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 removed, shall be stored in a bund wall on the high ground side of the mining/prospecting area outside the 1:50 flood level within the boundaries of the mining area/ prospecting.
- 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 camp-site/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 that a minimum number of bushes or trees are felled and existing fence lines shall be followed as far as possible.
  - Water courses 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 use of access roads by other users, arrangements for multiple responsibility 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 minimise 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 alia, 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 situation restored to the pre mining/ prospecting situation.
- Roads shall be ripped or ploughed, and if necessary, appropriately fertilised (based on a soil analysis) to ensure the regrowth of vegetation. Imported road construction materials which may hamper regrowth 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 analysed and any deleterious effects on 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 camp sites shall be established, as far as is practicable, outside the flood plain, above the 1 in 50 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 closer than 100 metres 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 fire-break 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 camp site 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 metres, from any stream, river, pan, dam or borehole.
- Only domestic type wash 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 recognised 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 recognised 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 recognised disposal facility. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the camp site.
- 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 metre 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 analysed and any deleterious effects on 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 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.
- 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 recognised facility.

F 2.4.4 Rehabilitation of vehicle maintenance yard and secured storages areas

- On completion of mining/prospecting operations, the above areas shall be cleared of any contaminated soil, which must be dumped as referred to in section F 2.4.3 above.
- All buildings, structures or objects on 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 fertilised 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 analysed and any deleterious effects on 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 effected.
- 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:

  - 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 river-bed, shall be through the use of only one access at a time. The location of the access to the river channel across the river-bank shall be at a point of the river-bank 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 river-bed

- 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 on 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 river-bank 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 re-established 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.

2. 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 small scale mining that relates to stormwater 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.

F 3.3 EXCAVATIONS

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.
  - Excavations 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.

- ❖ Trenches 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 on 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 fertilized 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 on 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 commisioning, 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 –*
(i) *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 deposits must be classified by a suitably qualified person(s).*

(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 residents in zone of influence	*Number of workers in zone of influence*	*Value of third party property in zone of influence*	*Depth to underground mine workings*	*Classification*

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 characteristics 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 -*
- *(i) 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-*

(i) 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;

(vi) the receiving environment and specifically

(vii) 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 description 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 non-compliance 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
  (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 CONTENTS 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 Heritage Resources Act, 1999 (Act 25 of 1999)
* 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)

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:

POTENTIAL ENVIRONMENTAL IMPACTS OF MINING										
Activity	Disturbance					Pollution				Visual
	Landform	Soil	Flora	Fauna	Heritage	Land	Water	Air	Noise	
Mining	M	M	M	VL	VL	L	VL	M	M	M
Access	L	L	M	VL	VL	L	VL	M	L	M
Topsoil removal	M	H	M	VL	VL	L	VL	M	L	L
Overburden removal	H	H	VL	VL	VL	L	VL	M	L	L
Mineral Extraction	H	H	VL	VL	VL	L	L	M	M	M
Tailings disposal	VL	VL	VL	VL	VL	VL	VL	VL	VL	VL
Water Abstraction	VL	VL	VL	VL	VL	VL	VL	VL	VL	VL
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.

H. UNDERTAKING

I,.....Floyd Brink....., the undersigned and duly authorised thereto by.....Limpopo Department of Roads and Transport.

.....

Company (Delete that which is not applicable) 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 .Polokwane..... this.....12.....day of.....April.....2011...

