



CHEC QUARRY (MOTA ULUN)

TERMS OF REFERENCE

13 Mar 2019

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1.0 INTRODUCTION

- 1.1 The purpose of this document is to provide a proposal for the ToR, with the main objective of stating the quarry-related activities and environmental and social impacts, both positive and negative, which will be further studied during the EIS phase. The ToR is subject to acceptance or rejection by ANPM (the Environmental Authority; as stipulated under Article 5, Diploma Ministerial No. 47/2017), and who will communicate and confirm the project significant impacts. The ToR forms the basis of the EIS and the EMP, and it can also be used to provide information during public consultation phases of the process to obtain an Environmental License for the quarry.
- 1.2 The project is a quarry for the extraction of rocks, and the processing of rocks and gravel for construction of Tibar Port. As part of the environmental license procedures for the quarry, the following documents are to be prepared and approved, i.e. a Project Documents, a Terms of Reference (ToR), an Environmental Impact Statement (EIS) and an Environmental Management Plan (EMP).
- 1.3 The Quarry Project has obtained “Category A” classification from the National Authority on Petroleum and Minerals (ANPM), based on the rules of Decree Law 5/2011, Environmental Licensing. For ease of confirmation and easy reference, it is stated that the said classification document from ANPM does not mention any particular item to be followed in preparing the TOR, the EIS or the EMP. ANPM has provided relevant Diploma Ministerial and flowcharts to assist in the preparation of ToR and subsequent EIS and EMP preparations.

2.0 GENERAL INFORMATION

- 2.1 Dili Port is the main port for handling cargo in Timor-Leste. It is not feasible to expand this port to cope with the expected increase in cargo. The new replacement port is to be sited at Tibar Bay, i.e. the Tibar Bay Port Project (TBPP).
- 2.2 For the TBPP, Bollore leads the Concessionaire provided by the Government of Timor-Leste, for a public-private partnership to undertake the financing, design, construction, and operations of Tibar Bay Port, 10 km west of Dili, for a 30-year timeframe. China Harbour Engineering Company (CHEC) is the main contractor for Design, Procurement and Construction of the said Port.
- 2.3 A quarry is needed to provide rocks and gravel of a certain strength to survive at least 50 years of pounding by the sea. The rocks will also be used for strengthening the quay and the grounds of Tibar Bay Port, in the form of stone columns in the ground. This is an engineering design to enable the structures on top of the ground to survive an earthquake. In the event of an earthquake, the Port must be able to remain operational, so that supplies, materials and machinery can be brought into the country for humanitarian reasons, and for rebuilding work.
- 2.4 CHEC is applying for and will be the quarry license holder. The quarry is at Mota Ulun, about 25 km west of Dili; as illustrated at Figure 2-1

Figure 2-1. Locations of the Quarry, Tibar Bay and Dili



- 2.5 The main components of the quarry are clustered together, with estimated sizes of each area shown at Table 2-1. The amounts of material (e.g. rocks) are shown at Tables 2-2 and 2-3. Other layout plans of the quarry are at Chapters 6 and 7 of this document.

Table 2-1. Main Components and Dimensions of the Quarry

SN	Item	Estimated Area
1	Hill A	6.1 ha
2	Hill B	10.75 ha
3	Hill C (reserve)	6.76 ha
4	Hill D (reserve)	2.1 ha
5	Processing Area	5.84 ha
6	Storage Area	1.28 ha
7	Housing Area (for 35 persons)	0.5 ha

Table 2-2. Estimated Amount of Material in the Quarry

SN	Location	Soil (m3)	Minable Rocks (m3)	Total (m3)
1	Hill A	241,000	755,000	996,000
2	Hill B	80,000	545,000	625,000
3	Total	321,000	1,300,000	1,621,000

Table 2-3. Comparison Between Project Requirements and Quarry Estimates

SN	Item	Project Requirements (m3)	Quarry Estimates (m3)
1	Revetment and concrete aggregates	303,000	428,000
2	Stone column and pavement	677,000	872,000
3	Sand	40,000	mechanism sand
4	Total	1,020,000	1,300,000 (excluding sand)



3.0 DETAILS OF THE PROJECT PROPONENT

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3.1 The legal document of the Project Proponent is at Attachment A.

4.0 DETAILS OF CONSULTANTS AND EXPERTS

4.1 The names of the persons preparing the EIS and the EMP are stated at Table 4-1.

Table 4-1. Names of Persons Preparing the EIS / EMP

SN	Area	Name / Academic and Professional Qualifications / Experience
1	EIS / EMP Preparation Lead	Koh Chee Thong, Aircraft Maintenance Engineer (Qantas Airways), Dip in Electronics (Sydney Technical College), Dip in Law (University of London). CHEC HSE Adviser. Prepared and implemented more than 5 Construction Environmental Management Plans (in which EIS / EMP are components) for CHEC projects in Angola, Qatar, Gabon, Ghana and Guinea. Also prepared and implemented HSE Management Plans for Seagate sites in Singapore, Malaysia, China and India.
2	Biodiversity	Kate Barker, BSc Hons Marine and Freshwater Biology, University of Wales. Marine life researcher in various country, e.g. Mexico, Thailand and Timor-Leste. Diving instructor.
3	Biodiversity	Kayla Noble, BSc Hons Zoology. Developed and implemented programs in improved farming techniques (US Peace Corp in Timor-Leste) and caring for animals (including preparation of diets and feeding) at VHS Wildlife Rehabilitation Center, Asheboro, North Carolina (USA). Diving Instructor.
4	Dust Management	Li ShunQuan, BSc, South China Agricultural University. Director of an Analysis Laboratory. More than 10 years of experience in field monitoring of water and air samples for water and power plants.
5	Noise Management	Koh Chee Thong, ex-HSE Officer for Seagate factories in Singapore, Malaysia, India and China, and a Sony factory in Singapore. Prepared and implemented Noise Control / Monitoring procedures for these factories.



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6	Vibration Management	Hu SiJie, BEng, Ocean University of China. CHEC Quarry Engineer, for supply of rocks for revetment for Fujian Ningde Nuclear Power Marine Engineering Project (China)
7	Quarry Management	Pedro Nelson dos Santos Moreira, a geotechnical engineer, has extensive experience in quarry works. He is employed by CHEC, with the previous project at a CHEC quarry in Tema, Ghana, supplying about 3 million m ³ of rocks for the construction of a breakwater approximately 3.5 km long.

5.0 LEGAL REQUIREMENTS

- 5.1 The preparation of the EIS and the EMP is mainly governed by environment-related regulations. In addition, other regulations, standards, and guidelines that are associated with environmental protection, e.g. covering demarcated sensitive areas, protected and endangered species, culturally important sites, and the welfare of communities, are also referenced. A “Compliance with Legislation Requirements” Section is in the EIS. The relevant legislation are described at follow-on sections.

5.1 The Constitution

- 5.1.1 The Constitution of RDTL has Articles relating to the environment, natural resources and culture, with examples as follows:
- 5.1.1.1 Section 61 (Environment) directs that the State should promote actions aimed at protecting the environment and safeguarding the sustainable development of the economy.
 - 5.1.1.2 Section 139 (Natural Resources) states that the exploitation of the natural resources shall preserve the ecological balance and prevent destruction of ecosystems.
 - 5.1.1.3 Section 41.5, though relating to freedom of the press and mass media, mentions the protection and dissemination of culture and traditional values. Section 59 (Education and Culture), recognises and guarantees that every citizen has the right to education and culture.

5.2 Environmental Legislation

- 5.2.1 Decree Law 26/2012, Environmental Basic Law; Sets out the framework for environmental policy and the guiding principles for the conservation and protection of the environment and for the preservation and sustainable use of natural resources in order to promote the quality of life of the citizens. Article 13 states that the State, before consenting to any rule, plan or project that could potentially impact the environment, shall conduct a strategic environmental assessment identifying, describing and assessing any significant effects on the environment and ensuring the integration of environmental concerns into the decision-making procedure.
- 5.2.2 Decree Law 5/2011, Environmental Licensing Law; Creates a system of environmental licensing for public and private projects likely to produce environmental and social impacts on the environment. The system of licensing is based on assessing the size of the potential environmental impact of projects taking into account their nature, size, technical

characteristics and location. Article 3 states the environmental licensing procedure.

- 5.2.3 Decree Law 14/2018, Government Structure; Article 33, paragraph 1, sub-paragraph O, empowers the Minister of Petroleum and Minerals to carry out the environmental licensing process, including the approval of environmental licenses, in the petroleum and mining sector.
- 5.2.4 Ministerial Diploma 44/2017, Regulation on Impact and Benefit; Covering the process for agreement between the project Proponent and the local community regarding the advantages and disadvantages of the project.
- 5.2.5 Ministerial Diploma 45/2017; Regulation on the management of and the rules for the Committee assessing Category A projects.
- 5.2.6 Ministerial Diploma 46/2017; Defining the details for Project Documents (PD), TOR, EIS and EMP documents, as stated in Annexes 1, 3, 4 and 5 respectively.
- 5.2.7 Ministerial Diploma 47/2017; Regulation on public consultation procedures and requirements during an environmental assessment process.
- 5.2.8 Government Resolution 32/2016; Establishing an investment strategy for waste management covering waste collection, destruction, and recovery. A new landfill is to be setup in Tibar, to be operated by private entities.
- 5.2.9 Decree Law 2/2017, Urban Waste Management; Stating the rules on recyclable waste, duties of Municipalities, waste collection, transportation and disposal, and urban waste management contracts.

5.3 Biodiversity and Protected Areas Legislation

- 5.3.1 Decree Law 5/2016, National System of Protected Areas; Defines the legal framework for the creation and management of protected areas, including waters. These areas could be classified as national parks, wildlife sanctuaries, natural monuments, protected landscapes and natural reserves. Permitted activities include subsistence hunting and fishing of unprotected species. Prohibited activities include cutting, burning, stripping and harvesting of protected flora.
- 5.3.2 Government Resolution 41/2015, Sandalwood Classified as Iconic Plant; Classifies sandalwood as an iconic plant of national value, and prescribes the protection measures for this species, e.g. the cutting, extraction, and sale of sandalwood is prohibited.
- 5.3.3 Joint Ministerial Diploma No. 18/MAP/MCIA/II/2017 of 12 April 2017; Annex 1 has the List of Protected Species.

- 5.3.4 UNTAET Regulation 2000/19 on Protected Places.
- 5.3.5 UNTAET Regulation 2000/17 on the Prohibition of Logging Operations and the Export of Wood from East Timor.
- 5.3.6 Draft Decree Law on Forest Management, draft 7 August 2013.
- 5.3.7 Draft Decree Law on Biodiversity March 2012.
- 5.3.8 Timor-Leste Biodiversity Strategy and Action Plan 2016.

5.4 Mining Legislation

- 5.4.1 Ministerial Diploma 64/2016, Licensing of Mining Activities; Sets the licensing procedures for different types of mining licenses, for mining activities relating to construction materials, certain process materials and ornamental stones. Article 40 requires the submission of monthly reports covering HSE concerns and other matters.
- 5.4.2 Joint Ministerial Resolution 1/2017; This directive states the importance of rocks for the Tibar Bay Port Project, in that without rocks of a certain quality and quantity, the Project is in jeopardy. The use of explosives permit is to be issued, subject to certain conditions. A copy of this directive, in Portuguese, is at Attachment B.
- 5.4.3 Government Resolution 36/2016; Determining that licenses for the extraction of construction materials shall be awarded to companies incorporated in Timor-Leste, and in which Timorese citizens hold the majority of the share capital. However, the Government may provide an exemption to international companies engaged in major public construction projects.

5.5 Land Acquisition Legislation

- 5.5.1 Decree Law 15/2017, Private Investment Law; Article 14, on Land Ownership and Land Use, states that the State guarantees the right to private ownership and use of land for development of investment or reinvestment projects, subject to the limits provided under the Constitution and land legislation.
- 5.5.2 Decree Law 10/2011, Civil Code; Comprehensively covers the management, e.g. rights, purchase, lease, and contractual interpretations, of land and immovable property.
- 5.5.3 Decree Law 6/2017, Basis of Spatial Planning; Provides the mechanism for planning, promotion and development of sectors and regions.

- 5.5.4 Decree Law 8/2017, Expropriations Law; Defining “expropriation” as any legally admissible restriction to private property or related rights or interests, irrespective of the persons or entities to which they belong. Expropriation is only admissible in cases of “public interest” in the use of the asset. The exploitation of petroleum, gas, minerals, and geothermal energy facilities is included in the “public interest” category.

5.6 Agriculture and Fishing Legislation

- 5.6.1 Decree Law 6/2004, Legal Regime for Regulation and Management of Fisheries and Aquaculture; Regulates fishing activities including aquaculture. Article 81 prohibits the introduction into waters of substances likely to harm aquatic life. Article 82 states that authorisation is required, amongst other activities, for any work or installation intended to be carried out in national maritime waters, or in the seafront up until 100 meters from the coastline.

5.7 Labour Legislation

- 5.7.1 Decree Law 4/2012, Labour Law; This law establishes the legal regime applicable to individual and collective labour relations. Article 20 requires an employer, to provide to employees, in addition to other items, good working conditions, with regard to health, hygiene and safety at work. An employer is also required to provide vocational training opportunities. Other health, safety and environmental (HSE) matters are covered in Section IV.

5.8 Other Legislation

- 5.8.1 Decree Law 33/2008, Hygiene and Public Order; Article 2 states that this law is applicable to urban areas. However, in a social responsibility sense, it is prudent to note Article 5 stating the following prohibitions, in addition to others, of releasing polluted water into ditches, depositing refuse on rights of ways, blocking drains, directing drainage onto rights of ways, and making noises that prejudice communication or disturb the peace.
- 5.8.2 Decree Law 9/2016, Sucos Law; Explaining the concept of Sucos, establishing the authorities of Sucos, and the rules for appointments of members of associated bodies.
- 5.8.3 Decree Law 7/2009, Community Leaderships and their Election; Defines community leadership, and sets the rules for the action limits of the

community leadership structures, and the organization and implementation of the process for elections.

5.8.4 Decree Law 43/2015, Tibar Port Public-Private Partnership; Sets the legal framework for Tibar Port, e.g. granting the legal power to the Government to execute the contract for the financing, design, construction and operation of the Port.

