.

1.3 LOCATION.

The proposed mining area is situated on the western bank of the Swartkops River on the Remainder of the Farm Springfield 339 (Springfontein), located about 9 km north-west of Uitenhage (Figure 1 in Appendix 1). Site co-ordinates are provided on Figure 2 in Appendix 1).

The study area comprises about 1,5 hectares in total, and does not directly abut the adjacent farms. The land in question, as well as the adjacent land to the north, east and west belongs to Mr Albert Muller Harbron of Harbron Quarries. The land to the south (Lower Springfield) belongs to Mr Marius Pitout.

1.4 PROJECT BACKGROUND.

Much of the area adjacent to the Swartkops River downstream of the study area, has already been mined or is currently being mined. Various quarrying operations are in existence, including those run by Mr A. M. Harbron, and Messrs Scribante. This Mining Permit represents an adjacent 1,5 hectare site upstream of existing operations, where further sand and gravel deposits occur. This application has been made by Mthombo Quarries CC, who currently do not have any other mining interests in this area.

This quarry has a projected lifespan of about 2 to 5 years. Material removal is proposed down to a level just above the existing water table depth nearest the Swartkops River channel, grading gently upslope away from the river in a south-westerly direction, thus blending in with the contour profile of the adjacent area as far as possible.

The sand and gravel will be bought by Mr A. M. Harbron from Mthombo Quarries CC, who have already concluded an agreement to this effect. The removed material will be transported to the existing screening plant on the adjacent farm to the south-west, where the sand and gravel will be separated and stockpiled. The gravel will then be crushed into various size fractions before further stockpiling. These materials are utilised in the construction industry.

The gravel and sand reserves at this site amount to approximately 25 000 cubic metres. It is envisaged that approximately 2 500 cubic metres can be mined per month (depending on demand). The mine lifespan could be as short as 1 year, but could extend up to about 5 years. The application period is thus initially for 2 years, with the option to extend it up to 5 years.

1.5 ENVISAGED LAND IMPROVEMENTS.

The proposed quarrying operation would require no permanent land improvements. Existing mining, screening, and crushing infrastructure on the adjacent farm will be used. On completion of all mining activities, the site should not vastly differ in appearance from the current situation. New ground levels should be the only signs of disturbance. In all probability, these landscape changes would also be of a temporary nature, as a large flood event would redistribute fluvial bedload material such as boulders, gravel, and sand, and would mask previous mining activity on site.

Post-flood river channel and floodplain environments could, therefore, resemble pre-quarried facies, depending on the size of the flood event. It is thus important to realise that all mining activity in this fluvial environment would be of a temporary nature, due to the dynamics of the fluvial system. Natural sedimentological processes are very active along this section of the Swartkops River, and natural changes in the landscape are inevitable.

1.6 AVAILABLE INFORMATION.

- a) Ortho-photographs 3325 CB 22 KRUISRIVIER and 3325 CD2 KRUISRIVIER, both on a scale of 1:10 000.
- b) Topographical maps, 3325 CB UITENHAGE (NORTH) and 3325 CD & 3425 AB UITENHAGE, both a scale of 1:50 000.
- c) Topographical map, 3324 PORT ELIZABETH, on a scale of 1:250 000.
- d) Geological map, 3324 PORT ELIZABETH, produced by the Geological Survey of South Africa on a scale of 1:250 000.
- e) Copy of an EMPR document entitled, "Omgewingsbestuurprogram (OBP) ten opsigte van Mynwerksaamhede by klein myne met 'n lae Omgewingsinvloed en vir Massamonsterneming tydens Prospektering". This document was completed by the landowner, Mr J. P. Rens, during October 1998.
- f) Copy of a report (number 1998-0232) entitled, "Aanvullende Omgewingsbestuurprogram vir Sand- en Gruisontginning by De Hoop Quarries, deel van Kruisrivier 337, Uitenhage". This report was completed by the Council for Geoscience during November 1998 for Mr J. P. Rens.

- g) Copy of a report by Professor Izak C. Rust of the University of Port Elizabeth entitled, "Gruis-afsetting op Deel 1 van Springfield 339 en Deel 28 van Kruisrivier 337". This report was completed for Harbron Quarry Products during February 1986.
- h) Copy of a report by Blue Horizon Consulting for D. A. Claassen Attorney and Conveyancer entitled, "An Environmental Management Programme and Flooding Evaluation for the Proposed New Slabbert Sand Quarry at Despatch", dated June 1999, report number G0074.
- i) Copy of a report by Blue Horizon Consulting entitled "A Flood Risk Evaluation for the Proposed New Sand Quarry on Portions 60, 61 and 62 of the Farm Swartkopsrivier Waagendrift 567, Uitenhage". This report (number G0077) was completed during July 1999 for Harbron Quarries.
- j) Copy of a report entitled, "An Engineering Geological Appraisal of the Greater Uitenhage Area for Integrated Development Plan Purposes". This report (number G0067) was completed during March 1998 by Blue Horizon Consulting for Urban Dynamics (Eastern Cape).
- k) Copy of a report entitled, "An Environmental Management Programme for the Quartzitic Sandstone Gravel and Sand Quarry at Kruisfontein, near Uitenhage, in the Eastern Cape Province". This report (number G0090) was completed by Blue Horizon Consulting during October 2000 for Harbron Quarries.
- l) Copy of a report entitled "An Environmental Management Plan for the proposed sand and gravel quarry on the Remainder of Portion 35 of the farm Kruis Rivier 337, Uitenhage". This report (number G06164) was completed by Blue Horizon Consulting during June 2006 for Mr A. M. Harbron.

2. **PROJECT DESCRIPTION.**

2.1 **CONTACT DETAILS.**

This investigation was conducted at the request of Mthombo Quarries CC, represented by Mr Khabu Motloenya (ID Number 610416 5704 085), whose contact details are as follows:

Address: 6553 Titijanzimle Street, Despatch.

Contact Telephone: 073 160 1051

2.2 **MINING PROGRAMME.**

This EMP covers the 1,5 hectare site depicted on Figures 2 and 3 in Appendix 1. Material removal will take place according to a predetermined strip mining programme (4 strips), with controlled backfilling and environmental rehabilitation taking place during the mining process.

The site, parts of which are not characterised by much vegetation growth (see Photographs in Appendix 2), should be mined in strips, starting nearest the Swartkops River, moving south-westwards. Topsoil (which is poorly developed), should be stockpiled separately at the outset, to ensure adequate rehabilitation. Stockpiling is proposed in the north-western part of the site, which affords maximum protection from flood events. The existing river channel falls outside the quarry area.

3. **SITE DESCRIPTION.**

3.1 **TOPOGRAPHY.**

The study area is generally flat, with a very gentle northerly to north-easterly gradient of less than 1°. The floodplain drops off from a height of about 79 metres above mean sea-level, down to about 77 metres above mean sea-level at the Swartkops River. Localised undulations, dating back to previous quarrying activity, are prominent in the northern part of the study area

3.2 **DRAINAGE.**

The study area is located on the Swartkops River floodplain (fluvial terrace), adjacent to the main river channel. Flooding and the quarrying of fluvial boulders, gravel and sand to the south of the study area, have altered the natural braided river channel flow patterns over the years. The Swartkops River channel flow to the south is presently confined within artificial channels and furrows excavated in the broad river channel environment.

The study area, is essentially drained by means of low velocity run-off towards the Swartkops River, and infiltration into the fluvial terrace. A poorly defined artificial channel also occurs to the west of the study area. This channel appears to accommodate water during flood events.

The lower reaches of the site may be inundated by flood waters if the Swartkops River were to rise by more than two to three metres. Minor floods would cause little damage, however, but major floods may result in reworking of the alluvium, and even damage to property adjacent to the river. This has been recorded in the past, but since the river channel was widened and deepened at the advice of the Department of Water Affairs and Forestry many years ago, floods have apparently caused less damage. Note : The recent floods of early August 2006 resulted in dramatic rise in the Swartkops River level. The eastern and western part of the study area was covered by about a metre of water, which subsided a week later. The only lasting effect of the flood water in this area was the deposition of a layer of silt. Similarly, the adjacent previously mined areas to the south were inundated by about 2 metres of water, and when the river subsided, a layer of silt was left behind. In this particular area, the layer of silt will assist with rehabilitation. No lasting damage was caused by the flood waters on this property.

Well developed tributaries originate from the higher ground to the west of the study area, and flow into the Swartkops River. These tributaries often flow out onto the flood plain as sheetwash.

3.3 CLIMATE.

Moderate climatic conditions prevail in the Uitenhage - Groendal region. Rainfall varies between 400 and 440 mm per annum, falling throughout the year. The highest monthly rainfall on record, occurred in July 1983, when 197 mm of rain fell. The highest 24 hour rainfall period was recorded on 1 September 1968, when 149 mm of rain fell. Average surface run-off values in the Uitenhage District are estimated to be between 50 and 100 mm per annum (Midgley *et al.*, 1981). Mean evaporation values in the study area are between 1500 mm and 1600 mm per annum (Middleton and Lorentz, 1988).

Summer (January) temperatures vary from an average maximum of about 28°C to an average minimum of about 17°C, whilst winter (July) maximums and minimums are about 22°C and 6°C, respectively. The prevailing wind direction is from the west and south-west, with an equally dominant easterly and south-easterly component during the summer months.

Weinert's climatic N number in this area is approximately 3 implying that chemical weathering of rocks dominates over mechanical weathering. Thornwaite Moisture Index contours, which relate to the mean values of potential evapotranspiration and precipitation over the entire year, fall between -20 and -40 (Brink, 1983).

3.4 ACCESS.

A single gravel track currently provides access to the proposed quarry site area. This gravel track runs through the Swartkops River. This route is currently only accessible by vehicles with high clearance, and would not be passable when the river level is high. The access track originates from the main entrance to the Springfontein farm, off the main gravel road serving the Groendal area.

The track will have to be upgraded if mining were to commence, and a temporary causeway would have to be constructed over the Swartkops river. The causeway would have to be at least 20 metres long. This causeway would be removed after mining and rehabilitation have been completed.

4. INVESTIGATION PROCEDURE.

4.1 DESK STUDY.

The investigation commenced with a desk study of all available information sources. This study gave an indication of the general geology to be expected, as well as an indication of prevailing fauna and flora in the region. Potential environmental issues could also be identified.

The desk study revealed that the entire study area is underlain by fluvial sediments deposited within the river channel and floodplain environments of the perennial Swartkops River.

Vegetation types in the region generally vary from very short Eastern Province Grassveld to isolated patches of Valley Bushveld (Fish River Scrub) and False Thornveld. Much of the natural vegetation has, however, long since been removed from the quarry site to facilitate farming and past quarrying activity.

