

MINING CLAIMS 68069 AND 68070

FINAL: ENVIRONMENTAL MONITORING REPORT (EMR)

***FOR THE PROPOSED QUARRY FOR MARBLE MINING CLAIMS: 68069
AND 68070, ERONGO REGION, KARIBIB DISTRICT, NAMIBIA***

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PROJECT DETAILS

**TITLE: ENVIRONMENTAL MONITORING REPORT FOR THE PROPOSED QUARRY
FOR MARBLE ON MINING CLAIMS 68070 AND 68069 KARIBIB DISTRICT,
ERONGO REGION, NAMIBIA.**

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DECLARATION

We hereby declare that:

- a. We have the knowledge of and experience in conducting assessments, including knowledge of the Acts, Regulations, and Guidelines that are relevant to the proposed small-scale surface mining for Marble.
- b. We have performed the work relating to the application objectively, even if this results in views and findings that are not favorable to the proponent.

A handwritten signature in black ink, appearing to read 'J Sirunda', is written over a white rectangular background.

J Sirunda
Environmental Assessment Practitioner (EAP)

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1. ENVIRONMENTAL MONITORING REPORT (EMR)

1.1. Background

The proponent Ms. Brenda Van Der Merwe is proposing to conduct quarrying activities for marble. The proposed quarry activities are to take place at the mining claims located in Habbis No 71, Etusis Farm, Karibib District, Erongo Region. The associated mining claims relating to this undertaking are registered under **Ms. Brenda van der Merwe** with the Ministry of Mines and Energy (MME). The mining claims numbers are as follows:

- **68069**
- **68070**

In line with the Environmental Management Act No.7 of 2007 and its Environmental Impact Assessment Regulation of 2012, the proposed project is a listed activity that cannot be undertaken without an environmental assessment. Therefore, it is required that an environmental assessment is carried out for the proposed project, to ensure the protection of the environment and community members found in that particular vicinity of the proposed project area. For this reason, an HJ Geo-enviro Consulting and Trading Cc was appointed by Ms. Brenda Van Der Merwe to undertake an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) to quarry for marble in 2016. On the 26th of September 2016, an Environmental Clearance Certificate (ECC) was issued to Brenda Van der Merwe for the above mentioned quarry project. As stipulated in the Environmental Management Act of 2007, that the Environmental Clearance Certificate (ECC) is valid only for three years, and after three years an amendment or renewal should be submitted together with Environmental Monitoring Report to update on the progress of the project if something was done. Since the ECC is only valid for three (3) years, the certificate expired in 2019.

It is against this background, that, HJ GeoEnviro Consulting and Trading cc has prepared this Environmental Monitoring Report (EMR) to meet the statutory environmental management requirements of the proposed quarry for marble. This

Environmental Monitoring Report (EMR) has been undertaken within the framework of the existing environmental assessment process as described in the Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995, published by the Ministry of Environment and Tourism as well as the provisions of the Environmental Management Act, (Act No. 7 of 2007) and its EIA regulation of 2012. Due to the COVID 19 pandemic, the quarry was closed and the situation made it difficult to apply for the ECC renewal on time. For this reason, the proponent has requested HJ GeoEnviro Consulting and Trading cc, to apply for the renewal of the expired ECC on behalf of Brenda Van der Merwe.

1.2. Project description

The proponent Ms. Brenda Van Der Merwe intends to implement a quarry for marble operation of the potential economic marble. The proposed quarry has a strong focus on dimension stone in particular marble. The intended quarry for marble will use the cutting methods to remove the marble slabs and various technological equipment and instruments will be used in the process. The mining claims 68069 and 68070 are located near Karibib Town (Figure 1). The mining claims are located in the Etusis Farm which belongs to Mr. Siggie Von Lutwitz (Figure 2). In the Etusis Farm, there are about five quarries that are currently in operation with different owners. In addition to the quarries, the owner also operates a lodge on the same Farm to cater for tourism attractions. In view of the tourism activities taking place on this farm, Mr. Siggie Von Lutwitz acts as an Environmental Officer to ensure that none of the quarry miners pollutes or mine in a way that will affect the environment and hence affect the attraction of tourism to use his lodge facilities. Therefore, mining activities in this farm are well controlled by the farm owner, and these will be beneficial to the Ministry of Environment Forestry and Tourism as far as their monitoring are concern as less time will be spent to ensure compliance in this area. The mining claims are within the following coordinates:

S 22.5.33.10 , E 15.51.10.80

S 22.5.24.80 , E 15.51.8.80

S 22.5.24.90 , E 15.51.25.80

S 22.5.29.40 , E 15.51.28.60

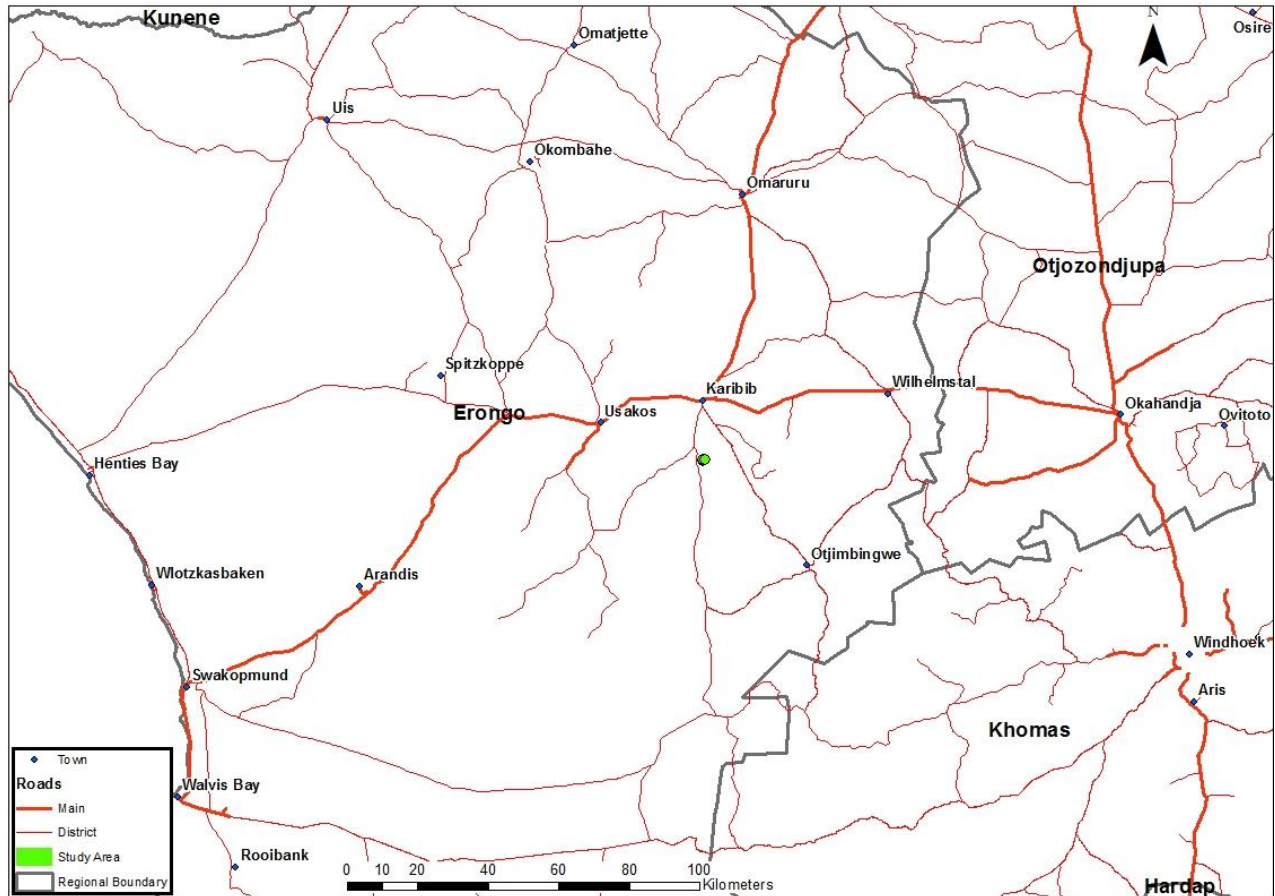


Figure 1: Locality of the mining claims

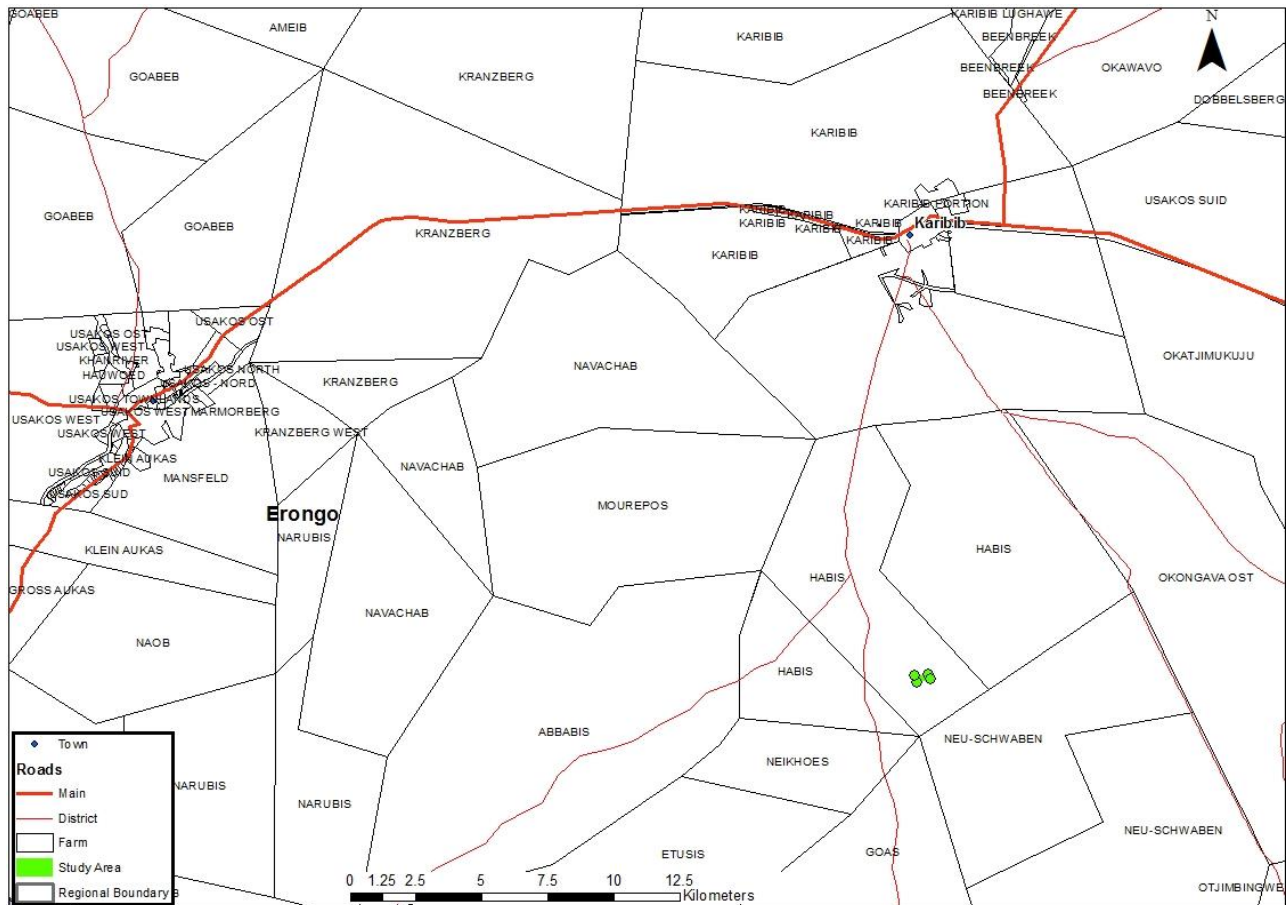


Figure 2: The mining claims with farms

1.3. Summary of the proposed activities

The environmental issues related to the quarrying of marble are mostly local and are common to most surface operations. These issues include oil spillage, dust or air pollution, impact on biodiversity, and land disturbance, impact on groundwater aquifer, and also social-economic impacts. The quarrying operations processes and associated activities are as follows:

- Ground or land disturbances will take place and this will result in localized loss of flora as well as any other fauna that may be dependent on such specific flora;
- Cutting, Drilling, trenching will be used for loosening the hard rock.

1.4. Environmental requirements

The proponent Ms. Brenda Van Der Merwe is required by law to undertake an

Environmental Impact Assessment (EIA) for the proposed quarrying in line with the following legal requirements:

- Prospecting and Mining Act, 1992, (Act No 33 of 1992);
- Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995;
- The Environmental Management Act, (Act No. 7 of 2007) and its EIA regulations of 2012.

1.5. Fulfilments of the environmental requirements

