person.

- Personnel have access only to demarcated access routes and mine sites.
- Access onto private property and driving on non-designated routes is strictly forbidden
- Entry onto areas which are out of bounds is also forbidden
- Personnel are not to interfere with the daily activities of the surrounding communities.
- Exit/Egress routes and points, need to be kept free of obstructions at all times, with adequate lighting to ensure safe passage in the event of an emergency.
- In addition to this, the relevant safety signage needs to be clearly displayed showing such routes and exits. Where possible, emergency exists should have outward opening doors. Keys to all emergency exists must be readily available alongside the exit, thus ensuring that there are no unnecessary delays in exiting any building or camp.

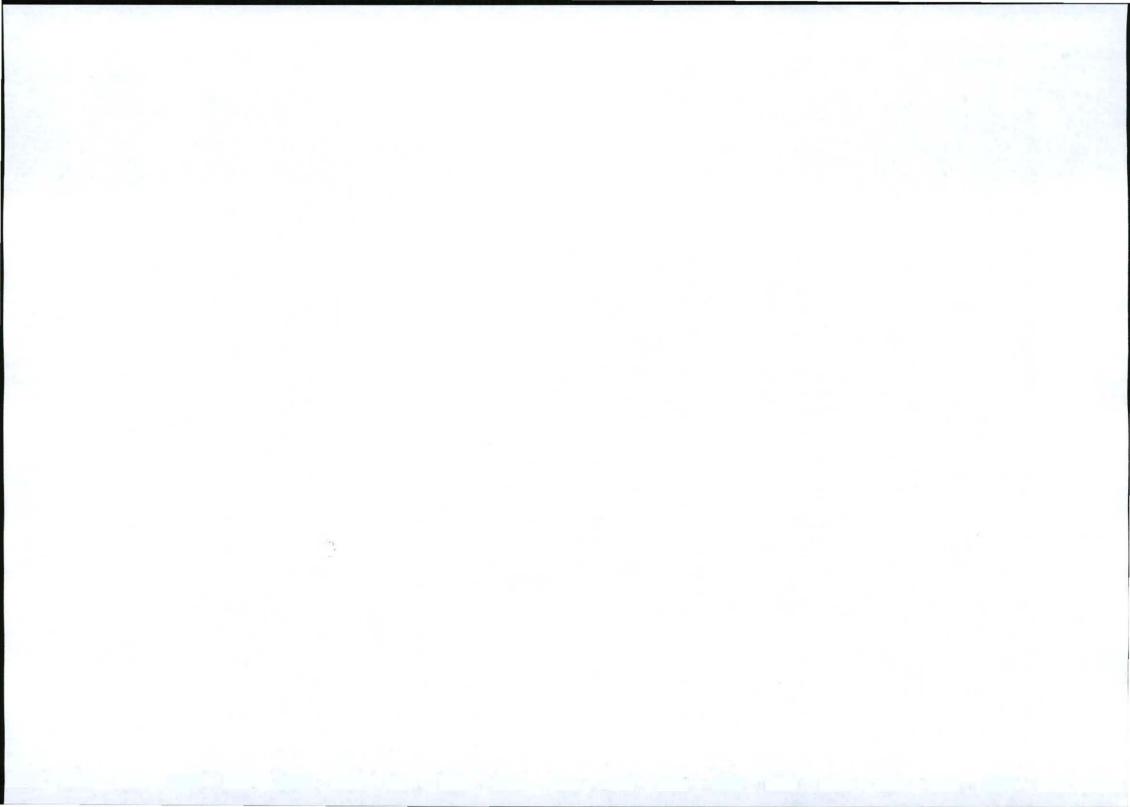
C.11.8.4 Environmental Considerations

- An Environmental Management Plan should have been completed before operations commence.
- Personnel are forbidden to disturb/interfere, trap, lure or kill any animal encountered on site or within a specified area.
- Personnel are strictly forbidden from poaching any animals. Poaching is illegal and all offenders will be prosecuted.
- Personnel are not to pick, cut or damage any flora on site and in the area, unless told to do so by a supervisor after environmental impact study has been completed.
- Firewood is not to be collected from sire or the surrounding area.
- The making of fires on site is prohibited except in designated areas
- Cigarette buts must be extinguished and disposed of on the waste containers provided.
- Littering of any kind is strictly forbidden.
- Driving is only to be done on designated roads

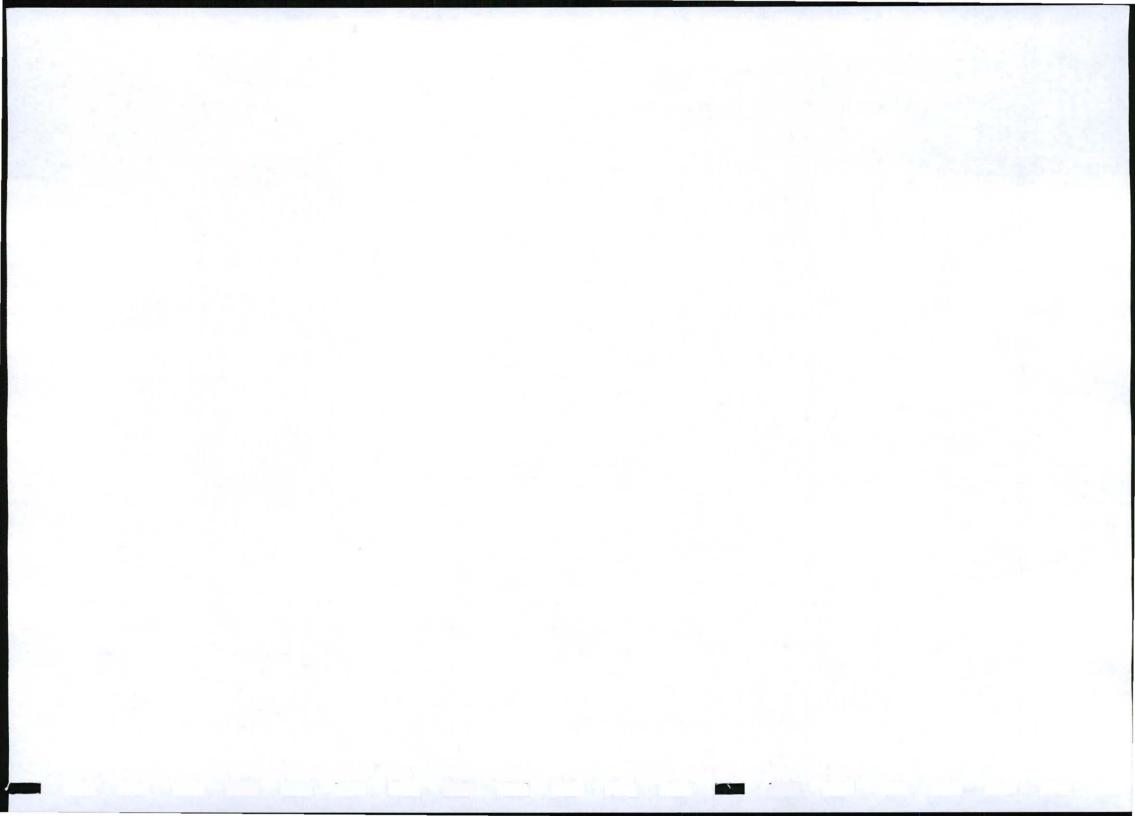
C.11.9 Checklist for monitoring risks

Table 23. Checklist for monitoring risks

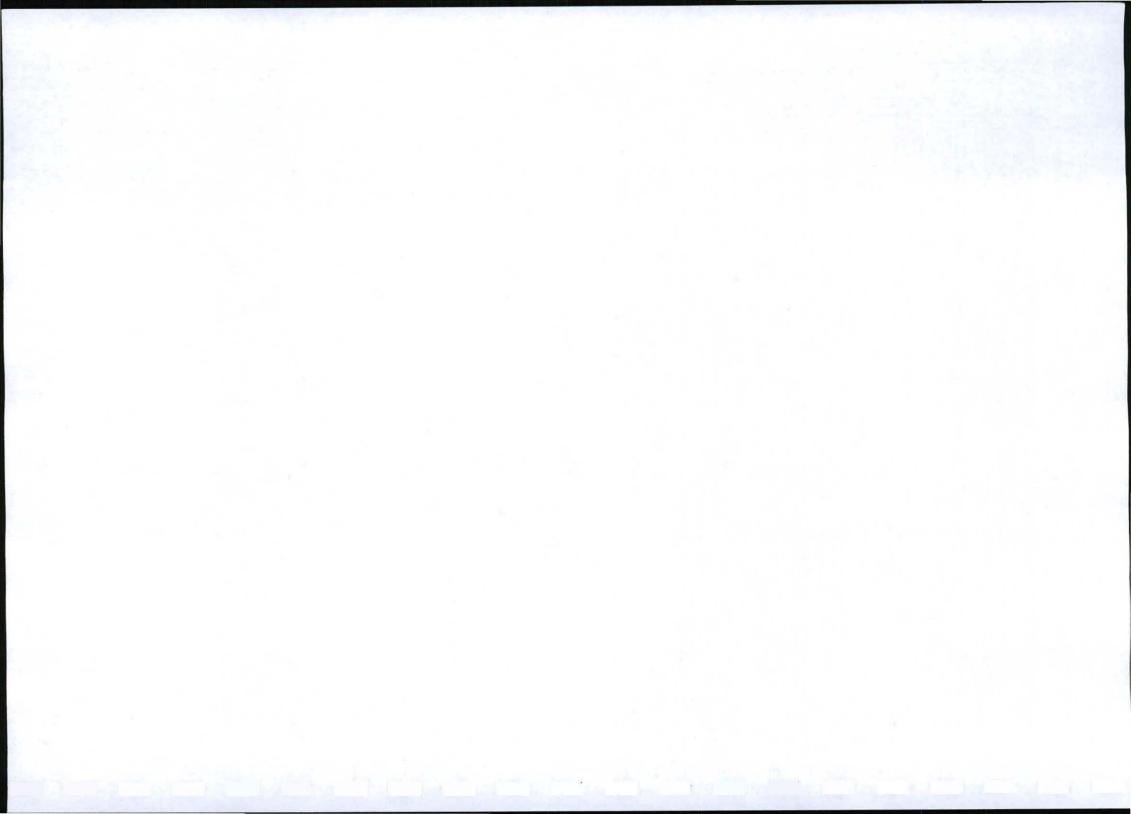
EXAMPLE OF A CHECK LIST: FIRE MANAGEMENT					
Aspects to check (building refers to the temporary site office)					
	No				
Have you identified all potential ignition sources	man appendent				
Have you identified all potential fuel sources?					
Have you identified all potential sources of oxygen?					
Have you identified who is at risk					
Have you identified why they are at risk					
Have you made a note of your findings?					
Can the existing means of detection ensure a fire is discovered quickly enough for the alarm to be raised in					



	_
time for all the people to escape to a place of total safety?	
Are detectors of the right type and in the appropriate locations?	
Can the means of warning be clearly heard and understood by everyone throughout on the entire site when	
initiated from a single point?	
Are there provisions for people or locations where the alarm cannot be heard?	
If the fire detection and warning system is electrically powered, does it have a back-up power supply?	
Are the extinguishers suitable for the purpose?	
Are there enough extinguishers sited throughout the premises at appropriate locations?	1
Are the right types of extinguishers located close to the fire hazards and can users get to them without	
exposing themselves to risk?	
Are the extinguishers visible or does their position need indicating	
Have you taken steps to prevent the misuse of extinguishers	1
Do you regularly check equipment provided to help maintain the escape routes	
Do you carry out daily checks to ensure that there is clear access for fire engines	-
Are those who test and maintain the equipment competent to do so?	
Do you have the necessary procedures in place to maintain any facilities that have been provided for the	
safety of people (or for the use of firefighters, such as access for fire engines and firefighting lifts)?	
Are the escape routes and final exits kept clear at all times?	
Do the doors on escape routes open in the direction of escape (example the site office)?	
Can all final exit doors be opened easily and immediately if there is an emergency?	
Will everybody be able to safely use the escape routes from your site/premises?	
Are staff aware of the importance of maintaining the safety of the escape routes, e.g. by ensuring that fire	-
doors are not wedged open and that combustible materials are not stored within escape routes?	
Are there any particular or unusual issues to consider?	-
Is your building constructed so that in the case of a fire there is a fire, heat and smoke will not spread	-
uncontrolled through the building to the extent that people are unable to use the escape routes?	
Can all the occupants escape to a place of total safety in a reasonable time?	
Are the existing escape routes adequate for the numbers and type of people that may need to use them, e.g.	
staff, pupils and students, members of the public, disabled people, and young children?	
Are the exits in the right place and do the escape routes lead as directly as possible to a place of total safety?	
If there is a fire, could all available exits be affected or will at least one route from any part of the premises	-
remain available?	
Are your premises used during periods of darkness?	
Will there always be sufficient lighting to safely use escape routes?	
Do you have back-up power supplies for your emergency lighting?	-
Where necessary, are escape routes and exits, the locations of firefighting equipment and emergency	
telephones indicated by appropriate signs?	
Are you provided notices such as those giving information on how to operate security devices on exit doors,	
those indicating doors enclosing hazards must be kept shut and fire action notices for staff and other people?	



Are you maintaining all the necessary signs and notices so that they continue to be correct, legible and	
understood?	
Are you maintaining signs that you have provided for the information of the fire and rescue service, such as	
those indicating the location of water suppression stop valves and the storage of hazardous substance?	
Do you regularly check all fire doors and escape routes and associated lighting and signs?	
Do you regularly check all your firefighting equipment?	
Do you regularly check your fire detection and alarm equipment?	
Are those who test and maintain the equipment competent to do so?	
Do you keep a logbook to record tests and maintenance?	
Evaluating the risk to people in the immediate area if a fire starts?	2
Considering the need for fire detection and for warning?	
Considering the need for firefighting equipment?	
Determining whether your escape routes are adequate?	
Checking that you have adequate signs and notices?	
Regularly testing and maintaining safety equipment?	
Considering whether you need any other equipment or facilities?	
Have you recorded the significant findings of your assessment?	
Have you recorded what you have done to remove or reduce the risk?	
Are your records available for inspection by the enforcing authority?	
Do you have an emergency plan and, where necessary, have you recorded the details?	
Is the plan readily available for staff to read?	
Is the emergency plan available to the enforcing authority?	
Have you told your staff about the emergency plan?	
Have you informed visitors about what to do in an emergency?	
Have you identified people nominated to do a particular task?	
Do you have arrangements for informing temporary or agency staff?	
Do you have arrangements for informing other employers whose staff are guest workers in your premises,	
such as maintenance contractors and cleaners?	
Have you co-coordinated your fire safety arrangements with other responsible people on the farm?	
Have you recorded details of any information or instructions you have given and the details of any	
arrangements for co-operation and co-ordination with others?	
Are employees aware of specific tasks if there is a fire?	
Are you maintaining a record of training sessions?	
Do you carry out training and fire drills?	
If you use or store hazardous or explosive substances have your staff received appropriate training?	



D. SCORING

D.1 SCORING OF EIA – FOR OFFICIAL USE

Instructions for officials:

In this table, complete the totals of each section indicated below and do the calculation. Remember to <u>first add all</u> the values of sections C 1,2,4 and 5 <u>and then to multiply</u> it by the time factor in Section C 3

Note that the value for the time factor element of the impact rating appears in Section C3. This is the total amount of time that the operation is expected to impact on the environment and all other factors are MULTIPLIED by this value. Compare the score (Impact rating) with the table below to help you make a decision on the total impact of the operation and also on the sufficiency of this programme to address all expected impacts from the operation on the environment.

D.1.1 Calculation Table

Table 20. Calculation Table

Section C 1 Total	+	Section C 2 Total	+	Section C 4 Total	+	Section C 5 Total	=	<u>Subtotal</u>	x	Time Factor Section C 3	=	Score (Impact rating)
	+		+		+		=		x		=	

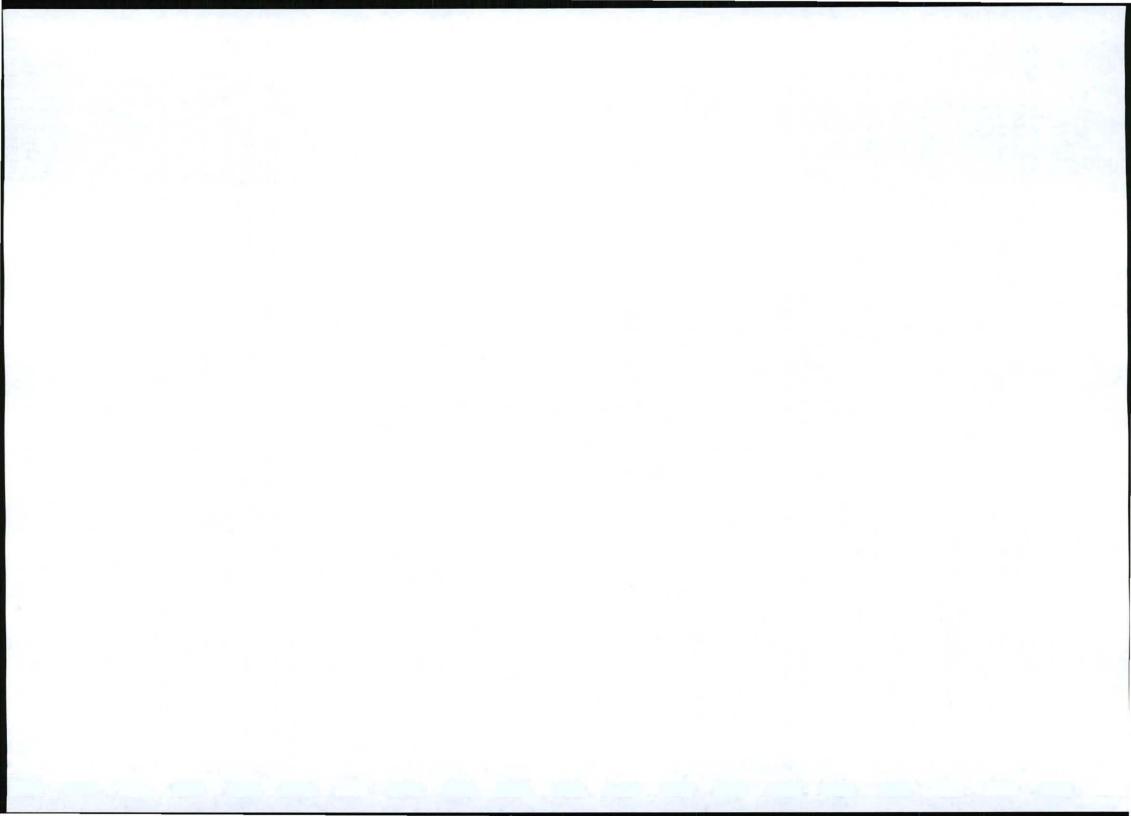
D.1.2 Impact Rating Scaling

Table 21. Impact rating Scaling

SCORE ATTAINED	IMPACT RATING	REMARKS			
46 - 300	Low	No additional objectives needed - this programme is sufficient			
301 – 800 Medium		Some specific additional objectives to address focal areas of concern may be set.			
801 – 1160	High	Major revision of Environmental Management Plan for adequacy and full revision of objectives.			

Additional Objectives:

Based on the information provided by the applicant and the regional office's assessment thereof, combined with the interpretation of the scoring and impact rating attained for the particular operation above, the Regional Manager of the regional office of the DME may now determine additional objectives /requirements for the mine owner/manager to comply with. *These measures will be specific and will address specific issues of concern that are not adequately covered in the standard version of this document.* These requirements are not listed here, but are specified under Section G of this document, so as to form part of the legally binding part of this Environmental Management Plan.



E. UNDERTAKING

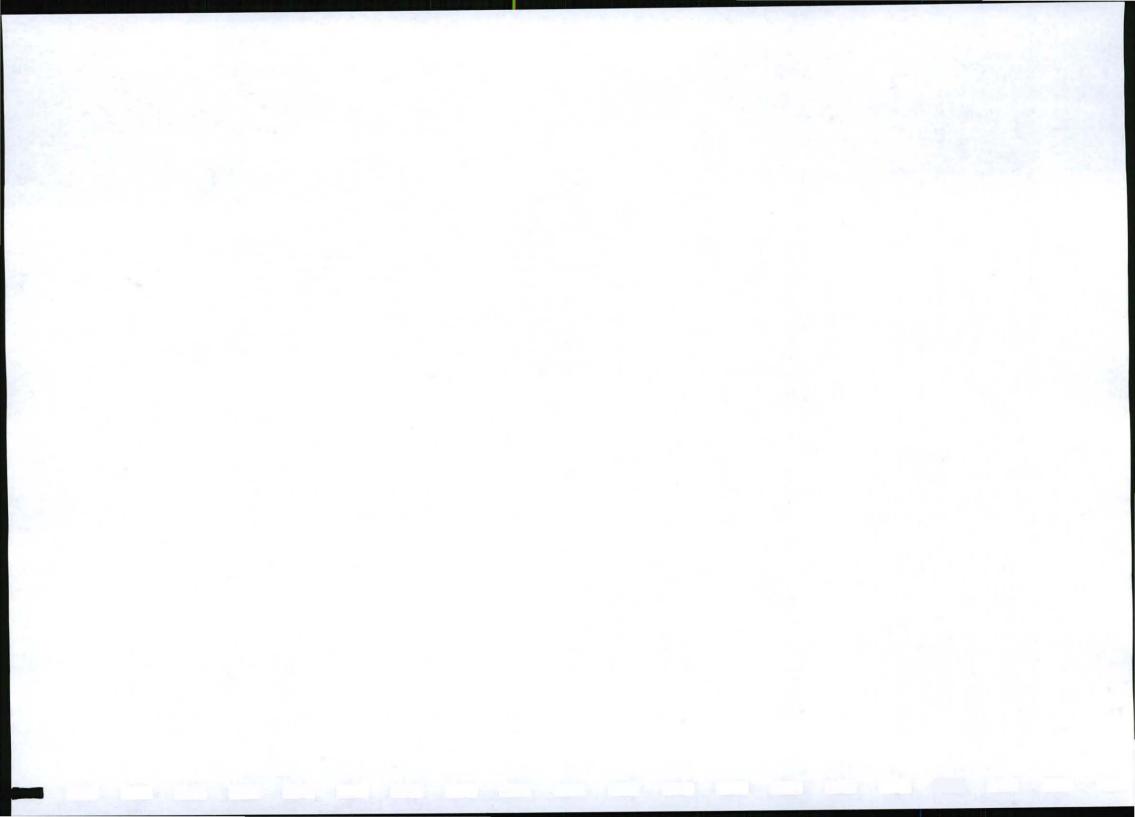
I, Blaire Rieger, the applicant for a mining permit/ right hereby declare that the above information is true, complete and correct. I undertake to implement the measures as described in Sections F and G hereof. I understand that this undertaking is legally binding and that failure to give effect hereto will render me liable for prosecution in terms of Section 98 (b) and 99 (1)(g) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). I am also aware that the Regional Manager may, at any time but after consultation with me, make such changes to this plan as he/she may deem necessary.

Signed on this 28 day of September 2009 at Port Elizabeth (Place)

BLAIRE LAUREN RIEGER

Signature of applicant

The following section is provided in addition to the above. The section is an extract of the guideline document and is placed in its entirety to ensure all possible impacts are addressed. Although not part of the main section of the document it is signed by the applicant meaning that all requirements relevant to prospecting of resource and gravel will be adhered to in addition to the requirements of the main documents.



F. ENVIRONMENTAL MANAGEMENT PLAN

INTRODUCTION

This Environmental Management Plan contains guidelines, operating procedures and rehabilitation/pollution control requirements which will be binding on the holder of the mining permit/ prospecting permission/ reconnaissance permission after approval of the Environmental Management Plan. It is essential that this portion be carefully studied, understood, implemented and adhered to at all times.

F.1 GENERAL REQUIREMENTS

F.1.1 Mapping and Setting out

F.1.1.1 Layout Plan

- A copy of the layout plan as provided for in Regulation 2.2 must be available at the prospecting/mining site for scrutiny when required.
- The plan must be updated on a regular basis with regard to the actual progress of the establishment of surface infrastructure, mining operations and rehabilitation (a copy of the updated plan shall be forwarded to the Regional Manager on a regular basis).
- A final layout plan must be submitted at closure of the mine or when operations have ceased.