4.2 FIELD INVESTIGATION.

The information obtained from the desk study was checked during the field-work stage of the investigation. An initial site reconnaissance was followed by a more detailed field investigation, during which specific information was collected on the geological conditions, vegetation types, and faunal populations. The biophysical aspects of the field investigation are discussed in Chapter 6 (Environmental Considerations) of this report.

A public participation process was also conducted. Notices were sent to the Springfontein landowner and neighbouring landowners. A notice was also erected at the entrance to the farm. See Appendix 3 of this report.

5. **GEOLOGY.**

5.1 **REGIONAL GEOLOGY.**

According to the 1:250 000 Geological map (3324 PORT ELIZABETH) published by the Geological Survey of South Africa, as well as the newer 1:50 000 geological map series, the entire study area is underlain by alluvium. This alluvium has been deposited over time by the perennial Swartkops River. The Kirkwood Formation occurs at depth below the alluvium.

The gravelly and sandy alluvium would have been deposited by a combination of low sinuosity channel and meandering (braided) channel river facies types. Alluvial source would be the surrounding material, which includes the Enon Conglomerate Formation to the north and west, and the Kirkwood Formation to the east and south. Both of these formations form part of the Uitenhage Group.

5.1.1 **ALLUVIUM.**

Alluvium generally grades from fine-grained silty sand to very coarse quartzitic sandstone boulders and gravel in this area. These sediments are usually poorly sorted, with clast types frequently dictated by the availability of material from parent sources. A hierarchy of channels occur in response to a continuous cycle of channel migration, abandonment, and fill by finer grained sediments.

5.1.2 **KIRKWOOD FORMATION.**

The Kirkwood Formation of the Uitenhage Group generally comprises reddish-brown variegated silty mudstone and whitish, yellowish or greenish-grey coloured sandstone. Coarser sandstones are either massive or cross-bedded. This formation is regarded as mainly of fluvial origin, and overlies the Enon Conglomerate Formation conformably in many places.

6. ENVIRONMENTAL CONSIDERATIONS.

6.1 CURRENT ENVIRONMENTAL SITUATION.

The Swartkops River floodplain environment to the south of the study area has been exposed to quarrying activity for a number of years. Previous mining activity in this area has generally comprised the removal of surface sand and gravel within the river channel environment and on the adjacent floodplain. More recent mining activity has included widening of the river channel. This material has also been actively exploited for aggregate purposes. The extensive river environment alteration and destruction described above has taken place at Springfontein, Syfergat, and Vrede amongst other farms.

The braided Swartkops River channel system is characterised by vegetation-covered braid bars, and Valley Bushveld covered river banks, dominated by short grasses near the river edge. The river bank in the study area has, however, been altered by past farming and quarrying activity.

The proposed quarrying operations should not have a significant long term effect on the natural environment. Short term effects will be inevitable, however, but can be effectively managed. The study area should be seen as an important part of the malleable and dynamic Swartkops River system. This system is not pristine, but still fairly sensitive and prone to abuse. Mining activity in this area must, therefore, be conducted in a responsible manner.

Mining will have a minor additional impact on traffic volumes and dust generation along roads in the area.

During the field investigation, no rare or endangered animal species were identified. However, certain species occurring in the region have been identified by the Committee for Nature Conservation Research in the National Programme for Ecosystem Research, and listed in the South African Red Data Book.

6.2 FAUNA AND FLORA.

6.2.1 FLORA.

Much of the natural vegetation in the study area has been removed to facilitate farming and quarrying, leaving a thin grassy cover dominated by *Themeda triandra* (Red Grass), with patches of alien and thorn (*Acacia karroo*) dominated vegetation (see attached photographs in Appendix 2).

Natural vegetation in the study area, according to the NM MOSS project, is classed as Swartkops River Floodplain [51] surrounded by Sundays Thicker [45]. The same study also classes the study area as “Non Restorable Development”, however. No red data or protected plant species were observed in the study area.

6.2.2 FISH.

Although the Swartkops River is classed as a perennial fluvial system, the dynamics of the braided river system adjacent to the study area conforms more towards an ephemeral drainage model. Numerous isolated ponds and cut-off channels occur throughout the upper reaches of the Swartkops River, which are only connected during flood events when the floodplain and channel environments are underwater.

Fish species should, therefore, occur within these isolated water bodies (in deep pools and during the wet season) in the river channel and floodplain environments. Only about ten indigenous fresh-water fish occur in the Eastern Cape Province. Translocation and introduction of other South African and alien species, however, has resulted in a surprisingly diverse situation, with at least 40 species recorded in the province.

Of the indigenous fish species occurring in the Swartkops River system, only the Freshwater Mullet (*Myxus capensis*) is listed in the South African Red Data Book. This species is considered rare and vulnerable (i.e. small restricted populations which are at risk), and occurs naturally near the coastline, both feeding and growing in freshwater, but reproducing at sea.

Indigenous species introduced to the Swartkops River system by local fisherman for bait and aquiculture purposes, include the Flathead Mullet (*Mugil cephalus*) and the Mud Mullet (*Label imbrutes*). Alien aquatic species occurring in the Swartkops River system include the freshwater snail, *Lymnaea columella*, White Spot disease, *Ichthyophthirius multifiliis*, Common Carp (*Cyprinus carpio*), Smallmouth Bass (*Micropterus dolomieu*), and Largemouth Bass (*Micropterus salmoides*).

The Smallmouth Bass, Largemouth Bass, and Carp were also introduced into Southern Africa for angling purposes, but have subsequently dominated many river systems to the detriment of indigenous fish populations. The control of, and in certain cases, total eradication of these species, has been recommended by the Directorate of Nature Conservation.

Furthermore, small rivers presently contain large populations of small fish, whereas previously, large specimens of indigenous fish could be found in similar streams. The benefit to anglers in such circumstances, is, therefore, debatable.

The rivers of the Cape Fold Belt mountains are usually naturally acidic, very clear, cool and poorly mineralised. These systems are generally oligotrophic (poorly productive in terms of organic matter formed), the fish communities small, and the food chains short and, therefore, easily disrupted.

Species occurring in such environments have a low competitive ability and have consequently been depleted by introduced alien fish species. The greatest impact usually arises where a successful invasive predator is introduced into communities with a low species saturation and a high degree of isolation, as occurs in the study area. Removal of such alien species should, therefore, be encouraged.

In essence, it is doubtful if the proposed quarrying operation will have any significant impact on fish populations in the adjacent river system.

6.2.3 REPTILES AND AMPHIBIANS.

The herpetofauna in the region are very diverse, as 140 taxa occur, of which 31 are restricted (endemic) to the Eastern Cape Province. No reptiles were noted in the study area during the field investigation.

The only Red Data Book species which could possibly occur in the study area is the Yellowbellied House Snake. This snake, *Lamprophis fuscus*, is associated with the mountainous and grassland areas of the Eastern Cape Province, and is a pale olive colour with a light yellow belly. The snake is secretive and nocturnal, occurring in old termitaria and beneath stones. This species is considered rare, and could occur within the study area, although unlikely.

It should be noted that the Nature Conservation Ordinance (1974) prohibits any person from hunting wild animals, or removing them from land of which he is not the owner, unless he has the owner's written permission. Eastern Cape reptiles and amphibians are classed as Schedule II protected wild animals.

Thus, all tortoises (including water terrapin), frogs, toads, lizards and non-poisonous snakes are protected species. None may be hunted or kept without a permit. Although poisonous snakes appear neglected, as wild animals they still cannot be kept, killed, or transported without a permit.

6.2.4 MAMMALS

Of the 292 terrestrial mammal species in Southern Africa, 128 occur in the Eastern Cape Province. Most of the larger species occur in game reserves, and only the smaller mammals could occur in the study area.

Species listed as vulnerable in the Red Data Book, where the study area is included in their range, include the Honey Badger (*Mellivora capensis capensis*), African Wild Cat (*Felis lybica cafra*), and Antbear (*Orycteropus afer afer*).

Rare species occurring in this region, and listed in the Red Data Book, include the Spectacled Dormouse (*Graphiurus ocularis*), African Striped Weasel (*Poecilogale albinucha albinucha*), Aardwolf (*Proteles cristatus cristatus*), Serval (*Felis serval serval*), Tree Dassie (*Denrohyrax arboreus arboreus*), and Blue Duiker (*Philantomba monticola monticola*).

Other more common mammals occurring in the region include the Bushbuck (*Tragelaphus scriptus*), Grey Duiker (*Sylvicapra grimmia*), Bushpig (*Potamochoerus porcus*), Vervet monkeys (*Cercopithecus pygerythrus*), Caracal lynx (*Felis caracal*), hedgehogs (*Erinaceous frontalis*) and Chacma Baboons (*Papio ursinus*).

No mammals were identified in the study area during the field investigation, and due to the present levels of habitation, agriculture and quarrying in the area, most of the abovementioned mammals are more likely to be found in the protected mountainous areas to the west and north-west.

6.2.5 BIRDS.

Past records indicate that about 500 bird species occur in the Eastern Cape Province, of which about 300 species breed, including 20 species currently listed as rare or endangered in the South African Red Data Book.

Of the 500 species in the region, only the European Starling (*Sturnus vulgaris*), House Sparrow (*Passer domesticus*), and Feral Pigeon (*Colomba livia*) occur as exotic species in the study area. The major factor determining current bird distribution in the region is man's modification of the habitat. This is especially applicable to the wet land environment encountered around the Swartkops River.

Habitat destruction due to quarrying operations and anthropological pressures from farming along the river bank and human habitation, have reduced the value of the study area from an avifaunal point of view.

6.3 POSSIBLE AFFECT OF THE PROJECT ON THE ENVIRONMENT.

As mentioned in Chapter 6.1, the study area is already in a fairly disturbed state. River channel and floodplain environments on neighbouring properties have been fairly extensively mined for quartzitic sandstone boulders, gravel, and sand for a number of years. These mining activities have resulted in artificial river banks adjacent to the study area, and gravel stockpiles. Furthermore, agricultural activities have altered the natural habitat to a large extent.

The mining scars in the area are of a surficial nature, however, and represent short-term damage to the environment. Fluvial material has been targeted in an area which is continuously reworked and sorted, as river system dynamics remould the area during flood events.

A moderate flood event (1 in 10 to 1 in 50 year flood) would probably alter the existing river channel course slightly and redeposit bedload material to the extent that the surface scars would be reduced. Larger floods would completely rework the area. Long-term damage to the river channel and floodplain environments in the study area would, therefore, not be all that severe. The floods of early August 2006 did not result in any long term damage within the study area. A layer of silt was, however, deposited over the north-eastern parts of the study area, once the water levels subsided.

