DRILLING PHASE		ENVIRONMENTAL SIGNIFICANCE												MITIGATION SUMMARY
		BEFORE MITIGATION						AFTER MITIGATION						
PROJECT ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT / NATURE OF IMPACT	Probability of occurrence	Severity	Frequency	Duration	TOTAL (SP)	SIGNIFICANCE	Probability of occurrence	Severity	Frequency	Duration	TOTAL (SP)	SIGNIFICANCE	
Site Access	Disturbance of onsite wildlife and vegetation on access track	1	1	1	1	4		1	1	1	1	4		• Existing farm roads and tracks must be used as far as possible; • Where new access tracks are required to get the drill rig to the drilling site, such tracks must be scarified during decommissioning; • Vehicles speed must take into account the possibility of collisions with fauna. • All compacted roads and drill sites will be scarified and any topsoil stockpiled to be spread over the disturbed area. • Duel use access roads must be handed back to the landowner in a good state of repair.
	Soil compaction from repeated use of access track to drill sites	1	1	1	1	4		1	1	1	1	4		
Site Establishment	Destruction and/or loss of Cultural and Heritage Resources	2	3	1	1	7		1	1	1	1	4		• A Heritage Impact Assessment inclusive of a Paleontological Impact Assessment conducted by a suitably qualified archaeologist and paleontologist respectively is required prior to any site activities on undisturbed land or access routes. • If any significant resources are discovered as a result of the prospecting activities, such activities will cease with immediate effect and a qualified archaeologist and/or paleontologist will be commissioned to assess their significance and determine appropriate mitigation measures. • All personnel and contactors will be made aware of the locations of all identified resources and the necessity of avoiding them. • Personnel will be informed about the consequences of unlawful removal of cultural and historical remains and artefacts associated with heritage sites. • A safe distance of at least 50 metres will be maintained between the identified resource and prospecting activities. • Where necessary, directional drilling will be practised to assess ore reserves situated below identified resources.

Site Establishment	Noise Generation	1	1	1	1	4		1	1	1	1	4		• All prospecting activities will be limited to daylight hours during weekdays and no activities on Sundays and public holidays. • Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings. • Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition. • If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.
	Visual intrusion	3	2	1	2	8		2	1	1	1	5		• The drilling rig and other visually prominent items on the site will be located in consultation with the landowner. • Make use of existing vegetation as far as possible to screen the prospecting operations from view. • If necessary, the operations can be screened from view by erecting a shade cloth barrier.
	Dust fall & nuisance from activities	1	1	1	1	4		1	1	1	1	4		• Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings. • Low vehicle speeds will be enforced on unpaved surfaces.
	Wildlife and Vegetation disturbance from drill pad preparation	2	3	1	1	7		2	1	1	1	5		• The soil disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required. • No surface vegetation will be cleared for acess by the drilling rig, leaving roots intact will enable vegetation to coppice and regrow. • No clear scraping (dozing) or removal of topsoil will be carried out unless absolutely necessary to establish a level drill pad. • If dozing of drill pad are required topsoil must be stored separately and drill sites must be rehabilitated by scarifying disturbed and compacted areas and spreading topsoil. • Disturbed areas will be revegetated with locally indigenous species as soon as possible. • Where new access tracks are required to get the drill rig to the drilling site, such tracks must be raked and revegetated during decommissioning. • Vehicles speed must take into account the possibility of collisions with fauna. • The design of the drill fluid sump must be such that it prevents fauna from gaining access to site and becoming trapped.

