

ENVIRONMENTAL MANAGEMENT PLAN

**CARRIER FUEL UNIPESSOAL LDA
CARUNGULAU, METIAUT, CRISTO REI, TIMOR LESTE**



This Environmental Management Plan is prepared by Hersege Lda on behalf of Carrier Fuel Unip Lda. Hersege Lda is a national mining and environmental consulting company located in Dili. Comment, Suggestion and input for this EMP report can be forwarded to hersegeconsultant10@gmail.com

APRIL 2021

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1. EXECUTIVE SUMMARY

The Carrier Fuel Unip Lda is located at Aldeia Carungulau, Suku Metiaut, Cristo Rei and the geographic coordinates are 8°32'24"S Latitude and 125°36'47"E Longitude. It is an automotive fuel filling station that supplies gasoline and diesel fuel to the customers. Carrier Fuel occupies a total land of approximately 1,499 m² where the facility's components such as underground storage tanks with capacity of 15,000 L for each fuel products such as gasoline and diesel; two fuel dispensers where each of the dispensers has four nozzles, a simple canopy, minimarket and a supporting office are available.

The main activities during the operational stage of Carrier Fuel include tanker unloading, storage of fuel on site, dispensing fuel into vehicles' tankers, carrying repair or maintenance, and ensure fire safety during the operation.

This Environmental Management Plan (EMP) has been compiled for the installation and operation of automotive fuel filling station. It would be presented in draft form to ANPM for review and approval. A review or amendment to the EMP may be needed during the life of the project as a part of important aspect for improving the fuel filling station's environmental management. The purpose of this EMP is to ensure:

- ✓ Compliance with Timor-Leste regulations on installation and operation of fuel filling station and environmental protection
- ✓ That minimum standards for health, safety and the environment are met
- ✓ That environmental risks associated with the project are properly managed through the design and implementation of the mitigation measures and facilitate monitoring programs

Environmental impacts at an automotive fuel filling station are primarily resulted from storing and handling of fuels on site, which associated with emissions of products to soil, groundwater and surface water, and emissions to air. Sources that may give rise to contamination on site include underground storage tanks, pumps or dispensers, fuel lines between tanks and pumps, waste oil tanks, etc. The contamination may result from a slow leak over time or a fast release (spill) and it may occur at or near the surface, or at a depth. Furthermore, the age, type of construction and method of operation used for the facilities at the fuel filling station may affect the likelihood and severity of the impacts on the environment. Hence, within the EMP, it provides description of mitigation measures that are required for managing and controlling the potential impacts from the activities at the fuel filling station. The company demonstrates its commitments by taking actions for the implementation of these control measures and it establishes monitoring program to measure the impacts that may occur as a result of the project.

It also serves as the company's ways of showing its commitment in the health, safety and the environmental protection and to comply with the legal requirements. Furthermore, the effectiveness of proposed mitigation measures can be gauged through the monitoring program.

The proposed project location close to tourism area and protected area the proponent considered these impacts during pre-construction, construction, operation and decommissioning phase within provides the environment management plan.

Potential impacts during pre-construction and construction period there are several vegetation's that will be removed, Increase air pollution, increase of noise level, Health & safety at work, Increasing of waste, Health and safety at work, Jobs Opportunities. Potential impacts during operation, maintenance and decommissioning phase soil contamination, increasing of waste (solid and liquid).

Groundwater contamination may occur however all potential impacts will be prevented by proponent according to the mitigation measures in the Environmental Management Plan (EMP) document.

2. DETAILS OF PROJECT PROPONENT

The proposed project is an automotive fuel filling station, called Carrier Fuel Unip Lda and located in Aldeia Carungulau, Suku Metiaut, Post Administrative Cristo Rei, Dili Municipality, and Timor-Leste. It occupies a total land of approximately 1,499 m², where the fuel station and its supporting facilities are built. The contact detail of the project proponent and the principal contact is provided below.

OPERATOR	: Carrier Fuel Unipessoal LDA
Address	: Comoro, Bebonuk, Dom Aleixo, Dili
Contact Person	: Mr. Adolfo Antonio Belo
Mobile	: (+670) 77285568 / 73392089
E-mail	: countryfuell@gmail.com

3. DETAILS OF CONSULTANT WHO PREPARED EMP

Consultant Name	: HERSEGE LDA
Consultant TIN	: 12299016
Registered Address	: Rua Taibessi, Alcrin, Lahane Oriental, Nain Feto Dili
Telephone No.	: (+670) 77522363 / 76717048 / 76641553
E-mail Address	: hersegeconsultant10@gmail.com
Type of Company	: Private Limited
Status of Company	: Local Timorese
Date of Incorporation	: 13 July 2018

Experiences

Hersege Lda has involved in preparing Environmental Impact Assessment in several activities since it was established and has a qualified and experiences members in Environmental Engineering, Geological Engineering, Mining Engineering and Instrumentation Engineering (Oil and Gas Operation). Following are the experiences of the consultant and it member's qualification:

Table 1. Experiences of the Hersege Lda Consultant

NO	COMPANY	TYPE OF SERVICES	PROJECT ACTIVITIES	PROJECT LOCATION	STATUS
1	Nananiu Unip. Lda	Mining And Environmental License	River Sand Mining	Matai, Suai	COMPLETED
2	China Wu Yi Co.,Ltd	Mining And Environmental License	Quarry And River Sand Mining	Ulmera, Liquica	On Process
3	Montana Diak Unip Lda	Mining And Environmental License	River Sand Mining,	Hera, Dili	COMPLETED
4	Jucostim Lda	Mining License	Quarry and River Sand Mining	Dato, Liquisa	On Process
5	Xirevo Unip Lda	Mining And Environmental License	Quarry and River Sand Mining	Dili, Liquica	On Process
6	Borala Lda	Environmental License	Fuel Filling Station	Dili, Viqueque	COMPLETED
7	Green Diamond Unip Lda	Environmental License	Fuel Filling Station	Oe-cussi	COMPLETED
8	Jesoria Unip Lda	Environmental License	Fuel Filling Station	Viqueque	COMPLETED
9	Tatoli Fuel Lda	Environmental License	Fuel Filling Station	Lospalos	COMPLETED
10	Queybubun Laco Combustivel Lda	Environmental License	Fuel Filling Station	Maliana	COMPLETED
11	AdyPay Lda	Environmental License	Fuel Filling Station	Ossu	COMPLETED
12	Mekar Fuel Lda	Environmental License	Fuel Filling Station	Lurumata, Dili	COMPLETED
13	Nusabe III Unip Lda	Environmental License	Fuel Filling Station	Aileu	COMPLETED
14	Ergin Fuel	Environmental License	Fuel Filling Station	Metinaro	COMPLETED
15	Mega Petroleum	Environmental License	Fuel Filling Station	Fatuhada, Dili	COMPLETED
16	Super Fuel	Environmental License	Fuel Filling Station	Kuluhun, Dili	COMPLETED
17	Titer Unip Lda	Environmental License	Fuel Filling Station	Losaplos	COMPLETED
18	Klean Gas Lda	Environmental License	Retail Gas Station	Dili	On Process
19	Abom Kase Fuel	Environmental License	Fuel Filling Station	Maliana	COMPLETED
20	Arca Flacor	Environmental License	Fuel Filling Station	Ainaro	COMPLETED
21	Vida Diak Petroleo	Environmental License	Fuel Filling Station	Aipelu	COMPLETED
22	Xalila Fuel	Environmental License	Fuel Filling Station	Dili	COMPLETED
23	Divita Fuel Unip Lda	Environmental License	Fuel Filling Station	Tibar	COMPLETED
24	Ai-dalau Furak Unip Lda	Environmental License	Fuel Filling Station	Same	COMPLETED
25	ETO Lda	Environmental License	Fuel Filling Station	Mandarin, Balide and Manatuto	COMPLETED
26	GSGP Petrol Station	Environmental License	Fuel Filling Station	Laga	COMPLETED

Qualification and Experiences of each member

- **Herculano Ivo .L. Granadeiro** is Mining Engineer with 5 years of experiences in preparing the mining license activities and Environmental Impact Assessment for fuel filling stations and mining activities for obtaining the Environmental License.
- **Geovanio Alves**, is Geological Engineer with 4 years of experiences in preparing the mining license activities and Environmental Impact Assessment for fuel filling stations and mining activities for obtaining the Environmental License. During the study in Indonesia, Geovanio has done several geological surveys for mineral in Kalimantan, Papua, Halmahera and Sumatera.
- **Sergio Valdano Pinto** is a Mining Engineer and has diploma of engineering in instrumentation (oil and gas operation), with 5 years of experiences in preparing the mining license activities and Environmental Impact Assessment for fuel filling stations, mining activities and involved in preparation of EIA for China Harbour Timor Temporary Jetty in Mota Ikun for obtaining the Environmental License. Also, Sergio has attended training for Oil and Gas Safety Passport and a safety briefing in Petronas Chemical Methanol Labuan, Malaysia.
- **Patricio de Oliveira Ximenes** is Environmental Engineer with 4 year of experiences in preparing the mining license activities and Environmental Impact Assessment for fuel filling stations and mining activities for obtaining the Environmental License and as an environmental officer in China Wu Yi, Co.,Ltd
- **Sergio Martires**, is Mining Engineer with 3 year of experiences in preparing the mining license activities and Environmental Impact Assessment for fuel filling stations and mining activities for obtaining the Environmental License

4. DESCRIPTION OF THE PROJECT

The Carrier Fuel Unip Lda is located at Aldeia Carungulau, Suku Metiaut, Cristo Rei and the geographic coordinates are 8°32'24"S Latitude and 125°36'47"E Longitude. It is an automotive fuel filling station that supplies gasoline and diesel fuel to the customers. Carrier Fuel occupies a total land of approximately 1,499 m² where the facility's components such as underground storage tanks with capacity of 15,000 L for each fuel products such as gasoline and diesel; two fuel dispensers where each of the dispensers has two nozzles, a simple canopy, minimarket and a supporting office are available.

The main activities during the operational stage of Carrier Fuel Unip Lda include tanker unloading, storage of fuel on site, dispensing fuel into vehicles' tankers, carrying repair or

maintenance, and ensure fire safety during the operation. The fuel filling station operates from seven days in a week, Monday to Sunday from six in the morning till eight at night. It consists of two shifts that are attended by staffs/pump attendants for each shift.

The following map shows the respective features of the existing land pattern around the fuel filling station. There are small businesses and shops located in front of the fuel filling station, and other important existing features, such as the Public School, Public Clinic and others government institution office, (refer to the following map).

a. Identification of the Project

The fuel filling station will be located at Carungulau, Metiaut, Cristo Rei and Dili Municipality, The project area nearby national road is new business development proposed by Carrier Fuel Unip Lda, Company for the purpose of supplying and delivering fuel directly to end users. The geographic coordinates of the location is 8 32"24" S (Latitude) and 125 36"47" E (Longitude). Total land occupied by the fuel storage and supporting facility is about 1,499 m2, in which the fuel station with supporting facility for operation will be constructed shown in Figure 1.

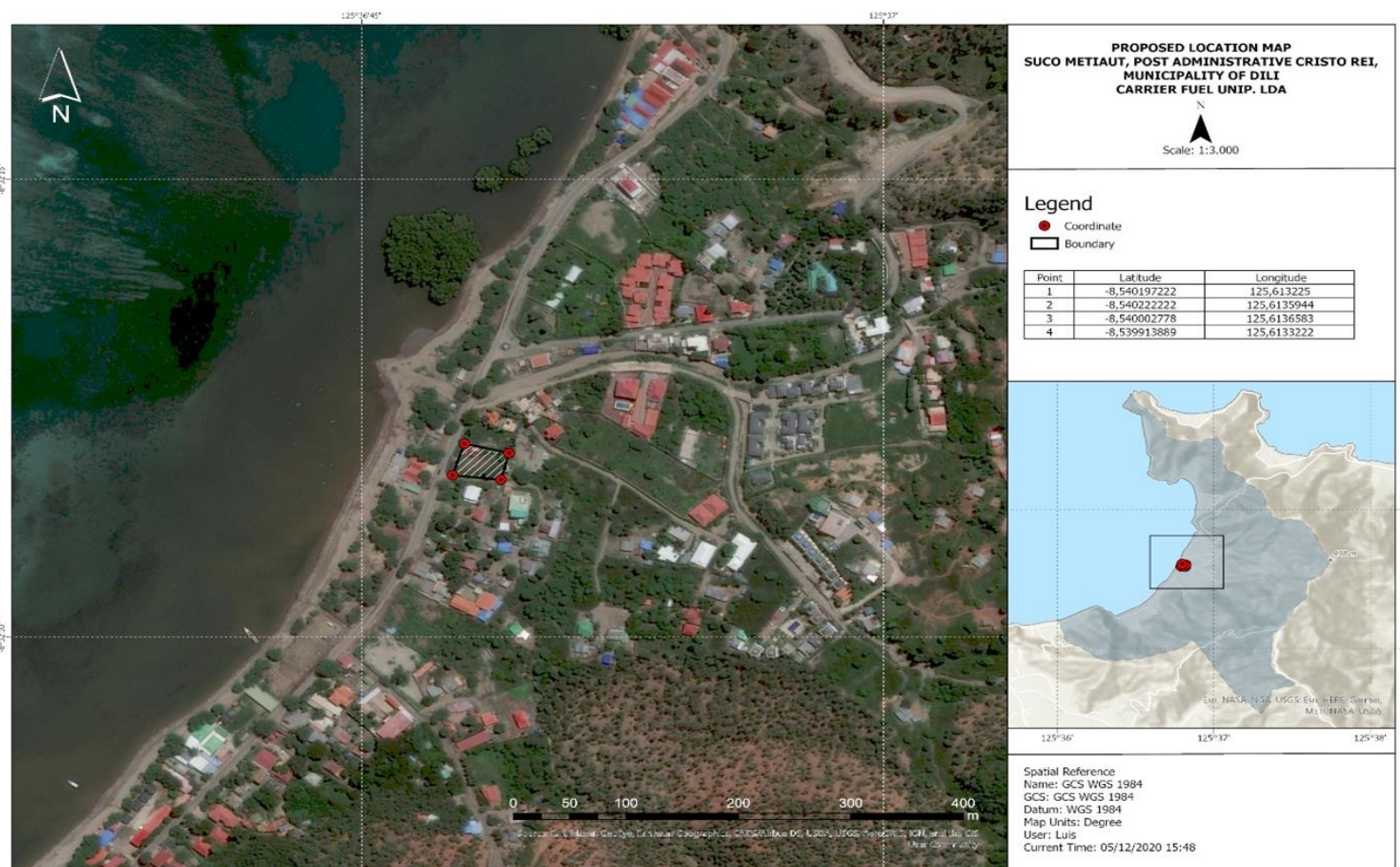


Figure 1. Proposed Location Map

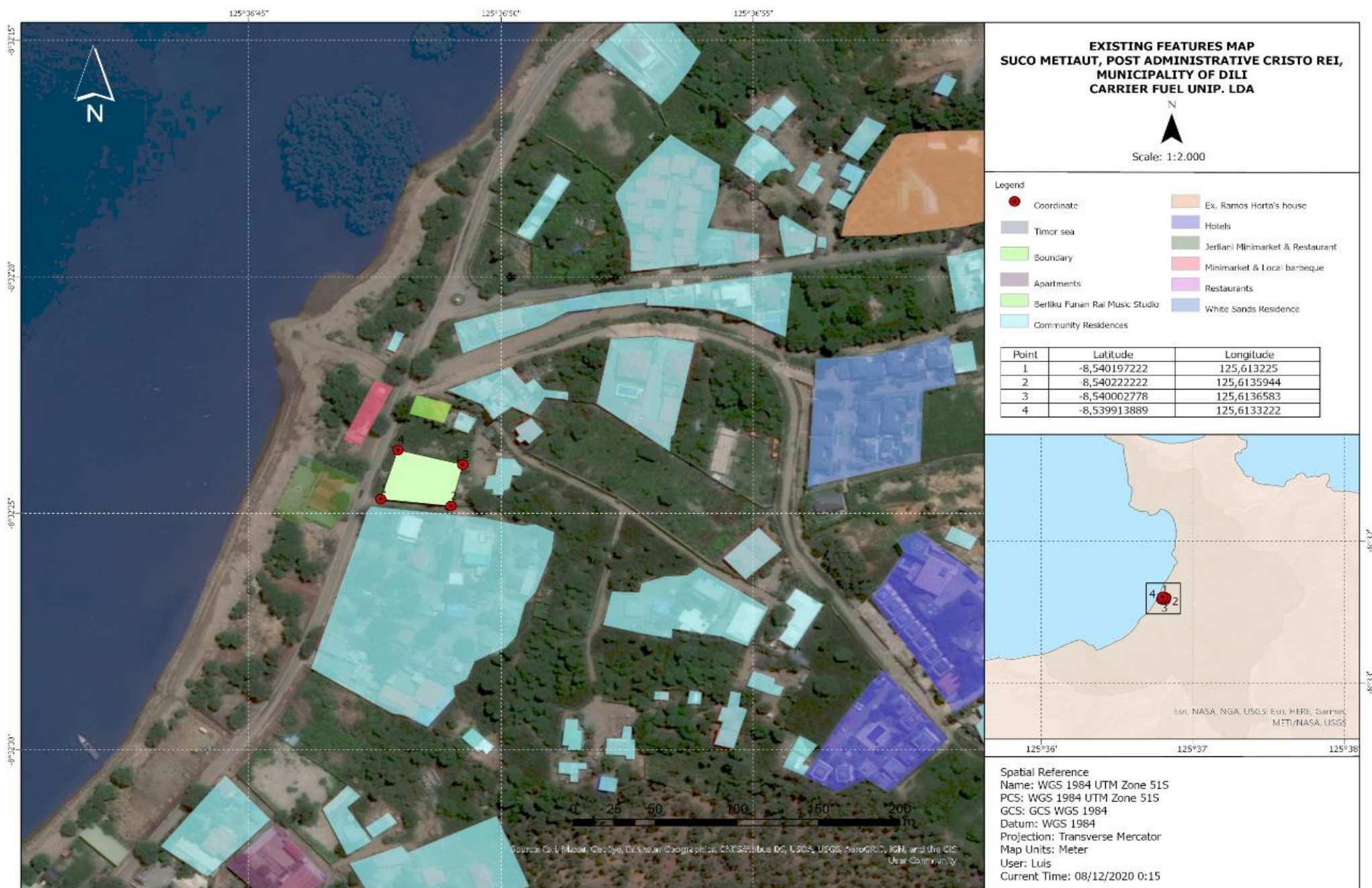


Figure 2. Existing Features Map

b. Category of the Project

In accordance to the definition of the project category set out in article 4 of the Decree Law no.5/2011 Environmental Licensing and Annexes 1 and 2 of the law, this project (Fuel Station and Storage) is defined as a category (B). The fuel station project components fall into the Petroleum Industry Sector (Storage sites for Oil / Natural Gas / Petrochemicals or Chemicals) and due to the environmental impact may occur during the activities.

c. Brief description of the Nature, size and Location of the Project

The Carrier Fuel is located at Aldeia Carungulau, Suku Metiaut, Cristo Rei and the Geographic coordinates are 8°32'24"S Latitude and 125°36'47"E Longitude. It is an automotive fuel filling station that supplies gasoline and diesel fuel to the customers. Carrier Fuel occupies a total land of approximately 1,499 m² where the facility's components such as underground storage tanks with capacity of 15,000 L for each fuel products such as gasoline and diesel; and two fuel dispensers where each of the dispensers has four nozzles, a simple canopy, minimarket and a supporting office are available.

The main activities during the operational stage of Carrier Fuel include tanker unloading, storage of fuels on site, dispensing fuel into vehicles' tank, carrying repair or maintenance, and ensure fire safety during the operation. The fuel filling station operates from seven days in a week, Monday to Sunday from six in the morning till eight at night. It consists of two shifts that are attended by eight staffs/pump attendants for each shift.

Inter-Municipality and intra-Municipality public and private transportation are serviced by Motor bikes, Buses and others public transportation. This existing road is the main road that connects to Areia Branca Beach (Tourism Area) and heading to Suco Hera, Post Administrative Cristo Rei, Municipality Dili. The access road to the proposed project is good condition.

Areia Branca Beach, Dolok Oan Beach and Cristo Rei Statue has the country's biggest Tourism Area in Timor Leste and to whole of other nation were there, as currently; Dili's capital of Timor Leste, most of population of Dili, and some of population from other District were to the Areia Branca Beach, Dolok Oan and Cristo Rei for Weekend recreation or holidays time.

The proposed location is Government land, in the Northern part of the project the proposed project is bordered with Public Road, Eastern Part is Berliku Fanun Rai Music Studio's, Western part is bordered with community residence and Southern is bordered with communities residence.