Of concern could be the downstream effects of flood waters on neighbouring properties, especially if sheet floods occur, with a resultant "wall of water" rushing down the Swartkops River valley. Only large-scale floods would have a detrimental impact on landowners adjacent the river valley. Floods of this nature would in all likelihood cause significant damage to the floodplain environment and river banks whether mining activity occurred in the river bed or not. Large floods would not cause significantly more damage to neighbouring property if quarrying operations did or did not take place within or adjacent to the river system. Flooding is an accepted fact of life when living or operating in a dynamic fluvial environment. Certain measures can, however, be taken to reduce the effects of flooding.

Quarrying activities in the study area will have very little effect on downstream activities in the Swartkops River valley. Sewerage ponds and dams occur about 5 km to the south-east (downstream), and the nearest industrial development is at the Cape Road (Uitenhage) Industrial Area, located about 6 km to the south-east. Numerous other river bed and floodplain quarrying activities occur between the abovementioned infrastructure and the study area. Flood related damage to such downstream infrastructure can not, therefore, be exclusively attributed to mining in the study area, if at all.

Considering that the quarrying activity represents no significant negative long-term impact, it is worth noting that a few positive environmental benefits may also be derived from the removal of river boulders, gravel and sand in the study area.

The removal of alien vegetation along the river banks should be seen as a significant improvement to the natural vegetation in the area. Dispersal of alien plants along river channels is a significant environmental nuisance in the Eastern Cape region, which not only adversely affects the indigenous vegetation, but also plays a role in the volumes of surface run-off which enter the river systems. Furthermore, alien vegetation is more prone to burning, so their removal reduces the potential for uncontrolled veld fires in the area. Any removal of alien fish species would also be of benefit to the indigenous fish populations occurring within the Swartkops River system.

With regard to the removal of alien vegetation species, it is proposed that these plants be immediately removed around the fringes of the study area. After removal, further eradication of new saplings is recommended every six months.

No infrastructure currently exists in the study area, other than a few tracks and farm fences to the north-west.

In terms of the National Heritage Resources Act (No. 25 of 1999), the following is confirmed:

- Bedrock occurs at least 2 to 3 metres beneath the surface, and the associated geological formation only contains limited fossils, generally of little academic value.
- Inspection of the soil surface revealed no archaeological activity.
- No grave sites were found
- There are no existing structures in the study area, nor living heritage sites.

Once mining operations have ceased and rehabilitation has been effectively completed, the only evidence of past mining activity should be a slightly lower landscape which grades gently upwards from the river.

7. HYDROLOGICAL ENVIRONMENT.

The Swartkops River has a small catchment area of about 1438 km², and receives a mean annual run-off (MAR) of about 84 million m³. The river system has its source in the Groendal State Forest in the Groot Winterhoek mountains, and flows in a south-easterly direction through the towns of Uitenhage and Despatch towards the coast.

The river has a total length of about 75 km, and enters the sea at Amsterdamhoek, about 10 km north of Port Elizabeth. The river estuary near the tidal inlet has never been closed in living history, and plays an important role as a recreational facility together with the development of adjacent land as urban and industrial regions.

Some of the major tributaries along the Swartkops River system include the Elands River near the study area, the Brak River near KwaNobuhle, and the Chatty River near Redhouse. The Groendal dam has been constructed in the river course about 8 km upstream (north-west) of the study area.

7.1 DYNAMIC FLUVIAL SYSTEM.

The Swartkops River system represents a dynamic fluvial environment ranging from proximal gravel braid bars such as those occurring adjacent to the study area, down to meandering floodplain environments seawards of Despatch. The system eventuates in the distal Swartkops estuary and tidal inlet at Amsterdamhoek.

The Swartkops River has a low sinuosity in the study area, and carries a predominantly gravel load, depending on the flood regime. The site represents a typical proximal gravel deposit and best fits Scott's river profile as described by Miall (1978). The area generally comprises very coarse quartzitic sandstone clasts with well developed longitudinal bars, bisected by a multitude of primary and secondary channels, as well as clearly recognisable pool and riffle sequences.

These features are characteristic of ephemeral fluvial conditions, where occasional floods, some of extreme severity, are interspersed with long periods of little or no sediment movement.

The effects of high magnitude floods are maximised in a region of extreme hydrological variability, such as the dry landscape occurring in the study area. With this scenario, the flood waters would spill out of the low-flow channels and occupy the entire valley floor. This would result in secondary circulation, flow separation, and helical vorticity around obstacles. Macroturbulence would then create phenomenal hydraulic lift force, capable of moving even the largest boulders in suspension over short distances.

The presence of huge boulder fronts in the study area is evidence of such rare, extremely high-energy events, which must have occurred in the past. The poorly sorted sediment covering most of the braid plain is in many ways coarser than the subsurface material. During major flood events, bar tops may become channel floors, and therefore, smaller clasts are swept away, leaving lags of coarser size as armour in the upper bar surfaces.

These features may also be attributed to the winnowing of the relatively fine particles as discharge diminishes following a flood peak. Waning floods, when water depths are low, are frequently responsible for deposition of extreme sand bodies, which are often present on bar tops, or the edges of the channels.

The distribution of clasts in the Swartkops River braid plain is clearly complex, with no evidence of downstream fining and channel bar grading in the study area.

7.2 SUB-SURFACE WATER.

Perched water tables are a common occurrence in the quartzitic sandstone boulder and gravel horizons, within the braid bar environment. These perched water tables will generally occur within the upper three metres, and will fluctuate according to wet and dry periods in the Swartkops River valley and catchment area. The perched water tables would generally occur above a fairly impermeable clay layer (Kirkwood Formation), beneath the gravelly material in the river channel (Rust, 1986). Usage of perched water for industrial applications should have no negative effect on other water sources in the area.

The permanent water table will also not be effected by the quarrying activity in the study area. This permanent water table occurs in the Table Mountain Group quartzitic sandstones which occurs at depth beneath the Kirkwood Formation).

This area represents an artesian basin in which these deep quartzite rocks store ancient water resources that seep out on the surface at the Springs resort, located about 5 km north of Uitenhage. These ground water reserves are protected by law, and usage thereof is strictly controlled.

The Kirkwood Formation, which underlies the sandy and gravelly alluvium deposits in the study area, represents an impermeable barrier (aquiclude) between the overlying Swartkops River system, and the underlying permeable quartzitic sandstone aquifer and the artesian basin. The mining activities in the study area are, therefore, isolated from the underlying aquifer, and will pose no threat to permanent ground water reserves in the region.

8. ENVIRONMENTAL MANAGEMENT PLAN.

Mining in four strips extending away from the river is proposed. Topsoil stockpiling will take place prior to mining, to facilitate later rehabilitation.

The disturbed nature of the environment and the dynamics of braided river channel and floodplain, have been addressed in this report. The environmental implications associated with quarrying in the study area are considered to fall within environmentally acceptable limits, bearing the value and strategic importance of the building material deposit in mind. It is, however, recommended that mining activities be conducted in a controlled and systematic manner, with due cognisance of the prevailing environmental parameters.

8.1 OPERATIONAL PHASE.

Mining in strips should take place in a pre-determined direction commencing nearest the river (north-east), and continue until an entire strip has been removed (See Figure 3 in Appendix 1). Only then should a subsequent strip be mined. The four proposed strips should be mined down to a level just above the water table in the north-east, sloping gently upwards (2 degrees) towards the south-west (away from the river). Figure 3 shows the strips (from the north-east to the south-west). Mining directly adjacent to the river can take place below the water table, as this will effectively widen the channel, which could be seen as a positive flood control measure.

The surface 200 mm to 300 mm of topsoil should be removed and stockpiled for later rehabilitation purposes. These stockpiles should be placed on the western side of the quarry area (Figure 3) where flood risk potential would be reduced, and so that rehabilitation and vegetation re-establishment may commence during the ongoing quarrying operations.

These topsoil stockpiles should be less than 1 metre high and must be located on the western side of the mining area, thus protecting them from flooding. The topsoil must be reworked into quarried areas prior to vegetation re-growth on the stockpile itself. This topsoil horizon may have to be improved with seed after rehabilitation. The following seed mix should be used during March / April at an application rate of 5 kg per hectare for each specie: *Cloris gayana*, *Aragrostis curvula*, and *Cynodon dactylon*, whilst the same species along with *Panicum maximum* can be used during September / October.

The depth of material removal should soften upslope (westwards), so that the final borrow pit scar is not as pronounced.

The final mining face along the north-western, south-western and south-eastern quarry boundaries must be softened to a slope of about 1:3 (18°) on completion of mining operations. These softened slopes must be in place prior to the rehabilitation of topsoil, which should be evenly spread over the surface in layers not less than 100 mm thick. Rehabilitation of mining areas is discussed in more detail in Chapter 8.2 of this report.

The quarry operator must understand that the proposed mining operation will take place in a risky environment, that is prone to flooding during wet periods.

8.1.1 GEOLOGY.

The target mineral is quartzitic sandstone boulders, gravel and sand from the floodplain environment. This material is to be sorted and crushed at the adjacent existing screening and crushing plant, and will be used as aggregate for the construction industry.

The removal of the fluvial material will have a short-term impact in the study area. The removed material may eventually be replaced by flood waters during future flood events.

Finding: The operational phase of the quarry will have a limited short-term effect on the geology of the study area. These effects will probably be removed in the long term.

8.1.2 TOPOGRAPHY.

The prevailing topography in the study area is dealt with in Chapter 3.1 of this report. The mining operations will predominantly taken place within the floodplain environment during the next 2 to 5 years.

The mining activity is proposed down to just above water table level near the river channel environment, softening upslope (south-westwards) towards the western quarry boundary. Material removal has been advocated so that the mined area blends into the remaining topography as best as possible.

Removal of target material will lower the terrace heights by an average of about 3 metres.

Finding: The short-term alteration of the prevailing topography in the study area will not have a detrimental effect on the natural environment in the region. These topographical variations could, nevertheless, be restored after floods.

8.1.3 SOILS.

The soils in the Swartkops River valley are generally classed as red lime-rich sandy clay loams (Hartman, 1988). These soils are generally fairly deep in the region, and are well drained.

Typical soil forms include Hutton, Oakleaf, and Fernwood. It should be noted that these soil horizons are more common on the floodplain, away from the gravelly channel lag deposits. The gravelly material from the river channel is not classified according to the Soil Classification Working Group of South Africa (1991), due to its rock-like nature. The finer-grained sandy and silty material, however, would be classified as stratified alluvium (Dundee form).

All of these soil horizons are characterised by orthic A topsoil horizons, which are variable in thickness. Average thicknesses of about 200 mm to 300 mm usually prevail. This horizon is classed as a surface horizon that is darkened in colour by organic matter. Orthic soils show no signs of organic, humic or melanic character, and may be regarded as “ordinary” or “normal”. They are, therefore, defined by exclusion as “orthic”.