NOTE: Regulation 2.2 of the regulations promulgated in terms of the Act requires:

"An application contemplated in sub-regulation (1) must be accompanied by a plan that must contain -

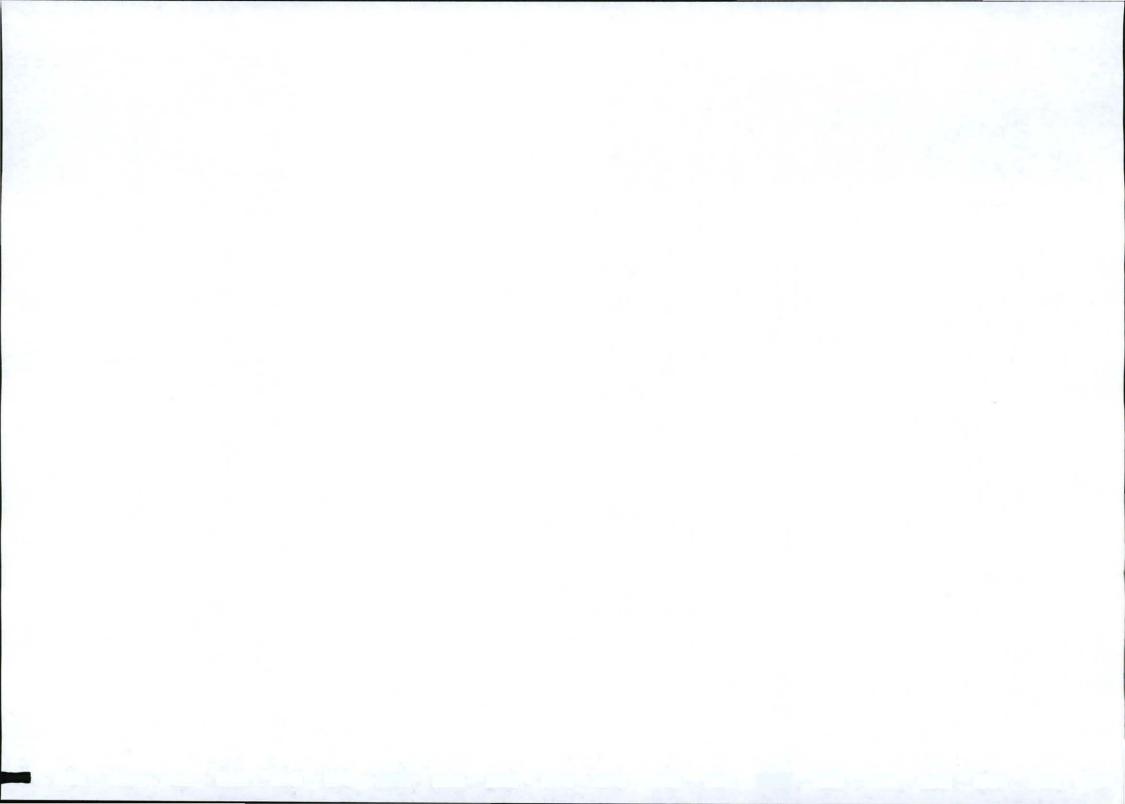
- (a) the co-ordinates of the land or area applied for;
- (b) the north point;
- (c) the scale to which the plan has been drawn;
- (d) the name, number and location of the land or area covered by the application; and
- (e) in relation to farm boundaries and surveyed points-
 - (i) the size and shape of the proposed area;
 - (ii) the boundaries of the land or area comprising the subject of the application concerned;
 - (iii) the layout of the proposed reconnaissance, prospecting, exploration, mining or production operations;
 - (iv) surface structures and servitudes;
 - (v) the topography of the land or area; "

F.1.1.2 Demarcating the prospecting area

- The mining/ prospecting area must be clearly demarcated by means of beacons at its corners, and along its boundaries if one corner beacon cannot be seen from the next.
- Permanent beacons as indicated on the layout plan or as prescribed by the Regional Manager must be firmly erected and maintained in their correct position throughout the life of the operation.
- Mining/ prospecting and resultant operations shall only take place within this demarcated area.

F.1.1.3 Demarcating the river channel and riverine environment

The following is applicable if operations are conducted within the riverine environment (See F 3.2):



- Beacons as indicated on the layout plan or as prescribed by the Regional Manager must be erected and maintained in their correct position throughout the life of the operation.
- These beacons must be of a permanent nature during the operations and must not be easily removable, especially those in a river channel. The beacons must, however, be removed at the end of the operations.
- The mining of and prospecting for any mineral shall only take place within this demarcated mining area.
- If riverine vegetation is present in the form of reeds or wetland vegetation, the presence of these areas must be entered in Part C 1.45 of the EMPlan and indicated on the layout plan.

F.1.2 Restrictions on mining or prospecting

- On assessment of the application, the Regional Manager may prohibit the conducting of mining or prospecting operations in vegetated areas or over portions of these areas.
- In the case of areas that are excluded from mining or prospecting, no operations shall be conducted within 5 m of these areas.

F.1.3 Responsibility

- The environment affected by the mining/ prospecting operations shall be rehabilitated by the holder, as far as is practicable, to its natural state or to a predetermined and agreed to standard or land use which conforms with the concept of sustainable development. The affected environment shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof.
- It is the responsibility of the holder of the mining permit/prospecting right to ensure that the manager on the site and the employees are capable of complying with all the statutory requirements, which must be met in order to mine, which includes the implementation of this EMP.
- If operations are to be conducted in an area that has already been disturbed, the holder must reach specific agreement with the Regional Manager concerning the responsibilities imposed upon himself/herself pertaining to the rehabilitation of the area and the pollution control measures to be implemented.

F.2 INFRASTRUCTURAL REQUIREMENTS

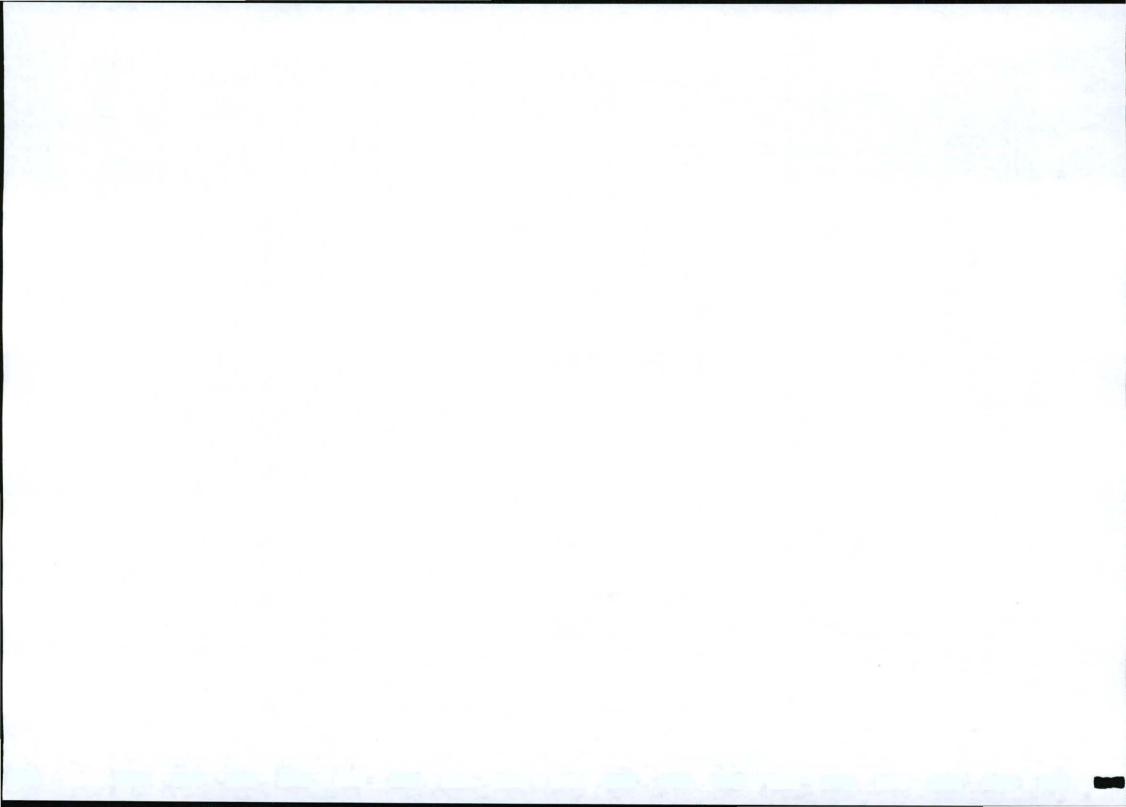
F.2.1 Topsoil

- Topsoil shall be removed from all areas where physical disturbance of the surface will occur.
- All available topsoil shall be removed after consultation with the Regional Manager prior to the commencement of any operations.
- The topsoil shall be stored in a bund wall on the high ground side of the mining/prospecting area outside the 1:50 year flood level within the boundaries of the mining/prospecting area.
- Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of access roads.
- The topsoil stored in the bund wall shall be adequately protected from being blown away or being eroded.

F.2.2 Access to the site

F.2.2.1 Establishing access roads on the site

The access road to the mining/prospecting area and the campsite or site office must be established in consultation with the landowner/tenant and existing roads shall be used as far as practicable.



- Should a portion of the access road be newly constructed the following must be adhered to:
 - The route shall be selected so that a minimum number of bushes or trees are felled and existing fence lines shall be followed as far as possible.
 - ♥ Watercourses and steep gradients shall be avoided as far as is practicable.
 - Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary.
- If imported material is used in the construction or upgrading of the access road this must be listed in C 2.17
- The erection of gates in fence lines and the open or closed status of gates in new and existing positions shall be clarified in consultation with the landowner/tenant and maintained throughout the operational period.
- No other routes will be used by vehicles or personnel for the purpose of gaining access to the site.

NOTE: The design, construction and location of access to provincial roads must be in accordance with the requirements laid down by the Provincial or controlling authority.

F.2.2.2 Maintenance of access roads

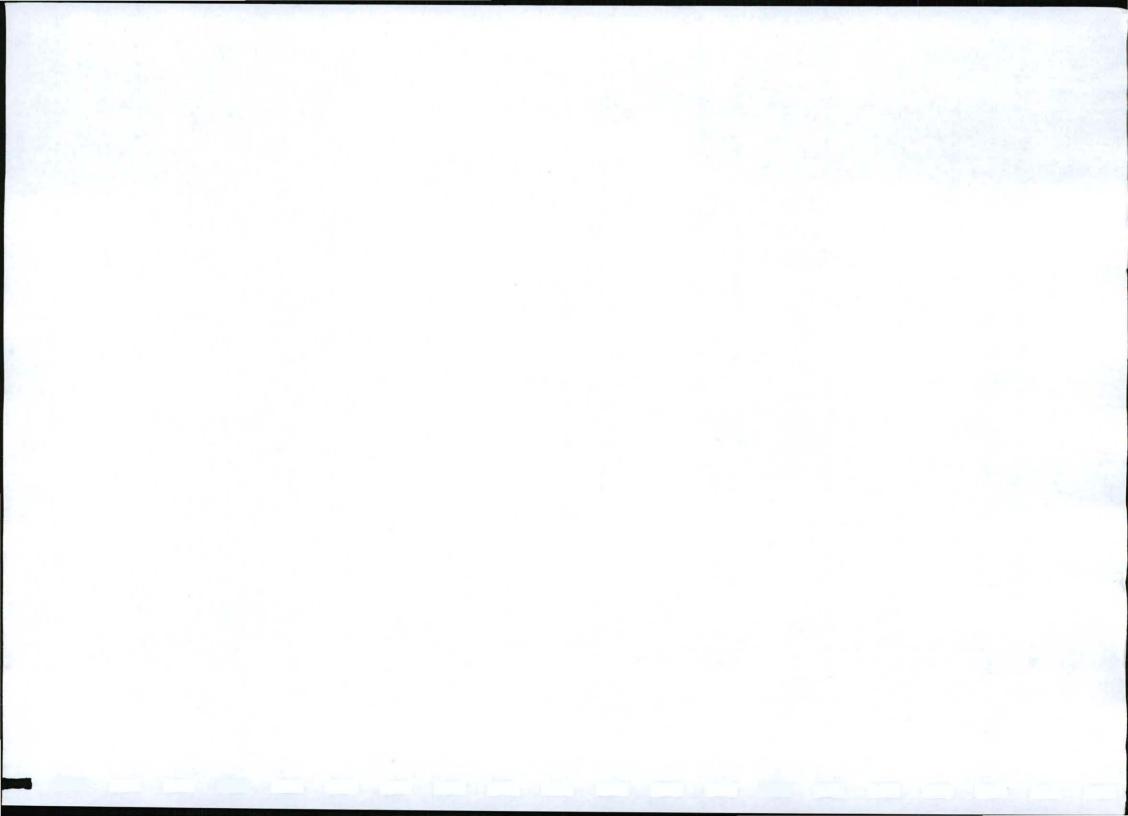
- In the case of dual or multiple uses of access roads by other users, arrangements for multiple responsibilities must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the mining permit/prospecting right.
- Newly constructed access roads shall be adequately maintained so as to minimize dust, erosion or undue surface damage.

F.2.2.3 Dust control on the access and haul roads

The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alias, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.

F.2.2.4 Rehabilitation of access roads

- Whenever a mining permit/ prospecting right is suspended, cancelled or abandoned or if it lapses and the holder does not wish to renew the permit or right, any access road or portions thereof, constructed by the holder and which will no longer be required by the landowner/tenant, shall be removed and/or rehabilitated to the satisfaction of the Regional Manager.
- Any gate or fence erected by the holder which is not required by the landowner/tenant, shall be removed and the infrastructure restored to the pre- prospecting condition.
- Roads shall be ripped or ploughed, and if necessary, appropriately fertilized (based on a soil analysis) to ensure the growth of vegetation. Imported road construction materials, which may hamper re-growth of vegetation, must be removed and disposed of in an approved manner prior to rehabilitation.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analyzed and any deleterious effects to the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to the Regional Manager's specification.



F.2.3 Office/Camp Sites

F.2.3.1 Establishing office / camp sites

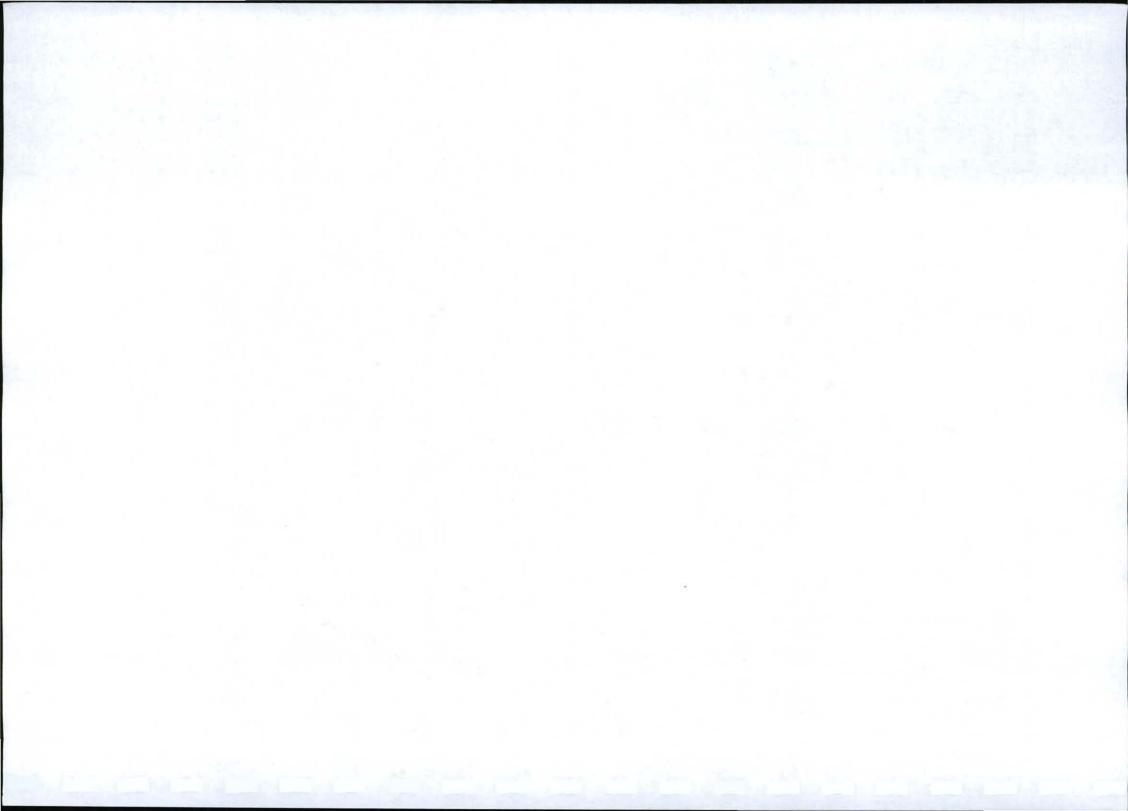
- Office and campsites shall be established, as far as is practicable, outside the flood plain, above the 1 in 50 year flood level mark within the boundaries of the mining/prospecting area.
- The area chosen for these purposes shall be the minimum reasonably required and which will involve the least disturbance to vegetation. Topsoil shall be handled as described in F 2.1 above.
- No camp or office site shall be located any closer than 100 meters from a stream, river, spring, dam or pan.
- No trees or shrubs will be felled or damaged for the purpose of obtaining firewood, unless agreed to by the landowner/tenant.
- Fires will only be allowed in facilities or equipment specially constructed for this purpose. If required by applicable legislation, a firebreak shall be cleared around the perimeter of the camp and office sites.
- Lighting and noise disturbance or any other form of disturbance that may have an effect on the landowner/tenant/persons lawfully living in the vicinity shall be kept to a minimum.

F.2.3.2 Toilet facilities, waste water and refuse disposal

- As a minimum requirement, the holder of a mining permit/ prospecting right shall, at least, provide pit latrines for employees and proper hygiene measures shall be established.
- Chemical toilet facilities or other approved toilet facilities such as a septic drain shall preferably be used and sited on the campsite in such a way that they do not cause water or other pollution.
- The use of existing facilities must take place in consultation with the landowner/tenant.
- In cases where facilities are linked to existing sewerage structures, all necessary regulatory requirements concerning construction and maintenance should be adhered to.
- All effluent water from the camp washing facility shall be disposed of in a properly constructed French drain, situated as far as possible, but not less than 200 meters, from any stream, river, pan, dam or borehole.
- Only domestic type water shall be allowed to enter this drain and any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.
- Spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognized facility.
- Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., shall be stored in a container at a collecting point and collected on a regular basis and disposed of at a recognized disposal facility. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the campsite.
- Biodegradable refuse generated from the office/camp site, processing areas, vehicle yard, storage area or any other area shall either be handled as indicated above or be buried in a pit excavated for that purpose and covered with layers of soil, incorporating a final 0,5 meter thick layer of topsoil (where practicable). Provision should be made for future subsidence of the covering.

F.2.3.3 Rehabilitation of the office/camp site

- On completion of operations, all buildings, structures or objects on the camp/office site shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), which states:
 - (1) When a prospecting right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any prospecting or mining operation comes to an end, the holder of any such right or permit may not demolish or remove any building, structure, object -



- (a) which may not be demolished in terms of any other law;
- (b) which has been identified in writing by the Minister for purposes of this section; or
- (c) which is to be retained in terms of an agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Minister in writing.
- (2) The provision of subsection (1) does not apply to bona fide mining equipment, which may be removed
- Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
- Areas containing French drains shall be compacted and covered with a final layer of topsoil to a height of 10cm above the surrounding ground surface.
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analyzed and any deleterious effects to the soil arising from the mining/prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.
- Photographs of the camp and office sites, before and during the mining/ prospecting operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the Regional Manager.

F.2.4 Vehicle maintenance yard and secured storage areas

F.2.4.1 Establishing the vehicle maintenance yard and secured storage areas

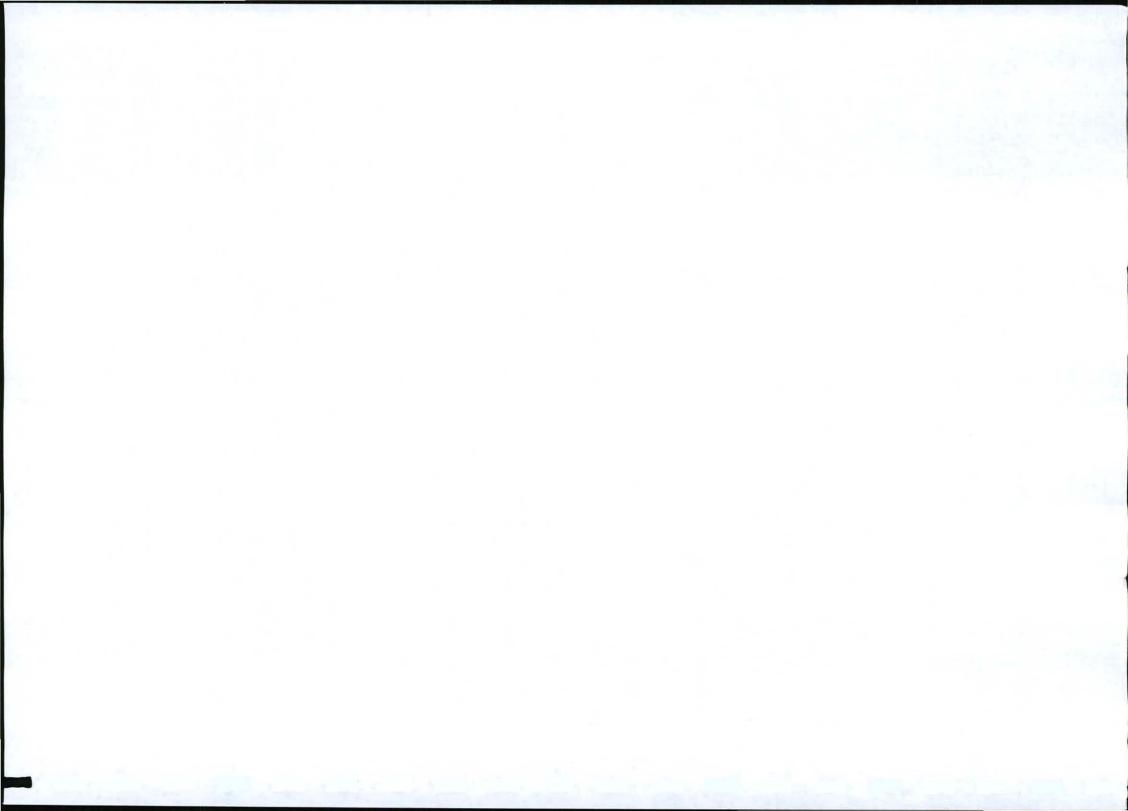
- The vehicle maintenance yard and secured storage area will be established as far as is practicable, outside the flood plain, above the 1 in 50 year flood level mark within the boundaries of the mining/prospecting area.
- The area chosen for these purposes shall be the minimum reasonably required and involve the least disturbance to tree and plant life. Topsoil shall be handled as described in F 2.1 above.
- The storage area shall be securely fenced and all hazardous substances and stocks such as diesel, oils, detergents, etc., shall be stored therein. Drip pans, a thin concrete slab or a facility with PVC lining, shall be installed in such storage areas with a view to prevent soil and water pollution from hydrocarbons.
- The location of both the vehicle maintenance yard and the storage areas are to be indicated on the layout plan.
- No vehicle may be extensively repaired in any place other than in the maintenance yard.

F.2.4.2 Maintenance of vehicles and equipment

- The maintenance of vehicles and equipment used for any purpose during the mining/prospecting operation will take place only in the maintenance yard area.
- Equipment used in the mining/prospecting process must be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.
- Machinery or equipment used on the mining/prospecting area must not constitute a pollution hazard in respect of the above substances. The Regional Manager shall order such equipment to be repaired or withdrawn from use if he or she considers the equipment or machinery to be polluting and irreparable.

F.2.4.3 Waste disposal

- Suitable covered receptacles shall be available at all times and conveniently placed for the disposal of waste.
- All used oils, grease or hydraulic fluids shall be placed therein and these receptacles will be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.



All spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognized facility.

F.2.4.4 Rehabilitation of vehicle maintenance yard and secured storage areas

- On completion of mining/prospecting operations, the above areas shall be cleared of any contaminated soil, which must be disposed of as referred to in section F 2.4.3 above.
- All buildings, structures or objects in the vehicle maintenance yard and secured storage areas shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002.
- The surface shall then be ripped or ploughed to a depth of at least 300mm and the topsoil previously stored adjacent the site, shall be spread evenly to its original depth over the whole area. The area shall then be fertilized if necessary (based on a soil analysis).
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analyzed and any deleterious effects to the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

F.3 OPERATING PROCEDURES IN THE MINING AREA

F.3.1 Limitations on mining/prospecting

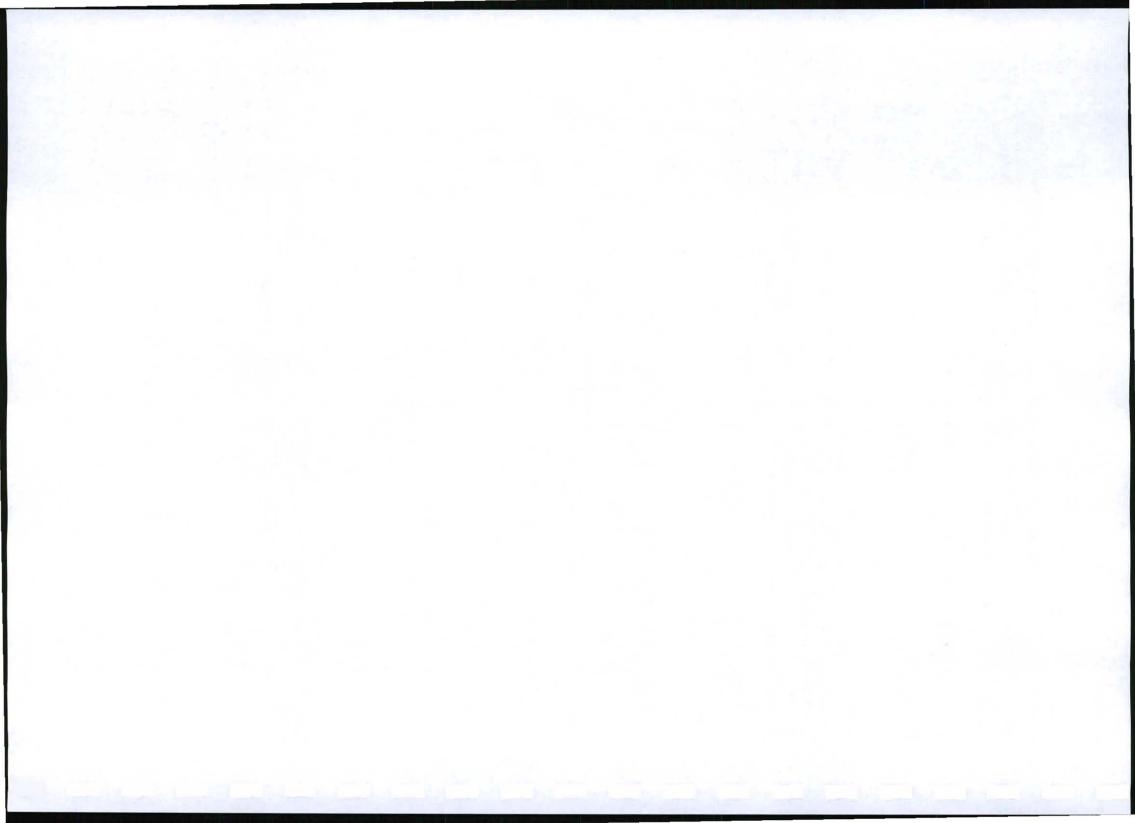
- The mining of or prospecting for precious stones shall take place only within the approved demarcated mining or prospecting area.
- Mining/prospecting may be limited to the areas indicated by the Regional Manager on assessment of the application.
- The holder of the mining permit/ prospecting right shall ensure that operations take place only in the demarcated areas as described in section F 1.1.2 above.
- Operations will not be conducted closer than one and a half times the height of the bank from the edge of the river channel and in such manner that the stability of the bank of the river is affected.
- Precautions shall also be taken to ensure that the bank of the river is adequately protected from scouring or erosion. Damage to the bank of the river caused by the operations, shall be rehabilitated to a condition acceptable to the Regional Manager at the expense of the holder.
- Restrictions on the disturbance of riverine vegetation in the form of reeds or wetland vegetation must be adhered to. The presence of these areas must be entered in Part of the programme and indicated on the layout plan.