Site Establishment	Surface water and groundwater use and contamination from hydrocarbons	2	3	1	1	7		2	1	1	1	5	• To ensure that measures are put in place to prevent any drilling activities within 100m from a water course. • A lined sump (with sufficient capacity) will be constructed to receive drill fluids and allow for evaporation should clays be intersected in the borehole. • If a drill pad needs to be levelled by dozing topsoil must be stripped from the area immediately surrounding the drill area and stockpiled. • Stormwater must be diverted around the drill site topsoil stockpile to prevent erosion, if necessary. • Oils and lubricants must be stored within sealed containment structures. • Fuel storage must be contained in mobile bowsers and refuelling will be done with care to minimise the chance of spillages. • Any mechanical equipment maintenance must be undertaken on drip trays or UPVC sheets to prevents spills/ leaks onto the soil. • When not in use, a drip tray must be placed beneath mechanical equipment and vehicles. • Machinery must be kept in good working order and regularly inspected for leaks. • A spill kit will be available on each site where prospecting activities are in progress. • Any spillages will be cleaned up immediately. • Drilling muds will contain in lined drill sumps and this material will be removed from site and disposed in a licensed disposal facility. • Storm water must be diverted around the drill site to prevent ingress of storm water. • Waste materials generated on site must be stored in suitable lidded containers and removed off site to a suitable disposal facility. • Waste separation must be undertaken if practical for recycling.

Site Establishment	Contamination and disturbance of soil from drill pad preparation, compaction and soil disturbance due to topsoil stockpiling	1	2	1	1	5		1	2	1	1	5		• Same mitigating measures as for surface water and groundwater contamination from hydrocarbons • Limiting the activities and clearance of the drill pad to the smallest area that is necessary. No clear scraping (dozing) will be carried out unless absolutely necessary to establish a level drill pad. • All drill pads will be scarified and any topsoil stockpiled removed to be spread over the disturbed area immediately after completion of the activity
	Socio- economic impact	3	3	2	2	10		2	2	2	2	8		• Non-invasive activities will be completed off-site. • During field-investigations a maximum of three specialists will require access. • All access will be arranged beforehand with landowner and the project manager will be present at all times and will report to the landowner when accessing and leaving the property. • Indemnity will be signed by all mining personnel entering the property. • Any other mining companies operating legally will be listed as affected parties and consulted. Areas of operations will be demarcated and no overlapping will be allowed. • Agreements between current mining operations and landowner will be respected and adopted as part of this operation. • Co-ordinate invasive activities with existing mining activities to reduce the time of disturbances • Landowner will be updated with regard to the progress of implementing the PWP and any invasive operation and concurrent rehabilitation will be planned in consultation with landowner. • All operations will be carried out under the guidance of strong, experienced manager with proven skills in public consultation and conflict resolution. • All personnel will be made aware of the local conditions and sensitivities in the prospecting area and the requirements of the local residents. • There will be a strict requirement to treat local residents with respect and courtesy at all times.
ection	Destruction or loss of Cultural and Heritage Resources	1	2	1	1	5		1	2	1	1	5		• If any heritage or paleontological resources are discovered as a result of the prospecting activities, such activities will cease with immediate effect and a qualified archaeologist and or paleontologist will be commissioned to assess their significance and determine appropriate mitigation measures. • All personnel and contactors will be made aware of the locations of all identified resources and the necessity of avoiding them. • A safe distance of at least 50 metres will be maintained between the identified resource and prospecting activities. • Where necessary, directional drilling will be practised to assess ore reserves situated below identified resources.

Drilling and Core Sample Coll	Noise Generation	3	2	1	1	7		1	1	1	1	4		• All prospecting activities will be limited to daylight hours during weekdays and no activities on Sundays and public holidays. • Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings. • Noise abatement equipment, such as mufflers on diesel engines, will be maintained in good condition. • If intrusive noise levels are experienced by any person at any point, the source of the noise will be moved if practical, or it will be placed in an acoustic enclosure, or an acoustic barrier will be erected between the source and the recipient.
	Visual intrusion	3	2	1	2	8		2	1	1	1	5		• The drilling rig and other visually prominent items on the site will be located in consultation with the landowner. • Make use of existing vegetation as far as possible to screen the prospecting operations from view. • If necessary, the operations can be screened from view by erecting a shade cloth barrier.
	Dust fall & nuisance from activities	1	1	1	1	4		1	1	1	1	4		• Separation of distance of minimum 500m, but preferably 1000m to be maintained between drill sites and dwellings. • Low vehicle speeds will be enforced on unpaved surfaces.
e Collection	Wildlife and Vegetation disturbance from drillling	2	3	1	1	7		2	1	1	1	5		• The drill sites will be informed by the findings of non- invasive prospecting. • The disturbance and clearance of vegetation at drill pad areas will be limited to the absolute minimum required. • The drill sites must be clearly demarcated, and no activities may take place outside of demarcated areas. • Drill holes must be backfilled as soon as is practically possible after drilling is completed. • Drill sites must be rehabilitated by scarifying disturbed and compacted areas and spreading topsoil. • Disturbed areas will be revegetated with locally indigenous species as soon as possible. • Vehicles speed must take into account the possibility of collisions with fauna. • The design of the drill fluid sump must be such that it prevents fauna from gaining access to site and becoming trapped. • Invasive drilling activities will be aligned in consultation with landowner not to coincide with the breeding or hunting season.

