

ENVIRONMENTAL IMPACT ASSESSMENT

DRAFT ENVIRONMENTAL MANAGEMENT PLAN (EMP):

THE PROPOSED MINERAL EXPLORATION ACTIVITIES IN RESPECT OF BASE AND RARE METALS, INDUSTRIAL MINERALS AND PRECIOUS METALS GROUP OF MINERALS ON EXCLUSIVE PROSPECTING LICENCE (EPL) 8613, LOCATED NORTH-WEST OF KHORIXAS IN THE KUNENE REGION, NAMIBIA.

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03 NOVEMBER 2023

DOCUMENT CONTROL

Report Title	Environmental scoping assessment (ESA) report for the proposed mineral exploration activities on Exclusive Prospecting License (EPL) 8613, located north-west of Khorixas in the Kunene region, Namibia.
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ECC Application Reference No	APP-00929
Version	Final

Previous Versions		
Version	Issue Date	Update
Final	November 2023	Update comments from I&APs from third round of consultative meetings (Meetings 5 & 6: 12-13 October 2023). Confirmation of conservancy inputs, and inputs from residents of Ruspoort, the largest settlement on the EPL8613.
Draft 2	March 2023	Update comments from I&APs from second round of consultative meetings (Meetings 5 & 6: 24-25 February 2023). Inputs from affected conservancies through their management committees.
Draft 1	January 2023	Initial Document

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1. INTRODUCTION

1.1. Project Background

Ms. Ndeyapo Annasitansia Mungoba (hereinafter referred to as *The Proponent*) intends to carry out prospecting and exploration activities on Exclusive Prospecting License (EPL) No. 8613. An application for the EPL was lodged on 16 September 2021, to which the Ministry of Mines and Energy (MME) responded with a “*Notice of Preparedness to grant application for exclusive prospecting license*” on 15 July 2022. The Proponent is interested in the prospecting and exploration of Base and Rare Metals, Industrial Minerals and Precious Metals Group of Minerals.

The EPL lies approximately 70km north-west of Khorixas, and 60km west of Fransfontein in the Khorixas Magisterial District of the Kunene region (Figure 1) and covers an area of ~ 8,047. 0576 hectares (ha). The EPL is overlain by three farms, namely Brakwater (Farm No. 670), Ruspoort (Farm No. 669), and Eersbegin (Farm No. 675) (Figure 2).

Prior to the commencement of the proposed exploration activities, environmental clearance is required from the Department of Environmental Affairs and Forestry (DEAF) of the Ministry of Environment, Forestry and Tourism (MEFT), on the basis of an approved Environmental Impact Assessment (EIA) process, in terms of the Environmental Management Act, No. 7 of 2007 and its associated regulations of 2012. An Environmental Scoping Report and Environmental Management Plan (EMP) are required as part of the Environmental Clearance Certificate (ECC) application, as well as to support the decision-making process.

Inga Metals and Commodities CC was appointed by the Proponent to conduct and manage the EIA process as an independent environmental consultant. This report presents the EMP, which is a culmination of the work that has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and its associated regulations of 2012.

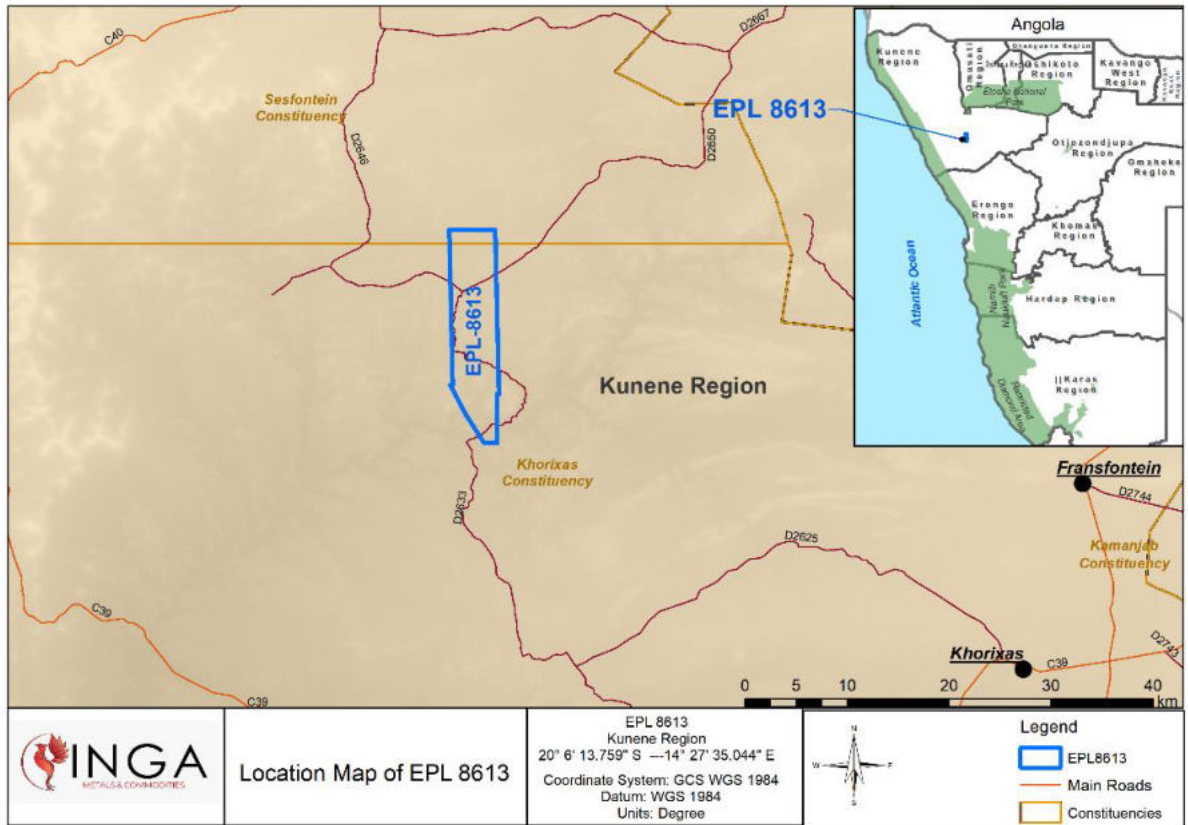


Figure 1: Location of EPL 8613 north-west of Khorixas in the Kunene Region

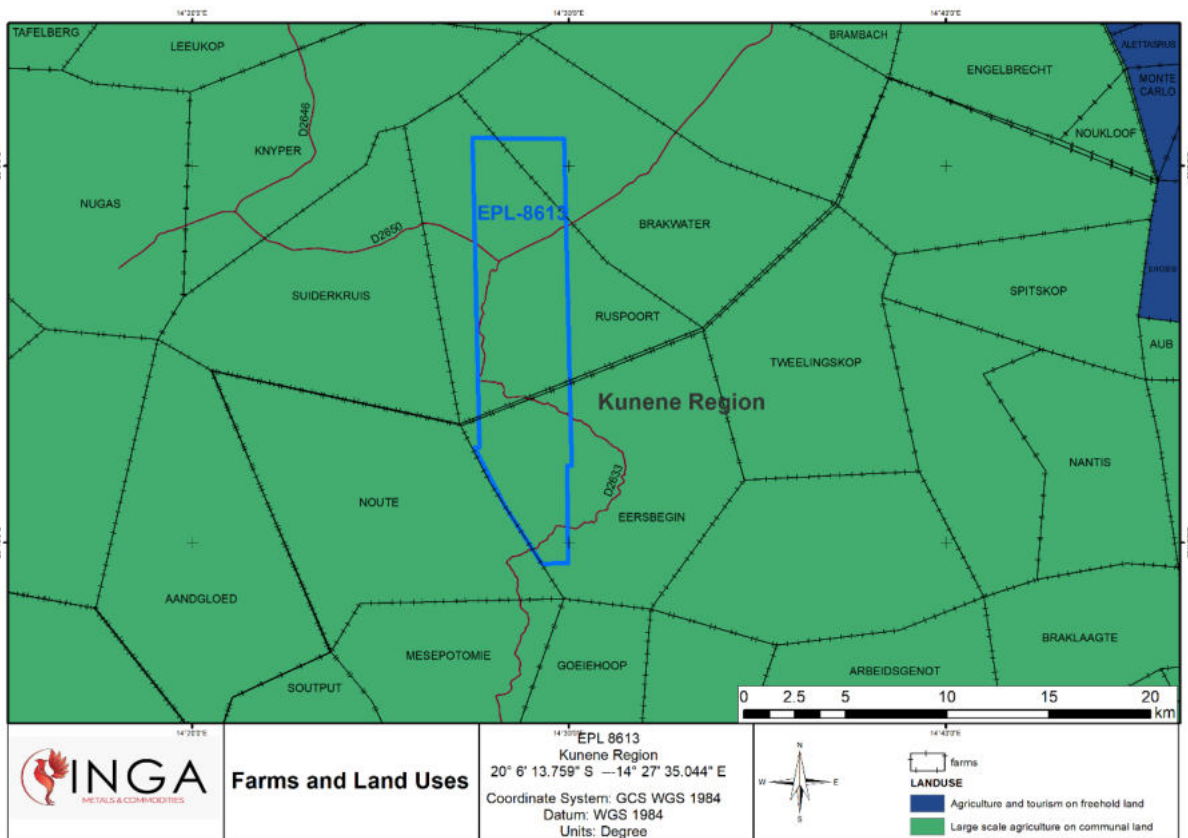


Figure 2: Farms covered by EPL8613

2. PURPOSE AND ENVIRONMENTAL OBJECTIVES

2.1. The purpose of the Environmental Management Plan (EMP)

The purpose of the Draft EMP is to ensure that the proposed project activities are undertaken in an environmentally friendly and sustainable manner. The EMP is an important product of the EIA process as it presents the amalgamation of all the proposed mitigation and monitoring actions as they relate to the identified impacts, the recommended frequency of actions and with specific assigned responsibilities. It therefore serves as the link between the impacts identified in the EA process and the required mitigation measures to be implemented during operation.