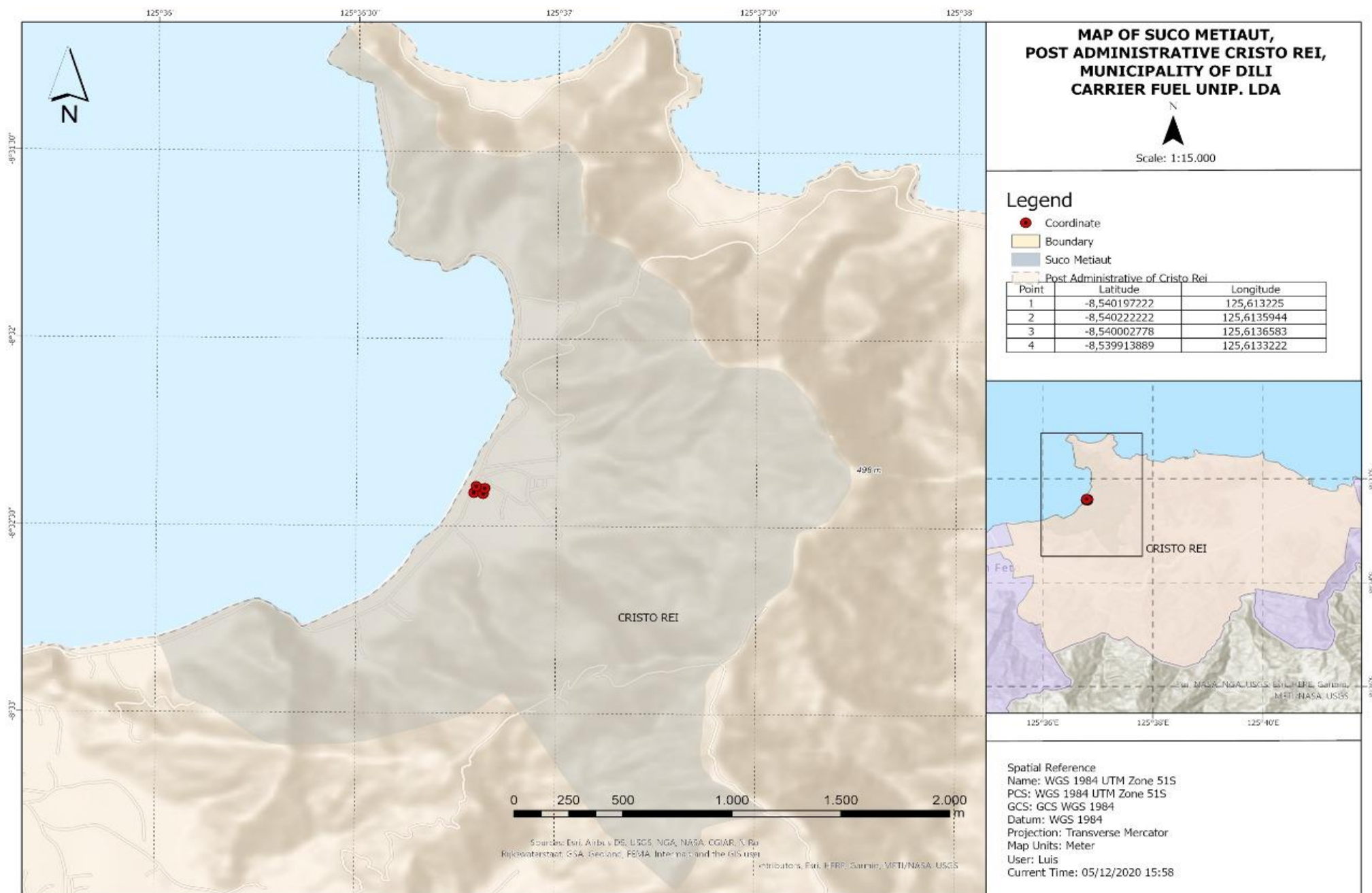


Figure 3. Suco Map

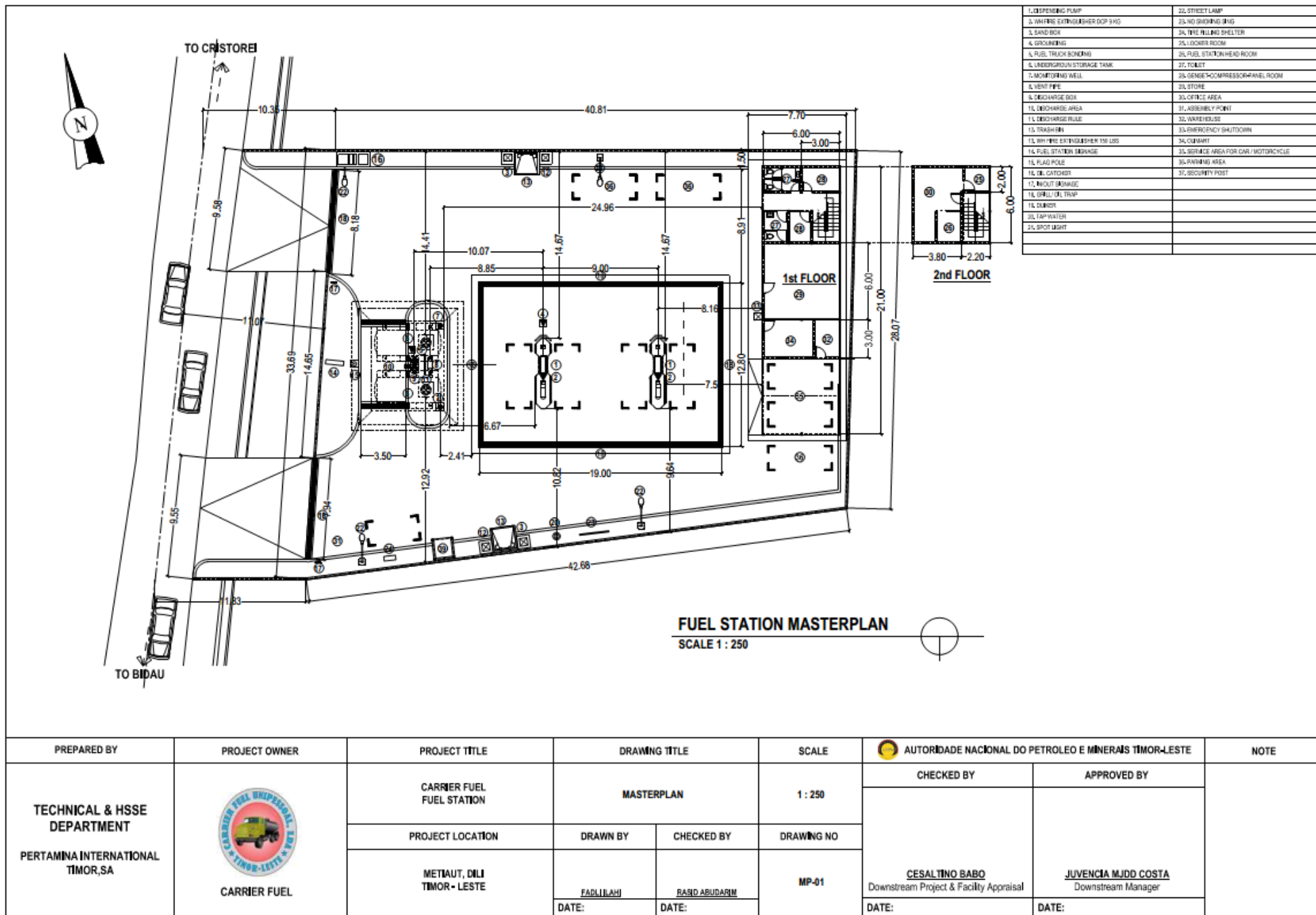


Figure 4. Site Layout Plan

➤ **Underground Tank**

The proposed storage of fuel on site consists of two underground storage tanks. The tanks can withstand a volume of 15,000 liters each. The indicated underground storage tanks will supply; diesel, Gasoline. The underground storage tanks are going to be installed as shown in the 'Underground Tank Cross-Section', as outlined in the 'Guidance for the Design, Construction, Modification and Maintenance of Fuel Filling Stations'. The bottom structure of the tank is going to be constructed from a 7-10 mm of asphalt coating and 500 mm of compacted fine sand. The underground tank is going to be anchored to ground with straps that are non-corrosive, and must offer good strength to hold the tank firmly. Proper care must be taken to ensure that the excavation does not collapse. Once the underground tank is in place, it is important that the gap between the wall and the tank shall be filled with the appropriate backfill up to the neck of the tank. The interstitial space is going to be continuously monitored by means of a leak detection system being of Class 2 system. Furthermore, tanks constructed from metal steel must be coated for the protection from corrosion. Such coating must be tested from the supplier according to the listed standard by ANPM.

The tanks are manufactured from coated steel. These are called composite tanks. The manhole section is fitted with a overfill protection device and self-contained manhole which is impervious to hydrocarbon and is sealed to prevent contamination to the surrounding environment. The materials used to make the tanks are corrosive free metals. A documented leak monitoring system will be put in place. All the installation and operation of fuel filling station should rely on Regulation No. 3 /2014 on Installation and Operation of Fuel Filling Station.

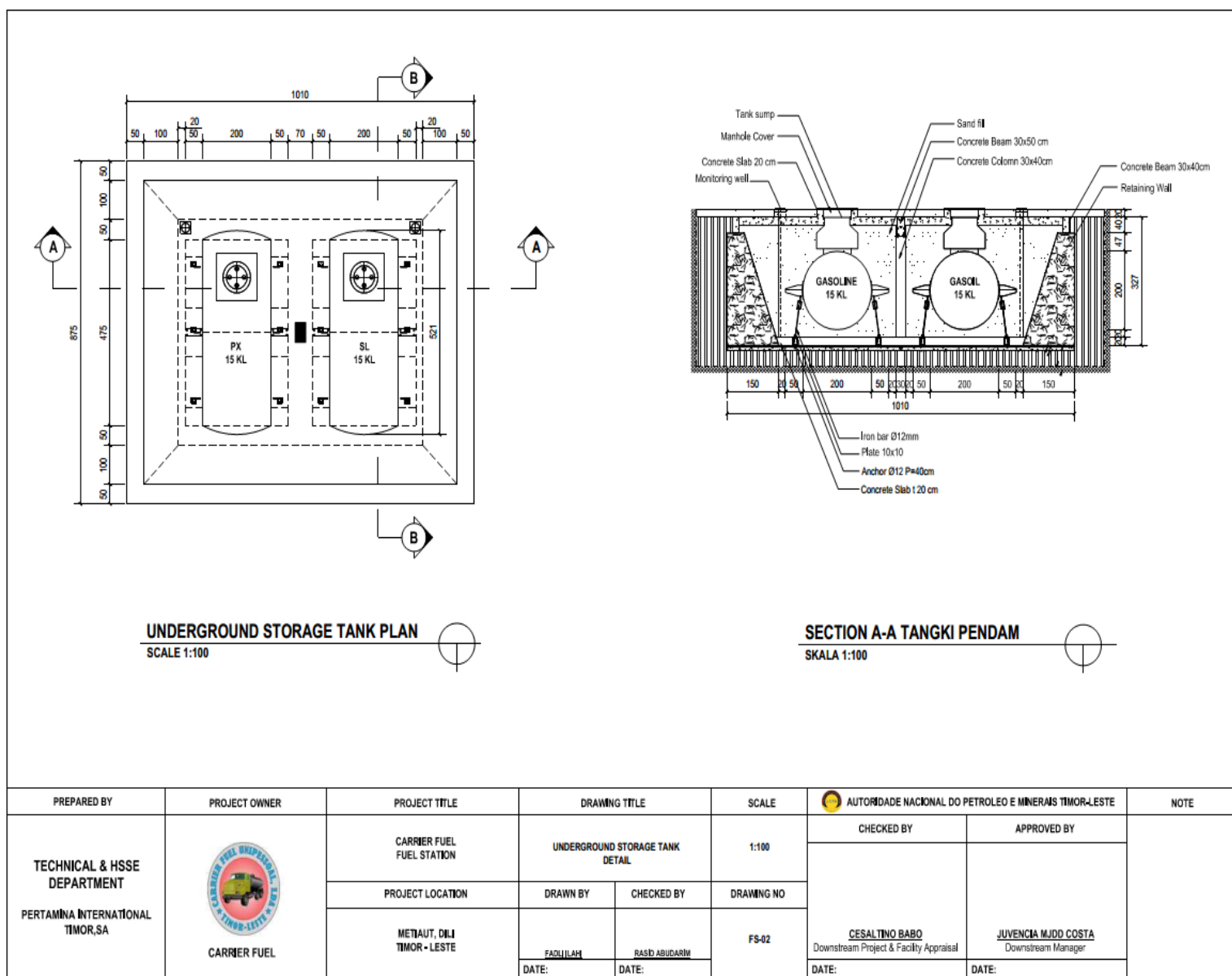


Figure 5. Underground Tank



Dispensers

The fuel dispenser, pump, and piping system that connect to the storage tank are important components of the system. Automatic control mechanism and monitoring equipment will be applied including flow meter to measure flow and quantity of fuel from one place to the other as well as detecting leak from the difference between fuel flowing in and the volume recorded at the tank. The same principle is applied to monitor the flow of fuel out of the storage tank and the volume dispense at the dispenser facility. A fuel dispenser will be installed in the fuel filling station consists of four nozzle (two for gasoline and two for fuel diesel). Every dispenser has extinguisher and extinguishers are also located in the office and filling point area.

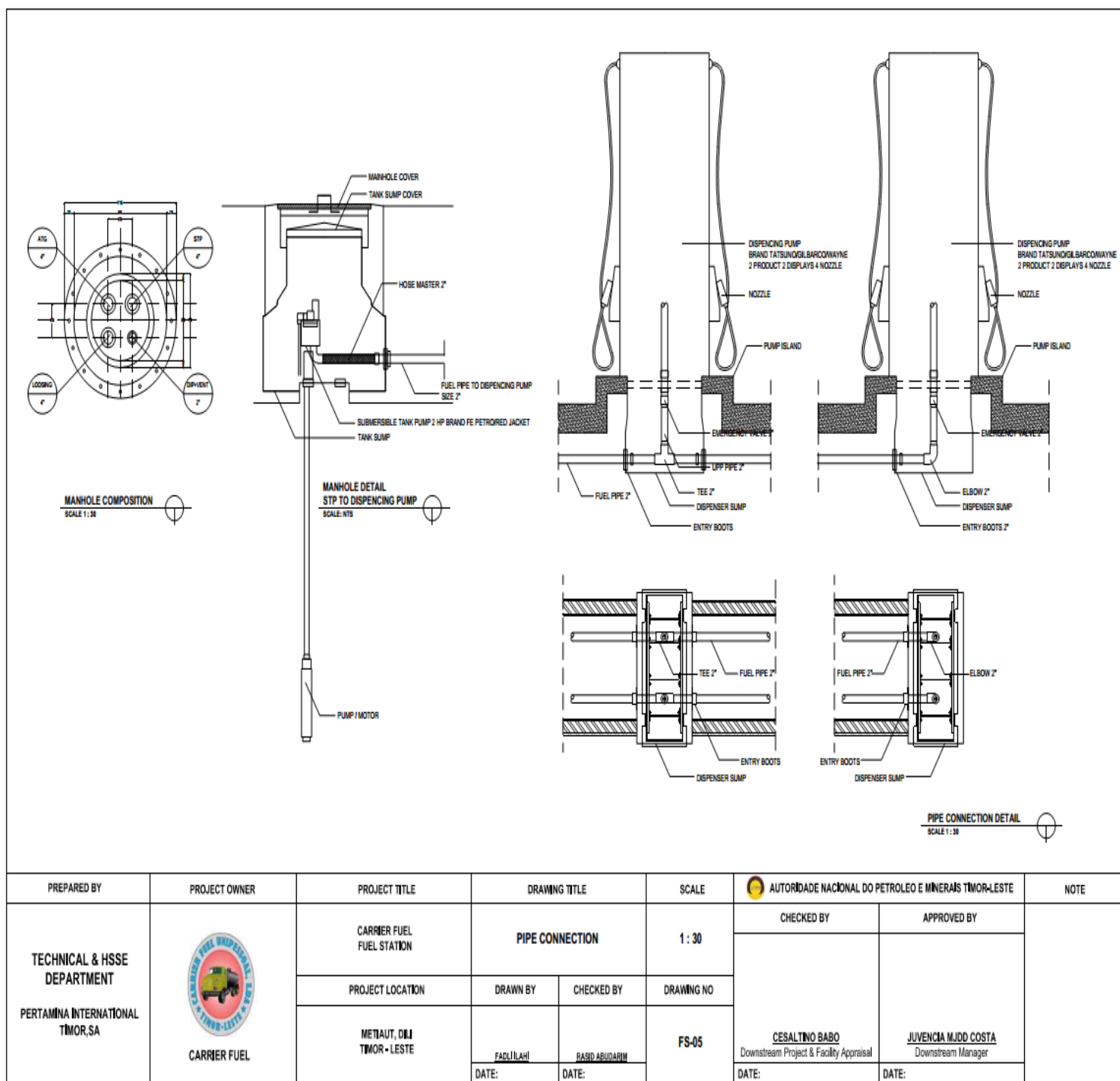
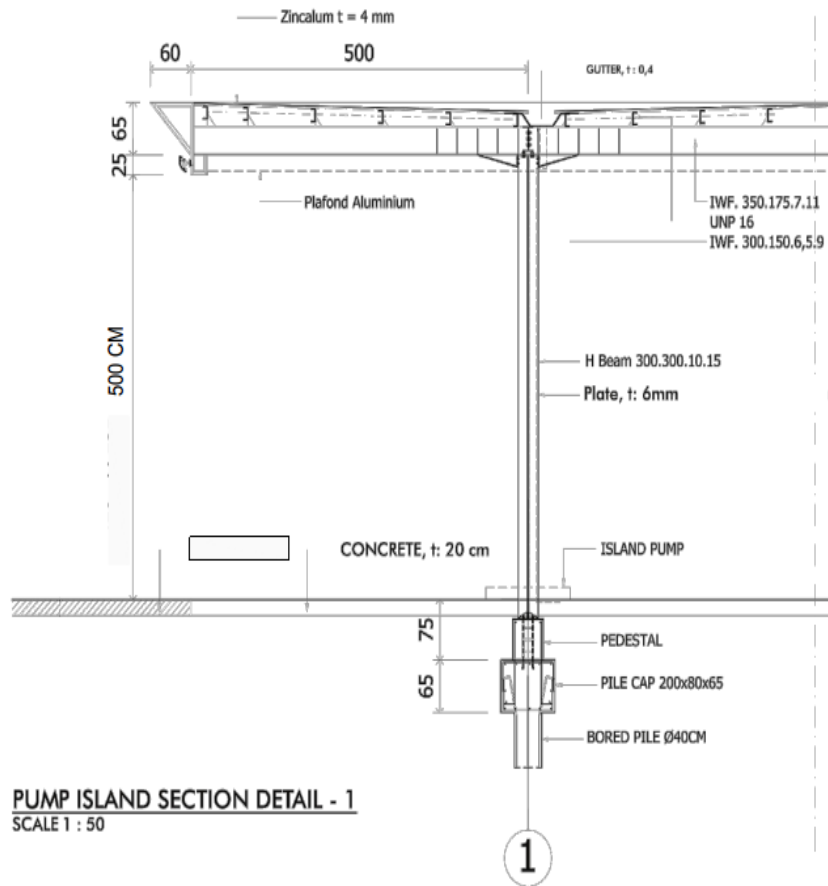


Figure 6. Fuel Dispenser

➤ **Pump Island**

Pump Island to set up dispensers on it, size of the pump island determine vehicle in fuel station, and determine the distance between the dispenser and the vehicle to refueled, dimension of pump island; the length is 5 meter, height of pump island is 0.2 meter, and the width is 1.4 meter.



PREPARED BY	PROJECT OWNER	PROJECT TITLE	DRAWING TITLE		SCALE	AUTORIDADE NACIONAL DO PETROLEO E MINERAIS TIMOR-LESTE		NOTE
TECHNICAL & HSSE DEPARTMENT PERTAMINA INTERNATIONAL TIMOR,SA	 CARRIER FUEL	CARRIER FUEL FUEL STATION	PUMP ISLAND SECTION DETAIL		1:50	CHECKED BY	APPROVED BY	
		PROJECT LOCATION	DRAWN BY	CHECKED BY	DRAWING NO	CESALTINO BABO Downstream Project & Facility Appraisal	JUVENIA MUJO COSTA Downstream Manager	
		METIAUT, DILI TIMOR - LESTE	FADLI ILAH	RASID ABUDARIM	PI-02			
			DATE:	DATE:				

Figure 7. Pump Island

➤ **Canopy**

Canopies structure shall be at a height of not less than 4.5 meters from the ground and should be fireproof type. Cladding installed shall be non-combustible and be according to ANPM standards. Such a standard also holds for price display pole signs. The function of a canopy is to:

- ✓ Provides a degree of weather protection; canopy can be a shelter/shade from weather condition such as sun
- ✓ Withstand the elements such as wind and rain

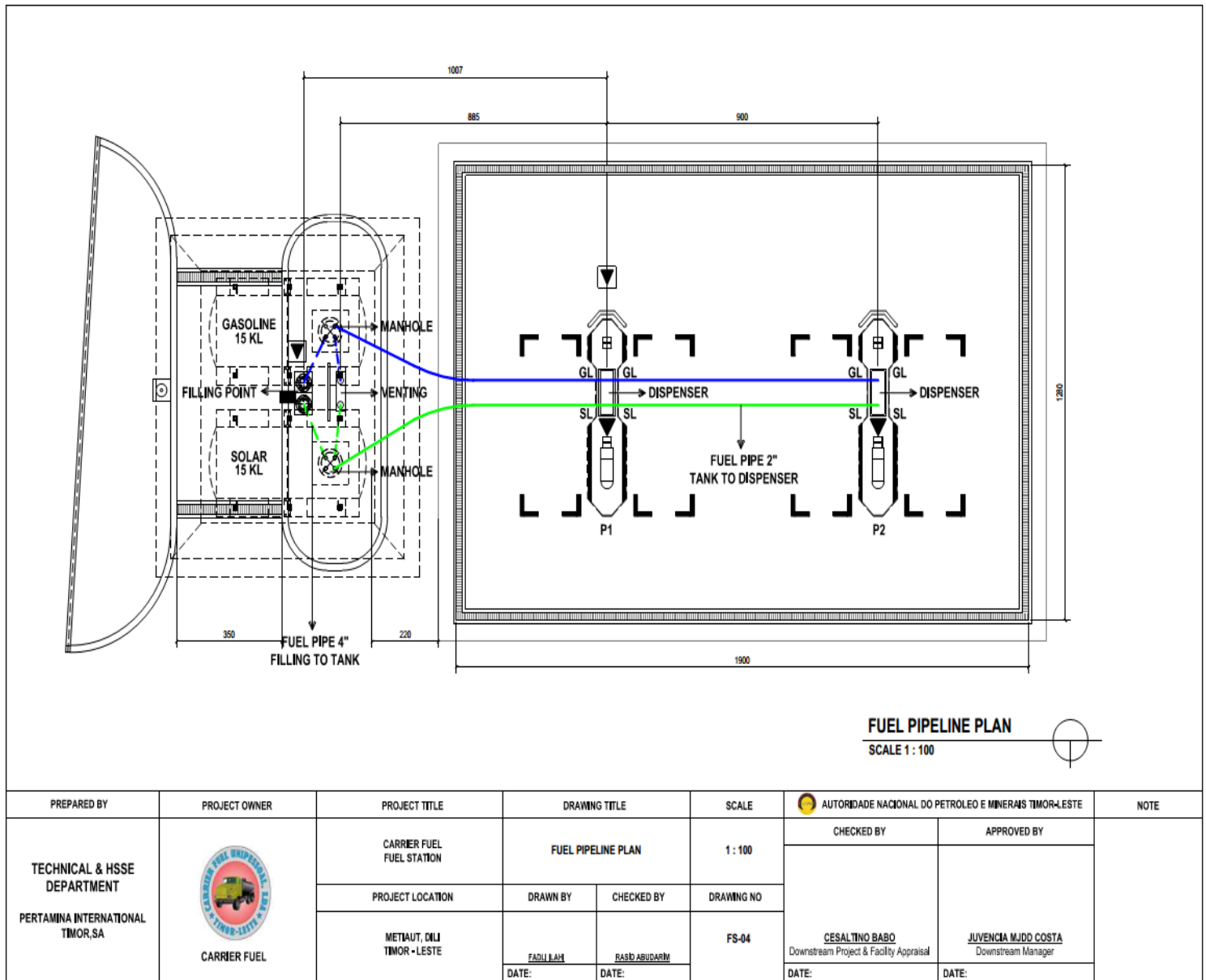


Figure 9. Pipe Distribution Plan

➤ Electrical System

The electrical system at the filling station will be designed by a quality engineer and in accordance with the electric power regulations in Timor-Leste (EDTL) and other electrical standards such as National Electric Code Fuel Filling Station regulation based on the standard that adopted by ANPM (National Electrical Code (NEC), or NFPA 70). The electrical system will include power supply to the mechanical pumps, underside of the steel canopy, the offices, and Machine/compressor room and security systems. On completion of the electrical works, it is expected that Timor Leste (EDTL) Power will approve the electrical works and issue a power connection certificate to the proponent.