.....
Signature of applicant

Gm: Roads infrastructure
Designation

Agency declaration: This document was completed by Tsetse Consulting cc on behalf of the Limpopo Department of Roads and Transport

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

Signed at……this……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
Private Bag X 59
PRETORIA
0001

Tel : 012 317 9288
Fax: 012 320 6786
E-mail: dorothy@mepta.pwv.gov.za

APPENDIX 1: TOPOGRAPHICAL AND LOCALITY MAPS

Map showing total area of the borrow pit

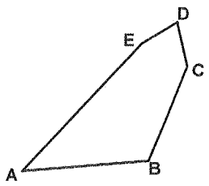
APPENDIX 2: PLATES OF THE SITE

Plate: 1&2 Location of the borrow pit facing towards the East on the Left Hand Side of the road from Mookgopong

Plate: 3 showing the geological type of the preferred area

APPENDIX 3: BORROW PIT LAYOUT PLAN

Sketch plan of borrow pit on Farm Sjambokskojes 553 KR



SJAMBOKSKOPJES 553 KR

Meters
0 5 10 20 30 40

1:3000

Co-ordinates:

A: 28°51'8.2"E
24°38'31.9"S

B: 28°51'9.6"E
24°38'31.8"S

C: 28°51'10"E
24°38'30.8"S

D: 28°51'9.9"E
24°38'30.3"S

E: 28°51'9.5"E
24°38'30.5"S

Limpopo Province
Prospecting Right

The figure lettered A, B, C, D and E in extent 0.13 Hectares

Prepared by:
Phaki Phakanani
Enviromental Consultants

No:06 Paul Kruger
Polokwane
0700
Tel: (015) 295 7391
Fax: 086 618 5960

Contact: Segopotse Mabule
Email: segopotse@phakanani.co.za

Applicant:

Limpopo Department
of Roads and Transport
Phamoko Towers Building
40 President Kruger Street
POLOKWANE
Tel: (015) 295 1015
Fax: (015) 295 1162/3

Legend

- Primary road
- Secondary road
- Tertiary road
- River/Stream
- Proposed site

.....
Regional Manager
Limpopo Department of
Mineral and Energy

Date.....

APPENDIX 4: CONSENT AND CONSULTATION LETTERS

Tsetsetse Consulting

Silidi N.E
C: 073 881 9032
F: 086 567 6871
esilidi@gmail.com

P. O Box 55980
Polokwane
0700

11 Oost Street
Polokwane
0699

Sjambokskojies

Tel: 072 776 2081

Fax: 086 619 1222

Attention: Mr. Johan De Beer

APPLICATION FOR THE UTILIZATION OF THE BORROW PIT (GRAVEL MATERIAL) FOR MAINTENANCE OF SURFACED ROADS D943 AND D2500 FROM GRUISFONTEIN TO BEKEND VALLEY (SETTLERS TO CRECY) IN THE MOOKGOPONG LOCAL MUNICIPALITY OF THE WATERBERG DISTRICT.

The aforementioned matter refers.

Tsetsetse Consulting is the Environmental consultants working on behalf of the Limpopo Department of Roads and Transport and Phakama Knight Piesold (Engineer). Our role amongst other things is to apply for the use of the borrow pits for the extraction of gravel materials for the maintenance of surfaced roads D943 and D2500 from Gruisfontein to Bekend Valley (Settlers to Crecy) in the Mookgopong Local Municipality of the Waterberg District

The process of lodging an application to the Department of Minerals and Resources (DMR former DME) in terms of the Minerals and petroleum Resource Development Act (MPRDA) of 2002, requires the consultation with the farm/land owner of the borrow pit site. The Environmental Management

Plan Report (EMPR) to be submitted will have to include the proof of consultation in the form of consent letter from the farm/land owner.

The test pits for the borrow pit that has been identified is found within Sjambokskojies farm at the following coordinates:

S24.642 and E28.854

In view of the above, Tsetsetse Consulting cc then request the consent letter that will be incorporated into the Environmental Management Plan Report (EMPR) for the approval by the Department of Minerals and Resources (DMR).

Should you have any enquiries regarding the contents of this correspondence, please do not hesitate to contact the undersigned.

Thanking you in anticipation

.....