The EMP gives the commitments, which form the environmental contract between the Proponent and the Government of the Republic of Namibia; represented by the MEFT. It is important to note that an EMP is a living document and can be amended to adapt to address project changes and/or environmental conditions and feedback from compliance monitoring. If approved, an ECC will be issued for the proposed project. The proponent will be held responsible for the implementation and management of this EMP.

The management measures proposed to mitigate the potential impacts are detailed in the action plans in Sections 9, 10 and 11.

It is important to note that this EMP, as it forms part for the ECC application, is for activities relating to the prospecting and exploration of Base and Rare Metals, Industrial Minerals and Precious Metals Group of Minerals. It is **not** an application for mining activities. Therefore, no blasting, excavation or related activities will be allowed in any zone of the conservancies. In the unlikely case that blasting and/or excavation is required for metallurgical test work samples, written approval should be sought from concerned Traditional Authorities and conservancy management.

Any potential mining activities that may arise from the proposed exploration activities must be cleared with a separate Environmental Impact Assessment (EIA) Process.

2.2. Overall Environmental Objectives

The following overall environmental objectives have been set for the proposed exploration activities on EPL 8613, to be implemented by the Proponent:

- To comply with national legislation and standards for the protection of the environment;
- To limit potential impacts on biodiversity by minimising the footprint of the proposed activities and the conservation of residual habitat as far as possible;
- To investigate and exploit measures to minimize impact to water resources;
- To limit contaminated effluent discharge into the environment through the containment, recycling or removal of contaminated water;
- To protect soils and groundwater resources through the implementation of measures for spill prevention and clean-up;
- To ensure the legal and appropriate management and disposal of general and hazardous waste, through the implementation of a strategy for the minimisation, recycling (where possible), management, temporary storage and removal of waste;
- To minimise the potential for dust emissions and impacts to third parties;
- To minimise the potential for noise disturbance in surrounding areas and possible sensitive receptors;
- To undertake rehabilitation after the completion of the various exploration activities;
- To keep landowners and neighbours informed about exploration activities;
- To avoid potential impacts on the safety of landowners and neighbours;
- To support and encourage environmental awareness (and where relevant training) and responsibility amongst all employees and service providers;
- To prevent pollution and clean up if incidents occur;
- To incorporate the relevant requirements stipulated in this EMP into the exploration programme, design and contracts;
- To ensure that all the employees and contractors adhere to the relevant management commitments; and

- Ensure compliance to the EMP and other relevant conditions or approvals (ECC and other permits).

3. ENVIRONMENTAL ASPECTS AND IMPACTS

Table 1 provides a summary of the activities associated with the exploration activities, the associated environmental aspects and potential impacts on the environment and also a qualitative assessment of these impacts (before and after mitigation). See also Section 7 of the Scoping Report for details.

Table 1: Environmental aspects and potential impacts associated with the proposed exploration activities on EPL 8613

Activity	Aspect	Potential Environment Impact	Significance Discussion	Ref	With and Without mitigation	Extent	Duration	Nature and intensity	Probability	Significance
Geological studies, field mapping, rock and soil sampling										
Field mapping, ground geophysical surveys and rock and soil sampling	Biodiversity	Potential impact on fauna and flora (general disturbance and clearing of vegetation)	Disturbance of natural vegetation may occur as vehicles may have to drive off-road to access certain areas. However, it is of a very small scale, non-invasive, involving a limited number of vehicles. It is unlikely that significant clearing activities are used. In the case of dense stands of common species (e.g., Acacia, Mopane and Dichrostachys cinerea) access to the specific areas will be on foot. Cutting down any species will be avoided.	1	Without	L/M: -2	L/M: -2	L/M: -2	M/H: 4	L: -24
					With	L: -1	L: -1	L: -1	M: 3	L: -9
	Air quality	Increase in dust levels (nuisance and health impacts)	Where vehicles travel close to homesteads, the dust from the gravel tracks might be a nuisance to the people. Air pollution through vehicle emissions (i.e., exhaust fumes) and dust is, however, expected to be negligible due to the small scale of the project and limited number of vehicles to be used.	2	Without	L/M: -2	L/M: -2	L: -1	M/H: 4	L: -20
					With	L: -1	L: -1	L: -1	M: 3	L: -9
	Heritage	Activities could result in possible damage to or destruction of heritage resources	With reference to Section 5.6, no known archaeological /heritage sites were identified within EPL 8613. However, the EPL is regarded as archaeologically sensitive and hidden and buried sites might be	3	Without	L: -1	M: -3	H: -5	M/H: 4	M: -36

Activity	Aspect	Potential Environment Impact	Significance Discussion	Ref	With and Without mitigation	Extent	Duration	Nature and intensity	Probability	Significance
			exposed as the project proceeds. Although unlikely, exploration activities could result in possible damage to or destruction of heritage sites. With the implementation of mitigation measures under the EMP as well as the applying of a Chance Finds Procedure, this risk can be reduced to low.		With	L: -1	L/M: -2	M: -3	M: 3	L: -18
Drilling										
Drill site establishment: <ul style="list-style-type: none"> • Access the drill site (possibly creating a new access track) • Set-up drilling machine with drip trays and groundsheets • Establish temporary safety fencing around the drill site • Set-up portable toilet and ablution 	Noise	Noise generated by the establishment of access tracks and drill site.	Should the activities take place in close proximity to a residence, the noise from these activities might be a nuisance impact.	4	Without	L: -1	L: -1	M: -3	M/H: 4	L: -20
					With	L: -1	L: -1	L/M: -2	M: 3	L: -12
	Biodiversity	Potential impacts on fauna and flora (general disturbance and clearing of vegetation). Potential loss of habitat for fauna due to presence of exploration equipment. Unsupervised drilling personnel can impact on the biodiversity through illegal collection of firewood, poaching, road kills, off-road driving, etc.	Due to the fact that the activities are relatively small-scale and the fact that the exploration team will not be very big, potential poaching, road kills and collection of firewood and organisms can easily be managed through appropriate management and mitigation measures outlined in the EMP, including supervision. Could result in possible loss of land available for livestock farming, however at a small scale. See also Impact Reference 1. Potential loss of habitat or displacement of fauna (especially black rhino) due to presence of exploration equipment. This is mitigated by limiting the number of equipment operating in wildlife zones, prohibition of blasting and trenching activities, operating at controlled schedules, prohibition of camping within exclusive wildlife zones, aligning operational plans and schedules to animal locations and movements (conservancy approval of drill holes before commencement), and adhering to strict operational schedules.	5	Without	M/H: -4	H: -5	H: -5	H: 5	H: -75
					With	M: -3	M: -3	M/H: -4	M: 3	M: -30

Activity	Aspect	Potential Environment Impact	Significance Discussion	Ref	With and Without mitigation	Extent	Duration	Nature and intensity	Probability	Significance
facilities	Heritage	Exploration activities could result in possible damage to or destruction of heritage resources.	See Impact Reference 3	6	Without	L: -1	M: -3	H: -5	M/H: 4	M: -36
					With	L: -1	L/M: -2	M: -3	M: 3	L: -18
	Land use	Loss off land capability due to site clearance.	Possible loss of grazing- or agricultural land. The rehabilitation of the site will allow for the continued use for grazing and or agricultural activities.	7	Without	L: -1	M: -3	H: -4	H: 5	M: -40
					With	L/M: -2	L: -1	L: -1	M: 3	L: -12
Drilling	Spillages of hydrocarbons, lubricants, or possible spills from portable toilet and ablation facilities	Soil pollution	Soil loss and contamination could have an impact on grazing animals. However, the area to be disturbed is very localized and on a small-scale, and impacts can be easily mitigated.	8	Without	L/M: -2	M/H: -4	M/H: -4	M/H: 4	L: -40
					With	L: -1	M: -3	L/M: -2	L/M: 2	L: -12
	Surface water contamination	With reference to Section 5.4 of the ESR, the southern portion of EPL 8613 holds tributaries of the Huab River. Significant hydrocarbon spills could run into these dry riverbeds during rain events. Given the small area to be impacted per hole and large hydrocarbon spills being unlikely the potential for this impact is likely to be small. Mitigation measures can be found in the EMP.	9	Without	M/H: -4	M: -3	M/H: -4	M: 3	L: -33	
				With	L/M: -2	L/M: -2	L/M: -2	L/M: 2	L: -12	
	Groundwater could become polluted due to pollutants entering aquifers via surface water infiltration.	Given the magnitude of the project, small areas to be affected per hole and large hydrocarbon spills being unlikely, this impact is likely to be low, if mitigated. With reference to Section 5.4 of the ESR, EPL 8613 is located in areas where the groundwater potential is low to very low.	10	Without	M/H: -4	M: -3	M/H: -4	M: 3	L: -33	
				With	L/M: -2	L/M: -2	M: -3	L/M: 2	L: -14	
	Air quality deterioration.	Dust generated on access roads and tracks. Air pollution from exhaust	Where drilling activities are close to residences, the noise and dust from the activities might be a nuisance to the residents. Air pollution through vehicle emissions	11	Without	L/M: -2	L/M: -2	H: -5	M/H: 4	L: -36