In line with national statutory environmental requirements, the proponent Ms. Brenda Van Der Merwe has appointed HJ GeoEnviro cc as the Environmental Consultant. Therefore HJ Geo Enviro cc has prepared this Environmental Assessment Report covering the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) to meet the statutory environmental management requirements of the proposed quarrying activity for mining claims 68069 and 68070. This Environmental Assessment report was undertaken within the framework of the existing environmental assessment process as described in the Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995, published by the Ministry of Environment, Forestry and Tourism as well as the provisions of the Environmental Management Act, (Act No. 7 of 2007) and its EIA regulation of 2012. The ECC which was obtained in 2016 expired in 2019, and for this reason, HJ Geo Enviro cc has prepared an EMR to apply for the renewal of the expired ECC.

1.6. What is an Environmental Monitoring Report?

At its core, environmental monitoring is designed to help us understand the natural environment and protect it from any negative outcomes of human activity. The process is an integral part of environmental impact assessments. Environmental monitoring assessments can involve establishing baseline quality, uncovering environmental trends, identifying any variations, determining the success of projects, and confirming whether or not environmental goals have been met.

The purpose of the environmental monitoring report is to provide a summary of the key issues relating to the implementation of environmental management plans over the project duration. The report includes an update on overall project progress, the status of EMP implementation, environmental monitoring results, and other relevant issues such as non-compliance and corrective actions, and monitoring of the Grievance Redress Mechanism.

1.7. Implementation Progress

To date, the proponent Ms. Brenda Van Der Merwe started with the quarry for marble in 2017 and stopped with the quarrying activities when the ECC expired in 2019. Funds are still available for the quarrying activities to proceed, upon receipt of the renewed ECC. Figure 3, shows the quarry area where marble blocks were removed. Based on the site inspections, there is still enough marble available to be extracted as blocks for commercial purposes (Figure 3).



Figure 3: Marble quarry area

The quarry area was inspected to ensure compliance with the provisions of the

EMP. From vegetation and availability of trees point of view, the quarry area was found with trees that were marked not to be removed during the quarrying phase (Figure 4). Vegetation is still very good on-site and the compliance to the provisions of the EMP was found adequate.



Figure 4: The vegetation and trees in the marble quarry area

The proponent has extracted commercial blocks as shown in Figure 5 below. Given the available marble in the quarry area, it is estimated that more commercial blocks can still be removed to sustain the quarry for the next 3 years.