N.E Silidi

Environmental Assessment Practitioner (Tsetsetse Consulting cc)

Tel: 073 8819 032 Fax: 086 567 6871

BEKENDEGELUK BOERDERY

Posbus 902 Naboomspruit 0560

31 Maart 2011

Tsetsetse Consulting
Posbus 55980
POLOKWANE
0700

Geagte Mnr/Me

RE : APPLICATION FOR THE UTILIZATION OF THE BORROW PIT (GRAVEL MATERIAL) FOR MAINTENANCE OF SURFACED ROADS D943 AND D2500 FROM GRUISFONTEIN TO BEKEND VALLEY (SETTLERS TO CRECY) IN THE MOOKGOPONG LOCAL MUNICIPALITY OF THE WATERBERG DISTRICT.

1. Met verwysing na u brief ongedateerd maar per e-pos ontvang op 22/3/11:

2. Hiermee toestemming vir die onttrekking van gruis uit die gruisgat te die plaas Sjambokskopjes onder die volgende voorwaardes;

2.1 gruis/en of profielgate (proefmonsters) mag slegs uit die **bestaande** gat losgemaak en gebruik word vir die doeleindes soos vervat in bogemelde skrywe.

2.2 die oppervlak (en omtrek) van die **bestaande** gruisgat mag onder geen omstandighede vergroot word nie,

2.3 geen verkeer of operasionele aktiwiteit sal op die oppervlakwalle behalwe by die toegangspad toegelaat word nie,

2.4 erosie wat die toegangspad na die gruisgat mag veroorsaak moet bekamp en voorkom word,

2.5 die gebruikte gruisgat sal in so 'n mate gerehabiliteer word dat dit esteties nie 'n swakker posisie as huidig sal vertoon nie,

2.6 die departement sal homself vergewis van die huidige los en beskikbare gruis binne die gruisgat en toesien dat na afloop van die aktiwiteite deur die departement binne die gruisgat daar net soveel los gruis agtergelaat word

2.7 binne werksure sal slegs mense op die terrein (gruisgat) toegelaat word wat aktief is in die uitvoering van hul pligte in ooreenstemming met die gruisprojek soos vervat in bogemelde skrywe,

2.8 buite werksure sal slegs aangewese sekuriteitspersoneel op die terrein (gruisgat) toegelaat word wat aktief is in die uitvoering van sy/hul plig om beveiliging te doen van toerusting en apparaat wat gebruik word vir die gruisprojek soos vervat in bogemelde skrywe,

2.9 vir die duur van die uitgrawings sal die terrein en stoor en masjinerie altyd in 'n ordelike toestand wees,

2.10 opruiming van enige afvalmateriaal, afvalstowwe en skroot sal uitgevoer word voor ontruiming.

2.11 alle masjinerie, implemente en ander bates van die departement sal op risiko van die departement by die gruisgat ontplooi word en dra die eienaar van die plaas Sjambokskopjes geen aanspreeklikheid nie.

3 'n Ontruimingsdokument wat stateer dat alle voorwaardes nagekom is, moet aan die verteenwoordiger van die eienaar oorhandig word vir ondertekening, alvorens die implemente en toerusting wat gebruik word om die gruis in die gruisgat los te kry, verwyder word.

4 Verder sal die *Limpopo Department of Roads and Transport* op die plaas Sjambokskopjes aan die volgende uitvoering gee

4.1 'n Enkelpad van ongeveer 300 meter opskraap en begruis vir gebruik deur die eienaar van die plaas Sjambokskopjes

4.2 'n enkel waterafloopbaan oor die lande na die gruisgat opbou vir afloopwater op die plaas Sjambokskopjes.

5. Ek vertrou u vind die toestemmingsbrief in orde en dankie vir die opgradering van die padnetwerk in die omgewing.

6 Onderteken nms Bekendegeluk Boerdery (Edms) Bpk / JAE de Beer;

7 Datum: 28 Maart 2011

Geteken JAE de Beer

Uittreksel uit 'n notule van 'n vergadering van direkteure van Bekendegeluk Boerdery (Edms) Bpk Reg. nr. 60/2383/07 gehou op 28 Maart 2011 te Naboomspruit. Bylaag A

1 Besluit: Dat Johan Adam Enslin de Beer gemagtig word om namens Bekendegeluk Boerdery (Edms) Bpk Reg. nr. 60/2383/07 toestemming te verleen aan *Limpopo Department of Roads and Transport* om gruis uit die gruisgat (S24.642 & E28.854) te onttrek en te gebruik, onderworpe aan sekere voorwaardes, soos vervat in die toestemmingsbrief hierby aangeheg.