Finding: The topsoil in the study area (which is predominantly confined to the floodplain and terrace environment) must be removed and stockpiled during the quarrying operations, which will take place in strips as per material removal recommendations described in Chapter 8.1. For mine rehabilitation purposes, the topsoil must be reapplied to the completed workings in layers not less than 100 mm thick.

It is important for the topsoil from each new mining strip to be used to rehabilitate the previously mined strips. The topsoil removed from Strip 3 should, therefore, be used to rehabilitate the completely mined Strip 1 and so on. This pattern would continue south-westwards, and the final two strips would be rehabilitated by topsoil stockpiled from Strips 1 and 2. This topsoil should, however be improved with a seed mix, as described in the previous pages.

These stockpiles should not exceed one metre in height, and should be placed on the western edge of the mining area, where flood risk potential is deemed the lowest.

8.1.4 LAND CAPABILITY.

The short-term post-mining land surface will represent a lower base level in the floodplain environment. The quarry operator understands that the area is at risk to damage by floods, and depending on the size of future flood events, the entire area may return to its original topographic profile prior to the commencement of mining activities. Post flood fluvial environments are, however, often re-aligned after large flood events, and may thus not resemble the area as it currently exists.

Finding: Post quarry land features would have to be seen as a short-term change, which could be altered after a large flood event. Post flood changes would depend on flood size.

8.1.5 LAND USE.

The land is currently not used for any purpose, but was previously used for agricultural purposes (grazing) and limited quarrying. The river channel environment to the south has been subjected to quarrying activity, and active ongoing operations also occur. The site is bound by private property on all sides, including a game farm to the north-west.

Finding: After mining, this area could again be used for grazing. The topsoil will be enhanced with a seed mix which will enhance the grazing potential at a later stage.

The river channel environment has been significantly altered by existing and past mining activity on neighbouring land to the south.

8.1.6 NATURAL VEGETATION.

The existing natural vegetation in the study area has been dealt with in Chapters 6.1 (Current Environmental Situation) and 6.2.1 (Flora), whilst effects of the mining activities on the vegetation are addressed in Chapter 6.3 (Possible Effects of the Project on the Environment).

Vegetation disruption by mining at this site is not, therefore, considered a botanically sensitive issue. The invasion by thorn trees (*Acacia Karroo*) and alien species in parts of the study area will be replaced by grass for grazing purposes. The sensitive vegetation in the existing river channel will remain unaffected.

Finding: Grass will be re-established on the flood plain, and this area could be used for grazing again. The grass will be re-established in accordance with the rehabilitation of the mined strips. It may also be worthwhile to re-establish some indigenous vegetation along the north-eastern edge of the study area nearest the river. The following species can be planted randomly: *Schotia afra*, *Euclea undulata*, *Olea europaea*, *Rhus refracta*, *Carissa bispinosa*, and *Portulacaria afra*. This should take place immediately after the third mining strip has been rehabilitated. Possible thorn tree (*Acacia Karroo*) and alien vegetation invasions should be controlled.

8.1.7 ANIMAL LIFE.

The faunal populations occurring in the study area were dealt with in Chapters 6.2.2 (Fish), 6.2.3 (Reptiles and Amphibians), 6.2.4 (Mammals), and 6.2.5 (Birds) of this report. The effects that mining activity would have on these faunal populations were also addressed in Chapter 6.3 (Possible Effects of the Project on the Environment).

Due to the levels of agriculture and human habitation in the area, most forms of wildlife have probably already moved northwards and westwards towards the mountains where disturbances are less. Any forms of wildlife still occurring in the study area, will probably also migrate to these less disturbed areas.

Although no fish species were noted in the study area during the field investigation, small fish populations will occur. Activity in the river should, therefore be kept to a minimum. Sediment should also not be dumped into the river, and the area should be kept oil and fuel free.

Finding: Remaining terrestrial faunal populations would migrate northwards and westwards once mining commences. However, few existing populations are expected in the immediate area.

Fish populations will still occur within the river, and should be left undisturbed as far as possible.

8.1.8 SURFACE WATER.

The surface water in the study area has been dealt with in Chapters 3.2 (Drainage) and 7.1 (Dynamic Fluvial Environment) of this report. As discussed, surface run-off will be temporarily disrupted in the study area during quarrying operations.

Finding: The disruptions to surface water flow will be of a temporary nature. The post-mining landscape will facilitate normal run-off and should be free-draining. Mining also does not take place into the river, thus not impacting the system directly.

8.1.9 GROUND WATER.

Ground water in the study area was dealt with in Chapter 7.2 (Sub-surface Water) of this report. The quarrying operations in the study area will have no impact on the permanent ground water table in the region, as the underlying artesian basin is protected from the surface by impermeable cover material of the Cretaceous Kirkwood Formation (mudstone).

The perched water table in the study area, however, will be brought closer to the surface by the removal of fluvial material. These perched water tables will fluctuate according to water levels in the river valley and may be used for commercial applications. Where possible, the perched water table should not be exposed by mining activity away from the river.

Finding: Usage of perched water for industrial applications should have no negative effect on other water sources in the neighbouring areas. The permanent water table will not be affected by mining activity.

8.1.10 AIR QUALITY.

Air quality was mentioned in Chapter 6.1 (Current Environmental Situation) of the report. Existing dust levels are already higher than normal on neighbouring properties to the south where mining activity is currently underway. The area to be quarried implies that dust will also be generated in this area.

Air quality may also be affected by heavy vehicle emissions. However, the scale of the proposed mining activity is relatively small in relation to other mining operations, and emissions are not expected to rise significantly in the area. Agricultural traffic also accounts for dust and vehicle emissions.

Finding: Although vehicle emissions and dust levels will have an impact on the air quality in the area, the impact will be relatively low, and should not be viewed as a significant environmental constraint. Levels of pollution will fall within acceptable environmental limits, and should not be seen as a fatal flaw with regards to the mining activity in the study area. Dust monitoring and adequate wetting will, nevertheless, assist in the control of this environmental issue.

8.1.11 NOISE.

Noise pollution is an inevitable by-product of the mining process. Noise pollution associated with vehicles and earth moving equipment, will occur. These noises will, however, be confined to business hours. Quarry related noise has occurred in this area for many years.

Findings: Noise pollution is an inevitable by-product of the quarrying operations. Noise levels must be restricted to business hours, however. More specifically, this implies a working day commencing at 07:00 and ending at 18:00. Working hours on a Saturday will be from 07:00 until 14:00. No work will be allowed at the quarry on Sundays or South African Public Holidays. Should additional working hours be required outside these recommended time frames, then special permission should be obtained in writing from the Department of Minerals and Energy. Should mining recommendations be adhered to, noise pollution levels will fall within acceptable environmental limits.

8.1.12 SENSITIVE LANDSCAPES.

The actual river channel is potentially sensitive, and for this reason, mining into the channel has been excluded. Widening of the channel is, however, possible, as this will improve river flow. This process must be carefully monitored from an environmental perspective.

The remainder of the study area is not considered a sensitive landscape.

Sediment from the quarry should not be allowed to migrate into the river. Run-off in the quarry can be controlled by a series of low soil berms. Infiltration, will, however, be dominant in the pervious sand and gravel environment.

Findings: The proposed new quarry area is not deemed a sensitive environment. The site is already partly disturbed, as are surrounding properties.

8.1.13 VISUAL ASPECTS.

The proposed mining area is partially visible from the Groendal road to the north-east of the study area. The majority of the site is, however, obscured by vegetation between the road and the site.

Findings: The study area is only partially visible from the gravel roads in the area. Post quarrying vegetation re-establishment will also obscure the mining scars.

8.1.14 REGIONAL SOCIO-ECONOMIC STRUCTURE.

Mthombo Quarries CC was formed by ten members, all of whom were disadvantaged under the previous political dispensation. Mthombo Quarries CC is thus 100 % HDSA owned. The mining venture will empower these individuals and their families. In addition, The mining activity in the study area will possibly result in a few additional job opportunities.

The quarry will also produce quality aggregate and sand for the construction industry in this part of the Eastern Cape Province.

Findings: The establishment of a quarry in the study area will have a positive socio-economic impact on the local labour force, as the quarry can form a stable source of employment.

8.1.15 INTERESTED AND AFFECTED PARTIES.

A public participation process was also conducted (see Appendix 3). The Springfontein Farm is owned by Mr A. M. Harbron. Mr Harbron also owns all of the abutting farms, with the exception of one, which is owned by Mr Marius Pitout. Messrs Harbron and Pitout were thus identified as Interested and Affected Parties. A laminated A3 size notice calling for interested and affected parties was also attached to the fence at the entrance to the Springfontein Farm

Findings: To date, limited feedback was received from the public participation process. Mr Harbron has consented to the Application by Mthombo Quarries CC.

Feedback was also received from Mr Pitout. Mr Pitout has stated via his attorney that he will only consent to the Mining Permit application if Mthombo Quarries CC has no affiliation with Mr Harbron. Mr Pitout alleges that Mr Harbron has not abided with the conditions of previous Mining Permits, amongst other violations.

It thus appears as if Mr Pitout has **not** assessed the merits of the Mining Permit application by Mthombo Quarries CC. Instead, his objection is a personal one aimed at Mr Harbron. Mr Pitout's full response has been submitted under separate cover to the Department of Minerals and Energy.

Due to the already disturbed state of this section of the Swartkops River system, the proposed quarry will probably not result in any further public response of significance.

8.1.16 BUFFER ZONE.

The mining area does not directly abut the farm of Mr Pitout (Lower Springfield). Mr Pitout's farm boundary is located about 850 metres to the south of the mining area. In addition, his dwelling is almost 2 km from the mining area.

Findings: Adjacent land owners will not be adversely impacted upon.

8.1.17 MAINTENANCE.

A mining operation of this nature will always require a maintenance plan to ensure cost effective and successful long-term operation.

It is important to ensure that fuels and other petroleum based products do not enter the river system from the quarry machinery. Adequate water pollution control measures, such as waste fuel collection points, and regular maintenance of machinery to ensure no leaks, are essential.

Should accidental leakage and soil contamination occur, the situation must be dealt with immediately. Contaminated river gravel and sand must be removed from the study area and disposed of at a suitable waste disposal facility in the Uitenhage area. Domestic waste should be confined to bins located adjacent to the site. The nature of the operation implies minimal waste generation at this site, however. A portable toilet should also be located in the area where the bins will be located (western side of mining area).

In addition to plant maintenance, the rehabilitated mine strips should also be maintained once topsoil has been replaced. A more thorough rehabilitation maintenance process is discussed in Chapter 8.2.7 (Maintenance), which includes adequate wetting and care of the regenerated vegetation growth, including the hand pulling of unwanted alien plant species.

