caseID: 2290

mineral resources

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Attention: Mr. Donald Lithole/ Victor Netshiavha

CONSULTATION IN TERMS OF SECTION 40 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 2002, (ACT 28 OF 2002) FOR AN ENVIRONMENTAL MANAGEMENT PROGRAMME FOR A MINING RIGHT ON THE FARMS GOUDA FONTEIN 76 LR, JULIETTA 112 LR AND MOONLIGHT 111 LR SITUATED IN THE MAGISTERIAL DISTRICT OF LEPHALALE/MOLEMOLE.

APPLICANT: TURQUOISE MOON TRADING 157 (PTY) LTD

Attached herewith, please find a copy of an EMPR received from the above-mentioned applicant, for your comments.

It would be appreciated if you could forward any comments or requirements your Department may have in the case in hand to this office and to the applicant within 60 days (as from **08 July 2011 to 08 September 2011**), failure of which will lead to the assumption that your Department has no objection or comments with regard to this application and this Department will in that instance proceed with the finalisation thereof.

Your co-operation will be appreciated.

For THE REGIONAL MANAGER
LIMPOPO REGION – POLOKWANE
08/07/2011

Applicant: Turquoise Moon Trading 157 (Pty) Ltd

DMR Reference Number: LP30/5/1/2/3/2/1/0201 EM

DEA Reference Number: 12/9/11/L386/5

LEDET Reference Number: 12/1/9-7/2-W110

MOONLIGHT IRON ORE PROJECT

ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME

File 2 of 3

APPENDICES A to L

SUBMITTED FOR AN APPLICATION FOR A MINING RIGHT IN TERMS OF SECTION 39 AND OF REGULATIONS 50 AND 51 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002) (the Act)

AND

AS REQUIRED IN TERMS OF REGULATION 385 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT NO. 107 OF 1998)

Compiled by

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APPENDIX A: CONCEPTUAL MANAGEMENT PLANS

This appendix includes conceptual management plans for the following aspects of the project:

- Appendix A1: Security and Access Control
- Appendix A2: Stockpile Management
- Appendix A3: Soil Management (Conservation And Use)
- Appendix A4: Non-Mineralised Waste Management
- Appendix A5: Tailings Management
- Appendix A6: Waste (Overburden/Rock) Management
- Appendix A7: Biodiversity Management
- Appendix A8: Water Use and Management
- Appendix A9: Stormwater Management System
- Appendix A10: Dust Management
- Appendix A11: Noise Management
- Appendix A12: Visual Management
- Appendix A13: Blast Management
- Appendix A14: Traffic Management
- Appendix A15: Heritage Management
- Appendix A16: Recruitment, Training, Procurement, Housing and Safety and Crime Management
- Appendix A17: Involuntary Resettlement
- Appendix A18: Compensation Plan
- Appendix A19: Stakeholder Engagement Plan
- Appendix A20: Rehabilitation Plan

APPENDIX A1: SECURITY AND ACCESS CONTROL

This section provides a description of the measures that will be implemented to prevent physical harm to third parties and animals from potentially hazardous excavations.

Security control measures in the form of manned access points, fencing, barriers and/or warning signs (in appropriate languages) will be used to keep people and animals away from both the site and any hazardous excavations and infrastructure.

Regular patrols of the fence perimeter will be undertaken to ensure no breach of security measures has taken place. Where required, maintenance of facilities will be done to re-instate the integrity of the security measures.

If people or animals do fall off or into hazardous excavations or infrastructure causing injury, or if the TSF fails causing injury to people or animals, the emergency response procedure in Section 20.2 will be followed.

Management measures for stockpiling materials (Appendix A2), informing stakeholders of potential hazards (Appendix A19) and rehabilitating the site (Appendix A20) will be implemented by the mine.

APPENDIX A2: STOCKPILE MANAGEMENT

This section provides a description of the measures that will be implemented for all stockpiles on site to prevent physical harm to third parties and animals from potentially hazardous excavations and to prevent unnecessary pollution of water and air resources.

Soil stockpiles will be managed as outlined in the soil management plan (Appendix A3).

All other stockpiles, including TSF and waste rock stockpiles, that have the potential to fail will be designed, constructed and operated in a manner that stability is a priority and that the risk of failure is limited to acceptable levels.

Process-related stockpiles that can cause groundwater contamination, excluding the TSF and waste dumps, will be placed on sealed and bunded surfaces or in bunkers / silos to prevent seepage. Stockpiles shall only be placed on bare ground where it is confirmed (through leachate testing and geotechnical investigations) that the leachability of the material will not pose a significant risk to groundwater pollution.

For the TSF and waste dumps, potential groundwater contamination will be mitigated in line with the design principles included in the tailings and waste rock management plans, respectively (Appendix A5 and A6, respectively).

Management measures for rehabilitating the site (Appendix A20) will be implemented by the mine.

APPENDIX A3: SOIL MANAGEMENT (CONSERVATION AND USE)

This section provides a description of the measures that will be implemented to prevent loss of soils and related functionality through physical disturbance, erosion and compaction. This plan is also aimed at ensuring that the land capability can be returned to that of grazing and/or wilderness to support the recommended end land use of game and livestock farming and hunting.

Turquoise Moon will limit the disturbance of soils to that identified in this EIA and EMP report. Where soils have to be disturbed the soil will be stripped, stored, maintained and replaced in accordance with the specifications of the soil management plan detailed in Table B1.

TABLE B1: SITE-SPECIFIC SOIL MANAGEMENT PLAN

Steps	Factors to consider	Detail
Delineation of areas to be stripped		Stripping will only occur where soils are to be disturbed by activities or infrastructure that are described in the EIA and EMP report, and where a clearly defined end rehabilitation use for the stripped soil has been identified.
Reference to biodiversity action plan		It is recommended that all vegetation be stripped and stored as part of the utilizable soil. However, the requirements for moving and preserving fauna and flora according to the biodiversity action plan should be consulted.
Protection of soils, where possible	Erosion control	Where water is discharged (i.e. end of clean stormwater controls, spillways of water dams), Turquoise Moon will establish and maintain controls (such as gabions) which reduce the velocity and erosive energy of these waters.
	Off-road driving	Mine vehicles will keep to established mine roads. No unnecessary off-road driving will be allowed.
Stripping and handling of soils	Utilisable soil (topsoil plus upper portion of subsoil)	A minimum of 50cm of utilisable soil will be stripped, where possible, unless the bedrock is less than this from surface. Where soil depths are deeper, the mine will consider stripping up to 75cm of utilizable soil to assist with the rehabilitation of shallow soils areas, at closure.
	Soil groups	The different soil groups will be stockpiled separately: deep sandy, shallow rocky, structured and hydromorphic (wet base) soils.
	Handling	Soils will be handled in dry weather conditions as far as practically possible so as to cause as little compaction as possible. Utilizable soil will be handled and stockpiled separately from the lower subsoil and soft overburden.
Delineation of stockpiling areas	Location	Stockpiling areas will be identified in close proximity to the source of the soil to limit handling and to promote reuse of soils in the correct areas.
	Designation of the areas	Soil stockpiles will be clearly marked to identify both the soil type and the intended area of rehabilitation.
Stockpile management	Vegetation establishment and erosion control	Rapid growth of vegetation on the soil stockpiles will be promoted (e.g. by means of watering or fertilisation) for soil stockpiles that will remain for more than 1 year and/or one rainy season. The purpose of this exercise will be to encourage vegetation growth on soil stockpiles and to combat erosion by water and wind.
	Stormwater controls	Stockpiles will be established with stormwater diversion berms to prevent run off erosion.

Steps	Factors to consider	Detail
	Height and slope	Soil stockpiles height will be restricted to avoid compaction and damage to the underlying soils. The ideal stockpile height for storage periods greater than 3 years is 1.5m. For short term stockpiles (less than 3 years) the maximum allowable height is 15m but these stockpiles should be benched. Each bench should ideally be 1.5m high and 2m wide. The stockpile side slopes should be 1 vertical: 6 horizontal to promote vegetation growth and reduce run-off related erosion.
	Waste	Only inert waste rock will be placed on soil stockpiles if the vegetative growth is impractical or not viable. This will aid in protecting the stockpiles from wind and water erosion until the natural vegetative cover can take effect. No other waste material will be placed on the soil stockpiles.
	Movement on stockpiles	Equipment, human and animal movement on top of the soil stockpiles will be limited to avoid topsoil compaction and subsequent damage to the soils and seedbank.
Rehabilitation of disturbed land: restoration of land capability	Placement of soil	Soft overburden will be followed by calcrete material, which will be compacted in place. This will be followed by the replacement of the utilizable soil.
		The utilisable soil will be redistributed in a manner that achieves an approximate uniform stable thickness consistent with the approved end land use and will attain a free draining surface profile.
		If insufficient soil is present on site to rehabilitate disturbed areas and there is a need to import soil for rehabilitation purposes, this will be done in consultation with an appropriately qualified soil specialist.
	Fertilisation	A representative sampling of stripped soils will be analysed to determine the nutrient status of the soil. As a minimum the following elements will be tested for: EC, cation exchange capacity, pH, Ca, Mg, K, Na, P, Zn, clay% and organic carbon. These elements provide the basis for determining the fertility of soil. Based on the analysis, fertilisers will be applied if necessary.
	Erosion control	Erosion control measures will be implemented to ensure that the topsoil is not washed or blown away and that erosion gulleys do not develop prior to vegetation establishment.
Pollution of soils	In situ remediation	If soil (whether stockpiled or in its undisturbed natural state) is polluted, the first management priority is to treat the pollution by means of in situ bio-remediation. The acceptability of this option must be verified by an appropriate soils expert and by DWAF, on a case by case basis, before it is implemented.
	Off site disposal	If in situ treatment is not possible or acceptable then the polluted soil must be classified according to the Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste (DWAF 1998) and disposed at an appropriate, permitted, off-site waste facility.

Management measures for water pollution prevention (Appendix A8), stormwater control (Appendix A9) and non-mineralised waste (Appendix A4) will be implemented by the mine.

APPENDIX A4: NON-MINERALISED WASTE MANAGEMENT

This section provides a description of the measures that will be implemented to manage non-mineralised waste generated on site. Non-mineralised waste streams generated by the project include sewage waste and general and industrial hazardous waste. These are discussed in further detail below.

Sewage treatment

It is proposed that there will be a sewage treatment facility located on site to cater for the proposed project. The proposed plant will be designed with an annual throughput capacity of 8,000m^3 (based on an anticipated peak of 455 workers). The design of the plant will be determined during the definitive feasibility study and will include measures for preventing pollution of soil, air (odour) and water resources.

Treated effluent will be recycled back into the process and sewage sludge will either be used for on-site rehabilitation of the tailings dam and other disturbed areas if the sludge is declassified and its use licensed or alternatively, disposed of off-site at a permitted facility.

General and hazardous waste

The types of wastes that will be generated by the project are summarised in Table B2. The method for handling and storage of the wastes is included in the table. No on-site landfill (waste disposal) facilities are planned. The waste management procedure for the site is included in Table B3.

TABLE B2: DOMESTIC AND INDUSTRIAL SOLID WASTES

Waste Type	Method of temporary storage on site	Options for re-use / recycling
First aid clinic	Designated sealed containers in covered store	-
Laboratory chemicals		-
Scrap metal	Open air scrap yard and salvage yard	Recycled through a scrap dealer
Building rubble	Open air scrap yard	Re-used on site for rehabilitation
Used oil and grease	Drums in bunded store/collecting sump	Recycled through a contractor
Packaging for hazard material	Sealed containers in bunded store	-
Chemicals/chemical contaminated containers and material	Sealed containers in bunded store	-
Vehicle parts and used tyres	Open air scrap yard	Recycled through a scrap dealer
General industrial, non-hazardous waste	Designated skip	Sorted on site for removal by various contractors – recycled where possible
General domestic, non-hazardous waste	Designated skip	
Sewage sludge	Drying beds and then used for rehabilitation	Used for on-site rehabilitation
Sewage screenings	Sealed container in bunded store	-

TABLE B3: WASTE MANAGEMENT PRACTICES FOR GENERAL AND HAZARDOUS WASTE

Items to be considered		Intentions
General	**Specific**	
Classification and record keeping	General	The waste management procedure for Turquoise Moon will cover the storage, handling and transportation of waste to and from the site. The mine will ensure that the contractor's responsible are made aware of these procedures.
	Waste opportunity analysis	In line with DWAFs' strategy to eliminate waste streams in the longer term, Turquoise Moon will assess each waste type to see whether there are alternative uses for the material. This will be done as a priority before the disposal option.
	Classification	Wastes will be broadly classified in terms of the DWAF Minimum Requirements for Waste Disposal (DWAF, 1998).
	Inventory of wastes produced	An inventory of wastes will be compiled and will include estimated quantities of waste. The inventory will be kept up to date.
	Disposal record	Written evidence of safe disposal of waste will be kept.
Waste management facilities	Portable chemical toilets	Mobile enclosed portable toilets will be placed at construction sites. The enclosed chemical toilets will be cleaned and serviced twice a week by a contractor. Sufficient toilets will be placed on site to cater for workers.
	Collection points	Designated waste collection points will be established on site. Care will be taken to ensure that there will be sufficient collection points with adequate capacity and that these are serviced frequently.
	Laydown/ salvage areas	During decommissioning and closure, lay down areas for re-usable non-hazardous materials will be established. Mixing of re-usable materials with other wastes, especially hazardous wastes will be prevented.
	General waste	Will be stored in designated skips and removed by an approved contractor for disposal at a licensed facility.
	Scrap metal and building rubble	Care will be taken to ensure that scrap metal and building rubble does not become polluted or mixed with any other waste. The scrap metal will be collected in a designated area for scrap metal (salvage yard). It will be sold to scrap dealers. Building rubble will be used to backfill and rehabilitating areas where required.
	Hazardous wastes	Medical waste, laboratory chemicals, used chemicals and chemical containers will be temporarily stored in sealed containers in a bunded store before removal by an approved waste contractor and disposal in a licensed facility.
	Oil and grease	Oil and grease will be collected in suitable containers at designated collection points. The collection points will be bunded and underlain by impervious materials to ensure that any spills are contained. Notices will be erected at each waste oil point giving instructions on the procedure for waste oil discharge and collection. An approved subcontractor will remove oil from site.
	Any soil polluted by a spill	If soil (whether stockpiled or in its undisturbed natural state) is polluted, the first management priority is to treat the pollution by means of in situ bio-remediation. The in-situ options include: bio- remediation at the point of pollution; or removal of soils for washing and/or bio remediation at a designated area after which the soils will be replaced. The acceptability of either of these options must be verified by an appropriate soils expert and by DWA, on a case by case basis or through a dedicated procedure, before it is implemented. Remediation will be followed up by an audit to ascertain whether the remediation has been successful.
		If in situ treatment is not possible or acceptable then the polluted soil must be classified according to the Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste (DWAF 1998) and disposed at an appropriate, permitted, off-site waste facility.