2 Geteken DE de Beer:

3 Datum: 28 Maart 2011

APPENDIX 5: HERITAGE IMPACT ASSESSMENT (HIA) REPORT / SAHRA COMMENTS

[redacted]

MBOFHO
Consulting and Projects

Mbofho Consulting and
Project Managers
Box 55980
Polokwane
0700

Report compiled by

Tel: 015 298 8899,
Fax: 086 514 6151
Cel: 072 133 4195
Email: takalani.mbofho@gmail.com

MBOFH
Consulting and Pro

PHASE 1 HERITAGE IMPACT ASSESSMENT

HERITAGE IMPACT ASSESSMENT (HIA) FOR BORROW PIT SITUATED ON FARM SJAMBOKOPJIES AT MOOKGOPONG AREA FOR THE PROPOSED MAINTENANCE OF ROAD.FROM MOOKGOPONG TO SETTLERS FOR THE DEPARTMENT OF ROADS AND TRANSPORT, IN THE WATERBERG DISTRICT OF LIMPOPO PROVINCE.

Report compiled for Tsetsetse Consulting cc
11 Oost Street
Polokwane
0700

[HIA OF BORROW PIT SITUATED AT MOOKGOPONG AREA, WATERBERG DISTRICT, LIMPOPO PROVINCE]

The Department of Roads and Transport, proposed to use a Borrow pit for the Preventative Maintenance of Road – Mookgopong to Settlers, Waterberg District, Limpopo Province

MBOFHO
Consulting and Projects

REPORT DETAILS

Project name:	Heritage Impact Assessment of the proposed Borrow pit found at Mookgopong area, for the rehabilitation of the road from Mookgopong to Settlers in the Waterberg District of Limpopo province
Environmental firm:	Tsetsetse Consulting cc
Heritage firm:	Mbofho Consulting and Project Managers
Author:	Mr M.A Silidi B Environmental Sciences 2000 (UNIVEN), Post Graduate Diploma in Museum and Heritage Studies 2002 (UCT), Archaeological Field Surveys 2002 and 2003 (WITS), Heritage Impact Assessment course 2006 (UOFS) and MA Environmental Management 2007 (UOFS)

ABBREVIATIONS

CRM	Cultural Resources Management
CMP	Conservation Management Plan
DEDET	Department of Economic Development, Environment and Tourism
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
HIA	Heritage Impact Assessment
LSA	Late Stone Age
LIA	Late Iron Age
MCPM	Mbofho Consulting and Project Managers
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
NEMA	National Environmental Management Act
SAHRA	South African Heritage Resources Agency

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TERMINOLOGY

- **Archaeological material**: remains resulting from human activities left as evidence of their presence which are older than 100 years, which are in the form of artifacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces and structures.
- **Cultural Heritage Resources:** refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.
- **Cultural Resources Management (CRM):** the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations
- **Cultural Significance:** is the aesthetic, historical, scientific and social value for past, present and future generations.
- **Conservation:** means all the processes of managing a place to retain its cultural significance.
- Excavation: that is a method in which archaeological materials are extracted, which involves systematic recovery of archaeological remains and their context by removing soil and any other material covering them.
- **Grave:** a place of burial which include materials such as tombstone or other marker such as cross etc
- **Historic material:** means remains resulting from human activities, which are younger than 100 years and no longer in used\, that include artifacts, human remains and artificial features and structures.
- **Historical:** means belonging to the past.
- ***In Situ* material:** means material culture and surrounding deposits in their original location and context for instance an archaeological remains that have not been disturbed.
- **Place:** means site, area, building or other work, group of buildings or other works, together with pertinent contents, surroundings and historical and archaeological deposits.
- **Preservation:** means protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary.
- **Site:** a spatial cluster of artifacts, structures, organic and environmental remains, as residues of past human activity.