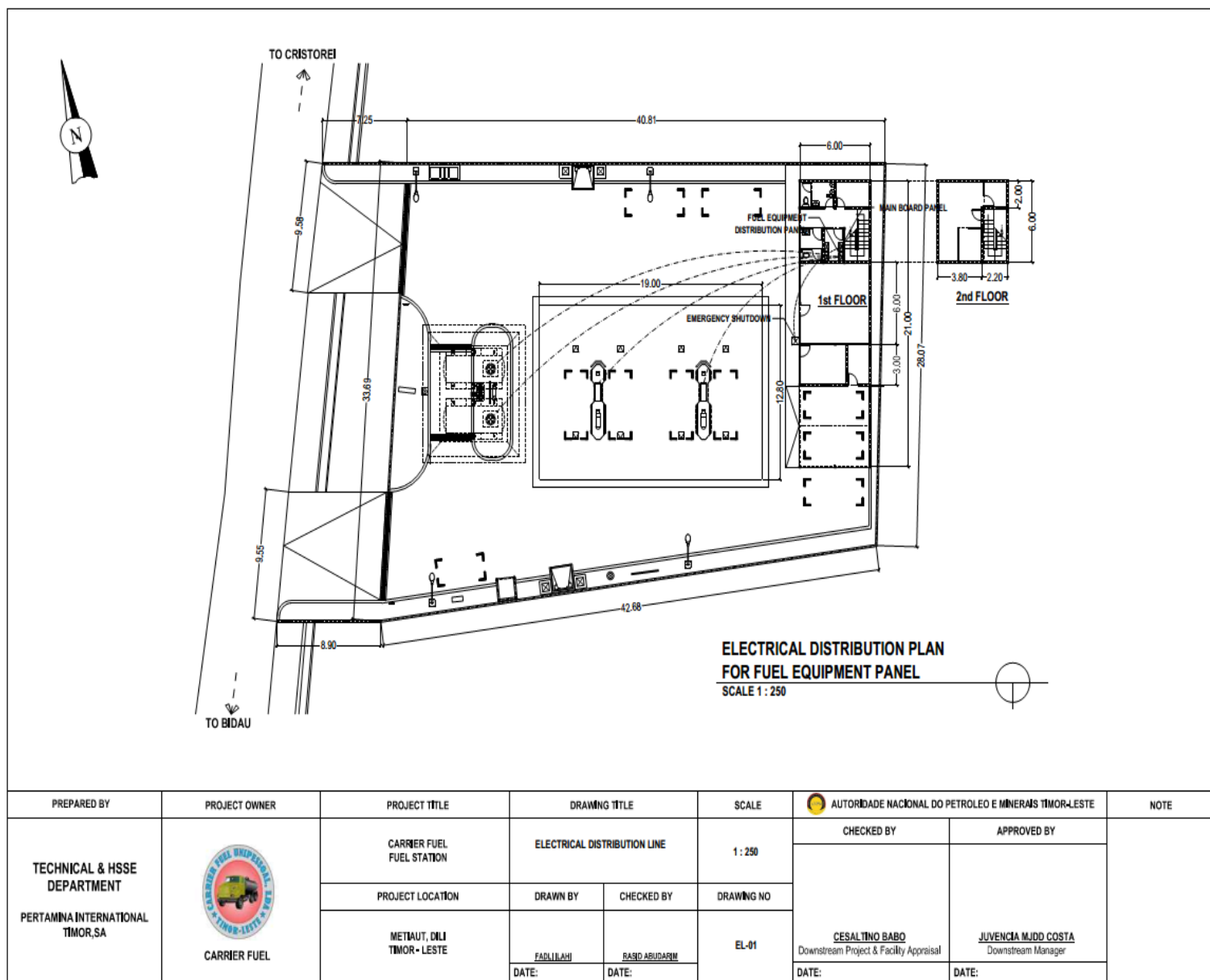


Figure 10. Electrical Plan

➤ Water Treatment System

Water treatment is any process that improves the quality of water to make it more acceptable for a specific before disposal to the environment. The fuel filling station is facility with a water treatment system for treating wastewater that may be contaminated with oil or fuel and separating oil from water. The floor areas where there is likely spillage, such as area dedicated to unloading liquid fuels from the fuel tanker into the storage tanks and the forecourt area are made impermeable (cemented) and allow for drainage into the water treatment system.

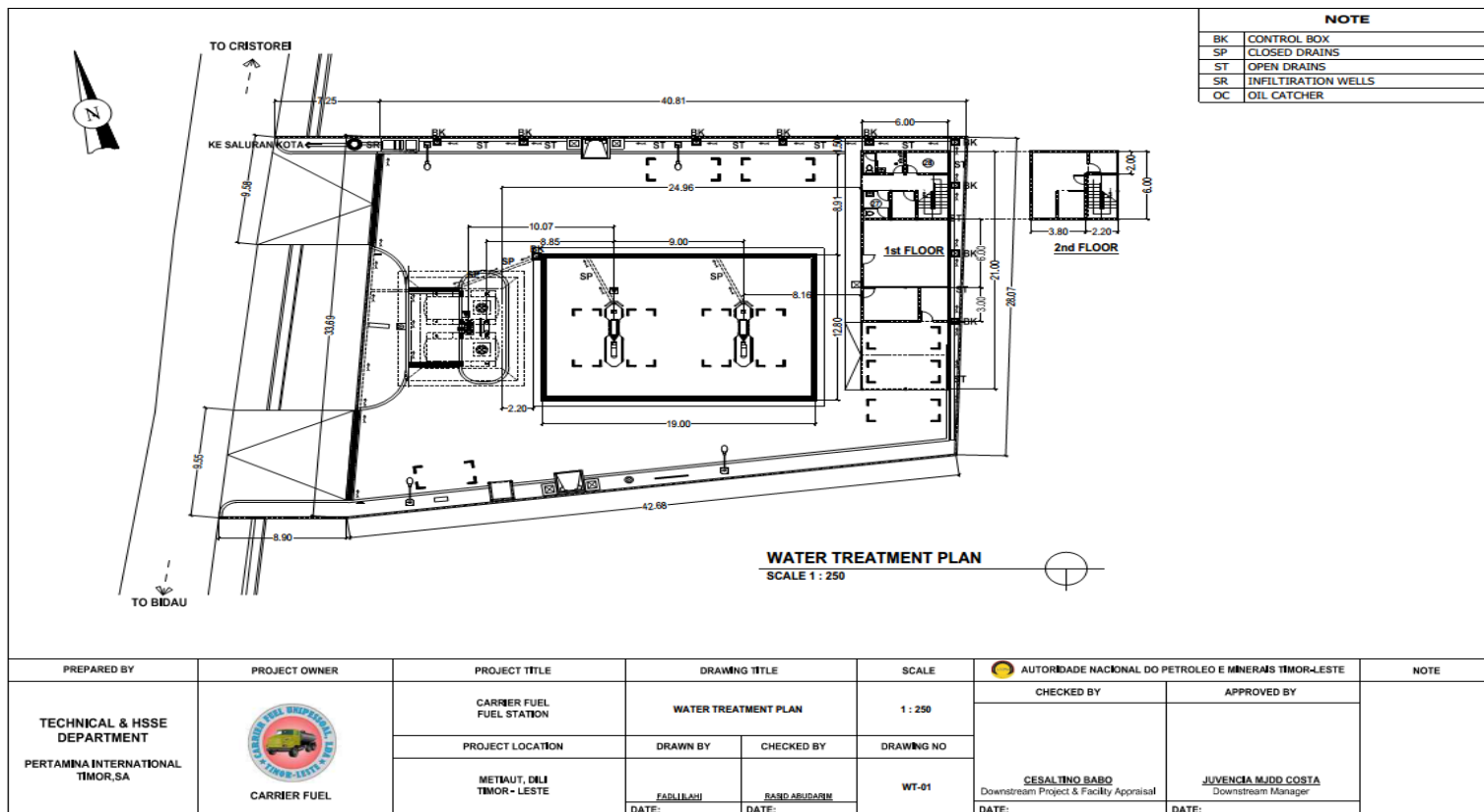
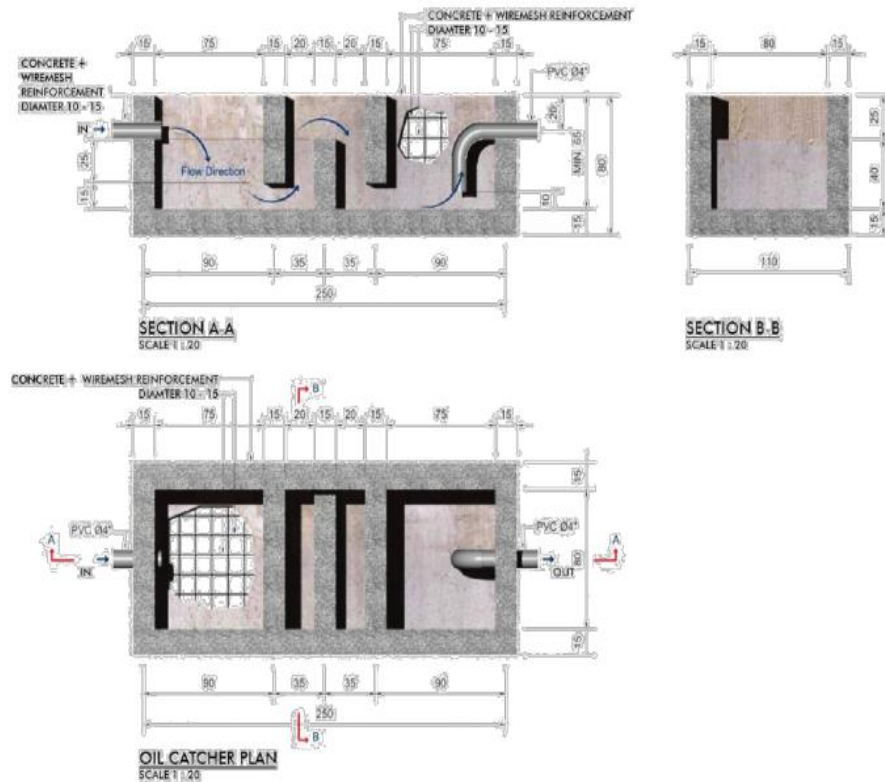


Figure 11. Water Treatment Systems

➤ Petrol interceptor/Oil Catcher

A petrol interceptor is a trap used to filter out hydrocarbon pollutants from rainwater Runoff, oil spills and leak as well. It is typically used in road construction and on Petrol Station forecourts to prevent fuel contamination of streams carrying away the runoff.

Petrol interceptors work on the premise that some hydrocarbons such as petroleum and diesel float on the top of water. The contaminated water enters the interceptor typically after flowing off roads or forecourts and entering a channel drain before being deposited into the first tank inside the interceptor. The first tank builds up a layer of the hydrocarbon as well as other scum. Typically petrol interceptors have 3 separate tanks each connected with a dip pipe, as more liquid enters the interceptor the water enters into the second tank leaving the majority of the hydrocarbon behind as it cannot enter the dip pipe, whose opening into the second tank is below the surface of the water. However some of the contaminants may by chance enter the second tank. This second tank will not build up as much of the hydrocarbon on its surface. As before, the water is pushed into the third tank, by fluid dynamics, as more water enters the second. The third tank should be practically clear of any hydrocarbon floating on its surface.



PREPARED BY	PROJECT OWNER	PROJECT TITLE	DRAWING TITLE		SCALE	AUTORIDADE NACIONAL DO PETROLEO E MINERAIS TIMOR-LESTE		NOTE
TECHNICAL & HSSE DEPARTMENT PERTAMINA INTERNATIONAL TIMOR,SA	 CARRIER FUEL	CARRIER FUEL FUEL STATION	OIL CATCHER		1:20	CHECKED BY	APPROVED BY	
		PROJECT LOCATION	DRAWN BY	CHECKED BY	DRAWING NO	CESALTINO BABO Downstream Project & Facility Appraisal	JUVENIA MUJO COSTA Downstream Manager	
		METIAUT, DILI TIMOR - LESTE	FADLI ILAH	RASID ABUDARIM	WT-02			
			DATE:	DATE:				

Figure 12. Oil Catcher

The following map shown are indicates the affected area in the proposed site. Having mentioned the affected area, the proponent considered these impacts during pre-construction, construction, operation and decommissioning phase within provides the environment management plan. During the construction period there are several vegetation's that will be removed such as Delonix Regia, Ai Santo Antonio, Ai Kaisote, Tamarin Tree (*Sukaer*), Ailok, Ai Cafe and a bar house that will be removed and build a supporting office other facilities according to new drawing and minimarket for Carrier Fuel.

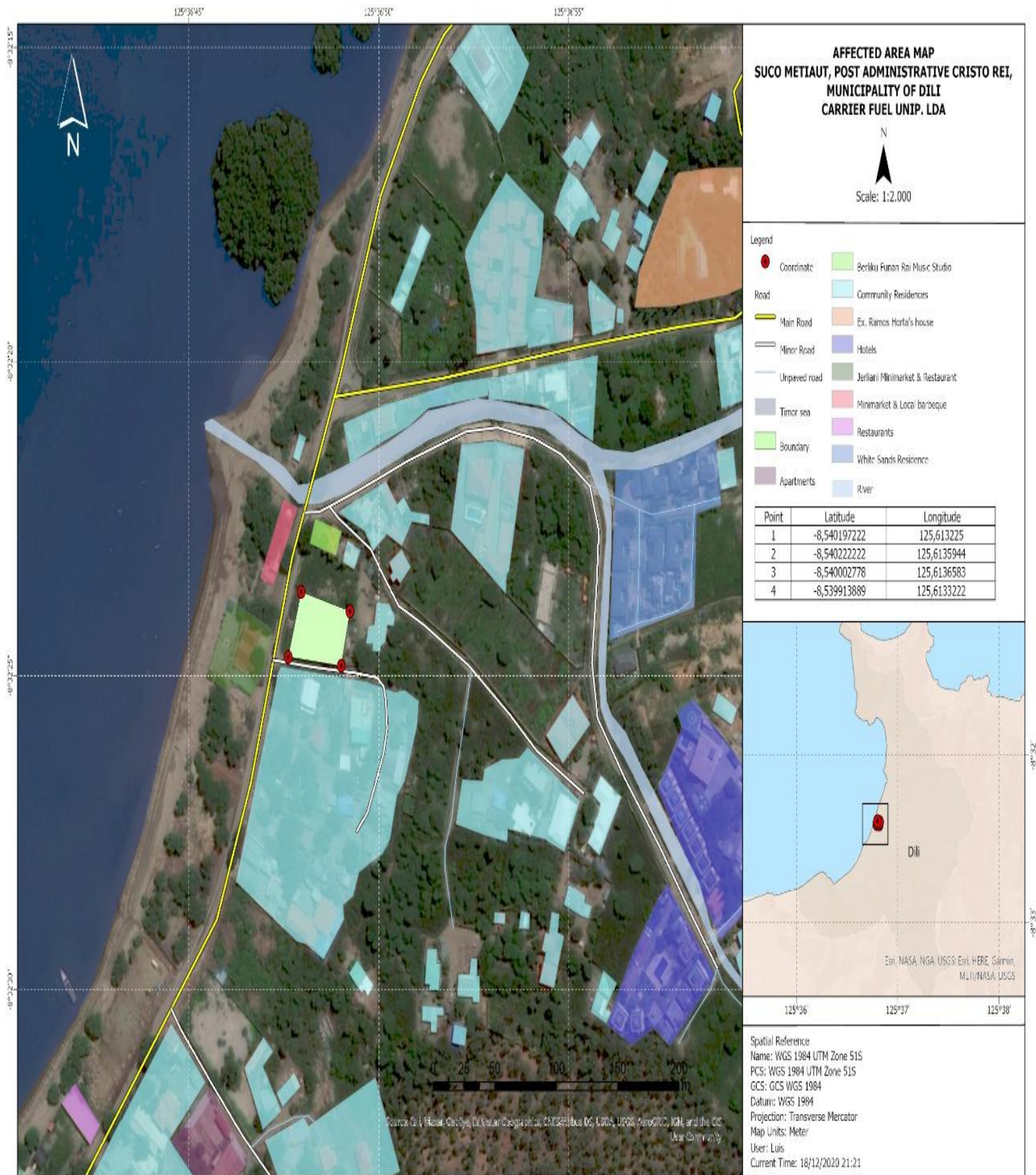


Figure 13. Affected Area Map



Figure 14. Photographs of the Proposed Location (Source: Hersege Consultant 2019)

d. Justification and Need for The Project

There are a number of factors considered as motives why the proposed development should be implemented in this particular site which draw the attention to support Cristo Rei development project. Some of the validating factors considered include:

- Accessibility: The accessibility of the site is relatively favorable where the site is located adjacent to the inter-municipality road of Cristo Rei to Hera
- Demand for Petrol Station Services: The demand of petroleum and related services in this area is highly required, due to the motorized traffic in this post Suco is high and the actual condition of Fuel station in Metiaut doesn't fulfill the need of the costumer in Cristo Rei and Bidau.
- The proper standard. There are several retail sellers in the streets, which may not be sufficient to response domestic demand. With this facility in place, the motorists will have a shorter distance to obtain the products and services.

Low Risk to the Locals: The area with the site for the proposed fuel station and gas oil storage is far to the community settlement, approximately 100 meters to 1km or so, this makes the project suitable for the area since there are very few people at risk from the activities of the project.

e. The Proponent's Endorsement of The SEIS

Carrier Fuel is fully responsible to endorse and implement all the requirements of this Simplified Environment Impact Statement (SEIS); including implementation of requisite legal frameworks. Monitoring of the fuel filling station activities will be carried out by the Carrier Fuel as the project's proponent and will be responsible for day-to-day management of the project's activities.

f. The Structure of The EMP

This document has been structured to describe the new, project-related facilities and their likely impacts - positive, neutral or negative - on the existing environment (including the community, the natural environment and local cultural heritage) in the context of prevailing government policies and law:

Tabel 2. Structure of EMP

Section 1	Executive Summary
Section 2	Details of The Project Proponent
Section 3	Details of The Consultant Who Prepared EMP
Section 4	Description of The Project
Section 5	Legal Requirements
Section 6	Institutional Roles and Responsibility
Section 7	Summary of Impact
Section 8	Description of proposed Mitigation Measures
Section 9	Governing Parameters
Section 10	Monitoring Program
Section 11	Reporting Requirements
Section 12	Responsibilities for Mitigation and Monitoring
Section 13	Emergency Plan
Section 14	Decommissioning Plan
Section 15	Capacity Development and Training
Section 16	Public Consultation and Information Disclosure
Section 17	Complaints and Grievances Mechanisms
Section 18	Work Plan and Implementation Schedule
Section 19	Cost Estimates Review of the EMP
Section 20	Non-Technical Summary

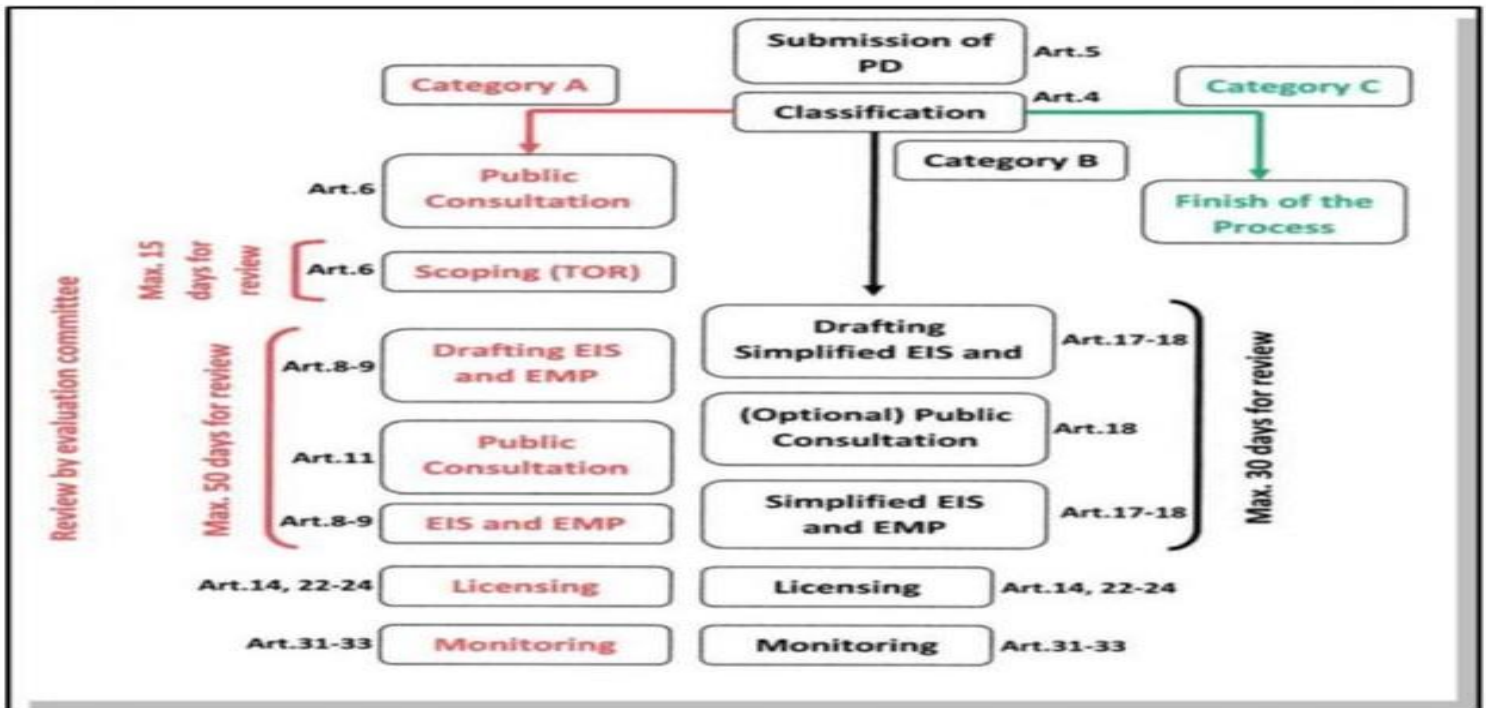
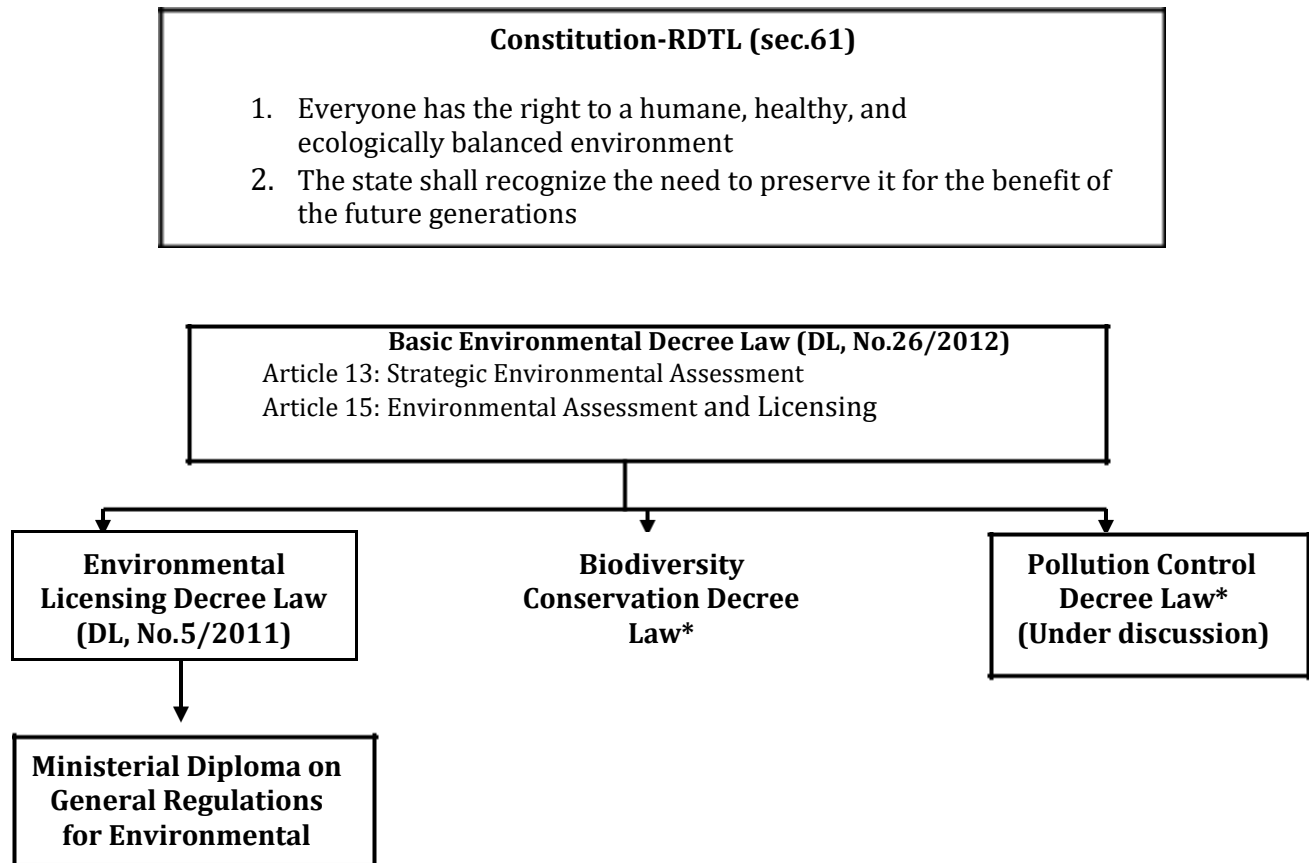


Figure 15. EIA Process Required for Category A, B and C Project

5. LEGAL RECRUITMENTS

a. Hierarchy of Environmental Law



b. Relevant Laws and Regulation

This environmental impacts assessment as a basis to prepare the report SEIS and EMP has been conducted by taking the reference from the legal framework of environmental safeguard policy, as well as the Timor Leste regulation of petroleum and mineral resources management. The following table, show the main regulation related to EIA and petroleum activity in Timor Leste.