F.3.2 Mining/prospecting operations within the riverine environment

NOTE: The Department of Water Affairs and Forestry may impose additional conditions, which must be attached to this EMP. In this regard, please see the Best Practice Guideline for small-scale mining developed by DWAF (BPG 2.1)

(Available from http://www.dwaf.gov.za)

The mining of or prospecting for precious stones in the river or the banks of the river will be undertaken only after the Regional Manager has consulted with the Department of Water Affairs and Forestry.



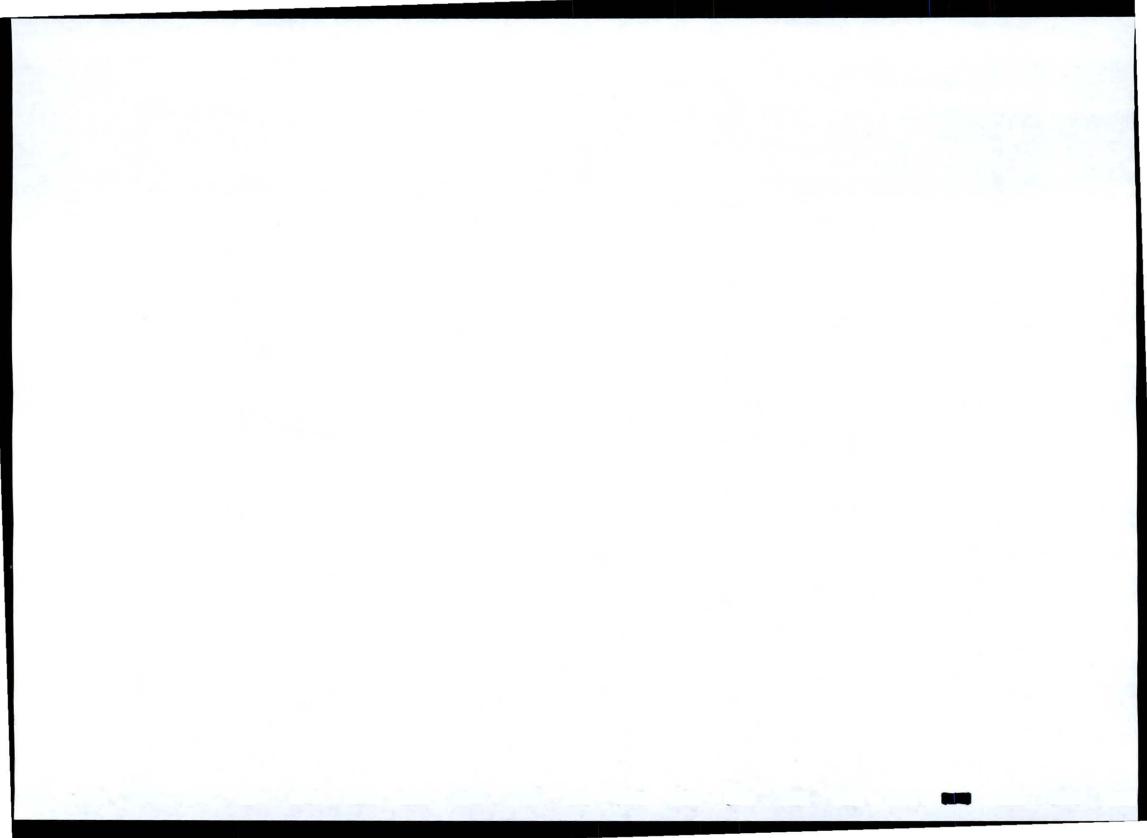
- The canalisation of a river will not be undertaken unless the necessary permission has been obtained from the Department of Water Affairs and Forestry. Over and above the conditions imposed by the said Department, which conditions shall form part of this EMPlan, the following will also apply:
 - Solution The canalisation of the flow of the river over different parts of the river bed shall be constructed in such a manner that the following are adhered to at all times:
 - The flow of the river may not be impeded in any way and damming upstream may not occur.
 - The canalisation of the flow may not result in scouring or erosion of the river-bank.
 - Well points or extraction pumps in use by other riparian users may not be interfered with and canalisation may not impede the extraction of water at these points.
 - Access to the riverbed for the purpose of conducting excavations in the riverbed, shall be through the use of only one access at a time. The location of the access to the river channel across the riverbank shall be at a point of the riverbank where the least excavation and damage to vegetation will occur and shall not be wider than is reasonably required. The position of the river access together with all planned future access points must be indicated on the layout plan.

F.3.2.1 Rehabilitation of access to riverbed

- When rehabilitating the access point, the original profile of the river-bank will be re-established by backfilling the access point with the original material excavated or other suitable material.
- The topsoil shall then be returned over the whole area to its original depth and if necessary fertilised and the vegetation allowed to grow.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects to the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.
- In the event of damage from an occurrence where high flood waters scour and erode access points in the process of rehabilitation over the river-bank or an access point currently in use, repair of such damage shall be the sole responsibility of the holder of the mining permit or prospecting right.
- Repair to the riverbank to reinstate its original profile to the satisfaction of the Regional Manager must take place immediately after such event has occurred and the river has subsided to a point where repairs can be undertaken.
- Final acceptance of rehabilitated river access points will be awarded only after the vegetation has reestablished to a point where the Regional Manager is satisfied that the river-bank is stable and that the measures installed are of durable nature and able to withstand high river-flow conditions.

F.3.2.2 Rehabilitation of mining/prospecting area in the bed of the river

- The goal of rehabilitation with respect to the area where mining/prospecting has taken place in the river-bed is to leave the area level and even, and in a natural state containing no foreign debris or other materials and to ensure the hydrological integrity of the river by not attenuating or diverting any of the natural flow.
- All scrap and other foreign materials will be removed from the bed of the river and disposed of as in the case of other refuse (see section F 2.3.2 above), whether these accrue directly from the mining/prospecting operation or are washed on to the site from upstream.
- Removal of these materials shall be done on a continuous basis and not only at the start of rehabilitation.
- Where reeds or other riverine vegetation have been removed from areas, these shall be re-established systematically in the approximate areas where they occurred before mining/prospecting.



An effective control programme for the eradication of invader species and other exotic plants shall be instituted on a regular basis over the entire mining/prospecting area under the control of the holder of the mining permit/ prospecting right, both during mining/prospecting and at the stage of final rehabilitation.

F.3.3 Excavation

F.3.3.1 Establishing the excavation areas

- Whenever any excavation is undertaken for the purpose of locating and/or extracting ore bodies of all types of minerals, including precious stone-bearing gravels, the following operating procedures shall be adhered to:
 - Topsoil shall, in all cases (except when excavations are made in the river-bed), be handled as described in F 2.1 above.
 - Section Shall take place only within the approved demarcated mining/prospecting area.
 - Overburden rocks and coarse material shall be placed concurrently in the excavations or stored adjacent to the excavation, if practicable, to be used as backfill material once the ore or gravel has been excavated.
 - Strenches shall be backfilled immediately if no ore or precious stone-bearing gravel can be located.

F.3.3.2 Rehabilitation of excavation areas

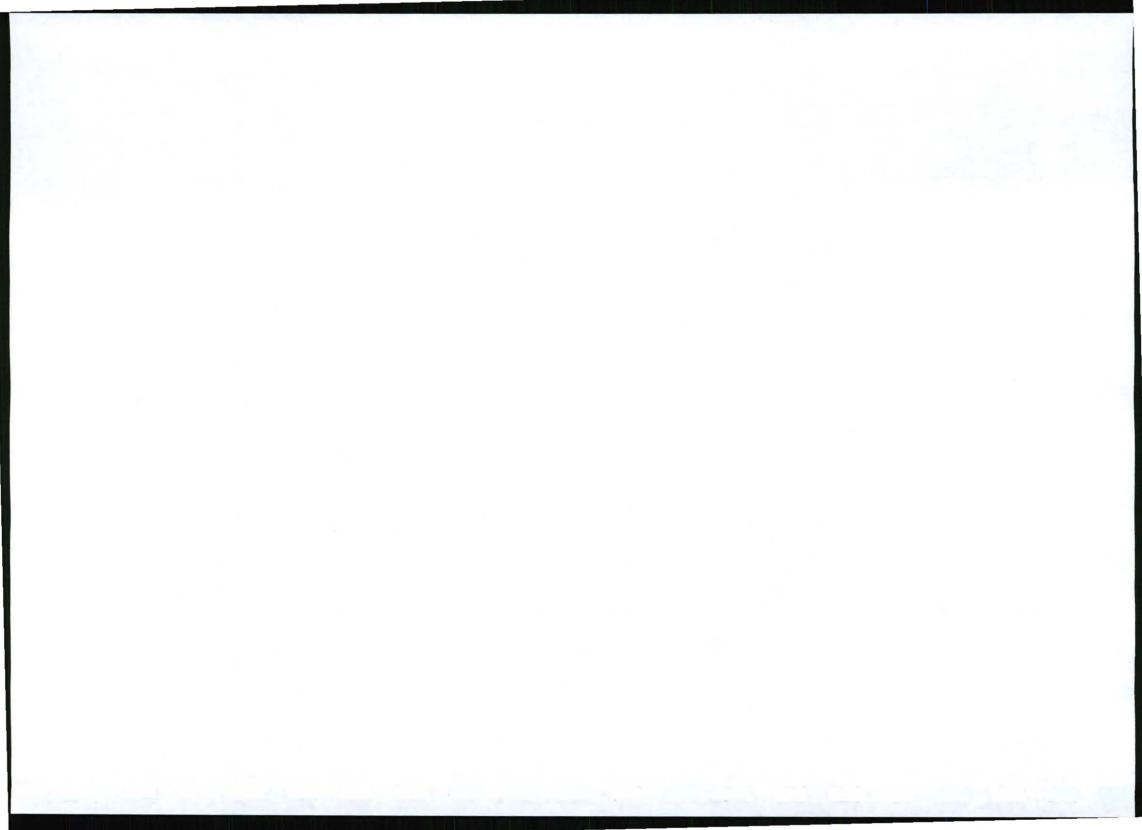
The following operating procedures shall be adhered to:

- The excavated area must serve as a final depositing area for the placement of tailings during processing.
- Rocks and coarse material removed from the excavation must be dumped into the excavation simultaneously with the tailings.
- Waste, as described in paragraph F 2.3.2 above, will not be permitted to be deposited in the excavations.
- Once excavations have been refilled with overburden, rocks and coarse natural materials and profiled with acceptable contours and erosion control measures, the topsoil previously stored, shall be returned to its original depth over the area.
- The area shall be fertilised if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects to the soil arising from the mining/prospecting operation, be corrected and the area be seeded with a vegetation seed mix to his or her specification.

F.3.4 Processing areas and waste piles (Dumps)

F.3.4.1 Establishing processing areas and waste piles

- Processing areas and waste piles shall not be established within 100 metres of the edge of any river channel or other water bodies.
- Processing areas should be established, as far as practicable, near the edge of excavations to allow the waste, gravel and coarse material to be processed therein.
- The areas chosen for this purpose shall be the minimum reasonably required and involve the least disturbance to vegetation.
- Prior to development of these areas, the topsoil shall be removed and stored as described in paragraph F 2.1 above.



- The location and dimensions of the areas are to be indicated on the layout plan and once established, the processing of ore containing precious stones shall be confined to these areas and no stockpiling or processing will be permitted on areas not correctly prepared.
- Tailings from the extraction process must be so treated and/or deposited that it will in no way prevent or delay the rehabilitation process.

F.3.4.2 Rehabilitation of processing areas

- Coarse natural material used for the construction of ramps must be removed and dumped into the excavations.
- On completion of mining/prospecting operations, the surface of the processing areas especially if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 300mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.
- Prior to replacing the topsoil the material that was removed from the processing area will be replaced in the same order as it originally occurred.
- The area shall then be fertilised if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects to the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

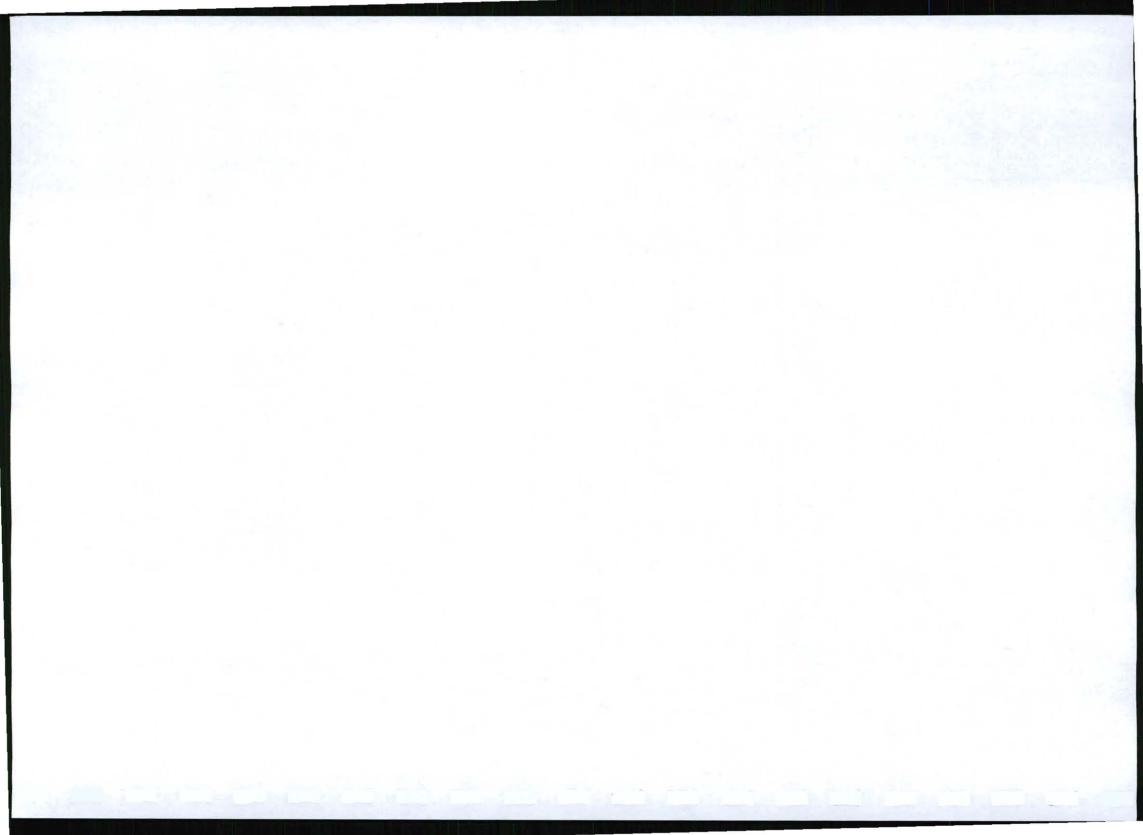
F.3.5 Tailings dam(s) (slimes dam)

The permission of the Regional Manager must be obtained should a tailings dam be constructed for the purpose of handling the tailings of the mining/prospecting operations. The construction, care and maintenance of tailings dams have been regulated and the relevant regulation is copied herewith, both for your information and as a guideline to the commissioning, management, operation, closing and aftercare of a tailings deposition facility.

Regulation 73 promulgated under the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) requires the following:

Management of residue stockpiles and deposits

- 56. (1) The assessment of impacts relating to the management of residue stockpiles and deposits, where appropriate, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan.
 - (2) Residue characterisation
 - (a) Mine residue must be characterised to identify any potentially significant health and safety hazard and environmental impact that may be associated with the residue when stockpiled or deposited at the site(s) under consideration.
 - (b) Residue stockpiles and deposits must be characterised in terms of its
 - i) physical characteristics, which may include -
 - (aa) the size distribution of the principal constituents;
 - (bb) the permeability of the compacted material;
 - (cc) void ratios of the compacted material;
 - (dd) the consolidation or settling characteristics of the material under its own weight and that of any overburden;
 - (ee) the strength of compacted material;
 - (ff) the specific gravity of the solid constituents; and
 - (gg) the water content of the material at the time of deposition, after compaction, and at other phases in the life of the deposit.



- (ii) chemical characteristics, which may include -
 - (aa) the toxicity;
 - (bb) the propensity to oxidize and /or decompose;
 - (cc) the propensity to undergo spontaneous combustion;
 - (dd) the pH and chemical composition of the water separated from the solids;
 - (ee) stability and reactivity and the rate thereof; and
 - (ff) neutralising potential.
- (iii) mineral content, which include the specific gravity of the residue particles and its impact on particle segregation and consolidation;
- (3) Classification of residue stockpiles and deposits
 - (a) All residue stockpiles and deposits must be classified into one or a combination of the following categories -
 - the safety classification to differentiate between residue stockpiles and deposits of high, medium and low hazard on the basis of their potential to cause harm to life or property; and
 - (ii) the environmental classification to differentiate between residue stockpiles and deposits with -
 - (aa) a potentially significant impact on the environment due to its spatial extent, duration and intensity of potential impacts; or
 - (bb) no potentially significant impact on the environment.
 - (b) All mine residue stockpiles and a suitably qualified person(s) must classify deposits.
 - (c) The classification of residue stockpiles and deposits shall determine the -
 - (i) level of investigation and assessment required;
 - (ii) requirements for design, construction, operation, decommissioning, closure and post closure maintenance; and
 - (iii) qualifications and expertise required of persons undertaking the investigations, assessments, design, construction thereof.
 - (d) The safety classification of residue stockpiles and deposits shall be based on the following criteria -

	Number of workers in zone of influence	Value of third party propert in zone of influence		Classiication
0	< 10	0 – R2 m	> 200m	Low hazard
1-10	11 - 100	R 2 m – R20 m	50 m - 200 m	Medium hazard
> 10	> 100	> R20 m	< 50 m	High hazard

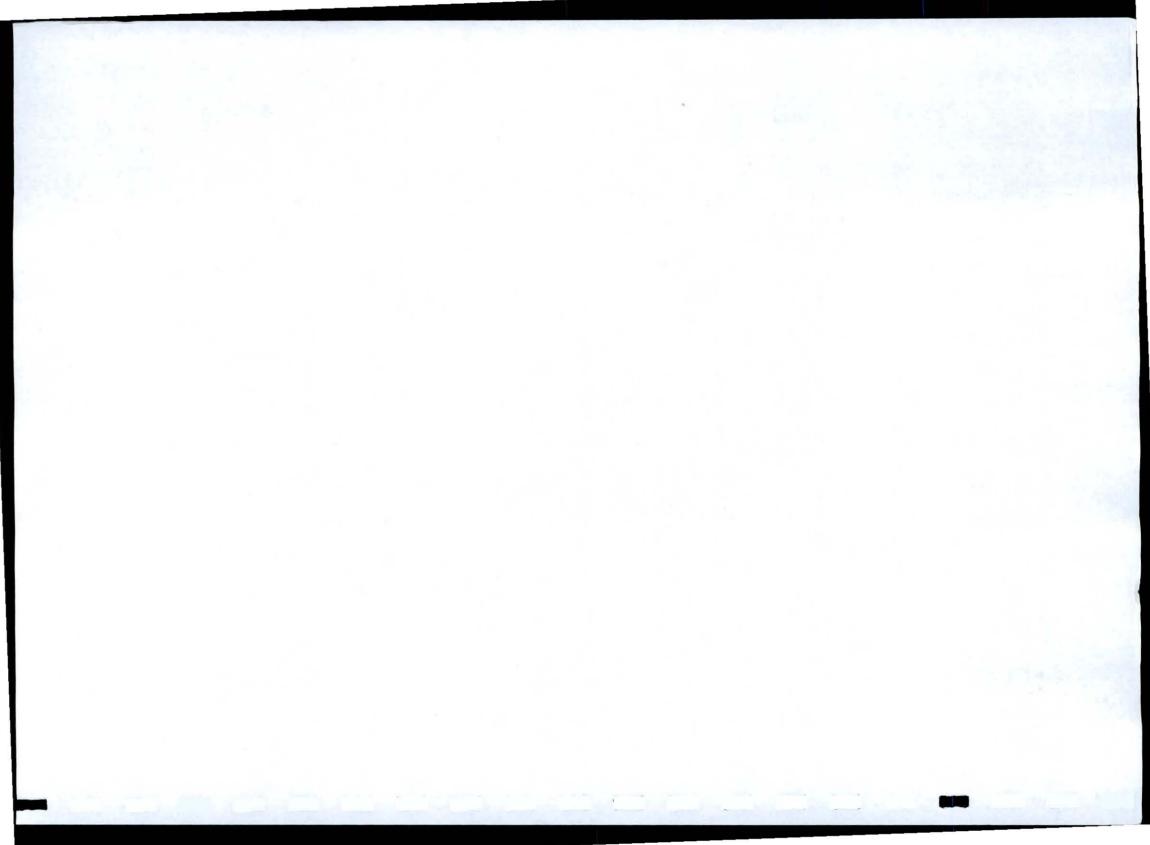
(e) A risk analysis must be carried out and documented on all high hazard residue stockpiles and deposits.

(f) The environmental classification of residue stockpiles and deposits must be undertaken on the basis of –
 (i) the characteritics of the residue;

- (ii) the location and dimensions of the deposit (height, surface area);
- (iii) the importance and vulnerability of the environmental components that are at risk; and
- (iv) the spatial extent, duration and intensity of potential impacts.
- (g) An assessment of the environmental impacts shall be done on all environmental components which are significantly affected.
- (h) The assessment of impacts and analyses of risks shall form part of the environmental assessment and management programme.
- (4) Site selection and investigation:

(a)

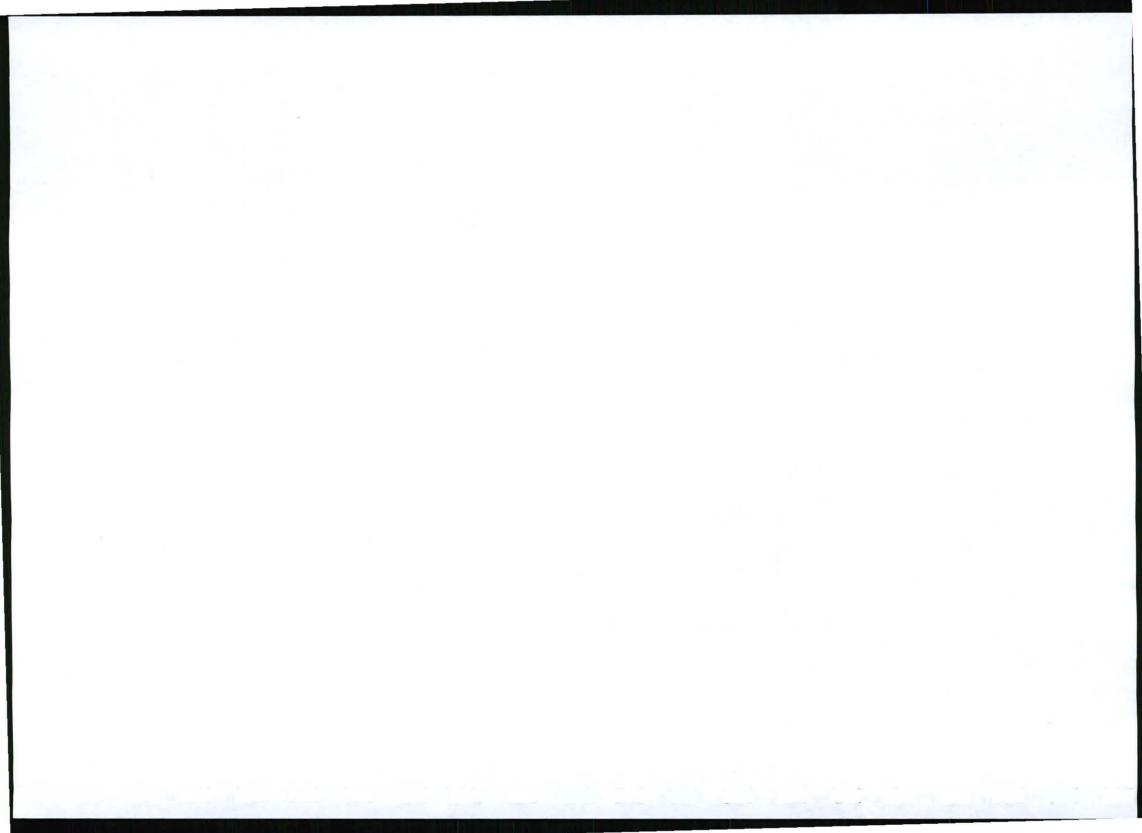
- The process of investigation and selection of a site must entail -
 - the identification of a sufficient number of possible candidate sites to ensure adequate consideration of alternative sites;



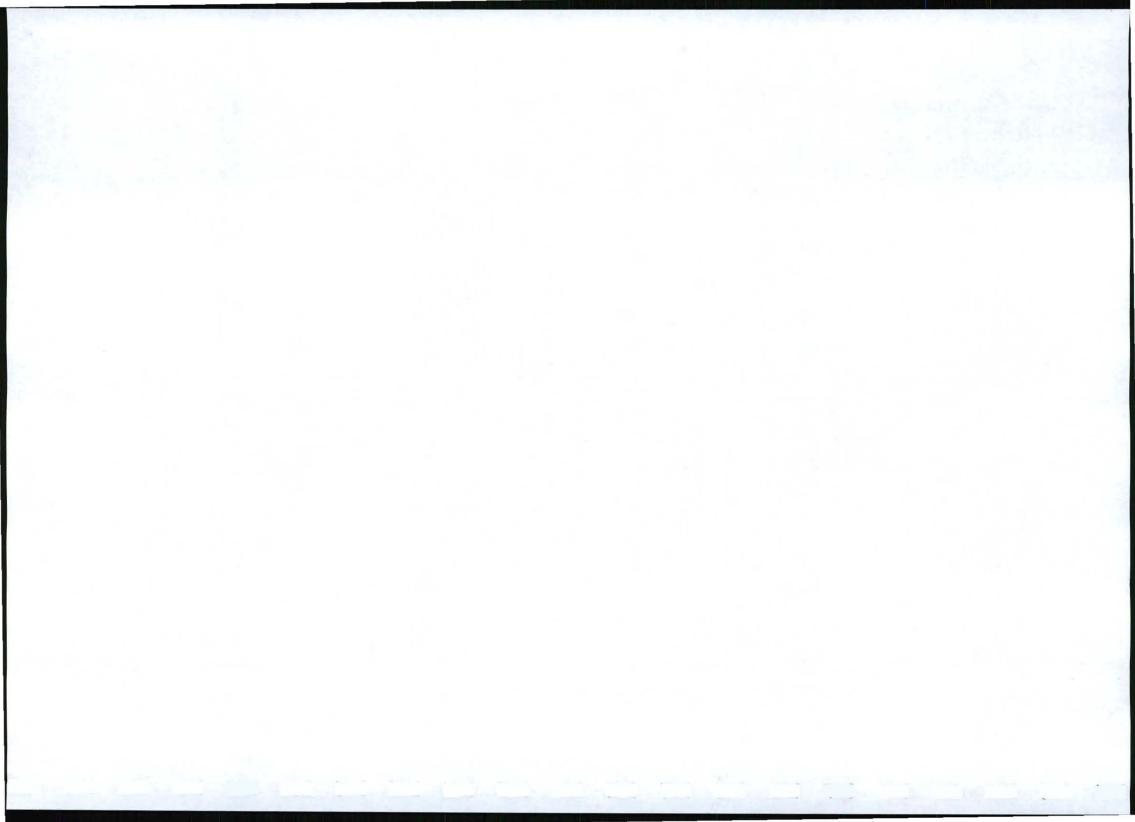
- (ii) qualitative evaluation and ranking of all alternative sites;
- (iii) qualitative investigation of the top ranking sites to review the ranking done in (ii);
- (iv) a feasibility study to be carried out on the highest ranking site(s), involving -
 - (aa) a preliminary safety classification;
 - (bb) an environmental classification;
 - (cc) geotechnical investigations; and
 - (dd) groundwater investigations.
- (b) The geotechnical investigations may include-
 - (i) the characterization of the soil profile over the entire area to be covered by the residue facility and associated infrastructure to define the spatial extent and depth of the different soil horizons;
 - (ii) the characterization of the relevant engineering properties of foundations soils and the assessment of strength and drainage characteristics.