- **Stone Age:** material resulting from proto-human to human up to the emergence of the early Homo sapiens, this include stone tools, bone and wooden tools, beads, shells, ivory, rock art, formal graves, etc. the period is divided into Early, Middle and Late Stone Age

MBOFHO
Consulting and Projects

Management summary

Mbofho Consulting and Project Managers (MCPM) has been appointed by Tsetsetse Consultants cc to undertake a Phase 1 Heritage Impact Assessment of the proposed Borrow pit situated at Mookgopong area, for the rehabilitation of the road from Mookgopong to Settlers in the Waterberg District of Limpopo Province, in terms of Section 38 of the National Heritage Resources Act No 25 of 1999. MCPM officials inspected the area on the 11 February and 01 March 2011; and completed a controlled-exclusive surface survey and also conducted a database and literature review of the study area.

We have identified no heritage resources within the proposed borrow pit site.

We recommend that this project may proceed with no further heritage resource mitigation and the report will be submitted to SAHRA/ LIHRA in fulfilment of the requirements of the National Heritage Resources Act, 25 of 1999 as part of the DMR commenting authority consultation process.

If permission is granted for the borrow pit activity to proceed, the Department of Roads and Transport (Client) is reminded that the Act requires that a developer ceases all works immediately and notify SAHRA/ LIHRA should any heritage resources, as defined by the Act, be accidentally discovered during the course of development activities.

MBOFHO
Consulting and Projects

TABLE OF CONTENTS

1. Introduction and legislation

MCPM has been appointed by Tsetsetse Consultants to undertake a Phase 1 Heritage Impact Assessment (HIA) of the proposed borrow pit at Mookgopong area, for the rehabilitation of the road from Mookgopong to Settlers in the Waterberg District of the Limpopo Province in terms of Section 38 of the National Heritage Resources Act, No 25 of 1999. Section 38 of the Act requires such an assessment in case of:

(a) construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;

(b) construction of a bridge or similar structure exceeding 50 m in length; and

(c) any development, or other activity which will change the character of an area of land, or water –

(i) exceeding 10 000 m^2 in extent;

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or

(d) the costs of which will exceed a sum set in terms of regulations; or

(e) any other category of development provided for in regulations.

A heritage impact assessment is not limited to archaeological artefacts, historical buildings and graves. It is far more encompassing and includes intangible and invisible resources such as places, oral traditions and rituals. In the NHRA, 25 of 1999 a heritage resource is defined any place or object of cultural significance i.e. of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This includes the following wide range of places and objects:

(a) places, buildings, structures and equipment;

(b) places to which oral traditions are attached or which are associated with living heritage;

(c) historical settlements and townscapes;

(d) landscapes and natural features;

(e) geological sites of scientific or cultural importance;

(f) archaeological and palaeontological sites;

(g) graves and burial grounds, including -

(i) ancestral graves,

(ii) royal graves and graves of traditional leaders,

(iii) graves of victims of conflict,

(iv) graves of important individuals,

(v) historical graves and cemeteries older than 60 years, and

(vi) other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);

(h) movable objects, including -

(i) objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects and material, meteorites and rare geological specimens;

(ii) ethnographic art and objects;

(iii) military objects;

(iv) objects of decorative art;

(v) objects of fine art;

(vi) objects of scientific or technological interest;

(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and

(viii) any other prescribed categories, but excluding any object made by a living person;

(i) battlefields;

(j) traditional building techniques.