Findings: Site maintenance must include preventative measures to ensure that the river channel environment is not polluted by petroleum based fluids from vehicles and infrastructure. A contingency plan should also be in place should contamination of the soil occur. Rehabilitation and maintenance measures for newly generated vegetation growth must also be implemented where mining has been completed.

8.2 DECOMMISSIONING PHASE AND CLOSURE.

The mining operation has a projected lifespan of one to five years, depending on demand. Mining operations will result in the floodplain being lowered by about 2 to 3 metres with the gradient softening towards the south-west (upslope).

Material removed from the quarrying area will be taken to the existing screening and crusher plant on the adjacent land to the south. No major quarry infrastructure will thus be needed.

Once the area has been mined, a process of mine closure should be undertaken. Mine closure will only be approved by the authorities once adequate quarry rehabilitation has been carried out. The various issues regarding decommissioning of a quarry are addressed below.

8.2.1 CLOSURE OBJECTIVES.

Mine closure will be conducted once all of the quarried material has been removed from the study area. Closure of a mine must be authorised by the relevant authorities once certain criteria have been satisfactorily adhered to. These criteria are discussed in more detail in the remainder of this chapter.

The mine operators will be held responsible for any environmental misconduct in the area upon completion of mining activity, especially if the decommissioning phases are not adhered to. Sensitive quarrying procedures with due cognisance of certain environmental parameters, have been recommended throughout this report.

It is the objective of mine closure, therefore, to ensure that all of the mining and environmental recommendations contained in the EMP, are adhered to, including sensitive rehabilitation of the quarry scars and the adjacent environment.

8.2.2 INFRASTRUCTURE AREAS.

Mobile machinery should be withdrawn from the site if any imminent flood risk occurs.

Mine closure will entail the removal of any infrastructure from the site. This will not be a major issue, however, as no infrastructure is planned, other than a temporary causeway providing access over the river.

8.2.3 MINE RESIDUE DEPOSITS.

All waste disposal facilities that were in operation during mining activity will have to be removed from the site once quarrying operations have ceased. These would probably represent disposable drums at the site.

No pipelines and concrete trenches are deemed necessary during the lifespan of the quarry, so removal and rehabilitation of such structures are not envisaged as part of the mine closure.

Unused soil and rock stockpiles, should they exist, will be removed from the study area upon completion of quarrying operations. No unused stockpiles of topsoil or waste products must remain in the worked mine area once the lifespan of the quarry has been realised.

The mined out areas should be levelled where possible, so that quarry scars are less conspicuous and easier to rehabilitate.

8.2.4 FINAL REHABILITATION.

Final rehabilitation must ensure that the destruction to the natural environment in the quarry area is softened to the extent that the previously worked area is not deemed an eyesore and an environmental disaster. This will require a sensitive approach to the environment throughout the quarrying operation. Potential impacts must be assessed as an ongoing process. Responsible and considerate mining management will ensure that all of the environmental recommendations contained in this EMP are adhered to. The following rehabilitation recommendations are proposed prior to closure of the quarry:

- Topsoil stockpiling and replacement should be conducted as per the recommendations contained in Chapter 8.1.3 (Soils).
- Attention should be given to the removal of alien fauna and flora from the study area throughout the quarrying operation. This is especially important once the seed bank in the replaced topsoil layers has started to germinate.
- All mining infrastructure and any other anthropogenic related structure must be removed from the mining area once quarry operations have ceased.
- Contamination of the natural environment must be addressed as per recommendations contained in Chapter 8.1.17 (Maintenance).

- The access road (if not to be utilised any further) should be softened and where possible vegetation should be encouraged to cover the road surface. The same seed mix should be used as advocated for the topsoil.
- The entire area must, as far as possible, be cleaned up so that the only evidence of quarry activity is a lower landscape.

8.2.5 MAINTENANCE.

The quarry operator is obliged to continue with site maintenance once closure of the quarry has been acknowledged by the authorities. Once decommissioning of the quarried area has been completed, mine operators must still ensure that the rehabilitated topsoil layers are afforded a reasonable time to stabilise, and allow vegetation to germinate and grow, and that alien plant species are removed (every six months).

Cognisance must, however, be taken of the fact that the rehabilitated quarry area occurs within a dynamic fluvial environment, which is prone to reworking after flood events.

Should such a flood event rework the rehabilitated quarry area, then responsibility for maintenance of the environment should be terminated within reason. The final decision in this regard should, nevertheless, be made by the responsible authorities.

8.2.6 TIME FRAMES FOR REHABILITATION.

The study area should be mined in four strips as previously mentioned. Topsoil from the first two strips must be stockpiled on the western side of the site (Figure 3), and will be used to rehabilitate the final strips once they are mined. The topsoil from strip 3 will be used to rehabilitate strip 1, topsoil from strip 4 to rehabilitate strip 2, and so on. Rehabilitation of strip 1 will commence when the mining of strip 3 commences, and rehabilitation of strip 2 when the mining of strip 4 commences (and so on). The last two strips should be fully rehabilitated within 6 months of cessation of mining activities.

As already mentioned, the bulk of the mined area will be re-vegetated with grass species to facilitate use of the land for grazing, whilst indigenous trees and shrubs will be planted in the north-eastern area.

8.2.7 FINANCIAL PROVISION.

A R50 000-00 financial guarantee by Mthombo Quarries CC is advocated for this specific mining area.

Bearing in mind the proposed condition of the site upon mining completion, and taking into consideration the state of the land surface should rehabilitation recommendations contained in this EMP be adhered to, then the guarantee amount seems adequate to complete any additional decommissioning work.

The R50 000-00 guarantee is based on the following:

| | |
|------------------------------------|------------|
| • Cut and fill of the quarry sides | R15 000-00 |
| • Spreading of topsoil | R15 000-00 |
| • Seeding | R 5 000-00 |
| • Supervision fees | R 5 000-00 |
| • Aftercare | R 5 000-00 |
| • Miscellaneous | R 5 000-00 |

8.2.8 ENVIRONMENTAL MONITORING AND AUDITING.

The Department of Minerals and Energy should receive an annual environmental report prepared by independent environmental consultant. All conditions and recommendations contained in the authorised mining permit should be strictly adhered to by the quarry operators. The environmental consultant should monitor the implementation of the proposed quarrying activities, and compliance thereof with the conditions of the approved EMP.

9. CONCLUSIONS AND RECOMMENDATIONS.

The proposed mining operation must follow a pre-determined mining programme in order to fulfill certain environmental conditions. The mining operation and rehabilitation programme recommended in Chapter 8 of this report must be adhered to. The environmental impacts are summarised in the following table:

| Environmental Component | Impact without and with Mitigation | | Significance | Comments |
|---------------------------------------|------------------------------------|----------------------|--------------|---|
| Viability of the Mining Activity | positive | positive | high | Facilitating mining operations by a HDSA group |
| Desirability of the Mining Activity | negative | neutral | high | biophysical and social impacts reduced by EMP guidelines |
| Impacts on Surrounding Landowners | negative | neutral | high | as above |
| Health Impacts | negative | neutral | low | short term dust and noise during mining |
| Impacts on Fauna and Flora | negative | neutral and positive | high | Alien vegetation to be cleared, but will be accompanied by loss of some indigenous vegetation on site |
| Geology and Groundwater | negative | negative | low | alluvium destruction associated with mining |
| Integration with Infrastructure | neutral | neutral | low | no significant impact on existing infrastructure |
| Engineering Geological Considerations | neutral | neutral | low | geotechnical constraints controlled by effective planning |
| Public Participation Process | negative | positive | high | public aware of proposed mining activity. Objections appear to be based on personal acrimony. |

The EMP recommendations must be addressed to the satisfaction of the responsible authorities. Sensible mining within the framework of this EMP will reveal no major reason to withhold authorisation for the proposed removal of fluvial material from the study area. Mining in the study area will have an impact on the area, but this and neighbouring sites are already significantly scarred due to past mining activity.

A responsible mining operation within a predefined set of environmental parameters, will, therefore, be of benefit to the natural environment in the study area in the long-term. This EMP indicates that the proposed mining operation will fall within acceptable environmental limits, as long as all conditions are adhered to.

Finally, it should be borne in mind that most of the quarry scars in the area will be masked if the area were to be inundated by a large flood, and the braided channel environment is reworked. The environmental damage may, therefore, be of a temporary nature in the long term.

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APPENDIX 1:

MINING PERMIT - MTHOMBO QUARRIES CC:

Figures.



BLUE HORIZON CONSULTING ENGINEERS CC TRADING AS
BLUE HORIZON CONSULTING
ENGINEERING AND ENVIRONMENTAL GEOLOGISTS

TEL: (041) 776 1171 FAX: (041) 776 1171 CELL: 082 572 9159
P. O. BOX 22727, PORT ELIZABETH, 6000
2 GOUSBLUM STREET, BLUE HORIZON BAY