Items to be considered		Intentions
General	**Specific**	
Waste management facilities cont.	Dried sewage sludge and screenings from the sewage plant	The first option is to make use of the sludge as part of the fertilising medium for re-vegetation of the tailings dam and other disturbed areas. Any excess sludge will be removed from site with the screenings as hazardous waste and disposed at a licensed facility.
	Biomass	Biomass generated from the clearing of the site during construction and development of the open pit will be temporarily stockpiled on site and either used to make compost for the rehabilitation of disturbed areas and/or made available to the local community as firewood.
Disposal	Off site waste disposal facilities	Waste will be disposed of at appropriate permitted waste disposal facilities as outlined below. For general waste the closest site is Lephalale (however this is not permitted). For hazardous waste the closest permitted site is at Holfontein.
Waste transport	Contractor	A qualified waste management subcontractor will undertake the waste transport. The contractor will provide an inventory of each load collected and of proof of disposal at a licensed facility.
Banned practices	Long-term stockpiling of waste	Stockpiling of waste is a temporary measure. Waste stockpiling sites must have an impervious floor, be bunded and have a drainage system for collection and containment of water on the site.
	Burying of waste	No wastes other than mine residues will be placed on site.
	Burning of waste	Waste may only be burned in legally approved incinerators.

APPENDIX A5: TAILINGS MANAGEMENT

This management plan has been compiled using the preliminary waste design compiled by Metago[d] (Metago 2011) (Appendix U of the EIA and EMP report). The design of the facility is at a conceptual stage. Key information is provided in the table below (Table A1).

Acid base accounting testing and acid leach tests will be undertaken on tailings and waste rock samples from site. If required, the results of these tests will be made available to the regulatory authorities and will be used to inform any changes required to the management of the residue facilities.

TABLE A1: PRELIMINARY DESIGN OF THE TSF

Feature	Detail
Typical tailings physical and chemical characteristics	
Physical properties	The tailings product will be derived from the processing of ore from open cast mining. The tailings will have 98% (by mass) passing the 0.075 mm sieve size. Permeability will range from 2.0 x 10-6 to 5.0 x 10-9 m/s. Average void ratio is 1.0. Consolidated strength is 0 kpa (apparent cohension) with a friction angle of 32 degrees. Specific Gravity is 4.1. Slurry density is 1.71 tonnes per m^3. Water content at the slurry density is 82% by mass.
Expected pH	6-9
TDS range	Likely to be 600 to 3500 mg/ℓ
Salinity of leachate	Likely to be high due to recirculation of process water.
Acid generation risk	Low to Very Low
Safety and environmental classification	
Safety classification	Low to medium due to number of residents in zone of influence and potential value of third party infrastructure (determined in accordance with the South African Code of Practice for Mine Residue Deposits (SABS 0286:1998) and the requirements of Mineral Regulation 527 of 23 April 2004).
Environmental classification	The environmental classification is such that there could be potentially significant impacts associated with the facility, but as included in Section 7.2 of this report, the impacts can be mitigated to an acceptable level.
Preliminary design details	
Physical dimensions	The footprint area of the TSF is approximately 312ha, which includes the perimeter road, solution trench, catchment paddock area and perimeter fencing. The final elevation of the lower paddock will be 984 mamsl (maximum height of 38 m as measured from the lowest toe elevation of the lower starter wall of 946 mamsl). The final elevation of the upper paddock will be 984 mamsl (maximum height of 24 m as measured from the lowest toe elevation of the upper starter wall of 960 mamsl). Total volume = 63,990,000 m^3 (or 127,980,000 tonnes of tailings at an assumed average dry density of 2.0 tonnes per cubic meter).
Tailings delivery and deposition	Tailings delivery pipelines are approximately 350 to 400 mm NB steel pipe.
	Perimeter spigot pipelines are approximately 350 to 400 mm NB steel pipe. Initial deposition will be directed at the base of the starter wall and will be carefully managed to ensure that the toe and blanket drains are not damaged. Once the tailings has reached the height of the starter walls, raising of TSF will be with tailings (or waste rock) in an upstream method of dam development. The rate of rise of the TSF is limited to 1.0 m/year or less to ensure sufficient drying and consolidation of the tailings material.

Feature	Detail
Geotechnical considerations	Clayey/Silty sands (SC materials) and poorly graded gravels (GP-GC) are found throughout the site. The materials on site have a low clay content, and are predominantly made up of sand and silt (SC) or gravel and sand (GP-GC).
Topsoil stripping	Topsoil will be stripped to a depth of 300 mm and stockpiled in accordance with the soil conservation procedure (Appendix A). Stripping and stockpiling of topsoil will be done as part of the initial TSF construction.
TSF lining	There is no lining in the basin of the TSF. The in-situ material (SC materials) may need to be prepared prior to covering with tailings (i.e. compaction). Infiltration of leachate from the TSF to groundwater is largely restricted by the superfine/impermeable nature of the tailings material (98% passing 75 microns) and the shallow bedrock.
TSF walls	Main starter wall has a maximum height of 9 m, 6 m wide crest, grassed outer slope of 1V:3.0H, bare inner slope of 1V:1.5H. Constructed with SC material.
	Upper starter (paddock containment) wall has a maximum height of 6 m, 6 m wide crest, bare outer slope of 1V:2H, bare inner slope of 1V:1.5H. Constructed with SC material.
	Catchment paddock walls (along the length of the starter walls) have a height of 1.5 m, 1.5 m wide crest, grassed outer and inner slopes of 1V:1.5H. Constructed with SC material.
Drainage system	Filter drainage system comprising: • Minimum 700 mm deep by 5 m wide toe drain, elevated by 250 mm, around the inner toe of main starter wall and along the TSF perimeter in the area of the upper paddock. • Minimum 700 mm deep by 10 m wide blanket drain, elevated by 500 mm, approximately 100 m from the toe drain, in the TSF basin. • Drain outlets comprising 160mm diameter closed HDPE corrugated pipe.
	Solution trench along the outside length of the main starter wall that is 1 m deep, 1 m at base, 1V:1.5H side slopes, concrete lined.
Decant system	Decant system comprising: • 600mm spigot and socket concrete pipeline, buried 1.2 m deep (minimum), gravity flow. • Thirteen intermediate concrete penstock intake structures with top and side inlets. • Concrete energy dissipator structure at the decant pipeline outlet from where decant water flows into the concrete lined solution trench.
Access and access control	Gravel road (4 m wide) around the perimeter of the TSF.
	Access to the TSF area is restricted by a 1.2 m high (6-strand) perimeter fence with appropriate warning signs displayed.
Clean stormwater diversion	A stormwater diversion channel and berm upstream of the TSF directs clean surface water run off away from the TSF and return / stormwater dams. The stormwater diversion channel is 0.9 to 1.5 m deep, and 1.5 to 3.2 m wide at the base, with 1V:1.5H side slopes. The stormwater diversion berm (constructed with the material from the channel) is 0.9 to 1.5 m high, and 1.5 to 3.2 m wide at the crest, with 1V:1.5H side slopes, and constructed with SC material.
Waste minimisation activities	Cobbing of the ROM ore in the process plant significantly reduces the tailings stream. The material extracted from the cobbing process will be added to the waste rock stream and deposited on the WRD.
On-going rehabilitation	There will be on-going amelioration of the tailings and the establishment of vegetation on the side slopes as the elevation of the TSF increases. To assist with the establishment of vegetation an irrigation system will most likely be required, using water from the RWD. The step-in berms on the side slopes will be engineered to contain and control stormwater runoff from the side slope. As older step-ins become redundant and are no longer required as access roads, the step-ins will be dozed over and the side slopes reshaped to a 1V:4H continuous slope, covered with a 0.5 m thick layer of rock cladding and pockets of vegetation (shrubs and grasses) established at 50 per hectare (i.e. roughly a 14 m x 14 m spacing).

Feature	Detail
TSF monitoring	During the life of the TSF, various elements will be monitored to ensure the integrity of the TSF complex. Monitoring elements will include: • TSF engineering parameters included in Section 21.1.7 of this report • Groundwater monitoring programme included in Section 21.1.1 of this report • Dust monitoring programme included in Section 21.1 of this report. • Erosion damage and general condition of catchment paddocks, solution trench, erosion gullies on slopes, safety around penstock intakes and catwalk, safe access to all other areas of the TSF, condition of the perimeter fence and warning signs etc.
Dust control	Most of the dust is expected to be generated from the side slopes and perimeter crest of the TSF. The vegetated (or rock clad) side slopes, and a perimeter berm along the crest of the TSF (typical for spigot operations) will significantly reduce dust emissions. Dust emissions from the basin of the TSF will be suppressed due to the relatively large area comprising either wet tailings (recently deposited) or the supernatant water pool. Vehicle traffic on and around the TSF during operation phase is minimal, however, on-going wetting of the roads will be carried out (especially during the dry season) to reduce dust emissions.
Contingency plans	The following situations, all of which could adversely affect slope stability of the TSF, may arise that will require contingency plans: • An increase in the elevation of the phreatic surface • A blocked drain outlet that may lead to the above • A blockage or failure of the decant outfall pipeline or penstock intake structure • Extreme rainfall and/or failure of the upstream stormwater diversion berm or flood protection berms • Excessive seepage noted on sidewalls. In each case, the problem will be investigated and, where necessary, remediation measures will need to be put in place timeously. Remediation may range from a simple repair to a designed engineering solution that ensures the on-going integrity of the tailings storage facility. In the event that a significant increase in groundwater pollution is indicated by one or more of the monitoring boreholes, the source would need to be identified and appropriate measures put in place to prevent further pollution and to control the pollution plume if necessary (e.g. seepage interception system).
Closure, rehabilitation and aftercare	At closure, the following activities will be undertaken: Top surface of the TSF • Remove all infrastructure, pipelines, supports etc.; • Sealing of penstock intakes and decant pipeline; • Push up 1.5 m high perimeter berm and internal paddock berms (at 50 m centre-to-centre spacing), all covered with 0.5 m thick layer of rock or overburden material; • Cover inside of paddocks with 0.3 m thick topsoil layer (not on berms); and • Establish vegetation cover inside paddocks (not on berms). Side slopes of the TSF • Rock clad access road (0.5 m thick wearing course) and establish sufficient stormwater drainage measures; • Doze over remaining step-ins and reshape side slopes to 1V:4H continuous slope; and • Clad remaining side slopes with 0.5 m thick layer of rock or overburden material and establish pockets of vegetation at 50 per hectare. Toe and surrounding area of TSF: • Remove all infrastructure, pipelines, supports etc.; • Reshape and clean out paddocks and solution trench; and • Re-establish vegetation cover all around and inside paddocks.

APPENDIX A6: WASTE (OVERBURDEN/ROCK) MANAGEMENT

This management plan has been compiled by Metago. Key information on the design principles for waste dumps is provided in the table below (Table A2).

Acid base accounting testing and acid leach tests will be undertaken on tailings and waste rock samples from site. If required, the results of these tests will be made available to the regulatory authorities and will be used to inform any changes required to the management of the residue facilities.

TABLE A2: WASTE (OVERBURDEN AND ROCK) DISPOSAL

Feature	Detail
Safety and environmental classification	
Safety classification	Low (determined in accordance with the South African Code of Practice for Mine Residue Deposits (SANS 10286:1998) and the requirements of Mineral Regulation 527 of 23 April 2004).
Environmental classification	The environmental classification is such that there could be potentially significant impacts associated with the facility, but as included in Section 7.2, the impacts can be mitigated to an acceptable level.
Preliminary design principles	
Waste Rock Transport and Deposition	Excess open pit waste rock loaded onto mine dump trucks and transported to waste rock dumps. Waste rock access ramps typically constructed with a maximum gradient of 1V:7H (8°) for mine dump trucks. Waste rock is then dumped and spread / flattened with a bulldozer.
Diversion	Stormwater trenches / berms around the upstream boundaries of the waste rock dumps that direct clean stormwater run-off around and away from the waste rock dumps.
Topsoil Stripping	Topsoil in waste dump footprint areas will be stripped and stockpiled in accordance with the topsoil conservation guide in close proximity to the final toe of each waste rock dump. A stripping depth of 300mm has been recommended by the soils study.
Lining	No lining will be provided.
Embankments	Nominally compacted earth training or toe walls around the perimeter of each waste rock dump will delineate the extent of each dump footprint to control dumping. Constructed using local in-situ material. Waste rock dump developed at overall outside slope of 1V:2H (27°). Compaction limited to vehicle traffic on top surface and ramps.
Under Drains	No under drainage will be provided. Surface run-off and toe seepage will be retained by a series of catchment paddocks (constructed using local in-situ material) around the perimeter of each waste rock dump and allowed to evaporate.
Access and Access Control	Mining haul roads will typically have a minimum width of 25m and will be constructed using waste rock. A 4m wide waste rock road will be constructed around the perimeter of each dump for routine inspections and maintenance of the catchment paddocks. A perimeter fence around each waste rock dump is not planned. Rather a perimeter fence around the whole of the mine site will be installed.
Waste Minimisation	Some 500,000 m^3 of waste rock will be used for the initial construction of the TSF containment walls. Waste rock will also be used for the construction of internal mine access and haul roads during the construction phase and for the maintenance of roads during the operational phase. The opportunity also exists to crush and sell waste rock as building aggregate.
Monitoring	Monitoring of seepage water retained in the perimeter catchment paddocks and of boreholes around the perimeter of each waste rock dump to determine pH, EC, TDS, NO_3, Ca, Mg, Fe, Mn, Na, Cl, K, SO_4, F, Zn, Sb, Cd, Cr, Cu, Ni and Se.
Dust Control	Operational Phase: Watering of roads for dust suppression.