Activity	Aspect	Potential Environment Impact	Significance Discussion	Ref	With and Without mitigation	Extent	Duration	Nature and intensity	Probability	Significance
	Increase in dust levels (Nuisance and health impacts)	fumes. Dust generation through drilling activities	(i.e., exhaust fumes) is expected to be negligible due to the small scale of the project and limited number of vehicles or machinery to be used.		With	L: -1	L: -1	M: -3	M: 3	L: -15
	Noise generation	Noise generated by the drill rig could disturb nearby residences (nuisance).		12	Without	L: -1	L: -1	H: -4	M: 3	L: -18
					With	L: -1	L: -1	L/M: -2	L/M: 2	L: -8
	Land use	Potential loss of land use and capability (very limited area) due to a combination of the above mentioned impacts. Potential loss of grazing and wildlife.	See Impact Reference 7	13	Without	L/M: -2	M: -3	M/H: -4	H: 4	M: -36
					With	L: -1	L/M: -2	L/M: -2	L/M: 2	L: -10
Relevant to all activities										
Socio-economic impacts and community safety	Occupational Health and Safety Risks	Potential harm to project personnel in terms of accidental injury	The risks associated with the operation of exploration machinery – primarily accidental injury, either minor (i.e., superficial physical injury) or major (i.e., involving heavy machinery or vehicles) accidents. However, occupational health risks are expected to be minimal due to small scale of the project and limited number of vehicles or machinery to be used; as well as the pre-emptive mitigation measures as discussed in section 7.4.8 of the ESR.	14	Without	L: -1	L: -1	H: -5	H: 5	M: -35
					With	L: -1	L: -1	M: -3	M: 3	L: -15
	Impact on Public Traffic	Potential increase in risk to pedestrian safety and increased impact on	Increased local vehicular traffic as a result of the introduction of exploration vehicles will give rise to road user traffic in the area, and the associated increased	15	Without	L: -1	L: -1	M/H: -4	M/H: 4	L: -24

Activity	Aspect	Potential Environment Impact	Significance Discussion	Ref	With and Without mitigation	Extent	Duration	Nature and intensity	Probability	Significance
	Safety and Services	services infrastructure (e.g., roads)	risk to road users and pedestrians, as well as local road infrastructure. However, the expected risk to be negligible due to the small scale of the project and limited number of vehicles to be used in comparison to EPL area.		With	L: -1	L: -1	L/M: -2	L/M: 2	L: -8
	Social Nuisance: Local Property intrusion and Disturbance or Damage	Inconvenience to residents and impacts on way of life due to differing norms, culture and values	<p>In the case of the exploration team being allowed unsupervised access, there is the potential for an increased risk of criminal activities such as poaching and theft and possible disturbance to immediate neighbors.</p> <p>The potential impacts on agricultural land are regarded as insignificant as the field mapping, surveying activities and soil sampling are noninvasive and will not damage any land. Drilling activities will be more invasive, but localized and temporary. The necessary management and mitigation measures are provided in the EMPs.</p> <p>Moreover, all exploration activities are very small scale, involving a limited number of vehicles / people and can be easily managed through the implementation of the respective EMPs.</p> <p>Agreements between the Proponent and the relevant landowners will be drafted, signed and put in place, supported by access pass letters to be carried by project team at all times.</p> <p>Any potential conflict arising from operators of unregistered mining claims on EPL8613 will be addressed through Conservancy Management and Traditional Authority Offices, to reach a workable arrangement between such operators and proponent.</p>	16	Without	M: -3	H: -5	H: -5	M: 3	M: -39
With					L/M: -2	L/M: -2	L/M: -2	L/M: 2	L: -12	

Activity	Aspect	Potential Environment Impact	Significance Discussion	Ref	With and Without mitigation	Extent	Duration	Nature and intensity	Probability	Significance
	Social Nuisance: Community Involvement and Employment	Social annoyance and community unrest due to perceived lack of community involvement.	Social annoyance to the local community due to the presence of out-of-area workers and lack of local involvement. However, the Proponent's pre-determined intention to use local human resources as far as possible will reduce the likelihood of this.	17	Without	M: -3	M: -3	H: -5	H: 5	M: -55
					With	L/M: -2	L/M: -2	M: -3	L/M: 2	L: -14
	Land use conflict and disruption of current income generating activities	Tourism and conservation are currently the primary economic driver and source of income, driven by the presence of the critically endangered black rhino in the area. The proposed activities may cause displacement of rhino populations, resulting in loss of tourism and conservation activities, and the associated loss of income. However, impact on the presence of rhino populations is expected to be low due to the limited duration of exploration activities. Based on previous estimates, the most invasive exploration activity (drilling) is usually about 1.5 weeks per drill site, before moving to the next site.	18	Without	M: -3	M/H: -4	H: -5	H: 5	H: -60	
				With	L/M: -2	L/M: -2	L/M: -2	M: 3	L: -18	
Waste Management	The dumping of general and domestic waste within the exploration area and drilling sites could prove hazardous to wildlife and livestock, as well as impede agricultural production. This could also lead to general environmental degradation and visual impacts.	If suitable toilet facilities are not provided for the exploration team, they will relieve themselves in the environment which could lead to potential health and safety issues to 3rd parties. Waste generation is likely to be limited onsite, will be contained and will primarily be domestic waste. Waste will be removed daily and disposed of properly off-site. Through the effective implementation of the management and mitigation measures, as described in the EMP, the potential impacts relating to waste management can be avoided and or mitigated.	19	Without	M: -3	L: -1	H: -5	M/H: 4	M: -36	
				With	L/M: -2	L: -1	L/M: -2	M: 3	L: -15	
Closure and rehabilitation of drill site										

Activity	Aspect	Potential Environment Impact	Significance Discussion	Ref	With and Without mitigation	Extent	Duration	Nature and intensity	Probability	Significance
Remove all waste and equipment from site. Rip compacted areas (including access roads and paths).	Biodiversity, Visual.	Loss of biodiversity	Prolonged disturbance to natural state, including fauna and flora by presence of foreign objects/conditions left behind by exploration team. The impacted sites will be rehabilitated in accordance with the EMP requirements to return site to natural state.	20	N/A					

4. PERMITS AND AUTHORIZATION REQUIREMENTS

Upon issuance of the ECC and obtaining any other necessary and required documentations, the Proponent will then prepare for the administrative and technical aspects needed for the actual prospecting and exploration works on the EPL.

The prospecting and exploration and associated activities will be required to adhere to certain local, regional, national as well as international legal framework (as detailed in the Scoping Report). [Table 2](#) outlines the legal requirements in terms of permits or licensing that the Proponent will need to obtain prior to the site works and or renewal of permits throughout the exploration phase.