(c) The groundwater investigations may include-

- (i) the potential rate of seepage from the residue facility;
- (ii) the quality of such seepage;
- (iii) the geohydrological properties of the strata within the zone that could potentially be affected by the quality of seepage;
- (iv) the vulnerability and existing potential use of the groundwater resource within the zone that could potentially be affected by the residue facility.
- (d) From these investigations, a preferred site must be identified.
- (e) Further investigation on the preferred site, shall include -
 - (i) land use;
 - (ii) topography and surface drainage;
 - (iii) infrastructure and man-made features;
 - (iv) climate;
 - (v) flora and fauna;
 - (vi) soils;
 - (vii) ground water morphology, flow, quality and usage; and
 - (viii) surface water.
- (f) The investigations, laboratory test work, interpretation of data and recommendations for the identification and selection of the most appropriate and suitable site for the disposal of all residue that have the potential to generate leachate that could have a significant impact on the environment and groundwater must be carried out by a suitably qualified person.
- (5) Design of residue stockpile and deposit
 - (a) The design of the residue stockpile and deposit shall be undertaken by a suitably qualified person.
 - (b) An assessment of the typical soil profile on the site is required for residue stockpiles and deposits which -
 - (i) have a low hazard potential; and
 - (ii) have no significant impact on the environment.
 - (c) The design of the residue stockpile and deposit must take into account all phases of the life cycle of the stockpile and deposit, from construction through to closure and must include –
 - (i) the characteristics of the mine residue;
 - (ii) the characteristics of the site and the receiving environment;
 - (iii) the general layout of the stockpile or deposit, whether it is a natural valley, ring dyke, impoundment or a combination thereof and its 3-dimensional geometry at appropriate intervals throughout the planned incremental growth of the stockpile or deposit;
 - (iv) the type of deposition method used; and
 - (v) the rate of rise of the stockpile or deposit.
 - (d) Other design considerations, as appropriate to the particular type of stockpile and deposit must be incorporated –



- (i) the control of storm water on and around the residue stockpile or deposit by making provision for the maximum precipitation to be expected over a period of 24 hours with a frequency of once in a 100 years, in accordance with the regulations made under section 8 of the National Water Act, 1998;
- (ii) the provision, throughout the system, of a freeboard of at least 0.5 m above the expected maximum water level, in accordance with regulations made under the National Water Act, 1998, to prevent overtopping;
- (iii) keeping the pool away from the walls; where there are valid technical reasons for deviating from this, adequate motivation must be provided and the design must be reviewed by a qualified person as required in terms of sections 9(6) or 9(7) of the Mine Health and Safety Act, 1996;
- (iv) the control of decanting of excess water under normal and storm conditions;
 - (aa) the retention of polluted water in terms of polluted water in terms of GN R991(9), where measures may be required to prevent water from the residue deposit from leaving the residue management system unless it meets prescribed requirements;
 - (bb) the design of the penstock, outfall pipe, under-drainage system and return water dams;
 - (cc) the height of the phreatic surface, slope angles and method of construction of the outer walls and their effects on shear stability;
 - (dd) the erosion of slopes by wind and water, and its control by (ee)
 - vegetation, berms or catchment paddocks; and
 - (ee) the potential for pollution.
- (e) A design report and operating manual shall be drawn up for all residue stockpiles and deposits which
 - (i) have a medium to high hazard; and
 - (ii) have a potentially significant impact on the environment.
- (f) Relevant information must be included in the draft environmental management programme or environmental management plan.
- (6) Construction and operation of residue deposits:
 - (a) The holder of any right or permit in terms of the Act, must ensure that-
 - the residue deposits, including any surrounding catchment paddocks, is constructed and operated in accordance with the approved environmental management programme or environmental management plan;
 - (ii) the design of the residue deposit is followed implicitly throughout the construction thereof, and that any deviations from the design be approved by the Regional Manager and the environmental manage programme and environmental management plan be amended accordingly;
 - (iii) as part of the monitoring system, measurements of all residues transported to the site and of all surplus water removed from the site are recorded;
 - (iv) the provision for appropriate security measures be implemented to limit unauthorised access to the site and intrusion into the residue deposit;
 - (v) specific action be taken in respect of any sign of pollution;
 - (vi) adequate measures be implemented to control dust pollution and erosion of the slopes; and
 - (vii) details of rehabilitation of the residue deposit be provided in the draft environmental management programme or environmental management plan.
 - (b) A system of routine maintenance and repair in respect of the residue deposit must be implemented to ensure the ongoing control of pollution, the integrity of rehabilitation and health and safety maters at the site.
- (7) Monitoring of residue stockpiles and deposits:
 - (a) A monitoring system for residue stockpiles and deposits with respect to potentially significant impacts as identified in the environmental assessment must be included in the environmental management programme or environmental management plan.
 - (b) In the design of a monitoring system for a residue stockpile or deposit, consideration must be given to
 - (i) baseline and background conditions with regard to air, surface and groundwater quality;
 - (ii) the air, surface and groundwater quality objectives;
 - (iii) residue characteristics;
 - (iv) the degree and nature of residue containment;



- (v) the receiving environment and specifically the climatic, local geological, hydrogeological and geochemical conditions;
- (vi) potential migration pathways;
- (vii) potential impacts of leachate;
- (viii) the location of monitoring points and the prescribed monitoring protocols; and
- (ix) the reporting frequency and procedures.
- (8) Decommissioning, closure and after care:
 - (a) The decommissioning, closure and post closure management of residue deposits must be addressed in the closure plan, which must contain the following -
 - (i) the environmental classification, including assumptions on which the classification were based;
 - (ii) the closure objectives, final land use or capability;
 - (iii) conceptual descrption and details for closure and post closure management;
 - (iv) cost estimates and financial provision for closure and post-closure management; and
 - (v) residual impacts, monitoring and requirements to obtain mine closure in terms of the Act.

F.3.6 Final rehabilitation

- All infrastructure, equipment, plant, temporary housing and other items used during the mining period will be removed from the site (section 44 of the MPRDA)
- Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the mining area and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on the site.
- Final rehabilitation shall be completed within a period specified by the Regional Manager.

F.4 MONITORING AND REPORTING

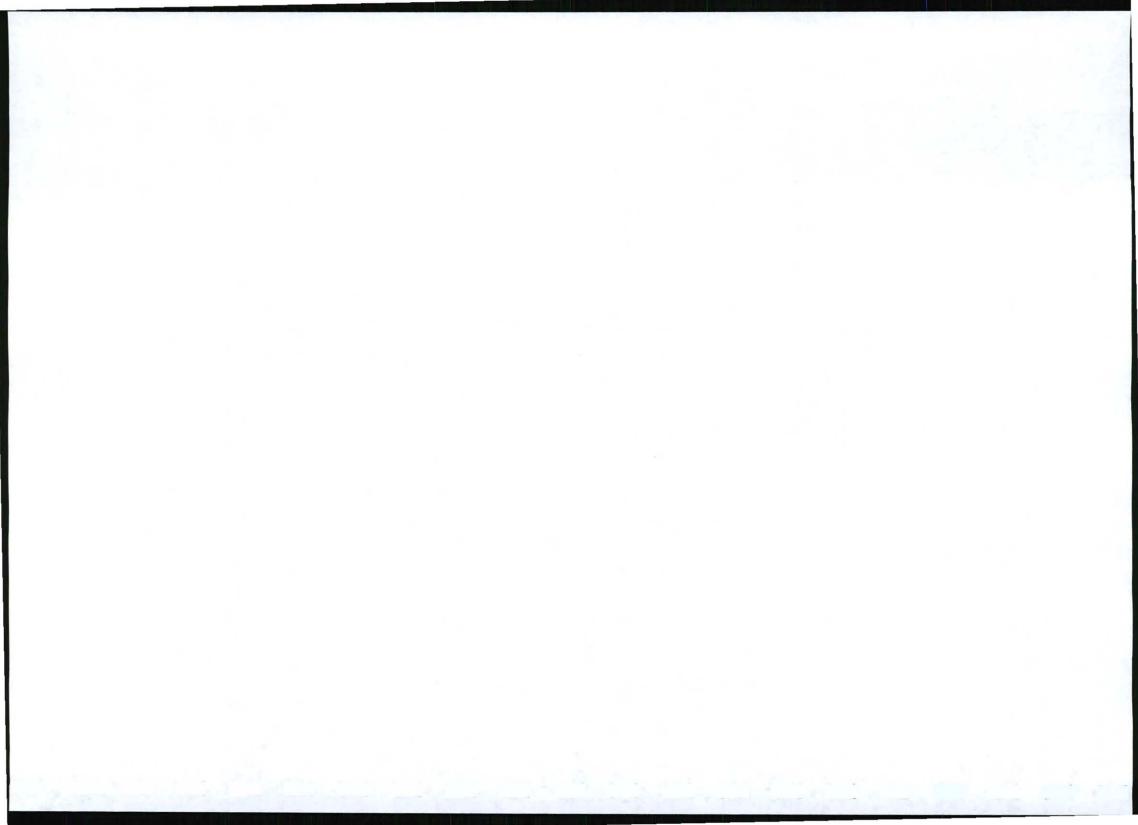
F.4.1 Inspections and monitoring

- Regular monitoring of all the environmental management measures and components shall be carried out by the holder of the prospecting right, mining permit or reconnaissance permission in order to ensure that the provisions of this programme are adhered to.
- Ongoing and regular reporting of the progress of implementation of this programme will be done.
- Various points of compliance will be identified with regard to the various impacts that the operations will have on the environment.
- Inspections and monitoring shall be carried out on both the implementation of the programme and the impact on plant and animal life.
- Visual inspections on erosion and physical pollution shall be carried out on a regular basis.

Regulation 55 promulgated in terms of the MPRDA requires the following:

Monitoring and performance assessments of environmental management programme or plan

- (1) As part of the general terms and conditions for a prospecting right, mining right or mining permit and in order to ensure compliance with the approved environmental management programme or plan and to assess the continued appropriateness and adequacy of the environmental management programme or plan, the holder of such right must-
 - (a) conduct monitoring on a continuous basis;
 - (b) conduct performance assessments of the environmental management programme or plan as required; and
 - (c) compile and submit a performance assessment report to the Minister to demonstrate adherence to sub-regulation (b).

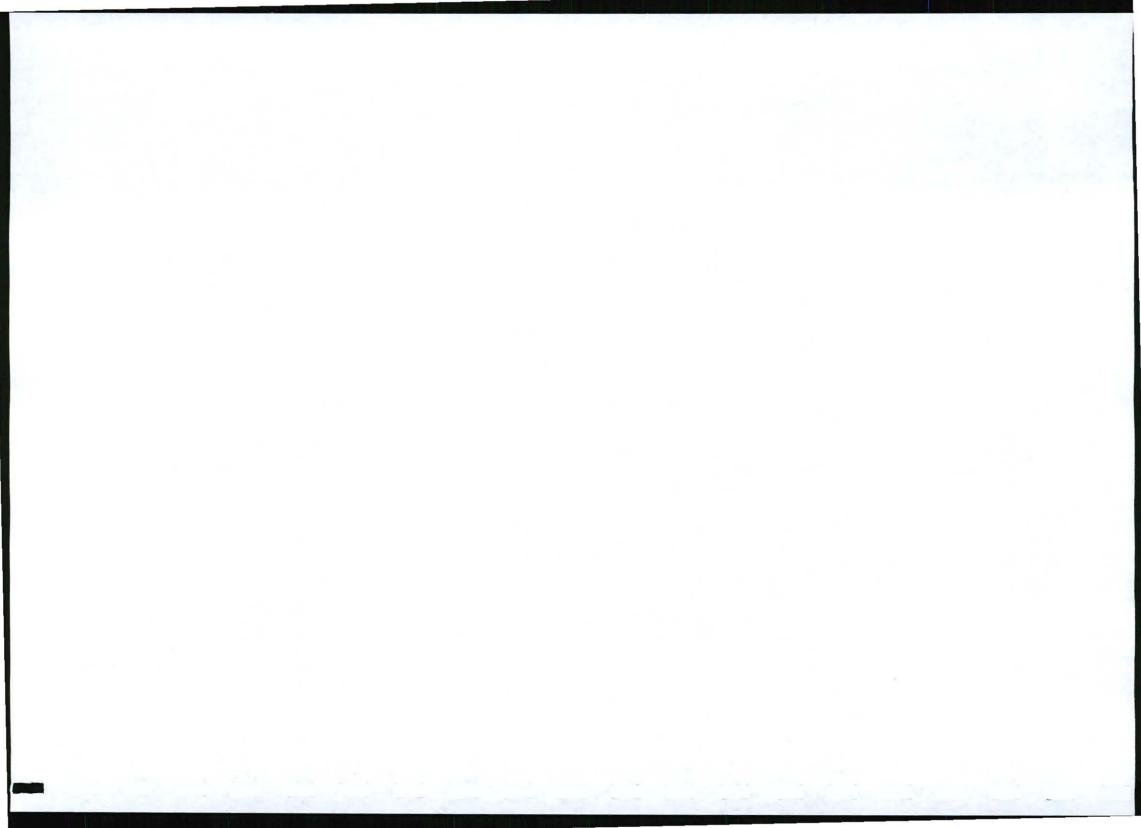


(2) The frequency of performance assessment reporting shall be-

- (a) in accordance with the period specified in the approved environmental management programme or plan, or, if not so specified;
- (b) as agreed to in writing by the Minister; or
- (c) Biennially (every two years).
- (3) The performance assessment report, shall be in the format provided in guidelines that will from time to time be published by the Department and shall as a minimum contain-
 - (a) information regarding the period that applies to the performance assessment;
 - (b) the scope of the assessment;
 - (c) the procedure used for the assessment;
 - (d) the interpreted information gained from monitoring the approved environmental management programme or plan;
 - (e) the evaluation criteria used during the assessment;
 - (f) the results of the assessment; and
 - (g) recommendations on how and when deficiencies that are identified and/or aspects of noncompliance will be rectified.
- (4) The holder of a prospecting right, mining right or mining permit may appoint an independent qualified person(s) to conduct the performance assessment and compile the performance assessment report provided that no such appointment shall relieve the holder of the responsibilities in terms of these regulations.
- (5) Subject to section 30(2) of the Act, the performance assessment report submitted by the holder shall be made available by the Minister to any person on request.
- (6) If upon consideration by the Minister, the performance assessment executed by the holder is not satisfactory or the report submitted by the holder is found to be unacceptable, the holder must-
 - (a) repeat the whole or relevant parts of the performance assessment and revise and resubmit the report; and/or
 - (b) submit relevant supporting information; and/or
 - (c) appoint an independent competent person(s) to conduct the whole or part of the performance assessment and to compile the report.
- (7) If a reasonable assessment indicates that the performance assessment cannot be executed satisfactorily by the holder or a competent person(s) appointed by the holder, the Minister may appoint an independent performance assessment person(s) to conduct such performance assessment. Such appointment and execution shall be for the cost of the holder.
- (8) When the holder of a prospecting right, mining right or mining permit intends closing such operation, a final performance assessment shall be conducted and a report submitted to the Minister to ensure that -
 - (a) the requirements of the relevant legislation have been complied with;
 - (b) the closure objectives as described in the environmental management programme or plan have been met; and
 - (c) all residual environmental impacts resulting from the holder's operations have been identified and the risks of latent impacts, which may occur, have been identified, quantified and arrangements for the management thereof have been assessed.
- (9) The final performance assessment report shall either precede or accompany the application for a closure certificate in terms of the Act.

F.4.2 Compliance reporting / submission of information

- Layout plans will be updated on a regular basis and updated copies will be submitted on a biennial basis to the Regional Manager
- Reports confirming compliance with various points identified in the environmental management programme will be submitted to the Regional Manager on a regular basis and as decided by the said manager.
- Any emergency or unforeseen impact will be reported as soon as possible.
- An assessment of environmental impacts that were not properly addressed or were unknown when the programme was compiled shall be carried out and added as a corrective action.



F.5 CLOSURE

When the holder of a prospecting right, mining permit or reconnaissance permission intends closing down his/her operations, an environmental risk report shall accompany the application for closure. The requirements of such a risk report is contained in Regulation 60 of the Regulations promulgated in terms of the Act and is quoted below:

F.5.1 Environmental risk report

• •

"An application for a closure certificate must be accompanied by an environmental risk report which must include-(a) the undertaking of a screening level environmental risk assessment where-

- (i) all possible environmental risks are identified, including those, which appear to be insignificant;
 - (ii) the process is based on the input from existing data;
 - (iii) the issues that are considered are qualitatively ranked as -
 - (aa) a potential significant risk; and/or
 - (bb) a uncertain risk; and/or
 - (cc) an insignificant risk.
- (b) the undertaking of a second level risk assessment on issues classified as potential significant risks where-
 - (i) appropriate sampling, data collection and monitoring be carried out;
 (ii) more realistic assumptions and actual measurements be made; and
 - (ii) more realistic assumptions and actual measurements be made, and
 (iii) a more quantitative risk assessment is undertaken, again classifying issues as posing a potential significant risk or insignificant risk.
- (c) assessing whether issues classified as posing potential significant risks are acceptable without further mitigation;
- (d) issues classified as uncertain risks be re-evaluated and re-classified as either posing potential significant risks or insignificant risks;
- (e) documenting the status of insignificant risks and agree with interested and affected persons;
- (f) identifying alternative risk prevention or management strategies for potential significant risks which have been identified, quantified and qualified in the second level risk assessment;
- (g) agreeing on management measures to be implemented for the potential significant risks which must include (i) a description of the management measures to be applied;
 - (ii) a predicted long-term result of the applied management measures;
 - (iii) the residual and latent impact after successful implementation of the management measures;
 - (iv) time frames and schedule for the implementation of the management measures;
 - (v) responsibilities for implementation and long-term maintenance of the management measures;
 - (vi) financial provision for long-term maintenance; and
 - (vii) monitoring programmes to be implemented."

F.5.2 Closure objectives

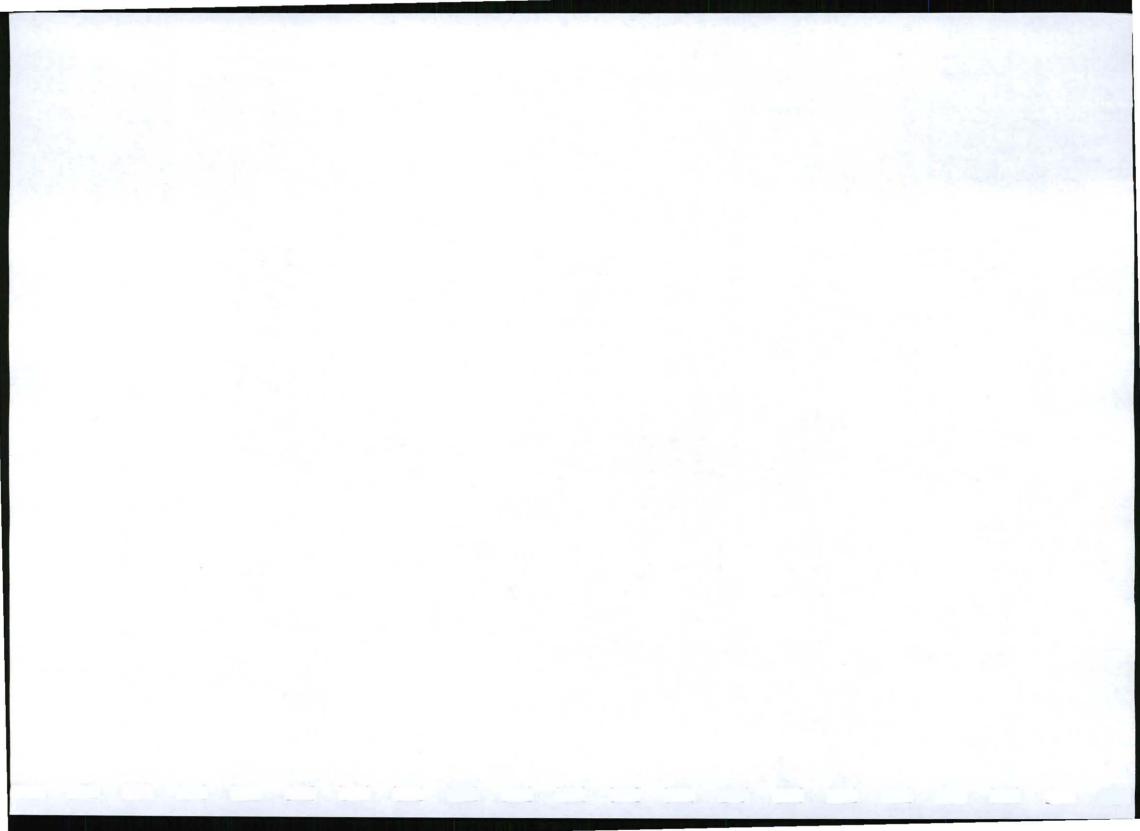
Closure objectives form part of this EMPlan and must-

- (a) identify the key objectives for mine closure to guide the project design, development and management of environmental objectives;
- (b) provide broad future land use objective(s) for the site; and
- (c) provide proposed closure cost

F.5.3 Content of closure plan

A closure plan forms part of the EMP and must include the following:

- (a) a description of the closure objectives and how these relate to the prospecting or mine operation and its environmental and social setting;
- (b) a plan contemplated in Regulation 2(2), coordinated according to generally accepted standards, showing the land or area under closure;
- (c) a summary of the regulatory requirements and conditions for closure negotiated and documented in the environmental management programme or plan;
- (d) a summary of the results of the environmental risk report and details of identified residual and latent impacts;
- (e) a summary of the results of progressive rehabilitation undertaken;



- (f) a description of the methods to decommission each prospecting or mining component and the mitigation or management strategy proposed to avoid, minimize and manage residual or latent impacts;
- (g) details of any long-term management and maintenance expected;
- (h) details of financial provision for monitoring, maintenance and post closure management, if required;
- (i) a plan or sketch at an appropriate scale describing the final land use proposal and arrangements for the site;
- (j) a record of interested and affected persons consulted; and
- (k) technical appendices, if any.