Feature	Detail
	Post Operational Phase: No measures necessary due to the coarse particle size distribution.
Closure (if waste dumps/stockpiles exist at closure)	Waste rock dump side slopes flattened to 1V:4H. Waste rock dumps re-vegetated using a combination of indigenous trees, shrubs, grasses and aloe species etc. to mimic the vegetation cover of natural topographical features in the area. Topsoil stripped prior to development will be used to provide the growth medium. Topsoil will be placed in bowls excavated on the top surface and side slopes of each dump. The vegetation will be irrigated initially until it is no longer dependent on artificial irrigation for survival. Final catchment paddocks constructed of durable waste rock materials to be provided. The catchment paddocks will be vegetated in a manner similar to that stated above to blend in to the natural Bushveld. The catchment paddocks will be sized to contain run-off from a 1:100 year 24hr duration storm event and will be provided with an emergency overflow to avoid significant damage associated with events exceeding this magnitude. On closure of the waste rock dumps, access ramps and berms will be eliminated prior to rehabilitation to reduce erosion risks. No active groundwater protection measures are envisaged given the relatively low pollution potential of the waste rock. The crest of the waste rock dumps will be provided with a durable waste rock berm to prevent drainage from the top surface from eroding the side slopes.

APPENDIX A7: BIODIVERSITY MANAGEMENT

This section provides a description of the measures that will be implemented to prevent the unacceptable loss of biodiversity and related functionality through physical and indirect disturbance from project-related activities.

The mine will develop and implement a biodiversity management plan, compiled in consultation with a biodiversity specialist. The key components of this plan will include:

- Project infrastructure, activities and related disturbance will be limited to those specifically identified and described in this EIA and EMP report.
- Areas of disturbance will be demarcated to prevent movement by mine personnel and activities outside of the demarcated boundary.
- There will be planning on the removal of fauna and flora (plants and seeds) species prior to disturbance by project infrastructure and activities. This will include planning for the preservation, cultivation and re-use of plant species in on-going rehabilitation and search, rescue and relocation of key fauna species. There will also be provision for the collection of medicinal plants by local people. Links will also be made to the soil management procedure and actions.
- Biomass from the clearing of the site and from development of the open pit will be used to create compost for the rehabilitation of disturbed areas and/or made available to the community as firewood.
- Permits in terms of the National Forests Act for the destruction and/or removal of protected tree species will be obtained prior to disturbance.
- Determine in consultation with DWA whether a water use license application is required to destroy some isolated pan-like structures on site.
- An alien/invasive/weed management programme will be implemented to control the spread of these plants onto and from disturbed areas. Care will be taken to prevent the encroachment of alien plant species into rehabilitated areas.
- Vegetation harvesting will be strictly prohibited unless for medicinal purposes and agreed to by the environmental officer.
- Faunal hunting, poaching, snaring or capturing will be strictly prohibited.
- Workers will be prohibited from entering adjacent property.
- Inspections of site should include checking of mine site and adjacent properties along perimeter of mine for illegal harvesting and evidence of poaching.

Monitoring will be undertaken in line with the biodiversity monitoring programme described in Section 21 of the EIA and EMP report.

With respect to rehabilitation, rehabilitation of disturbed areas and the site will:

- aim at restoring biodiversity functionality as far as possible in areas that have been physically rehabilitated

- cover all phases of rehabilitation such as site preparation, rehabilitation implementation, maintenance and on-going monitoring and research
- focus on reconstructing original landscapes as far as possible so at to provide habitats for fauna species
- include follow up audits and monitoring in the short and long term to determine success of rehabilitation and restoration activities in terms of performance indicators

For a period of at least six years after the re-establishment of vegetation, a programme of monitoring and "after care" will be implemented to ensure vegetation is recovering and alien/invasive species are not becoming an ecological problem. This issue will be revisited as part of the detailed closure planning.

Measures for minimising loss and pollution of water resources (Appendix A8), controlling dust generation (Appendix A10) and preventing blast hazards (Appendix A13) will be implemented by the mine.

APPENDIX A8: WATER USE AND MANAGEMENT

This section provides a description of the measures that will be implemented to a) reduce the mine's demand on external water and maximise re-use of water within the site, and b) prevent, where possible, and minimise the loss and pollution of surface and groundwater resources from project-related activities.

As part of the detailed design phase, the mine will investigate ways of reducing its demand on make-up water and maximising the re-use of water within the site. If necessary, additional measures will be implemented to reduce the loss of water from the mine water circuit.

The mine will install flow meters in the mine circuit to understand its water usage. These flow meters will be maintained until such time as the facilities are removed. Data from the flow meters will be used to update the climatic water balance on an annual basis. The annual water balance report will be submitted to the Department of Water Affairs (DWA).

Detailed design of potentially polluting facilities and pollution control facilities will be done by an appropriately qualified person in line with regulatory requirements and including measures for containing spillages and/or dirty water runoff (both in the short term and for long-term closure).

Turquoise Moon will conduct all potentially polluting activities in a manner that pollutants are contained at source, as far as possible. In this regard:

- Vehicles and equipment will be serviced regularly according to a service plan and maintained such that the potential for leaks or spillages of polluting substances are limited. All vehicles and equipment servicing and maintenance activities will take place in workshops and washbays with impermeable floors, dirty water collection facilities and oil traps.
- All potentially polluting storage and handling facilities will be operated with containment facilities. In this regard, in all areas where hazardous materials (new and used), dirty water or non-mineralised wastes will be handled and temporarily stored, measures will be designed in a manner that the facilities do not contaminate the environment. In this regard, the storage method of all substances is to contain them in sealed containers/areas within impermeable surfaces, bunded areas and covered (where required) with sufficient capacity to contain 110% of total spilled materials. All spilled materials must drain to sumps with oil traps that must also be equipped to allow collection and removal of spilled substances as per the guidelines in SANS 10089-1:2003.
- Process-related stockpiles that can cause groundwater contamination, excluding the TSF and waste dumps, will be placed on sealed and bunded surfaces or in bunkers / silos to prevent seepage.

The mine will design, construct and operate the TSF and waste dumps in line with the design principles included in the tailings and waste rock management plans, which include measures to minimise the

potential for groundwater to be polluted (Appendix A5 and A6, respectively). The detailed design of facilities will be done by an appropriately qualified engineer.

Spillages will be cleaned up and disposed of in accordance with set procedures and immediately when they are detected.

The mine will implement a stormwater management system as outlined in Appendix A9.

The mine will implement good "house-keeping practices" which will include a non-mineralised waste management procedure as outlined in Appendix A4. No waste disposal other than that provided for in the project design in Section 2 and Appendix A4 of this report will be conducted.

Any dirty water holding facilities will be designed, constructed and operated in accordance with the requirements of DWA as stipulated in the water licence. The design of facilities will be undertaken by an appropriately qualified hydrologist and professional engineer. Preliminary design principles to be incorporated into the detailed design of any dirty water dams are described in Table A3.

TABLE A3: DESIGN PRINCIPLES OF DIRTY WATER HOLDING FACILITIES

Feature	Detail
Freeboard	A minimum freeboard of 0.8 m except for the TSF RWD and SWD where the freeboard will be 1m.
Water levels	All stormwater dams will be operated empty and will only contain water during the rainy season. These dams will not be used to store excess process water, unless licensed appropriately.
Water usage	Water from the stormwater dams will be used first, followed by process water and then make-up water.
Topsoil stripping	Topsoil will stripped and stockpiled in line with the soil management plan (see Appendix A3 of the main EIA and EMP report).
Lining	The plant process water dam, pollution control dam and TSF return water dam will be lined with an HDPE liner. All stormwater dams will be lined with a riprap protection layer to protect the inner slopes of the dam.
Leakage detection	A leakage detection system will be provided for all dirty water dams.
Silt control	A silt trap will be provided for upstream of each dirty water dam to remove (or "settle out") fine particles.
Access and access control	Gravel road around the perimeter of the dams to allow access to the pump station.
	Access is controlled by the separate security fence surrounding the dams with appropriate warning signs displayed.
Erosion control	Where water is discharged (i.e. end of clean stormwater controls, spillways), Turquoise Moon will establish and maintain controls (such as gabions) which reduce the velocity and erosive energy of these waters.
Emergency spillways	An emergency spillway will be established for all dams. The spillways can easily discharge the 1:50 storm event (if required). There is no planned discharge to stream from the dams.
Drown prevention	To reduce the risk of drowning, nylon ropes fastened to concrete anchor blocks at various locations around the dams will be provided. Life rings will also be provided at all dams.
Monitoring	Monitoring the water quality and dam operation in line with the water monitoring programme outlined in Section 21.1 of the EIA and EMP report.

Feature	Detail
Contingency plans	The following adverse operational conditions may occur that need to be planned for: • The water level of the dam is above what is considered acceptable, as determined by the climatic water balance • The pumps that convey water to the process plant break down, implying that there is no way of maintaining the water level within acceptable limits • A power failure rendering the pumps inoperable If the water level in the dam is above what is considered acceptable, the following courses of action could be taken: • Excess water could be pumped to the process water and stormwater dams • Excess water could be pumped back to the TSF, if there is sufficient capacity; or • As a last resort, water could be discharged to the environment. DWAF will be informed should such an action be required. A pump breakdown will be countered by a backup pump that can be commissioned timeously and operated while the primary pump is repaired and reinstalled. A power failure of short duration (less than 24 hours) should not pose a significant risk to the operation of any of the dams but if the duration is greater than 24 hours, a generator may be necessary if the water level approaches or is greater than what is considered acceptable.
Closure	At closure, all infrastructure will be demolished and disposed of (e.g. pump station, pipelines, silt trap etc.). Also, the lining in any dams will be removed. At this stage, it is assumed that the unlined RWD and SWD will remain post closure to settle and trap stormwater runoff from the TSF. The dams will also serve as a water source for irrigation during the initial stages of TSF rehabilitation.

With respect to the pollution potential of water in the open pit post closure:

- The groundwater model will be updated to verify the potential for water to collect in the pit and the predicted water quality. Depending on the results of the model, the mitigation measures may need to be revisited.

The mine will implement and the groundwater and process water monitoring programme outlined in Section 21 of the EIA and EMP report. If monitoring indicates a mine-related decrease in groundwater supply to third parties or a mine-related decrease in groundwater quality at third party boreholes, appropriate measures will be taken to prevent the decrease from occurring, to provide the affected third parties with an alternative water supply of equal quality, and/or to possibly purchase affected farms.

Management measures for controlling access to the site (Appendix A1) to prevent exposure of third parties to potentially polluted water, erosion control (Appendix A3) and compensation (purchase and/or lease properties) for landowners on the project site (Appendix A18) will be implemented by the mine.

APPENDIX A9: STORMWATER MANAGEMENT SYSTEM

This section provides a description of the stormwater management plan that will be established on site to ensure that clean and dirty water systems are kept separate and in line with regulatory requirements.

A stormwater management plan was prepared by Metago[c] (Metago 2011) for the project site (see specialist study attached in Appendix J of the EIA and EMP report). An overview of the measures is included below with further detail provided in the specialist report.

The clean and dirty water systems on site will be designed (where relevant), implemented and managed in accordance with the provisions of Regulation 704, 4 June 1999 (Regulation 704) for water management on mines and the requirements of DWA as stipulated in the water licence. The design will be undertaken by an appropriately qualified hydrologist and professional engineer.

In this regard (see Figure 15 of the EIA and EMP report):

- The footprint and associated catchment of all project infrastructure will be minimised to limit the impact on runoff reduction.
- Clean and dirty water will be kept separate. Clean water will be diverted around infrastructure so that it can run into natural flow paths. Dirty water runoff from potential polluting areas (TSF and associated facilities, plant area, mining complex area, waste dump areas, open pit area) will be contained within a dirty water system.
- Clean stormwater will be channelled around the site by means of earth berms with a stormwater earth channel on the outer perimeter of the berm. These diversion facilities will be in place for the life of mine.
- Dirty water will be channelled into the dirty water system by means of diversion berms and stormwater earth channels on the inner perimeter of the berm. These diversion facilities will be in place for the life of mine.
- The side slopes for all berms and channels will be kept constant at 1 vertical: 1.5 horizontal.
- The use of topsoil for the building of channels and berms will be done in line with the soil management plan (see Appendix A3 of the main EIA and EMP report).
- At the TSF and waste dumps, a system of catchment paddocks will capture and contain dirty run off and feed this to the stormwater system (for re-use as process water).
- In the plant areas, dirty water will be directed via trenches and channels to a plant stormwater dam.
- Dirty process water will be released into the process water system via the process and stormwater dams to the various process sections and will return to the system via the thickener, the tailings dam and the return water sumps.
- All dirty water will be reused rather than discharged to the environment.
- Dirty water containment dams will be sized to prevent spillage more than once in 50 years in accordance with Regulation 704.

- The stormwater management systems will be routinely inspected to detect possible breaches and implement preventative or corrective action.

Where water is discharged (i.e. end of clean stormwater controls), Turquoise Moon will establish and maintain controls (such as gabions) which reduce the velocity and erosive energy of these waters. Monitoring of discharges will take place in line with the monitoring programme outlined in Section 21 of the EIA and EMP report.

APPENDIX A10: DUST MANAGEMENT

This section provides a description of the measures that will be implemented to prevent unacceptable air quality related pollution impacts.

All dust generating sources should be located as close as possible to each other and the centroid of activities around the pit. Haul roads will be kept to a minimum.

An air quality management plan will be developed and implemented for the site, in consultation with an air quality specialist. The air quality management plan will include dust control measures such that:

- Vegetation removal and construction activities – 60% control efficiency is achieved through effective water sprays
- Unpaved roads – 75% control efficiency is achieved through effective water sprays on haul roads and 90% control efficiency through application of dust suppressants on mine access road
- Windblown dust from TSF and waste dumps – at least 80% vegetation cover and/or rock cladding on side slopes to ensure 64% control efficiency and general vegetation cover on waste dumps to achieve same control efficiency
- Crushing and screening – 60% control efficiency is achieved through water sprays and/or vacuum packs

Where possible, the mine will investigate alternative dust control measures that reduce its demand on water but maintain the same control efficiencies as outlined above.

Vehicle speeds will be limited on haul and mine access roads, in line with the air quality management plan.

Monitoring will be undertaken in line with the dust monitoring programme described in Section 21 of the EIA and EMP report.

If monitoring data confirms that either the emissions or the ambient concentrations exceed the relevant standards then Turquoise Moon will, in consultation with the relevant authorities, take steps to further reduce the emissions or ambient concentrations where possible.

Any failure of the air pollution control equipment is considered an emergency situation. Turquoise Moon will follow the emergency response procedure included in Section 20.