Table 2: Applicable and required permits/authorizations/licenses for the proposed prospecting and exploration activities

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project and Contact Institution/Person
Environmental Management Act (EMA) No. 7 of 2007	<p>The Act requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27).</p> <p>The Act details principles which are to guide all EAs.</p>	<p>The EMA and its regulations should inform and guide this ESA process, and the application for an Environmental Clearance Certificate. Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue.</p>
Environmental Impact Assessment (EIA) Regulations Government Notice 28-30 (Government Gazette 4878))	<p>Details requirements for public consultation within a given environmental assessment process (Government Notice 30 Section 21).</p> <p>Details the requirements for what should be included in a Scoping Report (Government Notice 30 Section 8) and an Assessment Report (Government Notice 30 Section 15).</p>	<p>Contact details at the Department of Environmental Affairs and Forestry (DEAF), Ministry of Environment, Forestry and Tourism (MEFT)</p> <p>Office of the Environmental Commissioner (Attention: Mr. Timoteus Mufeti) Tel: +264 (0) 61 284 2701</p>
Minerals (Prospecting and Mining) Act (No. 33 of 1992)	<p>Section 48 (3): To enable the Minister to consider any application referred to in section 47.</p> <p>Section 48 (2): The Minister may (b) require the person concerned by notice in writing to (i) carry out or cause to be carried out such environmental impact studies as may be specified in the notice.</p> <p>Section 54(2): details provisions pertaining to the decommissioning or abandonment of a mine.</p> <p>Under this Act (Section 51 (1a)), holder of a mineral license cannot exercise any rights on a private land until the holder has entered into an agreement with the owner regarding payment of compensation.</p>	<p>The Proponent should ensure that all necessary permits/authorization for these EPL are obtained from the Ministry of Mines and Energy (MME); as well as seek agreements with land users in the area.</p> <p>The proposed project operates under a license that permits for the execution of prospecting and exploration activities, which may include the construction of temporal camps, drill sites and access roads. An EPL excludes any mining activities and makes provision strictly relating to exploration work.</p> <p>An EPL is granted for a period of three years and may be renewed, but only be extended twice for two-year periods if demonstrable progress is evident. Renewals are subject to reduction in the size of the EPL and applications must be lodged prior to the expiry date of the EPL. Amendments</p>

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project and Contact Institution/Person
		<p>and revisions may be required for the EIA and EMP in the case of a renewal.</p> <p>Notice of the intention to drill needs to be submitted to the Ministry of Mines and Energy (MME), prior to drilling on an EPL.</p> <p>Contact person and details at the MME (Mining Commissioner)</p> <p>Mrs. Isabella Chirchir Tel: +264 61 284 8251 / 8167</p>
Traditional Authority Act (Act No.25 of 2000)	The Act also stipulates that Traditional Authorities (TAs) should ensure that natural resources are used on a sustainable basis that conserves the ecosystem. The implications of this Act are that TAs must be fully involved in the planning of land use and development for their area. It is the responsibility of the TA's customary leaderships, the Chiefs, to exercise control on behalf of the state and the residents in their designated area.	<p>The EPL considered under this project is predominantly located in Fransfontein and Anker areas which is mainly communal land under the Swartbooi and Gao-Daman Traditional Authorities (TAs). Therefore, they should be consulted throughout the project, and their approval documented through Letters of Consent.</p> <p>Swartbooi TA Office: Otto W. /Uirab (Deputy Chief) Cell: +264 (0) 81 774 1838 Gao-Daman TA Office: Manfred Katjako / Monica Uwites (Secretary) Cell: +264 (0) 81 481 8142 / 81 374 2070</p>
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that “No person shall possess or store any fuel except under authority of a license or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area”.	<p>The Proponent should obtain the necessary authorization permit from the MME for the storage of fuel on-site.</p> <p>Mr. Carlo Mcleod (Ministry of Mines and Energy: Acting Director – Petroleum Affairs) Tel: +264 61 284 8291</p>

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project and Contact Institution/Person
<p>Forest Act, No. 12 of 2001; Forest Amendment Act, No. 13 of 2005</p>	<p>Section 22 of the Act requires a permit for the cutting, destruction or removal of vegetation that are classified under rare and or protected species.</p> <p>Section 23 further prohibits the clearing of more than 15 hectares of land of vegetation without prior consent from the Director.</p>	<p>It is unlikely that an area greater than 15 ha will be cleared from vegetation as a result of the exploration activities, therefore a permit under the Forest Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005 and its regulations of 2015 is not required.</p> <p>However, some vegetation will be cleared on the EPL to allow exploration activities to commence. The Act also stipulates that trees, shrubs and bushes within 100 m from a watercourse may not be cut, destroyed or removed without a permit. Where this applies (including the presence of protected species), the necessary permit(s) should be obtained from the Directorate of Forestry within the MEFT.</p> <p>Mr. Fillemon Kayofa, Deputy Director: Forestry Management (North West Regions), (Ministry of Environment, Forestry and Tourism), Tel: +264 61 296 5143</p>
<p>National Heritage Act (Act No. 27 of 2004)</p>	<p>The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration, or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Section 51 (3) sets out the requirements for impact assessment.</p>	<p>Since there is a potential that heritage objects might be found, the stipulations of the Act have to be taken into account, in addition to a <i>Chance Finds Procedure which is provided for in this EMP.</i></p> <p>Contact: The Director of the National Heritage Council of Namibia (NHC): Mrs. Erica Ndalikokule OR Regional Heritage Officers at the NHC Mr. Manfred Gaeb and Ms. Agnes Shiningayamwe Tel: +264 (0) 61 301 903</p>

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project and Contact Institution/Person
	Section 55 of the Act compels exploration companies to report any heritage findings to the National Heritage Council after which a heritage permit needs to be issued, and before heritage resources may be relocated.	
The National Monuments Act No.28 of 1969	The Act enables the proclamation of national monuments and protects archaeological sites.	
The Water Resources Management Act, No. 11 of 2013	<p>Sections 44 and 56 requires that an entity is issued a license by the Minister that authorizes the abstraction and use of water from that water resource.</p> <p>Section 61 requires that any drilling or excavation in the ground to the level or below the level of the water table for any purpose other than the abstraction of water (e.g., Mineral Exploration, Construction) requires the issuance of a borehole license by the Minister to undertake such work.</p>	<p>Although the Water Resources Management Act, No. 11 of 2013 is not enforced, it is best practice to adhere to its stipulations while ensuring compliance with the Water Act, No. 54 of 1956.</p> <p>It is not intended to drill a borehole to obtain groundwater; however, in the case of such an unlikely development, a license to abstract water is required in terms of the Water Act, No. 54 of 1956 and shall operate in accordance with any conditions of the license. Abstraction rates need to be measured and reported to the authorities in accordance with the permit. Annual reporting on the environmental impacts of water abstraction is recommendable.</p>
Water Act 54 of 1956	<p>The act requires the proponent to ensure that all documentation, permits and measures are in place prior to discharge, including effluent discharge permits.</p> <p>The proponent should provide specification of the treatment system (type of technology); describe the activities resulting in effluent generation; list all possible contaminants (by providing the necessary analysis of effluent samples); provide information about the effluent quality; reference the points of discharge; and report the necessary quantities.</p>	<p>Mrs. Ndiyakupi Nghituwamata, Acting Executive Director (Ministry of Agriculture, Water & Land Reform), Tel: +264 61 296 5143</p> <p>Ms. Marha Amakali, Director: Water Resource Management, (Ministry of Agriculture, Water & Land Reform), Tel: +264 61 208 7266</p>
The Road Traffic and Transport Act No. 52 of 1999 and its 2001 Regulations	Provides for the control of traffic on public road and the regulations pertaining to road transport, including the licensing of vehicles and drivers.	Mr Eugene de Paauw (Roads Authority- specialist Road legislation), Tel: +264 (0) 61 208 7320

5. IMPLEMENTATION OF THE EMP – ROLES AND RESPONSIBILITIES

The Proponent is ultimately responsible for the implementation of the EMP. However, they may delegate this responsibility at any time, as they deem necessary during the project phases (usually an environmental control officer or safety, health, and environmental person). This section outlines the roles and responsibilities for the effective implementation of this EMP.

5.1. Competent Environmental Monitoring Authorities

The Department of Environmental Affairs and Forestry (DEAF) in the Ministry of Environment, Forestry and Tourism (MEFT) as the environmental custodian is responsible for enforcing compliance with the EMA, its regulations and full implementation of this EMP. The authority is also responsible for the reviewing of bi-annual reports submitted by the Proponent and grant ECC renewal after every 3 years following an environmental audit.

Further monitoring institutions include but not limited to:

- **Ministry of Mines and Energy:** Compliance to the relevant prospecting and exploration requirements, including petroleum products' storage and handling on site.
- **The National Heritage Council of Namibia:** Archaeological and heritage resources (sites and objects).

5.2. The Exploration Manager (or the Proponent)

This Manager who may also be the Proponent, has overall responsibility for environmental management at all the exploration sites and for ensuring this EMP is implemented. The Exploration Manager must ensure the EMP is included in all contracts and ensure that contractors adhere to the conditions of the EMP.

Contract documents should consider the inclusion of penalties for non-conformance to the EMP, or to link the sign-off of the contract to a retainer clause. The client retains part of the contract fees until the Exploration Manager has signed off the clearance

certificate, indicating satisfaction with the rehabilitation of the contractor's work and exploration activities (where relevant).

In addition to the above, the Exploration Manager is responsible for ensuring that all persons involved with the project comply with this EMP.

This Manager who may also be the Proponent, will be responsible for the following aspects related to compliance of this EMP:

- Regular inspections and auditing compliance to this EMP and any other relevant legal requirements e.g., permits and authorisations.
- Ensure environmental awareness training during induction training and on an ad hoc basis thereafter.
- Ensure compliance to this EMP and permits and authorisations issued by relevant authorities.
- Ensure submission of required information to relevant authorities such as reporting on compliance with the EMP, permit and relevant authorisations.

The Exploration Manager is also responsible for establishing and managing relations with affected farmers (property owners) and/or occupiers of land as well as Traditional Authority, other stakeholders.

The Exploration Manager may delegate by appointing further social and environmental management personnel (Safety, Health and Environmental Officers; Public Relations Officers) to manage daily aspects of EMP.