5.8.5 National Cultural Policy (2016).

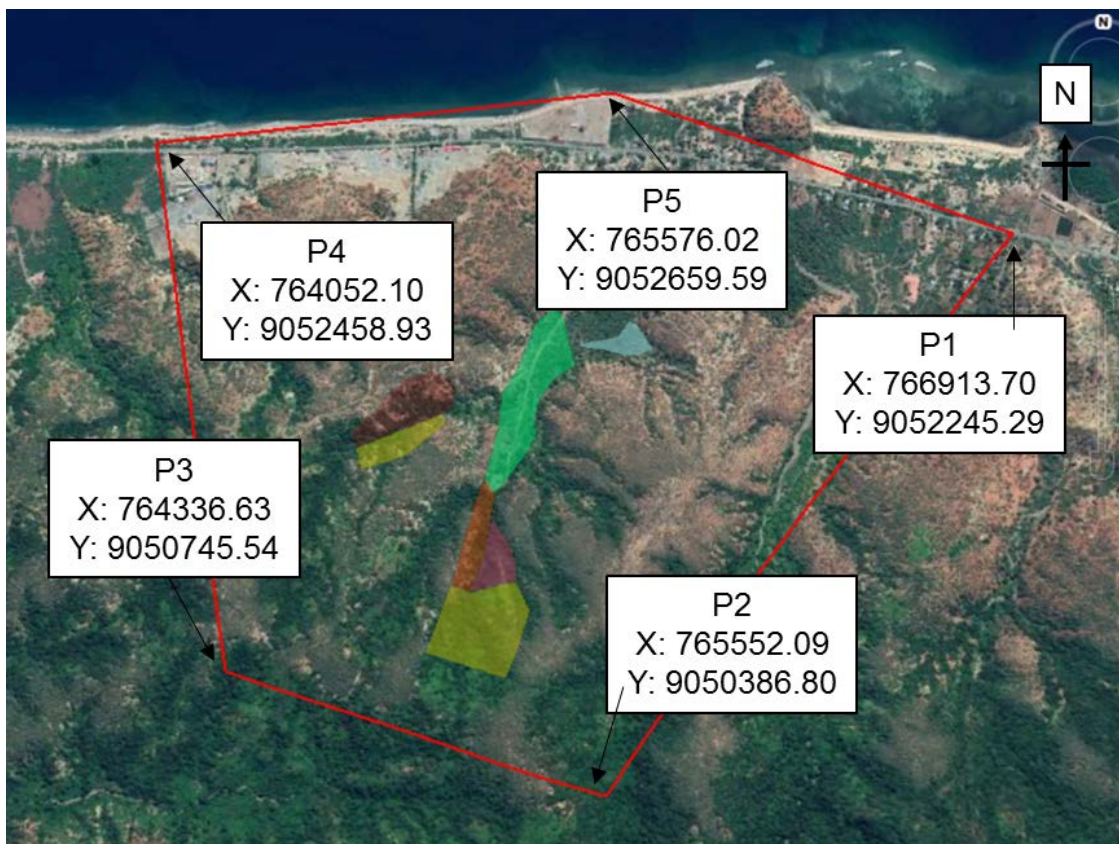
5.9 Other Standards and Guidelines

- 5.9.1 Timor-Leste regulations, e.g. covering health, safety and environmental (HSE), and social matters, will be followed. If local standards do not cover an item of concern, then WHO (World Health Organisation) specifications are referenced. If still not available, then for consistency with the EIS and the EMP for the Tibar Bay Port Project, Australian standards are used as guidance. As an example, the reference standards for noise and vibration are the Western Australian Environmental Protection (Noise) Regulation 1997, and AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites. These 2 documents are referenced at clause 7.10, page 92 of the Advisian Tibar Bay EMP dated 18 Oct 2017.
- 5.9.2 CHEC HSE department keeps copies of the Advisian EIS and EMP documents for the Tibar Bay Port Project; from which interested parties involved with the Quarry Project can obtain information, only relating to legislation, standards, and guidelines from various sources.

6.0 STUDY AREA

- 6.1 The main part of the Study Area in which impacts and evaluations take place, is shown at Figure 6-1A, with corner coordinates included. Other parts of the Study Area cover the entities on the sides of the Dili-Liquica trunk road from the quarry to Tibar Bay, for quarry trucks will use this stretch of road.

Figure 6-1A. Study Area (Red Boundary) (Part 1)



- 6.2 Entities in the study area, highlighted in Figure 6-1A, include:

- 6.2.1 Industrial enterprises, e.g. small-scale quarries with gravel processing and concrete component activities, and the Laiara bulk fuel station with a jetty.
- 6.2.2 Village type dwellings scattered along both sides of the Dili-Liquica trunk road.
- 6.2.3 Educational, religious and recreational facilities. There is a primary school, i.e. the Ensino Basico Filial Caitehu. There is a Church; the Church of Capela da Sagrada Familia. At the rear of the Church is a convent; Irmas Franciscanas de Nosa Senhora das Victorias. There are 2 places, each with one billiards table.

- 6.2.4 Commercial businesses, i.e. 3 small grocery shops, and 2 motorcycle repair shops. There are 2 one-person type fishing boats at the beach behind the primary school.
- 6.2.5 The nearest Clinics are at Ulmera and at Liquica.
- 6.3 From the quarry to Tibar Bay, quarry dump trucks travel along the good condition Dili-Liquica trunk road. This approximately 11 km stretch of road is included in the study area (illustrated at Figures 6-1B and C), as part of transboundary effects, and traffic safety surveys will be conducted.

Figure 6-1B. Entities in the Study Area (Part 2)
(refer to Figure 6-1C for entities further east until Tibar Bay)



Figure 6-1C. Entities in the Study Area (Part 3)



- 6.4 The quarry is in Liquica Municipality, about 25 km west of Dili. The associated districts and villages are shown at Table 6-1.

Table 6-1. Districts and Villages

Location	Name
District	Liquica
Sub-district	Bazartete
Village (suco)	Mota-ulun
Sub-village (Aldeia)	Mota-ikun

- 6.5 The quarry location is bordered by the northern coast at the north, in the southern part with Suco Fahilebo, at the western part with Suco Lauhata, and Suco Tibar in the eastern part. The area is generally hilly, with hills rising to 200 m. Vegetation is sparse, and the few streams are dried-up during the dry season. The nearest community is Mota Ulun with a population of only a few hundred people. The nearest protected area is located at Mount Fatumasin, about 20 km south of the study area, as stated in regulation United Nations Transitional Administration for East Timor (UNTAET) 19/2002.
- 6.6 Regarding transboundary environmental impacts, the quarry affects are localized, i.e. affecting land, the few streams that are dried-up during the dry season, and the neighbourhood. Even though the mining activities are more than 1 km from the seaside, a watercourse evaluation will still be conducted to ensure protection of the marine environment. Cross-boundary impacts from the quarry are concluded after specialist studies on various environmental matters are investigated.
- 6.7 The potential impacts from the proposed project to be further assessed in the EIS phase are shown at Table 6-2.

Table 6-2. Potential Impacts (to be assessed in EIS phase)

SN	Activity	Potential Impact	Local / Transboundary Effect
1	Initial entry into site	Objections from local community	Local
2	Land clearance (1)	Unnecessary destruction of vegetation, and improper disposal of waste vegetation	Local
3	Land clearance (2)	Destruction of flora and fauna	Local

4	Land clearance (3)	Soil erosion and flooding, i.e. interfering with existing water courses	Local and transboundary
5	Trespassing (1)	Antagonizing locals	Local
6	Trespassing (2)	Harm to stray domestic animals	Local
7	Truck movements	Dust and noise pollution, traffic accidents, road obstructions, and spilled gravel	Local and transboundary
8	Machinery operations	Dust, noise and oil pollution	Local
9	Blasting work	Dust and noise pollution, and vibration hazard	Local
10	Influx of workers	Social and health problems	Local and transboundary
11	General operations (1)	Interference with existing businesses	Local and transboundary
12	General operations (2)	Excessive drawing of ground water	Local and transboundary

6.8 The timelines for the key dates of the EIS are shown at Table 6-3.

Table 6-3. EIS Tasks and Milestones

SN	Step	Month					
		1	2	3	4	5	6
1	Background research						
2	Stakeholder engagement						
3	Field Surveys / Assessments						
4	Preparation of draft EIS						
5	Review by Authority						
6	Preparation of final EIS						
7	Approval by Authority						

7.0 SCOPE OF WORK

7.1 Description of the Proposed Project

- 7.1.1 The mining method for the project is that of leaving a stepped pyramid structure (similar to a multi-layered wedding cake) at the end of work. The original height and top features of the hills remain untouched. The rock mining of a hill using explosives, usually consists of the following steps, in general chronological order:
- 7.1.1.1 Building haul roads to the upper-most top part to be mined.
 - 7.1.1.2 Clearing the area to be mined.
 - 7.1.1.3 Drilling of holes for placing explosives.
 - 7.1.1.4 Placing of explosives and blasting.
 - 7.1.1.5 Placing the loosened rocks and other material onto trucks for delivering to the rock crusher.
 - 7.1.1.6 Clearing the next area to be blasted at the same level, followed by above-mentioned activities.
 - 7.1.1.7 Clearing all-round the same level, then going down to the next level about 10 m below, and starting the mining process all over again.
- 7.1.2 The detailed site layout for each component of the quarry is at Attachment C. The final pit designs for quarries (Hill A and Hill B) are at Attachment D.
- 7.1.3 The stone processing yard, and the hills where blasting takes place, are about 1 km and 1.5 km respectively from the main road. The nearest local residences, located at the east of the main entrance, are about 1.5 m away from the stone processing yard. The site location and general layout plan is at Figure 7-1. A detailed layout plan is at Figure 7-2.

Figure 7-1. Location and Site Plan of CHEC Quarry at Mota Ulun

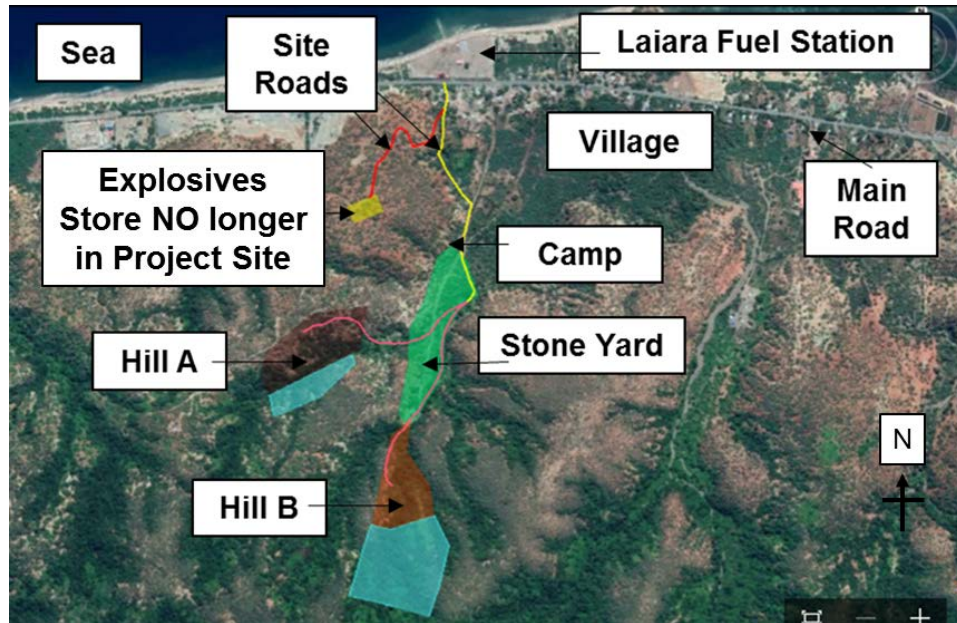
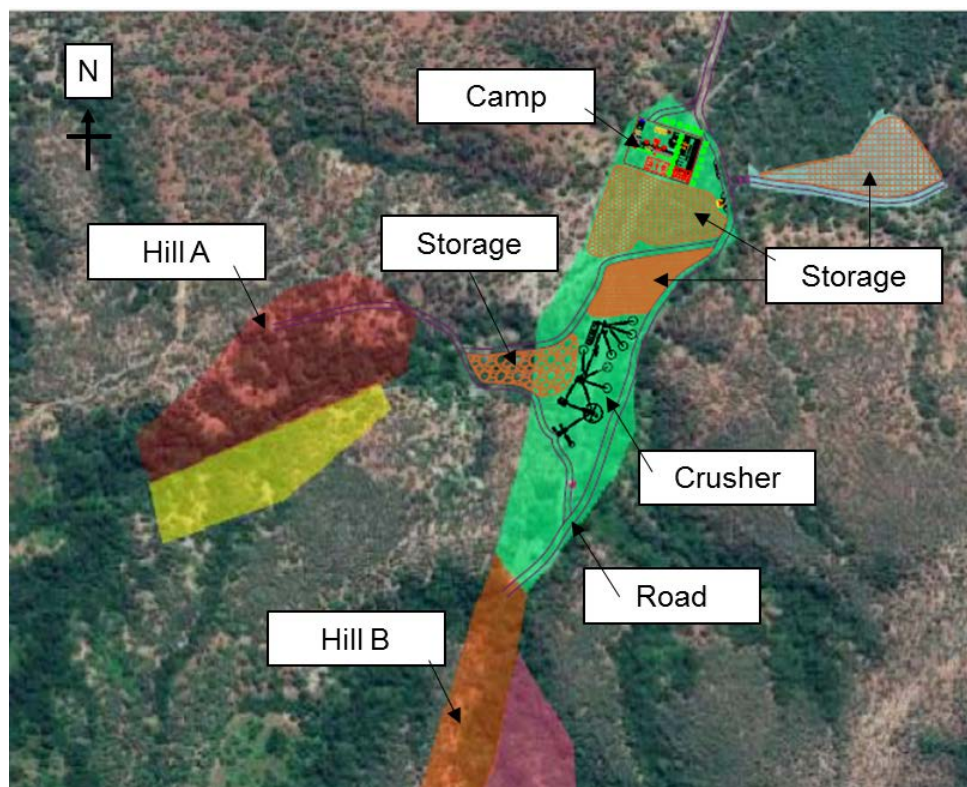


Figure 7-2. Detailed Quarry Layout Plan



- 7.1.4 The conventional method for obtaining rocks is used, i.e. using controlled explosions for breaking up a rock surface, and followed by transporting rocks to a crushing machine for processing into the required smaller sizes. The rock / gravel processing and storage area is about 70,000 m². The rock crushing machine has a capacity of about 300 tons per hour. Recycled water, stored in an enclosed tank, to prevent evaporation loss, is used to water the rocks in the crusher to mitigate against dust pollution. For illustration, a picture of a crusher is at Figure 7-3.

Figure 7-3. Picture of a Crusher



- 7.1.5 The type and number of equipment are shown at Table 7-1.

Table 7-1. Type and Quantity of Machinery

Heavy Machine	Initial setup (first 4 months)	Production
Excavator	4	4
Bulldozer	2	1
Front Loader	2	2
Dump Truck	5	21
Water Tanker	1	2
Fuel Tanker	1	1
Rock Crusher	1	1

- 7.1.6 A separate license application will be made for a proposed temporary jetty about 60 m west of the existing Laiara Bulk Fuel Station. Rocks are transported via barges from this jetty to Tibar Bay for unloading and subsequent use. The requirement for this jetty is as a mitigation measure in case the only road between the quarry and Tibar Bay is not usable, due to all sorts of reasons.
- 7.1.7 The description of the proposed project must have sufficient details for analyzing the environmental and social impacts, and also related health and safety aspects. Initial descriptions start by discussing the need for the quarry, followed by the footprint of the project, e.g. nature, size and location. Specific details, supported by maps and illustrations, cover items including:
- 7.1.7.1 Locations and boundaries of various parts and activities. These are described at Section 6 (Study Area) and Figures 6-1A to 6-1C.
 - 7.1.7.2 Developments relating to mobilization, pre-construction, construction, operations, and decommissioning. These are explained at Attachment E.
 - 7.1.7.3 Relationships with neighbours, i.e. both domestic and commercial, and on-route communities. These are described at Attachment F.
- 7.1.8 Legislation that the project must comply with, and industry practices for guidance, are mentioned, and the methods of ensuring compliance are clearly stated. The relevant legislations are stated at Section 5 of this ToR. A “Compliance with Legislation Requirements” Section is in the EIS.
- 7.1.9 The types of rocks in the quarry are metamorphic-quartzite (85 %) and meta-sandstone (15 %). The former is used for the revetments and the stone columns, and the latter used for only stone columns. About 1,030,000 m³ of rocks is required, over an approximate 3-year timeframe, starting from Mar 2019. The estimated volumes of material to be extracted each year in 2019, 2020 and 2021 are 300,000, 700,000 and 30,000 m³ respectively. The peak monthly production is about 60,000 m³ per month for the 12 months of 2020. A single 320 ton/hr crusher is used.
- 7.1.10 The quarry operating hours are from 8.00 am to 10.00 pm, for all 7 days of a week, except that there is no blasting work on Sundays.
- 7.1.11 The types and quantities of explosives used are stated in Table 7.2. There is only one blast each day, for each day, except on Sundays. The time of blasting is usually set at 11.00 am, or at 5.00 pm. Holes are drilled for inserting explosives. Each blast creates loose rocks about 10 m deep, and a surface area of about 360 m².