APPENDIX A11: NOISE MANAGEMENT

This section provides a description of the measures that will be implemented to limit excessive noise pollution from project activities and facilities.

Turquoise Moon will ensure that all equipment is kept in proper working order, and exhausts and silencers of diesel operated equipment are functioning correctly.

Soils stripped in the construction phase and waste rock from the development of the mine will be stockpiled, as far as possible, in such a manner as to act as a noise screen between noise generating equipment and sensitive receptor sites (and in line with soil management plan - Appendix A3).

All activities most likely to cause noise pollution impacts (transport, crushing and screening, materials handling, waste rock dumping) will be restricted to the hours between 06h00 and 20h00.

No blasting will take place in the morning. Blasting will be restricted to the afternoon.

Partial enclosure and acoustic screening of noise generating components of the plant will be implemented by Turquoise Moon.

Employees and contractors should be trained on disturbing noise and ways in which to minimize this.

It should be investigated if beeping reverse alarms with a pure-tone character can be replaced by a buzzer type alarm. Unlike the beeper type, the buzzer type generates a wide-band noise rather than a tone, which is audible and effective as an on-site warning device, yet much less audible and annoying in the external environment. It should however be cautioned that before implementation, the mine has to ensure that any modification or replacement will still comply with legal and in-house occupational safety requirements.

Noise monitoring as detailed in Section 21 will be undertaken to verify the outcomes of the noise modelling and provide input into additional management measures, if required.

Where hunting and tourism areas are no longer considered favorable because of the disturbing mine noise, Turquoise Moon will compensate the affected landowners for reduction in business, which may include purchase of additional land to create a sufficient buffer zone.

All registered complaints will be documented, investigated in a timeously manner and efforts made to address the area of concern where possible.

APPENDIX A12: VISUAL MANAGEMENT

This section provides a description of the measures that will be implemented to limit excessive visual impacts.

Land disturbance will be limited to what is absolutely necessary.

Any natural vegetation will be retained, as far as possible and incorporated into the mine site rehabilitation. Either natural vegetation buffers or planted vegetation screens should be established between the mine site and sensitive viewers. These screens should be as close as possible to the sensitive viewer.

Where possible, buildings and large equipment will be painted with colours that reflect natural colours of the surrounding landscape.

Waste dumps should be kept in line or below the tree canopy in order to reduce the visibility and intrusiveness.

As part of closure planning, the designs of any permanent structures will take into consideration recommendations of a professional landscape architect.

In the shaping of any structures that will remain after closure, harsh, angular and steep slopes will be avoided and care should be taken to integrate these structures into the surrounding landscape. The side slopes should be designed in such a way that they are articulated to form natural shaded areas.

Night lights will be used only where necessary and should be designed to illuminate only that which requires illumination and directed downwards with containment shields to prevent light shining directly away from the proposed operations. The use of standard high pole flood lights should be avoided. Where security lighting is used it should be activated by movement and are not permanently switched on.

Management measures for minimising dust pollution (Appendix A10), controlling non-mineralised waste pollution (Appendix A4) and rehabilitation of the site and final land forms (TSF, waste dumps) (Appendix A20) will be implemented by the mine.

Where hunting and tourism areas are no longer considered favorable because of the disturbing visual impacts of the mine, Turquoise Moon will compensate the affected landowners for reduction in business, which may include purchase of additional land to create a sufficient buffer zone.

APPENDIX A13: BLAST MANAGEMENT

This section provides a description of the measures that will be implemented to minimise the potential for third party damage and/or loss.

Blast design and implementation such that:

- peak particle velocity (ppv) at third party structures is below the damage causing threshold (12mm/sec for houses/structures reduced to 6mm/sec for rural mud houses/structures).
- Airblast at third party structures is below the recommended threshold (120dB).
- Flyrock must be contained within 500m from the blast and for every blast, this zone must be cleared of people and commercial animals.

Precise control of the charging up operation, auditing prior to detonation and monitoring of blasts and related impacts will be undertaken by the mine. Criteria include: care and control, explosive quantity control, correct stemming lengths, clearing of flyrock zone, pre-blast warnings, inspection prior to charging - identify and rectify 'problem' holes, explosive quality control checks, taping to ensure correct stemming length is obtained, errors must be corrected before the hole is stemmed closed, tie up according to the blast plan timing and sequencing and prolonged sleeping of blasts will be avoided.

Turquoise Moon will use electronic detonators to control the blast.

A pre-blast baseline survey will be carried out on all privately-owned structures (including houses, buildings, steel pipelines, electrical lines and boreholes) within a 1,5km radius of the open pit and at the historical house on site (if kept). The current structure integrity will be quantified, photographed and reported. The findings of the survey should be used to characterise the structural integrity, which in term must be used to inform blast designs.

Blasting will be restricted to those times of day when weather conditions have the least influence on blasting hazards.

A standard blast time will be set.

The blast schedule will be communicated with stakeholders in a timeously and on-going manner and notice boards informing the public of blast times and associated hazards will be placed at entrance points to the site, and along the re-routed D1347.

Monitoring will be undertaken in line with the blast monitoring programme described in Section 21 of the EIA and EMP report.

If monitoring data confirms that blast-related damage and/or nuisance has occurred Turquoise Moon will, in consultation with the relevant third party, take steps to investigate and rectify any damage and to limit any further potential for damage and/or nuisance.

Where the use of surrounding property (residential, farming, hunting and tourism) are no longer considered favorable because of the disturbing blast hazards, Turquoise Moon will compensate the affected landowners for reduction in business, which may include purchase of additional land to create a sufficient buffer zone.

APPENDIX A14: TRAFFIC MANAGEMENT

This section provides a description of the measures that will be implemented to reduce the potential for mine-related safety and vehicle related impacts on road users.

Detailed design drawings will be compiled and submitted to the various authorities for approval purposes, and where necessary the required way leaves will be obtained in order to conduct the required road improvements of intersection D1347 and N11 and intersection D1347 and R518, as well as diversion of the D1347.

Establish joint road maintenance plan in consultation with relevant roads department and other significant users of public roads. Ensure plan includes initial investigations on quality and lifespan of roads trucks will travel.

Traffic and information signs and road markings will be provided where relevant. Sufficient lighting and the necessary traffic and information signs and road markings will be established at the intersections in consultation with the Roads Department.

Upgrades will be implemented in line with specialist recommendations (see Appendix T of the EIA and EMP report):

- Point A (Intersection of Roads N11 (P83/1), D1553 and D1347
  - Re-align the intersection of Road D1553 with Road N11 (P83/1) to be perpendicular with the intersection of Road D1347 with Road N11 (P83/1)
  - Provide left-turn slip lane on the eastern and western approaches on Road N11 (P83/1)
  - Provide deceleration lane on eastern approach
  - Provide acceleration lanes towards the eastern and western approaches
  - Provide public transport loading and off-loading bays
- Point C (Intersection of Roads R518 (P19/2) and D1347)
  - Provide a left-turn slip lane on the western approach on Road R518 (P19/2)
  - Provide left turn deceleration lane on western approach on Road R518 (P19/2)
  - Provide acceleration lane towards the east and west on Road R518 (P19/2)
  - Provide dedicated right-turn lane on the eastern approach on Road R518 (P19/2)
- Point D (Intersection of Road D1347 and the proposed access, should road D1347 be surfaced with asphalt in the future)
  - Provide left-turn slip lane on northern approach on Road D1347
  - Provide deceleration lane on northern approach on Road D1347
  - Provide acceleration lane towards the southern approach on Road D1347
  - Provide dedicated right-turn lane on southern approach on Road D1347

- In terms of workers and visitors, a dedicated loading and off-loading area need to be provided on the property of the proposed mining development
- If Road D1347 is surfaced with asphalt in the future, it is recommended that dedicated loading and off-loading bays be provided as close as possible to the proposed access on Road D1347

The re-routing of road D1347 will be done in consultation with the relevant roads departments.

Turquoise Moon will provide alternative access for landowners whose access is impeded by the development of the site. This will be done in consultation with the relevant landowners.

Turquoise Moon will monitor and evaluate its use of the relevant road intersections and road sections on an annual basis as part of its risk and safety management practices (see Section 21.1).

Where hunting and tourism areas are no longer considered favorable because of project-related transport on local roads, Turquoise Moon will compensate the affected landowners for reduction in business, which may include purchase of additional land to create a sufficient buffer zone.

Transport of any abnormal heavy loads will be co-ordinated with the relevant roads department.

Transport of any hazardous substances will comply with Hazchem requirements.

Any road accident involving or caused by project related traffic will be handled in accordance with the emergency response procedure (see Section 20.2).

APPENDIX A15: HERITAGE MANAGEMENT

This section provides a description of the measures that will be implemented to prevent the unacceptable loss of heritage resources and related information and to minimise the loss of fossil resources and related information.

Prior to the construction phase, where heritage sites will be disturbed and/or destroyed, the information in the specialist report will be used to apply for the necessary permits that are required in terms of the National Heritage Resources Act, 25 of 1999. An accredited specialist recognised by the SAHRA will be appointed to undertake any Phase II investigation work in a timeously manner.

Prior to damaging or destroying any identified graves, obtain permission for the exhumation and relocation of graves from the relevant descendants (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police. Exhumation process must comply with requirements of relevant Ordinance on Exhumations and Human Tissues Act, 65 of 1983.

Additional measures will ensure that:

- project infrastructure, activities and related disturbance are limited to those specifically identified and described in this EIA and EMP report
- all heritage sites not impacted on by the initial development of the site will be marked on the site layout plan
- all workers (temporary and permanent) will be educated about the heritage sites (including palaeontological resources) that may be encountered.

If there are any chance finds of heritage (including palaeontological) sites that have not been identified and described in the specialist report, Turquoise Moon will follow its emergency response procedure detailed in Section 20.2.

APPENDIX A16: RECRUITMENT, TRAINING, PROCUREMENT, HOUSING AND SAFETY AND CRIME MANAGEMENT

This section provides a description of the measures to be incorporated to enhance the positive economic impacts of the mine, limit the negative economic impacts of the mine, limit the impacts associated with inward migration and to ensure that the mine conducts its business in a responsible manner.

Turquoise Moon will ensure that its recruitment, training and housing policies incorporate the principles included below.

In terms of recruitment and training:

- there will be no recruitment at the gates of the project site in either the construction or operational phase. All recruitment will take place on set dates and at an arranged venue - preferably in Seleka or Lephalale;
- there will be no ad hoc hiring of temporary casual labour, no matter how small and temporary the job (washing of vehicles or litter clearance). A sign clearly indicating that there will be no recruitment at the construction site will be erected at the entrance to the site. Also, a list of available temporary workers in the area will be drawn up and kept by Turquoise Moon in the event that temporary labour is required;
- the existence and screening of specific skills may be determined through the establishment of a skills register prior to employee selection processes;
- a register of all potential job seekers will be compiled prior to the start of the recruitment process;
- the precise number of job opportunities (permanent and temporary) will be made public together with the required skills and qualifications. The duration of temporary work should be clearly indicated and employees provided with regular reminders and revisions throughout the employment period;
- a site specific labour plan will be compiled and implemented in consultation with unions (if applicable) to meet regulatory requirements;
- good communication with all job seekers will be maintained throughout the recruitment process. The process must be seen and understood to be fair and impartial by all involved;
- urging people to get all their documents and certificates, including valid driving licenses, in order prior to recruitment;
- facilitating the recognition of prior learning of those job applicants who do not possess formally documented qualifications;
- encouraging the Department of Labour and Local Economic Development Forums to educate potential workers about the recruitment process and providing assistance with the organization of the necessary documentation, as well as keeping an up to date database of unemployed people who are looking for work;
- setting up structures for training potential employees as required;
- specialised skills will be sourced as and when they are needed;

- notifying unsuccessful job seekers once the recruitment process is complete; and
- disclose any social investment plans for the area that may lead to jobs.

Turquoise Moon will maintain an employee profile that can assist with both managing social wellbeing impacts and informing the Turquoise Moon closure plan – for both long term planned closure and for unplanned premature downscaling or closure.

Turquoise Moon will start closure planning as soon as practically possible (at least five years prior to decommissioning).

Where possible, wealth creation and life skills training will be undertaken to assist employees post closure.

Turquoise Moon will endeavour to procure services from the local area and encourage suppliers to develop local businesses.

Turquoise Moon will establish the required nutritional facilities on site for its workers.

Turquoise Moon will implement its commitments in the social and labour plan in accordance with the employment, procurement and social investment principles of the Mining Charter.

Turquoise Moon acknowledges that it is responsible for ensuring that its employees are housed in formal serviced housing. This will be achieved by:

- recruitment of as many people as possible that have the required skills, that live in the Lephalale region and that have existing formal housing
- for workers that do not reside in the region, Turquoise Moon will facilitate the provision of appropriate off site formal housing or the provision of a housing allowance that will be provided as part of wages. In order to obtain the housing allowance workers will have to demonstrate that they will be accommodated in formal housing.

Formal transport will be provided for the majority of the workforce. Bulk transportation vehicles such as buses and mini vans will be used for this purpose.

Turquoise Moon will co-operate with law enforcement officials to minimise the potential for informal settlements.

In regard to crime, Turquoise Moon will facilitate the establishment of a forum that comprises the local police force, its own security company and the neighbouring land owners. This forum will focus on developing strategies for combating crime in the vicinity of the project and surrounding farms and it will

have particular focus on preventing trespassing on private land and on preventing the development of informal settlements.

Turquoise Moon will also prevent the establishment of informal traders at its mine entrances, unless it is done in a controlled manner defined by Turquoise Moon.

APPENDIX A17: INVOLUNTARY RESETTLEMENT PLAN

This section provides a description of the measures to be implemented in the resettlement of local people, where required.

If the project is approved and the affected farm workers and families are to be relocated with their current employees this must be captured as a condition in the land purchase contract between the farmers and Turquoise Moon.

If the project is approved and the affected farm workers and their families do not relocate with their current employees, then Turquoise Moon will appoint a team of professionals to design and implement a resettlement plan.

The resettlement must take place prior to the components of the operational phase that will necessitate resettlement and the plan must cover the relevant components from the following list which has been extracted from the World Bank Operational Directive on Involuntary Resettlement. The decision on which components to include in the plan will be made by the appointed team of professionals:

- clear statement on organisational responsibilities with mechanisms for the affected parties to be involved from the outset with their own professional representation;
- community participation and impacts on/integration with host populations;
- an updated socio-economic survey;
- a legal framework;
- alternative sites;
- valuation of and compensation for lost income and assets;
- land tenure, acquisition and transfer;
- access to training, employment and credit;
- shelter, infrastructure and social services;
- environmental protection and management; and
- implementation schedule, monitoring and evaluation.