Table 3. Relevant Laws and Regulation

Agency	Relevant Laws
Ministry of Commerce and Environment	Decree Law No. 5/2011
	Decree Law No. 26/2012 on Environmental base law
	(Draft) Law on Biodiversity (March 2012)
	(Draft) Law on Protected Area (May 2013)
	UNTAET Law No. 19/2000 on Protected Area
Ministry of Agriculture and Fisheries (MAF)	Law No. 12/2004 on Crimes related fisheries
	Law No. 6/2006 on legal Basis for management and Regulation of Fisheries and Agriculture
National Petroleum and Mineral Authority	1. ANPM Regulation no.2/2014, of 24, October 2014, first Amendment of ANPM regulatory No. 1/2012 on the downstream petroleum activity. 2. ANPM Regulation no.3/2014, of 24, October 2014, first amendment and operation of fuel filling station
International	1. Convention on the Prevention of Marine pollution by Dumping of Wastes and other Matter (London Dumping Protocol) 2. Indonesian Petroleum Regulation

Other relevant regulation required in absence of local regulation are also applicable such WHO, IFC, USEPA, where some standard parameters of the environmental indicator was used. The following table shows the most applicable international standards parameter of the environmental indicators:

Table 4. Applicable International standards in Absence of Timor Leste's Standards

Environmental Standard	TL National Standard	International Standard
Drinking water Quality standards	Adopted WHO Standards	WHOs
Waste water effluent	None	WHO/USEPA
Ambient Air Quality Standards	None	IFC/WHO
Heavy Metal Standards	None	WHO
Noise	Leq55dB(A) per UNTAET Regulation	Word Bank
Vibration	None	USEPA
Soil	None	IFC/Word Bank
Ambient receiving water Quality Standards	None	IFC/WHO
OHS	None	IFC/ISO-81001

c. Downstream Regulations

First Amendment to ANPM Regulation No. 3 /2014 on Installation and Operation of Fuel Filling Station. This regulation serves as a legal instrument necessary to efficiently manage the procedures for reviewing existing installations, installing new Fuel Filling Stations, renovating or making alterations to existing Fuel Filling Stations, as well as their operation.

General Principles for Installation of Fuel Filling Station

Section I of this regulation covers the *location, project and licensing approvals*.

- a) The approval of the location of a new or an existing Fuel Filling Station is done prior to the presentation and approval of a project for the construction of a Fuel Filling Station. It must be made through the completion and submission of the form included in annex I in this regulation, called “*Application for Approval of Location of a Fuel Filling Station*” to the ANPM.
- (b) After obtaining a Certificate of Approval of Location for Fuel Filling Station, operators of new or existing Fuel Filling Station shall present to the ANPM an “*Application for the Approval of a Project for a Fuel Filling Station*”, in the form included in Annex II to this Regulation.
- (c) The License Application shall follow the rules set forth in ANPM Regulation No.1/2012, of 24 October 2012, and the License is issued in the form set out in Annex I to Decree Law No.1/2012, of 1 February 2012, on the Downstream Sector.

First Amendment to ANPM Regulation no.1/2014 on Fuel, Biofuel, and Lubricant Quality Standards and Specifications. This regulation sets the minimum quality standards for Fuel, Biofuel, Lubricants and similar products available in the domestic market and minimum standards of consumer protection.

6. INSTITUTING ROLES AND RESPONSIBILITIES

Proponent responsibilities Category B Project – Automotive Fuel Filling Station

- ✓ Preparation of Project Document and submission
- ✓ Holding a public consultation (optional)
- ✓ Implementation of environmental survey, prediction of environmental impacts, and evaluation of these impacts identified
- ✓ Preparation of Environmental Management Plan
- ✓ Implementation of monitoring: to monitor periodically the environmental aspects identified and submit a monitoring report to the Environmental Authority

Relevant Authorities' Roles and Responsibilities

<i>Agência Nacional de Licenciamentu Ambiental (ANLA)</i> <i>Secretario Estado do Meio Ambiente (SEA)</i>	Carry out inspection and monitoring to safeguard the environment, health and safety
<i>Autoridade Nacional do Petróleo e Minerais (ANPM)</i> <i>Direcção Downstream</i> <i>Ministério do Petróleo</i>	The regulatory authority for the petroleum and natural gas and related products, and mining Industries Carry out inspection and monitoring on downstream activities
<i>Direcção Nacional de Servicos de Águas e</i>	Responsible for the national management of water
<i>Saneamento (DNSAS)</i>	resources. It also formulates sector policy, manages the distribution for human consumption, and monitor water quality through DNSAS laboratory
<i>Ministério da Saúde</i>	Responsible for public health
<i>Direcção Nacional da Protecção Civil (which include the fire fighters)</i>	Responsible for fire hazard and emergency

7. SUMMARY OF IMPACTS

Environmental impacts at an automotive fuel filling station are primarily resulted from storing and handling of fuels on site, which associated with emissions/release of products to soil, groundwater and surface water (release in liquid phase), and emissions to air (vapor phase of the fuel). Sources that may give rise to contamination on site include underground storage tanks, pumps or dispensers, fuel pipe between tanks and pumps, waste oil tanks, etc. The contamination may result from a slow leak over time or a fast release (spill) for the sources that may rise to contamination and it may occur at or near the surface, or at a depth. Furthermore, the age, type of construction and method of operation used for the facilities at the fuel filling station may affect the likelihood and severity of the impacts on the environment.

The activities arise from the operational stage of the fuel filling station are likely to cause noise that may become a nuisance to the surrounding community. Such activities may also affect the health and safety of the workers and the local community, particularly from the vapor release that may have adverse health impacts, and the risk of fire/explosion. Moreover, there may be a disruption from unruly behavior of customers or violence on site which can affect the safety of the workers and general public.

The following table lists the main activities and facilities on site that are likely to cause social and environmental impacts during the Pre-Construction, Construction Maintenance and operational phase. It highlights the interaction between the potential sources of pollution (*e.g.* the loss product) that migrates (pathway) until it reaches the receptors, such as soil, water, air, and biodiversity (plants and wildlife) that can be affected.

Table 5. Summary of Impact

Project Related Activity	Source of potential impacts	Potential Impacts	
		Negative	Positive
PRE-CONSTRUCTION			
- Land clearing using heavy machinery - Land excavation	- Land clearing - Poor soil and rock piles - Inexperienced workers - Fuel and lubricant leakages	- Air pollution - Noise and vibration pollution - Impact on workers' health and safety and community - Impact on agriculture, geology economic and ecology - Soil and water pollution - Fire or/and explosion - Conflict - Impact on traffic	Employment opportunity

• Vehicle and heavy machinery movements	• Intense movements of vehicles and heavy machineries in and out of the facility • Inexperienced workers • Fuel and lubricant leakages	• Air pollution • Traffic jam and traffic accident • Impact on workers' health and safety and community • Soil and water pollution • Fire or/and explosion • Conflict • Impact on traffic	
• Wastes Production	• Poor soil and rock piles • Improper disposal of wastes • Poor site management	• Air pollution • Visual pollution • Soil and water pollution • Impact on economic and agricultural activity • Conflict • Impact on traffic	
CONSTRUCTION			
• Vehicles and heavy machineries movement • Excavation	• Poor site management • Inexperienced workers and drivers • Poor soil and rock piles management • Fuel and lubricant leakages	• Air pollution • Noise and vibration pollution • Impact on workers' health and safety • Soil and water pollution • Fire or/and explosion • Conflict • Impact on traffic	Employment opportunity
• Concrete mixtures for construction of walls, floor, supporting office, retention basin, pumps island and etc.	• Poor site management • Inexperienced workers • Fuel and lubricant leakages	• Air pollution • Noise and vibration pollution • Impact on workers' health and safety and community • Soil and water pollution • Fire or/and explosion • Conflict	
• Installation of underground tanks, Fuel pipes, canopy and dispensers electrical system and etc.	• Inexperienced workers • Not follow procedures	• Air pollution • Noise and vibration pollution • Impact on workers' health and safety and community • Fire or/and explosion • Conflict	
• Wastes production	• Improper disposal of wastes • Poor site management	• Visual pollution, • Soil and water pollution • Conflict • Impact on economic and agricultural activity	
OPERATION			

• Fuel delivery from tankers to underground storage tanks • Dispensing fuel in to vehicles tanks	• Inexperienced and untrained staffs • Leaking or spill during transferring of fuels • Safety procedure negligence • Leaking from the underground tanks • Overfilled of vehicles' tanks • Smoking and using mobile phone in the facility • Poor facility management • Movement of vehicles and people • Leaking from dispensers • Leaking from pipes • Lack of monitoring and inspection	• Fire or/and explosion in the facility • Air pollution in and outside the facility • Impact on health and safety of the workers and community • Soil, surface water and groundwater pollution • Fire or/and explosion in the facility • Air pollution in and outside the facility • Impact on health and safety of the workers and community • Impact on soil, surface water and groundwater	Employment opportunity
• Use of electricity	• Lack of inspection • Electrical failure	• Fire and explosion • Impact on health and safety of the workers and community	
• Movement of vehicles in and out of the facility	• Poor management facility	• Traffic jam and traffic accident during peak hours • Impact on people inside and outside of the facility, including the workers	
• Community activity • Residence inside the facility's activity	• Rubbish burning • Burning house • Burning for agriculture purposes	• Air quality in and outside the facility • Fire in the facility • Explosion in the facility • Loss of life • Impact on health and safety of the workers	
• Solid and liquid wastes production	• Improper management of wastes • Improper wastes disposal • Poor wastes management	• Soil and water pollution • Impact on land field • Impact on economic and agricultural activity	
MAINTENANCE			
• Underground storage tanks maintenance • Fuel pipes maintenance • Dispensers maintenance	• Inexperienced and untrained staffs • Improper use of equipment • Safety procedure negligence • Leak and spill • Poor planning to carry out the activity • Vehicles and people's movements	• Impact on health and safety of the workers and community • Fire or/and explosion in the facility • Air pollution • Traffic accident	Employment opportunity

	• Volatile organic compounds emission		
• Canopy maintenance • Fence/wall/ maintenance • Floor maintenance	• Poor planning to carry out the activity • Inexperienced and untrained staffs • Improper use of equipment • Safety procedure negligence • Vehicles and people's movements	• Noise and vibration pollution • Air pollution • Impact on health and safety of the workers	
• Electrical system maintenance	• Inexperienced and untrained staffs	• Fire or/and explosion • Impact on health and safety of the workers • Loss of life	
• Vehicles movement in and out of the facility	• Vehicles and people's movements in the facility • Poor facility management	• Noise and vibration pollution • Air pollution • Impact on health and safety of the workers • Loss of life • Impact on traffic	
• Drainage maintenance/ • Oil trap system maintenance	• Inexperienced and untrained staffs • Improper use of equipment • Safety procedure negligence • Poor wastes management	• Noise and vibration pollution • Impact on health and safety of the workers • Soil, and water pollution, • Impact on economic and agriculture activity	
DECOMMISSIONING			
• Removing of storage tanks, dispensers and fuel pipes	• Inexperienced staffs • Improper use of equipment • Safety procedure negligence	• Noise and vibration pollution • Air pollution • Impact on staffs occupational health and safety • Impact on community health and safety	Employees would losing their job
• Dismantle canopy, demolish supporting office (and minimarket), floors, walls oil traps system, drainage and etc.	• Inexperienced staffs • Improper use of equipment • Safety procedure negligence	• Noise and vibration pollution • Air pollution • Impact on staffs occupational health and safety • Impact on community health and safety	
• Movement of vehicles and heavy machineries in and out of the facility	• Movement of people and other vehicles outside the facility • Safety procedure negligence	• Impact on staffs occupational health and safety • Impact on community health and safety • Damage to public and private facility and property • Impact on traffic	
• Produce solid and liquid wastes	• Dismantle of the facility components	• Soil quality and water pollution • Air pollution	

	• Leaks and spill of fuel from vehicles • Sludge from oil traps and storage tanks • Poor wastes management	• Land field • Impact on economic and agricultural activity	
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8. DESCRIPTION OF PROPOSED MITIGATION MEASURES

The following section provides mitigation measures required for managing and controlling the potential impacts identified during the operational and decommissioning phase of the fuel filling station.

Table 6. Proposed of Mitigation Measures

PRE-CONSTRUCTION

Activities	Impacts	Parameter/ particular concerns	Preventive action	Control and responding action	Corrective action
- Land clearing - Vehicles movements - Use of heavy of machinery for land clearing and excavation - Wastes production and burning	Air quality	<i>Dust (particulate matter) and Flue gasses/exhaust gasses impact on air quality</i>	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Proper pilling of soil from earth work - Build fence around the project site to isolate dust to spread to surround - Installation of signage inside and outside the facility to inform general traffic those construction vehicles might make an access in and out of the facility. - Suspend or Stop the work when it is windy if required to - Daily Check and maintenance to the equipment before be utilized to avoid emission to the air - Reduce vehicle's speed to minimise flue gasses emission and dust from suspend in the air - Turn off unnecessary idling of vehicles and machineries' engines - Waste materials shall not be burned on working area and disposed to the designated area. - Adequate wastes management sign must be displayed at project site - Appointing designated personnel to supervise the activity	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Reduce the vehicle speed to minimize flue gasses emission and dust from suspend in the air - Suspend or Stop the work when it is windy - Construction equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order. - Clean the wastes and disposed at the designated location - Appointing designated personnel to supervise the activity	- Re-planting trees after construction at the suitable and designated location - Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Conduct maintenance to vehicles regularly - Regular inform the drivers to operate vehicles according to established speed - Regular inform workers to manage and dispose the wastes of at the designated location - Adequate wastes management sign must be displayed at project site - Appointing designated personnel to supervise the activity

• Land clearing • Vehicles movement and excavation • Use of heavy machinery for land clearing and excavation • Vehicles movements • Wastes production and burning	Workers' Occupational health and Safety (OHS)	<i>Dust (particulate matter) impact on Workers</i> <i>Flue gasses/exhaust gasses impact on Workers</i>	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Proper pilling of soil from earth work • Installation of signage inside and outside the facility to inform general traffic those construction vehicles might make an access in and out of the facility. • Suspend or Stop the work when it is windy • Proper PPE should be worn by the Workers • Daily Check and maintenance to the equipment before be utilized to avoid emission to the air • Reduce vehicle's speed to minimise flue gasses emission and dust from suspend in the air • Workers should spend less time next to idling engines • Turn off unnecessary idling of vehicles and machineries' engines • Wastes should not be burnt in the project area, but managed properly and disposed of at designated location • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Reduce the vehicle speed to minimize flue gasses emission and dust from suspend in the air • Suspend or Stop the work when it is windy • Construction equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order. • Clean the wastes and disposed at the designated location • Appointing designated personnel to supervise the activity	• Proper PPE should be worn by the Workers • Re-planting trees after construction at the suitable and designated location • Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Conduct maintenance to vehicles regularly • Regular inform the drivers to operate vehicles according to established speed • Regular inform workers to manage and dispose the wastes of at the designated location • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity
• Land clearing and excavation		<i>Workers exposure to extreme heat</i>	• Workers must adjust exposure until body is acclimated to the heat • Minimize exposure to hazard through workers rotation and limitation to working hours • Regular drinking to maintain an adequate hydration level • Ensuring a good quality rest period prior to attending work • Workers must wear proper PPE • Provide an adequate rest area • Provide and display the emergency contact list in the working area	• Wearing clothes that allow sweat to evaporate • Immediate treat workers suffer from unserious heat stress • Immediate Evacuate the workers from serious heat stress to hospital or clinic • Appointing designated personnel to supervise the activity	• Proponent must provide proper PPE to all Workers • The worker should be recovered completely before continue to work • Fair Compensate the workers if necessary • Provide and display the emergency contact list in the working area • Appointing designated

					personnel to supervise the activity
- Land clearing using heavy machineries - Vehicles movements during land clearing and excavation		<i>Workers injury related to accident (vehicles, heavy duty equipment, etc.)</i>	- Proper PPE should be worn a before conducting a task - Ensure Workers are fit prior to undertake any works - Proponent should properly hiring a qualified/ experienced and healthy person - First Aid kits will be provided and placed at strategic locations to allow access to the workers in case of an accident - Build fence around the project to prevent unauthorized people entering to the work site - Human traffic to be directed away from the construction works site using appropriate signage. - Assigned tasks to Workers based on their skill and knowledge - Provision of training for proper equipment handling and safety precaution for equipment handling - Provide and display the emergency contact list in the working area. - Appointing designated personnel to supervise the activity	- Stop or suspend the work temporarily when there is accident or incident - Immediate treat workers unseries injured Workers - Immediate evacuate the serious injured Workers to nearest hospital or clinics or call ambulance for evacuation assistance - Appointing designated personnel to supervise the activity and the injured Workers	- Provide PPE for all Workers - Provision of training to specific job - First Aid kits will be provided and placed at strategic locations to allow access to the workers in case of an accident - The worker should be recovered completely before continue to work - Provide and display the emergency contact list in the working area. - Fair compensate the Workers if necessary - Appointing designated personnel to supervise the activity
Use of heavy machinery during land clearing and excavation		<i>Workers mechanical related works accident or incident</i>	- Proper PPE should be worn a before conducting a task - Proponent should properly hiring a qualified/ experienced and healthy person - Provision of training for proper equipment handling and safety precautions for equipment handling Prevent body to contacting hazardous moving parts - Ensure no objects can fall into moving parts - First Aid kits will be provided and placed at strategic locations to allow access to the workers in case of an accident - Appointing designated personnel to supervise	- Suspend or stop the work temporarily when people Workers are injury - Apply first aid to treat the unseries injured Workers properly - Immediate evacuate the serious injured Workers nearby hospitals or clinics or call ambulance for evacuation - Appointing designated personnel to supervise the activity and injured	- Provide PPE for all Workers - Provision of training to specific job - First Aid kits will be provided and placed at strategic locations to allow access to the workers in case of an accident - The worker should be recovered completely before continue to work - Provide and display the

			the activity	Workers	emergency contact list in the working area. • Fair compensate the Workers if necessary • Appointing designated personnel to supervise the activity
• Use of heavy machinery during land clearing and excavation		Noise impact to Workers	• Proper PPE should be worn a before conducting a task • Utilized equipment with one lower noise emission to ensure that the permissible occupation noise-rating limit of 85 dBA is not exceeded. • The equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order • Barricade or Install fence around the project site to isolate the noise • Appointing designated personnel to supervise the activity	• Control noise level should not exceed the limit • Workers should wear proper PPE • Appointing designated personnel to supervise the activity	• Utilized equipment with one lower noise emission • Provide workers to wear proper PPE • Appointing designated personnel to supervise the activity
• Vehicles movements during land clearing and excavation • Land clearing • Use of heavy of machinery for land clearing and excavation • Wastes production and burning	Social impact (community health and safety)	Dust (particulate matter) and Flue gasses/exhaust gasses impact on community	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Proper pilling of soil from earth work • Build fence around the project site to isolate dust to spread to surround • Installation of signage inside and outside the facility to inform general traffic those construction vehicles might make an access in and out of the facility. • Suspend or Stop the work when it is windy if required to • Provide a proper PPE to the community that live around the project site • Daily Check and maintenance to the equipment before be utilized to avoid emission to the air • Reduce vehicle's speed to minimise flue gasses emission and dust from suspend in the air	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Reduce vehicle speed to minimize flue gasses emission and dust from suspend in the air • Suspend or Stop the work when it is windy • Suspend or stop to work temporarily when receive any complaint from the community • Resolve the complaint in a proper manner before resume to work • Contact the police if	• Re planting trees after construction at the designated location within the facility • Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Prepare and archive the report on complaints • Prepare and provide PPE to community live around the project site • Conduct maintenance to equipment and vehicles regularly • Regular Inform the drivers to operate