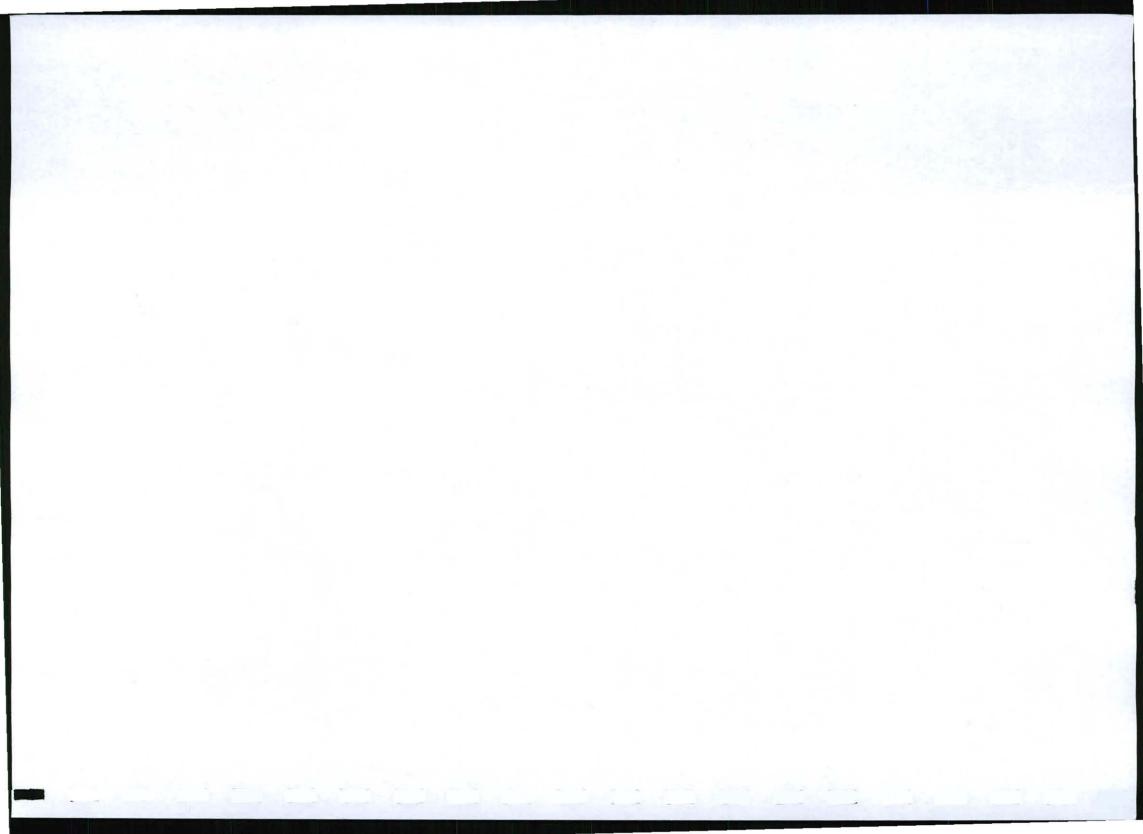
F.5.4 Transfer of environmental liabilities to a competent person

Should the holder of a prospecting right, mining permit or reconnaissance permission wish to transfer any environmental liabilities and responsibilities to another person or persons, the following will pertain:

- (1) An application to transfer environmental liabilities to a competent person in terms of section 48) of the Act, must be completed on Form O as set out in Annexure 1 to the Regulations and be lodged to the Minister for consideration.
- (2) The holder of a prospecting right, mining right or mining permit may transfer liabilities and responsibilities as identified in the environmental management plan and the required closure plan to a competent person as contemplated in Regulation 58.
- (3) When considering the transfer of environmental liabilities and responsibilities in terms of section 48) of the Act, the Minister must consult with any State department which administers any law relating to matters affecting the environment.
- (4) No transfer of environmental liabilities and responsibilities to a competent person may be made unless the Chief Inspector of Mines and the Department of Water Affairs and Forestry have confirmed in writing that the person to whom the liabilities and responsibilities is transferred to, have the necessary qualifications pertaining to health and safety and management of potential pollution of water resources.

F.5.5 Notes on legal provisions

- **NOTE:** The holder of a prospecting right, mining permit or reconnaissance permission must also take cognisance of the provisions of other legislation dealing with matters relating to conservation, and which include, *inter alia*, the following:
- * National Monuments Act, 1969 (Act 28 of 1969).
- * National Parks Act, 1976 (Act 57 of 1976)
- * Environmental Conservation Act, 1989 (Act 73 of 1989)
- * National Environmental Management Act, 1998 (Act No. 107 of 1998)
- * Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965)
- * The National Water Act, 1998 (Act 36 of 1998)
- * Mine Safety and Health Act, 1996 (Act 29 of 1996)
- * The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).



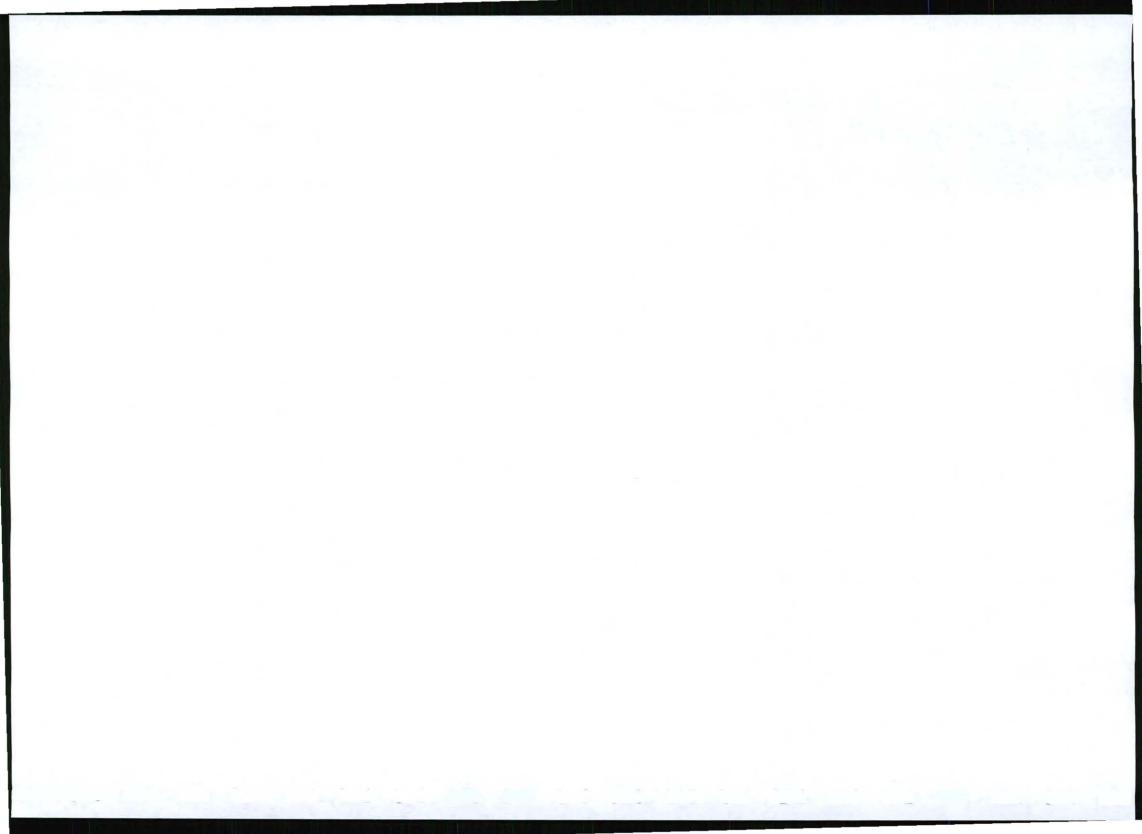
F.6 THE WATER USE LICENCE

The National Water Act, (Act 36 of 1998), is based on the principles of sustainability, efficiency and equity, meaning that the protection of water resources must be balanced with their development and use.

In addition to being issued with a prospecting right or mining permit a small-scale miner may also need to get a **water use licence** for the proposed water uses that will take place, except in certain cases.

NOTE: The Department of Water Affairs and Forestry (DWAF) developed specific Best Practice Guideline for smallscale mining that relates to storm water management, erosion and sediment control and waste management. Copies of these guidelines can be obtained from the regional office of DME or DWAF.

Applications for a water use licence must be made in good time, such that approval can be granted before a water use activity can begin. The appropriate licence forms for each kind of expected water use should be completed together with supporting documentation. The main supporting document required is a technical report. To make the technical report easier, you can refer to sections in this EMPlan, as most of what the technical report requires has already been done in the EMPlan. If you refer to the EMPlan it must be attached to the technical report.



G. SPECIFIC ADDITIONAL REQUIREMENTS DETERMINED BY THE REGIONAL MANAGER.

Officials in regional offices may use the following matrix to determine the necessity for additional objectives to be included in this Section of the document:

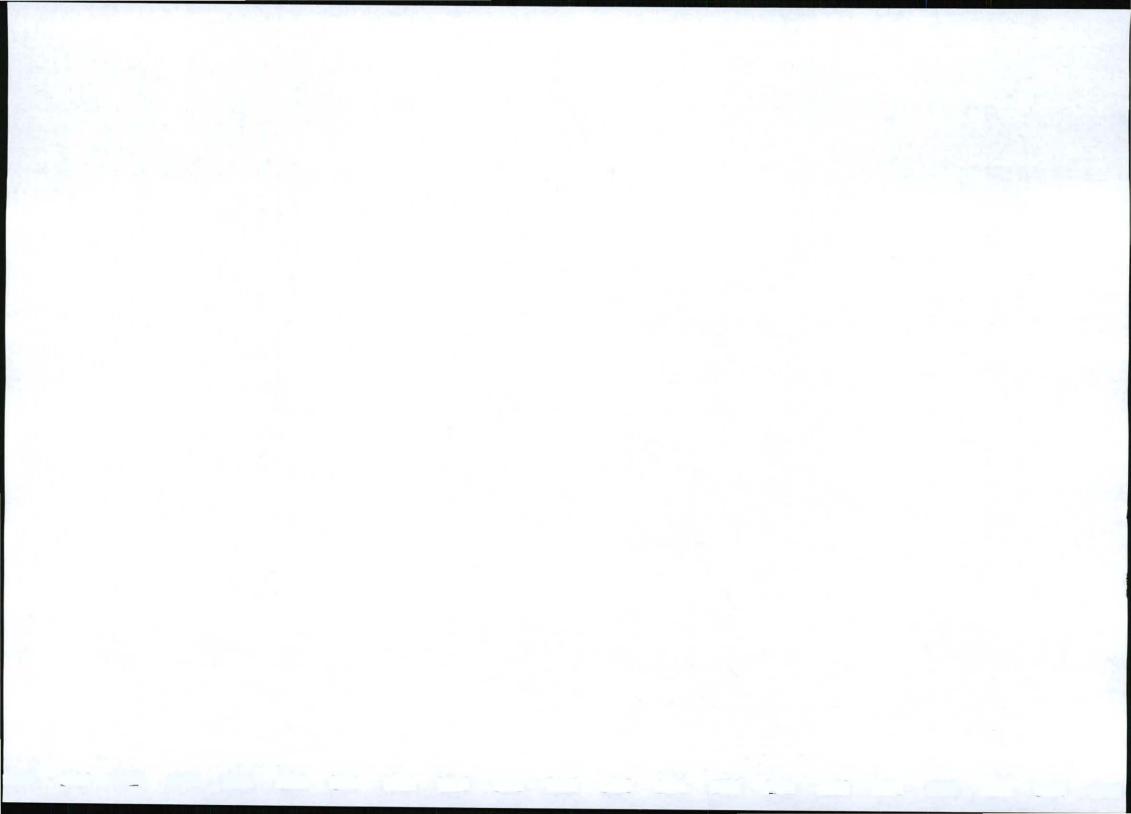
Activity	Disturbance						Pollution			
	Landform	Soil	Flora	Fauna	Heritage	Land	Water	Air	Noise	
Mining										
Access								÷.,		
Topsoil removal										
Overburden removal										
Mineral Extraction										
Tailings disposal										
Water Abstraction										
Pipeline route										
Transport										
Accommodation										
Waste Disposal										
Electricity										
Hydrocarbon storage										
Workforce										

Please indicate VL, L, M, H, and VH for Very Low, Low, Medium, high and Very High in each column to determine the main area and severity of impact.

G. This section outlines the specific additional requirements that may be set for the operation by the Regional Manager. Additional requirements will only have been set if the Regional Manager is of the opinion that there are specific impacts on the environment which will not be adequately mitigated by the provisions set within the standard version of the Environmental Management Plan. These requirements form part of the Environmental Management Plan and all elements and instructions contained herein must be complied with by the applicant.

1

167



H. UNDERTAKING

I, Blaire Rieger, the undersigned and duly authorised thereto by Vaduba Investments CC, Close Corporation have studied and understand the contents of this document in it's entirety and hereby duly undertake to adhere to the conditions as set out therein including the amendment(s) agreed to by the Regional

Manager in Section G and approved on

Signed at Port Elizabeth this 28 day of September 2009.

Manager

BLAIRE LAUREN RIEGER

Signature of applicant

Production Manager Designation

<u>Agency declaration</u>: This document was completed by Pro-Earth Consulting on behalf of Vaduba Investments CC.

I. APPROVAL

Approved in terms of Section 39(4) of the Mineral and Petroleum Resources Development Act, 2002 (Act 29 of 2002)

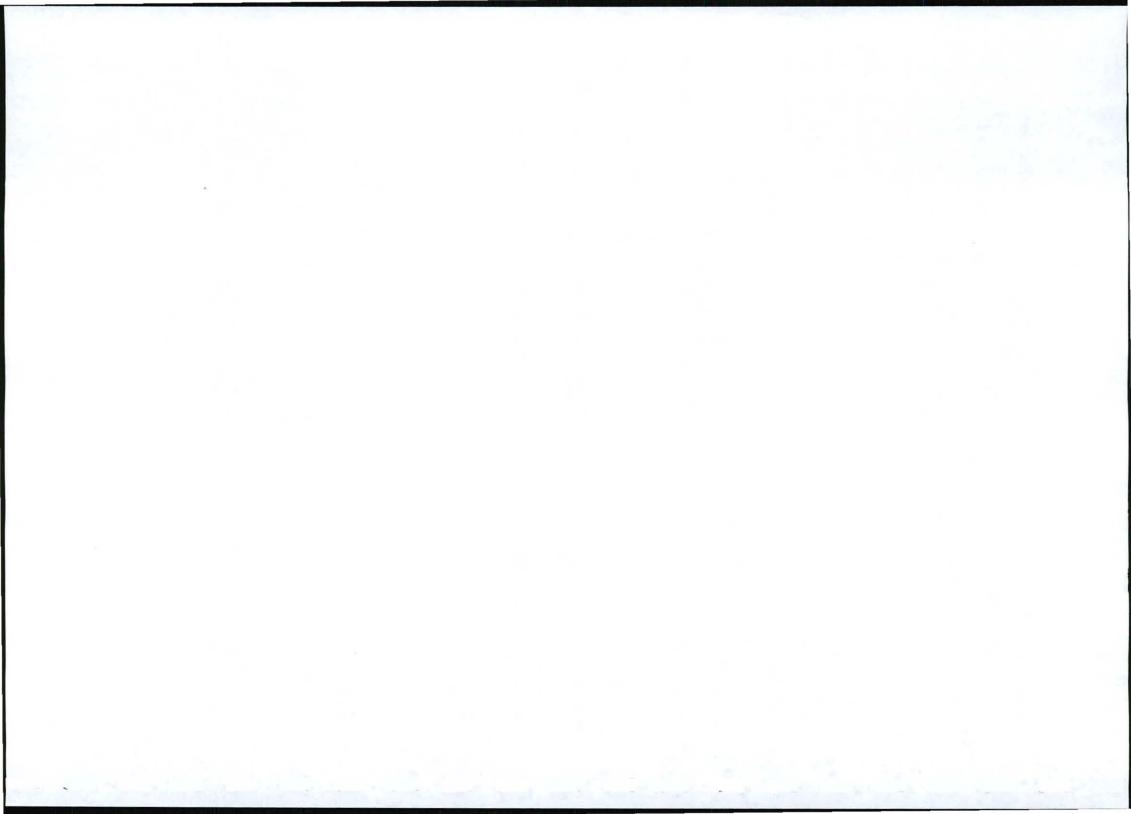
Signed at.....day of......20.....

REGIONAL MANAGER

REGION:....

This document has been compiled by the Directorate: Mine Environmental Management of the Department of Minerals and Energy at their Head Office in Pretoria. Any comments, suggestions or inputs will be sincerely appreciated. If you have any comments or suggestions regarding this document or its application, please forward your contribution to:

The Director: Mine Environmental Management	Tel : 012 317 9288
Private Bag X 59	Fax: 012 320 6786
PRETORIA	
0001	E-mail: dorothy@mepta.pwv.gov.za

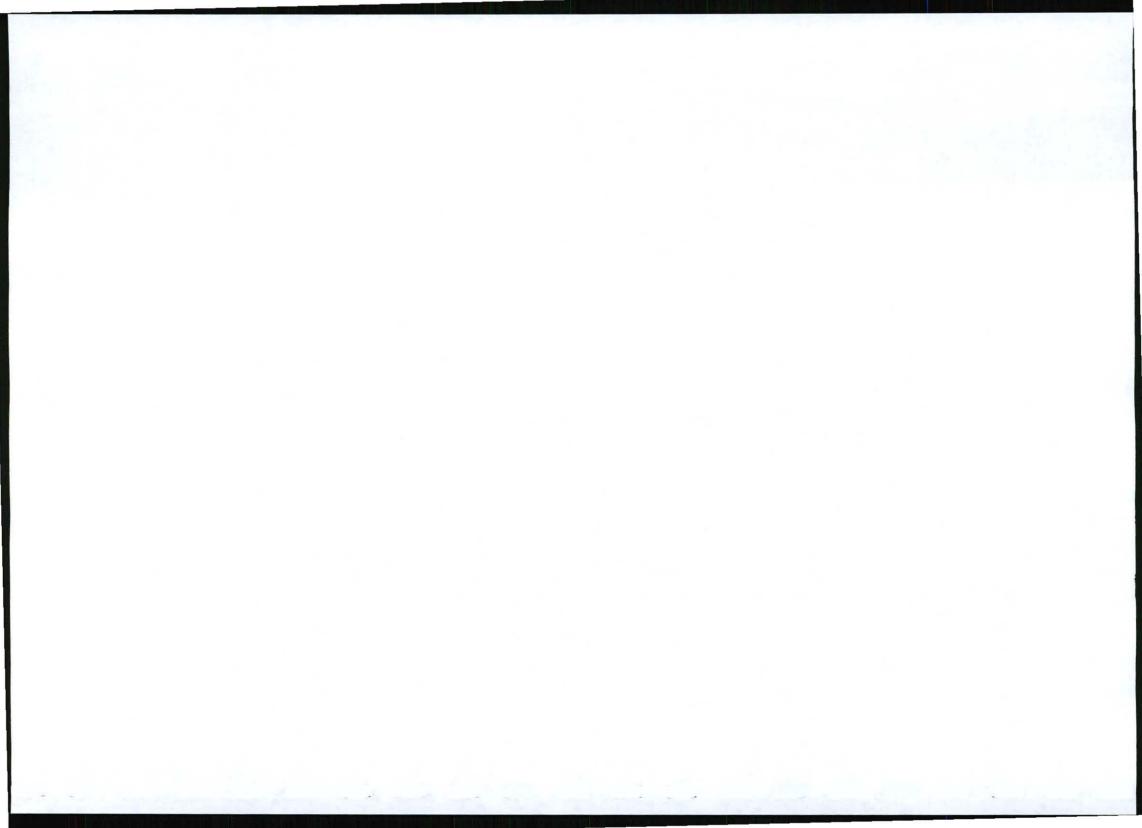


J. REFERENCES

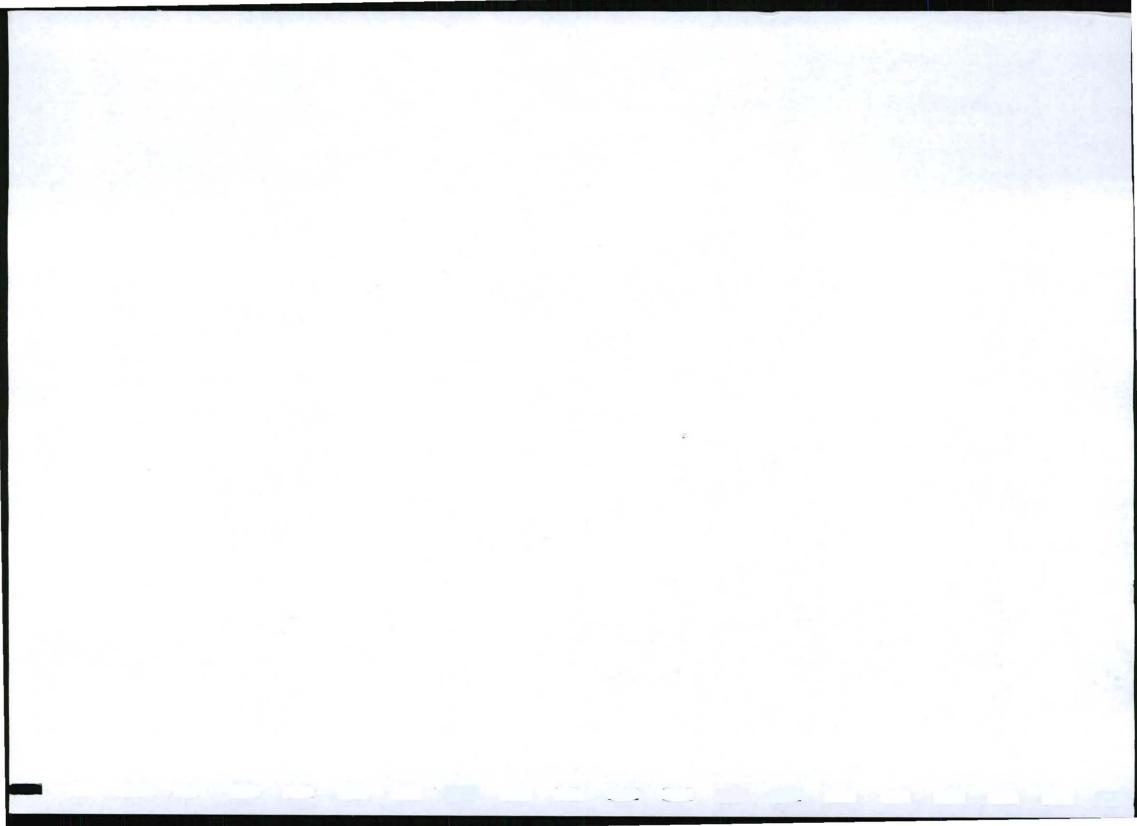
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- 2. Acocks (1953, 1988) Judd (2001), Vlok & Euston Brown (2002), Vlok et al. (2003). (also Acocks (1988))
- Branch, G.M. (1998). Bill Branch's field guide to the snakes and other reptiles of Southern Africa. Cape Town. Struik Publishers.321 pp
- W.R. Branch. Wild Coast Toll Road between East London and Durban Environmental Impact Assessment Report. Terrestrial fauna. Chapter 4. Harrison et al. (1997). Birds. This document included information from the following authors: Skinner and Smithers (1990),

Stuart and Stuart (1988), Kingdon (1997) and Mills and Hex (1997) Mammals.. (Toerien and Hill,1989) Hartman (1988) Reddering and Estruysen (1986)

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- 6. Broadley D.G. (1990). Reptiles: Barnes (1998)
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- CSIR research Report 441. Estuaries of the Cape. Part II. Synopses of available information on individual systems. Report N0 42. Nahoon (CSE 44), Qinira (CSE 45) and gqunune (CSE 46).
- 5 Council for Geoscience. Geological Surveys. Explanation: Riversdale Sheet 3420 (1:250 000)
- 6 Footprint ranking report for the Proposed Regional General and Hazardous Waste processing facility in the Eastern Cape. 11 November 2006.
- 6. Goss, R. (revision). Maberly's Mammals of Southern Africa. 1990.
- Isemonger, R.M. Snakes of Africa. 1983. Cilliè, B. The mammal guide of Southern Africa. 1997. MacDonald, D.W. (editor). The encyclopedia of mammals. 1984.
- 8. Marais, J. Slange & slangbyte in Suider Afrika. 1999.
- 9. McLachlan, G.R. and Liversidge, (Revised) R.Roberts: Birds of South Africa. and. 1978
- 10. Mucina, L. and Rutherford, M.C. (Edt.) The vegetation of South Africa, Lesotho and Swaziland. Strelizia 19. 2006.
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- 12. Skinner, J. D. and Chimimba, C. T. (Revised). The Mammals of the Southern African Subregion.. 2005.
- 13. Taylor, B and O'Shea, M. The great big book of snakes and reptiles.
- 14. Smith, R.L. Elements of ecology. Second edition. 1986
- 15. Streamkeeper's Field Guide: Watershed Inventory and Stream Monitoring Methods. 1991

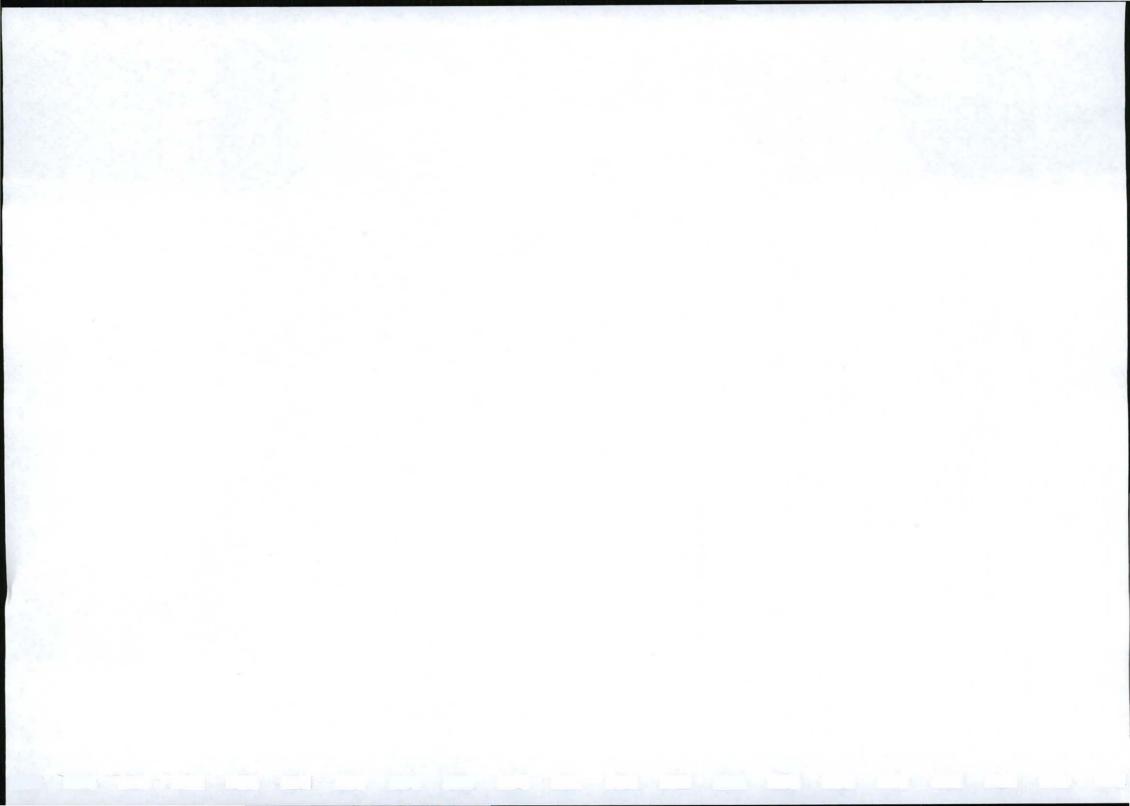


K. APPENDICES



ANNEXURES

н.