Figure 5: Marble blocks extracted from the quarry area

During the quarrying process, the proponent removed overburdened materials and broken blocks to be used for the mining closure phase (Figure 6 and 7). The EMP indicates that the proponent Ms. Brenda Van Der Merwe's site rehabilitation emphasizes the backfilling of sampling/drilling holes and cover with topsoil in areas that will be disturbed by mining/ quarrying activities. These will be but not be limited to the access road, vehicle tracks around the site, removal, and restoration of areas covered by stockpile and rock piles.



Figure 6: Stockpiles of the broken blocks and overburden materials for use during mining or quarry closure



Figure 7: Existing access road in the quarry area

1.8. Environmental Management Plan Implementation and Organisation

Environmental Management Plans (EMP's) are important tools that focus on the management actions that are required to ensure not only environmental compliance of projects but also on implementing mitigation measures aimed at maximizing positive impacts while minimizing negative ones. The statutory validity and compliance significance of the EMP are inherited from the provisions of Regulations (2012) of the Environmental Management Act (2007) which states that “the environmental management plan shall set out steps that are intended to be taken to manage any significant environmental impact that may result from the operation of the undertaking”.

Against the above-given context, EMPs are thus by their nature recurring processes that transform mitigation measures into actions and through cyclical monitoring, auditing, review, and corrective action ensures conformance with stated EMP aims and objectives. Inherently, an EMP must respond to unforeseen events and changes in project implementation that were not considered before, and this is achieved through monitoring and auditing, including feedback for continual improvement in environmental performance.

Institutional arrangement

In the preceding sections, the environmental aspects which may be affected by the proposed project have been categorized into negative and positive impacts. As an extension of the preceding sections, this section summarizes the objectives, indicators to be observed, schedules to adhere to the roles and responsibilities of various stakeholders to the EMP.

The following abbreviations are used to indicate who is responsible for what impact mitigation objective:

- **Site Manager and Environmental Coordinator
SM/ENCO**

- **Site Foreman** **SF**
- **Project Staff** **PS**
- **Project Proponent** **PP**
- **Environmental Impact Assessment Consultant** **EIA_C**
- **Environmental Commissioner** **EC**
- **Interested and Affected parties** **I & AP**

Table 1: Project Planning and Implementation

Objectives	Indicators	Schedule	Responsibility
Establish a strong environmental protocol from project implementation to final closure to ensure the least possible impacts on the environment	Resources (Financial, human, equipment, and safety gear) are provided for the awareness, meetings, monitoring, and reporting.	At the beginning of the quarrying phase.	PP, SM
To maximize the economic spin-off into the local economy.	Expedite the appointment of a senior person to assume the responsibility of an environmental coordinator (ENC)	At the planning stage or at the beginning of the implementation phase of the quarrying phase	PP, I & AP

Table 2: Mitigation Measures during Exploration Phase

No	Affected Environmental Parameters	Likely adverse impacts in the absence of mitigation measures	Nature of the impact	Proposed mitigation measures	
				Action to be taken	Implementing agency
1	Land Environment	Impact on fauna and flora	Significant and permanent if not controlled	Avoid construction within 20m of the main drainage line(s). Avoid disturbance of marginal vegetation Remove (e.g. capture) unique fauna	Contractor/CENC
		Generation of solid waste and debris. Aesthetically unpleasant. Health problems of laborers	Temporary	Segregation to facilitate reuse/recycling. Recyclable wastes will be segregated and sent for recycling. Adequate facilities for the storage of these waste materials on site	Contractor/CENC
2	Air Quality	Traffic congestion Increase air pollution risks	Significant and temporary	Idling of the trucks and dumpers on the Roads will not be allowed. Raw materials will be procured from the nearest material supplier. Material will be brought in batches so that there is no sudden increase of traffic volume at one particular	Project manager/Contractor/CENC