			• Turn off unnecessary idling of vehicles and machineries' engines • Waste materials shall not be burned on working area and disposed to the designated area. • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity	physical confrontation involved during the complaint • Construction equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order • Clean the wastes and dispose of at the designated location • Appointing designated personnel to supervise the activity	vehicles according to established speed • Regular Inform workers manage and dispose the wastes of at the designated location • Proper wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity
• Companies Vehicles movements outside project area during site preparation • Land clearing • Excavation		<i>Traffic Jam and Traffic accident (general traffic)</i>	• Organize the movement of vehicles on and off site to minimize risks and prevent congestion on roads in the vicinity of the site. • Appointing designated personnel to help smoothing traffic out during an especially heavy vehicle movement • Large vehicle movement must be taken place in appropriate location where it does not cause traffic jam • In cases where activities may obstruct traffic, local traffic officials/police officer must be contacted. • Proponent should properly hiring a qualified/ experienced and healthy person • Installation of signage near the facility to inform general traffic those construction vehicles might make an access in and out of the facility. • Reduce number of construction vehicle leaving the site during peak hours • Clear markings to set apart vehicle and pedestrians routes right outside the project site • Provide designated safe zones for drivers to	• Reduce number of construction vehicle leaving project site during peak hours • Appointing designated personnel to help smoothing traffic out during an especially heavy vehicle movement • Frequently held training and inform on traffic safety and follow up drivers driving attitude to respect the safety and follow the speed limit • Driver should inform the project manager or person in charge immediately when an accident or incident occur • Treat small injury immediately	• Proper management plan for vehicle movement • Assign staffs to smoothen the traffic outside the facility • Reduce number of construction vehicle leaving the site during peak hours • Driver must aware of Emergency contact numbers in the car must be made available at project site • Fair compensate the victims of vehicle accident if necessary • Maximum supervision from project manager on the activity

			stand when unloading/loading activity is being undertaken. • Frequently held training and inform on traffic safety and follow up drivers driving attitude to respect the safety and follow the speed limit. • Ensure that drivers are competent to operate the vehicles safely. • Manage the work hours and duration for drivers to minimize fatigue. • Implement a one-way system to reduce the need for vehicles to reverse on site. • Provision of adequate protection to the general public in the vicinity of the work site, including installing safety barriers if required by villagers and signage or marking of the work areas. • Establish a speed limit to the driver driving outside the project area. • Established parking area outside of the project area should not cause traffic jam • Provide emergency contact number in the vehicles and make drivers aware of it • Maximum supervision from the project manager on the activity	• Maximum supervision from project manager on the activity	
• Vehicles movements in the project area during site preparation • Land clearing and excavation		<i>Noise and vibration impact to community</i>	• Inform affected communities well in advance for the nuisance and Contact all relevant local authorities for utilities and local village groups • Operation of noise generating equipment should only be during the day. • Utilized equipment with one lower noise emission to ensure that the permissible occupation noise-rating limit of 85 dBA is not exceeded. • The equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order • Isolate noise source by enclosing with barriers upon discussion with the management • Reduce heavy machinery and vehicles	• Stop or suspend the work temporarily when there is complaint from the community • Resolve complaints from the community in a proper manner • Inform the relevant authorities if there is physical confrontation involved during the complaint • Control noise level should not exceed the limit • Carry out the work in working hours only	• if possible use equipment with low noise • Maximum supervision from the project manager on the activity • Carry out the work in working hours • Use low noise and vibration equipment • Reduce heavy machinery and vehicles movement inside the facility, into or out of the facility • Maximum supervision

			- movements inside the facility, into or out of the facility - Use low noise and vibration equipment - Maximum supervision from the project manager on the activity	- Use low noise and vibration equipment - Reduce heavy machinery and vehicles movement inside the facility, into or out of the facility - Maximum supervision from the project manager on the activity	from the project manager on the activity
Leaking of fuels and lubricants from the heavy machinery and vehicles	Soil quality, Water quality (both groundwater and surface water)	<i>Soil, surface and groundwater pollution</i>	- Daily Check to the equipment to ensure the condition of the equipment all construction vehicles and heavy machineries should be properly maintained to prevent leaks. - Any spill or accidental leakage of the substance has to be cleaned up promptly. Operator should have in place procedure, equipment as well as material suitable to clean up oil leaks either on the ground or in the surface water. Contaminated water or soil should be disposed-off at oil disposal site. - Inform the relevant environmental authority - Ensure availability of spill clean-up materials (e.g., Absorbent pads, etc.) specifically designed for petroleum products and other hazardous substances - Maximum supervision from the project manager on the activity	- Project manager or person in charge should be informed when construction vehicles or heavy machineries leak - Leaking construction vehicles or heavy machineries should undergo maintenance right away when it is found. - Change the broken equipment with the well maintained equipment - Maximum supervision from the project manager on the activity	- Prepare emergency response plan - Ensure availability of spill clean-up materials (e.g., Absorbent pads, etc.) specifically designed for petroleum products and other hazardous substances - Remediation must be undertake when contamination is detected - Maximum supervision from the project manager on the activity
Poor management during excavation and land clearing		<i>Soil and surface water pollution</i>	- Provide appropriate drainage systems to manage surface runoff. - Install sediment retention structure around the project site to capture sediments in the raining season - Minimize the vehicles movement during raining season - Maximum supervision from the project manager on the activity	- Install sediment retention structure around the project site to capture sediments in the raining season - Minimize vehicles movement during raining season - Maximum supervision from the project manager on the activity	- Install sediment retention structure around the project site to capture sediments in the raining season - Minimize vehicles movement during raining season - Maximum supervision from the project manager on the activity
Land clearing	Ecology	<i>Impact on</i>	Works had been done restricted to the approved boundary.	Avoid removing trees and	Replant appropriate

	impact	<i>animals Vegetation and animals</i>	• Avoid cutting to trees that are not in the project area and that do not interfere with the site preparation • Avoid removing grasses that are not in the project area and that do not interfere with the site preparation • Use of guns and hunting equipment by workers will be banned and dismiss workers taking or using green timber or hunting or in possession of wildlife during site preparation • Maximum supervision from the project manager on the activity	grasses that are not in the project area and that do not interfere with the site preparation • Use of guns and hunting equipment by workers will be banned and dismiss workers taking or using green timber or hunting or in possession of wildlife • Maximum supervision from the project manager on the activity	grass and trees in the project area after the construction • Maximum supervision from the project manager on the activity
• Land excavation • Land clearing	Geological impact	<i>Disturbance of soil and rock</i>	• Utilize appropriate excavation equipment • Excavate in the designated planned location • When find any minerals, relevant authority should be notified • The stock pile of soil and rock should put at designated location • Suspend or Stop the work when it is raining • Maximum supervision from the project manager on the activity	• Suspend or stop the work temporarily when a mineral is found while excavating and notify the relevant authority • Resume the work if an investigation to the location is done • Maximum supervision from the project manager on the activity	• Minimized used of heavy equipment by manual excavation • Maximum supervision from the project manager on the activity
	Economic and agricultural impacts	<i>Impact on economic and agriculture</i>	• Inform the landowners before dumping soil or rock and other materials on lands • Avoid dumping soil or rocks and other material on community agricultural land	• Suspend or stop the work temporarily when these is complaint • Resolve the complaint in a	• Let the relevant authority investigate people of involve in physical confrontation

		<i>activities</i>	• Adequate signage and security provided at the site • Wastes should be managed properly and disposed at designated location • Maximum supervision from the project manager on the activity	proper manner • Inform the relevant authorities if there is physical confrontation involved during the complaint • Clean the wastes and disposed at the designated location • Maximum supervision from the project manager on the activity	• Fair Compensate if necessary • inform the workers to manage and dispose wastes at designated location • Maximum supervision from the project manager on the activity
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CONSTRUCTION PHASE

Activities	Impacts	Parameter/ particular concerns	Preventive action	Control and responding action	Corrective action
• Vehicles movements in and out of the facility • Concrete mixture • Use of heavy machineries • Use of backup generator • Wastes production and burning	Air quality	<i>Dust (particulate matter) and Flue gasses/exhaust gasses from activity impact on air quality</i>	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Proper pilling of soil from earth work • Build fence around the project site to isolate dust to spread to surround • Installation of signage inside and outside the facility to inform general traffic those construction vehicles might make an access in and out of the facility. • Suspend or Stop the work when it is windy if required to • Daily Check and maintenance to the equipment before be utilized to avoid emission to the air • Reduce vehicle's speed to minimise flue gasses emission and dust from suspend in the air • Turn off unnecessary idling of vehicles and machineries' engines • Waste materials shall not be burned on working area and disposed to the designated area. • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Reduce the vehicle speed to minimize flue gasses emission and dust from suspend in the air • Suspend or Stop the work when it is windy • Construction equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order. • Clean the wastes and disposed at the designated location • Appointing designated personnel to supervise the activity	• Re-planting trees after construction at the suitable and designated location • Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Conduct maintenance to vehicles regularly • Regular inform the drivers to operate vehicles according to established speed • Regular inform workers to manage and dispose the wastes of at the designated location • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity
• Vehicles movements in and out of the facility • Use of concrete mixer • Use of heavy		<i>Dust (particulate matter) and Flue gasses/exhaust gasses impact on workers</i>	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Proper pilling of soil from earth work • Installation of signage inside and outside the facility to inform general traffic those construction vehicles might make an access in and out of the facility.	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Reduce the vehicle speed to minimize flue gasses emission and dust from	• Proper PPE should be worn by the Workers • Re-planting trees after construction at the suitable and designated location • Regular Water sprinkle in

machinery • Use of backup generator Wastes production and burning			• Suspend or Stop the work when it is windy • Proper PPE should be worn by the Workers • Daily Check and maintenance to the equipment before be utilized to avoid emission to the air • Reduce vehicle's speed to minimise flue gasses emission and dust from suspend in the air • Workers should spend less time next to idling engines • Turn off unnecessary idling of vehicles and machineries' engines • Wastes should not be burnt in the project area, but managed properly and disposed of at designated location • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity	suspend in the air • Suspend or Stop the work when it is windy • Construction equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order. • Clean the wastes and disposed at the designated location • Appointing designated personnel to supervise the activity	the dusty area to suppress dust from suspend in the air • Conduct maintenance to vehicles regularly • Regular inform the drivers to operate vehicles according to established speed • Regular inform workers to manage and dispose the wastes of at the designated location • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity
• Construction and installation of facility's components		<i>Electrical related work accident or incident</i>	• Only trained and competent people install the electrical system • The worker should wear proper PPE to do the task Install specific cable only for the electrical system • Check electrical installation in the equipment to prevent short-circuit before operation. • Establishment of safety measures and use safe work practices every time electrical equipment is used. • All Workers should informed and aware the location and how to operate shut-off switches and/or circuit breaker panels • Minimize the potential for water or chemical spills on or near electrical equipment. • Only suitable electrical equipment	• Suspend or stop the activity temporarily when there is accident on incident related to electricity • Only trained and competent people install the electrical system • Treat the minor injured Workers immediately • Evacuate the injured Workers to nearest hospital or clinic or contact emergency number for evacuation immediately • Maximum supervision from the project manager	• First Aid kits will be provided and placed at strategic locations to allow access to the workers in case of an accident • The worker should be recovered completely before continue to work • Fair compensation the Workers if necessary • Maximum supervision from the project manager on the activity

			- provided are used - Maximum supervision from the project manager on the activity	on the activity	
		<i>Expose to heat extreme heat</i>	- Workers must adjust exposure until body is acclimated to the heat - Minimize exposure to hazard through workers rotation and limitation to working hours - Regular drinking to maintain an adequate hydration level - Ensuring a good quality rest period prior to attending work Workers must wear proper PPE - Provide an adequate rest area - Provide and display the emergency contact list in the working area	- Wearing clothes that allow sweat to evaporate - Immediate treat workers suffer from unserious heat stress - Immediate Evacuate the workers from serious heat stress to hospital or clinic - Appointing designated personnel to supervise the activity	- Proponent must provide proper PPE to all Workers - The worker should be recovered completely before continue to work - Fair Compensation the workers if necessary - Provide and display the emergency contact list in the working area - Appointing designated personnel to supervise the activity
		<i>Accident or incident related to installation of components (underground storage, canopy, pump island, pipework, wall/fence, office etc.)</i>	- Project manager should ensures that all Workers are fit prior to undertake the work - Only trained and competent staffs should be assigned to do the task - Project manager should ensure that all contractors, consultants and labourers must wear necessary personal protective equipment (PPE) on site. - Build fence around the project to prevent unauthorized people entering to the work site must be strictly controlled. - Open excavations must be clearly marked. - Appropriate health and safety signage must be displayed on site. - Construction Workers should wear proper PPE to do the tasks - All visitors must report to the site office. - Sign for the hazardous zones should be displayed on site and barricade hazardous zones	- Suspend or stop the work temporary when there is serious accident or incident - Apply first aid to treat the unserious injured Workers - Evacuate serious injured Workers to nearest hospital or clinic or contact emergency number for evacuation immediately - Maximum supervision from the project manager on the activity	- Provide PPE for all Workers - Undertake training to specific job - First Aid kits must be made available at work place - Let the injured Workers recover completely before resume to work - Compensation the Workers if necessary - Maximum supervision from the project manager on the activity

			Maximum supervision from the project manager on the activity		
		<i>Accident or incident related to work in Confined space</i>	- Ensure that only certified Workers can perform confined space work - Only trained and competent staffs should be assigned to do the task - Appointing designated personnel to supervise the activity - Use Respiratory protective equipment during perform confined space work - Make sure work to in a team of two or more - Maximum supervision from the project manager on the activity	- Suspend or stop the temporarily when accident or incident happen - Immediate Rescue the injured Workers from the confined space - Apply first aid to treat non-serious injury - Evacuate the serious injured Workers to nearest hospital or clinic or call ambulance immediately - Maximum supervision from the project manager on the activity	- Provide proper PPE - Limit access to the confined space work - Let the work recover completely before resume to work - Fair Compensation the Workers if necessary - Maximum supervision from the project manager on the activity
- Vehicles movements in and out of the facility - Working with heavy machineries - Work at height		<i>Risk injury related to accident (vehicles, heavy duty equipment working in height, etc.)</i>	- Only trained and competent staffs should be assigned to do the task - Install proper traffic sign in the facility and outside the facility - Provide safety training for Workers - Hold frequent safety meeting - Proper PPE should be worn a before conducting a task - Activities should be executed follow the safe system of work. - Organizing work to reduce exposure to the hazard. - Preventing access to the hazardous zones. - Workers must make sure that every time Workers are on roofs and scaffolding, fall-prevention countermeasures are in place. - Prevent falling objects - Recognize hazard and provide plan - Maximum supervision from project manager on the activity	- Suspend or stop the work temporarily when there is serious accident or incident - Immediate Rescue the injured work - Apply first aid to treat un-serious injury - Evacuate serious injured Workers to nearest hospital or clinic or contact ambulance for evacuation assistance immediately - Maximum supervision from the project manager on the activity	- Provide proper PPE - First Aid kits must be made available at work place - Let the injured Workers recover completely before resume to work - Fair compensation the Workers if necessary - Maximum supervision from project manager on the activity

• Welding • Installation of facility components • Maintenance of cars and heavy machineries		<i>Workers Mechanical related works accident or incident</i>	• Proponent should properly hiring a qualified/ experienced and healthy person Proper PPE must be worn before starting work • Workers must understand mechanical hazard • Prevent body to contacting hazardous moving parts • Ensure no objects can fall into moving parts • Maximum supervision from project manager on the activity	• Suspend or stop the work temporarily when there is serious accident or incident • Immediate Rescue the injured work • Apply first aid to treat unserious injury • Evacuate serious injured Workers to nearest hospital or clinic or contact ambulance for evacuation assistance immediately • Maximum supervision from the project manager on the activity	• Provide proper PPE • First Aid kits must be made available at work place • Let the injured Workers recover completely before resume to work • Fair compensation the Workers if necessary • Maximum supervision from project manager on the activity
• Welding • Installation of electricity • Leaking of fuels from vehicles and heavy machineries		<i>Impact of fire or/and explosion in site project on Workers</i>	• Eliminate activities that cause fire explosion during construction • Investigate surroundings before welding begins • Keep flammable materials far from welding areas • Practice good housekeeping • Any leakage from vehicle or heavy machinery should be cleaned • Only allow experienced Workers install the electrical system • Take immediate action to Suspend or Stop the leakage from vehicles and machineries • Emergency procedure must be applied • Provide emergency contact number in the facility and make the Workers aware of it • Routine inspections of escape routes & fire safety signage • Always keep a fire extinguisher nearby • All worker should wear proper PPE	• Suspend or stop the work temporarily when there is serious accident or incident • If the fire is out of control, call the Fire department for assistance immediately • Evacuate Workers in the project site • Treat the unserious injured Workers immediately • Evacuate the serious injured Workers to nearest hospital or clinic, contact emergency number for evacuation • Maximum supervision from the project manager on the accident or incident	• Provide appropriate PPE • First Aid kits must be made available at work place • Ensure emergency procedures are well understood by Workers • Investigate what causes the fire or explosion • Let the workers recover completely before resume to work • Fair compensation the Workers if necessary • Maximum supervision from the project manager on the activity

			Maximum supervision from the project manager on the activity		
- Vehicles movement in and out of the project area - Movement and use of heavy machinery - Excavation		Noise and vibration impact on workers	- Proper PPE should be worn a before conducting a task - Utilized equipment with one lower vibration and noise emission to ensure that the permissible occupation noise-rating limit of 85 dBA is not exceeded. - Ensuring a good quality rest period prior to attending work - All equipment to be adequately maintained and kept in good working order to reduce noise. - All noise generating maintained to ensure that they operate within the noise limits they were designed to operate - Watch for the loosen and falling structures - Maximum supervision from the project manager on the activity	- Proper PPE should be worn a before conducting a task - Utilized equipment with one lower vibration and noise - Suspend or stop the operation when there is accident or incident - Immediate treat minor injured workers - Evacuate serious injured Workers to nearest hospital or contact ambulance for assistance immediately - Maximum supervision from the project manager on the activity	- Proper PPE should be worn a before conducting a task - Utilized equipment with one lower vibration and noise emission - Maximum supervision from the project manager on the activity - Let the Workers recovery completely before resume to work - Maximum supervision from the project manager on the activity
- Vehicles movements in and out of the facility - Use of concrete mixer - Working with heavy machineries - Use of backup generator - Wastes production and burning	Social impact (community's health and safety)	Dust (particulate matter) and Flue gasses /exhaust gasses impact on community	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Proper pilling of soil from earth work - Build fence around the project site to isolate dust to spread to surround - Installation of signage inside and outside the facility to inform general traffic those construction vehicles might make an access in and out of the facility. - Suspend or Stop the work when it is windy if required to - Provide a proper PPE to the community that live around the project site - Daily Check and maintenance to the equipment before be utilized to avoid emission to the air - Reduce vehicle's speed to minimise flue	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Reduce vehicle speed to minimize flue gasses emission and dust from suspend in the air - Suspend or Stop the work when it is windy - Suspend or stop to work temporarily when receive any complaint from the community - Resolve the complaint in a proper manner before resume to work	- Re planting trees after construction at the designated location within the facility - Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Prepare and archive the report on complaints - Prepare and provide PPE to community live around the project site - Conduct maintenance to equipment and vehicles regularly - Regular Inform the

			- gasses emission and dust from suspend in the air • Turn off unnecessary idling of vehicles and machineries' engines • Waste materials shall not be burned on working area and disposed to the designated area. • Adequate wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity	• Contact the police if physical confrontation involved during the complaint • Construction equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order • Clean the wastes and dispose of at the designated location • Appointing designated personnel to supervise the activity	- drivers to operate vehicles according to established speed • Regular Inform workers manage and dispose the wastes of at the designated location • Proper wastes management sign must be displayed at project site • Appointing designated personnel to supervise the activity
• Vehicles movements in and out of the facility • Movement of people outside the facility		<i>Traffic Jam and traffic accident (general traffic)</i>	• Organize the movement of vehicles on and off site to minimize risks and prevent congestion on roads in the vicinity of the site. • Appointing designated personnel to help smoothing traffic out during an especially heavy vehicle movement • Large vehicle movement must be taken place in appropriate location where it does not cause traffic jam • In cases where activities may obstruct traffic, local traffic officials/police officer must be contacted. • Proponent should properly hiring a qualified/ experienced and healthy person • Installation of signage near the facility to inform general traffic those construction vehicles might make an access in and out of the facility. • Reduce number of construction vehicle	• Reduce number of construction vehicle leaving project site during peak hours • Appointing designated personnel to help smoothing traffic out during an especially heavy vehicle movement • Frequently held training and inform on traffic safety and follow up drivers driving attitude to respect the safety and follow the speed limit • Driver should inform the project manager or person in charge immediately when an accident or incident occur • Treat small injury	• Proper management plan for vehicle movement • Assign staffs to smoothen the traffic outside the facility • Reduce number of construction vehicle leaving the site during peak hours • Driver must aware of Emergency contact numbers in the car must be made available at project site • Fair compensation the victims of vehicle accident if necessary • Maximum supervision from project manager on the activity

			leaving the site during peak hours • Clear markings to set apart vehicle and pedestrians routes right outside the project site • Provide designated safe zones for drivers to stand when unloading/loading activity is being undertaken. • Frequently held training and inform on traffic safety and follow up drivers driving attitude to respect the safety and follow the speed limit. • Ensure that drivers are competent to operate the vehicles safely. • Manage the work hours and duration for drivers to minimize fatigue. • Implement a one-way system to reduce the need for vehicles to reverse on site. • Provision of adequate protection to the general public in the vicinity of the work site, including installing safety barriers if required by villagers and signage or marking of the work areas. • Establish a speed limit to the driver driving outside the project area. • Established parking area outside of the project area should not cause traffic jam • Provide emergency contact number in the vehicles and make drivers aware of it • Maximum supervision from the project manager on the activity	immediately • Maximum supervision from project manager on the activity	
• Vehicles movements in and out of the facility • Working with heavy machineries • Construction of facility's		<i>Noise and vibration impact to community</i>	• Inform affected communities well in advance for the nuisance and Contact all relevant local authorities for utilities and local village groups • Operation of noise generating equipment should only be during the day. • Utilized equipment with one lower noise emission to ensure that the permissible occupation noise-rating limit of 85 dBA is	• Stop or suspend the work temporarily when there is complaint from the community • Resolve complaints from the community in a proper manner • Inform the relevant authorities if there is	• if possible use equipment with low noise • Maximum supervision from the project manager on the activity • Carry out the work in working hours • Use low noise and vibration equipment

components			- not exceeded. - The equipment has been maintained to a good standard. The equipment has been checked at regular intervals to ensure they are maintained in working order - Isolate noise source by enclosing with barriers upon discussion with the management - Reduce heavy machinery and vehicles movements inside the facility, into or out of the facility - Use low noise and vibration equipment - Maximum supervision from the project manager on the activity	- physical confrontation involved during the complaint - Control noise level should not exceed the limit - Carry out the work in working hours only - Use low noise and vibration equipment - Reduce heavy machinery and vehicles movement inside the facility, into or out of the facility - Maximum supervision from the project manager on the activity	- Reduce heavy machinery and vehicles movement inside the facility, into or out of the facility - Maximum supervision from the project manager on the activity
- Welding - Leaking of fuels from vehicles		<i>Impact of fire or/and explosion to community</i>	- Eliminate activities that cause fire or explosion during the construction - inform neighbours prior to perform any work associated with fire hazards - Develop a grievance procedure to ensure fair and prompt resolution of problems arising from the project. - Maintain full written records of each grievance case and the associated process of resolution and outcome for transparent, external reporting. - Regular inspections of escape routes & fire safety signage - Fire extinguisher and first aid kit should be made available at all times Make sure Workers are above to use fire extinguisher - Provide emergency contact number in the facility and make the Workers aware of it - Maximum supervision from the project manager on the activity	- Suspend or stop the work temporarily when there is fire - Use proper fire extinguisher when there is fire in the facility - Contact emergency numbers immediately for assistance when fire is out of control before it spread to community house or facilities - Evacuate community to safe place - Immediate treat the unserious injured Workers - Evacuate the serious injured Workers to nearest hospital or clinic, contact emergency number for evacuation immediately - Maximum supervision	- Investigate what causes the fire or explosion - Fair compensation to the Workers if necessary - Maximum supervision from the project manager on the activity

				from the project manager on the accident or incident	
Leaking of fuels and lubricant from movement of vehicles and use of heavy machineries	Soil quality, Water quality (both groundwater and surface water)	<i>Soil, surface water and groundwater pollution due to leak of fuel and lubricant and construction</i>	- Regular inspection to construction vehicles and heavy machineries should be regularly done - All construction vehicles and heavy machineries should be properly maintained to prevent leaks. - Any accidental spill or leakage of substances (e.g. oil and lubricants) has to be cleaned promptly using proper procedure and equipment and should be disposed of in designated location - Notify environmental authority for any contamination cause - Ensure availability of spill clean-up materials (e.g., Absorbent pads, etc.) specifically designed for petroleum products and other hazardous substances - Maximum supervision from the project manager on the activity - Maximum supervision from the project manager on the activity	- Project manager should be notified when construction vehicles or heavy machineries leak - Leaking construction vehicles or heavy machineries should undergo maintenance right away when it is found. - Maximum supervision from the project manager on the activity	- Ensure availability of spill clean-up materials (e.g., Absorbent pads, etc.) specifically designed for petroleum products and other hazardous substances - Maximum supervision from the project manager on the activity - Remediation must be undertaken when contamination is detected - Maximum supervision from the project manager on the activity