In regard to the issue of providing access to training and employment, Turquoise Moon should consider whether the farm workers that are currently employed and that will have to be relocated can be employed at the mine in skill appropriate roles.

APPENDIX A18: COMPENSATION PLAN

This section provides a description of the measures to be implemented by the mine as they relate to compensation.

Turquoise Moon will purchase and/or lease the three farms that form part of the application, for the duration of the planned life of mine.

Turquoise Moon will conduct a base case valuation of land and property (by an independent valuator that is acceptable to all parties and paid for by the mine). This valuation will provide a basis for future discussions if landowners are of the view that mine related impacts have caused a decrease in productivity and associated land value. If any loss in land value has been caused by unacceptable mine related impacts, Turquoise Moon will compensate the relevant land owners accordingly.

The following compensation measures will be implemented by the mine (where required):

- If groundwater monitoring indicates a mine-related decrease in groundwater supply to third parties and/or a decrease in groundwater quality at third party boreholes, appropriate measures will be taken to prevent the loss and/or pollution from occurring, to provide the affected third parties with an alternative water supply, and/or to possibly purchase affected farms.
- Where hunting and tourism areas are no longer considered favorable because of disturbing mine noise, disturbing visual impacts, disturbing blast hazards and/or project-related transport on local roads. Turquoise Moon will compensate the affected landowners for reduction in business, which may include purchase of additional land to create a sufficient buffer zone.

APPENDIX A19: STAKEHOLDER ENGAGEMENT

This section provides a description of the measures as they relate to on-going stakeholder engagement.

Turquoise Moon will implement a stakeholder communication and engagement strategy. The key components of which will be: developing community forums, maintaining an inclusive comprehensive stakeholder database that recognises all stakeholder groups, encouraging meaningful and transparent communication and information sharing (including addressing grievances and reporting back on monitoring results), on-going monitoring to ensure that the strategy is up to date, and follow up auditing. Any monitoring reports will be made available to stakeholders on request.

Stakeholder information-sharing meetings will take place quarterly unless an alternative schedule is agreed with stakeholders.

Turquoise Moon will develop a formal complaints (grievance) procedure that incorporates measures for receiving, responding, tracking and recording complaints and grievances from all stakeholders. All registered complaints will be documented, investigated in a timeously manner and efforts made to address the area of concern where possible.

Information to educate third parties about the potential dangers associated with the mine will be provided at stakeholder information meetings. This will include potential hazards associated with:

- hazardous excavations and infrastructure
- blasting
- traffic
- water

APPENDIX A20: REHABILITATION PLAN

This section provides a description of the measures to be implemented by the mine to ensure that the rehabilitation of the site meets the recommended closure objectives.

Where practical, rehabilitation will take place during the construction and operational phases. Rehabilitated areas will be monitored for a minimum period of five years, and managed where necessary so as to ensure the objective of restoring the land to it pre-mining land use capability. This issue will be revisited as part of the detailed closure planning for the project.

Only vegetation indigenous to the area should be used for rehabilitation / landscaping purposes.

Concurrent rehabilitation of the TSF should take place in line with the tailings management plan (Appendix A5). Final rehabilitation of the TSF and waste dumps will take place in line with the management plans included in Appendix A5 and A6, respectively.

During decommissioning:

- all infrastructure will be removed, unless an alternative end use is identified during the detailed closure planning
- all stockpiles, except for TSF and waste dumps, will be removed and the disturbed areas rehabilitated
- any water dams no longer needed for the operations will be backfilled and rehabilitated
- the open pit will be engineered and maintained such that it does not pose a safety risk to people and animals - a perimeter berm comprising waste rock and topsoil will be established around the pit to prevent unnecessary access.

Any stockpiles / facilities that will remain at closure will be rehabilitated and closed in a manner that they present land forms that have similar safety attributes to the natural land forms in the area. In this regard, structures will be stable, protected from flood damage and steep slopes will be contoured.

Closure planning

As part of closure planning, the designs of any permanent and/or potentially polluting structures (open pit, TSF and waste dumps) will take into consideration the requirements for:

- long term erosion prevention, pollution and confirmatory monitoring.
- the establishment of long term biodiversity functionality, aftercare and confirmatory monitoring.
- long term water pollution prevention and confirmatory monitoring.

Soils, biodiversity and visual

The rehabilitation plan will take into consideration the requirements of the soil, biodiversity and visual management plans (Appendix A3, A7 and A12, respectively).

APPENDIX B: PROJECT ALTERNATIVES CONSIDERED

This appendix provides a description of the project alternatives considered in the development of the project plan as detailed in the EIA and EMP report and was compiled by the Metago EIA team with input from the various specialist studies.

PROJECT ALTERNATIVES CONSIDERED

Alternatives were considered for various aspects of the project. These are discussed below.

Alternative development sites

During the initial public involvement process, a question was asked as to why the development of the mine and associated infrastructure at the Moonlight project site. In terms of the mining operations, the position of the ore body is fixed which restricts the position of the mining component of the project to on-site. From an economic perspective, any supporting infrastructure for the processing of the mined material is often established as close as possible to the mine to reduce overall operating costs. Given the position of the ore body and Turquoise Moon's existing prospecting right, this is the preferred site for developing an iron ore mine.

The initial project scope as presented during the initial scoping public involvement process, included establishing both a concentrator plant and iron-making plant on site. Following the initial scoping process and with input from the public involvement process, Turquoise Moon took a decision to exclude the iron-making plant from the current scope and to consider the establishment of such a plant within already built up industrial/mining type areas in Lephalale, Mokopane, Polokwane, Thabazimbi and Selebi Phikwe (Botswana). The establishment of a plant in any of these areas will require a separate environmental authorisation process. The reasons for excluding the on-site options are as follows:

- alternative transport methods, other than road, can be considered for the magnetite concentrate thereby significantly reducing the road transport requirements and influence on public roads;
- significant power requirements are needed to operate the plant (in the region of 20 to 40 MW);
- keep the footprint required for the development as small as possible so as to limit impacts on current land uses;
- reduced volume of mine residue requiring disposal on an on-site facility;
- minimise potential noise, dust and water-related impacts.

Surface infrastructure layout options

Surface infrastructure layout options were considered for the mining support area/processing plant and tailings storage facility. Apart from the open pit, which is fixed due to the position of the ore body, these are the two main components of the project.

Mining support area / Processing plant

Any area within the study boundary that is not underlain by economically viable reserves was a potential site for surface infrastructure. Where possible, infrastructure has been located as close as possible to other components of the mine.

Key considerations in the positioning of infrastructure included:

- limiting the disturbance footprint of the project so as to minimise disturbance of the environment as far as possible
- avoiding more sensitive environments as far as possible
- allowing for efficient access and movement of equipment and materials between the open pit and the mine components thereby reducing the carbon footprint and minimising the potential for significant dust generation
- ensuring no future mineable reserves are sterilised

Tailings storage facility

The tailings dam site selection process was undertaken as part of the waste design study (see Appendix U of the EIA and EMP report). Four alternative sites were investigated. The preferred option based on environmental consideration is the site as proposed in the overall site layout for the mine (see Section 2.4 of the main EIA and EMP report).

Power supply and use

With the exclusion of the iron-making plant and associated power plant and cogeneration facilities, the only feasible option at this stage is to source power from Eskom. No other feasible alternatives exist. Turquoise Moon will however consider alternative power sources for domestic power requirements such as solar panels and/or solar water geysers.

Water supply options

A water supply study is currently being conducted for the project by Metago Water Geosciences (MWG[b] 2011). This study involves the identification of potential water sources for the Moonlight project. The sources of water being investigated include recycling of water; collection of rainfall and runoff on site; local/regional boreholes within 20km of the site; dewatering of the mine workings; irrigation schemes within 10 km of proposed project site and near Tolwe/Baltimore; existing water use allocations from the Limpopo and Lephalala Rivers, surface water schemes including the Mokolo Crocodile River Water Augmentation and Olifants River Water Resource Project; catchment transfer from the Crocodile River catchment near Thabazimbi; flood water storage/artificial recharge or a combination of the above.

The climatic water balance calculated by Metago for the project provided an indication of the volume of make-up water needed for the operations (see Appendix W of the EIA and EMP report). In this regard, it is calculated that the make-up water requirement for the mine (based on the tailings tonnage profile as presented in Section 2 of the EIA and EMP report) varies from 32,909m^3/month (during the wet season) to 167,763m^3/month (during the dry season). The total annual water requirement is therefore 943,725m^3 per annum. It is expected that maximising the recovery of magnetite during the definitive feasibility study will decrease the tailings production. In this case, for 274,260 tailings tonnes per month, the make-up water

In terms of transporting concentrate product from site, the options considered to date included: road, pipeline or conveyor. At this stage, the pipeline is the preferred option given the current conditions of the roads in the area and the potential safety of road users. In addition, the pipeline is also expected to have less significant impacts when considering air quality, long term noise disturbance and existing land uses. If the pipeline is buried, the potential exists for groundwater pollution if there is a leak, the pollution impacts could potentially be long term, if unmitigated. If the pipeline is placed above-ground, this would limit any potential impacts on groundwater. The pipeline transport EIA will investigate these issues in further detail.

Sewage sludge management options

The alternatives of off-site disposal or on-site use of the sludge have been considered. The criteria considered for these alternatives were waste minimisation, long term closure objectives, and environmental protection. Use of the treated sludge for on-site rehabilitation of the tailings dam and other disturbed areas is considered to be the best alternative if the sludge is declassified and its use licensed. Alternatively, off-site disposal will take place.

Other alternatives

Alternatives that have not been considered further in this EIA include:

- Mining method – The nature of the ore body influences the mining method to be employed. In this regard, open pit mining is the only feasible option available for exploiting the ore body on site.
- Processing method – No significant alternatives have been considered for the mineral processing operations. The proposed process has been designed based on the nature and type of materials mined on site and the use of best available technology. No other alternatives were considered.
- Domestic/industrial waste disposal – the only feasible option is to make use of an existing permitted disposal facility.
- Housing – no on-site facilities are planned. The most feasible option is to house employees within existing residential areas. Turquoise Moon intends to work together with the local municipality in identifying suitable options. There is no plan to establish any housing on site.

The "no-project" option

The assessment of this option requires a comparison between the alternative of proceeding with the project with that of not proceeding with the project. Proceeding with the project attracts potential economic benefits and potential negative environmental and social impacts. Not proceeding with the project leaves the status quo. In the unmitigated scenario, assuming no measures are implemented to control the mine's operations, the significance of potential impacts could be high. With the mitigation and monitoring as outlined in the EIA and EMP report, the significance of impacts can be reduced to acceptable levels. A comparative assessment of the project development versus the alternative land use (which is the current land use) is given in Section 8 of the EIA and EMP report.

requirement for the mine varies from 7,629m^3/month (during the wet season) to 126,200m^3/month (during the dry season) with a total annual water requirement at 622,113m^3 per annum.

Based on the outcomes of the water supply study, the development of new water resources is not recommended due to a) over allocation of surface water in both the Lephalala and Mogolakwena catchments and, b) the potential over abstraction of groundwater in many of the irrigation areas in this catchment (e.g. Tolwe, Baltimore and along the major River courses – alluvial aquifers).

In terms of the provision of water for the Moonlight operation, the approach will be to integrate the existing registered water use volumes with improved internal water management strategies, without the need to develop additional water resources. In this regard the Moonlight operation will either be:

a) fully dependent on groundwater (by transferring of water allocations through purchases or leases) or,
b) predominately dependent on surface water (by transferring of water allocations from the Limpopo- and/or Lephalala Rivers through purchases or leases) or
c) partially by surface water and groundwater through a comprehensive Artificial Recharge and off-channel storage facility along the Limpopo- and or the Lephalala River.

These three options will be considered further in the definitive feasibility study. If required, the necessary environmental and water approvals will be obtained as part of a separate process.

Transport options

Access route at Moonlight

The proposed access route to the Moonlight site is a dedicated mine road off the existing gravel road (D1347), which leads off the N11 near Marnitz south towards the project site. This route provides the shortest distance to the national N11 highway with the least disturbance to surrounding land uses. It is also expected that the gravel road (D1347) leading from the project site south towards the D1690 and R518 will be used by employees. The traffic study and EIA considered the use of both these roads by the project for transporting employees and supplies to and from site (Sections 2.3 and 7.2.13 and Appendix T).

Transport mechanisms for Moonlight

In terms of transport mechanisms, the following options were identified for the transportation of materials to and from site: road, rail, pipeline and overland conveyor. In terms of transporting materials and supplies, other than concentrate, the only feasible option at this stage is road transport. It may be possible to make use of rail transport in the future however given the lack of infrastructure within the immediate surrounds of the Moonlight site, this option is not being considered further in this process.

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APPENDIX C: INFORMATION-SHARING WITH REGULATORY AUTHORITIES

- Correspondence received from land claims commission (October 2008)
- LEDET acknowledged receipt of application (26 July 2010)
- DEA acknowledged receipt of application (20 July 2010)
- Minutes of regulatory authority site meeting held on 12 November 2010
- Mining right acceptance letter from DMR (dated 5 January 2011)
- DMR comments on the scoping report (dated 20 May 2011)
- DEA comments on the scoping report (dated 10 June 2011)
- LEDET comments on the scoping report (dated 28 June 2011)

COMMISSION ON RESTITUTION OF LAND RIGHTS
IKHOMISHANA YOKUBUYISELA
KWAMALUNGELO OMHLABA
KHOMISHINI E MABAPI LE PUSETSO YA
DITSHWANELO TSA MAFATSHE
KOMMISSIE OP HERSTEL VAN GRONDREGTE

OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO

Private Bag 9552, Polokwane, 0700 (015) 287 0800 (015) 297 8570

ENQUIRIES : DAPHNEY CHABALALA
OUR REF : General

METAGO ENVIROMENTAL ENGINEERS
ATT: TARRYN BOTHA
FAX: 011 467 0978

Dear Sir/Madam

ENQUIRIES REGARDING LAND CLAIMS IN TERMS OF THE RESTITUTION OF LAND RIGHTS ACT, 1994 (ACT NO. 22 OF 1994)

Your enquiry dated 24 October 2008 has reference.