5.3. Safety, Health and Environmental (SHE) Officer

The SHE Officer will assist the Exploration Manager with the management (implementation and compliance) of the EMP as it relates to all the stakeholders at site in their daily operations.

The SHE Officer's duties and responsibilities will include:

- Development and management of schedules for daily activities in compliance with the EMP.
- Managing/overseeing the implementation of this EMP and updating and maintaining it when necessary.
- Ensure that relevant commitments contained in the EMP Action Plans are adhered to.

- Ensure the relevant staff is trained in procedures entailed in their duties.
- Through consultations and cooperation with the SHE officer, issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site.
- Ensuring all incidents are recorded and documented.
- Undertaking an annual review of the EMP and amending the document when necessary.

5.4. Contractors and Exploration Team

All contractors and their sub-contractors, and employees on the Project will be contractually required to comply with the relevant commitments in this EMP.

5.5. External Specialists

The Proponent, through the Exploration Manager may appoint an external environmental specialist, as and when required, to assist with the implementation of certain commitments made in the various management plans.

An external environmental specialist will also assess compliance against the EMP on an annual basis.

5.6. Archaeology: Chance Finds Procedure (CFP) Implementation Roles

The following personnel have been assigned responsibilities as per the Chance Finds Procedure as per the provided Archaeological and Heritage Impact Assessment Study ([Appendix J](#)) conducted for the proposed activities:

- Operator: To exercise due caution if archaeological remains are found
- Foreman: To determine safe working boundary, secure site and advise management timeously
- Archaeologist: To inspect, identify, advise management, and recover remains.

6. HANDLING ENVIRONMENTAL EMERGENCIES AND INCIDENTS

Potential environmental emergencies are identified by the Exploration Manager based on legal and other requirements, aspects identified and risk rating and knowledge of the EPL and associated activities.

Should an environmental emergency occur, the following procedure will be followed: -

- The Exploration Manager must immediately be notified of the incident;
- Steps must immediately be taken to minimize the spread of pollution or other risks;
- The Exploration Manager must report the incident to the following state departments (depending the nature of the incident):
 - Department of Water Affairs within the MAWLR;
 - The Namibian Police Services or relevant Fire Department;
 - The relevant landowner(s); and
 - Any other state departments that must be notified in response to specific legal or policy requirements.
- Clean-up and remedial actions must be taken. These may be directed by the Department of Water Affairs, or developed in consultation with water specialist; and
- Informing the Department of Water Affairs when the incident has been fully remediated.

7. AUDITING / MONITORING COMPLIANCE OF THE EMP

The commitments contained in this EMP will, once environmental clearance has been obtained, be the contractual agreement between the Proponent and the Namibian authorities for sound environmental management. All employees, contractors and sub-contractors will be expected to comply with the commitments contained herein.

The EMP is a legally binding document and non-compliance with it shall result in disciplinary action, such as fines and penalties; legal action; monetary penalties; withdrawal of licences and permits; and the suspension of work.

7.1. Internal Audits and Inspections

A copy of the EMP shall be available onsite and upon request, throughout the duration of the project.

The Exploration Manager through any of their delegated staff, shall be responsible for monitoring and enforcement of the EMP on a day-to-day basis and conduct regular internal inspections against the commitments in the EMP.

Daily, weekly and monthly inspections will be undertaken. Inspection findings will be documented for both record keeping purposes and for informing continual improvement.

Any violation of the EMP shall be recorded and the agreed-on measurements are taken, e.g., penalties.

7.2. External Environmental Performance Assessment

Conduct bi-annual audits and compile bi-annual environmental reports, which need to be submitted to MME, MAWLR and MEFT.

7.3. Monitoring

An inspection program shall be established to check that standards and procedures as described in the EMP are implemented and complied with. A reporting system shall be maintained to ensure that all applicable statutory requirements are met.

Incidents and non-conformances shall be recorded and addressed with appropriate corrective action.

Reporting of incidents and non-conformances shall include details such as the reason for incidents and non-conformance, responsible persons, consequences, the corrective action taken and the necessary follow-up activities. Incidents and non-conformances shall be reported to the Exploration Manager. The cause of incidents and non-conformances shall be investigated and recommendations formulated to prevent recurrence.

Monitoring requirements include, but are not limited to:

General monitoring:

- Conduct audits and inspections as per [Section 7.1](#). All non-compliances should be recorded and discussed at weekly site meetings and timeous remedial actions taken.
- Check for non-compliances (off-road driving, signs of illegal fires, traps and weapons, lack of good housekeeping, spills and leaks, incorrect storage of substances, etc.) during a general drive-through weekly.
- Monitor drill areas and all access tracks and roads frequently. Record all negligent plant destruction sightings, and apply the penalty system to all guilty parties.
- Constant monitoring and record keeping of rehabilitation progress until it is completed, approved and signed off by the Exploration Manager.
- Daily monitoring of fences and gates which have been entered through to ensure no unplanned movement of livestock or animals occur.

Waste Management:

- Monitor whether the provisions set out in this EMP concerning waste management is being applied as per instructions.
- Keep safe disposal certificates.

Dust and noise:

- When complaints are received from affected communities regarding noise and dust nuisance, abatement in the form of water spraying and restricted work hours should be implemented. Communication with those that complained should be continued to determine whether the problem has been resolved.

Training and awareness

- Exploration Manager to request attendance registers be completed by all personnel attending induction training sessions.

8. REPORTING

As a minimum, the following documents will be submitted to the relevant authorities on an ongoing basis:

- The bi-annual report required by the MEFT will be submitted every six months.

9. ACTION PLANS TO ACHIEVE OBJECTIVES

The environmental management and mitigations measures (management plan actions) provided to the potential adverse impacts associated with the proposed project and its activities (as defined in the Scoping report and [Table 1](#)) are presented under this chapter. The aim of these plan actions is to avoid these potential impacts where possible, and where avoidance is impossible, measures are provided to reduce the impacts' significance (as presented under the impacts' assessment chapter of the Scoping Report).

The required management and mitigation plan actions have been presented under [Table 2](#) in terms of:

- (a) Environmental aspect,
- (b) Impact or issues for which management actions are required,
- (c) proposed impact mitigation measures,
- (d) key performance indicator (KPI) for monitoring success levels of management actions,
- (e) responsible person(s) for implementing the proposed management actions,
- (f) resources required for implementing management actions and monitoring and
- (g) (f) implementation timeframes for the proposed management actions.

Table 3: Management and Mitigation Measures Relevant to All Exploration Stages

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
MAPPING AND SAMPLING				
Field mapping, rock and soil sampling	Socio-economic and land use	<ul style="list-style-type: none"> - Honour agreements set out in the site-access contracts - Consult and provide feedback regarding activities on the individual properties - Perform regular compliance audits and submit compliance monitoring reports to the DEAF on a bi-annual basis - Provide contact details to a designated project staff member, who will serve as liaison between landowners and the exploration teams - Landowners to be provided with a list of all people working onsite - All staff operating onsite will be provided with identification and proof that they are working for the applicant - Ensure gates are closed after entry and exit. - Poaching and plant theft will not be tolerated and staff found in possession will be prosecuted. - Schedule exploration activities in such a way that disturbances to local people are minimised. - No new access tracks are created during mapping and soil sampling if not otherwise agreed with the landowners during the land access agreement. - No firearms are allowed - Consult and provide feedback regarding activities 	Duration of mapping and sampling	Exploration Manager, SHE Officer, Contractors, Employees

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		<ul style="list-style-type: none"> - Prioritize sourcing of labour and business services from local communities as far as possible. Specialized skills and services, not available locally can be escalated to regional scale (Kunene Region), before sourcing nationally. - Make provision for water carting to site to augment onsite water supplies for domestic use - The proponent will implement a zero-tolerance policy with regards to the use of alcohol and drugs during operational hours, or while operating project equipment, or executing project duties. This applies to people directly employed as well as any contractors working on their behalf. - Portable fire extinguishers should be provided on site and all project vehicles. - No unauthorized firearms are allowed on-site - Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses and adhere to the road safety rules. 		
	Biodiversity	<ul style="list-style-type: none"> - The footprint of the area to be disturbed for surveying or mapping and for providing access to survey sites will be minimised as far as is practically possible. - The proponent will implement a zero-tolerance policy with regards to the killing or collecting of any biodiversity. This applies to people directly employed as well as any contractors working on their behalf. - Employees and contractors will be shown the value of biodiversity and the need to conserve the species and systems that occur within the project area. 	Duration of mapping and sampling	Exploration Manager, SHE Officer, Contractors, Employees