LIST OF ANNEXURES

ANNEXURE A: NEWSPAPER ADVERTS

ANNEXURE B: NOTICE BOARD

ANNEXURE C: COMMUNICATION WITH NEIGHBOURING IAPS

ANNEXURE D: COMMUNICATION WITH NGOs AND GOs

ANNEXURE E: RESPONSE FROM IAPS

ANNEXURE F: RESPONSE FROM GOs and NGOs

ANNEXURE G: COMMUNITY MEETING

ANNEXURE H: COMMENTS REGISTER

ANNEXURE I: GEOPHYSICAL AND GEOTECHNICAL INFORMATION

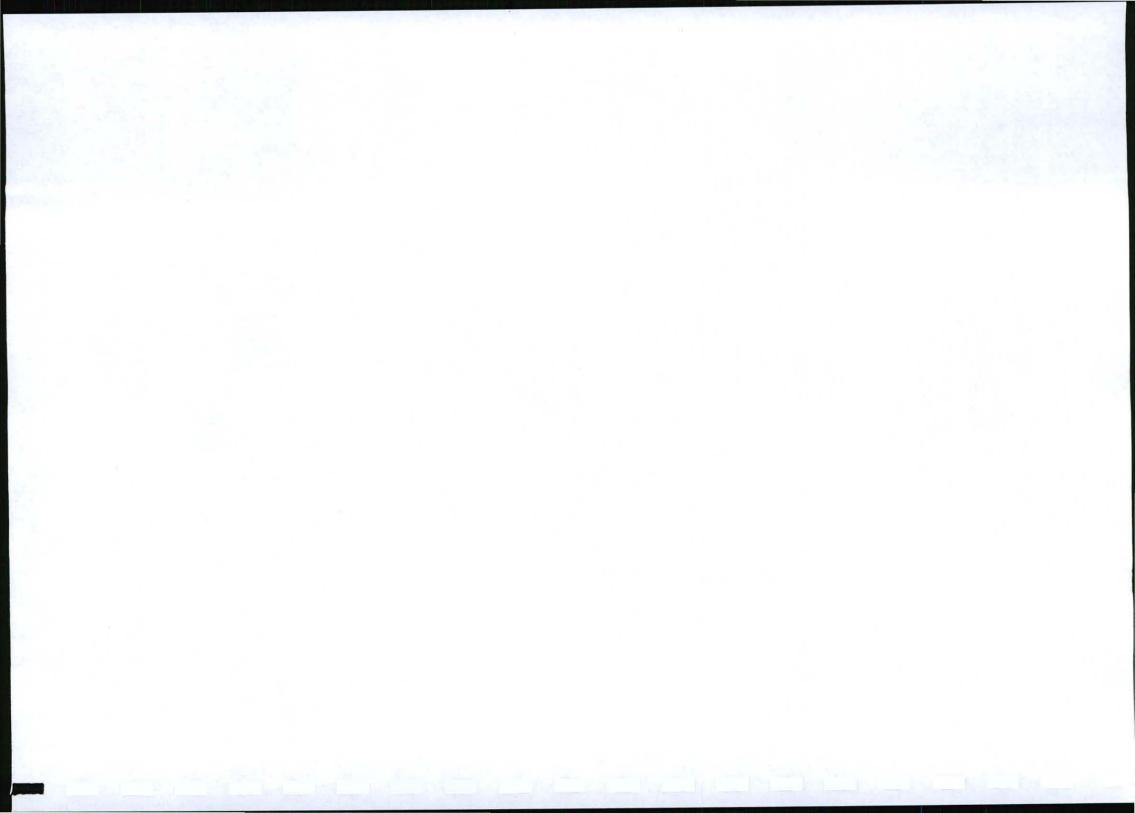
ANNEXURE J: COMMUNICATIONS WITH THE LANDOWNER



ANNEXURE A

NEWSPAPER ADVERTS

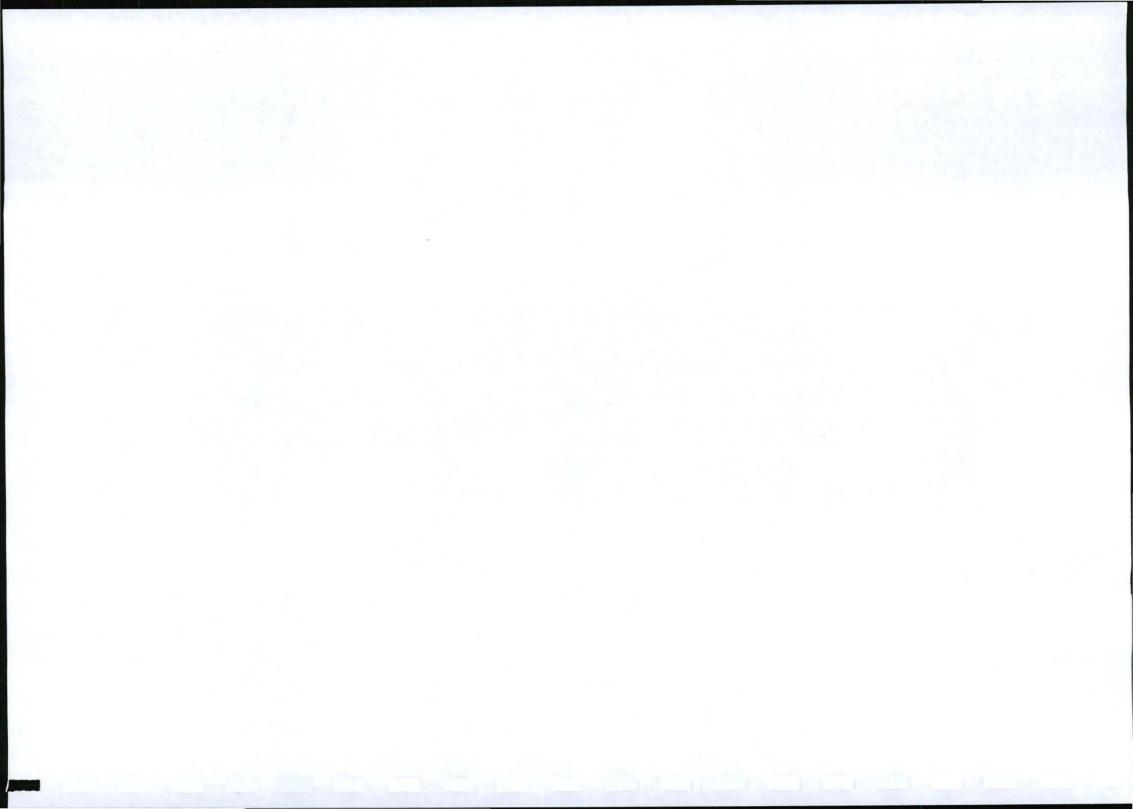
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Advert placed in Daily Dispatch: 14 August 2009

Ψ



Vaduba Investments BK het aansoeke om 'n mynpermit en mynreg op Porsie 1 van die Plaas 800, Gonubie, Oos-Londen, by die Departement van Minerale en Energiesake (DME) ingedien. 'n Aansoek om 'n mynpermit op Porsie 3 van die Plaas 800, Oos-Londen, is ook ingedien. Ingevolge Regulasie 49 (f) wat in die Staatskoerant Nr. 26275 onder die Minarale en Petroleumhulpbron-ontwikkelingswet ("Minerals and Petroleum Resources Development Act [MPRDA] [Act No. 28 of 2002]") verskyn, word hiermee kennis gegee van die voorneme om die vogende aktiwiteite uit te voer:

Aktiwiteit: Myn van verweerde doleriet (sabunga) en sand op Plaas 800/1 en verweerde doleriet op Plaas 860/3

Grootte van Area: Plaas 800/1 mynpermit: 1.5 hektaar (ha) Plaas 800/1 mynreg op oorblywende gebied: 139ha Plaas 860/3 mynpermit: 1.5ha

Huidige grondgebruik: Plaas 800/1: Mynbou en braakgrond Plaas 860/3: Braakgrond en landbou

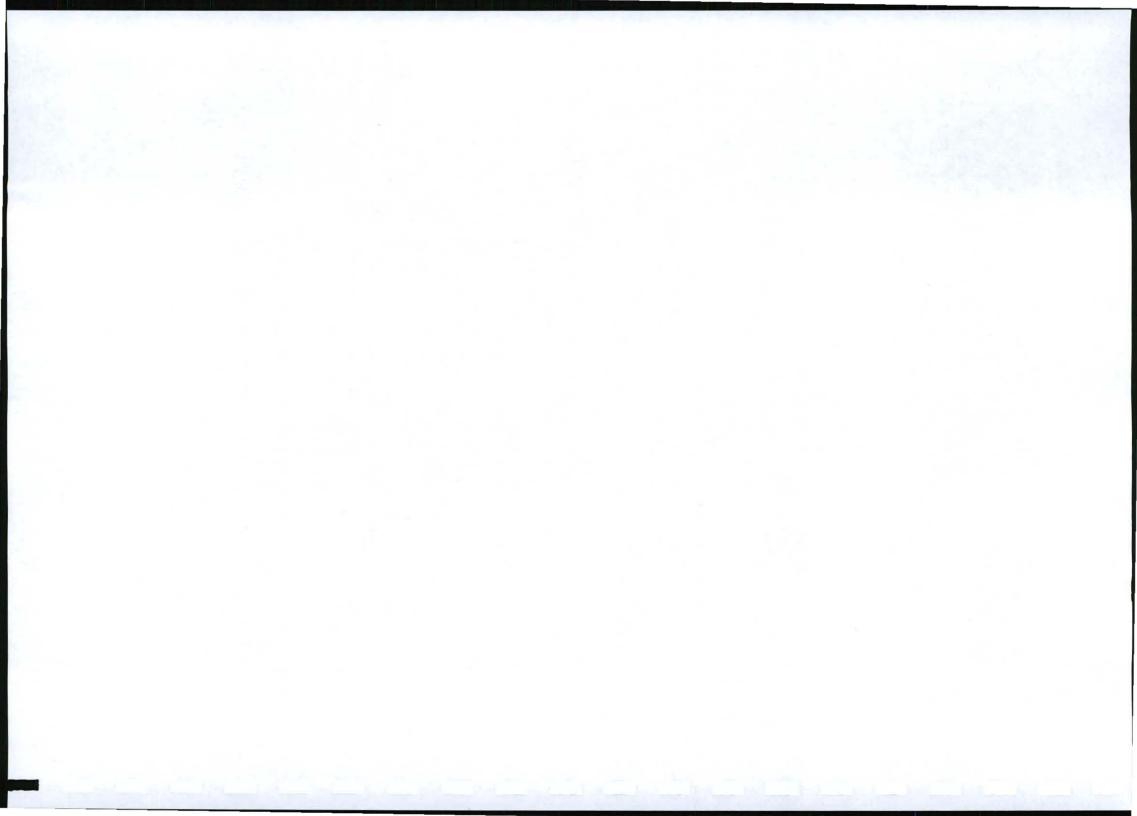
Toegangspaaie: Plaas 800/1: bestaande plaas ingang vanaf hoof deurweg na Gonubie (Oceanweg)

Plaas 860/3: bestaande ingangspad na plaas vanaf R346 **Duur van aktiwiteit:** Mynpermit-aansoek op Plaas 800/1: 2 jaar Mynregaansoek op Plaas 800/1: 30+ jaar Mynpermit-aansoek op Plaas 860/3: 2 jaar **Mynbou metode:** Uitgrawings in oopgroef myn, laai & vervoer

U word hiermee genooi om skriftelik te registreer as 'n belanghebbende party ("Interested and Affected Party [IAP]) en om u kommentaar of besware te lewer binne dertig (30) dae vanaf die verskyning van hierdie kennisgewing. In die geval van die mynpermit-aansoeke sal 'n beduidende verslag van die publieke deelname proses by die DME ingedien word. Die verslag i.s. Plaas 800/1 word teen 15 Augustus 2009 ingedien en i.s. Plaas 860/3 teen 29 Augustus 2009. 'n Omvangsverslag ("Scoping Report") moet saamgestel word as deel van die aparte mynregaansoek-proses op plaas 800/1 en die dokument sal by die DME ingedien word. Belanghebbendes sal in kennis gestel word t.o.v. die datum wanneer die verslag aan die publiek beskikbaar sal wees en die verslag sal by die Gonubie Biblioteek geplaas word. Kommentaar wat tydig ontvang is sal (in geval van die mynpermit-aansoeke) in die Omgewings bestuursplanne (OBPlanne) vervat word en in die geval van die mynreg-aansoek sal dit in die Omgewingsimpakstudie/ Omgewingsbestuursplan ("Environmental Impact Assessment/Environmental Management Programme [EIA/EMP]") vervat word.

Toepaslike omgewingsverslae sal by die DME ingedien word en sal soos volg aan die publiek beskikbaar gestel word:

Permit op Plaas 800/1: teen 15 September 2009 (Gonubie Biblioteek) Permit on Plaas 860/3: teen 29 September 2009 (Oos-Londen Biblioteek) Mvnreg op Plaas 800/1: Datum sal aangekondig word (Gonubie Biblioteek)



Vaduba Investments CC has lodged an application with the Department of Minerals and Energy (DME) for a mining permit and a mining right on Portion 1 of Farm 800, Gonubie, East London. An application has also been lodged for a mining permit on Portion 3 of the Farm 860, East London. In terms of Regulation 49 (f) published in Government Notice No. 26275 under the Minerals and Petroleum Resources Development Act (MPRDA) (Act No. 28 of 2002), notice is hereby given of the intent to carry out the following activity.

Activity: Mining of weathered dolerite (sabunga) and sand on Farm 800/1 and weathered dolerite on Farm 860/3

Size of Area: Farm 800/1 mining permit: 1.5 hectare (ha)

Farm 800/1 mining right on remaining area: 139ha Farm 860/3 mining permit: 1.5ha

Current land use: Farm 800/1: Mining and fallow land

Farm 860/3: Fallow land and agriculture

Access roads: Farm 800/1: existing farm access from the main road to Gonubie (Ocean Way)

Farm 860/3: existing farm access road from R346

Duration of activity on site: Mining Permit application on Farm 800/1: 2 years Mining Right application on Farm 800/1: 30+ years Mining Permit application on Farm 860/3: 2 years

Methodology: Excavation in an open cast mine, loading & hauling

You are hereby invited to register, in writing, as an interested and affected party (IAP) and submit comments/objections within 30 days from the publishing date of this notice.

In respect of the mining permits, a report indicating the method and results of public participation will be submitted to the DME. The applicable dates are, for Farm 800/1, by 15 August 2009 and for Farm 860/3, by 29 August 2009. A Scoping Report must be compiled in respect of the mining right on Farm 800/1 and this document will be also be forwarded to the DME. IAPs will be notified when the document will be available for public scrutiny and it will be placed at Gonubie Public Library. Comments received timeously will be included in the Environmental Management Plans (EMPlans) (with reference to the two permit applications) and Environmental Impact Assessment/ Environmental Management Programme (EIA/EMP) (in the case of the mining right application).

The environmental reports will be submitted to the DME and will be made available for public scrutiny as follows:

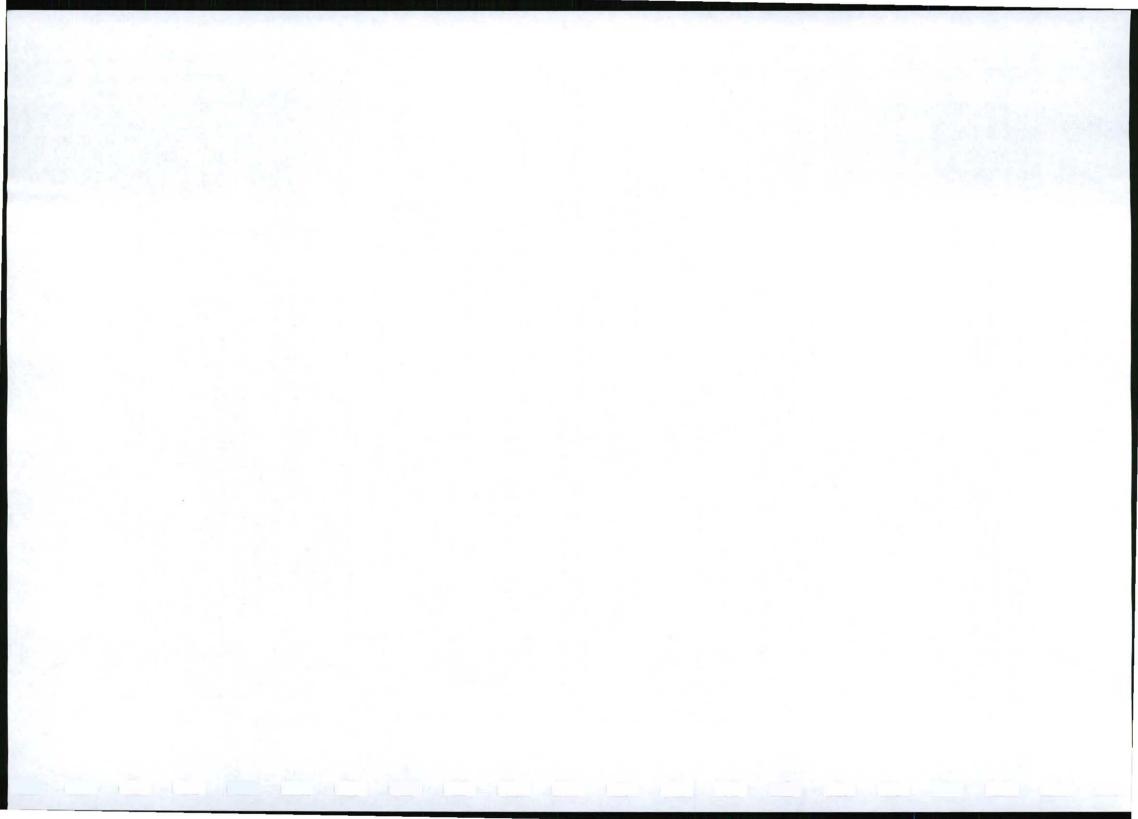
Permit on Farm 800/1: by 15 September 2009 (Gonubie Public Library)

Permit on Farm 860/3: by 29 September 2009 (East London Central Library)

Mining right on Farm 800/1: Date to be advised (Gonubie Public Library)

Registered IAPs will be kept informed regarding the progress of the applications and the availability of the EMPlans and EIA/EMP reports.

To register and comment, or for further information please contact Carmen le Roux Krige, CLEAR Communications, at Tel: 082 603 5470 or 021 979 1172; Fax: 021 979 1172 or 086 610 7719; E-mail: <u>clear@polka.co.za</u> or post your submission to CLEAR Communications at PO Box 2179, Durbanville, 7551.



While the same adverts that appeared in the Daily Dispatch also appeared in the Gonubie Bugle on 14 August 2009, the Bugle failed to provide electronic proof of such, notwithstanding the fact that proof was requested.

Carmen le Roux Krige

From: Carmen le Roux Kinge [carmenleroux@poika.co.za]

Sent: Wednesday, August 19, 2009 5:22 PM

To: 'dave@border.co.za'

Subject: Vaduba Ads

Hi Dave,

Could you send me proof of the Vaduba the ads being placed, please?

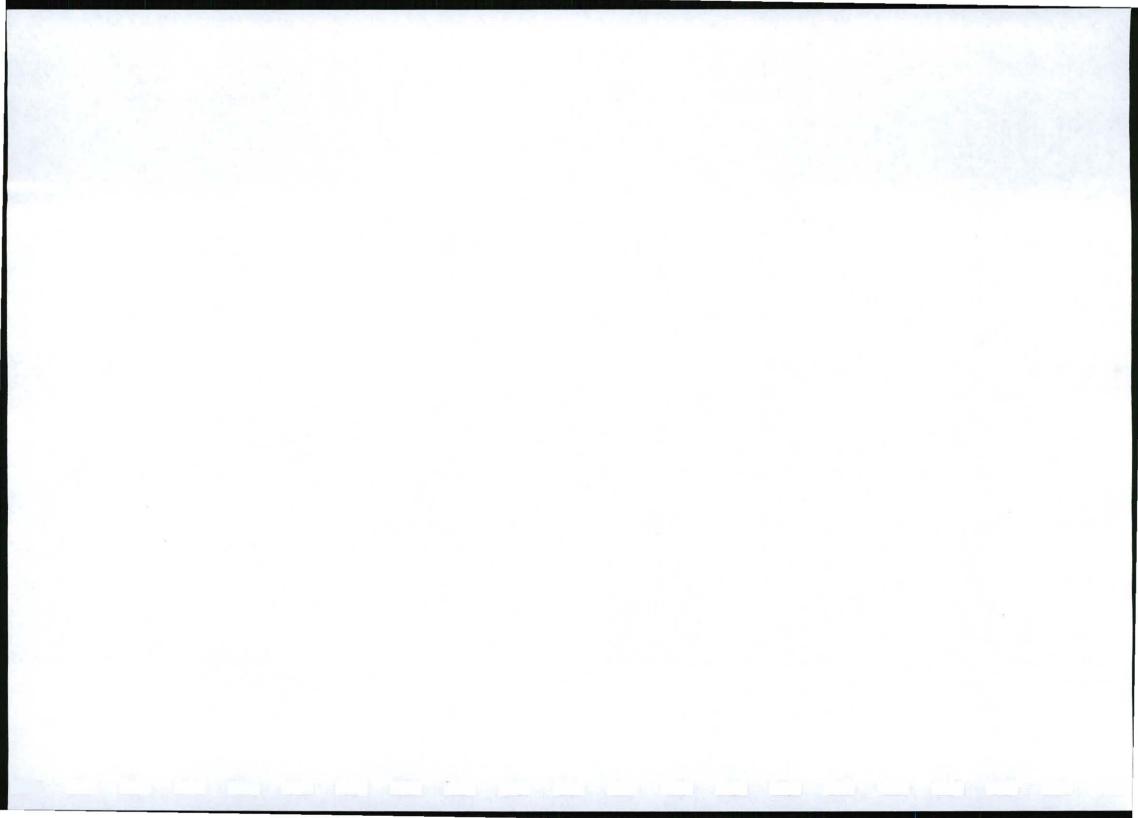
Thanks

Carmen

Carmen ic fork living a

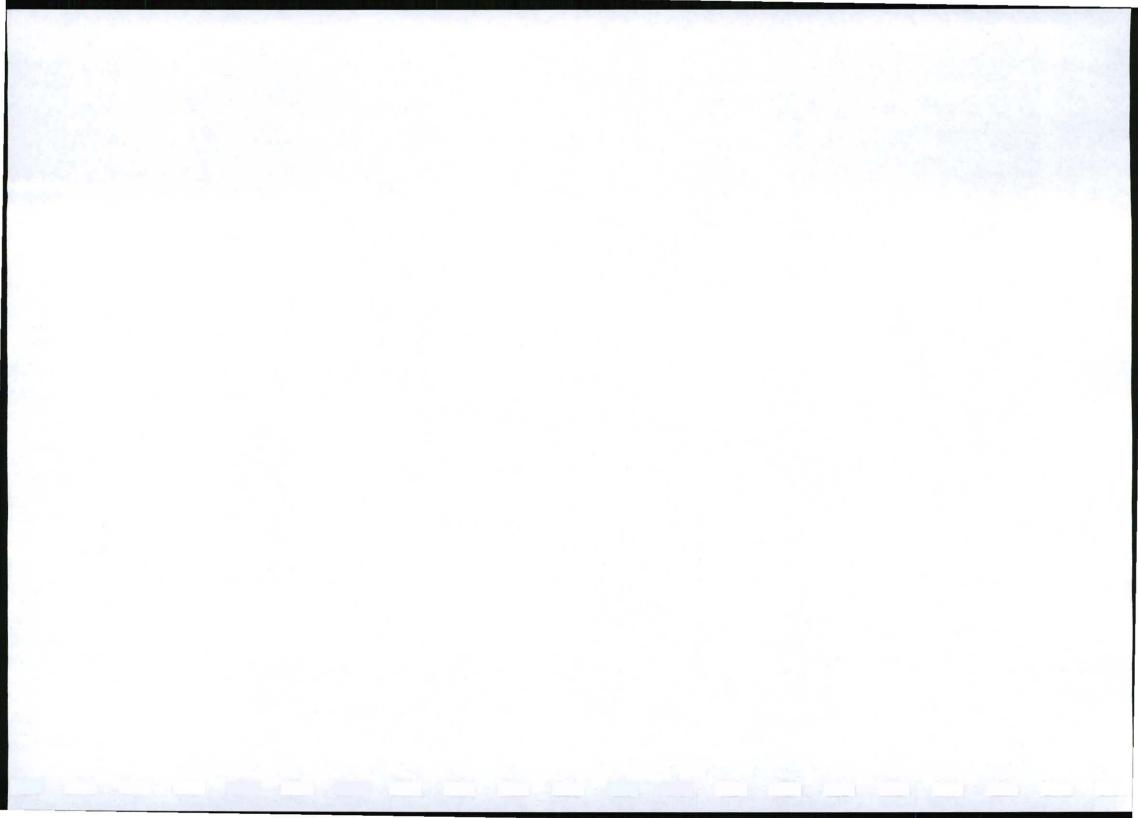
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ANNEXURE B