Table 7-2. Type and Quantity of Explosives

Type	Total Quantity
Ammonium nitrate	615 tons
Emulsion explosive	10 tons
Non-electric detonator	20,500 each

- 7.1.12 The quarry water usage system is that of using recycled water, in a holding tank of 50 m³ capacity, for spraying on the rock crushing mechanism to reduce dust emission. The housing quarters for 35 persons use about 8 m³ of domestic type water per day. The water is supplied from 2 sources:
- 7.1.12.1 Water tankers that provide water to the local community.
- 7.1.12.2 Bore-holes in the quarry. A location map of the 3 bore-holes in the quarry is at Figure 6 in Attachment C.
- 7.1.13 At the end of quarrying work, the total area cleared for excavation of rocks is approximately 16.85 ha, with 6.1 ha at Hill A and 10.75 ha at Hill B. The removed topsoil is stockpiled for ground rehabilitation as work moves from place to place and at the mine closure stage. Bare earth is not allowed to remain for long periods of time, i.e. revegetated as soon as practicable.
- 7.1.14 The workforce is about 85 persons. A single-storey camp quarter for 35 persons is constructed. The majority of workers, about 50 persons, are from the local Mota Ulun community.
- 7.1.15 At closure stage, facilities at the quarry area include 2 unpaved access roads wide enough for 2 way traffic, and with a total length of about 3,400 m, 3 boreholes for well water, a rain water reservoir measuring 200 m by 100 m and with a depth of 20 m, 3 domestic water tanks (2 with 10 m³ capacity, and a third with 50 m³ capacity), an electrical room connected to government supplied electrical mains, street lights from the main road powered by solar cells, and a single-storey unit for 35 residents with a fence.

7.2 Environmental Description

- 7.2.1 Practically all aspects of the existing environment are covered, with examples including physical, topography, ecological, climatological, economic, social, and cultural components. Baseline conditions are captured. The potential aspects and impacts stated in Tables 7-3 to 7-5 are investigated in greater detail.
- 7.2.2 Baseline studies will be conducted, e.g. covering noise, dust, traffic loading, types and locations of vegetation, and locations and sizes of dried-up streams at the bases of the excavated hills. The profile of the local community is also studied, with the view of determining employment figures before quarry operations, then 6 months later, and finally at yearly intervals. Attachment G has brief descriptions of environmental baseline conditions of the following components: physical, ecological, economic, social, and cultural of the proposed study area.
- 7.2.3 The present state of economic activity is low. Therefore, changes, whether domestic, commercial or industrial, are not expected before the start of project activities.

Table 7-3. Impacts - Environment-related Matters

SN	Potential Impact	Aspects / Impacts
1	Biodiversity	Vegetation clearing, habitat destruction, transit corridor changes, migration routes, caves, roosting areas, wetlands, and groundwater dependent ecosystems
2	Weeds	Introduction of weeds into pristine areas and loss of topsoil
3	Feral animals	introduction of pests and feral animals
4	Drainage / Sedimentation	Changes to surface water catchments, and increased sedimentation from land clearing
5	Noise	Vehicle and construction noise, operational noise, blasting, rock breaker noises, and heavy machinery noise
6	Vibration	Blasting vibration impacts on fauna
7	Solid Waste	Increase in waste materials generated, location of disposal of waste material, and overburden siting
8	Waste water	Run-off of waste water (contaminated), and additional waste water generated from camp and human activities

9	Groundwater	Impact on groundwater on site and surroundings, surface water flows, and water quality impacts from human activities (e.g. sanitation and waste)
10	Air quality (dust)	Blasting dust, traffic dust, excavation dust, and erosion increase due to clearing of vegetation

Table 7-4. Impacts - Economical and Cultural-related Matters

SN	Potential Impact	Aspects / Impacts
1	Loss or reduction in livelihoods	Land use change and reduction in livestock access, community working at quarry for short time periods, and skills development and improvement of employability
2	Employment	Increased employment opportunities, and increased support services opportunities, e.g. shops and transport services
3	Cultural Heritage	Impacts to cultural heritage, and community cultural sites

Table 7-5. Impact - Social-related Matters

SN	Potential Impact	Aspects / Impacts
1	Noise and Vibration	Amenity and human health impacts from noise and vibration, and sensitive receptors
2	Infrastructure	Pressure on existing housing, health and recreational facilities, roads, and water supply services
3	Traffic	Increased truck movements, personnel movements and increased vehicles and motorcycles in the community and on roads to/from Tibar Port
4	Safety	Vehicle/plant interactions, and vehicle/person interactions
5	Visual Amenity	Landscape visual amenity from open quarry area, and land clearing
6	Restricted access	Community grazing areas and common areas for firewood collection, i.e. ecosystem services
7	Population	Increased population and change in population profile of the community

8	Health	Pressure on existing services, and increase in prevalence of sexually transmitted diseases and infections due to increased population
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7.2.4 Field studies are necessary to obtain existing conditions, and extrapolations are done for analysing the consequences of mobilisation, construction, operation and closure of the quarry. Topics covered include:

- 7.2.4.1 Air, land, and water quality, including noise and vibration impacts.
- 7.2.4.2 Flora and fauna significance, e.g. protected or endangered species.
- 7.2.4.3 Location, size and flow of watercourses, and circumstances during wet and dry seasons. Ground water conditions are also studied.
- 7.2.4.4 Land usage, e.g. dwellings, industrial and commercial entities, plantations, raising of livestock, and hunting and gathering.
- 7.2.4.5 Societal factors; covering population, households, family structures, livelihood, health, education, basic essentials, recreation and other social conditions, and matters relating to influx of workers.
- 7.2.4.6 Socially significant items, e.g. religious, historical, cultural, archaeological, heritage, and sacred places and objects.
- 7.2.4.7 Transportation, i.e. types, ancillary structures, and conditions of roads, and traffic loading.

7.2.5 Flora and fauna assessments include:

- 7.2.5.1 Literature review of existing studies and NGO records for the area.
- 7.2.5.2 Consultation with the community to obtain their understanding of habitats in the area.
- 7.2.5.3 Site visits and area surveys by a qualified botanist and a fauna specialist.
- 7.2.5.4 Bat and bird surveys at dawn and sunset to identify and count the presence of fauna.
- 7.2.5.5 Aerial photography interpretation to identify vegetation zones.
- 7.2.5.6 Mapping of vegetation types, distribution and health.

- 7.2.5.7 Mapping of significant fauna habitats, key trees for different species, nesting areas (ground level or in trees), and other suitable nearby habitats.
- 7.2.5.8 Classification of species against the International Union for the Conservation of Nature (IUCN) Red List.
- 7.2.6 Air, land, and water quality assessments cover matters including:
 - 7.2.6.1 Noise and vibration impact assessment model, e.g. boundary of the noise from a blast, other quarry operations, and truck movements, and the proximity of the boundary to the nearest sensitive receptor.
 - 7.2.6.2 Groundwater impact assessment, e.g. depth of benches/pits, the dewatering boundary, groundwater intersected in the geotechnical drilling, water level in background boreholes, water supply location for dust suppression at the crusher and domestic water for the camp and for workers, need for closure of boreholes, and location maps of boreholes.
 - 7.2.6.3 Dust and air quality impact assessments from rock crushing, rock stockpiling, blasting and road travel, e.g. prevalent wind direction, dust generated by crushing and loading/tipping activities, frequency and duration of dust travel to the nearest sensitive receptor, frequency of water spraying, and baseline conditions at the nearest sensitive receptor.
- 7.2.7 For the quarry, a subsequent level lower study will provide details on intra-quarry matters, with areas of coverage including:
 - 7.2.7.1 The quarry proper, e.g. site layout, extraction areas, extraction methods, machinery and stockpiles.
 - 7.2.7.2 The quarry supporting utilities, e.g. housing quarters, water and electricity supplies, and waste management.
 - 7.2.7.3 The quarry equipment, e.g. type and quantity, usage, fuel consumption and supply, maintenance and repair needs, and impacts on climate change.
 - 7.2.7.4 The quarry personnel, e.g. employment conditions, workplace welfare, transport, and retrenchment at quarry closure stage.
- 7.2.8 The items stated in Section 7.2 are further described at Attachment H, i.e. identification of the tasks, information to be collected, studies to be carried out, methodologies to be used and any other tasks in order to facilitate the assessment of environmental components in the proposed study area during the EIS study phase.

7.3 Alternative Analysis

- 7.3.1 Discussions on alternatives start on the premise that the engineering design of the Tibar Bay Port is finalised, and that rocks are required for constructing revetments for shore protection against sea waves, and for ground improvement to strengthen against earthquakes. Therefore, a “no quarry project” scenario is not practical.
- 7.3.2 The rocks should not be imported, for imports cause significant revenue and other economic loss to the country due to the required large quantity that is readily available locally. Also, local quarries provide opportunities for improving the extractive type of industries by building-up the components of people, machinery and logistics needed for quarry operations. This scenario is readily feasible because of the large amounts of minerals in the mountains of Timor-Leste.
- 7.3.3 The selection of the location for a quarry usually considers the following factors:
- 7.3.3.1 Quantity and quality of material.
 - 7.3.3.2 Favourable terrain, e.g. ease of access and transportation.
 - 7.3.3.3 Availability of the workforce.
 - 7.3.3.4 Proximity to protected or endangered or unique species and vegetation.
 - 7.3.3.5 Proximity to religious, historical, cultural, archaeological, heritage and sacred sites.
 - 7.3.3.6 Proximity to wetlands or nature reserves.
 - 7.3.3.7 Compatibility with existing or planned usage.
 - 7.3.3.8 Harmony with the local community. Evictions, resettlements, dispossession of land and assets, destruction of dwellings and other structures, and economic deprivation, are examples of disharmony that might or might not be beneficial.
- 7.3.4 An analysis of the reasons why a quarry is required and why the quarry at Mota Ulun is selected is discussed as follows:
- 7.3.4.1 Highly favourable scores for the many factors stated at above.
 - 7.3.4.2 There are no disadvantages with the Mota Ulun site.

- 7.3.4.3 No other location is better than the Mota Ulun site.
- 7.3.4.4 Rocks are needed for strengthening the ground of Tibar Port to withstand an earthquake.
- 7.3.4.5 The size of the quarry cannot be reduced due to the amount of rocks required.
- 7.3.4.6 Explosives are required for excavation because of the hardness of the rock material. Other methods, e.g. using excavators, are not feasible.
- 7.3.4.7 Only crushers can be used to reduce rocks to the required sizes. There is no other technology.
- 7.3.4.8 In worst case scenarios of an environmental license cannot be granted to the current proposed quarry site, or the materials could not meet the Tibar Port project demand, then the processes for quarry selection and application for various types of permits start all over again.

7.4 Determination of the Potential Impact of the Project

- 7.4.1 When discussing potential impacts, the EIS makes distinctions for better evaluation, and considers:
 - 7.4.1.1 Direct and indirect impacts, including global impacts, e.g. climate change. Other types of cross-boundary impacts from the quarry are concluded after specialist studies on various environmental matters are investigated.
 - 7.4.1.2 Positive and negative impacts.
 - 7.4.1.3 Short, medium and long term impacts, including cumulative impacts.
- 7.4.2 The types and durations of activities that cause each impact are stated, and cover all phases of the life cycle of a quarry; from mobilisation, to pre-construction, to construction, to operations, and finally to decommissioning. The significance of each impact is also mentioned. Where practical, a monetary cost is placed against each impact, and the mitigation measures.
- 7.4.3 Attachment I has further discussions of impacts, e.g. with distinctions covering potential significant positive and negative impacts, direct and indirect impacts, cumulative impacts, cross-border impacts, global impacts, including climate change impacts, long-term, medium-term and short-term impacts in every phase of the project.

7.5 Analysis and Evaluation

- 7.5.1 The specialist for each area determines the method for evaluation of environmental impacts for each specific area. The reasons for the identification and selection of the method are stated. Generally, a methodology for classification of impacts and weighing of significance can be based on receptor exposure, covering:
- 7.5.1.1 Vulnerability; type and number of receptors, resilience and avoidance.
 - 7.5.1.2 Duration; short term, medium term, long term, and permanent.
 - 7.5.1.3 Location; localized or further spread of the impact.
 - 7.5.1.4 Cost; exposure reduction, and restoration to baseline.
- 7.5.2 Analysis and evaluation start by determining the scope of the work, type of information to collect, the collection procedure, the time periods, required personnel (both quantity and expertise level), the instruments, the test agencies, the reference standards, and the compulsory sections of the final reports for each area of interest.
- 7.5.3 After reports from each topic of interest are received, assessments are done to determine the:
- 7.5.3.1 Need for changing or redefining criteria or indicators.
 - 7.5.3.2 Need for further data collection, e.g. to evaluated new impacts.
 - 7.5.3.3 Significance of identified impacts.
 - 7.5.3.4 Determination of baseline readings.
 - 7.5.3.5 Proposed mitigation measures.
 - 7.5.3.6 Residual risk level.
- 7.5.4 Further analysis and evaluation of impacts can be found in the following Attachments:
- 7.5.4.1 Attachment J. Describing the key potential adverse impacts identified during the scoping phase (detail assessment of these impacts will be done in EIS study).
 - 7.5.4.2 Attachment K. Prediction of methods to be used to assess impacts and determine criteria and standards to be used for impacts evaluation.

- 7.5.4.3 Attachment L. A matrix containing information covering impact mitigation measures, mitigation responsibilities and mitigation cost, and impact monitoring (parameters, frequency, means of verification and monitoring responsibility).
- 7.5.5 In the EIS, a “Summary of Impacts and Mitigation Measures” is required for easy reference, and also to guide the follow-on EMP document.

7.6 Environmental Management Plan

7.6.1 The EMP, derived from the EIS, has the following components:

- 7.6.1.1 Coverage from start of project to operations to decommissioning.
- 7.6.1.2 In addition to environmental factors, economic and social factors are also included.
- 7.6.1.3 Listing the impacts, the significance of each impact, the mitigation measures to completely avoid, to reduce or to compensate for impacts, and the residual risks.
- 7.6.1.4 Monitoring requirements, e.g. methodology, locations, frequencies and responsibilities.
- 7.6.1.5 Estimated costs of the mitigation measures.
- 7.6.1.6 Types of reports and persons responsible for the reports.
- 7.6.1.7 Training needs to build-up local competency in environmental management matters.
- 7.6.1.8 Continuous improvement of environmental management actions.