Poor management of the construction site		<i>Soil, surface water and groundwater pollution due construction</i>	- Install sediment retention structure around the project site to capture sediments in the raining season - Limit vehicles movement during rainy day - Avoid working during raining - Maximum supervision from the project manager on the activity	- Install sediment retention structure around the project site to capture sediments in the raining season - Limit vehicles movement during rainy day - Suspend or Stop working when it is raining - Maximum supervision from the project manager on the activity	- Install sediment retention structure around the project site to capture sediments in the raining season - Limit vehicles movement during rainy day - Maximum supervision from the project manager on the activity
Construction activity	Ecological Impact	<i>Impact on Vegetation and animal</i>	There might be very low or zero impact negative of the construction of project on vegetation and animals		
- Construction activities - Waste production	Economic and agriculture impact	<i>Impact on economic and agricultural activities</i>	- Inform the landowners before dumping soil or rock and other materials on lands - Avoid dumping soil or rocks and other material on community agricultural land - Adequate signage and security provided at the site - Wastes should be managed properly and disposes at designated location - Maximum supervision from the project manager on the activity	- Suspend or stop the work temporarily when these is complaint - Resolve the complaint in a proper manner - Inform the relevant authorities if there is physical confrontation involved during the complaint - Clean the wastes and disposed at the designated location - Maximum supervision from the project manager on the activity	- Let the relevant authority investigate people of involve in physical confrontation - Fair Compensate if necessary - inform the workers to manage and dispose wastes at designated location - Maximum supervision from the project manager on the activity

OPERATION PHASE

Activities	Impacts	Parameter/ particular concerns	Preventive action	Control and responding action	Corrective action
• Vehicles movement (costumers and company's) in and out of the facility • Use of backup generator • Wastes production and burning	Air quality	Dust(particulate matter) and Flue gasses/ exhaust gasses impact on air quality	• Visual inspection should be conducted regularly on the floor for dust • Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Set a vehicles speed limit in the facility • Regularly clean dust of the floor in the facility area • Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be temporarily installed in the project to remind the drivers. • All delivery tankers should be adequately maintained to reduce exhaust emissions • Discourage idling of vehicles engines in the facility to reduce exhaust emission • Wastes should not be burnt onsite ,but managed properly and disposed at designated location • Proper wastes management sign must be displayed in the facility • Regular maintenance of backup generator to reduce emission • Maximum supervision from the facility manager on the activity	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Reduce vehicle speed in the facility • Regularly clean the dust on the floor in the facility area • Turn off unnecessary idling of vehicles in the facility area • Vehicle speeds in the fuel filling area will be limited to minimize vehicle smoke in the area • Suspend or Stop using vehicles or/and generator that emit too much flue gasses • Clean the wastes and disposed at the designated location • Maximum supervision from the facility manager on the activity	• Visual inspection should be conducted regularly on floor for dust • Regularly clean the dust on the floor in the facility area • Encourage drivers to turn off unnecessary idling of vehicles in the facility area • Regular maintenance to the facility company's vehicles and generator should done • inform the drivers to operate vehicles according to the established speed limit • inform workers to manage and dispose the wastes of at the designated location • Proper wastes management sign must be displayed in the facility • Maximum

					supervision from the facility manager on the activity
• Storing fuel in underground storage tanks • Refilling/dispensing of fuel to customer vehicle • Loading of fuels to underground storage tank		Volatile Organic compounds (VOCs) impact on air quality	• Make sure that underground tank seals are kept in good condition and caps are appropriately sealed • Ensure that fuel nozzles cut off automatically when tank is full • A competent person must remain near the tanker during unloading • Regular monitoring and inspect for leaking from pipework, dispensers and tanks, and implementing repairs within predefined period • Pressure vacuum vent should be used to avoid continuation of the releasing of gasses from the tanks. • All staff should ensure that dispensers hoses are not laid on the filling area and pump island floor at any time • Regular check the vapour control systems and make sure that they are in good condition • Maximum supervision from the facility manager on the activity	• Conduct maintenance to leaking pipework, dispenser, tanks and vapour control system if found damaged and corroded • Maximum supervision from the facility manager on the activity	• Limit exposure to products and materials that contain VOCs. • Conduct inspection regularly to detect leaks from pipework, dispensers and tanks • Maximum supervision from the facility manager in the activity

• Vehicles movement (Costumers and company's) • Use of backup generator • Wastes production and burning	Workers' Occupational Health and Safety (OHS)	Dust (Particulate matter) and Flue gasses/ exhaust gasses impact on workers	• Visual inspection should be conducted regularly on the floor for dust • Regular spray dusty area using water to suppress dust from suspend in the air • Regularly clean dust of the floor in the facility area • Provided proper PPE to Workers and Workers should wear the PPE when it is dusty in facility area • All delivery tankers should be adequately maintained to reduce exhaust emissions • Vehicle speeds in the facility should be reduced to minimize vehicle smoke in the area • Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be installed in the facility to remind the drivers. • Discourage idling of vehicles' engines to reduce exhaust gasses emission • Wastes should not be burnt in the facility, but managed properly and disposed of at the designate location • Prepare and provide PPE to workers if flue gasses are from outside of the facility • Proper wastes management sign must be displayed at project site • Regular maintenance of back-up generator and company's vehicles to reduce emission • Maximum supervision from the facility manager on the activity	• Regular spray dusty area using water to suppress dust from suspend in the air • Reduce vehicle speed • Provide proper PPE to workers • Regularly clean the dust on the floor in the facility area • Turn off unnecessary idling of vehicles in the facility area • Suspend or Stop using vehicles or/and generator that emit too much flue gasses • Staffs should remind and reprimand driver when not follow establishes speed limit • Clean the wastes and disposed at the designated location • Maximum supervision from the facility manager on the activity	• Visual inspection should be conducted regularly on floor • Provide proper PPE to workers • Limit employee exposure to dust, where required • Regularly clean the dust on the floor in the facility area • Encourage drivers to turn off unnecessary idling of vehicles in the facility area • Regular maintenance to the facility company's vehicles and generator should done • Remind worker to manage and dispose the wastes of at the designated location • Proper wastes management sign must be displayed in the facility • Maximum supervision from the facility manager on the activity
• Storing fuel in underground storage tanks		Volatile organic compounds (VOCs) impact	• Underground storage tanks to be fitted with respirators or vent lines and have a minimum height of 4 meter above ground level	• Conduct maintenance to leaking pipework, dispensers, tanks and	• Limit exposure to products and materials that

• Refilling/dispensing of fuel to customer vehicle • Loading of fuels to underground storage tank		on workers	• Make sure that underground tank seals are kept in good condition and caps are appropriately sealed • Ensure that fuel nozzles cut off automatically when tank is full • A competent person must remain near the tanker during unloading • Regular monitoring and inspect for leaking from pipework, dispensers and tanks, and implementing repairs within predefined period • Pressure vacuum vent should be used to avoid continuation of the releasing of gasses from the tanks. • All staff should ensure that dispensers hoses are not laid on the filling area and pump island floor at any time • Regularly check the vapour control systems and make that they are in good condition • Proper PPE should be provided and Workers should wear the PPE • Maximum supervision from the facility manager on the activity	• vapour control system if found damaged and corroded • Ensure rotating pumps attendants to prevent them from inhaling fuel vapour (gas) for long time • Proper PPE should be provided and Workers should wear the PPE when there is present of VOCs • Maximum supervision from the facility manager on the activity	• contain VOCs. • Conduct inspection regularly to detect leaks from pipework, dispensers and tanks • Operator must Avoid Breathing in low levels of VOCs for long periods • Proper PPE should be provided and Workers should wear the PPE • Maximum supervision from the facility manager on the activity
• Over use of electricity components • Electrical components Inspection		Workers electrical related work accident or incident	• Conduct daily Inspect ion to electrical system • Use safe work practices every time electrical equipment is used. • Know the location and how to operate shut-off switches and/or circuit breaker panels • Prevent the potential for water or chemical spills on or near electrical equipment • Proper PPE should be provided and Workers should wear the PPE before carrying out inspection • Inspection should be carry out only by competent and experienced staff • First aid kit should be provided at the facility • Maximum supervision from the facility manager on the activity	• Suspend or stop the operation temporarily when there is electrical accident or incident • Treat unserious injury • Evacuate serious injured Workers to nearest hospital or clinic or contact emergency number for evacuation assistance • Maximum supervision from the facility manager on the activity	• First Aid kits will be provided and placed at strategic locations to allow access to the workers in case of an accident • Let the injured victim recover completely before resume to work • Compensate the Workers if necessary • Conduct daily inspection to electrical system

					Maximum supervision from the facility manager on the activity
Dispensing fuel		Exposure to extreme heat by workers	- Cease the work temporarily when temperature is extremely hot - Workers must adjust to exposure until body is acclimated to the heat - Workers should take break according to resting schedule - Do not ignore possible symptoms of heat stress - Use proper PPE before working during extreme heat - Water should be provided in the work site - Workers should regularly drink water to stay hydrated - Notify supervisor of any personal risk factors - Maximum supervision from the project manager on the activity	- Notify supervisor of any personal risk factors - Applied first aid to treat Workers that suffer from unserious heat stress or dehydration - Evacuate Workers that suffer from serious or severe heat stress or dehydration to nearest hospital or clinic or contact ambulance for evacuation assistance - Maximum supervision from the facility manager in the activity	- Proponent must provide PPE for all Workers - Let the workers fully recover before resume to work - Compensate the Workers if necessary - Maximum supervision from the facility manager on the activity
Vehicles movement in and out of the facility		Traffic jam and traffic accident in the facility	- Conduct regular briefing before operation - Assigned staff to direct the traffic in the facility during peak hours - Display Speed limit sign for costumers vehicles, tankers and motorbike enter and leave the facility at the accessible location - Marking parking spot properly for general parking in the facility - Parking spot for refuelling at the pump islands should be clear - Parking spot for fuel delivery truck should be marked clearly - Car washing area should not be inclined to avoid involuntary move by cars that can cause accident or incident in the facility	- Suspend or stop the operation temporarily when there is accident or incident - Direct traffic away from the accident spot - Apply first aid to treat unserious injured Workers - Evacuate serious injured Workers to nearest hospital or clinic or contact ambulance for evacuation assistance	- Conduct a safety meeting regular basis - Let the Workers recover completely before resume to work - Maximum supervision from the facility manager on the activity

			• Car wash spot should be located far from the exit and entry gates to avoid traffic jam and accident • Provide emergency contact number in the facility and make staffs aware of it • Provide first aid kit in an accessible location and make staffs aware of it • Maximum supervision from the facility manager on the activity	• Maximum supervision from the facility manager on the activity	
• Welding facility's components		Mechanical work related accident or incident, fire and explosion	• Welding within the facility is prohibited at anytime	•	•
• Unloading of fuels from tankers into storage tanks • Dispensing of fuels from underground storage tanks into vehicles' tank • Leak from dispenser, storage tanks and fuel pipes • Smoking and using cell phone • Electrical failure		Fire and explosion in the facility impact on workers, costumers and facility	• Relevant operational staff must receive training on the correct operation of the storage tanks, as well as maintenance and repair procedures when leaks are detected. • Procedure for unloading fuels from tankers into underground storage tanks should be written on a board and display close to the unloading of fuel into storage tanks location where the unloader can see and follow • Procedure for dispensing fuels into vehicles' tanks should be written on a board and display close to each pump islands where the pump attendants can see and follow • Appropriate Health & Safety signage must be placed on and around the tank. • The fuel filling station should be equipped with fire extinguishers should be available on site and are regularly maintained • The facility should have a fire contingency plan which are made aware to all the employees • Pump attendants can only begin refilling the vehicle's fuel tank after the engines and ignition sources have been fully cut off • During the bulk fuel delivery, a competent person must be present until the delivery process is completed. Before the delivery	• The correct PPE should be worn in the facility area to combat fire. • Suspend or stop the operation temporarily when there is fire in the supporting office, dispensers, pump island and storage tanks areas • Sounding the emergency drill when the fire cannot be contained • Evacuate Workers and costumers to safe place • Switch off the emergency valve • Extinguish the fire with proper fire extinguishers right away when there is fire • Contact emergency	• Investigate the cause of the fire and explosion • Provide proper fire extinguishers • Emergency contact numbers must be made available at facility • Ensure all staff are attended refreshment training • Prepare and provide PPE to staffs • Practice emergency drill • Ensure all costumers are follow safety procedure • First aid kits must be made available • Safety sign must be display at facility

			process start, buckets of sand and fire extinguishers shall be made easily available and accessible. • During operation of unloading/ refuelling from tanker to the storage tanks, the tanker must have parked at the properly marked area and all circulation of people and other vehicles within the area is strictly prohibited and must be prevented. • Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices. • Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch and a fire extinguisher. • A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the USTs to prevent fugitive emissions. • Costumers and staffs' cell phones should be switched off during fuel dispensing, unloading of fuel into storage tanks • No Smoking and Using Cell Phone signs should be displayed in the facility • Staffs should reprimand costumers when smoking and using cell phone in the facility and during dispensing of fuel in to vehicles' tanks • All staff should ensure that dispensers' hoses are not laid on the filling area and pump island' floor at any time. • Internal visual inspection on pipework, electrical system and dispensers should be regularly conducted for the condition such as leakage, deterioration, and corrosion (for pipework) • Authority should be notifying when there is leak from pipework, dispensers and tanks • The correct PPE should be used on the site. • All Workers should be made aware of all emergency contact numbers. • Practice emergency drill	number for assistance when the fire is out of control • Maximum supervision from the facility manager on the activity	• Compensate the workers or costumers if necessary • Maximum supervision from the facility manager on the activity
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			• All staffs (including pumps attendants) must attend training refreshment training on first aid, safety and firefighting training and have trainings certificates • Facility electrical system should be equipped and protected with grounding system • An emergency response plan must be available on site and employees must be familiar with the plan. • The facility should have a fire contingency plan which are made aware to all the employees • Maximum supervision from the facility manager on the activity		
• Burning houses • Trash burning • Bush fire		Impact of Fire or/and explosion from surrounding to facility	• Notify surrounding community about the hazard of fire to the facility • Make sure that community fire is not out of control • Contact fire department when a community house is on fire or fire set up by community is out of control • Ask community not to set up fire near the facility • Staff should put out community fire it is out of control • Perform general housekeeping tasks on a regular basis • Fire extinguisher should be made available at all the time at the facility • Prepare and provide PPE to all workers to combat fire just in case fire outside the facility is out of control • Practice emergency drill • Maximum supervision from the facility manager on the activity	• Suspend or stop the operation temporarily when fire outside of the facility cannot be contained • Sounding the emergency drill when community' fire is out of control and cannot be contained • Evacuate serious Workers or costumer suffer from burnt to hospital or clinic • Switch off the emergency valve • Wear Proper PPE to combat fire • Extinguish the fire with proper fire extinguishers right away when there is fire • Contact emergency number for assistance when the community	• Ensure all costumers are follow safety procedure • First aid kits must be made available • Prepare and provide proper PPE • Provide fire extinguishers • Emergency contact numbers must be made available at facility • Ensure all staff are attended refreshment training • Ensure all costumers are follow safety procedure • Safety sign must be display at facility • Practice emergency drill

				- fire affect the facility - Maximum supervision from the facility manager on the activity	Maximum supervision from the facility manager on the activity
- Vehicles movement (Costumers and company's) in and out of facility - Use of backup generator - Waste production and burning	Social Impact (community health and safety)	Dust (particulate matter) and Flue gasses/ exhaust gasses impact on community	- Visual inspection should be conducted regularly on the floor for dust - Minimize bare surface in the facility area - Regular spray dusty area using water to suppress dust from suspend in the air - Regularly clean dust of the floor in the facility area - All delivery tankers should be adequately maintained to reduce exhaust emissions - Company's vehicle speeds outside the facility should reduce to minimize vehicle smoke and dust in the area - Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be temporarily installed in the project to remind the drivers. - Discourage idling of vehicles' engines to reduce exhaust emission - Regular maintenance of back-up generator to reduce emission - Wastes should not be burnt on sites, but managed and disposed at designated location - Proper wastes management sign should be displayed in the facility - Maximum supervision from the facility manager on the activity	- Regular spray dusty area using water to suppress dust from suspend in the air - Reduce vehicles' speed inside and outside the facility - Regularly clean the dust on the floor in the facility area - Turn off unnecessary idling of vehicles in the facility area - Remind and reprimand driver to reduce speed in the facility - Suspend or Stop using gasses emitter generator and vehicles - Clean the wastes and disposed at the designated location - Maximum supervision from the facility manager on the activity	- Visual inspection should be conducted regularly on floor - Regularly clean the dust on the floor in the facility area - Reduce vehicles' inside and outside the facility - Encourage drivers to turn off unnecessary idling of vehicles in the facility area - Regular maintenance to the facility's vehicles and generator should done - Remind workers manage and dispose the wastes of at the designated location - Proper wastes management sign should be displayed in the facility - Maximum supervision from the facility manager on the activity

• Storing fuel in underground storage tanks • Refilling/dispensing of fuel to customer vehicle • Loading of fuels to underground storage tank		Volatile Organic compounds (VOCs) impact on community	• Underground storage tanks to be fitted with respirators or vent lines and they are to be fitted such that facing away from the neighbouring residential areas and have a minimum height of 4 meter above ground level • Inspect vent pipe's base for sign of corrosion or damage and conduct maintenance straight away when it is found corroded and damaged • Make sure that underground tank seals are kept in good condition and caps are appropriately sealed • Ensure that fuel nozzles cut off automatically when tank is full • A competent person must remain near the tanker during unloading • Regular monitoring and inspect pipework, dispensers and tanks to detect leaks and implementing repairs within predefined period • Pressure vacuum vent should be used to avoid continuation of the releasing of gasses from the tanks. • All staff should ensure that dispensers hoses are not laid on the filling area and pump island floor at any time • Maximum supervision from the facility manager on the activity	• Conduct maintenance to leaking pipework, dispenser, tanks and vapour control system if found damaged and corroded • Ensure rotating pumps attendants to prevent them from inhaling fuel vapour (gas) for long time • Maximum supervision from the facility manager on the activity	• A competent person must remain near the tanker during unloading • Limit exposure to products and materials that contain VOCs. • Operator must Avoid Breathing in low levels of VOCs for long periods • Regular monitoring and inspect pipework, dispensers and tanks to detect leaks and implementing repairs within predefined period • Maximum supervision from the facility manager on the activity
• Vehicles movement (Costumers and company's) in and out of facility • Car washing		Traffic jam and traffic accident outside the facility (general traffic)	• Clear markings to set apart vehicle and pedestrians routes • Provide warning signs at all entrances and exits to the site. • The entry and exit of vehicles into and from the fuel filling station are made through one-way accesses to avoid traffic jam outside the facility • Parking of vehicles in facility's pathway is not permitted • Adequate entry of fuel tankers to the area for unloading and allow exit from the fuel filling station into a safe area by moving forward without the need of any manoeuvres to avoid	• Instruct the river to move vehicles that park near or at the entry and exit gates to avoid traffic jam and accident outside the facility • Staffs should direct cars and motorbikes that enter the facility during peak hours • Instruct drivers to reduce speed limit	• Display sign of pedestrian & vehicle way inside and outside of the facility • Emergency contact must be made available at project site • Compensate if necessary • Company should toughen up the

			traffic inside and outside the facility • Staff should direct the cars not to park in or near the entry and exit gates • Car wash area should not be near the entry and exit access • Staffs should direct cars and motorbikes that enter the facility during peak hours • Clear markings to set apart vehicle and pedestrians routes • Provide designated safe zones for drivers to stand when unloading/loading activity is being undertaken. • Dedicated personnel must be presented to manage traffic and pedestrian movements outside facility during peak hour in the facility • Encourage drivers to walk the route and plan for manoeuvrability on sites • Manage the work hours and duration for drivers to minimize fatigue. • Implement a one-way system to reduce the need for vehicles to reverse on site. • Provide sign for safe movement of vehicles and people (pedestrian crossing areas, barriers, safe zones, walkways etc.). • Make parking spot for costumers should be separated to fuel delivery spot • Time deliveries for quiet times of the day to reduce the number of people who are likely to be near the vehicle being unloaded. • Provide emergency contact numbers in the company's vehicles • Control company's vehicles driver's attitude about driving • Make sure company drivers have first aid certificate • Ensure that drivers have the competency to operate the company's vehicles safely. • Company's driver should obey traffic signs and under no alcohol influence when driving	when entering and exiting the facility • When there is accident or incident cause by company's vehicles, driver should suspend or stop the vehicles and access the accident • Apply first aid to treat unserious injured victims • Evacuate serious injured people to nearest hospital or clinic or contact emergency number for evacuation assistance • Control company's vehicles driver's attitude about driving • Maximum supervision from the facility manager in the activity	regulation or police control driver's behaviour • Maximum supervision from the facility manager in the activity
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			• Set speed limit for company's vehicles operate outside the facility • Maximum supervision from the facility manager in the activity		
• Vehicles movement (Costumers and company's) in and out of facility • Unloading of fuel into storage tanks from fuel tankers		Noise and vibration impact on community	• A grievance procedure will be established whereby noise complaints can be received, recorded and responded to appropriately. • Noise, especially at night, should be kept to a minimum. • Avoid loud background music that are clearly audible away from the forecourt • Avoid receiving fuels or other deliveries at night • Operation hours should be started in between 7am-8pm to avoid noisy at the facility and surrounding. • Display speed limit for vehicles in the facility to reduce noise • Conduct monitoring and inspection to company vehicles conditions and maintenance to avoid noise generation • Maximum supervision from the facility manager on the activity	• Control noise level to not exceed the limit during the day and at night • Resolve any complaint from the community • Build a wall to insulate the noise from the facility • Maximum supervision from the facility manager on the activity	• Remove people from vicinity of noisy area • Build wall to insulate the noise from the facility to reduce noise • Maximum supervision from the facility manager on the activity
• Unloading of fuels from tankers into storage tanks • Dispensing of fuels from underground storage tanks into vehicles' tank • Welding • Smoking and using cell phone • Electrical failure		Impact of fire and explosion in the facility to community and community's houses	• Use the prevention action mitigation measures for impact of fire and explosion in the facility on workers, costumers and facility in this section to prevent impact of fire and explosion in the facility to community and community' houses	• Stop or Suspend the operation temporarily when there is fire in the supporting office, dispensers, pump island and storage tanks areas • Sounding the emergency drill when the fire cannot be contained • The correct PPE should be worn in the	• Provide fire extinguishers in facility • Emergency contact numbers must be made available at facility • Ensure all staff are attended refreshment training • Compensate the community if