Drilling and Core Sampl	Surface water and groundwater use and contamination from drill fluids, hydrocarbon spills and drill maintenance activities	2	3	2	1	8		1	2	1	1	5		• Proper vehicle maintenance. • Refuelling will be done with care to minimise the chance of spillages. • A spill kit will be available on each site where prospecting activities are in progress. • Any spillages will be cleaned up immediately. • Drilling muds will contain in lined drill sumps and this material will be removed from site and disposed in a licensed disposal facility. • Stormwater must be diverted around the drill site to prevent ingress of stormwater; • Waste materials generated on site must be stored in suitable lidded containers and removed off site to a suitable disposal facility. • Waste separation must be undertaken if practical for recycling. • Drilling water requirements will be less than twenty cubic meters per day for prospecting. • The water will be sourced on agreement from an existing authorized water user. • The department responsible for water resources shall be consulted with regards to any water use related agreement prior to drilling. • No water will be abstracted in terms of section 21(a) of National Water Act, 1998 (Act no. 36 of 1998).
	Contamination and disturbance of soil from drill pad preparation, compaction and soil disturbance due to topsoil stockpiling	1	1	1	1	4		1	1	1	1	4		• The impact on contamination can be reduced by the mitigating measure applicable to water contamination. • Limiting activities and clearance of the drill pad to the smallest area that is necessary. • No clear scraping (dozing) will be carried out unless absolutely necessary to establish a level drill pad. • All drill pads will be scarified and any topsoil stockpiled removed to be spread over the disturbed area immediately after completion of the activity.

Drilling and Core Sample Collection	Socio- economic impact	3	3	2	2	10		2	2	2	2	8		• Non-invasive activities will be completed off-site. • During field-investigations a maximum of three specialists will require access. • All access will be arranged beforehand with landowner and the project manager will be present at all times and will report to the landowner when accessing and leaving the property. • Indemnity will be signed by all mining personnel entering the property. • Any other mining companies operating legally will be listed as affected parties and consulted. Areas of operations will be demarcated and no overlapping will be allowed. • Agreements between current mining operations and landowner will be respected and adopted as part of this operation. • Co-ordinate invasive activities with existing mining activities to reduce the time of disturbances • Landowner will be updated with regard to the progress of implementing the PWP and any invasive operation and concurrent rehabilitation will be planned in consultation with landowner. • All operations will be carried out under the guidance of strong, experienced manager with proven skills in public consultation and conflict resolution. • All personnel will be made aware of the local conditions and sensitivities in the prospecting area and the requirements of the local residents. • There will be a strict requirement to treat local residents with respect and courtesy at all times.
Removal of temporary infrastructure	Dust emission from decommissioning activities (vehicle entrained dust)	2	1	1	1	5		2	1	1	1	5		• Due to the remote location of the site, dust emissions are unlikely to be a source of nuisance; however the site must be wetted if required.
	Soil erosion of topsoil before vegetation is re-established	2	1	1	1	5		2	1	1	1	5		• As one borehole has been completed and the site has been decommissioned the disturbed site should be rehabilitated by scarifying hardened areas and filling the sludge catch pits (if any were required). • Any stored topsoil should be spread over the scarified surface.