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		<ul style="list-style-type: none"> - No open fires will be permitted onsite. - Speed limits will be enforced so as to prevent road kills (40km/h). - No protected species will be harmed, removed or killed. - Protected species will be identified and marked to be left intact. - If removal or cutting of protected plant species is unavoidable, tree removal permits will be obtained for the removal of all protected tree species (as is required by the Forestry Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005). - In case unknown species are discovered, a biodiversity specialist will be contacted and informed about the location of the species. 		
	Air quality	<ul style="list-style-type: none"> - Vehicle speeds will be limited to 40km/h on access routes to limit dust. - National Road Safety Regulations that apply to usage of seatbelts and adhering to speed limits within gravel road tarred roads must be followed. - Set up and stick to operational schedules to control nearest receptors' exposure to dust levels 	Duration of mapping and sampling	Exploration Manager, SHE Officer, Contractors, Employees
	Heritage	<ul style="list-style-type: none"> - Prior to the commencement of exploration activities in a specific area, liaise with the landowner (or occupant in the case of State land) to obtain any further information regarding likely heritage sites within the target exploration areas. - The precautionary principle must be applied throughout – team members should be given training to know what heritage resources they may encounter and what to do in case a discovery is made. 	Duration of mapping and sampling	Exploration Manager, SHE Officer, Contractors, Employees

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		<p>- A limited number of vehicles and people will be used for the activities so that proper supervision can be ensured and potential damage be avoided.</p> <p>- In the event that heritage resources are discovered, a Chance Finds Procedure will be implemented which includes the following:</p> <ul style="list-style-type: none"> • All work at the find will be stopped to prevent damage; • Identify the site with flag tape • Determine the georeferenced point • Report the finding to the Exploration Manager and the National Heritage Council • An appropriate heritage specialist will be appointed to assess the find and related impacts; • The heritage specialist will inspect the site, advise the National Heritage Council and request a permit to remove the findings from the work area, if required; and • Recover, package and label the findings for transfer to the National Museum <p>- In the event that any structures or cairns or graves are discovered during the exploration activities, these will be avoided and preserved as a first priority. In the event of discovering human remains, the actions will be as outlined above, including:</p> <ul style="list-style-type: none"> • Field inspection by a heritage specialist to confirm that the remains are human; 		

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		<ul style="list-style-type: none"> Advise and liaise with the National Heritage Council and Police; and Recover the remains and remove it to the National Museum or National Forensic Laboratory as directed. <p>- If damage is unavoidable, prior to damaging or destroying any identified graves, permission for the exhumation and relocation of graves must be obtained from the relevant descendants (if known) and the relevant authorities.</p>		
DRILL SITE ESTABLISHMENT				
<p>- Access the drill site using a new access track where necessary</p> <p>- Set-up drilling machine with drip trays and groundsheets</p> <p>- Strip vegetation and topsoil (up to 300 mm where necessary and possible)</p>	Air quality – dust and gaseous emissions	<p>- The movement of drilling equipment and support vehicles on unpaved access tracks will be on a small scale</p> <p>- Vehicle speeds will be limited to 40km/h onsite</p> <p>- Vehicles and the drilling rig will be maintained in good working order</p> <p>- Minimise new access route development (routes to be approved by landowners prior to development)</p> <p>- Drill sites and access routes to be designed far from homesteads or settlements, where possible</p> <p>- Set up and stick to operational schedules to control nearest receptors' exposure to dust levels</p>	Ongoing	Exploration Manager, SHE Officer, Contractors, Employees
<p>- Temporarily store topsoil adjacent to drill site</p>	Noise	<p>- Vehicles will travel maximum 40 km/hour near homesteads or settlements</p> <p>- Drill sites and access routes to be designed far from homesteads or settlements, where possible</p>	Ongoing	Exploration Manager, SHE Officer, Contractors,

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
- Set-up portable toilet and ablution facilities		- Set up and stick to operational schedules to control nearest receptors' exposure to noise levels		Employees
- Set-up fuel and lubricants storage area	Biodiversity	<ul style="list-style-type: none"> - Refer to biodiversity management measures relating to mapping and sampling section on this table. - Honour agreements set out in the site-access contracts, specifically relating to the areas utilised for farming. - Provide appropriate toilet and ablution facilities for the exploration workers on the site (where required). - The Ministry of Mines and Energy, with the advice of MEFT has revised and modified the proposed shape for EPL 8613 as applied for by the proponent before provisional approval in an effort to mitigate or minimize the interaction between exploration and rhino conservation activities. - The exploration crew campsite will not be allowed within Exclusive Wildlife Zones. Campsite must be within zones demarcated for Settlement & Cropping or similar. - Local guides are to be used as far as possible by exploration teams to foster transparency between land inhabitants and project team, and to discourage illegal poaching and collection of firewood. 	Ongoing	Exploration Manager, SHE Officer, Contractors, Employees
	Land use	<ul style="list-style-type: none"> - Access agreements to be prepared and approved prior to drill site establishment. - The footprint of the area to be disturbed will be minimised as far as is practically possible. 	Ongoing	Exploration Manager, SHE Officer, Contractors, Employees

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		<ul style="list-style-type: none"> - Areas used as laydown areas are to be ripped or scarified to encourage re-vegetation - Agree on relevant compensation with landowners where land uses are impacted 		
	Heritage	- Refer to heritage management measures relating to mapping and sampling section on this table.	Ongoing	Exploration Manager, SHE Officer
	Socio-economic	- Refer to socio-economic management measures relating to mapping and sampling section on this table.	Ongoing	Exploration Manager
DRILLING				
<ul style="list-style-type: none"> - Drill borehole - Contain all drilling water in the sump and allow to settle (Diamond Drilling) - Contain all drill cuttings in poly-weave bags (RC Drilling) - Log the drill core/chips and place on core trays 	Contamination of soil and hydrocarbon spillages	<ul style="list-style-type: none"> - In all areas where there is storage of hazardous substances (i.e., hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances. - All refuelling and any maintenance of vehicles will take place on impermeable surfaces. - Pollution will be prevented through basic infrastructure design and through maintenance of equipment. - Spill kits will be readily available onsite. Employees and or contractors will be shown to use the spill kits to enable containment and remediation of pollution incidents. - Environmental awareness training of all employees and contractors - An impermeable lined sump will be used for collection of oils and silt contained in the drilling water 	Ongoing for all drilling activities	Exploration Manager, SHE Officer, Contractors, Employees

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
- Maintain toilet and ablution facilities		<ul style="list-style-type: none"> - Any spills will be contained and cleaned up immediately - Non-toxic and biodegradable drilling lubricants will be prioritized - Ensure that drilled exploration boreholes are properly marked for visibility and capped/closed off. 		
	Groundwater contamination	<ul style="list-style-type: none"> - Refer to management measures relating to contamination of soils (above). - Licenses in terms of the Water Resource Management Act (Act No. 11 of 2013) will be obtained for all drilled holes (not just boreholes). - Provide appropriate toilet and ablution facilities for the exploration workers on the site. 	Ongoing for all drilling activities	Exploration Manager, SHE Officer,
	Air quality deterioration	<ul style="list-style-type: none"> - Vehicle speeds will be limited to 40km/h on access routes to limit dust. - The movement of drilling related vehicles on unpaved access track will be on a small scale. - Water sprays can be used around the lay-down area when a drill site is located near houses or a settlement. - Refer to air quality management measures relating to mapping and sampling and drill site establishment sections on this table. - Provision of dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks to the workers on site drilling areas. 	Ongoing for all drilling activities	Exploration Manager, SHE Officer, Contractors, Employees
	Noise generation	<ul style="list-style-type: none"> - Drilling will only be conducted during the day in the case of drill sites near homesteads or settlements. 	Ongoing for all drilling activities	Exploration Manager,

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		<ul style="list-style-type: none"> - Drilling plans and schedules will be discussed and agreed upon with landowners prior to initiation. - Use well-maintained drilling equipment. - Vehicles will travel maximum 40 km/hour near houses or settlements. - Provision of ear plugs, ear muffs and other respiratory personal protective equipment (PPE) such as face masks to the workers on site drilling areas. 		SHE Officer, Contractors, Employees
	Land use	- Refer to land use management measures relating to drill site establishment section in this table	Ongoing for all drilling activities	Exploration Manager,
	Biodiversity	<ul style="list-style-type: none"> - Refer to biodiversity management measures relating to mapping and sampling and drill site establishment sections on this table. - Only one drill rig will be permitted to drill within the Exclusive Wildlife Zones, to minimize the disturbance generated by machinery and limit it to the drilling site only. - There will be no blasting allowed in the Exclusive Wildlife zones of EPL 8613. This applies to the //Huab Conservancy only. - Any blasting required in other zones (Multiple Use) of EPL 8613 must be approved by the conservancy management and documented with written permission. This applies to the #Khoadi-//Hôas Conservancy only. - Any trenching required on any zone of EPL 8613 must be approved by the conservancy management and documented with written 	Ongoing for all drilling activities	Exploration Manager, SHE Officer, Contractors, Employees