A 'place' is defined as:

(a) a site, area or region;

(b) a building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);

(c) a group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and

(d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

'Structures' means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

'Archaeological' means -

(a) material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;

(b) rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and

(c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;

(d) features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Palaeontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. SAHRA/ LIHRA will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

2. Project Location

The study area Mookgopong is located on the South West side of Naboom town and the borrow pit is about 20km outside Mookgopong CBD and is found along the road from Mookgopong to Settlers. It is about 115km South of Polokwane town. The borrow pit is on farm Sjambokopjies. The area is found at the following GPS Coordinates:

Test pit 1: S24° 38' 31.9" E028° 51' 08.2"

Test pit 2: S24° 38' 31.8" E028° 51' 09.6"

Test pit 3: S24° 38' 30.8" E028° 51' 10.0"

Test pit 4: S24° 38' 30.3" E028° 51' 09.9"

3. Methodology

MCPM officials inspected the project site on the 11 February and 01 March 2011 and completed a controlled-exclusive surface survey, where sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 19781).

We consulted various provincial databases, including historical, archaeological and geological sources and provide a concise account of South Africa's pre and postcolonial history. We assessed the value and significance of heritage resources, as defined in the National Heritage Resources Act, 25 of 1999.

The client has provided a map of the area, contained in the EMPR report. Geographic coordinates were obtained with a handheld Garmin GPS. Photographs were taken with a Sony Cyber-shot digital camera.

The assumptions and limitations of this heritage impact assessment are as follows:

- We have assumed that the description of the proposed project, provided by Tsetsetse Consulting cc, is accurate.
- Soil surface visibility was moderate.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from SAHRA is required to disturb a heritage resource.

Reporting the results of these studies to the Heritage Authorities

All sites or possible sites found are classified using a hierarchical system wherein sites are assessed using a scale of one to ten according to their importance. These categories are as follows;

Degree of significance	Justification	Score
Exceptional significance	Rare or outstanding, high degree of intactness. Can be interpreted easily.	10
High significance	High degree of original fabric. Demonstrates a key element of item's significance. Alterations do not detract from significance.	7-9
Moderate significance	Altered or modified elements. Element with little heritage value, but which contribute to the overall significance.	5-7
Little significance	Alterations detract from significance. One of many. Alterations detract from significance.	3-5
Intrusive	Damaging to the item's heritage significance.	1-3

Table 1. Site significance table for pre-contact sites.

4. Site investigation

Observations and recommendations

The borrow pit is an existing one which has been confirmed during the field investigation

⇒ **Places, buildings, structures and equipment**

None were identified within the proposed activity areas.

⇒ **Places to which oral traditions are attached or which are associated with living heritage**

None were identified within the proposed activity areas.

⇒ **Historical settlements and townscapes**

None were identified within the proposed activity area.

⇒ **Geological sites of scientific or cultural importance**

None were identified within the proposed activity areas.

⇒ **Archaeological and palaeontological sites**

None were identified within the proposed activity areas..

⇒ **Graves and burial grounds**

None were identified within the proposed activity areas..

⇒ **Movable objects excluding any object made by a living person**

None were identified within the proposed activity areas.

⇒ **Battlefields**

None were identified within the proposed activity areas.

⇒ **Traditional building techniques**

None were identified within the proposed activity areas.

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Consulting and Projects

Summary of findings in terms of Section 38 of the National Heritage Resources Act, 25 of 1999.

(a) the identification and mapping of all heritage resources in the area affected

None.

(b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in regulations

Not applicable.

(c) an assessment of the impact of development on such heritage resources

Not applicable.

(d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development

Not applicable.

(e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources

The borrow pit is outside Mookgopong township (20km), and the Local Municipality has been consulted and consented on the proposed excavation of the borrow pit

(f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives

Not applicable.

(g) plans for mitigation of any adverse effects during and after completion of the proposed development

If permission is granted for development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and notify SAHRA/LIHRA should any heritage resources, as defined in the Act, be discovered during the course of development activities.

Conclusion

We recommend that this project may proceed with no further heritage resource mitigation and have submitted this report to DMR in fulfilment of the requirements of the National Heritage Resources Act, 25 of 1999; who will in turn submit to SAHRA/LIHRA during the process of consultation with commenting authorities.

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