CK 97/39490/23

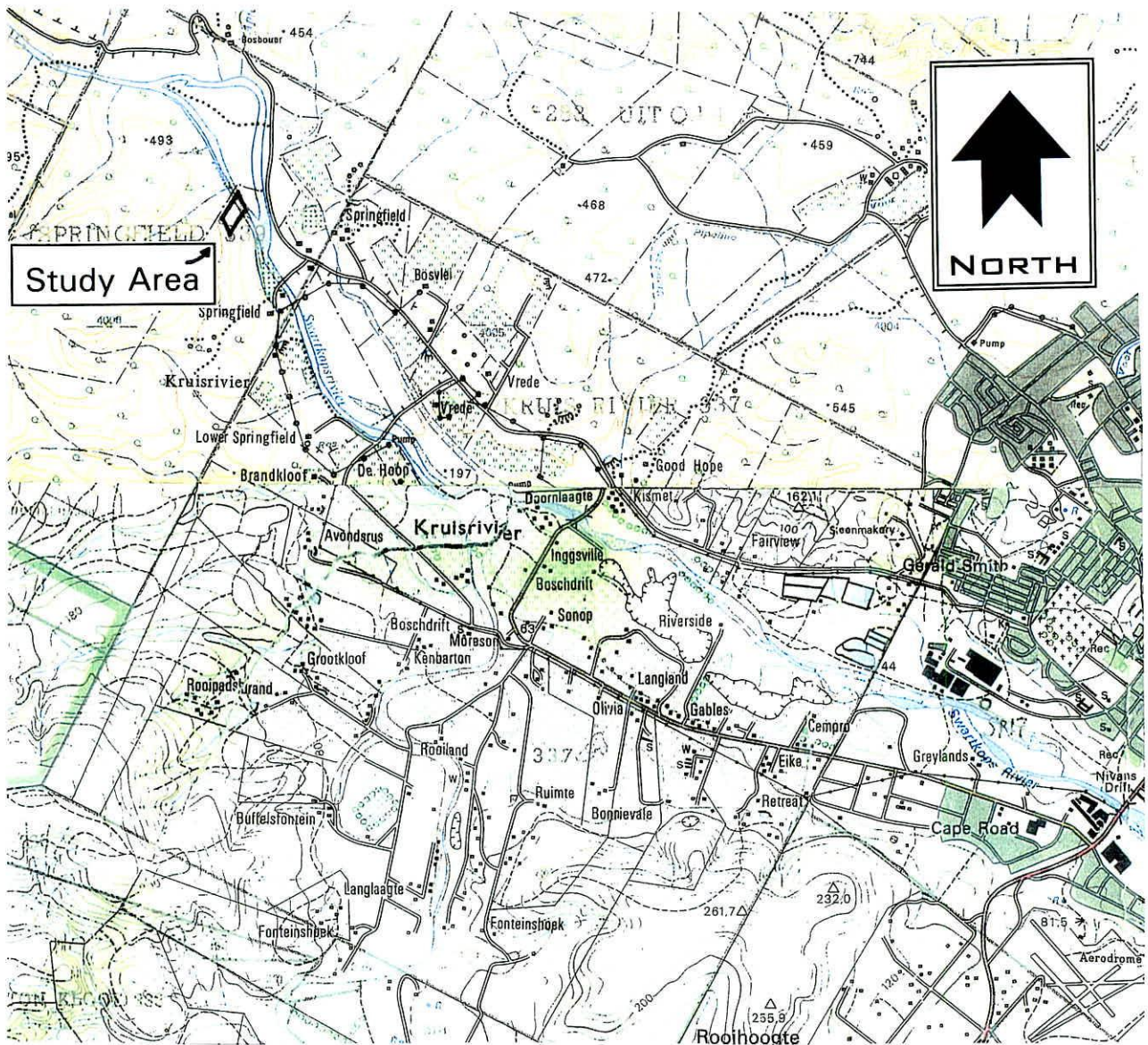


FIGURE 1: PROPOSED MINING AREA : Locality Map.

SCALE: 1:50 000

SOURCE: 3325 CB, 3325 CD & 3425 AB

0 1 000 2 000 3 000 4 000 m



LEGEND:



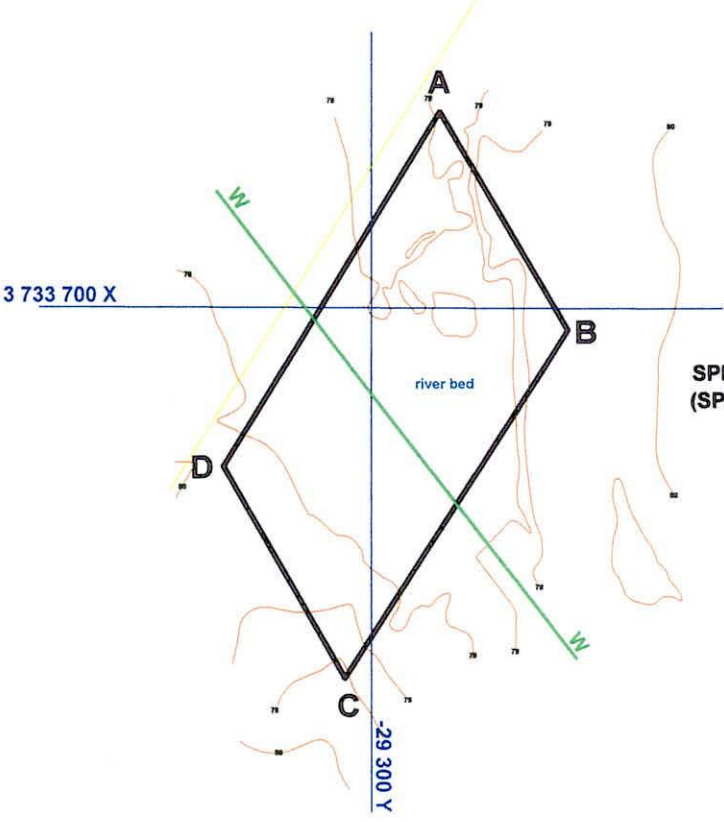
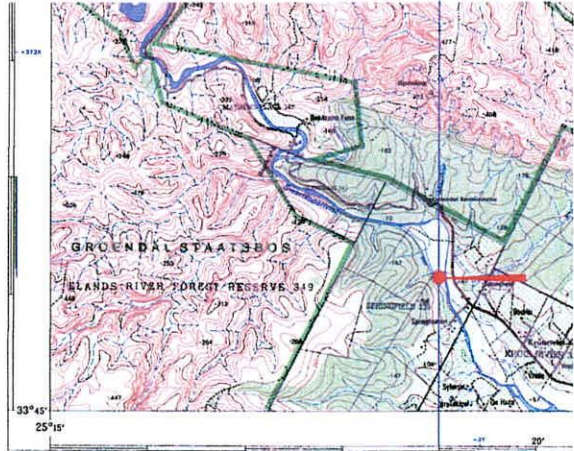
Proposed Mining Area (about 1,5 Hectares in extent)

CO-ORDINATE SYSTEM WGS 84
EAST 25°

- A Y -29 327,36 X 3 733 623,90
- B Y -29 378,36 X 3 733 709,90
- C Y -29 289,79 X 3 733 848,93
- D Y -29 241,63 X 3 733 764,14

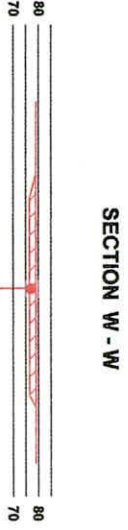
AREA 1,4366 HA

3325CB UITENHAGE NOORD



SPRINGFIELD 339
(SPRINGFONTEIN)

mining to a maximum depth
of 2,5m within the river bed



SCALE 1:3 000



SURVEYOR J. Victor
DATE _____
APPLICANT [Signature]
DATE 11 November 2009

OFFICE USE

REGIONAL MANAGER
EASTERN CAPE

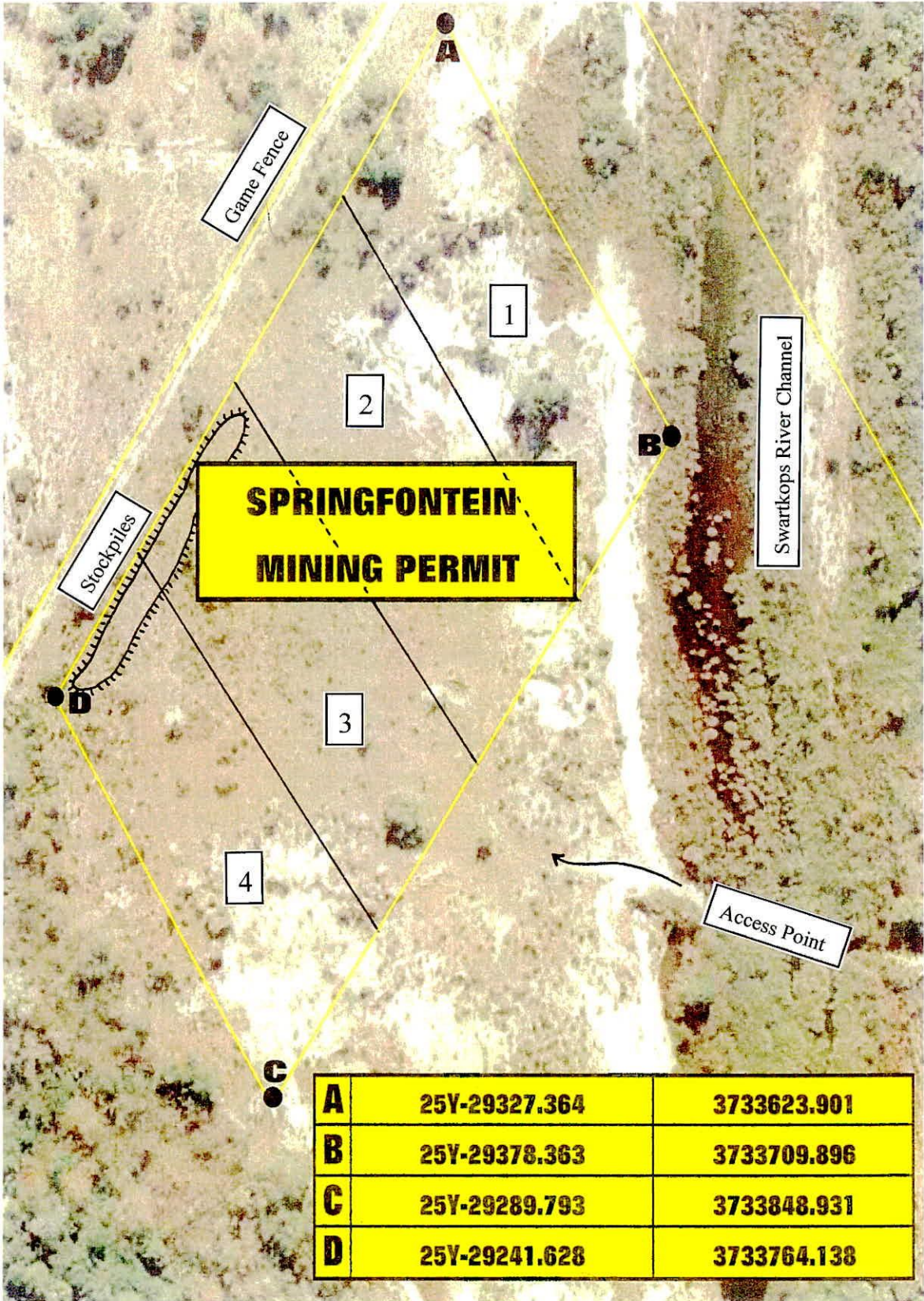
DATE

The above figure lettered A,B,C,D represents an area of land, in extent 1,4366 Ha, situated on Rem. of Springfield 339 (Springfontein) district of Uitenhage, Eastern Cape Region, in respect of which a mining permit has been issued to

ID No _____

JOHN VICTOR SURVEYS
PORT ELIZABETH
TEL/FAX (041) 5813044

FIGURE 3





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P. O. BOX 22727, PORT ELIZABETH, 6000

2 GOUSBLOM STREET, BLUE HORIZON BAY

Schematic Cross-section from East to West (Point B to D on Figure 3)