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		<p>permission. This applies to both the //Huab and #Khoadi-//Hôas Conservancies.</p> <ul style="list-style-type: none"> - The drilling program must be presented to, and pre-approved by the conservancy management before drilling commences. - Any drill holes planned within the exclusive wildlife zones of EPL 8613 must again be presented to, and approved by the conservancy management at least one week before drilling commences. This will help to dynamically manage the potential impact on wildlife habitats at any given time. 		
	Third party safety	<ul style="list-style-type: none"> - The working area of the drill site will only be accessed by project employees and contractors / workers. - Warning signs will be erected and maintained at the strategic location to warn third parties of dangers associated with the drilling activities. - Put 'no entry' signs at tracks turning off the official tourist routes. - Any person entering the drill sites will only be allowed after formal induction. - Project vehicles should be fitted with clear and visible signs to distinguish them easily. 	Ongoing for all drilling activities	Exploration Manager,
RELEVANT TO ALL EXPLORATION ACTIVITIES				
- All exploration activities	Coexistence: Subsistence Mining and Exploration	- Promote coexistence of subsistence mining and exploration activities by facilitating start-up meeting with operators of unregistered mining claims on EPL8613 through Conservancy Management and Traditional Authority Offices, to reach a workable arrangement between such operators and proponent.	- Project start	Exploration Manager,

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
	Social – provision of toilet and ablution facilities	- Provide appropriate toilet and ablution facilities for the exploration workers on the site.	Ongoing for all exploration activities	Exploration Manager,
	Waste Management	- Suitable receptacles for waste disposal will be provided at appropriate locations onsite. These receptacles will be clearly marked for different waste types (domestic, hazardous, metallic waste etc) - Employees and contractors will be shown the importance of correct waste disposal as well as waste minimisation and recycling (where possible). - Waste will be removed from site and disposed of at a suitable waste disposal facility. - Hazardous waste (including hydrocarbon contaminated material or soil) will be disposed of at a licenced hazardous waste disposal facility.		SHE Officer, Contractors, Employees
	General behaviour of exploration team in the EPL area.	- Provision in the budget is made for environmental awareness and training and for internal and external environmental monitoring and auditing costs as well as for rehabilitation costs. - Responsibilities as set out in Section 6 are explained and adhered to. - The EMP should be included in all tender documents.		
		- Senior exploration staff and all senior contractors are aware of, and implementing, the EMP requirements. All persons shall be expected to know and understand the objectives of the EMP and will, by example, encourage suitable environmentally aware behaviour to be adopted on all sites.		Exploration Manager, SHE Officer

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
		- Immediate recognition should be given to appropriate environmentally acceptable behaviour. Any inappropriate behaviour should be immediately corrected. An explanation as to why the behaviour is unacceptable must be given, and, if necessary, the person could be disciplined, e.g., fees set out, for different non-environmental compliance or not allowed to work on the project anymore.		
CLOSURE AND REHABILITATION				
<p>General closure activities:</p> <ul style="list-style-type: none"> - Close drill holes (unless otherwise agreed with landowners) - Remove water from the sump and drip trays - Remove oils and silt from drip trays and store until disposal to permitted hazardous landfill site 	Groundwater and surface water contamination	<ul style="list-style-type: none"> - In all areas where there is storage of hazardous substances (i.e., hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances. - All refuelling and any maintenance of vehicles will take place on impermeable surfaces. - Pollution will be prevented through basic infrastructure design and through maintenance of equipment. - Spill kits will be readily available onsite. Employees and or contractors will be shown how to use the spill kits to enable containment and remediation of pollution incidents. - Any spills will be contained and cleaned up immediately. 	Once - closure of drill site	Exploration Manager, SHE Officer
<ul style="list-style-type: none"> - Backfill the sump once it has dried out (dome to allow for subsidence) and plug borehole (unless an 	Soil erosion	<ul style="list-style-type: none"> - Impacted footprints are to ripped or scarified to encourage re-vegetation - Access routes will be ripped unless the landowners request otherwise - A monitoring program will be implemented to establish re-vegetation progress 	Starts at closure, continues for a pre-determined time (as stated in agreements)	Exploration Manager, SHE Officer

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
agreement is in place with landowner for alternative uses)		- Agree on relevant compensation with landowners where land used is impacted		
- Move drill core trays, toilet and ablution facilities, support equipment and vehicles from the site	Waste management	- Decommission toilet and ablution facilities - Ensure that all waste generated during activities is removed from the site and disposed of appropriately	Once-off	Exploration Manager, SHE Officer
	Land use	- Landowners will be invited to carry out site inspections following rehabilitation in order to ensure that it has been carried out suitably.	Post-closure	Exploration Manager, SHE Officer
- Dispose of any general waste to a permitted landfill site - Remove temporary fencing - Rip and scarify compacted areas - Rake and sweep new tracks - Replace topsoil over disturbed area	General	- Provision of adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc. to all on-site employees - All litter from the site i.e., bottles, tins, piping, etc. are contained and taken to an appropriate disposal site. - All debris, scrap metal, etc., is removed before moving to a new drill site. - All sumps have been dried and filled in, if not portable water reservoirs are used. - New tracks must be restored by fine raking and sweeping when exploration activities are complete. It is important that each tyre track be individually swept. If the entire area over the double track is swept it increases the area of impact.	Before moving to a next drill site	Exploration Manager, SHE Officer

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
<ul style="list-style-type: none"> - Rehabilitate access track by ripping - Dissemination of information and transparency 		<ul style="list-style-type: none"> - Ensure that no heaps of soil, rocks and material remain – sweep and rake manually before moving to the next drill pad so that the site looks as close to 'pre-operation 'as possible. - Re-cover levelled land with the soil that has been removed. - Arrange project start-up meetings through the conservancy management committees before commencement. - Project announcements must be made through the conservancy offices, as well as radio announcements to ensure that communications reach the targeted communities. - Project status and information must be disseminated for transparency. This will be achieved by sharing regulatory quarterly reports with conservancy offices. 	<ul style="list-style-type: none"> - Project start - Continuous - Quarterly 	

10. REHABILITATION AND DECOMMISSIONING MEASURES

Successful rehabilitation requires careful consideration of the local ecological context in combination with rehabilitation goals. The most important steps in undertaking a successful rehabilitation are planning and environmental awareness (environmental education) on the importance of progressive rehabilitation (or post-activity rehabilitation) and its importance to the environment. Furthermore, the practical and successful implementation of the planned rehabilitation will depend on a few factors, which include the characteristics of the site, nature of disturbance, rehabilitation methods, as well as the available resources.

Rehabilitation of the EPL site may include the re-vegetation of areas with species consistent with surrounding vegetation; refilling of trenches in such a way that subsoil is replaced first and topsoil replaced last. The management and mitigation measures (action plans) for the rehabilitation and decommissioning of explored sites and site works, respectively are presented in [Table 4](#).

Table 4: Management and Mitigation Measures to rehabilitate the explored sites and decommissioning of the site works

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
CLOSURE AND REHABILITATION				
General closure activities: - Close drill holes (unless otherwise agreed with landowners) - Remove water from the sump and drip trays - Remove oils and silt from drip trays and store until disposal to permitted hazardous landfill site	Groundwater and surface water contamination	- In all areas where there is storage of hazardous substances (i.e., hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances. - All refuelling and any maintenance of vehicles will take place on impermeable surfaces. - Pollution will be prevented through basic infrastructure design and through maintenance of equipment. - Spill kits will be readily available onsite. Employees and or contractors will be shown how to use the spill kits to enable containment and remediation of pollution incidents. - Any spills will be contained and cleaned up immediately.	Once - closure of drill site	Exploration Manager, SHE Officer
- Backfill the sump once it has dried out (dome to allow for subsidence) and plug borehole (unless an	Soil erosion	- Impacted footprints are to ripped or scarified to encourage re-vegetation - Access routes will be ripped unless the landowners request otherwise - A monitoring program will be implemented to establish re-vegetation progress	Starts at closure, continues for a pre-determined time (as stated in agreements)	Exploration Manager, SHE Officer

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
<p>agreement is in place with landowner for alternative uses)</p> <p>- Move drill core trays, toilet and ablution facilities, support equipment and vehicles from the site</p> <p>- Dispose of any general waste to a permitted landfill site</p> <p>- Remove temporary fencing</p> <p>- Rip and scarify compacted areas</p> <p>- Rake and sweep new tracks</p> <p>- Replace topsoil over disturbed area</p>		- Agree on relevant compensation with landowners where land used is impacted		
	Waste management	- Decommission toilet and ablution facilities - Ensure that all waste generated during activities is removed from the site and disposed of appropriately	Once-off	Exploration Manager, SHE Officer
	Land use	- Landowners will be invited to carry out site inspections following rehabilitation in order to ensure that it has been carried out suitably.	Post-closure	Exploration Manager, SHE Officer
	General	- Provision of adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc. to all on-site employees - All litter from the site i.e., bottles, tins, piping, etc. are contained and taken to an appropriate disposal site. - All debris, scrap metal, etc., is removed before moving to a new drill site. - All sumps have been dried and filled in, if not portable water reservoirs are used. - New tracks must be restored by fine raking and sweeping when exploration activities are complete. It is important that each tyre track be individually swept. If the entire area over the double track is swept it increases the area of impact.	Before moving to a next drill site	Exploration Manager, SHE Officer

Activities	Potential Impact	Management & Mitigation Measures	Action Plan	
			Frequency	Responsible Person
- Rehabilitate access track by ripping		- Ensure that no heaps of soil, rocks and material remain – sweep and rake manually before moving to the next drill pad so that the site looks as close to 'pre-operation 'as possible. - Re-cover levelled land with the soil that has been removed.		