7.6.2 A summary of the EMP is added to the EIS; for easy reference, and completeness.

7.7 Public Consultation

- 7.7.1 For a Project to be successful, a clear understanding of the stakeholders and an engagement strategy is essential for building better relationships with the societies in which a company operates, and also for improving business planning and performance. Conversely, if not managed properly, there will be considerable risks to the Project.
- 7.7.2 The stakeholders can generally be categorized into the following 4 main groups:
- 7.7.2.1 Partnership. These stakeholders have the highest interest and the greatest influence on the Project. There is usually a contractual relationship with shared accountability with two-way joint learning, decision making and actions. Communications are regular and with designated participants.
 - 7.7.2.2 Regulatory. Government agencies with regulatory oversight on particular activities, and with authoritative influence. There are ad-hoc site visits.
 - 7.7.2.3 In-directly Affected Parties. These consist of non-government organizations (NGO) and the media, e.g. newspapers, that has no responsibility for the company's activities, or duty to correct any activity. The NGO and the media, even if not affected by the project, can effectively voice the grievances of locals.
 - 7.7.2.4 Directly Affected Parties. These are the communities around the worksites, i.e. directly affected by activities.
- 7.7.3 As stated at above, the first group is bound by contract. The second group is regulatory. These 2 groups are legally unavoidable. The third group is a pressure group, and might be avoidable. The fourth group, i.e. the local community is crucial, and public consultation is essential towards ensuring harmony, for without peace, there cannot be progress.
- 7.7.4 Public consultation has the following guidelines:
- 7.7.4.1 Involve the local community early, i.e. as soon as possible. Rumours and subsequent denials or confirmation show a lack of planning.
 - 7.7.4.2 Be forthright. A development can be detrimental in the short-term, but bring greater rewards in the medium to long-terms. The slightest evidence of a hidden agenda can snowball to disastrous consequences.
 - 7.7.4.3 Present both the good and the bad.

- 7.7.4.4 Accurately take notes. One-sided notes are not worth reading for there are only skewed views, and other opinions are not presented.
- 7.7.5 Public consultations are fundamental because:
 - 7.7.5.1 The buy-in of the local community is essential in building trust.
 - 7.7.5.2 Involving the public in preparation of the EIS increases understanding and acceptance.
 - 7.7.5.3 Opportunities are available to raise concerns, some of which might not be obvious to the team from the Proponent.
 - 7.7.5.4 A sense of “togetherness” is created.
- 7.7.6 There are 2 types of public consultations for a local community, that usually does not have newspapers, or television or radio sets. The first is that of formal town-hall gatherings, with official invitations to community leaders, with an Agenda, with attendance sheets and note taking, and where seats, and refreshments are provided. Questionnaires are prepared, handed out and collected at the end of the meeting. A formal report is prepared by the CHEC Community Liaison Officer and submitted to the team preparing the EIS and the EMP, for inclusion in these 2 latter documents.
- 7.7.7 The second type of public consultations is that of the CHEC Community Liaison Officer regularly visiting as many households as practicable; to provide information about activities, gather feedback, as part of the Grievance Management process, and also to give a personal touch. These visits continue throughout the life of the quarry, and for a short period after decommissioning.
- 7.7.8 The public consultation process is guided by Ministerial Directive 47/2017; Regulation on public consultation procedures and requirements during an environmental assessment process. The CHEC Community Liaison Officer has the responsibility of ensuring that engagement methods are prepared, and that public consultations are properly and adequately carried out, covering, e.g.:
 - 7.7.8.1 Creating a table that identifies directly affected parties and indirectly affected parties.
 - 7.7.8.2 Details around actual stakeholders identified, e.g. Suco chief, names of community members, government officials and representatives of NGO groups.
 - 7.7.8.3 Consultations for the TOR, e.g. publicity, access, comments on documents, meetings and records.

- 7.7.8.4 Evidence of consultations undertaken, with photographs and notes/minutes of meetings covering key issues raised in each forum.
- 7.7.9 As part of the due diligence process in gathering information about the local population profile, a survey is conducted, covering type of dwellings, water supply, domestic animals, household size, make-up of persons in each household, education level, and type of employment. About 6 months after the quarry starts operations, and at yearly intervals, surveys will be conducted to find-out the effects on the community, especially on indicators of growing prosperity, e.g. employment rate, ownership of motorcycles, and better types of dwellings.
- 7.7.10 The names of respective stakeholders to be engaged in the public consultation activities can be found at Attachment M.

8.0 FLEXIBILITY

- 8.1 If there are any circumstances that require changes to be made in the EIS and EMP aside from those stated under this ToR, there is flexibility given to expand the contents of the EIS/EMP to ensure that these new issues are adequately covered, without any compensation being due to the proponent.



9.0 NON-TECHNICAL SUMMARY

9.1 The Non-Technical Summary in Tetum and English is at Attachment N.



Quarry (Mota Ulun)
Terms of Reference (ToR)

ATTACHMENT A. PROJECT PROPONENT LEGAL DOCUMENT

FIRMA: CHINA HARBOUR TIMOR, LDA.
REGISTERED NAME:
NARAN KOMPANHIA
NAMA PERUSAHAAN

NÚMERO ÚNICO DA EMPRESA (TIN): 1190065
ENTERPRISE UNIQUE NUMBER (TIN)
NÚMERO ÚNICO KOMPANHIA NIAN (TIN)
SATUAN NOMOR UNIK PERUSAHAAN (TIN)

SEDE EM: TIMOR PLAZA, COMORO, DOM ALEIXO, DILI
MAIN OFFICE ADDRESS
SEDE HIA
ALAMAT KANTOR PUSAT

ATIVIDADES COMERCIAIS AUTORIZADAS: 412 - CONSTRUCTION OF BUILDINGS (RESIDENCIAL AND NON RESIDENCIAL)
COMMERCIAL ACTIVITIES AUTHORIZED 412 - CONSTRUÇÃO DE EDIFÍCIOS (RESIDENCIAIS E NÃO RESIDENCIAIS)
ATIVIDADE KOMERSIAL SIRA NUTEBE AUTORIZADA
KEGIATAN USAHA YANG DIIZINKAN

DATA DE EMISSÃO: 09/04/2018
ISSUED ON
LORON HASAI
TANGGAL DIKELUARKAN

VÁLIDA ATÉ: 09/04/2020
VALID UNTIL
LORON HAMATE
BERLAKU SAMPAI

EMITIDA NOS TERMOS DO DECRETO-LEI N. 35/2012.
ISSUED IN ACCORDANCE WITH THE DECREE-LAW 35/2012.
HASAI TUR DEKRETO-LEI N. 35/2012
DIKELUARKAN BERDASARCAN UNDANG-UNDANG NOMOR 35/2012.

Autenticação do SERVE
SERVE's Authentication
Autentikasan SERVE
Otentifikasi SERVE



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ATTACHMENT B. JOINT MINISTERIAL DIRECTIVE 1/2017 ON EXPLOSIVES



DESPACHO CONJUNTO.º 1 /2017

MINISTRO DO INTERIOR, MINISTRA DAS FINANÇAS, MINISTRO DAS OBRAS PÚBLICAS, TRANSPORTES E COMUNICAÇÕES E MINISTRO DO PETRÓLEO E RECURSOS MINERAIS

Considerando que:

A) O Governo assinou, no dia 3 de junho de 2016, o Contrato de Concessão da Parceria Público Privada para desenvolvimento do novo Porto deTibar com a Concessionária Timor Port, S.A., para a concepção, construção, financiamento, execução, exploração e gestão do Porto de Tibar, em regime de concessão de serviço público;

B) O projeto do Porto de Tibar é um projeto de reconhecido interesse público nacional, uma vez que se trata da construção do único porto de águas profundas do país, essencial para o desenvolvimento económico e social da República Democrática de Timor-Leste;

C) De acordo com o referido Contrato de Concessão, a Concessionária deve começar as obras e construção do Porto de Tibar em Dezembro de 2017, com garantia de qualidade e durabilidade do mesmo por um período de 60 a 100 anos;

D) As referidas obras requerem a construção de aproximadamente 800 metros de revestimento de taludes com rochas e utilização de grandes quantidades de agregados ebetão, que se estimam equivalentes à atual produção anual de agregados rochosos em Timor-Leste;

E) A construção do revestimento dos taludes do Porto de Tibar requer, por um lado, a utilização de rochas de várias dimensões entre 10 kg e 900 kg que assegurem a estabilidade e durabilidade da estrutura, sendo que a atual produção convencional de agregados rochosos não permite a aquisição de rochas com as referidas características e, por outro lado, poderá requerer trabalhos subaquáticos de remoção de material rochoso que não seja possível remover com recurso a trabalhos mecânicos de dragagem;

F) A obtenção de agregados rochosos com as características técnicas enunciadas, bem como os trabalhos de dragagem em caso de aparecimento inesperado de rochas de grandes dimensões, só serão possíveis efetuar em condições com recurso a uso de explosivos;

G) A ausência de autorização para o uso de explosivos põe em risco não só os prazos de construção acordados contratualmente, como também a viabilidade económica e financeira do projeto;

H) A Concessionária encontra-se atualmente em fase de avaliação das propostas das empresas de construção, cujos contratos serão adjudicados em Setembro de 2017, sendo necessária a obtenção da autorização para o uso de explosivos previamente à referida adjudicação;

I) O Decreto-Lei n.º 43/2015, de 28 de Dezembro, que estabelece o regime jurídico específico da Parceria Público Privada para o Porto de Tibar determina que devam ser obtidas as necessárias licenças ou autorizações administrativas para a construção, nos termos da lei aplicável;

J) A única lei aplicável e em vigor em matéria de explosivos é o Regulamento UNTAET N.º 2001/5 sobre explosivos em Timor-Leste, que estabelece que o membro do gabinete responsável pela Polícia e Serviços de Emergência será investido de autoridade para conceder, em circunstâncias especiais, uma licença permitindo o uso de explosivos;

K) Atendendo à Lei Orgânica do VI Governo Constitucional, o membro do Governo responsável pelas áreas da segurança interna, e bem assim, pela Polícia e Serviços de Emergência existentes, é o Ministro do Interior, a quem compete, nos termos do referido Regulamento UNTAET N.º 2001/5, autorizar, em situações excepcionais, o uso de explosivos;

L) O artigo 28.º do Decreto-Lei n.º 6/2015, de 11 de março, estabelece que o membro do Governo responsável pela actividade extractiva de minérios é o Ministro do Petróleo e Recursos Minerais, e o Diploma Ministerial n.º 64/2016, de 16 de Novembro, por sua vez, estabelece as regras específicas de licenciamento de actividades de exploração mineral;

M) Nos termos da alínea i) do artigo 2.º do Decreto-Lei n.º 35/2015, de 16 de setembro, que aprova a Orgânica do Ministério do Interior, são atribuições do Ministério do Interior “...controlar as actividades de importação, fabrico, armazenamento, comercialização, licenciamento, detenção, transporte, uso e porte de armas, munições e explosivos, sem prejuízo das atribuições próprias de outros órgãos do Governo”;

N) A autorização excepcional para a importação, transporte, armazenamento e uso de explosivos circunscreve-se à construção do Porto de Tibar, designio nacional e projeto de interesse público, cuja competência em matéria de execução compete aos membros do Governo responsáveis pelas áreas das finanças e das obras públicas e transportes;

Assim, nos termos e para os efeitos do Decreto-Lei n.º 43/2015, de 28 de Dezembro, que estabelece o regime jurídico específico da Parceria Público Privada para o Porto de Tibar, ao abrigo das disposições conjugadas da alínea i) do artigo 2.º do Decreto-Lei n.º 35/2005, de 16 de setembro e do artigo 3.º, 1 do Regulamento da UNTAET N.º 2001/5 sobre armas de fogo, munições e explosivos em Timor-Leste, no que respeita ao licenciamento para importação, posse, transporte e uso de explosivos, os membros do Governo responsáveis pelas áreas das finanças, obras públicas e transportes e segurança interna determinam o seguinte:

1. Autorizar, a título excepcional, a importação, transporte, armazenamento e uso de explosivos estritamente necessários à construção do Porto de Tibar, nos termos e condições gerais estabelecidas no Regulamento UNTAET N.º 2001/5, e nos termos e condições específicas estabelecidas no Anexo I ao presente despacho;

2. Fixar as condições específicas de importação, transporte, armazenamento e uso de explosivos estritamente necessários e circunscritos à construção do Porto de Tibar, que constitui o Anexo I;



Quarry (Mota Ulun)
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3. A presente autorização administrativa para a importação, transporte, armazenamento e uso de explosivos não derroga a obrigação de obtenção das necessárias licenças ou autorizações administrativas para actividades extrativas e pedreiras e respetivo licenciamento ambiental;

4. O incumprimento total ou parcial de qualquer uma das condições específicas estabelecidas no Anexo I determina a revogação automática da autorização administrativa conferida;

5. Caso venha a ser aprovada nova legislação sobre o uso de explosivos, deve a mesma ser integralmente cumprida a partir da sua entrada em vigor, sem prejuízo das atividades que tenham sido, entretanto, desenvolvidas ao abrigo da presente autorização administrativa, nos termos do Regulamento UNTAET N.º 2001/5 e do Anexo I.

O presente despacho entra em vigor na data da sua assinatura.

16 de agosto de 2017

O Ministro do Interior
Longuinhos Monteiro

A Ministra das Finanças,
Santina Jose Rodrigues Ferreira Viegas Cardoso

O Ministro das Obras Públicas, Transportes e Comunicações
Gastão de Sousa

O Ministro do Petróleo e Recursos Minerais
Alfredo Pires

File Note: The Annexes are not shown in this document

ATTACHMENT C. QUARRY – LAYOUT OF MAIN COMPONENTS

1. The main layout plan of the quarry is at Figure 1. Figures 2 to 6 are “expanded” from Figure1.

Figure 1. Layout Plan of the Quarry

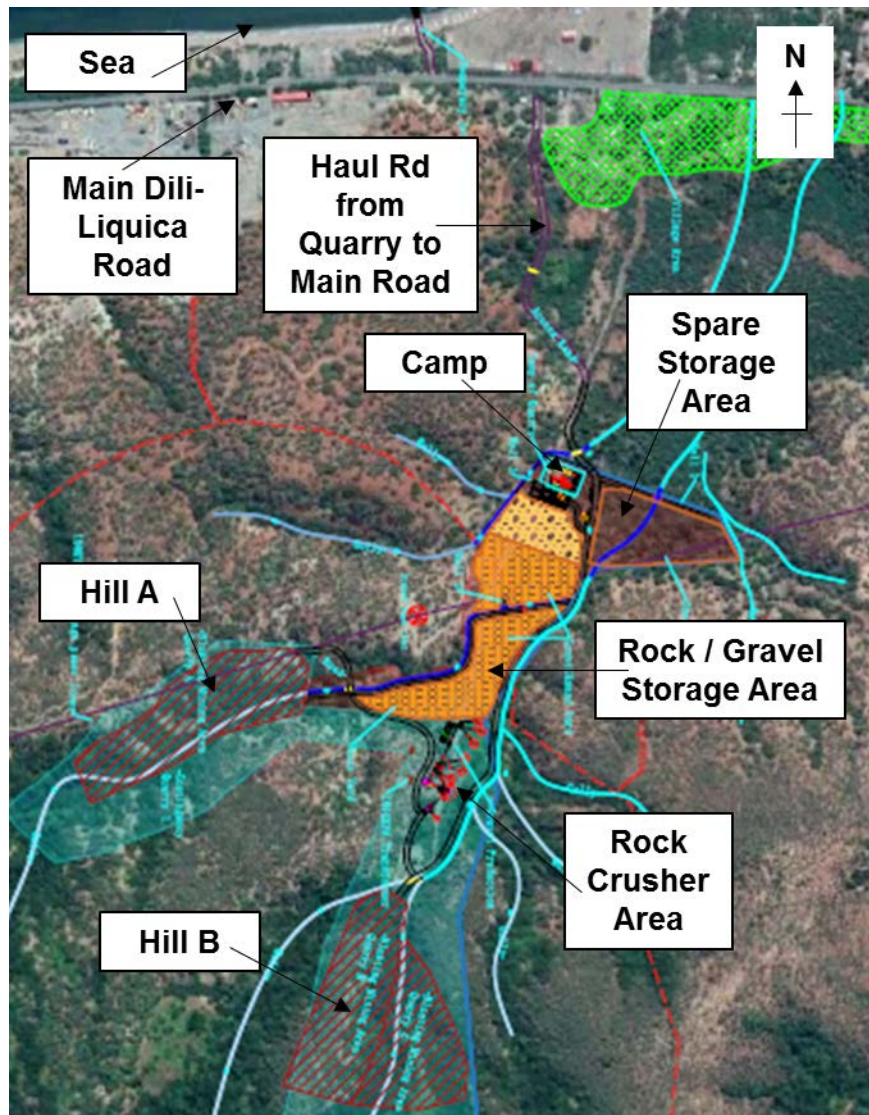


Figure 2. Layout of Camp (Accommodation Block)