NOTICE BOARD



NOTICE KENNISGEWING/ISAZISO

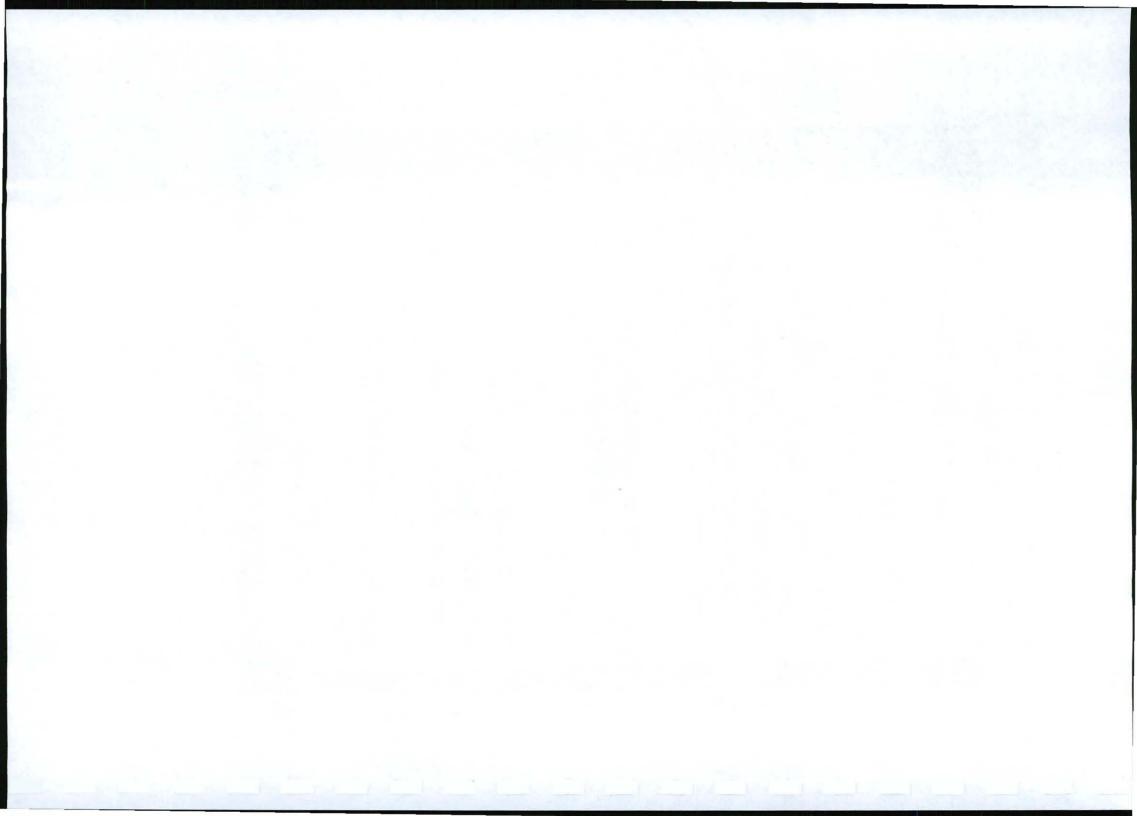
APPLICATION FOR A MINING PERMIT AND MINING RIGHT FOR WEATHERED DOLERITE (SABUNGA) AND SAND ON PORTION 1 OF FARM 800 GONUBIE, EAST LONDON

AANSOEK VIR 'N MYN PERMIT EN MYNREG VIR VERWEERDE DOLERIET (SABUNGA) EN SAND OP GEDEELTE 1 VAN PLAAS 800, GONUBIE, OOS-LONDEN

SAND KWI PORTION 1 OF SEFAMA 800, GONUBIE, KWINGINGQI YASI-EAST

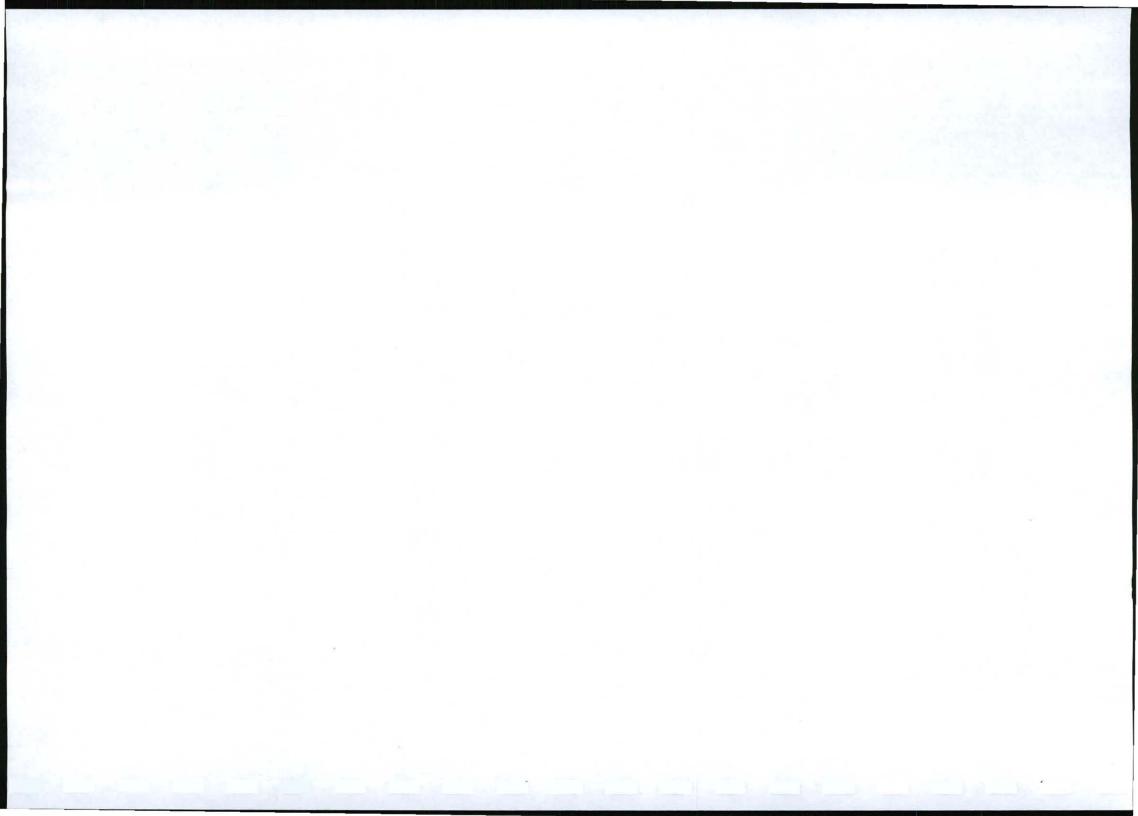
SEND WRITTEN COMMENTS TO: STUUR GESKREWE KOMMENTAAR AAN: HAMBISA ULU O OLUBHALIWEYO KULE DILESI:

clear@polka co.za or o CLE R COMMUNICATIONS: P.O. Box 2179, DURBANVILLE 7551 FAX: 021 979 1172 CELL. 82 603 5470

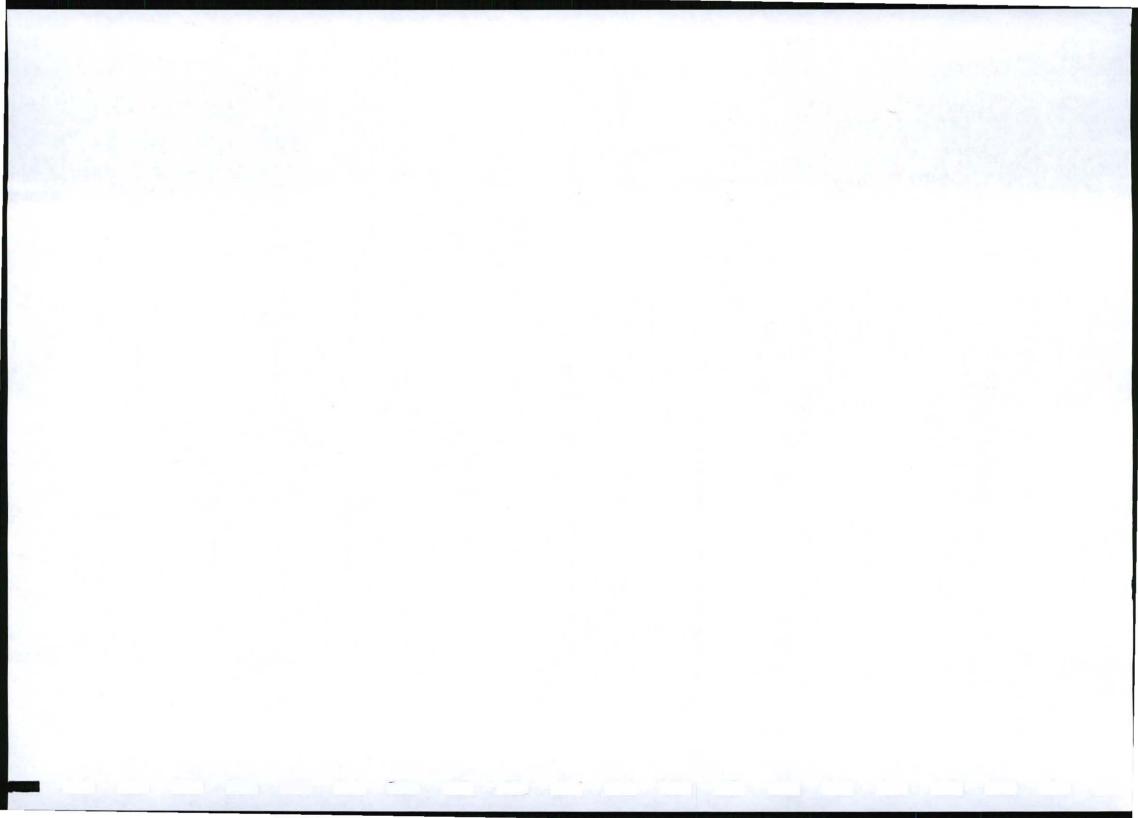


ANNEXURE C

COMMUNICATION WITH NEIGHBOURING IAPS



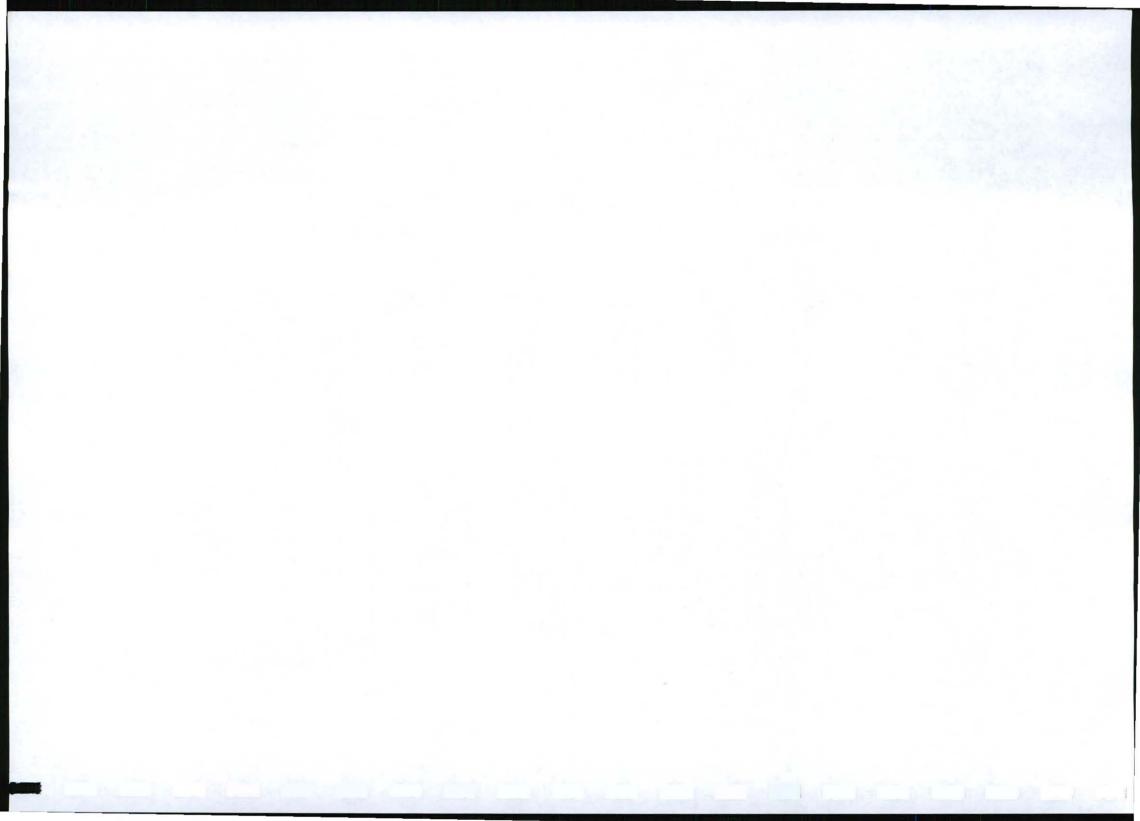
IAPs - NEIGHBOURS		BID SENT		
NAME	CONTEXT	REG MAIL	FAX	E-MAI
The Municipal Manager Buffalo City Municipality P.O. Box 134 EAST LONDON 5200	Local Government Registered Land Owner Farms: 807/28; 807;34	Yes	Yes	
ATTN: MS AMANDA MGWENTSHU				
The Manager ESKOM Southern Region Private Bag X 1 BEACON BAY 5205	Servitude on Farm 800/1 Registered Land Owner Farm 800/9	Yes	Yes	
EAST LONDON				
H KINGON PO BOX 226 GONUBIE 5256	Registered Land Owner Farm 800/12	Yes		
WENGARY P O BOX 759 EAST LONDON 5200	Registered Land Owner Farm 799/41	Yes		
VISION HOMES PTY LTD P O BOX 1470 HILLCREST 3650	Registered Land Owner Rezoned Erf. 4732	Yes		
THARRATT AND FREITAG P O BOX 19710 TECOMA EAST LONDON 5214	Registered Land Owner Farm 809/2	Yes		
MR W GAUSS PO BOX 18242 QUIGNEY 5211	Registered Land Owner Farm 807/30	Yes		
RODCHER INVESTMENTS CC P O BOX 13606 VINCENT 5217	Registered Land Owner Farm 807/55	Yes		
Kathy Wegner Kalin Farm PO Box 758 GONUBIE 5256	Owner Por 47 of Farm 799			Yes
Ed Johnson Coolray Trust	Owner Portion 31 of farm 807			Yes
Pacific Coast Investment 97/Bopa Lesedi 2 Rosalee Gardens 11 Stanmore Rd Nahoon	Developer: Por18 of Farm 799, GONUBIE			Yes
Malcolm Wheatly PO BOX 128 GONUBIE 5256	Owner Por 20 of Farm 799 Terryton Country Estate			Yes



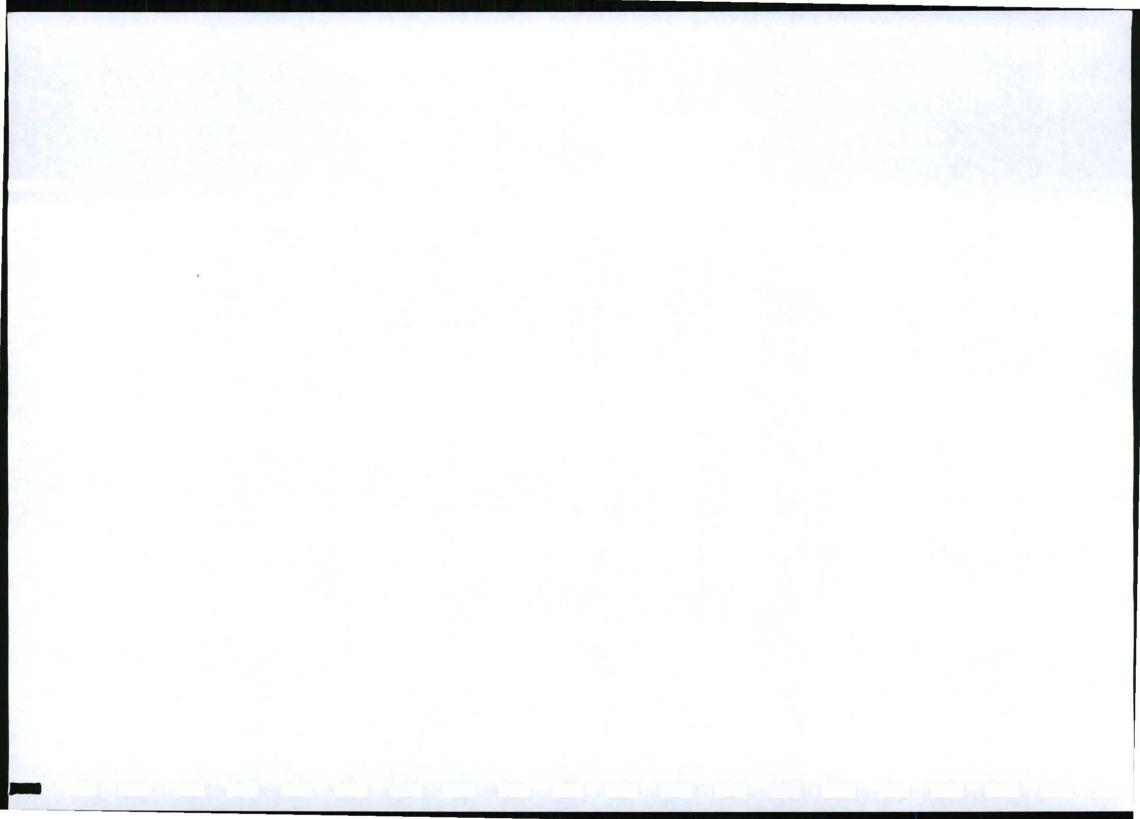
FARM 800/1 GONUBIE IAPs - MINING PERMIT APPICATION

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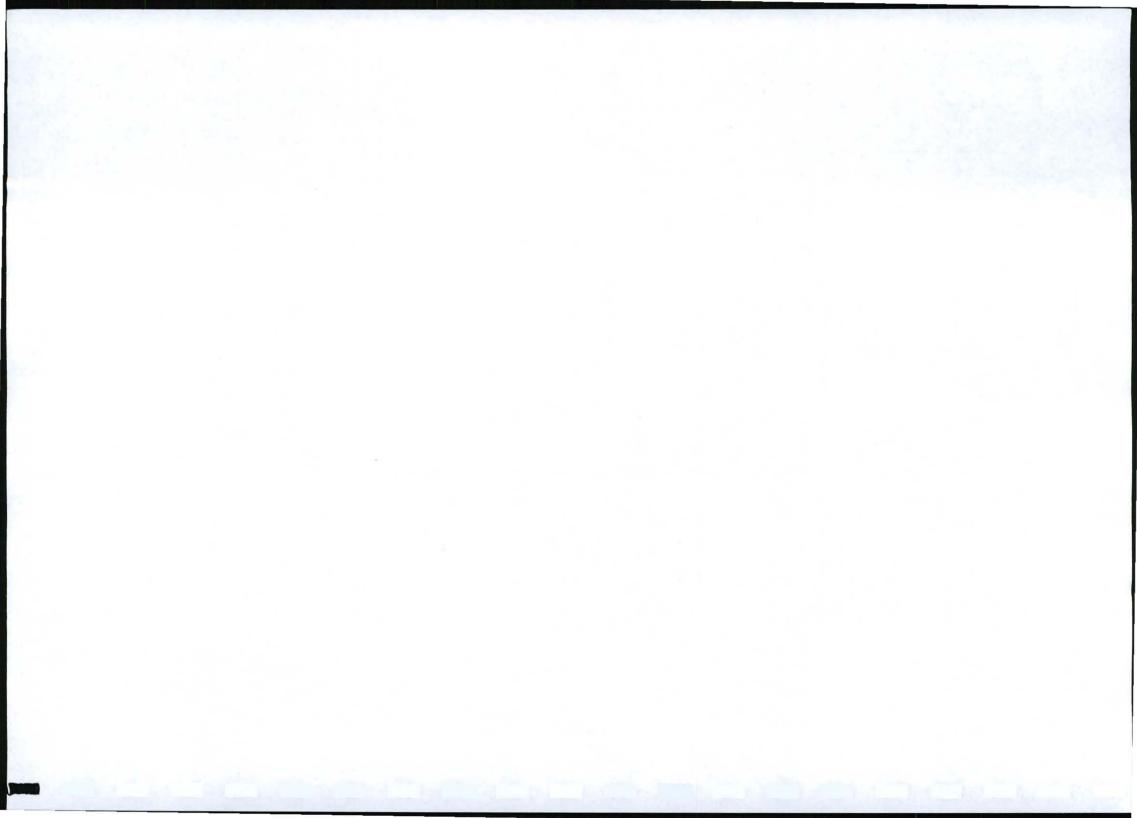
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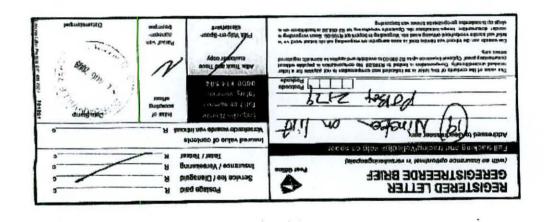


7	The Superintendent General Department of Local Government and	
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	ATTN: MR STANLEY KHANYILE	
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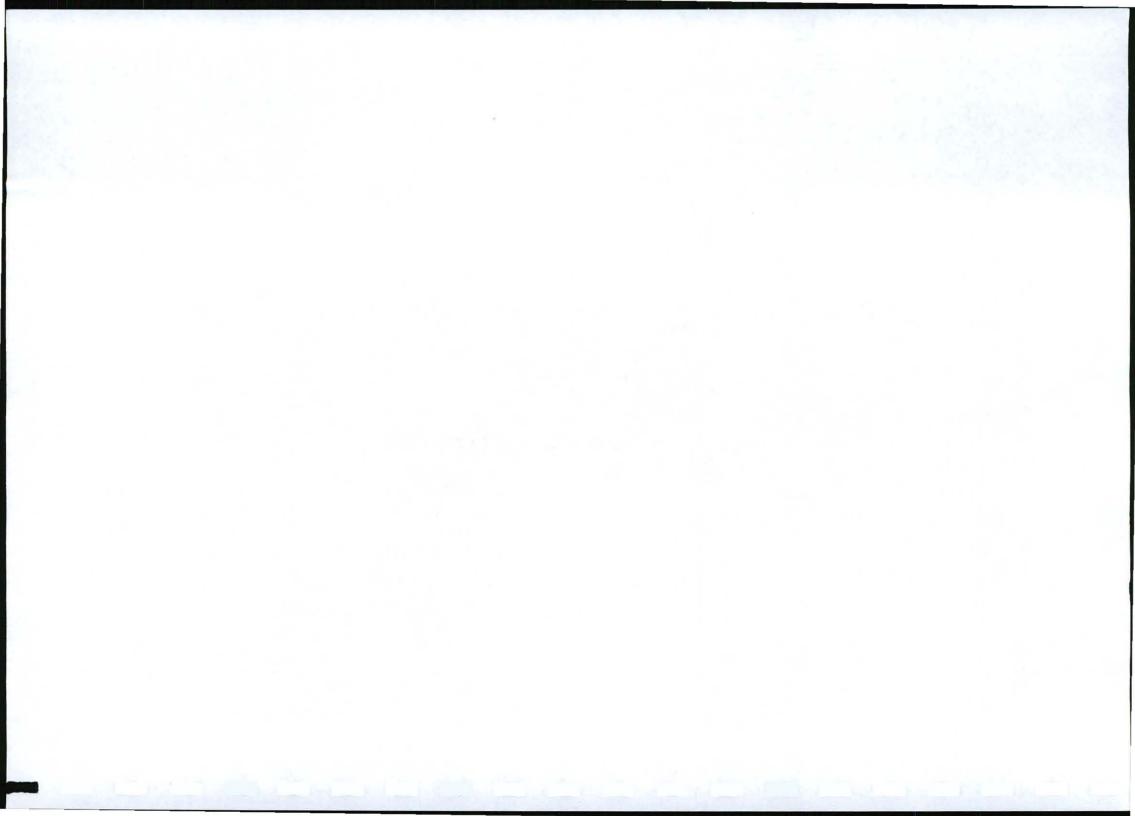


14	P O BOX 1470	ALTERNATION ANT THE ALTERNATION	
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	QUIGNEY 5211	RD 156 295 595 ZA CUSTOMER COPY BUILDER	
17	RODCHER INVESTMENTS CC		
	P O BOX 13606	ACCOUNTINGED LETTER	
	VINCENT	RD 156 295 618 ZA	
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Cell 082 603 5470 Tel 021 979 1172 Fax 086 610 7719 E-mail clear@polka.co.za

P.O. Box 2179 Durbanville 7551

The Municipal Manager Buffalo City Municipality P.O. Box 134 EAST LONDON 5200

ATTN: MS AMANDA MGWENTSHU

Fax: 043 743 8568

13 August 2009

Dear Madam,

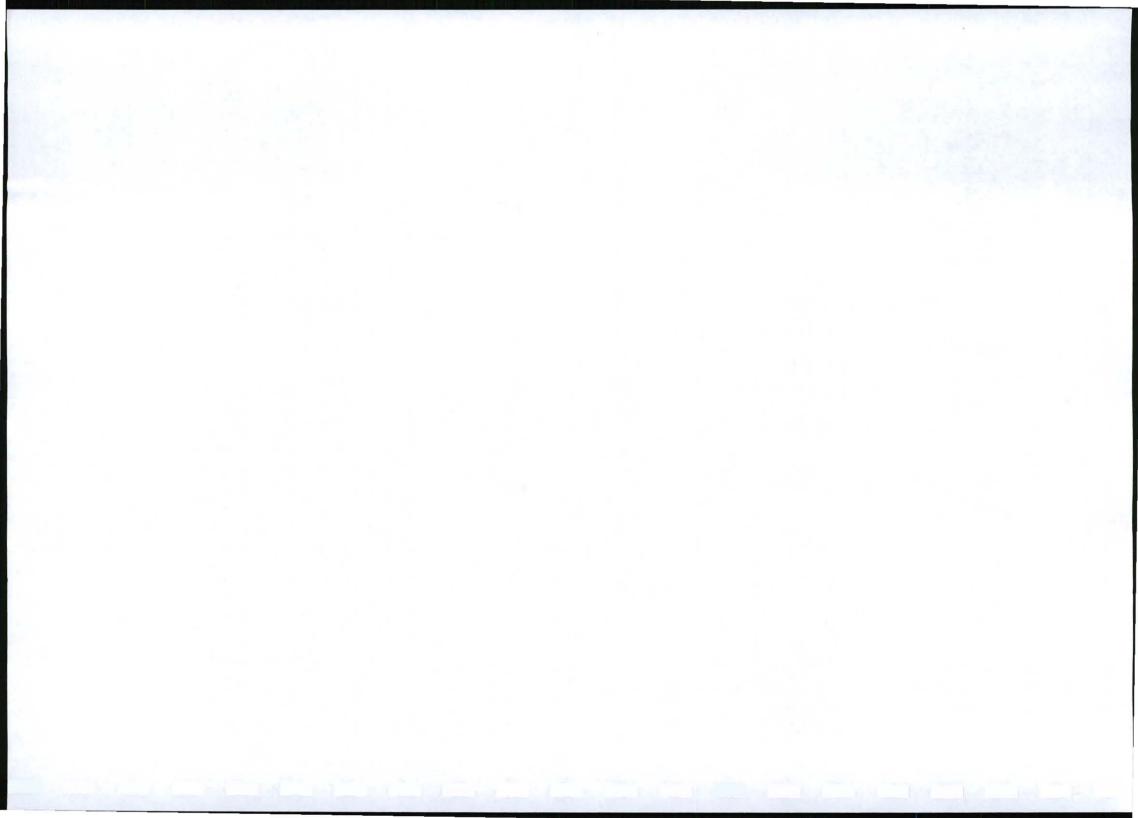
Re: APPLICATION FOR A MINING PERMIT ON PORTION 1 OF FARM 800, GONUBIE, EAST LONDON

Vaduba Investments CC, has applied for a permit to mine Weathered Dolerite (Sabunga) and Sand on Portion 1 of Farm 800, Gonubie.