				<p>time.</p> <p>On-site use of Concrete batching plant.</p> <p>Use of dust covers over construction material during transportation.</p> <p>Keeping all stationary equipment downwind.</p> <p>Stabilization of dust prone areas by sprinkling water</p>	
3	Noise Quality	Increase in noise levels causing a nuisance to the nearby Community Members/farm	Significant and temporary	<p>Prohibition for use of equipment emitting noise of greater than 90 dB (A) for 8 hour operation.</p> <p>Prohibition of noise from construction activities during night time.</p> <p>Provide workers on machinery with ear muffs/ earplugs.</p> <p>Provision of temporary barricading around site</p>	Project manager/Contractor/CENC

4	Water Environment	Surface and groundwater pollution due to fuel spillage. Turbidity and suspended solids due to soil erosion. Blocking of natural drains due to the deposition of construction materials.	Significant and temporary	<p>Mining to be carried out before periods of strong winds and erosion protection measures to be taken.</p> <p>Mining materials to be stored in enclosures.</p> <p>Cleaning of drains on regular basis to avoid blockage.</p> <p>No accumulation of stagnant water</p>	Contractor/CENC
5	Other Impacts	Soil erosion, additional exposure to noise/ air pollution	Significant and permanent	<p>Construction of necessary scaffolding and retaining structure for protection from waste material and water.</p> <p>Tree plantation to enhance bio aesthetic value.</p> <p>Guidelines for planting saplings of trees to be strictly followed.</p>	Contractor/CENC
6	Spillage of oil management	Contamination of surface and groundwater	Significant and permanent	<p>Contain spillage and remove the contaminated soil.</p> <p>Accessibility to spill prevention and response equipment, such equipment should be visible and accessible to all employees at any given time.</p>	Contractor/CENC

Table 3: Mitigation Measures during quarry (operation) Phase

No	Affected Environmental Parameters	Likely adverse impacts in the absence of mitigation measures	Nature of the impact	Proposed mitigation measures	
				Action to be taken	Implementing agency
1	Land Environment	Change in land use pattern due to the proposed quarry project	Significant and permanent if not controlled	Controlled and planned quarrying system	Project Proponent
		Contamination of soil by fuel and lubricants from construction equipment and vehicles. Increased solid waste generation in the area. If not managed properly will affect the health of local residents.	Significant and temporary	Avoiding spillage of oil and fuel to prevent seepage into ground and reaching surface water bodies. Waste management practices like waste segregation at source, recycling and reuse, mechanical composting etc. will be adopted Provision of mechanical composting units within the site. Regular collection of non-degradable solid waste from the site. Provision of a well engineered landfill site.	Project Proponent

4	Water Environment	<p>Water shortage within the area.</p> <p>Water flooding during rainy season.</p> <p>Increase in turbidity of water</p> <p>Reduced runoff due to increased paved areas.</p>	Significant and permanent	<p>Blockage of natural drains to be avoided and cleaning and maintenance to be carried out.</p> <p>Regular maintenance of stormwater drains, cleaning and effective soil erosion measures.</p> <p>Water harvesting to recharge on-site to be encouraged for use during the period of pumping failure.</p> <p>Prevent pollution from run-off.</p> <p>Sewage treatment plants to recycle domestic sewage and reuse for toilet flushing</p>	Project Proponent
5	Public Health and Safety	Health problems to people staying within the plots.	Moderate and Permanent	<p>Road maintenance to prevent air/noise pollution within site.</p> <p>Provision of adequate road safety like signage- posts/road-crossings etc.</p> <p>Firefighting / Disaster Management Plan provisions for buildings.</p>	Project Proponent

1.9. Environmental Awareness

Environmental regulations, rules and procedures apply to everybody, including subcontractors, visitors, permanent and temporal workers. Therefore, anybody who finds him or herself within the boundaries of the site must adhere to the Environmental Code of Conduct as outlined in this section of the EMP.