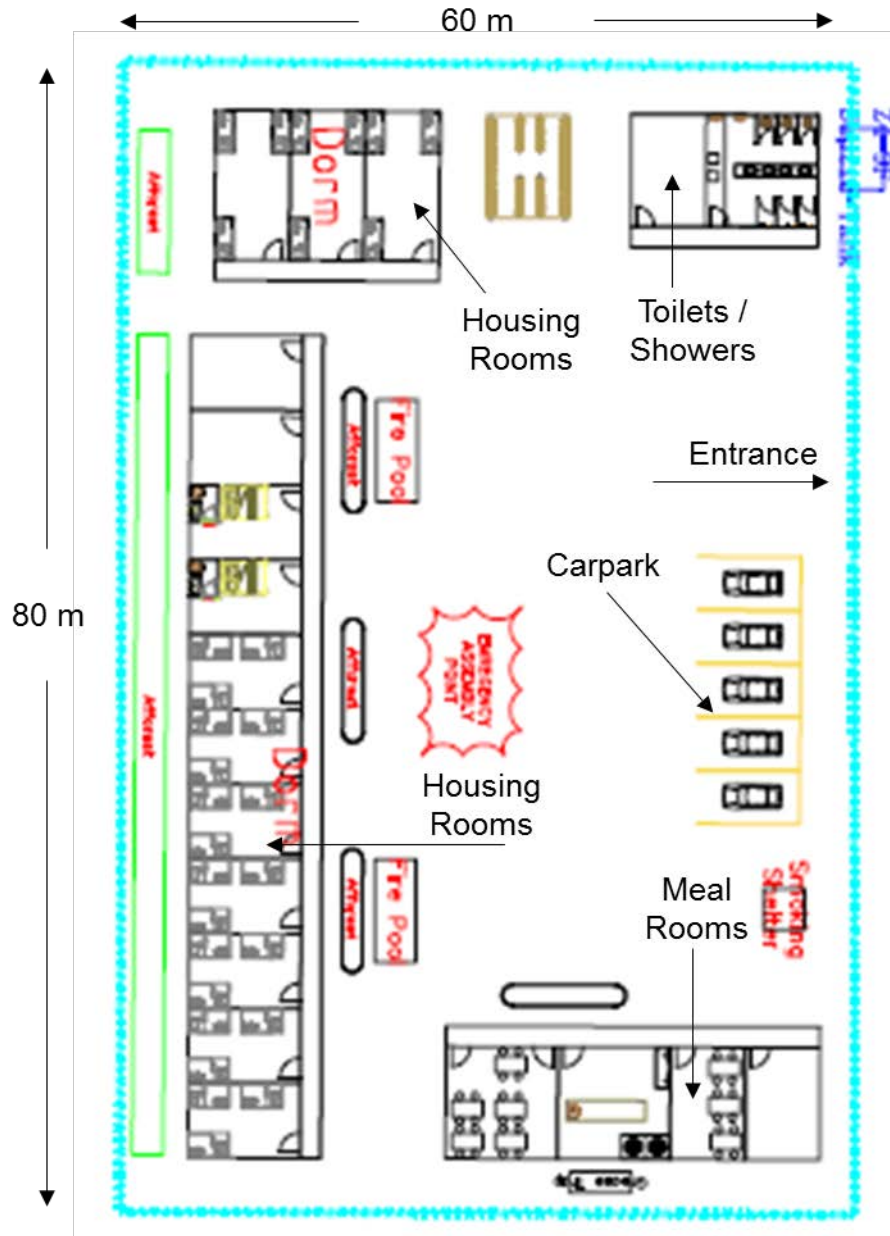


Figure 3. Layout of the Rock Crusher

Note 1. The “rectangular” footprint of the crusher unit is approximately 200 m by 80m.

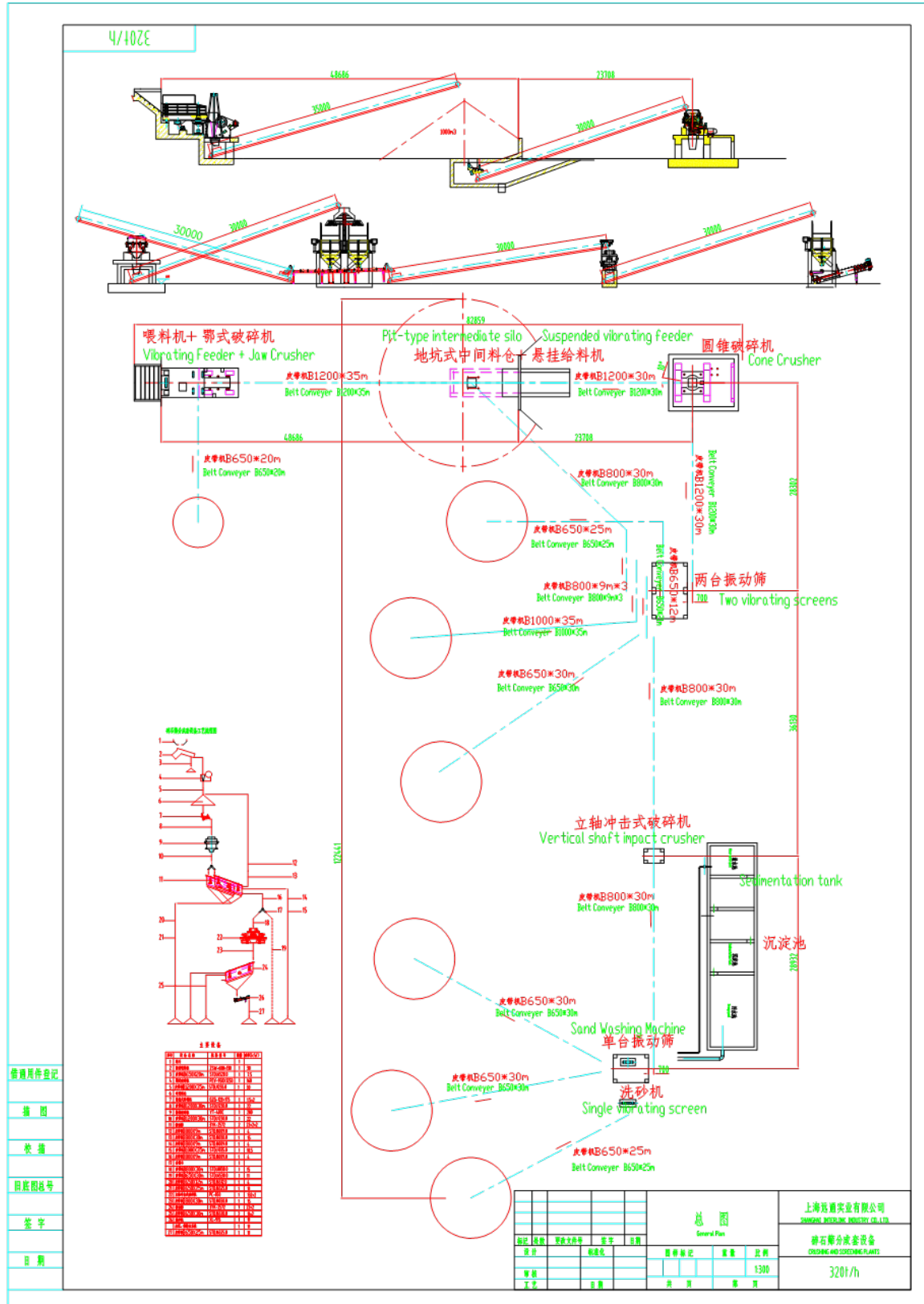


Figure 4. Layout of Hill A

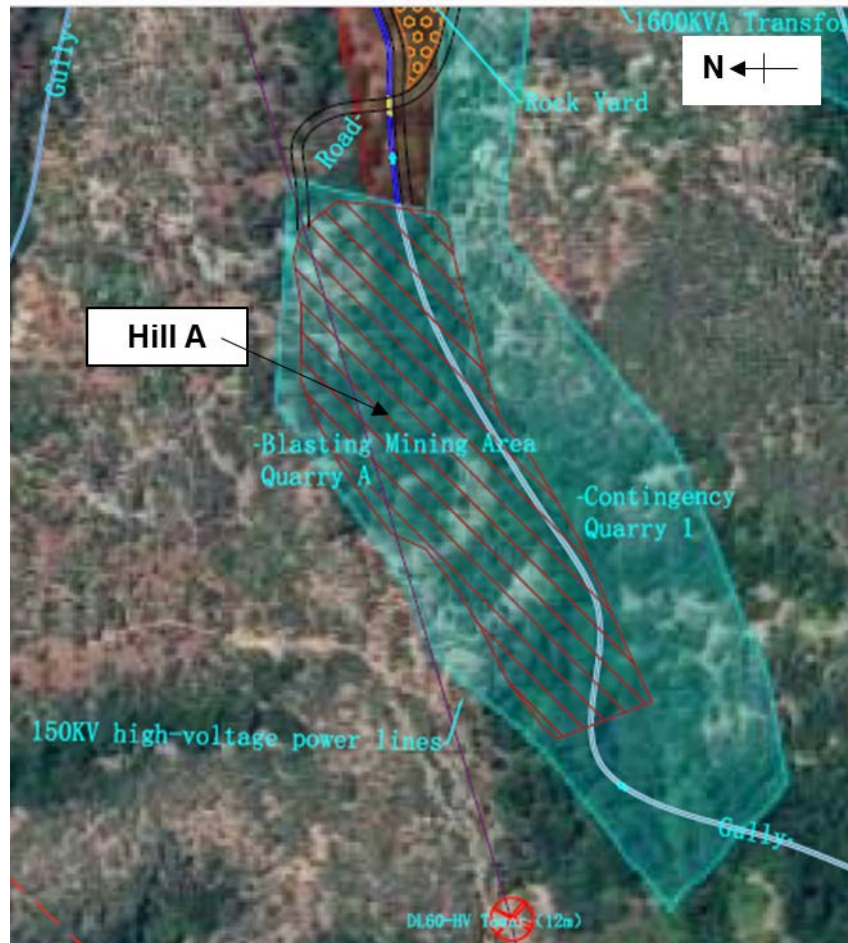
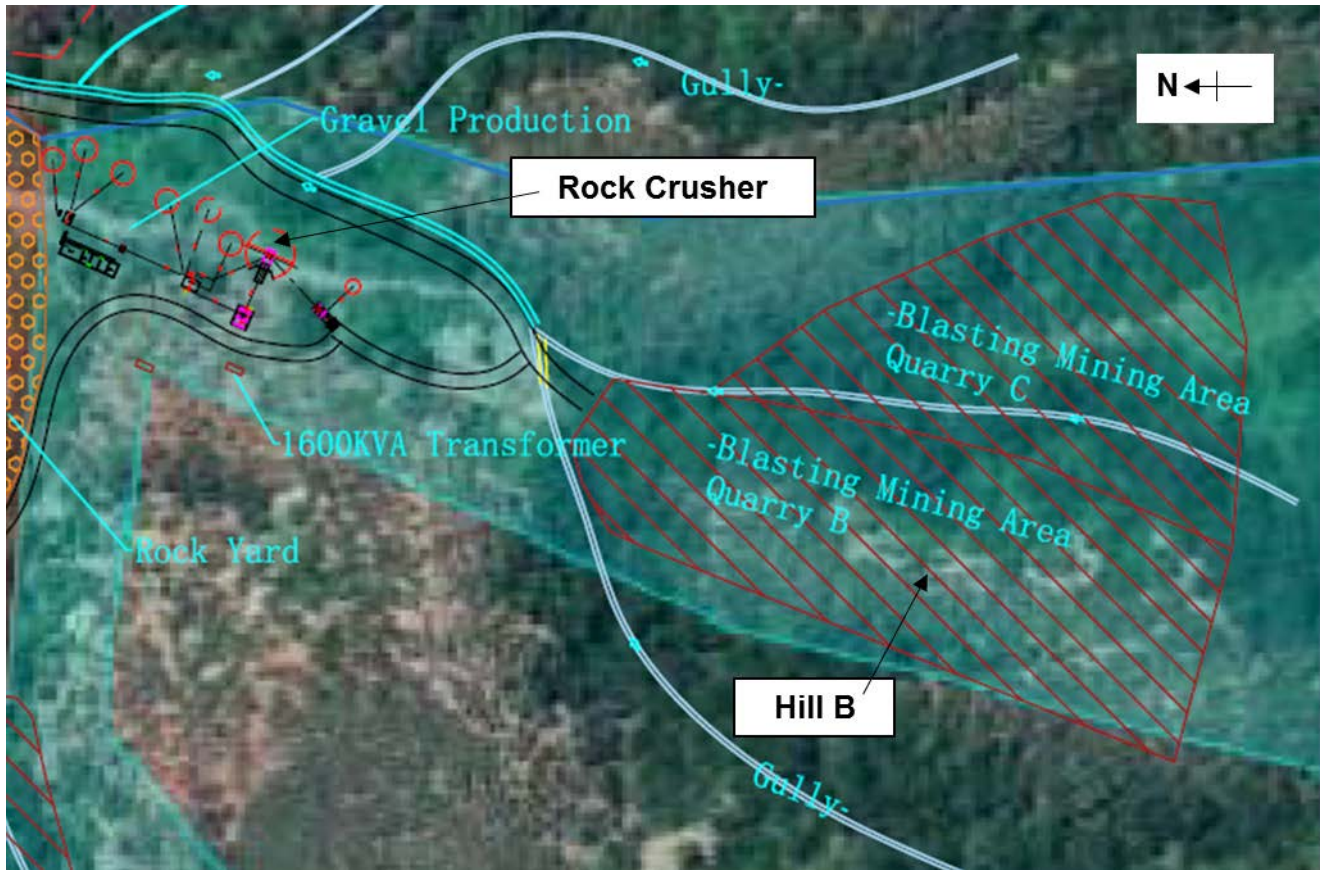
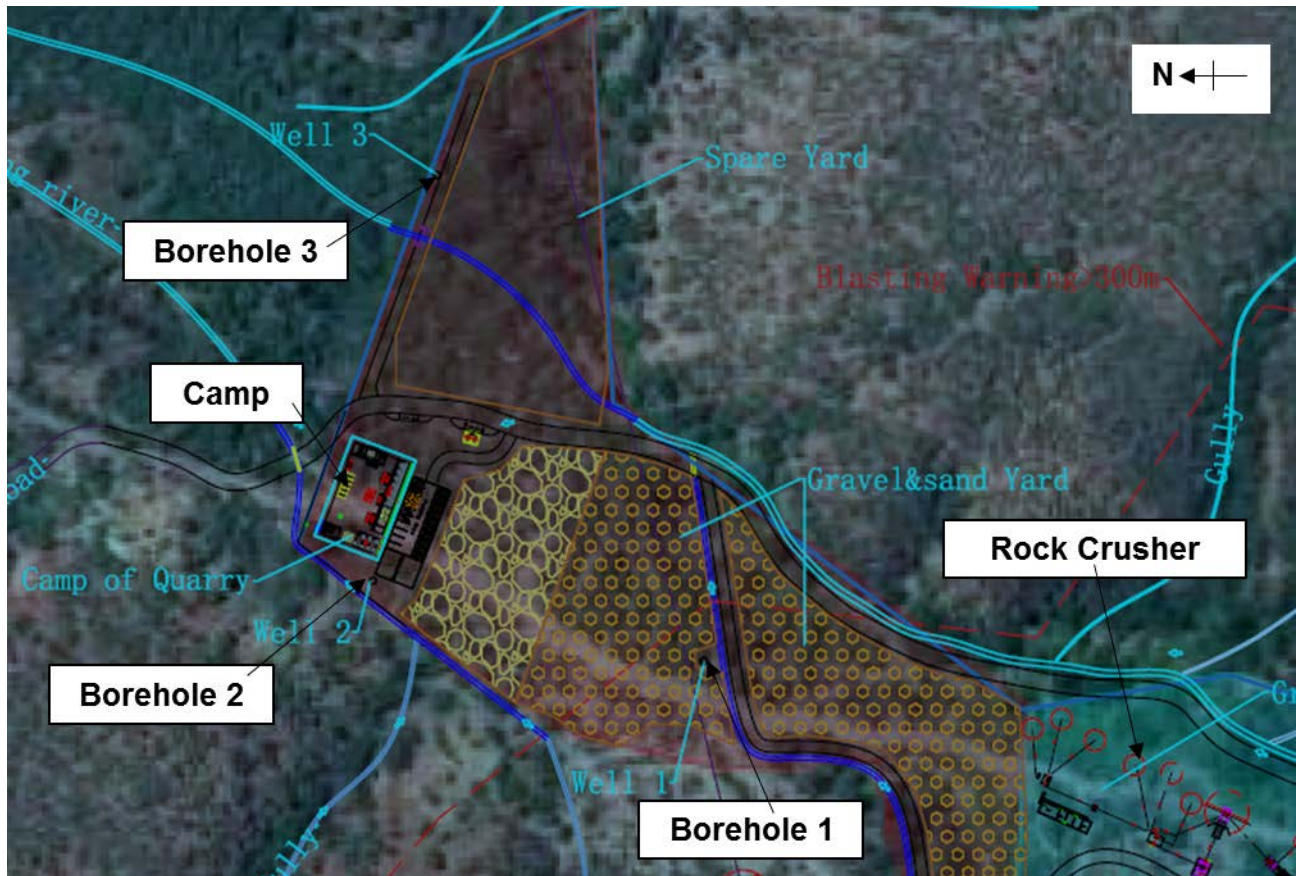