According to subsections 3 (1 & 2) of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), which came into effect on 1 May 2004, the State is the custodian of the nation's minerals. The minister, acting on behalf of the State may grant the right to an applicant to remove a mineral from an area where the resource has been identified. The applicant must, however, follow all the correct procedures and adhere to all the regulations and laws as prescribed by the MPRDA.

This letter serves as a formal notification that an application has been lodged with the Department of Minerals and Energy, Eastern Cape, for a permit to mine Weathered Dolerite (Sabunga) and Sand on Portion 1 of Farm 800, Gonubie. Notification is made in terms of subsection 5(4)(c) as well as subsection 22(4)(b) of the Act, which requires consultation with the landowner or lawful occupier of the land as well as other interested and affected parties. This notification is made on behalf of Vaduba Investments CC and forms part of the public participation process that is required by the MPRDA. A summary of the proposed activity is attached (Background Information Document) and more detailed information will be provided in the Environmental Management Plan, which will be made available to I&AP's for scrutiny.

According to the MPRDA, an applicant has 30 days from the time the DME accepts their application in which to notify and consult with interested and affected parties (IAPs) and the landowner or lawful occupier of the land on which the application has bearing of their intent, and to submit a record of such consultation to the DME.



Should you wish to register as an IAP or comment on the application, you are required to do so in writing. For your convenience, a response sheet is attached.

Please forward your written response to:	Clear Communications
	P.O. Box 2179
	Durbanville 7551
	E-mail: clear@polka.co.za Fax: 086 610 7719 / 021 979 1172
	Fax: 086 610 7719 / 021 979 1172

The final date for registering and submitting your response to this application is 9 September 2009. The EMPlan will be available at the Gonubie Public Library by 15 September 2009.

Registered IAPs will be kept informed regarding the progress of the application (availability of documents, public meetings etc.)

Kindly note that a mining permit, should it be granted, is valid for two years and the applicant is in the process of applying for a mining right, which, should it be granted, would be valid for 30+ years. IAPs will however be duly informed in respect of the Vaduba Investment's mining right application and a separate public participation process will be launched in this regard.

Yours faithfully,

Carmen le Roux Krige

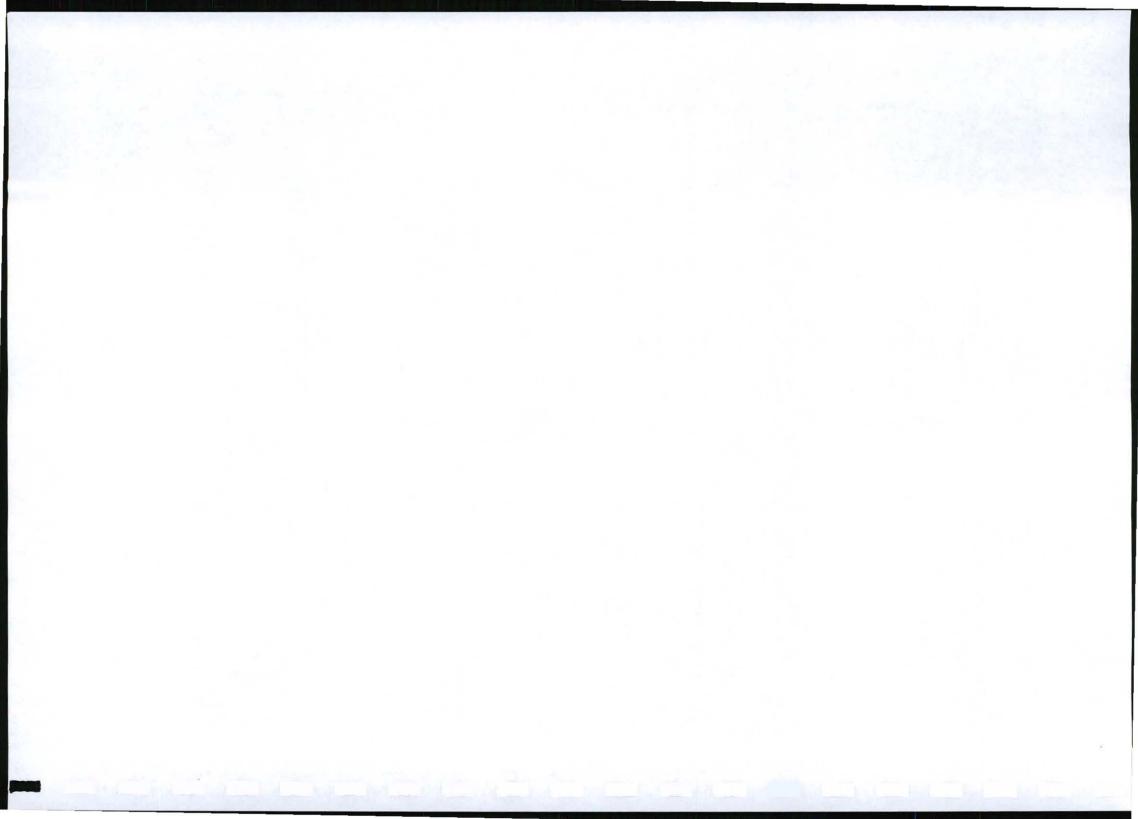
Attachments:

- Background Information Document
- Response Sheet
- Locality Map

Sending Confirm

Date : 14-AUG-2009 FRI 01:17 Name : CARNEN LE ROUX Tel. : 0219791172

Phone	:	0437438568
Pages	:	12/12
Start Time	7	08-14 01:13
Elapsed Time	:	03'24"
Mode	:	ECN
Result	:	Ok





Cell 082 603 5470 Tel 021 979 1172 Fax 086 610 7719 E-mail clear@polka.co.za

P.O. Box 2179 Durbanville 7551

The Manager ESKOM Southern Region Private Bag X 1 BEACON BAY 5205 EAST LONDON

Fax: 043 703 2929

13 August 2009

1

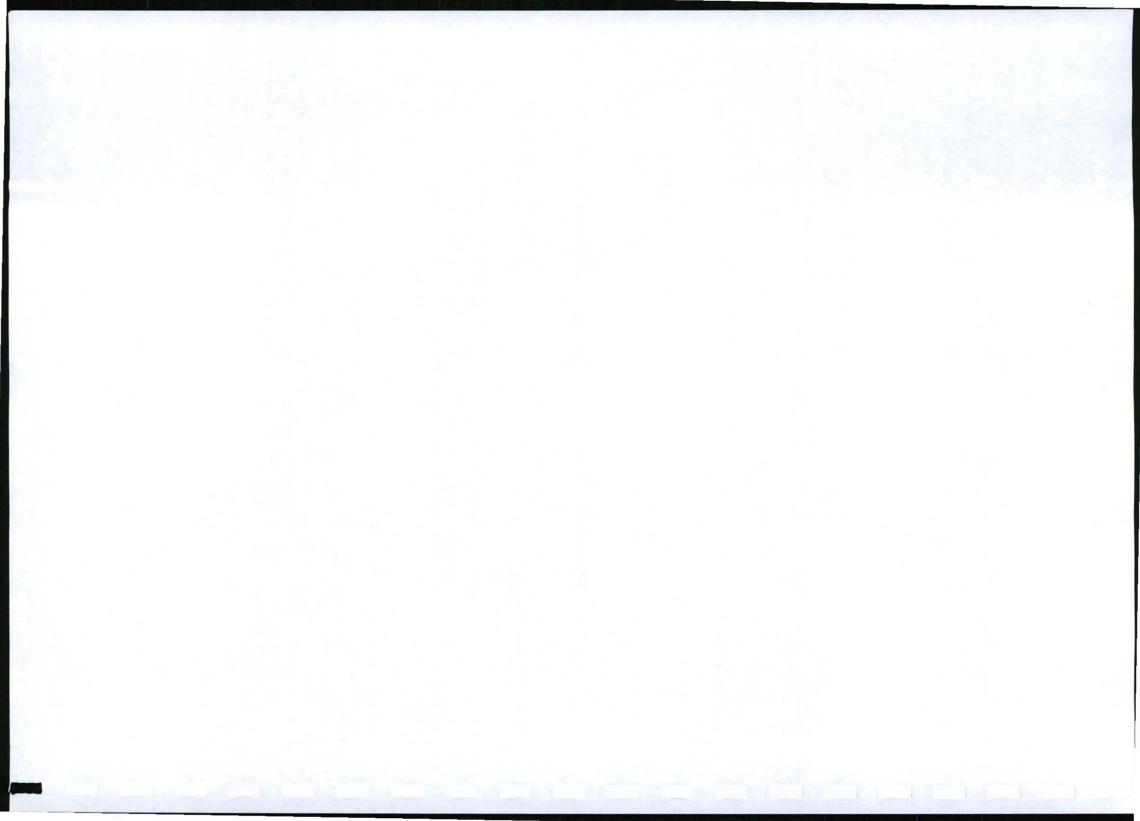
Dear Sir/Madam,

Re: APPLICATION FOR A MINING PERMIT ON PORTION 1 OF FARM 800, GONUBIE, EAST LONDON

Vaduba Investments CC, has applied for a permit to mine Weathered Dolerite (Sabunga) and Sand on Portion 1 of Farm 800, Gonubie.

According to subsections 3 (1 & 2) of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), which came into effect on 1 May 2004, the State is the custodian of the nation's minerals. The minister, acting on behalf of the State may grant the right to an applicant to remove a mineral from an area where the resource has been identified. The applicant must, however, follow all the correct procedures and adhere to all the regulations and laws as prescribed by the MPRDA.

This letter serves as a formal notification that an application has been lodged with the Department of Minerals and Energy, Eastern Cape, for a permit to mine Weathered Dolerite (Sabunga) and Sand on Portion 1 of Farm 800, Gonubie. Notification is made in terms of subsection 5(4)(c) as well as subsection 22(4)(b) of the Act, which requires consultation with the landowner or lawful occupier of the land as well as other interested and affected parties. This notification is made on behalf of Vaduba Investments CC and forms part of the public participation process that is required by the MPRDA. A summary of the proposed activity is attached (Background Information Document) and more detailed information will be provided in the Environmental Management Plan, which will be made available to I&AP's for scrutiny.



According to the MPRDA, an applicant has 30 days from the time the DME accepts their application in which to notify and consult with interested and affected parties (IAPs) and the landowner or lawful occupier of the land on which the application has bearing of their intent, and to submit a record of such consultation to the DME.

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	Durbanville	
	7551	
	E-mail: clear@polka.co.za	
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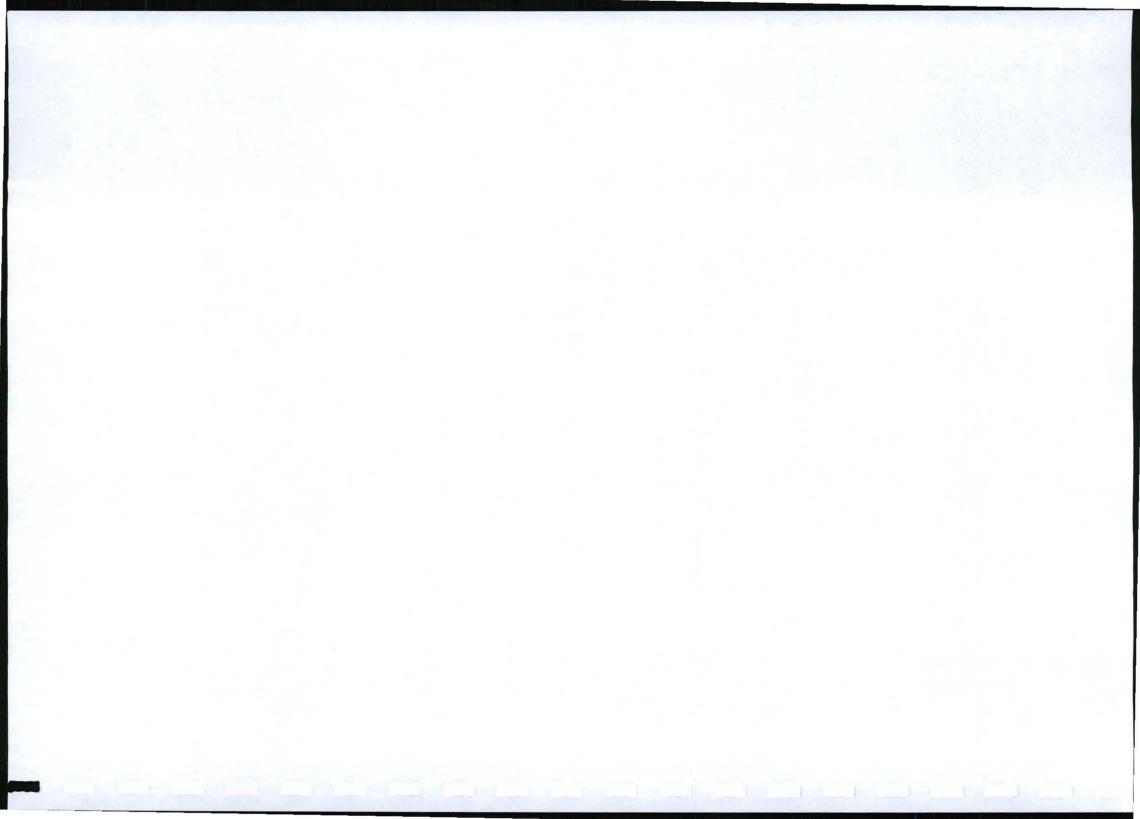
Attachments:

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Sending Confirm

Date : 14-AUG-2009 FRI 00:09 Name : CARMEN LE ROUX Tel. : D219793172

Phone	5	0437032929
Pages	:	12/12
Start Time	3	08-14 00:05
Elapsed Time	:	04'18"
Made	:	63
Resalt	-	Ok





Cell 082 603 5470 Tel 021 979 1172 Fax 086 610 7719 E-mail clear@polka.co.za

P.O. Box 2179 Durbanville 7551

H KINGON P.O. BOX 226 GONUBIE 5256

13 August 2009

Dear Sir,

Re: APPLICATION FOR A MINING PERMIT ON PORTION 1 OF FARM 800, GONUBIE, EAST LONDON

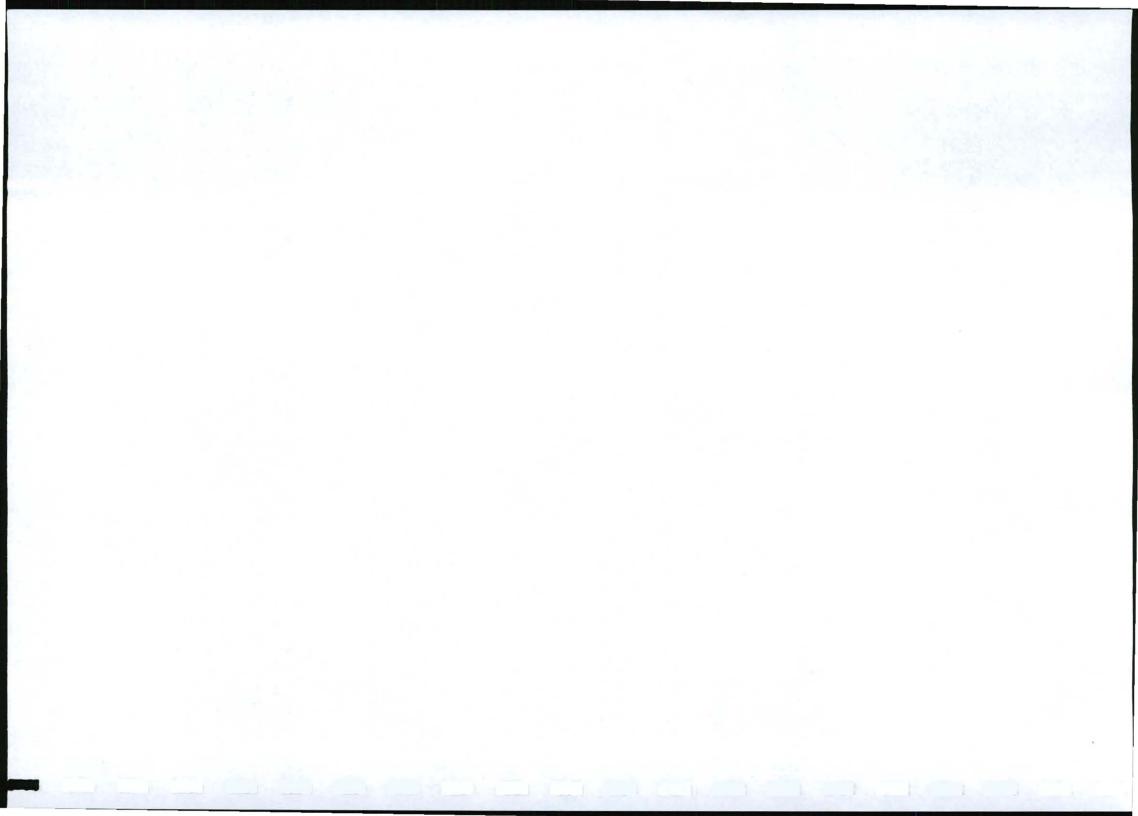
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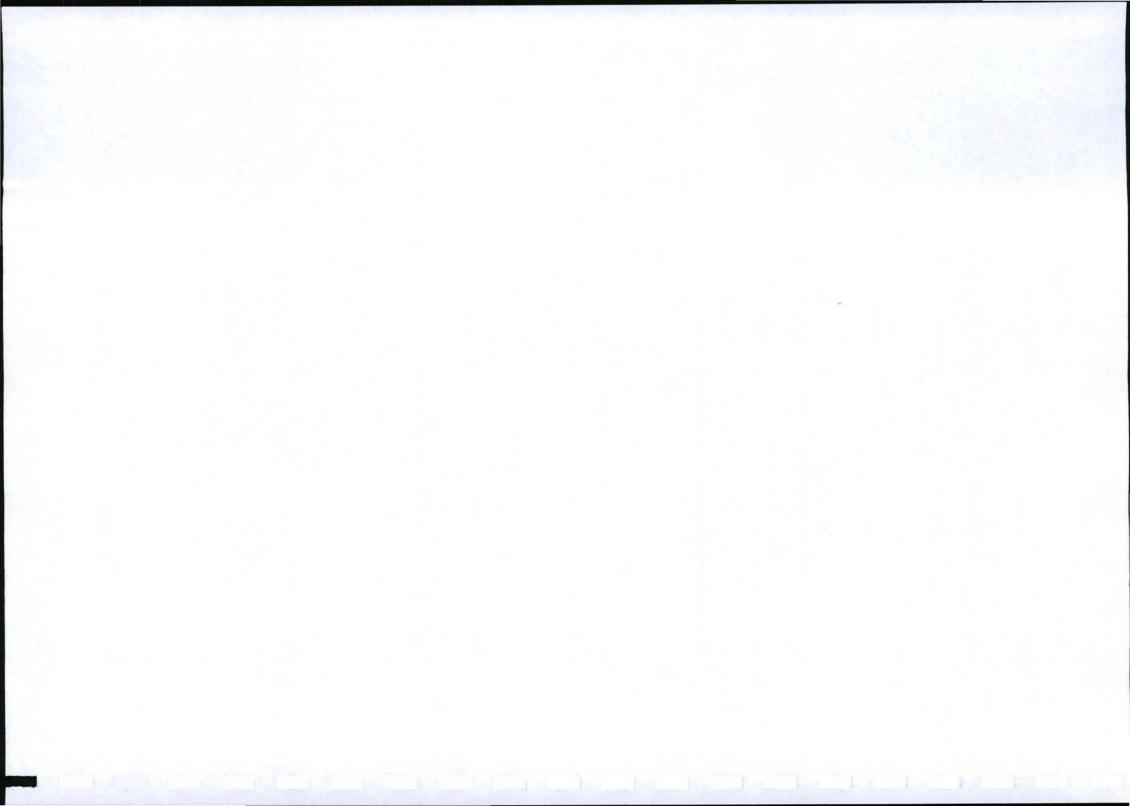
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Cell 082 603 5470 Tel 021 979 1172 Fax 086 610 7719 E-mail clear@polka.co.za

P.O. Box 2179 Durbanville 7551

WENGARY P.O. BOX 759 EAST LONDON 5200

13 August 2009

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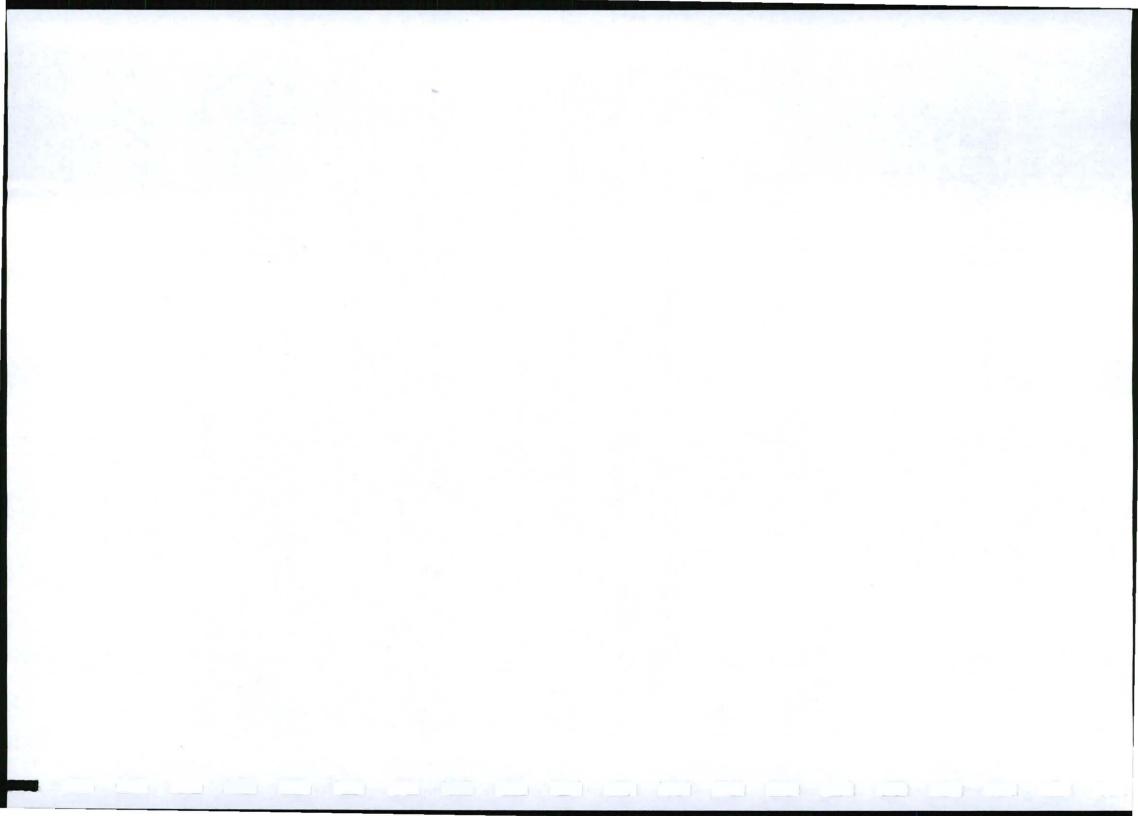
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