According to the records in our database, there is no information available at this stage on the under-mentioned properties,

- **THE FARM GOUDA FONTEIN REG DIV 76 LR**
- **THE FARM JULIETTA,REG DIV 112 LR** → no claim.
- **THE FARM LEKKERLACH,REG DIV 206 LS**
- **THE FARM MEANDERTHAL,REG DIV 188 LS**
- **THE FARM PURSIE,REG DIV 200 LS**
- **THE FARM SOHO,REG DIV 204 LS**
- **THE FARM ZANDPUT,REG DIV 202 LS**

PLEASE BE ADVISED THAT THE FOLLOWING FARMS HAVE BEEN DISMISSED ON THE 17/10/1997;

- **THE FARM VAN WYKSPUT,REG DIV 201 LS**
- **THE FARM WESTHEIM,REG DIV 191 LS** → was a claim, was found not valid on that date.
- **THE FARM TRIEST REG DIV 192 LS**

It should however be noted that the office is in a process of finalizing outstanding research. if it emerges during this process that there is a claim on the said farm/ property which satisfies the requirements of the Restitution of Land Rights Act, (Act no 22 of 1994) for validity purpose, then the Commission will send you the relevant correspondence.

We trust that you will find the above in order

Kind Regards,

MIYELANI NKATINGI
ACTING REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO
DATE: 24 OCTOBER 2008

P.P.

COMMISSION ON RESTITUTION OF LAND RIGHTS
IKHOMISHANA YOKUBUYISELA
KWAMALUNGELO OMHLABA
KHOMISHINI E MABAPI LE PUSETSO YA
DITSHWANELO TSA MAFATSHE
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OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO

Private Bag 9552, Polokwane, 0700 (015) 287 0800 (015) 297 8570

ENQUIRIES : DAPHNEY CHABALALA
OUR REF : General

METACO ENVIROMENTAL ENGINEERS
ATT: TARRYN BOTHA
FAX: 011467 0978

Dear Sir/Madam

ENQUIRIES REGARDING LAND CLAIMS IN TERMS OF THE RESTITUTION OF LAND RIGHTS ACT, 1994 (ACT NO. 22 OF 1994)

Your enquiry dated 29 October 2008 has reference. ⇒ no claim

According to the records in our database, there is no information available at this stage on the under-mentioned property:

- **THE FARM MOONLIGHT 111 LR.**

It should however be noted that the office is in a process of finalizing outstanding research, if it emerges during this process that there is a claim on the said farm/ property which satisfies the requirements of the Restitution of Land Rights Act, (Act no 22 of 1994) for validity purpose, then the Commission will send you the relevant correspondence.

We trust that you will find the above in order

Kind Regards,

MIYELANI NKATUNGI
ACTING REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO
DATE: 29 OCTOBER 2008

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIROMENT & TOURISM

Enquiries: Nyathi J **Telephone:** 015 290 7000 **Fax:** 015 295 5015 **Email:** nyathij@ledet.gov.za **Reference:** 12/1/9-7/2-W110

Metago Environmental Engineers (Pty) Ltd
P.O. Box 1596
CRAMEVIEW
2060

Attention: Alex Pheiffer
Fax: 011 467 0978

Dear Sir,

RE: PROPOSED DEVELOPMENT OF A NEW IRON ORE MINE ON THE FARMS GOUDAFONTEIN 76 LR, JULIETTA 112 LR, PORTIONS 1, 2 AND 3 OF THE FARM MOONLIGHT 111 LR, THE REMAINING EXTENT OF THE FARM MOONLIGHT 111 LR AND THE REMAINING EXTENT OF THE FARM MARNITZKRAAL 54 LP IN LEPHALALE LOCAL MUNICIPALITY

The above-mentioned project has reference.

The Department acknowledges receipt of Application Forms dated 08 July 2010, compiled and submitted by Metago Environmental Engineers (Pty) Ltd on 09 July 2010.

Kindly note that the application has been allocated the following Reference Number: **12/1/9-7/2-W110**. Should you still wish to continue with this application, you may proceed with the Scoping/Environmental Impact Assessment Process as required by the Environmental Impact Assessment Regulations GNR. 385 of the National Environmental Management Act (Act 107 of 1998) as amended.

Please do not hesitate to contact this Department should have any queries in this respect.

Yours faithfully,

MANAGER
ENVIRONMENTAL IMPACT MANAGEMENT
DATE: 26/07/2010

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447, PRETORIA, 0001· Fedsure Building, 315 Pretorius Street, PRETORIA

Ref No.: 12/9/11/L386/5
Enquiries: Ms Z Phohlo/ Ms L Mnguni
Tel: (012) 310 3382/3284 Fax: (012) 310 3753
Email:zphohlo@environment.gov.za/lmnguni@environment.gov.za

Metago Environmental Engineers (Pty) Ltd
P.O. Box 1596
CRAMEVIEW
2060

Fax No. (011) 467 0978

Attention: Ms Alex Pheiffer

APPLICATION FOR A WASTE MANAGEMENT LICENCE IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008 (NO. 59 OF 2008): DEVELOPMENT OF A NEW IRON ORE MINE INCLUDING ASSOCIATED ACTIVITIES - MOONLIGHT IRON ORE PROJECT.

This Department confirms having received the above-mentioned waste management licence application forms for the abovementioned activity on 09 July 2010.

You are hereby reminded to comply with the requirements Regulations 77 of GN No. R 385 with regard to the period allowed for complying with the requirements of the regulations, and Regulations 58 and 59 of GN No. R 385 with regard to the allowance of a commenting period for interested and affected parties on all reports submitted.

Your application has been assigned with a reference number (12/9/11/L368/5). Kindly quote this reference number in any future correspondence in respect of your application. The responsible officer for the processing of your application is Ms Zingisa Phohlo who can be contacted on (012) 310 3382.

Kindly be informed that the Department requires **four (4) additional copies** of reports submitted in respect of your application.

Please draw the applicant's attention to the fact that the activity may not commence prior to a waste licence being granted by the Department.

Should you require further detailed information, please do not hesitate to contact this office.

Yours sincerely

Ms Joanne Yawitch
Deputy Director-General
Environmental Quality and Protection
Letter signed by: Mr Lucas Mahlangu
Designation: Deputy Director: Permitting
Date: 20/07/2010

Cc: Turquoise Moon Trading 157 (Pty) Ltd: (086) 219 5701

Metago Environmental Engineers (Pty) Ltd
Consulting Engineers and Scientists

TURQUOISE MOON TRADING 157 (PTY) LTD

MINUTES OF A SITE MEETING HELD WITH THE REGULATORY AUTHORITIES

DATE	Friday, 12 November 2010
VENUE:	Koedoesrand Farmer's District Hall
PROJECT:	Turquoise Moon Trading 157 (Pty) Ltd Moonlight and De Loskop Iron Ore Project
PROJECT NUMBER:	T020-02
PURPOSE:	The purpose of the meeting was to: • inform the regulatory authorities and discuss the proposed project and environmental assessment process; • raise and record environmental issues; and • identify possible environmental specialist investigations.
APOLOGIES	See a list of apologies below.
ATTENDANCE:	See attendance register attached in Appendix 1.

1. OPEN AND INTRODUCTION

Alex Pheiffer (AP) from Metago Environmental Engineers (Pty) Ltd (Metago) opened the meeting and introduced the project team project present at the meeting: Stella Moeketse (SM) and Natasha Daly (ND). All the attendees introduced themselves; a copy of the attendance register is attached in Appendix 1.

2. PRESENTATION ON THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

AP from Metago, the independent environmental consultants who were appointed to conduct the environmental impact assessment (EIA) process gave a presentation on the proposed project and the environmental authorisation process being followed. A copy of the presentation is attached in Appendix 2. A site visit was conducted thereafter.

3. DISCUSSION

A number of issues were raised by interested and/or affected parties (IAPs) present in the meeting. These have been recorded in Table 1 below. Where a response was provided this has also been included in the table. Given the nature of this meeting, not all questions could be answered during the meeting.

Table 1: Issues raised by IAPs and the response given by the project team

Issue	Raised by whom	Response given by AP
Procedural related issues		
Metago should arrange a meeting with the Department of Water Affairs (DWA) to discuss the results of the specialist studies, the relevant water use applications and water quality management.	Malegodi Malatji	Noted.
The various and relevant sections of the DWA should be present in this meeting. Zama Masando and Malegodi Malatji will assist with the arrangements of this meeting.		Noted.
Turquoise Moon should meet with Lephalale Local Municipality to discuss the proposed project as well as the integration of the proposed project in the spatial plans of the municipality particularly in terms of bulk services such as water and sewage.	Leonard Sole	Noted.
Turquoise Moon should also ensure conformity to all the spatial plans of the municipality.		Noted.
It must be noted that mining activities do not take precedence over agricultural and tourism activities in this area.		Noted
Applications for land use changes should be lodged with the relevant local municipalities.		Noted.
Consultation with the land owners and users together with proof of consultation is very important for the proposed project and the environmental assessment process. The Department of Rural Development and Land Restitution (DRDLR) deals with land that is state owned or under claims not privately own.	Kwena Mantshilu	The farms that are going to be affected by the proposed mine (Moonlight area) are privately owned. On the De Loskop project area, portions are privately owned, state owned and owned by DRDLR. The public consultation process in both areas has commenced.
Is the public meeting at Ga-Seleka village still going to take place this afternoon? I would like to attend it.	Lawrence Kgonyane	Yes, we will be going straight to Ga-Seleka from here to conduct the public meeting.
Housing		
It would be ideal that Turquoise Moon incorporates housing for the workforce at the mine with one of the already existing settlements and not establish an isolated town which might end up being a white elephant when the mine closes.	Leonard Sole	Noted.
Roads		
Turquoise Moon should ensure that the impacts on the roads are investigated and the negative impacts are mitigated accordingly.	Leonard Sole	Noted.
Socio-economic – employment/benefits		
What are the local economic benefits associated with the proposed project?	Leonard Sole	Noted.
Lephalale area is equipped with people with skills and companies that can do some of the jobs at the mine therefore it will be ideal that Turquoise Moon procures services and skilled labour from within the Lephalale area or the Limpopo Province.		

4. THE WAY FORWARD

The following way forward was greed:

- Copies of the scoping report are being distributed to the regulatory authorities for review; and
- Specialist studies will be undertaken and the results of the reports will be incorporated in the EIA/EMP report which will be made available for review.

5. CLOSE

AP thanked everyone for attending and closed the meeting.

APPENDIX 1: ATTENDANCE REGISTER

Name	Interest	Postal Address	Telephone	Email / Fax
Alex Pheiffer	Metago Environmental Engineers	P O Box 1569 Cramerview 2060	011 467 0945	alex@metago.co.za
Stella Moeketse				stella.moeketse@metago.co.za
Natasha Daly				natasha.daly@metago.co.za
Malegodi Malatji	Department of Water Affairs	49 Joubert Street Polokwane	015-290-1269	mahlatjim@dwaf.gov.za
Zama Masando			015-290-1417	MasandoZ@dwa.gov.za
Kwena Mantshilu	Department of Rural development and Land Restitution	Private Bag X9312 Polokwane 0700	015-297-3539 083-977-45	JKMantshilu@ruraldevelopment.gov.za
Leonard Sole	Lephalale Local Municipality	Private Bag X136 Lephalale 0855	082-578-8441	leonard.sole@lephalale.gov.za
Lawrence Kgonyane			079-082-7538	100494@lephalale.gov.za

APPENDIX 2: PRESENTATION

TURQUOISE MOON TRADING 157 (PTY) LTD

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED MOONLIGHT AND DE LOSKOP IRON ORE MINE

AUTHORITIES SCOPING MEETING

Metago Environmental Engineers (Pty) Ltd

12 November 2010

OBJECTIVES OF THE MEETING

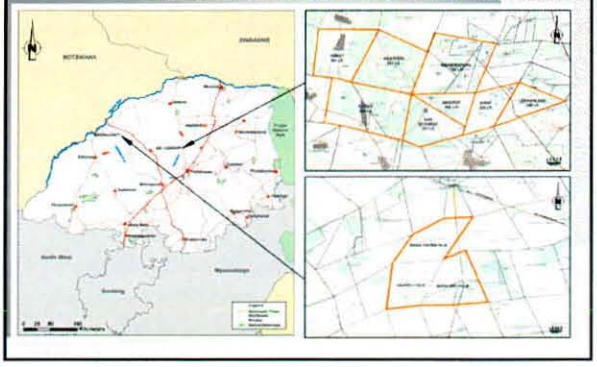
- Outline the project and environmental assessment process
- Hear and record comments
- Agree on the process to be followed and the way forward

AGENDA

- Registration
- Welcome and opening
- Environmental process overview
- Project overview
- Site visit and general discussion
- Close

metago

LOCAL SETTING OF THE PROJECT AREA



DESCRIPTION OF MOONLIGHT PROJECT MINING & PROCESSING

Farms – Gouda Fontein, Moonlight, Julietta

Resource – iron ore, manganese ore, nickel, limestone, marble

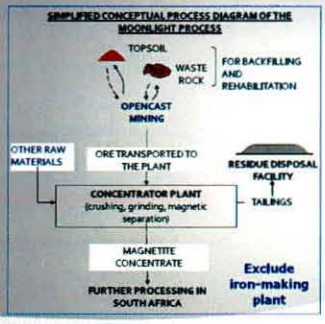
Mining method – opencast

Production rate – ± 116 000 tonnes magnetite concentrate per month

Life of mine – life of 30 years (starting 2012 with construction, 2016 full production)

Workforce – ±500 temporary, ±210 operational

OVERVIEW OF POSSIBLE PRODUCTION PROCESS



ALTERNATIVES BEING CONSIDERED

- Development sites
- Site layout options
- Transport
- Water supply
- Power supply
- Sewage sludge
- "No-go" option

SUPPORT FACILITIES/SERVICES

- Construction borrow pit(s)
- Temporary construction yard and offices
- Mining contractor area to support mining fleet
- Material/waste storage and handling area(s)
- Water management facilities
- Water and power supply facilities
- Communication and lighting facilities
- Helipad and airstrip
- Sewage treatment facilities
- Administration, security, access control
- Laboratory, staff medical station
- Housing facilities?