Figure 5. Layout of Hill B



**Figure 6. Locations of 3 Boreholes
(for domestic and construction water)**



ATTACHMENT D. FINAL PIT DESIGNS OF HILL A AND HILL B.

- The final pit designs of Hills A and B are shown at Figures 1 and 2.

Figure 1. Hill A - Final Bench Plan

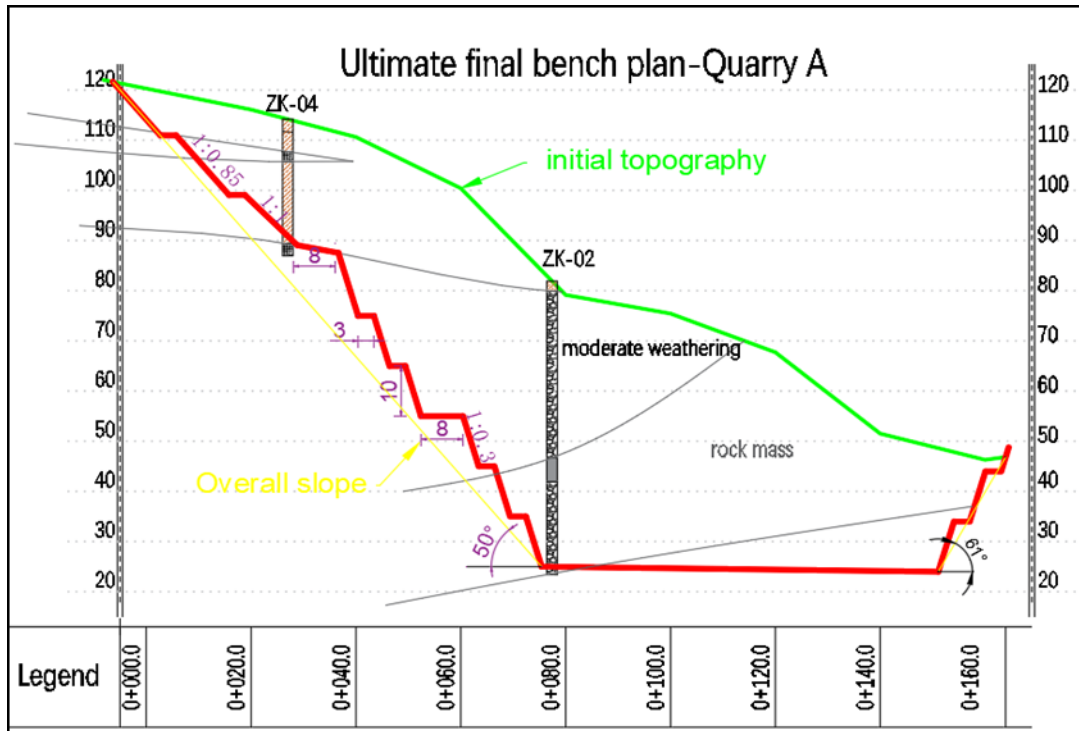
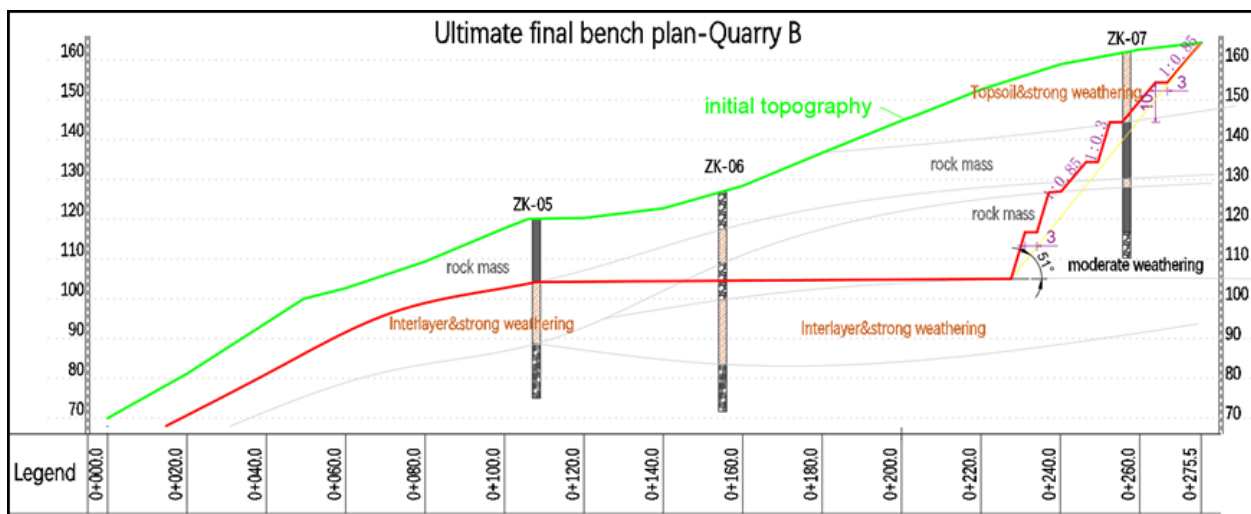


Figure 2. Hill B - Final Bench Plan



ATTACHMENT E. DEVELOPMENTS RELATING TO PHASES OF THE PROJECT

- Developments relating to mobilization, pre-construction, construction, operations, and decommissioning are stated in Table 1.

Table 1. Identification of Impacts

SN	Impact	Generator	Mobilisation	Pre-Construction	Construction	Operation	De-commissioning
1	Dust	Use of machinery and explosives	Yes	Yes	Yes	Yes	Yes
2	Noise	Use of machinery and explosives	Yes	Yes	Yes	Yes	Yes
3	Vibration	Use of explosives	No	No	No	Yes	No
4	Polluted Water	General Waste	No	Yes	Yes	Yes	Yes
5	Flooding	Land Clearance	Yes	Yes	Yes	Yes	Yes
6	Silt	Land Clearance	Yes	Yes	Yes	Yes	Yes
7	Traffic Congestion and Accidents	Truck Movements	No	Yes	Yes	Yes	Yes
8	Destruction of flora and fauna	Land clearance and machinery movement	Yes	Yes	Yes	Yes	Yes
9	Visual Amenity	Alteration of landscape	Yes	Yes	Yes	Yes	Yes
10	Social Disharmony	Influx of workers and foreigners	No	No	No	Yes	No

ATTACHMENT F. NEIGHBOURHOOD RELATIONSHIPS

1. The relationships of the quarry with the neighbourhood are stated at Table 1.

Table 1. Quarry to Neighbourhood Relationships

SN	Factor	Families	Family-type Businesses (Provision shops and garages)	Existing Quarry Operators	Social and Religious Entities
1	Multi-national presence	Positive	Positive	Positive (not in conflict; different types of rocks, spill- over effect)	Positive
2	Employment	Positive	Positive		Positive
3	General business		Positive	Positive (not in conflict; different types of rocks)	
4	Population increase		Positive		Positive
5	General atmosphere	Generally positive for all, for industrialization without excessive pollution, provides a wealthier and livelier atmosphere			
6	Health and security problems increase	Negative			
7	General industrial-type pollution, including traffic	Negative			

ATTACHMENT G. ENVIRONMENTAL BASELINE CONDITIONS

1. The environmental baseline conditions covering physical, ecological, economic, social, and cultural of the Mota Ulun area are stated in Table 1. Measurements for noise and environmental dust will be taken during the EIS phase.

Table 1. Environmental Baseline Conditions at the Quarry Neighbourhood

SN	Condition	Description
1	General atmosphere (day time)	Quiet neighbourhood, as expected from a rural setting without tourists or large-scale industries.
2	General atmosphere (night time)	Very quiet. Shops do not open at night, as expected from a rural setting without tourists.
3	General terrain (land)	The beach is about 100 m from the Dili-Liquica trunk road. From the beach, generally the land rises gently for about 400 m onto the base of the forested hills.
4	General terrain (vegetation)	Lots of greenery, as expected for a semi-tropical area. No wide-spread cutting of trees, even though there is firewood for sale along the road sides.
5	General terrain (usage)	There is no commercial raising of animals or growing of crops.
6	General terrain (water courses)	The few natural water courses run from the hills, through the culverts under the Dili-Liquica trunk road, onto the beach and finally to the sea. The water courses are dried up during the dry season (usually with a duration of about 6 months).
7	General terrain (land, water and air pollution)	As is expected from a rural setting without tourists, there is hardly any man-made type of litter (e.g. drink cans and plastic bottles) on the ground or in the water courses.
8	Dwellings	As is expected of a rural setting in a semi-tropical region, there are scattered dwellings alongside the main road. The houses are all single-storey structures made from bricks and wood, and with roofs of zine or palm tree leaves.
9	Roads	The Dili-Liquica trunk road is a good bitumen-type road. It has single lanes in either direction, and with low traffic loading. There are no street lights. The roads from the villages to the main road are of the dirt type.

10	Economics	At Mota-Ulun, the few employment opportunities are at the few small-scale gravel plants and at the bulk fuel station. The only sign of fishing activity is the 2 small one-person type fishing boats at the beach behind the primary school.
11	Social, religious and cultural	As expected from a rural setting, there is negligible social and cultural activity. There is a small church, and a convent behind the church.
12	Noise	There is light road traffic noise, for most dwellings line the sides of the main Dili-Liquica trunk road.
13	Dust	A “clean” environment, as expected from a rural setting, except at the vicinity of the several small industrial enterprises processing gravel and casting concrete components.
14	Vibration	None, except for the occasional rumble effects from dump trucks running at speed on the main road.
15	Domestic animals	There are free-ranging pigs and goats, with the occasional cows, and foraging at all sorts of places, including at the beach area.

ATTACHMENT H. TASKS AND METHODOLOGY

- Table 1 has information regarding the identification of the tasks, information to be collected, studies to be carried out, methodologies to be used and any other tasks in order to facilitate the assessment of environmental components in the proposed study area during the EIS study phase.

Table 1. Tasks, Information and Methods

SN	Task Area	Information to be Collected	Studies to be carried out and Methodology
1	Terrain	Topography, climate, and water courses.	Geographical studies. Site surveys, and information from literature.
2	Biodiversity	Type, location, quantity, habitat and condition of flora and fauna.	Flora and fauna studies. Site surveys, and information from literature.
3	Population and Social Condition (including political)	Number of people, family (age and sex) groups, education, employment, and sanitary fixtures. Political and media establishments.	Site and community profile surveys. Interviews with local community, including community leaders.
4	Cultural, religion and education	Number, type, size, reverence, and usage of facilities.	Site surveys. Interviews with local community, including community leaders.
5	Commercial and Industrial	Number, type and size of facilities, including household rearing of animals and growing of crops.	Site and community profile surveys. Interviews with local community, including community leaders.
6	Industrial Pollution	Number, type and size of industries, including domestic types.	Site surveys. Measurements of noise and dust (and vibration, if any).
7	Infrastructure (and roads)	Number, type and size of facilities.	Site and community profile surveys.
8	Prosperity and Hardship	Commercial, industrial and educational facilities. Employment prospects.	Site and community profile surveys. Interviews with local community, including community leaders. Development plans for the region.

ATTACHMENT I. FURTHER DISCUSSIONS ON IMPACTS

- Table 1 has discussions of impacts, e.g. with distinctions covering potential significant positive and negative impacts, direct and indirect impacts, cumulative impacts, cross-border impacts, global impacts, including climate change impacts, long-term, medium-term and short-term impacts in every phase of the project.

Key:

Mob: Mobilisation.

Pre-Const: Pre-Construction.

Const: Construction.

Const: Construction.

Ops: Operations.

De-Comm: De-commissioning.