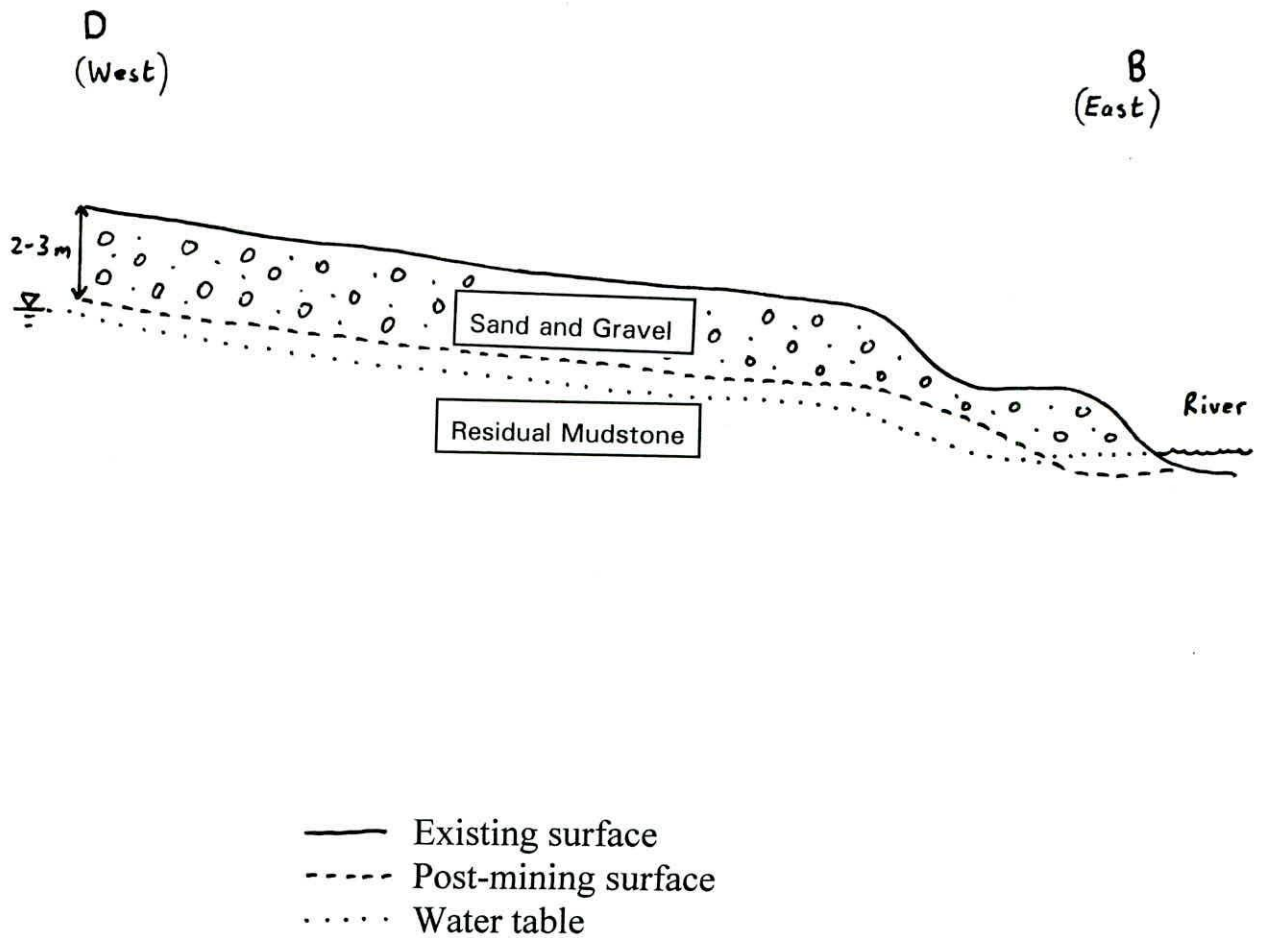


FIGURE 4: PROPOSED MINING AREA : Schematic Cross-Section

Not to Scale

APPENDIX 2:

MINING PERMIT - MTHOMBO QUARRIES CC:

Photographs.



Photograph 1: A view across the northern part of the study area taken from east to west. This area is characterised by a number of old mining scars and an uneven landscape. Natural vegetation is also sparse. The fence and bush line visible in the background represent the boundary of the study area.



Photograph 2: A view across the northern part of the study area taken from the south-east towards the north-west. This area is also characterised by a number of old mining scars with little remaining vegetation. The fence and bush line visible in the background represent the boundary of the study area.



Photograph 3: A view from the centre of the study area towards the north. The green riparian strip along the Swartkops River can be seen in the valley, which also represents the north-eastern boundary of the proposed mining area.



Photograph 4: A view from the centre of the study area towards the south-west. The green strip at the base of the hill coincides with an old channel of the Swartkops River. This is also the south-western boundary of the proposed mining area.

APPENDIX 3:

MINING PERMIT - MTHOMBO QUARRIES CC:

Public Participation Process.



CK 97/39490/23

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2 GOUSBLOM STREET, BLUE HORIZON BAY

**PUBLIC PARTICIPATION PROCESS
FOR THE PROPOSED SAND AND
GRAVEL QUARRY ON THE
REMAINDER (SPRINGFONTEIN)
OF THE FARM SPRINGFIELD 339
TO THE WEST OF UITENHAGE.**

Prepared For Mthombo Quarries CC.

October 2009

Report No. G09192



CK 97/39490/23

BLUE HORIZON CONSULTING ENGINEERS CC TRADING AS

BLUE HORIZON CONSULTING
ENGINEERING AND ENVIRONMENTAL GEOLOGISTS

TEL: (041) 776 1171 FAX: (041) 776 1171 CELL: 082 5729159
P. O. BOX 22727, PORT ELIZABETH, 6000
2 GOUSBLOM STREET, BLUE HORIZON BAY

Department of Minerals and Energy
Eastern Cape Province
Private Bag X6076
PORT ELIZABETH
6000

Our Ref: mthombopp.rep
Your Ref: (EC)30/5/1/3/2/0376 MP

14 October 2009

ATTENTION: Mr S. van den Berg

Dear Sir,

PUBLIC PARTICIPATION PROCESS FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER (SPRINGFONTEIN) OF THE FARM SPRINGFIELD 339, NEAR UITENHAGE.

Your correspondence (dated 14 September 2009) regarding the abovementioned project, refers.

As stipulated, herewith the results of the Public Participation Process for the Mining Permit application on the Remainder of the Farm Springfield 339 (Springfontein).

SITE NOTICE.

A laminated A3 size notice was attached to the fence at the entrance to the Springfontein Farm (see Photographs 1 and 2 in Appendix 1). The farm entrance is along the gravel road linking Uitenhage and the Groendal area. This notice provided broad information regarding the Mining Permit application, and called for prospective interested and affected parties to register with the consultant (see copy of notice in Appendix 2). The notice was placed on Wednesday 7 October 2009. To date, no responses have been forthcoming.

SURROUNDING LANDOWNERS.

The Springfontein Farm is owned by Mr A. M. Harbron. Mr Harbron also owns all of the abutting farms, with the exception of one, which is owned by Mr Marius Pitout. Messrs Harbron and Pitout were thus identified as Interested and Affected Parties.

A letter providing details of the application was forwarded to Mr Harbron on 3 October 2009. Mr Harbron replied on 7 October 2009, confirming that he, as the landowner and owner of the abutting farms, consented to the application by Mthombo Quarries CC. Copies of both letters are attached in Appendix 3.

A similar letter providing details of the application was also forwarded to Mr Pitout via Registered Letter (see tracking and tracing details in Appendix 2). The letter was also faxed to Mr Pitout on 6 October 2009. Mr Pitout responded telephonically on 9 October 2009, requesting details of the applicant. A letter of response was faxed to him on the same day.

Subsequently, a facsimile was received from Mr Pitout's attorneys (Rushmere Noach) on 13 October 2009, requesting a copy of the application document, so that they could consider their position in respect of the application. A letter of response was faxed on 14 October 2009, offering certain information, but declining access to the full application report. Information offered includes the applicant details, a plan showing the locality of the proposed mining area, and broad details regarding the deposit to be mined. This information is deemed sufficient for consideration of the application. In addition, the Environmental Management Plan will be made available to Mr Pitout, when completed. Copies of the above correspondence can be found in Appendix 3. A further response from Mr Pitout is now awaited.

The subject site is located more than 1,5 km from Mr Pitout's farmstead, at least 500 metres from his farm boundary.

FEEDBACK.

Any further feedback will be passed on to the Department of Minerals and Energy as soon as it is received.

CONCLUSION.

The site in question and the surrounding area has been subjected to sand and gravel mining for many years, and very little additional feedback is expected.

If any further information is required regarding the public participation process, please contact the undersigned.

Yours Faithfully



Gavin J. Fisher *BSc (Hons) Engineering Geology*

APPENDIX 1:

REMAINDER OF FARM SPRINGFIELD 339:

Photographs.



Photograph 1: A notice advising that a Mining Permit has been applied for, was erected at the entrance to the Farm Springfontein. On the notice, readers are afforded the opportunity of registering as an Interested and Affected Party (I&AP).



Photograph 2: A close-up of the notice referred to above.

APPENDIX 2:

REMAINDER OF FARM SPRINGFIELD 339:

Notice.

BLUE HORIZON CONSULTING

ENGINEERING & ENVIRONMENTAL GEOLOGISTS

Notice is given in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) of an application for a Mining Permit as follows:

- A quartzitic sandstone gravel and sand quarry is planned on the Remainder of the farm Springfield 339 (Springfontein), near Uitenhage.
- Applicant is Mthombo Quarries CC.
- Consultant is Mr Gavin J. Fisher of Blue Horizon Consulting Engineering and Environmental Geologists.
P. O. Box 22727, Port Elizabeth, 6000
e-mail : bopite@netactive.co.za

This is the final opportunity to be identified as an interested and / or an affected party. You are invited to submit your name and contact details to the consultant before 13 October 2009, and supply written details of your interest in the matter.

The registered letter tracking and tracing details for the correspondence sent to the abutting landowner, Mr Marius Pitout.

| | | | |
|---|--|---|--|
| REGISTERED LETTER GEREGISTREERDE BRIEF | |  Post Office | |
| <i>(with an insurance option/met 'n versekeringsopsie)</i> | | | |
| Full tracking and tracing/Volledige volg en spoor | | | |
| Addressee to/Geadresseer aan M. Marius Pitout P.O. Box 254 White River | | Insured value of contents Versekerde waarde van inhoud R _____ c | |
| Postcode Poskode | | Enquiries/Navrae Toll-free number Tolvry nommer 0800 111 502 | Initial of accepting officer mo |
| The value of the contents of this letter is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof. Optional insurance up to R2 000.00 is available and applies to domestic registered letters only. Die waarde van die inhoud van hierdie brief is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering tot R2 000.00 is beskikbaar en is slegs op binnelandse geregistreeerde briewe van toepassing. | | REGISTERED LETTER <small>(with a domestic insurance option, ShareCall 0860 111 502 www.sapo.co.za)</small> RD 240 855 958 ZA CUSTOMER COPY 301028R kliëntafskrif | Date stamp  Datumstempel |

701281

APPENDIX 3:
REMAINDER OF FARM SPRINGFIELD 339:
Correspondence.