ENVIRONMENTAL PROCESS

Decisions:

- Department of Mineral Resources (DMR)
- National Department of Environmental Affairs
- Department of Economic Development, Environment and Tourism (DEDET)

ENVIRONMENTAL PROCESS

Authority involvement:

- Department of Water Affairs
- South Africa Heritage Resource Agency
- National Department of Agriculture
- Provincial Department of Rural Development and Land Reform (DRDLR) (Land Affairs)
- Limpopo Department of Parks and Tourism
- Limpopo Department of Roads and Public Transport
- Lephalale Local Municipality
- Waterberg District Municipality

ENVIRONMENTAL PROCESS

Different stages?

- Scoping phase
- Environmental Impact Assessment and Environmental Management Programme (EIA/EMP) phase

POTENTIAL ENVIRONMENTAL IMPACTS

- Loss and sterilisation of mineral resources
- Change in topography
- Impact on soil, land capabilities and land uses
- Traffic
- Impact of blasting activities
- Impact on natural vegetation and animal life
- Hydrology (alteration of drainage patterns)
- Groundwater contamination and lowering of levels
- Dust generartion
- Increase in noise levels
- Impact on heritage resources
- Visual impact
- Socio-economic impacts (positive and negative)

QUESTIONS

WAY FORWARD

- Distribute scoping report (November 2010)
- Regulatory authority and public review (40 days from distribution)
- Report to LEDET & DEA (end January 2011)
- Specialist EIA investigations (next 3 to 6 months)
- Distribute EIA/EMP report (April 2011)
- Distribute record of decisions (2nd half 2011)

CLOSE

Private Bag X 9467, Polokwane, 0700, Tel: 015-287 4700, Fax: 015-287 4729
101 Dorp Street, Polokwane, 0699
From: Directorate Mineral Regulation: Limpopo Region
Enquiries: Semenya mamikie Ref: LP30/5/1/2/2/201MR
e-mail: Ephesia.semenya@dmr.gov.za

TURQUOISE MOON TRADING 157 (PTY) LTD
P. O Box 877
Lonehill
Gauteng
2062

Fax: 011 5100 159
Attention: Kevin Scott Huntly

Sir/Madam

ACCEPTANCE FOR A MINING RIGHT: TURQUOISE MOON TRADING 157 (PTY) LTD ON THE FARMS GOUDA FONTEIN 76 LR, JULIETTA 112 LR AND MOONLIGHT 111 LR, IN THE MAGISTERIAL DISTRICT OF LEPHALALE/MOLEMOLE.

I refer to the abovementioned matter and I confirm that your application for a mining right of **Iron Ore, Limestone, Manganese, Marbel and Nickel** in terms of section 22(1) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) has been accepted.

In terms of Section 22 (4) of the Act, you are therefore required to submit the following:

(a) to conduct an environmental impact assessment and submit seven copies or folds of Environmental Management Programme on or before the **04th July 2011(180 days)** .

(b) to submit a Scoping report in terms of Regulation 49(2) on or before **04th February 2011(30 days).**

(c) to notify in writing and consult with the landowner or lawful occupier and any other affected party; and

(d) to consult with the Department of Land Affairs if the land is state owned, in the event that the land is subject to land restitution consult office of the Commission of Restitution for Land Rights and submit the result of such consultation to this office on or before the **04th February 2011 (30 days).**

(e) It is important that you comply with the requirement mentioned under point (b) and your Environmental Management Plan will only be accepted once the results of the consultation as referred to in (c) has been submitted.

(f) **You are requested in terms of Section 23(1)(h) of the Act to give effect to the object referred to in Section 2(d) of the Act. In this regard, you are required to submit by no later than the 06th March 2011 the following documents:**

- **duly signed shareholders agreement;]**
- **share certificates and shareholder's registers;**
- **articles and memorandum of association of the company;**
- **details relating to funding (all relevant agreements); and**
- **any other agreement or documents relating to the agreement.**

Acceptance of your application does not grant you the right to commence with prospecting / mining operations. Your application will be evaluated / processed and a recommendation on the granting / refusal of the right will be forwarded to the Minister or her delegate. **Take note that the Department will finalize your application by December 2011.** Any person operating without a prospecting / mining right or mining permit will be in contravention of Section 5(4) of the MPRDA and would be guilty of an offence in terms of the relevant Act.

Further be advised that due a system failure, the application could not be adjudicated against the Minact data base for old order rights and therefore the following will be applicable:

Should it transpire at later stage that an old encumber the area under application order right, the Department will be entitled to refuse this application based on the fact that an old order right for the same minerals, has already been granted to another entity, as the granting thereof would be contrary to the provisions of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

Yours faithfully

.....

ACTING REGIONAL MANAGER
LIMPOPO REGION: POLOKWANE
DATE: 05/01/2011

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447, PRETORIA, 0001· Fedsure Building, 315 Pretorius Street, PRETORIA

Ref No.: 12/9/11/L386/5
Enquiries: Ms Z. Phohlo
Tel: (012) 310 3382 **Fax:** (012) 310 3753 **Email:** zphohlo@environment.gov.za
www.environment.gov.za

Metago Environmental Engineers (Pty) Ltd
P.O. Box 1596
CRAMERVIEW
2060

Fax: 011 467 0978

Attention: Alex Pheiffer

FINAL ENVIRONMENTAL SCOPING REPORT FOR TURQUOISE MOON TRADING 157 (PTY)LTD WASTE MANAGEMENT FACILITIES IN LIMPOPO PROVINCE.

This Department confirms having received four (4) copies of the final scoping report for the above-mentioned activity dated 28 February 2011.

Subsequent to perusal and the evaluation thereof, the Department is satisfied that the FSR complies with the minimum requirements of the Environmental Impact Assessment (EIA) regulations, 2006, and accordingly made the following decision in terms of NEMA, 2006 regulations R.385 section 31(1)(a):

Accept the Final Scoping Report, drafted by Metago Environmental Engineers (Pty) Ltd, dated 28 February 2011. You may proceed with the Environmental Impact Assessment Report (EIAR) as required in terms of the EIA Regulations, 2006.

Please note that the activity may not commence prior to an environmental authorisation being granted by the Department.

Yours sincerely

Mr. Isheam Abader
Deputy Director-General
Environmental Quality and Protection
Letter signed by: Ms Z. Phohlo
Designation: Assistant Director: Permitting
Date: 10/06/2011

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

From: Directorate: Mineral Regulation: Limpopo
Enquiries: M.B. Mudau
101 Dorp Street, Polokwane, 0699
Private Bag X 9467, Polokwane, 0700
Tel: (015) 287 4700, Fax: (015) 287 4749

Sub Directorate: Mine Environmental Management **Ref: LP30/5/1/2/3/2/1/0201 EM**

REGISTERED MAIL
The Manager
Turquoise moon trading 157 (Pty) Ltd
P.O Box 877
LONEHILL
GAUTENG
2062

Attention: Mr. Kevin Scott Huntly Fax: 011 510 0159

COMMENTS ON SCOPING REPORT FOR A MINING RIGHT ON THE FARMS GOUDA FONTEIN 76 LR, JULIETTA 112 LR AND MOONLIGHT 111 LR SITUATED IN THE MAGISTERIAL DISTRICT OF LEPHALALE/MOLEMOLE.

The scoping report submitted on the 03 February 2011 has reference.

- You are advised to describe the nature and extent of any further investigations required in the environmental impact assessment report, including any specialist reports that may be required.

- A detailed environmental awareness plan must also be provided indicating who the responsible person will be and the frequency and the issues to be addressed.

The above mentioned concerns must be addressed and incorporated in the EMP. The EIA/Environmental Management Programme must be compiled in accordance with regulation 50 and 51 of the MPRDA and the date for submitting the EIA/EMP is still per acceptance letter.

This confirmation does not override any concerns or input which might be brought to your attention by this department at any given point in time.

For further enquiry, please feel free to contact the writer hereof on the number reflected above.

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

Enquiries: Ms TA Kubaye Tel: 015 291 3179 Fax: 015 295 5015 E-mail: KubayeTA@ledet.gov.za Ref: 12/1/9-7/2-W101

Metago Environmental Engineers (Pty) Ltd
P O Box 1596
CRAMERVIEW
2060

Fax: 011 467 0978
Attention: Ms Natasha Daly

Dear Madam

RE: PROPOSED OPENCAST AND PROCESSING FACILITIES OF IRON ORE MINE ON THE FARMS MOONLIGHT 111 LR, GOUDA FONTEIN 76 LR AND JULIETTA 112 LR WITHIN LEPHALALE LOCAL MUNICIPALITY IN WATERBERG DISTRICT MUNICIPALITY

The Scoping Report (SR) dated February 2011 and the site inspection conducted on 14 June 2011 have reference.

The Department of Economic Development Environment and Tourism (Department) accepts the SR and the attached Plan of Study for Environmental Impact Assessment (PoSEIA) for the above-mentioned development that was received on 14 December 2010. The Department brings the following, which must be considered:

1. All specialist studies to be undertaken must be in terms of Regulations 33 of GNR. 385 of EIA Regulations of 2006.

2. There must be herpetological survey that will be included as part of the broader ecological survey with regard to the outcrops identified during site inspection on the farm Moonlight 111 LR.

3. The vegetation on the proposed site looks very much pristine. Therefore vegetation survey must be included as part of the broader ecological survey as indicated by Biodiversity and Resource Use Management Directorate of this Department.

4. Water Use License (WUL) or proof of submission of application to the Department of Water Affairs for the existing boreholes and/or new boreholes is required.

5. Proof that you have applied with Eskom with regard to power supply as indicated on page 4-7 of the SR is required.

6. All issues and objections raised by the interested and affected parties (attached on appendix C) must be completely addressed in the EIA Report.

7. You are requested to provide a sensitivity map on an A3 paper with legend (it must be clear and visible), which will include the layout plan of the whole project overlaid on that map.

8. Service agreement letters must be submitted together with the EIA Report from all service providers.

You may proceed with the EIA process in accordance with the tasks that are outlined in the PoSEIA as required by the EIA Regulations GNR. 385 of the National Environmental Management Act (Act 107 of 1998) as amended.

Please note that no development must be undertaken prior to the Department granting an environmental authorisation to that effect. Non-compliance with the above will result in the relevant authority issuing a directive to address the non-compliance, including an order to stop the activity as well as instituting criminal and/or civil proceedings to enforce compliance.

Please do not hesitate to contact this Department should have any queries in this respect.

Yours faithfully,

MANAGER
ENVIRONMENTAL IMPACT MANAGEMENT
DATE: 28/06/2011

rural development & land reform
Department:
Rural Development and Land Reform
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO
Private Bag 9552, Polokwane, 0700, 61 Biccard Street: (015) 284 6300 Fax No: (015) 295 7404/7403, E-mail address clientrelations@dla.gov.za. Also at 96 Kagiso House Cnr. Rissik and Schoeman Street Tel: (015) 287 2600 and Andrea Building Tel: (015) 287 9460

ENQUIRIES : MOSEBEDI LORRAINE
OUR REF : GENERAL

Metago Environmental Engineers (Pty) Ltd
P.O Box 1596
CRAMERVIEW
2060

Fax : 011 467 0978 / 012 991 1907

Attention: Natasha Daly

Dear Sir/Madam

ENQUIRIES REGARDING LAND CLAIMS IN TERMS OF THE RESTITUTION OF LAND RIGHTS ACT, 1994 (ACT NO. 22 OF 1994).

Your enquiry dated 23rd of June 2011 as reference.

According to the records in our database, there is no information available at this stage on the under-mentioned properties:

- **Moonlight 111 LR**
- **Juliette 112 LR**
- **Goudafontein 76 LR**

It should however be noted that the office is in a process of finalizing outstanding research, if it emerges during this process that there is a claim on the said farm/ property which satisfies the requirements of the Restitution of Land Rights Act, (Act no 22 of 1994), then the Commission will send you the relevant correspondence.

We trust you will find the above in order.

Kind Regards,

M.F NKATINGI
OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO
DATE: 28/06/2011

APPENDIX D: STAKEHOLDER DATABASE

TURQUOISE MOON TRADING 157 (PTY) LTD

MOONLIGHT IRON ORE PROJECT

DATABASE – July 2011

TABLE 1: PROJECT TEAM, EIA/EMP TEAM AND ENVIRONMENTAL SPECIALISTS

Interest group	Title	Name	Surname	Organisation	Address	Telephone and cell phone	Fax	E-mail
Project proponent	Mr	Scott	Huntly	Turquoise Moon Trading 157 (Pty) Ltd	PO Box 877 Lonehill 2062	082-321-2050	086-219-5701	scott.huntly@ferrumcrescent.com
	Dr	Fanie	Botha			082-903-4212		fanie.botha@ferrumcrescent.com
	Ms	Sandy	Hill			011-510-0159 082-651-9966		sandy.hill@ferrumcrescent.com
Environmental project team	Mrs	Alex	Pheiffer	Metago Environmental Engineers	PO Box 1596 Cramerview 2060	011-467-0945 083-269-7545	011-467-0978	alex@metago.co.za
	Mrs	Linda	Munro			011-467-0945 082-335-1871		linda.munro@metago.co.za
	Ms	Stella	Moeketse			011-467-0945 072-380-5609		stella.moeketse@metago.co.za
	Ms	Mashadi	Monaledi			011-467-0945 078-625-3727		mashadi@metago.co.za
	Ms	Natasha	Daly			011-467-0945 083-226-8570		natasha.daly@metago.co.za
	Ms	Caitlin	Pringle			011-467-0945		cailtin.pringle@metago.co.za
	Mr	Michael	Willson			011-467-0945		Michael.willson@metago.co.za
SLP Team	Mr	Gerrie	Muller	Strategy4Good		082-606-0731	086-219-9486	gerrie@strategy4good.co.za
	Mrs	Nicky	Fourie			082-447-3285		nicky@strategy4good.co.za
Water supply study specialists	Mr	Martin	Holland	Metago Water Geosciences	P.O. Box 40161 Faerie Glen 0043	011-991-8881	086-684-2611	martin@watergc.co.za
	Mr	Luke	Wiles	Metago Environmental Engineers	PO Box 1596 Cramerview 2060	011-467-0945 (ext 2005) 083-269-7545	011-467-0978	luke.wiles@metago.co.za
MrSpecialist consultants	Mr	Ian	Jones	Earth Science Solutions	34Ferreira St Nelspruit 1200	083 654 2473 013 753 2746	013 752 2526	ian@earthscience.co.za
	Mr	Warren	Mcleland	Ecorex		083 231 5632 013 750 1893		warren@ecorex.co.za
	Ms	Hanlie	Liebenburg	Airshed Planning Professions	PO Box 5260 Halfway House 1685	083 416 1955 011 805 1940	011 805 7010	hanlie@airshed.co.za
	Mr	Luke	Wiles	Metago Environmental Engineers (Pty) Ltd	PO Box 1596 Cramerview 2060	011 467 0945 072 129 4202	011 467 0978	luke.wiles@metago.co.za/ lwiles@slrconsulting.com
	Mr	Stephan	Van Niekerk			011 467 0945 072 284 5281	011 467 0978	svanniekerk@slrconsulting.com