Table 1. Identification of Impacts

SN	Impact	Generator	Description of Impact			Phases of the Project				
			Positive / Negative	Extent of Impact (direct, indirect, cumulative, cross-border, and global)	Duration of Impact (short, medium and long term)	Mob	Pre-Const	Const	Ops	De-comm
1	Dust	Use of machinery and explosives	Negative	Direct. Cumulative. Localised	Long term	Yes	Yes	Yes	Yes	Yes
2	Noise	Use of machinery and explosives	Negative	Direct. Localised	Long term	Yes	Yes	Yes	Yes	Yes
3	Vibration	Use of explosives	Negative	Direct. Localised	Short term	No	No	No	Yes	No
4	Polluted Water	General Waste	Negative	Direct. Cross boundary	Long term	No	Yes	Yes	Yes	Yes
5	Flooding	Land Clearance	Negative	Direct. Cross boundary	Long term	Yes	Yes	Yes	Yes	Yes
6	Silt	Land Clearance	Negative	Direct. Cross boundary	Long term	Yes	Yes	Yes	Yes	Yes
7	Traffic Congestion and Accidents	Truck Movements	Negative	Direct. Cross boundary	Long term	No	Yes	Yes	Yes	Yes
8	Destruction of flora and fauna	Land clearance and machinery movement	Negative	Direct.	Long term	Yes	Yes	Yes	Yes	Yes



Quarry (Mota Ulun)
Terms of Reference (ToR)

9	Visual Amenity	Alteration of landscape	Negative	Direct. Cross boundary	Long term	Yes	Yes	Yes	Yes	Yes
10	Social Disharmony	Influx of workers and foreigners	Negative	Direct. Cross boundary	Long term	No	No	No	Yes	No
11	Wealth Generation	Employment and purchase of local products	Positive	Direct. Cross boundary	Long term	Yes	Yes	Yes	Yes	Yes
12	Skills Improvement	Employment	Positive	Direct. Cross boundary	Long term	Yes	Yes	Yes	Yes	Yes

ATTACHMENT J. KEY POTENTIAL ADVERSE IMPACTS

1. Table 1. Describes the key potential adverse (and non-adverse) impacts identified during the scoping phase (detail assessments of these impacts will be done in the EIS study).

Table 1. Key Potential Impacts (Identified During Scoping Phase)
(Positive and Negative)

SN	Impact	Generator	Brief Description of Impact
1	Dust	Use of machinery and explosives	Deposition of dust. Nuisance. Dis-amenity.
2	Noise	Use of machinery and explosives	Nuisance. Dis-amenity.
3	Vibration	Use of explosives	Nuisance. Damage to structures.
4	Polluted Water	General Waste	Unusable well water. Destruction of marine life. Hazardous to animals (both wild and domestic).
5	Flooding	Land Clearance	Damage to structures. Unusable structures. Harm to people, animals and plants.
6	Silt	Land Clearance	Destruction of marine life. Damage to water courses.
7	Traffic Congestion and Accidents	Truck Movements	Dis-amenity. Harm to people. Harm to domestic animals crossing the road, and staying by the sides of the road.
8	Destruction of flora and fauna	Land clearance and machinery movement	Destruction of biodiversity.
9	Visual Amenity	Alteration of landscape	Dis-amenity. Scarring of the landscape.



Quarry (Mota Ulun)
Terms of Reference (ToR)

10	Social Disharmony	Influx of workers and foreigners	Health and security problems. General discontent. Unwanted competition for natural resources.
11	Wealth Generation	Employment and purchase of local products	Improvement in standard of living. Greater selection of goods. Growth in business opportunities.
12	Skills Improvement	Employment	Better promotion and employment prospects; locally, in Timor-Leste and other countries.

ATTACHMENT K. METHODS OF EVALUATING IMPACTS AND EVALUATION

1. Table 1 shows the prediction of methods to be used to assess impacts and determine criteria and standards to be used for impacts evaluation.

Table 1. Impact Assessment Methods and Evaluation Standards

SN	Impact	Impact Assessment Method	Evaluation Standards
1	Dust	Dust Assessment Study	WHO Standard, or equivalent
2	Noise	Noise Monitoring Survey	WHO Standard, or equivalent
3	Vibration	Vibration Calculations	WHO Standard, or equivalent
4	Polluted Water	Water Courses and Pollutant Survey	No foreign objects. Signs of dead marine life. Signs of dead creatures.
5	Flooding	Water Courses and Pollutant Survey	No foreign objects. No damages to structures and crops.
6	Silt	Water Courses, Pollutant, and Green Boundary Survey	No foreign objects
7	Traffic Congestion and Accidents	Road Traffic Survey	Unsafe driving
8	Destruction of flora and fauna	Flora and Fauna Survey	1. Classification of species against the International Union for the Conservation of Nature (IUCN) Red List. 2. Unnecessary destruction.
9	Visual Amenity	Green Boundary Survey	Unnecessary destruction.



Quarry (Mota Ulun)
Terms of Reference (ToR)

10	Social Disharmony	Employment of locals. Regular visits by the CHEC Community Liaison Officer.	Number of complaints (administered under the Grievance Management Plan).
11	Wealth Generation	Community Profile Survey	Increase in local employment. Growth in the local businesses.
12	Skills Improvement	Training of local employees	Number of local employees trained, and promoted.

ATTACHMENT L. IMPACT MITIGATION AND RESPONSIBILITIES

1. Table 1 has information covering impact mitigation measures, mitigation responsibilities and mitigation cost, and impact monitoring (parameters, frequency, means of verification and monitoring responsibility).
2. The total planned expenditure for environmental monitoring of dust, noise and vibration, is about US \$191,000 over 2.5 years. Details are in Table 2.

Table 1. Impact Assessment Methods and Evaluation Standards

Note 1. Mitigation cost is not included, because manpower (e.g. Blasting Engineer, HSE Manager, and Equipment Manager) and maintenance of machinery and facilities are essential parts and operations of a quarry.

1	2	3	4	5	6
SN	Impact	Impact Mitigation Measure	Mitigation Responsibility (reference to column 3)	Impact Monitoring Parameter	Monitoring Responsibility (reference to column 5)
1	Dust	1. Safe blasting procedure. 2. Calculations on amount of explosives used to ensure no excessive noise and vibration. 3. Millisecond delays for each set of explosions to reduce overall impact. 4. No overloading of trucks. 5. Watering of haul roads. 6. Maintenance of vehicles and machinery.	1 to 3: Blasting Engineer. 4: Quarry HSE Manager. 5 and 6: Equipment Manager.	Baseline measurements of levels of noise and dust. Repeated monthly.	HSE Manager
2	Noise				
3	Vibration			Vibration measurements when there is blasting work (usually daily except on Sundays)	Blasting Engineer
4	Polluted Water	1. Land Clearance Permit. 2. Purpose-built oil storage area. 3. Closed system for sewage waste.	1: Dy Quarry Manager. 2 and 3: Equipment Manager.	Daily monitoring of site conditions	HSE Manager

5	Flooding	<ol style="list-style-type: none"> 1. Land Clearance Permit. 2. Proposed drainage included in Land Clearance Permit. 	1 to 2: Dy Quarry Manager.	Daily monitoring of site conditions	HSE Manager
6	Silt	<ol style="list-style-type: none"> 1. Land Clearance Permit. 2. Proposed drainage included in Land Clearance Permit. 3. Retention of green buffer at water courses. 	1 to 3: Dy Quarry Manager.	Daily monitoring of site conditions	HSE Manager
7	Traffic Congestion and Accidents	<ol style="list-style-type: none"> 1. Truck Timings (Leaving / Entering Site) Form. 2. In-house "Safe Driving" training. 3. Speed limit controls. 4. Designated routes and parking places. 	<ol style="list-style-type: none"> 1: Dy Quarry Manager. 2 to 4: HSE Manager. 	Daily monitoring of traffic movement	HSE Manager
8	Destruction of flora and fauna	<ol style="list-style-type: none"> 1. Land Clearance Permit. 2. Retention of green buffers. 3. "No hunting, no gathering and no pets" rule. 	<ol style="list-style-type: none"> 1 to 2: Dy Quarry Manager. 3: HR Manager. 	Daily monitoring of site conditions	HSE Manager
9	Visual Amenity	<ol style="list-style-type: none"> 1. Land Clearance Permit. 2. Retention of green buffers. 3. Designated vehicle parking areas. 	<ol style="list-style-type: none"> 1 to 2: Dy Quarry Manager. 3: HSE Manager. 	Daily monitoring of site conditions	HSE Manager
10	Social Disharmony	<ol style="list-style-type: none"> 1. Employment of persons from the local community. 2. Preference for buying from local shops. 3. Grievance Management Plan. 4. Designated vehicle parking areas (minimise interference with neighbourhood). 	<ol style="list-style-type: none"> 1 to 3: HR Manager. 4: HSE Manager. 	Weekly community visits	Community Liaison Officer

11	Wealth Generation	1. Employment of persons from the local community. 2. Preference for buying from local shops.	1 to 2: HR Manager.	Weekly community visits	Community Liaison Officer
12	Skills Improvement	1. Employment of persons from the local community. 2. Training of local employees.	1 to 2: HR Manager.	Weekly community visits. Weekly employee interviews	Community Liaison Officer

Table 2. Estimated Cost of Dust, Noise and Vibration Monitoring

SN	Item	One-off cost of Instrument (US \$). Excludes yearly calibration	Monthly personnel cost (US \$)
1	Air (Dust)	10,000	2,000
2	Noise	2,000	2,000
3	Vibration	8,000 (2 sets)	2,000
4	Sub-Total	11,000	6,000 per month, i.e. 180,000 for 30 months (i.e. 2.5 years)
5	Total (for 2.5 years)		US \$ 191,000 (11,000 plus 180,000)

ATTACHMENT M. LIST OF STAKEHOLDERS

The List of Stakeholders for public consultations are shown at Tables 1 to 4.

**Table 1. Consultations and Dialogue with Local Community Leaders
and Local Community Meet-the-People Sessions
(as at 13 Mar 2019)**

SN	Stakeholder	Dates of Past Meetings
1	Various leaders and representatives of Liquica, Barzetete and Tibar	23 Apr and 8 Jul 2018
2	Mr. Francisco Soares, Chief of Suco Mota Ulun and 3 other village leaders	31 Oct 2018 and 18 Jan 2019
3	Mr. Bento Correia da Conceicao, Chief of Suco Tibar	6 Feb 2019
4	Mr. Domingos da Conceicao Dossantos, Administrator of Liquica Municipality, and Mr. Joao Nascimento Braz, Administrator of Barzetete Sub-District	27 Feb 2019
5	Dialogue with general community (Mota Ulun)	31 Oct 2018
6	Dialogue with general community (Mau Meta)	28 Feb 2019

**Table 2. Stake Holders (Central Government) Engagement Plan
(as at 13 Mar 2019)**

SN	Stakeholder	Interest
1	Ministry of Petroleum and Mineral Resources (National Directorate of Mines and Minerals)	Environmental license and quarrying activities
2	Ministry of Justice (National Directorate of Land, Property and Cadastral Services)	Land lease
3	Ministry of Finance	Royalties, duties and taxes
4	Ministry of Public Works, Transport and Communications (Directorate of Roads, Bridges, and Flood Control)	Access road
5	Servico de Registo e Verificacao Empresarial (SERVE)-Registration	Quarry registration

Table 3. Stake Holders (Local Government) Engagement Plan
(as at 13 Mar 2019)

SN	Stakeholder	Dates of Previous Dialogue
1	Liquica District Municipality Representatives	20 April 2018, 8 Jul 2018 and 27 Feb 2019
2	Barzetete Sub-district Representatives	20 April 2018, 8 Jul 2018 and 27 Feb 2019
3	Suco Council Mota-Ulun	31 Oct 2018, and 18 Jan 2019
4	Local Police (PNTL) – Tibar Police Station	13 Mar 2019

Table 4. Stake Holders (Civil Communities) Engagement Plan
(as at 7 Mar 2019)

SN	Stakeholder	Dates of Previous Dialogue
1	Local Youth Organizations	20 to 26 Dec 2018 (Mota Ulun Community Profile Survey)
2	Local Women's Organizations	
3	Academic (Mr. Helio Casemiro Gutteres, President IPG – Institute of Petroleum and Geology -	On-going dialogue (e.g. on suitable rocks)
4	Trade Association (Senhor Oscar Lima, President CCI-TL, Camara do Comercio e Industria de Timor-Leste)	On-going dialogue (e.g. on quarry and other operations)
5	FONGTIL, umbrella body for NGO (Lourenco Tito Ximenes Lopes, Chefe Sebisu Membrus and Publiku)	13 Mar 2019
6	NGO - Lao Hamutuk	31 Jan 2019 and 8 Feb 2019
7	NGO – Luta Hamutuk	

ATTACHMENT N. NON-TECHNICAL SUMMARY

KESUMO NON-TEKNICAL NON-TECHNICAL SUMMARY

Quarry/Pedreira husi China Harbour Engineering Company iha Mota Ulun

China Harbour Engineering Company Quarry at Mota Ulun

Deklasaun de Impaktu Ambientál no Planu Jestaun Ambientál Kondensada ba Konsultasaun Públika

Summary of Environmental Impact Plans for Public Consultation

Planu de Fundu Background

1. Bollore mak sai hanesan koncessionário nebe oferese husi governo Timor-Leste ba parseria públiku-privada hodi toma konta desenhu, konstrusaun, finasiamentu no operasaun ba Porto da Baia Tibar nebe 10 km oeste husi Dili, ba periudu tinan 30. China Harbour Engineering Company (CHEC) hanesan kontrator prinsipal ba desenhu, sosa ,no konstrusaun.

Bollore leads the Concessionaire provided by the government of Timor-Leste for a public-private partnership to undertake the design, construction, financing and operations of Tibar Bay Port, 10 km west of Dili, for a 30 year timeframe. China Harbour Engineering Company (CHEC) is the main contractor for Design, Procurement and Construction.

2. Fatuk nebe ho nia resistensia a'as, no nia quantidade nebe sufisiente ba terrenu husi Porto da Baia Tibar, formasaun fatuk hanesan koluna iha rai. Ida ne'e desenhu husi engineru atu permiti strutura sira iha rai leten nune'e bele sobreviver/tahan husi rai nakdoko. Karik akontese rai nakdoko, Porto sei bele halo operasaun nafatin, hanesan forneseimentu, materiais no makina bele lori tama mai nasaun laran ho razoens humanitarian no atu rekonstruir servisu.

Rocks of a certain high strength, and adequate quantity are needed for strengthening the quay and the grounds of Tibar Bay Port, in the form of stone columns in the ground. This is an engineering design to enable the structures on top of the ground to survive an earthquake. In the event of an earthquake, the Port must be able to remain operational, so that supplies, materials and machinery can be brought into the country for humanitarian reasons, and for rebuilding work.

Quarry/Pedreira

The Quarry

3. Figura 1 hatudu lokasaun no disposisaun husi pedreira nian iha Mota Ulun. Presija fatuk serka de Serka de 1,030,000 m³, ho longu periodu ba tinan 2, komesa husi Abril 2019. Estimasaun volume material ida nebe atu extrasau kada tinan husi 2019, 2020, no 2021 mak 300,000, 700,000 no 30,000 m³ respectivamente. Pico/puncak husi produsaun mensal nian mak serka de 60,000 m³ kada fulan ba 12 meses de 2020.

Figure 1 shows the location and layout of the quarry at Mota Ulun. About 1,030,000 m³ of rocks is required, over a 2-year timeframe, starting from Apr 2019. The estimated volumes of material to be extracted each year in 2019, 2020 and 2021 are 300,000, 700,000 and 30,000 m³ respectively. The peak monthly production is about 60,000 m³ per month for the 12 months of 2020.