11. ENVIRONMENTAL AND SOCIAL MONITORING

To support and ensure that the proposed management and mitigation measures are achieving the desired results throughout the project phases, a monitoring plan must be implemented alongside the mitigation plan. Table 5 presents the required environmental and social monitoring program in terms of each potential impact, parameters to be monitored and monitoring objective, reporting channels, any thresholds that apply and relevant recommended actions (EDS, 2021).

Table 5: Monitoring requirements to manage and mitigate the potential adverse impacts (updated after Excel Dynamic Solutions, 2021)

Impact	Parameter to be monitored	Monitoring Objective	KPI	Method(s) of monitoring	Frequency	Responsible Party	Reporting Structure	Threshold	Action if threshold is exceeded
WATER AND SOIL POLLUTION									
Soil pollution by Hydrocarbon (fuel and lubricant spills)	Complaints from farmers or occupiers of land within the project sites	To prevent contamination of site soils	No complaints from farmers about visible oil spills	Inspection of complaints logbooks	Weekly	SHE officer	SHE Officer > Exploration Manager	A logged complaint	-Further consultations with the farm owner / land user or custodian - Clean-up of affected areas.

Impact	Parameter to be monitored	Monitoring Objective	KPI	Method(s) of monitoring	Frequency	Responsible Party	Reporting Structure	Threshold	Action if threshold is exceeded
Wastewater generated by exploration workers living on-site.	Open defecation and urination.	To prevent environmental pollution	Adequate toilet facilities on site. Complaints from the public about open defecation and urination.	Visual observation. Inspection of complaints logbook.	Weekly	SHE officer	SHE Officer > Exploration Manager	A logged complaint	Clean-up of affected areas.
SOILS									
Loss of topsoil	Increased loss of soil	To prevent loss of topsoil	No proliferation of informal vehicle tracks. No new erosion gullies	Visual observation	Weekly	SHE officer	SHE Officer > Exploration Manager	A logged complaint	Rehabilitation of affected areas
AIR QUALITY									
Increase in dust generation, which might negatively affect occupational and residential respiratory health.	Complaints from public about increased dust generation.	To reduce public complaints and prevent negative changes in air quality due to exploration activities	No complaints from the public about increased dust generation.	Inspection of complaints logbook.	Weekly	SHE officer	SHE Officer > Exploration Manager	A logged complaint	-Dust suppression around working areas to reduce dust -Revision of operational schedules to reduce dust generation
Hydrocarbon emissions	Complaints from the	Same as above.	No complaints	Inspection of complaints	Weekly	SHE officer	SHE Officer > Exploration	A logged complaint	Servicing of vehicles and

Impact	Parameter to be monitored	Monitoring Objective	KPI	Method(s) of monitoring	Frequency	Responsible Party	Reporting Structure	Threshold	Action if threshold is exceeded
from vehicles	public about increased vehicles fumes		from the public about increased vehicle emissions	logbook.			Manager		machinery by a certified service provider
POACHING (ILLEGAL HUNTING)									
Illegal hunting of wildlife	Reported poaching incidents by projects team	To prevent illegal hunting of wildlife	Incidents reports of illegal hunting of wildlife by exploration workers.	Consultation with the local Police Service and other agencies (CCFN, SRT, NNF, CBNRM, NACSO) for reported incidents of poaching.	Weekly	SHE officer	SHE Officer > Exploration Manager > local Police Service (Anti-poaching Unit) > Conservation agencies	An incidents report logged with the local Police Service	Appropriate action will be decided by the local Police Service
HABITAT LOSS (BIODIVERSITY)									
Localized loss of habitat and vegetation	Loss of habitat	To prevent loss of habitat outside areas of interest	No disturbance to unmarked areas within the project area	Visual observation	Weekly	SHE officer	SHE Officer > Exploration Manager > Conservancy Management Committee	Vegetation clearance outside of marked areas.	Rehabilitation of affected areas to the satisfaction of the SHE Officer Temporary suspension of exploration activities
Localized loss of habitat to wildlife	Loss of habitat	To prevent loss of habitat to wildlife	No permanent migration of wildlife species	Visual observation	Weekly	SHE officer	SHE Officer > Exploration Manager > Conservancy Management Committee	Permanent migration of wildlife species	Revisit drilling program within Wildlife Zones (reduce drilling durations in wildlife zones)

Impact	Parameter to be monitored	Monitoring Objective	KPI	Method(s) of monitoring	Frequency	Responsible Party	Reporting Structure	Threshold	Action if threshold is exceeded
									by introducing drilling breaks between drillholes)
OCCUPATIONAL AND COMMUNITY HEALTH AND SAFETY									
No health and safety plan for exploration activities.	Compiled health and safety plan for exploration activities.	To prevent health and safety impacts	No significant health and safety incidents (i.e., serious injuries or loss of life)	Visual Observation Inspection of complaints logbooks	Daily/weekly	SHE Officer and Exploration Manager	SHE Officer > Exploration Manager	Health and safety incident	Remedy the consequences
Potential increase in outbreak of wildfires due to project activities	Occurrence of wildfires	To prevent environment damage caused by wildfires	No wildfires recorded (due to presence of exploration workers)	Visual Observation	Daily	SHE Officer	SHE Officer > Exploration Manager > local police service	Outbreak of wildfires due to the exploration workers	Rehabilitation of affected areas
ARCHAEOLOGICAL AND CULTURAL HERITAGE									
Potential disturbance Of archaeological and cultural Heritage resources	Occurrence of archaeological or cultural heritage resources	To prevent destruction of artefacts and sites	Exploration team's handling of chance finds: Reporting of chance find sites, demarcation of sites	Frequency of Chance Find Reporting	Daily	SHE Officer, Operator	Operator > Foreman > Superintended > SHE Officer > Exploration Manager > Project Archaeologist > National Heritage Council (NHC)	Unearthing Of archaeological or cultural heritage resources	Cease all activities on site; cordon off area, Report chance find site location to NHC, project Archaeologist, demarcation
EMPLOYMENT/BUSINESS OPPORTUNITY CREATION									
Creation of	Creation of	To ensure	Number of locals	Inspection Of employment	Monthly	Exploration Manager	Exploration Manager or	Number of those	Revisit employment

Impact	Parameter to be monitored	Monitoring Objective	KPI	Method(s) of monitoring	Frequency	Responsible Party	Reporting Structure	Threshold	Action if threshold is exceeded
Employment and business opportunities	Employment and business opportunities	that local community benefit from the project	Employed, local businesses engaged during exploration activities	Records; list of service providers			Proponent	employed; businesses engaged	and procurement policies
NOISE									
Potential increase in noise	Above ambient noise levels.	To ensure that generated noise does not disturb residents.	Complaints from residents about noise generated.	Inspection of complaints logbook	Weekly	SHE Officer	SHE Officer > Exploration Manager	A logged complaint about above normal noise levels	Revision of site activities, operational schedule
VEHICULAR TRAFFIC									
Increase in traffic density on declared Roads Authority (RA) roads or damage to these.	Increase in reports of Pedestrian – Vehicle traffic interactions. Complaints about damage to RA roads caused by movement of project vehicles and machinery.	To ensure continued ease of access to RA roads by residents	No complaints from the public about increase off traffic due to exploration activities. No road traffic incidents involving exploration vehicles	Inspection of logbooks	Weekly	SHE Officer	SHE Officer > Exploration Manager > Roads Authority / Health Facilities	A logged complaint about traffic increase or damage to RA roads	Find alternative access roads for the workforce. Rehabilitation of affected roads
SOCIAL NUISANCE: PROPERTY INVASION OR DISTURBANCE AND DAMAGE									
Potential intrusion or	Unauthorized intrusion and or damage to	To prevent clashes and tension	No complaints of property	Liaison with property owners or occupiers of	Monthly	SHE Officer	SHE Officer > Exploration	A logged complaint	Investigate infringement, follow

Impact	Parameter to be monitored	Monitoring Objective	KPI	Method(s) of monitoring	Frequency	Responsible Party	Reporting Structure	Threshold	Action if threshold is exceeded
damage/ destruction of private or public properties	properties	between the Proponent and the land/property custodian	damage or intruding by Project personnel	land			Manager > Land custodian > Traditional Authority	about unauthorized movements	disciplinary protocols
ENVIRONMENTAL POLLUTION									
Environmental pollution from solid waste during exploration activities.	Scattered litter	To prevent littering of the general project area	No visible litter around the project area	Visual observation	Daily	SHE Officer	SHE Officer > Exploration Manager	Visible littering around project site	Clean-up of the affected areas and ensuring exploration workers utilise waste containers provided.
SITE REHABILITATION									
Soil and land disturbance because of exploration activities.	Abandoned and stockpiled topsoil as well as very disturbed land surface	To prevent major soil and land damage by project activities	No major soil and land disturbance	Visual observation	Daily	SHE Officer	SHE Officer > Exploration Manager	Visible soil and land disturbance	Effective progressive backfilling of topsoil and rocks