Interest group	Title	Name	Surname	Organisation	Address	Telephone and cell phone	Fax	E-mail
	Mr	Mark	Bollaert			011 467 0945 072 239 0974	011 467 09878	mbollaert@slrconsulting.com
	Mr	Rob	Bolton			011 467 0945 083 447 3125	011 467 0978	
	Mr	Julius	Pistorius	Archaeological specialist (independent)	352 Rosemary Street Lynwood 0081 South Africa	082 554 5449 012 348 5668	012 348 5668	juliuscc@absmail.co.za
	Mr	Stephan	Van Staaden	Scientific Aquatic Services in association with Terra-Africa Consultant	91 Geldenhuis Road, Malvern East Extension 1	011 616 7893 083 415 2356	011 615 4106	stephen@sasenvironmental.co.za
	Mr	Marine	Pienaar		PO Box 433 Ottosdal 2610	018 571 3005	011 615 4106	mpienaar@terraafrica.co.za
	Mr	Ben	Van Zyl	Acousolv	PO Box 70596 De Wilgers 0041	012 807 4924 086 508 1122		ben@acusolv.co.za
	Mr	Bruce	Rubidge	University of Witwatersrand, Johannesburg	Bernard Price Institute for Palaeontological Research, Van Riet Louw Building School of Geosciences Faculty of Science	011 717 6685/2	011 717 6694	Bruce.Rubidge@wits.ac.za
	Mr	Francois	De Wet	EnviroPlus CC	Postnet Suite 876 Private Bag X 2350 Ermelo 2350	082 462 8563	086 692 2120 086 558 7478	sedewet@iafrica.com
	Mr	Danie	Zeeman	Blast Management CC	PO Box 61538 Pierre Van Ryneveld Centurion 0045	082 854 2725		danie@blastmanagement.co.za
	Mr	Paul	Van Der Esthuizen	Siyazi	PO Box 71333 Willows 0041	012 343 6259	012 344 6496	paul@siyazi.co.za
	Mr	Leon	Roest					leon@siyazi.co.za

Interest group	Title	Name	Surname	Organisation	Address	Telephone and cell phone	Fax	E-mail
	Mr	Graham	Young	Newton Landscape Architects	369 Government Road Johannesburg North	011 462 6967 082 462 1419	0 11 462 9284	graham.young@up.ac.za
Baltimore Post Office	Mrs	Anya	Hawenge			014 767 1320		
Catering	Mrs	Lida	Hanekom	Catering at Farmers union hall		083 362 8990		
	Ms	Anelize				083 703 1671		
Lephalale public library	Ms	Hazel	Mashaba			014 762 1453		

TABLE 2: MOONLIGHT IAPS INCLUDING LOCAL AUTHORITIES

Name	Surname	Organisation/Interest	Address	Telephone	Fax/E-mail	Notes
Mr Andre	Du Plessis	Lessis Finansierings - Beleggingsmaatskappy Pty Ltd Landowner - Gouda Fontein 76LR Julietta 112LR Portion 3 Moonlight 111LR Portion 2 Moonlight 111LR Landowner of portion 6 of Victoria West, potion 0 of Hantam, portion 0 of Nelly	PO Box 795 Polokwane 0700	Tel: 015-293-4000 Cell: 083-229-1886	Fax: 015 293 4018 Email: andre@bbgroup.co.za	A portion of Gouda Fontein 76LR has been sold to Mr Eli Stroh in exchange for a Portion of Karnemelksfontein 76LR.
Mr Corneels	Coetzee	Philippina Coetzee Trust Landowner - Remaining extent Moonlight 111LR	Lives on property, works at Tolwe Police Station	Cell: 076-310-1933 Tel: 014-767-1012	Fax: 014-767-1132	Is part of the farmers union
Dr Christo	Pienaar	Landowner - Portion 1 Moonlight 111LR	PO Box 1753 Mokopane 0600	Tel: 015-491-6324 Cell: 083-255-0524	Fax: 015 491 6861 iti30791@mweb.co.za	
Mr Eli	Stroh (snr)	Stoh Family Landgoed Landowner – Karnemelksfontein 76LR and portion 1 of Good Hope 109LR	Suite 1, Constantiapark, 80 Hans van Rensburg St/str 80 1238 Pietersburg 0700	Tel: 015 297 5890-7 Cell: 082 554 6413 After hrs: 015 297 2764	Email: elistroh@pixie.co.za zoetje@elistroh.co.za Fax: 015 297 5898	A portion of Gouda Fontein 76LR has been sold to Mr Eli Stroh in exchange for a Portion of Karnemelksfontein 76LR.
Adrian Gert (At)	Mahne Snr	Landowner of Alice, portion 0 of Old Feff	PO Box 31 Baltimore 0619	014 76 71336 082 9386 245		
Antonia and Silvia	Mora	Hunters Dream Safaris – Landowner portions 0 and 1 of Lelie Vontijn, portion 3 of Marnitzkraal	PO Box 1755 Lephalale 0555	076 794 2912 +34 607 200 158 +34 600 406 645	info@thehuntersdream.es	Stay six months in SA and the remaining six months in Europe.
Louis and Bettie	Smuts	Landowner portion 2 of Lelie Vontijn	PO Box 3174 Rooinekkraal 0154	082 378 1747		

Name	Surname	Organisation/Interest	Address	Telephone	Fax/E-mail	Notes
Riana and Minderd	Spoelstra	Tabana Prop Inv Pty Ltd – Landowner of Tabana	Postnet Suite 54 Private Bag x 1007 Littelton 0140	012 661 5875 072 200 9761 (Riana) 083 445 0757 (Minderd)	rs@tabana.co.za ms@tabana.co.za	
P.H.	Fourie	Landowner of Boekenhoutfontein	PO Box 935 Modimolle 0510	082 823 8312 014 717 5424 (Secretary, Lindie)	phfourietr@telkomsa.net	Cattle farming. Belongs to the Limpopo farmers union
Pieter	Fourie	Landowner of Boekenhoutfontein	PO Box 3688 Modimolle 0510	014 717 5424 082 929 1909	pietlin@vodamail.co.za	
Daniel martin (Dannie)	Meyer	Landowner of portion 0 of Boekenhoutfontein	PO Box 7 Baltimore 0619	082 494 4370	boekfonteinvervoer@gmail.com	
Klasina and Johan	Vogel	Landowner of portion 0 of the farm Good Hope 109 LR	PO box 12169 Benoryn 1504	011 918 4979 084 505 8641 (Klasina) 084 590 5024 (Johan)	vogel@absamail.co.za	Bought the farm from Johannes Snyder in April 2010. The farm is a weekend getaway.
Willem and Karen	Briel	Landowners of portion 0 of Marnitzkraal LR	PO Box 57 Tom Burke 0621	082 394 1507	Karenbriel@yahoo.com	
~~Erwin~~	~~Kruger~~	~~Friesplaas Melkery CC Landowner of portion 1 of Marnitzkraal 54 LR~~	~~PO Box 370 Ellisrus 0555~~	~~082 898 5898~~	~~erwin@krugerafricansafaris.co.za~~	~~Friesplaas Melkery is a joint business with brother and father. The Kruger African Safaris is located on Marnitzkraal. Sold farm to Chris Lourens in Dec 2010~~
Chris	Lourens	Arisda Trust Landowner of portion 1 of Marnitzkraal 54LR	PO Box 1073 Wingate Pretoria 0153	083 379 4809	chris@cairnmead.co.za	
c/o J.I	Malatjie	Republic of SA – Landowner of portion 2 of Marnitzkraal	Private bag X9312 Polokwane 0700	082 827 0680 015 297 3539	015 297 4988	Department has confirmed that the land has not been allocated to anybody.

Name	Surname	Organisation/Interest	Address	Telephone	Fax/E-mail	Notes
Adrian Gert (Attie)	Mahne Jnr	Landowner of portion 3 of Marnitzkraal 54 LR and Grootepost 80 LR	PO Box 37 Baltimore 0619	082 908 7291 082 908 1886	attie.mahne@bkbbosveld.co.za	
Fanie	Van Wyk	Bhubezi Landgoed Pty Ltd Landowner of portion 4 and 6 of Marnitzkraal 54 LR	PO Box 1474 Bronkhortspruit 1020	082 4303 414		Fanie van Wyk is the landowner his son Wynand helps run the farm
Wynand	Van Wyk		PO Box 703 Bronkhortspruit 1020	082 321 9852	wynandvw@lantic.net	
Ronald	Jackson	Marnitzkraal Lodge CC – Landowner portion 5 of Maritz.	PO Box 1028 Heidelberg 1438	016 341 6036 082 891 4701	accounts@marnitzkraal.co.za 086 6766 849	
Joan	Jackson	Marnitzkraal	PO Box 1028 Heidelberg 1438	084 455 5925	Joanjackson@vearisk.co.za	
Riaan	De Beer	Botha Chips CC Landowner of portion 7 of Marnitz	PO Box 3553 Polokwane 0700	083 628 1951	debeer@telkomsa.net	
Peiter and Jennifer	Ras	Landowner portion 8 of Maritzkraal	PO Box 17033 Pretoria North 0116	072 133 6226	rasjennifer3@gmail.com ttprojects@mweb.co.za	
Petrus	Aucamp	Gereformeerde Kerk – Koekesrand – Landowner portion 1 of Victoria West	PO Box 112 Tom Burke 0621	072 075 5677		
J.W	De Vries	Hanta Trust – Landowner portion 2 of Victoria West	PO Box 124 Tom Burke 0621	082 324 0748	jwdevries@bosveld.co.za	
c/o Peet	Aucamp	Afrikaanse Protestante Kerk Koedeosrand – Landowner portion 7 of Victoria West				During the social scan Peet Aucamp informed us that this church no longer exists and that nobody lives on the property.
A	Van der Westhizen	Victoria West	PO Box 20 Tom Burke 0621	082 555 4597		

Name	Surname	Organisation/Interest	Address	Telephone	Fax/E-mail	Notes
Gerhardus Stephanus	Scheepers	Landowner portion 0 of Zandkraal, portion 1 of Hantam, portion 1 of Nelly	PO Box 19 Baltimore 0619	082 441 7345	086 500 7883	
Roelof	Scheeper	Marnitz	PO Box 19 Baltimore 0619		r.scheepers1@absamail.co.za	
~~Elrick~~	~~Viljoen~~	~~Shamanzi Trust – landowner of portion 1 of Zandkraal~~	~~PO Box 670 Witbank 1035~~	~~083 650 3754~~	~~tplaza@yebo.co.za~~	~~Sold his farm~~
Guido	Deacon			083 290 7334	guidoensusan@yahoo.com	
Louwrens Johannes	Van Staden	Landowner of portion 4 of Zandkraal	Private Bag x 2903 Polokwane	015 285 0004 083 296 2510	086 573 1956 Louw.v.staden@gijima.com	
Shannon		Bosman safari- landowner of sylvesterspan		082 616 1942	bushman.safaris@gmail.com	
Anel and Henk	Malan	Baobab Guest house. Landowner of Kildare	PO Box 88 Baltimore 0619	082 708 1928 (Anel) 082 851 2151 (Henk)	anel.malan@worldonline.co.za	Henk Malan is the chairman of the Bees studie groep
Andries	Van der Merwe	Manages farms belonging to land owners and surrounding land owners	PO Box 20 Tom Burke 0621	082 555 4597		Manages the farms Hantam, Moonlight, Nelly, Victoria West and Goudafontein
PJ	Kruger	Landowner of Bordeaux	PO Box 97 Tom Burke 0621	082 628 8907	pjkruger@24.com	
C.F	Kruger	Land owner	PO Box 97 Tom Burke 0621	082 436 9906	maritzkruger@vodamail.co.za	
Gerhard	Visser	Chairman of the farmers union – Koedoesrand DLU		082 5511 691	oryx@bushcall.co.za	
Elouise	Deetlefs	Deals with all the bookings at the venue – Koedoesrand DLU	PO Box 33 Baltimore 0619	084 814 0030	kdlu@mweb.co.za	
Marie	Helm	Nature reserve – Northern Transvaal Agricultural Union/ Noordelike Transvaal Landbou Unie (NTLU)	PO Box 638 Pietersburg 0700	082 683 2835	mariehelm@hotmail.com	

Name	Surname	Organisation/Interest	Address	Telephone	Fax/E-mail	Notes
Henna		Mangwe safaris		082 558 7512	henna@lantic.net	
Ken	Du Plessis	Fauna Africa		014 766 0111	086 559 2330 ken@lantic.net	
S.	Ehlers	Land owner	PO Box 9 Baltimore 0619	082 495 4549		
Nico	Lombard	Farm owner	PO Box 61 Tom Burke 0621	082 774 1700		
M.S.	Bosman			076 290 7789		Also stays at the same property
Simon	Van Niekerk	Land owner	PO Box 1 Tom Burke 0621	082 584 8056	simonhvn@mweb.co.za	
C.F	Kruger	Land owner	PO Box 97 Tom Burke 0621	082 436 9906	maritzkruger@vodamail.co.za	
PJ	Gouws		PO Box 92 Tom Burke 0621	082 371 8218	pip@lantic.net	
JD	Fodu		PO Box 34 Baltimore	014 467 1240		
Chrisjan	Havenga		PO Box 12 Baltimore	082 254 4176	Koe.doe@vodamail.co.za	
Chris	Van Zyl	Land owner	PO Box 108 Tom Burke 0621	083 568 1554	vzyl.chris@gmail.com	
Josef	Espog	Windhoek farm employee	PO Box 84 Baltimore	082 810 8254	josefespog@live.co.za	
Johan	Botha	Journalist-Projek Aardwolf - Kyknet		082 815 2939		
Arie	Bornman	Farm owner	PO Box 66 Baltimore	084 515 7742	ariebornman@yahoo.com	
Jan	Oberholzer	Winterhoek	PO Box 4 Tolwe 0690	082 805 6807	jolober@lantic.net jaober@lantic.net	
G.	Moelman	Marnitzkraal		082 938 6245		