- The term environment refers to the whole surrounding around us, or conditions in which a person, animal, or plant lives or operates. In context of this project, the term environment denotes the natural surroundings in a particular geographical area, especially as affected by human activity.
- The environmental coordinator will implement on site environmental guidelines and has the authority to issue warnings as well as discipline any person who transgresses environmental rules and procedures. Persistent transgression of environmental rules will result in a disciplinary hearing and thereafter continued noncompliance behaviour will result in permanent removal from the site and site related activities, including loss of employment.
- Continuous assistance from the environmental coordinator must be maintained in case some members of the project team do not understand or do not know how to keep up with established environmental guidelines.

Dealing with environmental complaints guidance

- a. If you have any complaint about dangerous working conditions or potential pollution to the environment, immediately report this to the Environmental Coordinator
- b. If any person complains to you about noise, lights, littering, pollution, or any other harmful or dangerous condition, immediately report this to the Contractor.

Environmental Personnel Register

Table 11 shows the Environmental Personnel Register to be signed by every person who receives or attends the Environmental Awareness Training or who

has the training material explained to him or her or in possession of the training material.

Table 4: Environmental Personnel Register

Date	Name	Company	Signature

**1.10. Environmental Monitoring
Environmental Monitoring Program**

To date, no environmental monitoring was carried out for this project as mentioned in the implementation progress above that, and no biannual reports were submitted. However, monitoring of the EMP performance for the proposed marble quarrying project by the proponent Ms. Brenda Van Der Merwe emphasizes early dictation, reporting, and corrective action using the below tables. It is divided into three parts, namely:

- Monitoring of project activities and actions to be undertaken by the Environmental Coordinator (ENC) appointed by the Contractor.
- The Environmental Coordinator (ENC) shall report all incidents and situations which have the potential of jeopardizing compliance of statutory provisions as well as provisions of this EMP to the Project Proponent.
- The Environmental Coordinator (ENC) shall take corrective prompt measures, adequate and long-lasting in addressing non-compliance activities or behavior.
- To ensure compliance of the Contractor ENC to the implementation of the EMP, it is highly recommended that an **External Environmental** Expert is appointed by the proponent to ensure the implementation of the EMP. The

tables (4-10) provided below are to be used for monitoring purposes by the Contractor's ENC.

Table 5 : Solid Waste Disposal: Wire, Paper, Drill bits, and Human waste

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are disposal drums/bins available or full?					
Is there any litter around the site and its surroundings?					

Table 6: Oil Spillage or used oil

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are disposal drums available or full?					
Is there any oil spills around the site and its surroundings?					

Table 7: Land and Soil Disturbance

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of					

the EMP on land and soil disturbance?					
Are car track barricades in place?					

Table 8: Dust generation on site and gravel road Stretch

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of the EMP on dust pollution?					
Are the fume and particulate levels acceptable?					

Table 9: Biodiversity (Fauna and Flora)

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of the EMP on biodiversity?					
It is traipses harvesting plant taking place					

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
feeding of animal or introduction of animals?					

Table 10: Noise and Vibrations on-site

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of the EMP on noise and vibration on-site?					
Are there any complaints from the surroundings neighbour about noise emanating from the sites or tracks transporting materials/produce?					

Table 11: Compliance

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of the EMP on noise and vibration on-site?					
Are there any complaints from the surroundings neighbor about noise emanating					

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
from the sites or tracks transporting materials/produce?					

2. CONCLUSION AND RECOMMENDATIONS

2.1. Conclusion

In conclusion, during the reporting period, no monitoring was undertaken for this quarry project during quarry phase thus no biannual reports were submitted as per the provisions of the Environmental Management Act of 2007 and the approved EMP. The EMR encompasses the overall monitoring for the quarry phase. Based on the detailed inspection conducted, the quarry site was found adequate and in compliance with the provisions of the approved EMP. The proponent was found in compliance with the implementation of the EMP during the quarrying phase.

2.2. Recommendations

In view of the inspection findings and the nature of the quarry project, which is small and supporting local employment in the two towns which are experiencing high unemployment rate, it is hereby recommended that:

- The application for the ECC renewal for the Quarry Project to be approved for activities to proceed for the next 3 years.

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