CK 97/39490/23

BLUE HORIZON CONSULTING ENGINEERS CC TRADING AS
BLUE HORIZON CONSULTING
ENGINEERING AND ENVIRONMENTAL GEOLOGISTS

TEL: (041) 776 1171 FAX: (041) 776 1171 CELL: 082 5729159
P. O. BOX 22727, PORT ELIZABETH, 6000
2 GOUSBLOM STREET, BLUE HORIZON BAY

Harbron Quarries
P. O. Box 617
UITENHAGE
6230

Our Ref: mthombopp.l1
Your Ref: --

3 October 2009

Attention: Mr A. M. Harbron

Dear Sir,

A MINING PERMIT APPLICATION FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER (SPRINGFONTEIN) OF THE FARM SPRINGFIELD 339, NEAR UITENHAGE.

As you are aware, an application has been lodged by Mthombo Quarries CC to the Department of Minerals and Energy (Regional Office in Port Elizabeth) for a mining permit on the Remainder of the Farm Springfield 339, near Uitenhage. The proponent intends mining sand and gravel from a 1,5 Hectare site on the aforementioned farm.

As the landowner, you have been identified as an interested and affected party. As part of the public participation process, you are invited to comment in writing on the abovementioned application. All comments will be appended to our Environmental Management Plan, which forms part of the application for a Mining Permit.

All submissions should be forwarded to the undersigned, either by fax, registered mail, or e-mail (bopite@netactive.co.za). Requests for further information or queries can also be directed to the undersigned. Your input by 9 October 2009 would be appreciated.

We trust that this is in order.

Yours Faithfully

Gavin J. Fisher BSc (Hons) Engineering Geology

AM HARBRON

POSBUS 617

UITENHAGE

Tel: 041 9921319

Fax: 041 9924025

Cell: 0829208869

07 October 2009

Blue Horizon Consulting
PO Box 22727
Port Elizabeth 6000

Attention: Mr Gavin Fisher

Dear Sir

A MINING PERMIT APPLICATION FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER (SPRINGFONTEIN) OF THE FARM SPRINGFIELD 339, KRUISRIVIER , NEAR UITENHAGE

Your letter dated 03 October 2009 refers.

I confirm that I am the owner of the land in question and that I have consented to the proposed mining activity by Mthombo Quarries cc.

Should there be any queries regarding the above please contact me.

Yours faithfully



AM HARBRON



CK 97/39490/23

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BLUE HORIZON CONSULTING
ENGINEERING AND ENVIRONMENTAL GEOLOGISTS

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P. O. BOX 22727, PORT ELIZABETH, 6000
2 GOUSBLOM STREET, BLUE HORIZON BAY

Mr Marius Pitout
P. O. Box 254
UITENHAGE
6230

Our Ref: mthomboppp.le2
Your Ref: --

041 992 5429 fax

3 October 2009

Dear Sir,

A MINING PERMIT APPLICATION FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER (SPRINGFONTEIN) OF THE FARM SPRINGFIELD 339, NEAR UITENHAGE.

An application has been lodged by Mthombo Quarries CC to the Department of Minerals and Energy (Regional Office in Port Elizabeth) for a mining permit on the Remainder of the Farm Springfield 339, near Uitenhage. The proponent intends mining sand and gravel from a 1,5 Hectare site on the aforementioned farm.

As a surrounding landowner, you have been identified as an interested and affected party. As part of the public participation process, you are invited to comment in writing on the abovementioned application. All comments will be appended to our Environmental Management Plan, which forms part of the application for a Mining Permit.

All submissions should be forwarded to the undersigned, either by fax or e-mail (bopite@netactive.co.za) with a hard copy also preferably sent via registered mail as confirmation. Requests for further information or queries can also be directed to the undersigned. Your input by 13 October 2009 would be appreciated.

We trust that this is in order

Yours Faithfully

Gavin J. Fisher BSc (Hons) Engineering Geology



CK 97/39490/23

BLUE HORIZON CONSULTING ENGINEERS CC TRADING AS
BLUE HORIZON CONSULTING
ENGINEERING AND ENVIRONMENTAL GEOLOGISTS

TEL: (041) 776 1171 FAX: (041) 776 1171 CELL: 082 5729159
P. O. BOX 22727, PORT ELIZABETH, 6000
2 GOUSBLOM STREET, BLUE HORIZON BAY

Mr Marius Pitout
P. O. Box 254
UITENHAGE
6230

Our Ref: mthombopp.le3
Your Ref: --

9 October 2009

Dear Sir.

A MINING PERMIT APPLICATION FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER (SPRINGFONTEIN) OF THE FARM SPRINGFIELD 339, NEAR UITENHAGE.

Our telephonic discussions earlier today refer.

I confirm that the above Mining Permit application has been made by Mthombo Quarries CC. According to the Certificate of Incorporation, which has been sent to the Department of Minerals and Energy, there are ten active members, one woman and nine men. All ten members are previously disadvantaged, and as such, Mthombo Quarries CC is 100 % HDSA owned.

We trust that this is in order

Yours Faithfully

Gavin J. Fisher BSc (Hons) Engineering Geology

Fax Cover Page*No. of Pages including this page:**Date* **13 October 2009****Rushmere  Noach****A T T O R N E Y S****To** **BLUE HORIZON CONSULTING****Fax No.** **(041) 776 1171****Address****Your ref.** **GAVIN J FISHER**
mthombopp.le2**Our ref.** **MRS C JONKER/mt/MAT18247**

Direct No. (041) 399 6735

Direct Fax: 086 634 7248

General Fax: (041) 374 3107

Cell No. 083 656 8421

e-mail: cindyj@rushmere.co.za

e-mail: madeleinet@rushmere.co.za

Dear Sirs

RE: A MINING PERMIT APPLICATION FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER (SPRINGFONTEIN) OF THE FARM SPRINGFIELD 339, NEAR UITENHAGE

We act on the instructions of Mr Marius Pitout who has handed us your telefaxes of 3 and 9 October 2009 for reply.

In your telefax of 3 October 2009 (which was only received by our client on 6 October 2009) you request our client's input by 13 October 2009. We are instructed that our client has not yet had sight of the applicant's application for a mining permit and in the absence thereof our client is not in a position to comment thereon. You are therefore requested to urgently provide us with a copy of the

Notaries • Conveyancers • Administrators of deceased and insolvent estatesRushmere Noach
Inc

Reg No 2002/015382/21

Directors: RO Jefferson B Comm B Proc (Managing), SK Gough BA LLB,
DJ Parker B Juris LLB, JM Louw B Juris LLB, J Theron B Comm LLB,
C Jonker B Juris LLB, T Heasley B Proc
Assisted By: CD Arnold B Comm LLB, L Koorsse LLB, JC Adriaan LLB
Consultant WS Allchurch BA, A Pretorius B Proc, CG Rushmere BA LLB
General Manger: PC Theron B. Comm B. Compt-Hons CA (SA)5 Ascot Office Park
Conyngham Road
Greenacres
Port Elizabeth
P O Box 100
Port Elizabeth
6000
South Africa
Docex 6
Port ElizabethTelephone: (041) 399 6735
Telefax: (041) 374 3110 General
(041) 374 3112 Conveyancing
(041) 374 3108 Commercial
(041) 374 3107 Litigation
International Code: + 2741
E-Mail Address:
general@rushmere.co.za
Website Address:
www.rushmere.co.za

aforesaid application in order for our client to consider same with a view to consider his position in respect thereof.

In terms of section 27(5)(b) of the Mineral and Petroleum Resources Development Act No. 28 of 2002 the applicant is to consult with any affected party and submit the results of such consultation within 30 days from having been notified in writing by the regional manager of the acceptance of the mining permit application and to comply with the requirements as set out in section 27(5). You are requested to advise us of the date on when the applicant was notified by the regional manager as contemplated in section 27(5) of the Act in order for our client to assess whether the applicant has afforded our client a reasonable opportunity to respond to the request to engage in a consultation process with the applicant.

Our client undertakes to revert with its comments in respect of the applicant's application for a mining permit within 14 business days from the date of receipt of a copy of the application for a mining permit as requested herein. We await your urgent reply.

Yours faithfully,
RUSHMERE NOACH INCORPORATED

Per: 



CK 97/39490/23

BLUE HORIZON CONSULTING ENGINEERS CC TRADING AS

BLUE HORIZON CONSULTING
ENGINEERING AND ENVIRONMENTAL GEOLOGISTS

TEL: (041) 776 1171 FAX: (041) 776 1171 CELL: 082 5729159
P. O. BOX 22727, PORT ELIZABETH, 6000
2 GOUSBLOM STREET, BLUE HORIZON BAY

Rushmere Noach Attorneys
P. O. Box 100
PORT ELIZABETH
6000

Our Ref: mthombopp.la4
Your Ref: Mrs C Jonker/mt/MAT18247

14 October 2009

ATTENTION: Mrs C. Jonker

Dear Madam

A MINING PERMIT APPLICATION FOR THE PROPOSED SAND AND GRAVEL QUARRY ON THE REMAINDER (SPRINGFONTEIN) OF THE FARM SPRINGFIELD 339, NEAR UITENHAGE.

Your correspondence received via facsimile on 13 October 2009, refers.

The application document contains information which is private and confidential, a large proportion of which relates to financial and technical matters. As such, release of this documentation can only be considered once a sound reason has been supplied.

Information which can be made available at this stage, includes the applicant details, a plan showing the locality of the proposed mining area, and broad details regarding the deposit to be mined. This information should be sufficient for your consideration of the application. In addition, the Environmental Management Plan will be made available to you when completed.

As previously stated, the Mining Permit application has been made by Mthombo Quarries CC, which is 100 % HDSA owned. The Mining Permit is aimed at mining of the fluvial sand and gravel deposits along a small section of the Swartkops River and the adjacent flood plain. A locality plan is attached. The proposed mining area is 1,5 hectares in extent.

We look forward to your reply within 14 days.

Yours Faithfully

Gavin J. Fisher BSc (Hons) Engineering Geology

MEMBERS: G. J. FISHER (BSc (Hons) Eng. Geol, MSAIEG), H. FISHER

APPENDIX 4:

MINING PERMIT - MTHOMBO QUARRIES CC:

Signed Undertaking.

UNDERTAKING

I,

the undersigned on behalf of Mthombo Quarries CC, hereby undertake to give effect to every undertaking contained in the Environmental Management Plan for the proposed mining activity on the Remainder of the Farm Springfield 339 (Springfontein), and accept full responsibility thereof.

SIGNED at thisday of November 2009

.....

.....

Witness

(To be signed when the Environmental Management Plan has been accepted by the Department of Minerals and Energy)