4. Foho oan/kolina 2 nebe identifikada iha Mota Ulun atende/tuir duni requisitos de qualidade no quantidade nebe relasiona ho fatuk, no requisitos seluk husi terreno ida nebe favorável (ida ne'e facilidade ba transporte), no minimiza pertubasaun/gangguan ba comunidade lokal, por exemplu, laiha despejo, laiha reassentamento, desapropriaun husi rai ou bens, laiha destruisaun ba habitações ou estrutura sira seluk, no laiha privasaun ekonômika. Existe ona empresas nebe relasionada ho pedreiras nebe halo operasaun iha area Mota Ulun.

The identified 2 hills at Mota Ulun meet the rock-related requirements of quality and quantity, and the other requirements of favourable terrain (i.e. ease of transportation), and minimal disruption to the local community, i.e. no eviction, no resettlement, dispossession of land or assets, no destruction of dwellings or other structures, and no economic deprivation. There are already quarry-related enterprises operating in the Mota Ulun area.

Figura 1A. Lokalizasaun husi Quarry/Pedreira

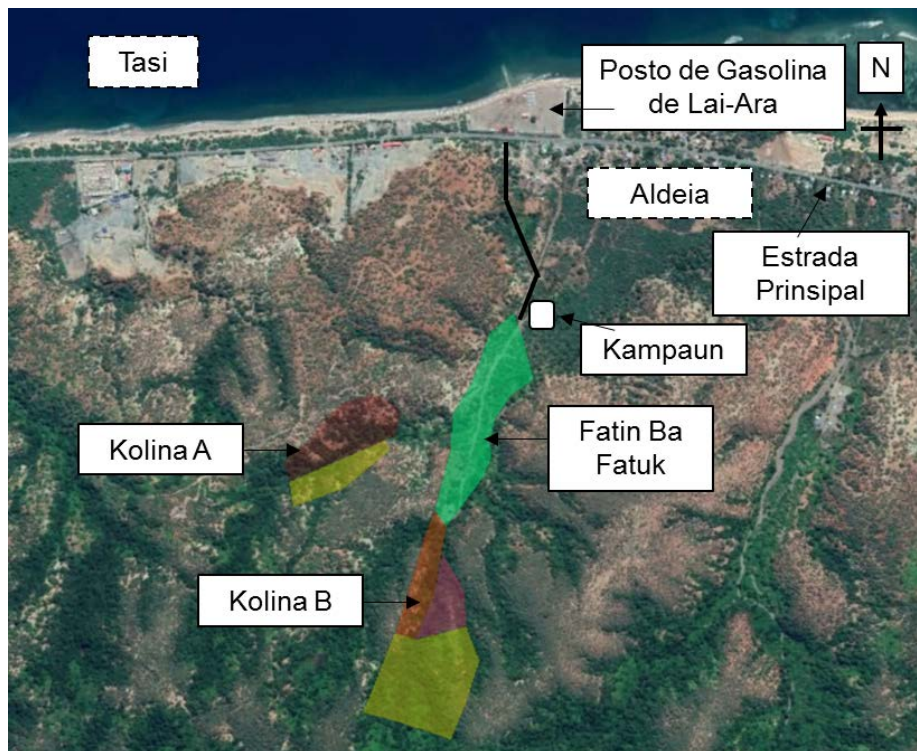
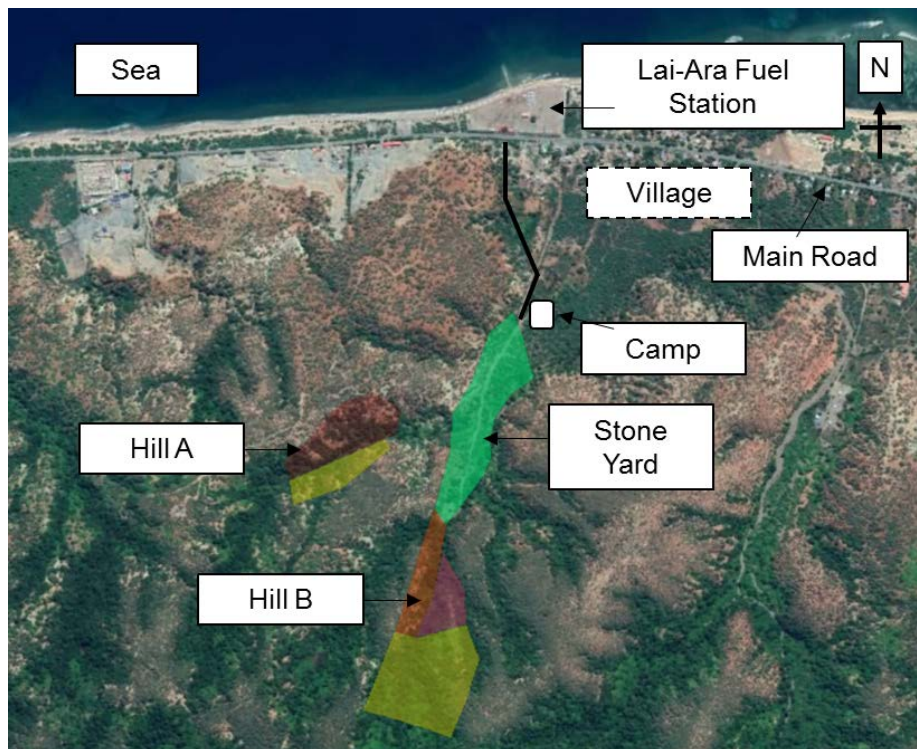


Figure 1B. Location of Quarry



5. Pedreira ne'e laos iha laran ou besik ba zona humidas (lahan basah) ou naturais reservas. Iha ne'e mos laiha fatin religious, historiku, kulturalis, arqueologikus, ou sagradu ou spesies protegidas ou extinsaun perigu ou vegetasaun unika, nebe besik iha area explorasaun fatuk nia laran. Mota ki'ik oan sira nebe iha area quarry ne'e maran wainhira iha tempu bailoro

The quarry is not in or near wetlands or nature reserves. There are also no religious, historical, cultural, archaeological, or sacred sites, or protected or endangered species, or unique vegetation, in or near the quarry area of operation. The few small streams at the quarry are dried-up during the dry season.

6. Quarry/Pedreira husi CHEC ne'e laiha impaktu nebe incomuns. Iha neba laiha tunelamentu. Labele ke'e rai nebe koak bo'ot, por exemplu, hanesan tipu de posu profundo de minerasaun. Laiha exigência ba tratamentu químicu, por exemplu, laiha kreesaun tahu nebe perigoju. Ida ne'e pedreira nebe relativamente simples atu konstrui no opera.

The CHEC quarry has no unusual environment impacts. There is no tunnelling, or open-cast, i.e. deep pit type of mining. There is no requirement for chemical treatment, i.e. no creation of hazardous sludge. It is a relatively simple quarry to construct and operate.

Arredores Gerais **General Surroundings**

7. Mota Ulun hanesan aldeia kii'k oan ida ho nia ema mais ou menus 457 no 162 familias, nebe hela iha uma nebe halo husi ai tipu oin-oin, zinco no taka ho tipos de telhado de sapê (jenis atap jerami). Be'e posu sira iha ne'e masin iha aldeia nebe besik ba tasi, no la besik ba mota ou be dalan.

Mota Ulun is a small village with about 457 people in about 162 families, living in scattered dwellings, usually of the timber, zinc and thatched roof types. Water obtained from the few wells are salty, for the village is near the sea, and not near rivers or streams.

8. Iha ne'e laiha plantasaun ou industria de estoque ou ro'o ba tiha ikan nian. Populasaun kuda no hakiak animal sira hodi han. Atividade komersial ne'e tun/baixa tebes, ho loja ki'ik rua (2) mak halao operasaun iha ne'e.

There are no plantations or live-stock industry or fishing using boats. Families grow crops and keep a few animals for home consumption. Commercial activity is very low, with 2 family owned and operated small provision shops.

9. Uniku no númeru oppurtunidade empregu ki'ik tebes ho faan gasolina tuir dalan ho intensidade nebe baixa/tun, no kompanhia balu ho eskala ki'ik halo operasaun ba fatuk, por exemplu; halo cascalho (kerikil) no fundação de peças de concreto (beton).

The only and small number of employment opportunities are at the low intensity bulk fuel station, and the few small-scale companies operating stone works, i.e. making gravel and casting concrete parts.

10. Mota ulun iha eskola Ensino Basico ida ho nia campu de futebol, igreja no Capela da Sagrada Familia, no igreja nia kotuk iha mos conveto irmas Franciscana de nosa Senhora das Victorias. Iha mos clinic, laiha fatin social no instalasoens recreativas, meja billiard mak iha fatin 2.

Mota Ulun has a primary school with a football field, the Church of Capela da Sagrada Familia, and at the rear of the Church, the convent Irmas Franciscanas de Nosa Senhira das Victorias. There is no Clinic. There are no social or recreational facilities, other than 2 billiard tables at 2 locations.

Benefisiu husi Quarry/Pedreira

Benefits of the Quarry

11. Quarry/Pedreira ne'e presija ema nain 90, konsiste husi ema lokal 60 pessoa no staf expatriado ema nain 30. Expatriado sei hela iha kampaun nebe area iha pedreira nian. Ema lokal 60 pessoas ne'e husi aproximasaun 162 familias nebe iha Mota Ulun ne'e.

The quarry requires a total of about 90 persons, consisting of about 60 locals and 30 expatriate staff. The expatriates stay in a Camp in the quarry. The 60 local employees will be from the approximately 162 families in Mota Ulun.

12. Alem de fornese salariu, total ema nan 90 ne'e sei apoiu atividade komersial, por exemplu, hahan, uma, transportasaun, no recreasional, nebe sei resulta iha ekônomia ba comunidade lokal sem halo at ordem sosial nebe iha.

In addition to providing wages, the overall 90 persons support local commercial activities, e.g. food, housing, transport and recreational, resulting in economic gain for the whole local community without damage to the social fabric, usually caused by an undesirable influx of workers from other regions.

13. Posu Quarry/pedreira, be'e nebe qualidade diak, por exemplu, la kontente husi masin, fornese be'e ba aldeia. Servisu excavaun quarry/pedreira bele kria reservatorio udan ben freska mais ou menus nia profundidade ho 20 metrus, no nia naruk 200 m, no luan 100 m.

The quarry wells, with better water quality, i.e. less salt content, supplies water to the village. Quarry excavation work creates a fresh rain water reservoir about 20 m deep, 200 m long, and 100 m wide.

14. Quarry, karik la kontinua, iha potensial ba konversaun ba plantasaun ou halo uma. Rai ne'e foho/montanhoa. Ida nebe agora iha extensoens nebe luan. Estrada, utilidade, strutura uma, no reservatóriu be'e freska ne'e asivel, sira ne'e hotu atu aumenta valor rai, ho vista tasi nebe kapas., estrada nebe diak ba Dili. Ida ne'e bele fasilmente transformadu sai hanesan habitasoens prinsipal no mos kampu de golfe.

The quarry, if not continued as it is, has potential for conversion to plantations or housing. The land was hilly. It now has large tracts of level ground. Roads, utilities, housing structures, and even a fresh water reservoir is available, all enhancing the value of the land, with scenic views of the sea, and with a good road to Dili. It can readily be transformed to premiere housing, and even a golf course.

Disvantagem **Disadvantages**

15. Disvantagem prinsipal husi quarry maka, trafego nebe a'as tanba movimentu husi dump truck nebe lori fatuk ba Baia Tibar. Regras nebe vigor mos atu garantia seguransa ba transit nian, por exemplu, motoristas/sofer nebe kualifikadu no treinadu, kontrola limite de velocidade, no labele tula sasan todan liu, sasan nebe tula tenki taka ho terpal, no labele para arbiru.

The main disadvantage of the quarry is that of the increased road traffic due to the movement of dump trucks carrying rocks to Tibar Bay. Rules are in place to ensure road safety, e.g. trained and qualified drivers, speed limit controls, no overloading of trucks, load covered with tarpaulin, and no unauthorised stops.

16. Polusaun Poeira/rai rahun no ruido/barulho, inkomoda husi vibrasaun, ne'e la signifiativa, tanba quarry situada 1 km husi aldeia nebe besik

Dust and noise pollution, and vibration nuisance, are not significant, because the quarry is sited at least 1 km from the nearest village dwellings.

Mitigation Measures

Medidas de Mitigasaun

17. Oficial de Ligacao da Comunidade do CHEC sempre hasoru malu ho residente lokal; esplika no justifika kona ba quarry, benefisu ekonômiko no sosial nebe relasionadu, asaun prevensaun nebe atu foti atu hamenus impaktu ambiental ba comunidade, fornese informasaun atulizadas, no implementa esquema de jestaun de reklamasoens.

The CHEC Community Liaison Officer (CLO) frequently meets local residents; explaining the rationale for the quarry, the associated economic and social benefits, the precautions taken to lessen environmental impacts to the community, providing up-to-date information, and implementing the Grievance Management Scheme.

18. Gerente ba Saude de quarry/pedreira, seguransa no ambiente (SSA) maka responsabilidade ba regular monitoramento ambiental, ho exemplu hanesan tuir mai ne'e:

The quarry Health, Safety and Environment (HSE) Manager is responsible for regular environmental monitoring, with examples as follows:

- 18.1 Ruido no Poeira. Linha de base no mensal iha residencia nebe besik iha quarry.

Noise and Dust. Baseline and monthly at dwelling nearest to the quarry.

- 18.2 Vibrasaun. Semana dahuluk ba detonasaun, no mensal iha residencia nebe besik iha quarry.

Vibration. First week of blasting, and monthly at dwelling nearest to the quarry.

- 18.3 Be'e. Teste mensais ba be'e posu no reservatóriu be'e iha quarry.

Water. Monthly tests of well water, and reservoir water in the quarry.

19. Gerente ba quarry HSE nian mak prepara relatoriu mensal kona ba quarry HSE, e copia sei apresenta ba Conselho do Suco.

The Quarry HSE Manager prepares a Quarry HSE Monthly report, a copy of which is presented to the Suco Council.

20. Gerente de Fechamento de Quarry/Pedreira nebe nomeado, karik quarry tenki taka. Passu primeru maka chefe Aldeia no autoridade rai nian deside kona ba uza ne'e rai iha futuru. Nune'e sei klaru liu saida mak husik hela, saida mak tenki hamos no saida mak bele hadia fali. Karik presija clearing out, ne'e signifika katak estoque sira faan ona, no makina hotu-hotu ne'e hamos hotu ona, destinu husi sasan strutura restante sira ne'e depende ba autoridades. Geralmente, estrada no suprimentu utilidades ne'e iha nafatin ba asesu iha future ba inspesaun no utiliza rai. Re-plantasaun ai horis ba rai ho stok material rai durante servisu limpeza rai.

A Quarry Closure Manager is appointed, if the quarry is to be decommissioned. The first step is for the Village Chief and the Land Authority to decide on the future use of the land. Then it will be clearer as to what to remain behind, what to remove, and what to restore. If clearing-out is required, it means that stockpiles are sold-off, all machinery are removed, and the fate of remaining structures depend on the Authorities. Usually the roads and utility supplies remain, for these are essential for future access for inspections and use of the land. Bare ground is returfed, with material from the topsoil stockpile during land clearance work.