Leak for dispenser, tanks and pipes				- facility area to combat fire. - Evacuate community to safe place - Switch off the emergency valve - Extinguish the fire with proper fire extinguishers right away when there is fire - Contact emergency number for assistance when the fire is out of control - Maximum supervision from the facility manager on the activity	- necessary - Practice emergency drill - Maximum supervision from the facility manager on the activity
- Spill of fuels during unloading of fuels from tanker into under storage tanks - Spill of fuel during dispensing of fuels from storage tanks into vehicles tanks - Leaking of fuels from underground storage tanks - Leaking of fuels from pipework - Poor maintenance of wastewater treatment system,	Soil Quality and Water Quality (both groundwater and surface water)	Soil, Surface water and Groundwater pollution due to fuels spill and leak	- Underground storage tanks must be placed in the concrete retention basin - USTs must have corrosion protection - Notice/warning signs are posted when fuels are being discharged into storage tanks - Spills must be cleaned up with the appropriate spill absorbent. - Overfill and spills during tanker unloading should be prevented - Any significant spills and leaks incidents must be reported to relevant authorities - USTs must be fitted with automatic leak detectors that alert management to a leak. - The oil/water separator must be inspected regularly to ensure that it is functioning at all times. - An impermeable surface ground (cemented) at the area dedicated to unloading fuel from tankers into the storage tanks and refuelling area, and allow drainage into the water	- When there leak is found in the pipework, dispensers and underground storage tanks, the operation should be ceased temporarily, and maintenance should be conducted prior to resume the operation - Spills must be cleaned up with the appropriate spill absorbent. - Conduct regular monitoring of groundwater quality - Maximum supervision from the project	- Prepare emergency response plan - Conduct regular monitoring to ground water quality - Regularly use monitoring well for the inspection of leak from underground tank, - Update fuel stock inventory regularly - Provide basic clean up material - Remediation must be undertaken when contamination is detected

oil traps and catchers • Car washing			treatment system • Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices. • The accumulated contents in the oil/water separator must be removed and disposed into appropriate treatment system (absorb into sand dedicated for this purpose) • Accidental leakages and spills that may occur on the forecourt must be cleaned immediately using dry sand provided in some removable containers for each of fuel dispenser, which then must be properly disposed • For the purpose of detecting leak, the quantities of fuel delivered, stored and dispensed stock are monitored and recorded on daily basis, and records are kept on site • Tanker delivery drivers must be present during delivery of fuel with the emergency cut off switch. • In the event of the pump dispenser or the hoses being knocked over or ripped off, the fuel supply must be cut off by shear-off valves. • Emergency response plan must be in place for the site, which clearly describes the procedures and include emergency contact numbers • All forecourt staff must undergo appropriate training, which must include training to prevent spillages during fuel dispensing. • The USTs, pipelines, dispensers and other associated infrastructure must be inspected regularly for leaks and to ensure structural integrity • A closed coupling must be used when fuel is being transferred from the bulk delivery vehicle to the USTs. • Use monitoring wells to monitor leakage in the underdoing tanks • All staff should ensure that dispensers hoses are	manager on the activity	• Compensate the workers surrounding community if oil leak from the facility destroy their properties • Maximum supervision from the project manager on the activity
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			not laid on the filling area and pump island floor at any time • Water from carwash area must be directed to proper drainage system • All the exposed pipework and other fitting (i.e., valves and bolts) should be visually inspected regularly for sign damages, leaks, deterioration or corrosion • Pipework should be tested for leakage before using for the operation • Underground pipework's connection and joints chamber should be installed for the inspection and maintenance. (Note: this would depend on the types pipe that is going to be used) • Make sure pipework joint's chambers have proper fitting lead to prevent ingress of water and other substance (Note: this would depend on the above mitigation measure) • Area within the facility should be cemented, unless it is advised otherwise by the authority • Provide appropriate drainage system to manage surface runoff • Adequate entry of fuel tankers to the area for unloading and allow exit from the fuel filling station into safe area by moving forward without the need of any manoeuvres • Should use double layers pipe to prevent leaking Note: this would depend on the pipe that is going to be used) • Procedure for unloading fuels from tankers into underground storage tanks should be written on a board and display close to the unloading of fuel into storage tanks location where the unloader can see and follow • Procedure for dispensing fuels into vehicles' tanks should be written on a board and display close to each pump islands where the pump attendants can see and follow • A competent person must remain near the		
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			- tankers during unloading - Authority should be notified when there is leak from pipework, storage tanks and dispenser. - Maximum supervision from the facility manager on the activity		
- Spill or leak - Fire or/and explosion	Ecology impact	Spill or leak and fired or explosion impact on vegetation and animals	- Use Preventive Mitigation Measures Action for soil, surface water and groundwater pollution for this section to prevent spill or leak - Use Preventive Mitigation Measures Action re or/and explosion in Workers' Occupational Health and Safety, Social Impact and Residents' Health and Safety in the Facility in this section for preventing fire or/and explosion	- Use Controlling and Responding Mitigation Measures Action for soil, surface water and groundwater pollution for controlling and responding spill or leak in this section - Use Controlling and Responding Mitigation Measures Action for fire or/and explosion in Workers' Occupational Health and Safety, Social Impact and Residents' Health and Safety in the Facility in this section for controlling fire or/and explosion	- Use Corrective Mitigation Measures Action for soil, surface water and groundwater pollution for this section to prevent spill or leak as corrective action for this section - Use Corrective Mitigation Measures Action for fire or/and explosion in Workers' Occupational Health and Safety, Social Impact and Residents' Health and Safety in the Facility as corrective action for this section
- Fire and explosion, and Spill or leak during operation - Waste production and burning	Economic and agricultural impact	Fire and explosion, and Spill or leak impact on economic	- Only trained and competent people do perform the maintenance - Make sure storage tanks, fuel pipes and dispenser are free of fuel prior to perform	Suspend or Stop the activity temporarily when there is fire and complaint on wastes	Investigate the cause of fire or/and explosion, spill or leaks

		activity (kiosks, market, shops and agriculture activities) • Wastes	maintenance • Prepare and provide firefighting equipment • Spill or leakage of oil and lubricants should be cleaned promptly and should be disposed of in designated location • Waste should be managed properly and disposed of at the designated location • Provided emergency contact number in the facility and make worker aware of it • Maximum supervision from facility manager on the activity	• Use proper fire extinguisher to put out fire • Contact fire departments for assistance when fire is out control and start affecting kiosks or shops or market • spill or leakage of oil and lubricants should be cleaned promptly and should be disposed of in designated location • Contact fire department when spill or leak affecting agricultural land or other property • Clean the wastes and dispose it at designated location • Maximum supervision from facility manager on the activity	• Compensate the affected people if necessary • Remind workers to manage the wastes properly and dispose of at the designated location • Maximum supervision from facility manager on the activity
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MAINTENANCE PHASE

Activities	Impacts	Parameter/ particular concerns	Preventive action	Control and responding action	Corrective action
• Vehicles movements (in and out of the facility) • Concrete mixture for floor, wall and other infrastructures in the facility maintenances • Use of machineries • Use of backup generator • Waster production and burning	Air quality	Dust (particulate matter) impact on air quality Flue gasses/ exhaust gasses impact on air quality	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Regular maintenance for vehicles, equipment and back-up generator to avoid emission into air • Turn off unnecessary idling engines of vehicles and equipment • Turn off unneeded back-up generator • Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be temporarily installed in the project to remind the drivers. • Reduce vehicles speed in the facility to minimize flue gasses emission and dust suspension • Wastes should not be burnt onsite, but managed properly and disposed of at the designated location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the project manager on the activity	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Reduce vehicle speed on site and outside • Proper maintenance to vehicles and equipment, and back-up generator • Suspend or Stop using gasses emitter generator, vehicles and equipment • Clean the wastes and dispose at the designated location • Maximum supervision from the project manager on the activity	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Conduct maintenance to equipment, vehicle and generator regularly • Remind the drivers to drive according to the established speed limit • Remind workers to manage and dispose the wastes of at the designate location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the project manager on the activity
• Dispenser, pipework and underground storage tanks maintenance		Volatile Organic compounds impact on air quality	• The release of the volatile organic carbon cannot be prevented during maintenance	• The release of the volatile organic carbon cannot be prevented during maintenance	• The release of the volatile organic carbon cannot be prevented during maintenance
• Vehicles movements (in and out of the facility) • Concrete mixture floor,	Workers' Occupational health and Safety (OHS)	Dust and flue gasses (particulate matter) and flue gasses impact on Workers	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Limit vehicle speeds onsite to minimize dust and flue gasses generation • Establish speed limits to vehicles operate inside and outside the project area and the	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Reduce vehicle speed on site and outside	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Suspend or Stop using too much flue gasses emitter

wall, pump island maintenances • Waster production and burning			speed limit sign should be temporarily installed in the project to remind the drivers. • Prepare and provide proper PPE to Workers • If possible install fence to contain dust in the work area only • Suspend or Stop using too much flue gasses emitter vehicles and machineries • Conduct regular maintenance to flue gasses emitter vehicles and machineries • Wastes should not be burnt in the facility but should managed and disposed at the designated location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the project manager on the activity	• Suspend or Stop using too much flue gasses emitter vehicles and machineries • Conduct regular maintenance to flue gasses emitter vehicles and machineries • Clean the wastes and dispose at the designated location • Workers should wear proper PPE • Maximum supervision from the project manager on the activity	vehicles and machineries • Conduct regular maintenance to flue gasses emitter vehicles and machineries • Provide PPE to workers • Remind the drivers to drive not over the established speed limit • Remind workers to manager and dispose the wastes of at the designated location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the project manager on the activity
		Noise and vibration impacts to community	• Work should occur during day hours only between 08:00Am-5:00Pm, on week days only. • Worker should wear the appropriate PPE, if and when required. • The contractor will adhere to local authority by-laws relating to noise control. • Take turn when operating noise machineries and rest accordingly • Utilized equipment with one lower vibration and noise emission to ensure that the permissible occupation noise-rating limit of 85 dBA is not exceeded. • All equipment to be adequately maintained and kept in good working order to reduce noise. • All noise generating equipment should be insulated and well maintained to ensure that they operate within the noise limits they were designed to operate	• Control noise level should not exceed • If the maintenance equipment is too noise, Workers should wear proper PPE • Take turn when operating noise machineries and rest accordingly • Maximum supervision from the facility manager on the activity	• Make sure only maintenance Workers at noisy area • If possible use equipment with low noise • Maximum supervision from the facility manager on the activity

			• Maximum supervision from the facility manager on the activity		
		Traffic jam and accident or incident inside the facility	• Display speed limit sign in the facility • Staff should direct vehicles enter the facility properly • Staff should instruct drivers not to park vehicles in the entry and exit gates • Clearly marking the maintenance sites • Barricade the maintenance sites • Provide PPE in the facility • Provide first aid kits in the facility • Provide emergency contact number in the facility and make workers aware of it • Maximum supervision from the facility manager on the activity	• Suspend or stop the work temporary if there is accident or incident • Apply first aid to treat unserious injured workers • Evacuate serious injured workers to nearest hospital or clinic or contact emergency number for evacuation assistance • Maximum supervision from facility manager on the activity	• Investigate cause of the accident or incident • Let the workers recover properly before resume to work • Compensate the work if necessary • Maximum supervision from the facility manager on the activity
• Underground storage tanks maintenance • Fuel pipe Maintenance • Dispenser maintenance		Workers Accident or incident(injuries)	• Barricade the maintenance site • Company should only allow experienced staffs or consultants to do the maintenance • Proper PPE should be worn before carrying out activity including cleaning the underground storage tanks • Workers should in good condition and under no alcohol influence when carry out maintenance • Only allow trained and experienced workers to access into underground storage tanks for inspection and maintenance • Carry out maintenance according to the specification recommendation	• Suspend or stop the work temporarily when there is accident or incident • Evacuate injured to safe place • Apply first aid to treat unserious injured workers • Evacuate serious injured workers to nearest hospital or clinic or contact emergency number for evacuation	• Investigate the cause of the accident or incident • Let the Workers or consultant recover properly before resume to work • Compensate the Workers if necessary • Maximum supervision from the facility manager on the activity and injured Workers

			• Emergency contact numbers should be provided in the facility and make the Workers aware of it • Provide first aid kit in an accessible location in the facility • Inspections on the underground tanks fuel pipes and dispensers' condition should be recorded and made available to relevant authority up on request • All the record of maintenance and repair of underground storage tanks should be made available on site for external audit purpose, if the authority requested. • Make sure to in a team of two or more • Maximum supervision from the facility manager on the activity	• assistance • Maximum supervision from the facility manager on the activity and injured Workers	
		Exposure to extreme heat during maintenance of underground storage tanks, fuel pipe and dispensers	• Proper PPE should be provided the company • Proper PPE should be worn before carrying out maintenance • Suspend or stop the work when temperature is extremely hot • Water or other alternative drink for hydration should prepared • Work should drink water or other alternative drink regular to stay hydrated • First aid kit should be prepare and located in accessible place • Emergency contact number should be provided and Workers should be made aware of it	• Suspend or stop the work temporarily when there is accident or incident • Evacuate injured to safe place • Apply first aid to treat unserious dehydrated and heat stress Workers • Apply first aid and Evacuate serious dehydrated or/and heat stress workers to nearest hospital or clinic or contact emergency number for evacuation assistance • Maximum supervision from the facility manager on the activity and injured workers	• Investigate the cause of the accident or incident • Let the workers or consultant recover properly before resume to work • Compensate the workers if necessary • Maximum supervision from the facility manager on the activity and injured workers

			• Make sure to in a team of two or more • Maximum supervision from the facility manager on the activity		
		Volatile Organic compounds underground storage tanks, fuel pipe and dispenser	• Make sure that underground storage tanks, pipe and dispenser are free of VOCs before carrying out maintenance • Only allow trained or/and experienced workers to carry out maintenance • Company should provide proper PPE • Make sure proper PPE is worn before access into underground storage tanks • Make sure to in a team of two or more when cleaning underground storage tanks • First aid kit should be provided by the company in an accessible location • Maximum supervision from the facility manager on the activity	• Suspend or stop the activity right away temporarily when Volatile Organic carbon is still present in the underground storage tanks, fuel pipe and dispensers • Apply first aid to workers who suffer from VOCs or/and contact emergency number for evacuation • Maximum supervision from the facility manager on the activity	• Let the workers recover properly before resume to work • Compensate the workers if necessary • Maximum supervision from the facility manager on the activity

		Fire and explosion during underground storage tanks, fuel pipe and dispensers maintenances	• Make sure that underground storage tanks, fuel pipes and dispensers are empty before carrying out maintenance • Maintenance, modifications and repairs to storage tanks, dispensers and fuel pipes should be carried out only by experienced workers • Make sure that there is no accumulated gas in the tanks or fuel pipes or outside of the tank and fuel pipes before carrying out maintenance • Avoid smoking while carrying out maintenance • Disconnect electrical system connect to storage tanks and dispenser before carrying out maintenance • Maintenance signage should be displayed before carrying out the activity • Restrict vehicles from entering the facility during maintenance • Barricade the maintenance site • During the maintenance of underground storage tanks, dispensing of fuels into vehicles' tanks should be Suspend or Stopped • During the maintenance of underground storage tanks, delivery of fuels from tankers to underground tanks should be Suspended or stopped • During the maintenance of fuel pipes, dispensing of fuel into vehicles' tanks and delivery of fuels into underground tanks should be Suspend or stop temporarily • PPE should be worn when carry out maintenances • Welding in the facility is prohibited • Provide emergency contact numbers and make workers aware of it • Provide first aid kit in accessible location • The record for any work carried out on	• Suspend or stop the activity temporarily when there is accumulated gasses in or/and outside the tanks and in fuel pipes • Suspend or stop the activity temporarily when there is fire • Evacuate injured workers to safe • Apply first aid to unserious injured workers • Evacuate serious injured workers to nearest hospital or clinic or contact emergency number for evacuation assistance • Maximum supervision from facility manager on the activity	• Investigate source of the fire • Let the workers or consultant fully recover before resume the work • Compensate the workers if necessary • Maximum supervision from the facility manager on the activity
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			pipework should include the inspection on the pipework as well • Prepare and provide firefighting equipment and only allow trained and certified worker operate it • Do not allow damaged dispensers to be used/activated • Control ignition sources in hazardous area. • Staffs should not activate dispensers when potential ignition sources are present. • It is recommended that staffs should ensure that dispensers' hoses are not laid on the pump island's floor at anytime • During the maintenance of dispensers, dispensing fuel into vehicles' tanks should be Suspended or stopped • During the maintenance of dispensers, delivery of fuel into underground storage tanks should be Suspend or Stopped • After maintenance, dispensers should be tested before use for operation • Dispenser should be calibrated according to specification recommendation and only by authorised authority • Inspection to pipes and dispensers should be conducted regularly for leaks and deterioration • Keep a record of any work carried out on fuel pipe, storage tanks and dispensers • Make sure to in a team of two or more • Maximum supervision from the facility manager on the activity		
• Canopy, fence, floor and/or, supporting office		Accident or incident related to maintenance	• Maintenance should be carried out by trained and experienced workers or contractor • Proper PPE should be worn before maintenance activity • Develop and implement plans for maintenance of the facility	• Suspend or stop the work temporary if there is accident or incident • Apply first aid to treat unserious injured	• Investigate cause of the accident or incident • Let the workers recover properly before resume

• Work at height			• Barriers and guards as necessary to protect employees, and visitors from physical hazards. • Safety Signs are required to place during maintenance activity. • Establish an environmental record keeping system. • Ensure that activity should be Suspend or Stopped when canopy is under maintenance • Ensure that barricade is used to prevent people entering the pump islands when canopy is under maintenance • Barricade should be used around floor maintenance site's; the same to walls and fences • Signage should display when carry out any maintenances in the facility • Working at height should in a team of two or more • Make sure working at height apparatus are worn before start working, • Ensure structure for working at height are installed before start working • Maximum supervision from facility manager on the activity	workers • Evacuate serious injured workers to nearest hospital or clinic or contact emergency number for evacuation assistance • Maximum supervision from facility manager on the activity	to work • Compensate the work if necessary • Maximum supervision from the facility manager on the activity
		Exposure to extreme heat	• Suspend or stop the work temporarily when temperature is extremely hot • Workers must adjust exposure until body is acclimated to the heat • Workers should take break according to working schedule • Do not ignore possible symptoms of heat stress • Use proper PPE • Water should be provided in the work site • Workers should regularly drink water to stay hydrated • Make sure to in a team of two or more • Maximum supervision from the project	• Notify supervisor of any personal risk factors • Applied first aid to treat workers that suffer from unserious heat stress or dehydration • Evacuate workers that suffer from serious heat stress or dehydration to nearest hospital or clinic or contact emergency number for evacuation assistance • Maximum supervision from the project	• Provide PPE to all Workers • Let the worked fully recover before resume to work • Compensate the workers if necessary • Maximum supervision from the project manager on the activity

			manager on the activity	manager on the activity	
Electrical system maintenance		Electrical related work accident or incident injuries	- Company should only allow experienced Workers or contractor to the maintenance to electricity - Disconnect part of the electrical system that need to undergo maintenance from the main circuit before carrying out the activity - Make sure to use electricity only after the maintenance is done - Make plan not to use of electricity when electrical components are under maintenance - Proper PPE should be worn before carrying out maintenance activity - Maintenance activity should done in team - Emergency contact number should be provided and make workers aware of it - Provide first aid kit in accessible location - Make sure to in a team or two or more - Maximum supervision from facility manager on the activity	- Suspend or stop the activity temporarily when there is accident or incident related to electricity - Evacuate workers or contractor to safe place - Apply first aid to treat unserious incurred workers or contractor - Evacuate serious injured workers or contractor to nearest hospital or clinic or contact emergency number for evacuate assistance - Maximum supervision from facility manager on the activity	- Investigate the cause of the accident or incident - Let the worked fully recover before resume to work - Compensate the workers if necessary - Maximum supervision from the facility manager on the activity
		Electrical related Fire risk and explosion accident	Company should only allow experienced Workers or contractor to the maintenance to electricity	- Suspend or stop the activity temporarily when there is fire - Evacuate workers or contractor to safe place	- Investigate the cause of the fire - Let the workers recover completely before resume to work

		or incident	• Make sure to use electricity only after the maintenance is done • Make plan to minimise the use of electricity when electrical components are under maintenance • Proper PPE should be worn before carrying out maintenance activity • Disconnect part of the electrical system that need to undergo maintenance from the main circuit before carrying out the activity • Proper PPE should be worn before carrying out the activity • Know the location and how to operate shut-off switches and/or circuit breaker panels • Minimize the potential for water or chemical spills on or near electrical equipment. • Test the electrical system before using it • provide proper fire extinguisher new the maintenance location • Make sure to in a team of two or more • Maximum supervision from facility manager on the activity	• Apply first aid to unseries injured workers or contractor • Evacuate serious injured workers contractor to nearest hospital or clinic • Maximum supervision from facility manager on the activity	• Fire extinguisher should be provided for the activity • Proper PPE should be provided for the activity and should be worn before the activity • Compensate the workers if necessary • Maximum supervision from facility manager on the activity
• Vehicles movements (in and out of the facility) • Concrete mixture for floor, wall and other infrastructure maintenances • Vehicles	Social Impact (community health and safety impact)	Dust (particulate matter) impact on surrounding community Flue gasses/ exhaust gasses impact on community	• Regular spray dusty area using water to suppress dust from suspend in the air • Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be temporarily installed in the project to remind the drivers. • Make sure that dusty floor in the facility is regularly cleaned to avoid accumulation of dust • Concrete mixture should be properly done to avoid cement powder from carrying by the wind, particularly during windy day	• Regular spray dusty area using water to suppress dust from suspend in the air • When there is complaint from the surrounding community Suspend or stop the work temporarily • Resolve to complaint before resume the	• Let the police investigate people who involve in physical confrontation • Regularly wetting the dusty area to minimise dust from suspense in the air • Conduct regular maintenance to flue gasses emitter vehicles and machineries

movements (in and out of the facility) • Use of machineries • Use of backup generator • Wastes production and burning			• Suspend or Stop using out of control flue gasses vehicles, machineries and generator • Regular maintenance for vehicles and equipment to avoid gasses emission • Turn off unnecessary idling of vehicles engines and machineries • Regular maintenance for back generator • Wastes should not be burnt in the facility, but managed properly and disposed of at designated location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the project manager on the activity	activity • Suspend the work when during windy day • Contact emergency number if there is physical confrontation involved during complaint • Suspend or Stop using out of control flue gas vehicles, machineries and generator • Proper maintenance to construction vehicles, equipment and generator • Clean the wastes and dispose of the at the designated location • Maximum supervision from the project manager on the activity	• Remind the drivers to drive not over the established speed limit • Remind the workers to managed and dispose wastes of at the designated location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the project manager on the activity
• Vehicles movements (in and out of the facility) • Movement of people outside the facility		Traffic jam and accident outside of the facility (general traffic)	• Clear markings to set apart vehicle and pedestrians routes; • Dedicated personnel must be presented to manage traffic and pedestrian movements outside the facility. • Ensure that company's driver have the competence to operate the vehicles safely outside the facility. • Provide warning signs at all entrances and exits when carry out maintenance activities. • Provide sign for safe movement of vehicles and people (pedestrian crossing areas,	• Driver should follow traffic signs or/and police instruction to avoid causing traffic jam • After traffic accident or incident, driver should Suspend or Stop the vehicle to assess the accident or incident • Apply first aid to unserious injured victim • Evacuate the serious	• Let the police investigate the accident on incident • Compensate the victim if necessary • Emergency contact numbers must be made available in the companies vehicles • Company should toughen up the regulation or police control driver behaviour

			barriers, safe zones, walkways etc.). • Introduce a speed limit to companies driver operate outside the facility. • Company's driver should follow all the traffic signs on the road • Driver operate companies vehicles outside the facility in any circumstances should under no alcohol influence • Provide emergency contact numbers in the vehicles and drivers should be made to aware of emergency contact number • First aid kit should be made available in the vehicles operating outside the facility • Driver should be trained to use first aid kit and have training certificate • Maximum supervision from facility manager on the activity	injured victim to nearest hospital or clinic or call emergency number for evacuation assistance • Maximum supervision from facility manager on the activity	• Maximum supervision from the facility manager on the activity
• Vehicles movement (in and out of the facility) • Conduct Maintenance to underground storage tanks, fuel pipes, canopy, fences, wall, floor and supporting office		Noise and vibration impact on the community	• Notify the surrounding community on the maintenance plan and noise impact of the maintenance activity • Carry out the maintenance activity during working hours only • Make sure that noise produce during the maintenance does not exceed the maximum standard • Recommend to use low noise and vibration equipment during maintenance activity • Maximum supervision from the facility manager on the activity	• Suspend or stop the activity temporarily when there is complaint from the surrounding community • Resolve the complaint before resume the work • Contact the police if there is physical confrontation involved during the complaint • Maximum supervision from the facility manager on the activity	• Let police investigate people who involve in confrontation • Investigate if there is damage to community property cause by the vibration during maintenance activity • Compensate if vibration produce during the activity destroy community's property • Maximum supervision from the facility manager on the activity

• Conduct Maintenance to underground storage tanks, dispensers, fuel pipes, canopy, floor and supporting office • Conduct maintenance to electrical system		Risk of fire or explosion impact to community	• Apply prevention action mitigation measures from conduct maintenance to underground storage tanks, fuel pipes, dispensers and electrical system maintenance to prevent fire explosion that potential have impact on community surrounding	• Apply control and respond action mitigation measures from conduct maintenance to underground storage tanks, fuel pipes, dispensers and electrical system maintenance to prevent fire explosion that potential have impact on community surrounding	• Apply corrective action mitigation measures from conduct maintenance to underground storage tanks, fuel pipes, dispensers and electrical system maintenance to prevent fire explosion that potential have impact on community surrounding
• Maintenance activity to underground storage tanks • Maintenance activity to pipework • Maintenance activity to dispenser • Maintenance activity to wastewater treatment system	Soil quality, Water quality (both groundwater and surface water)	Soil, surface water and groundwater pollution due to fuels spill and leak	• Only allow competent Workers or contractor to clean petroleum sludge at the bottom of the storage tanks • Make sure that tanks are empty, fuel pipe are free of fuels, and dispensers are empty of fuels before carrying out maintenance • Any accidental spill or leakage of substances (e.g. oil and lubricants) has to be cleaned promptly using proper procedure and equipment and should be disposed of in designated location • Relevant authority should be notified when carrying out tanks cleaning activity • Maximum supervision from facility manager on the activity	• Promptly clean the accidental spill or leak from underground storage tanks, fuel pipes and dispenser using proper methods and dispose it in designate location • Maximum supervision from facility manager on the activity and pollution	• Notify environmental authority for any contamination • Provide basic clean up material • Remediation must be undertaken when contamination is detected • Maximum supervision from the facility on the activity
		Petroleum slugged from the underground	• Only allow competent Workers or contractor to clean petroleum sludge at the bottom of the storage tanks	• Promptly cleaning the petroleum sludge using proper cleaning method	• Notify environmental authority for any contamination • Provide basic clean up

		storage tanks	• Petroleum sludge at the bottom of the storage tanks should be collected carefully and dispose at the proper or/and designated location • Oils the water treatment system should be removed and water should be drained before carrying out maintenance to water treatment system • Oil from water treatment should be disposed of at the proper or/and designated location • Maximum supervision from facility manager on the activity	when it spill or leak • Maximum supervision from facility manager on the activity	material • Remediation must be undertaken when contamination is detected • Maximum supervision from the facility on the activity
• Spill or leak during maintenance • Fire or explosion during maintenance	Ecology impact	Impact of leak (or spill) and fire (or/and explosion Vegetation and animals	• Only allow competent Workers or contractor to clean petroleum sludge at the bottom of the storage tanks • Petroleum sludge at the bottom of the storage tanks should be collected carefully and dispose at the proper or/and designated location • Make sure that tanks are empty, fuel pipe are free of fuels, and dispensers are empty of fuels before carrying out maintenance • Any accidental spill or leakage of substances (e.g. oil and lubricants) has to be cleaned promptly using proper procedure and equipment and should be disposed of in designated location • Oils the water treatment system should be removed and water should be drained before carrying out maintenance to water treatment	• Promptly clean the accidental spill or leak from underground storage tanks, fuel pipes and dispenser using proper methods and dispose it in designate location • Use fire extinguisher to put of fire or contact fire department for assistance when fire is out of control • Maximum supervision from facility manager on the activity and pollution	• Investigate the cause of leak (or spill) and fire (or/and explosion) • Notify environmental authority for any contamination • Provide basic clean up material • Remediation must be undertaken when contamination is detected • Maximum supervision from the facility on the activity

			system • Prepare and provide fire fighting equipment during maintenance • Maximum supervision from facility manager on the activity		
• Fire and explosion, and Spill or leak during maintenance • Waste production and burning	Economic and agricultural impact	• Fire and explosion, and Spill or leak impact on economic activity (kiosks, market, shops and agriculture activities) • Wastes on agricultural land	• Only allow experience do perform the maintenance • Make sure storage tanks, fuel pipes and dispenser are free of fuel prior to perform maintenance • Prepare and provide firefighting equipment • Any accidental spill or leakage of substances (e.g. oil and lubricants) has to be cleaned promptly using proper procedure and equipment and should be disposed of in designated location • Wastes should not be burnt onsite • wastes should managed properly and disposed of at the designated location • Provided emergency contact number in the facility and make worker aware of it • Maximum supervision from facility manager on the activity	• Suspend or stop the activity temporarily • Use proper fire extinguisher to put out fire • Contact fire departments for assistance when fire is out control and start affecting kiosks or shops or market • spill or leakage of oil and lubricants should be cleaned should be disposed of at designated location • Contact fire department when spill or leak affecting agricultural land or other property • Clean the wastes and dispose it at designated location	• Investigate that cause of fire or/and explosion, spill or leaks • Compensate the affected people if necessary • Remind the workers to manage and disposed the wastes of at the designated location • Maximum supervision from facility manager on the activity

				Maximum supervision from facility manager on the activity	
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DECOMMISSIONING PHASE

Activities	Impacts	Parameter/ particular concerns	Preventive action	Control and responding action	Corrective action
- Vehicles movements (in and out of the facility) - Demolition of the facility - Use of heavy machinery - Wastes production and burning	Air quality	<i>Dust (particulate matter) and Flue gasses/exhaust gasses impact on air quality</i>	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Build fence around the decommissioning site to contain dust - Any complaints received from neighbours must be reported to proponent and measures must be taken to limit dust - Reduce vehicles speed and movement in the demolition area - Regular maintenance for construction vehicles and equipment to avoid emission to the air - Turn off idling of vehicles and machineries' engines - Suspend or Stop using out of control emitter vehicles and heavy machineries - Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be temporarily installed in the project to remind the drivers - Turn off the unnecessary idling engines of vehicles and machineries - Wastes should not be burnt in the facility, but managed properly and disposed of at designated location - Proper wastes management sign should be displayed in the facility	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Reduce vehicles speed and movement in the demolition area - Proper maintenance of the vehicles and heavy machinery engine - Suspend or Stop using heavy flue gasses emitter vehicles and machineries - Clean and dispose the wastes of at the designated location - Maximum supervision from the facility manager on the activity	- Re planting trees or/and grass after the decommissioning activity - Conduct regular maintenance to flue gasses emitter vehicles and machineries - Remind the drivers to not drive over the established speed limit - Remind the workers to managed and dispose wastes at the designated location - Proper wastes management sign should be displayed in the facility - Maximum supervision from the facility manager on the activity

			Maximum supervision from the facility manager on the activity		
- Vehicles movements (in and out of the facility) - Use of heavy machinery - Demolition of the facility - Wastes production and burning	Occupational health and Safety (OHS)	<i>Dust (particulate matter) and Flue gasses/exhaust gasses impact on workers</i>	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Introduce speed limit to vehicles entering and exiting the site - Regular maintenance for construction vehicles and equipment to avoid emission to the air - Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be temporarily installed in the project to remind the drivers - Turn of the unnecessary idling engines of vehicles and machineries - Prepared and provide PPE to all Workers involve in decommissioning activity - Wastes should not be burnt onsite, but managed and disposed of at the designated location - Proper wastes management sign should be displayed in the facility - Maximum supervision from facility manager in the activity	- Regular Water sprinkle in the dusty area to suppress dust from suspend in the air - Provided PPE to all Workers involve in the decommissioning activity - inform drivers to reduce speed when entering and exiting the site - Proper maintenance of the heavy machinery engine and vehicles - Suspend or Stop using heavy flue gasses emitter vehicles and machineries - Maximum supervision from the project manager on the activity	- Provide PPE to all Workers involve in the decommissioning activity - Conduct regular maintenance to flue gasses emitter vehicles and machineries - Remind the drivers to drive not over the established speed limit - Remind workers to manage and dispose the wastes of at the designated location - Proper wastes management sign should be displayed in the facility - Maximum supervision from the project manager on the activity
Pipe and underground Storage Cleaning		<i>Volatile organic compounds (VOCs) impact on workers</i>	- Make sure that storage tanks are completely empty and free of VOCs before lifting it out from the retention basin - Make sure that fuel pipes are drained properly and free of VOCs before disconnecting it from underground tanks and dispensers and taking it out from its channel	- Suspend or stop the work if VOCs is still present in the storage tanks, fuel pipes and dispensers - Wear proper PPE when VOCs is present - Maximum supervision from facility manager on	- Instruct workers to wear PPE before start working - Maximum supervision from facility manager on the activity

			• Make sure that dispensers are free of VOCs before dismantle it • Provide PPE to all Workers involve in dismantle activity • Wear proper PPE • Maximum supervision from the facility manager on the activity	the activity	
• Work in extreme heat non Suspend or Stop		<i>Worker exposure to extreme heat</i>	• Workers must adjust exposure until body is acclimated to the heat • Notify supervisor of any personal risk factors • Set up breaking schedule • Provide proper PPE to all workers involve in the activity • Wear proper PPE • Prepare water or any alternative liquid to keep workers hydrated • Prepare first aid kit in an accessible location • Only trained and competent people to perform first aid • Do not ignore possible symptoms of heat stress • Maximum supervision from facility manager on the activity	• Suspend or stop the work temporarily when there is workers suffer from heat • Rest if exhausted • Apply first aid to heat exhausted workers or suffer from un serious heat stress • Evacuate the workers if the workers suffer serious heat stress to nearest hospital or clinic or contact emergency number for evacuation assistance • Maximum supervision from the supervision from facility manager on the activity	• Instruct workers to break regularly • Instruct workers to wear proper PPE • Remind workers to stay hydrated • Let the workers recover completely before resume to work • Compensate if necessary • Maximum supervision on the activity and sick workers
• Vehicles movement • Working with heavy machinery • Work at height		<i>Risk injury related to accident (vehicles, heavy duty equipment working in height, etc.)</i>	• Only trained and competent people to perform the work • Only allow competent driver to operate the vehicles and heavy machineries • Introduce speed limit on site for vehicles leaving and entering • Hold frequent safety meeting • Recognize hazard and provide plan • Use proper PPE working at height • Workers must make sure that every time Workers are on roofs and scaffolding, fall-	• Suspend or stop the activity temporarily when there is traffic accident or incident or injured during the activity • Apply first aid to treat unserious injured workers • Evacuate serious injured workers to nearest hospital or clinic, or	• Remind workers to proper PPE before work • Remind driver on the speed limit in the facility • Compensate if necessary • Maximum supervision from the facility manager on injured workers

			- prevention countermeasures are in place. - Make sure to work in a team of team of two or more - Prevent falling objects - Prepare first aid kit and provide emergency contact numbers - Maximum supervision from the facility manager on the activity	- contact emergency number for evacuation assistance - Maximum supervision from the facility manager on the activity and on injured workers	
Dismantle facility components		<i>Workers mechanical related works accident</i>	- Hiring people with related work experiences - Workers must understand mechanical hazard - Prevent body to contacting hazardous moving parts - Ensure no objects can fall into moving parts - Provide proper PPE and workers must PPE before work - Maximum supervision from the facility manager on the activity	- Suspend or stop the activity temporarily when there is traffic accident or incident or injured during the activity - Apply first aid to treat unserious injured workers - Evacuate serious injured workers to nearest hospital or clinic, or contact emergency number for evacuation assistance - Maximum supervision from the facility manager on the activity	- Remind workers to proper PPE before work - Compensate if necessary - Maximum supervision from the facility manager on injured workers
		<i>Work in Confined space</i>	- Only trained and competent people to performs confined space work - Use Respiratory protective equipment during perform confined space work - Provided proper PPE and workers must wear the PPE before the activity - Make sure to work in a team of two or more - Maximum supervision from the project manager on the activity	- Suspend or stop the temporarily when accident or incident happen - Rescue the injured workers from the confined space - Apply first aid to treat non serious injury - Evacuate the serious injured workers to nearest hospital or clinic or contact emergency	- Remind workers to work in a team - Remind workers to wear proper PPE - Let the work recover completely before resume to work - Compensate the workers if necessary - Maximum supervision from the project manager on the activity

				number for evacuation assistance • Maximum supervision from the project manager on the activity	
• Dismantle electrical power system • Leaking of fuel from vehicles during decommissioning		<i>Impact of fire in the facility on the workers</i>	• Disconnect all the electrical source prior to dismantle electrical power system • The work area must be fenced to prevent unauthorized access to working areas. • Avoid using leaking vehicles in facility • Only designated Workers, supervision and nominated personnel will be allowed in work areas. • Relevant signage must be placed in and around the proposed site, for purposes of awareness during decommissioning phase • An emergency response plan must be available on site and contractor and its Workers must be familiar with the plan. • Smoking is not permitted on site. • PPE must be worn at all time by staffs • All Workers should be made aware of all emergency contact numbers • Proper fire extinguisher should provide near that activity • Maximum supervision from the facility manager on the activity	• Suspend or stop the work temporarily when there is fire during the activity • Evacuate Workers to safe place • Apply first aid to unserious injured workers • Evacuate serious injured workers to nearest hospital or clinic, or contact emergency number for evacuation assistance • Maximum supervision from facility manager on the activity	• Investigate the accident or incident • Remind workers to wear PPE • Let the workers recover completely before resume to work • Compensate the workers if necessary • Notify the relevant authority when there is casualty • Maximum supervision from the facility manager on the activity
		<i>Electrical accident</i>	• Disconnect all the electrical source prior to dismantle electrical power system • Only allow competent workers to perform the activity • Provide PPE to workers and workers must wear the PPE before the activity • Make sure to work in a team of two or more • Maximum supervision from the facility manager on the activity	• Suspend or stop the work temporarily when there is accident or incident • Evacuate Workers to safe place • Apply first aid to unserious injured workers • Evacuate serious injured workers to nearest hospital or clinic, or	• Investigate the accident or incident • Remind workers to wear PPF • Let the workers recover completely before resume to work • Compensate the workers if necessary • Notify the relevant authority when there is

				contact emergency number for evacuation assistance • Maximum supervision from facility manager on the activity	casualty • Maximum supervision from the facility manager on the activity
• Vehicles movement (in and out of the facility) • Use of heavy machinery • Demolition of the facility • Wastes production and burning	Social impact (community health and safety)	<i>Dust (particulate matter) and Flue gasses/exhaust gasses impact on community</i>	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • Make sure that dusty floor in the facility is regularly cleaned to avoid accumulation of dust • Concrete mixture should be properly done to avoid cement powder from carrying by the wind, particularly during windy day • Suspend or Stop using out of control flue gasses vehicles, machineries and generator • Regular maintenance for vehicles and equipment to avoid gasses emission • Establish speed limits to vehicles operate inside and outside the project area and the speed limit sign should be temporarily installed in the project to remind the drivers • Turn of the unnecessary idling engines of vehicles and machineries • Regular maintenance for back-up generator • Wastes should not be burnt onsite, but managed and disposed of at the designated location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the facility manager on the activity	• Regular Water sprinkle in the dusty area to suppress dust from suspend in the air • When there is complaint from the surrounding community Suspend or stop the work temporarily • Resolve to complaint in a proper manner before resume the activity • Contact emergency number if there is physical confrontation involved during complaint • Suspend the work when during windy day • Suspend or Stop using out of control flue gas vehicles, machineries and generator • Proper maintenance to construction vehicles and equipment • Wastes should be cleaned and disposed of at the designated location • Maximum supervision from the facility manager on the activity	• Let the police investigate people who involve in physical confrontation • Conduct regular maintenance to flue gasses emitter vehicles and machineries • Remind the drivers to not drive over the established speed limit • Remind the workers to manage and dispose wastes of at the designated location • Proper wastes management sign should be displayed in the facility • Maximum supervision from the project manager on the activity
• Vehicles		<i>Traffic jam and</i>	• Clear markings to set apart vehicle and	• Driver should follow	• Let the police investigate

movement (in and out of the facility) • Movement of outside the facility		<i>traffic accident (general traffic outside the facility)</i>	pedestrians routes; • Dedicated personnel must be presented to manage traffic and pedestrian movements outside the facility. • Ensure that company's drivers have the competence to operate the vehicles safely outside the facility. • Provide warning signs at all entrances and exits when carry out maintenance activities. • Provide sign for safe movement of vehicles and people (pedestrian crossing areas, barriers, safe zones, walkways etc.). • Introduce a speed limit to companies driver operate outside the facility. • Company's driver should follow all the traffic signs on the road • Driver operate companies vehicles outside the facility in any circumstances should under no alcohol influence • Provide emergency contact numbers in the vehicles and drivers should be made to aware of emergency contact number • First aid kit should be made available in the vehicles operating outside the facility • Driver should be trained to use first aid kit and have training certificate • Maximum supervision from facility manager on the activity	traffic signs or/and police instruction to avoid causing traffic jam • After traffic accident or incident, driver should Suspend or Stop the vehicle to assess the accident or incident • Apply first aid to unseries injured victim • Evacuate the serious injured victim to nearest hospital or clinic or call emergency number for evacuation assistance • Maximum supervision from facility manager on the activity	the accident or incident • Compensate the victim if necessary • Emergency contact numbers must be made available in the companies vehicles • Company should toughen up the regulation or police control driver behaviour • Maximum supervision from the facility manager on the activity
• Vehicles movement (in and out of the facility) • Demolition of the facility		<i>Noise impact and Vibration impact</i>	• Notify the community around the facility on the decommissioning plan and impact of the activity • demolition the facility should happens during working hours • Make sure that noise produce during demolition does not exceed the maximum standard • Recommend to use low noise and vibration equipment during maintenance activity • Maximum supervision from the facility	• Suspend or stop the activity temporarily when there is complaint from the community • Resolve the complaint before resume the work • Call emergency contact number if there is physical confrontation involve during the complaint • Maximum supervision	• Let police investigate people who involve in physical confrontation • Resolve any problems in a proper manner • Investigate if there is damage to community property cause by the vibration during maintenance activity • Compensate if vibration

			manager on the activity	from the facility manager on the activity	produce during the activity destroy community's property • Maximum supervision from the facility manager on the activity
- Leaking of fuel from vehicles during decommissioning - Mechanical works		<i>Fire impact on the community</i>	Use the preventive action mitigation measures for fire impact in the facility on the Workers, fire impact to residents in the facility and impact of fire in the residents to facility in this section to prevent fire.	Use the control and responding action mitigation measures for fire impact in the facility on the Workers, fire impact to residents in the facility and impact of fire in the residents to facility in this section as control and responding actions.	Use the corrective action mitigation measures for fire impact in the facility on the Workers, fire impact to residents in the facility and impact of fire in the residents to facility in this section as corrective actions.
- Removing underground storage tanks - Removing pipework - Removing dispenser - Removing wastewater treatment system - Leaking of fuel or lubricant from heavy machinery	Soil quality, Water quality (both groundwater and surface water)	<i>Soil, Surface water and groundwater pollution due to fuels spill and leak</i>	- Ensure fuel has been removed from the UST. - Pipes and vents must be disconnected and removed before the tank is lifted. - The UST must be securely fastened before transportation via truck from the site. - Soil samples will be obtained from the base and sides of the UST excavation to verify that the site is un-impacted and does not pose a contamination risk to human or the environment. - Backfill material must be un-impacted. - Ensure that any contaminated soil is removed and properly disposed to prevent potential impacts on groundwater. - If any pollution/ contamination of water resources or soil is detected during the decommissioning of the tanks, relevant authorities should be informed - Any liquid waste produce during the decommissioning must be properly disposed at the designated location/facility. - Maximum supervision from the facility manager on the activity	- Clean the leak and spill properly - Remediate must be undertaken when contaminated is detected - Make known to relevant authority regarding the contaminated sites - Maximum supervision from the facility manager on the activity	- Remediation must be undertaken when contamination is detected - Maximum supervision from the facility manager on the activity

• Spill or leak • Fire or explosion	Ecology impact	<i>vegetation and/animals</i>	Rehabilitate the site by planting trees and grass if there is no more plan to use the site for other activity. It is important to work with relevant authorities do carry out rehabilitation		
Decommission of the facility	Economic and agricultural impacts	<i>Impact on employees</i>	• Let the employees know as early as possible • Allocate the employees to other facility if possible • Help them to find other jobs if possible		
Waste production and burning		<i>Waste production</i>	• Manage the wastes properly and dispose the wastes at the designated location • Wastes should not be burnt onsite • Sing should be displayed on site and where waste should accumulated and disposed of • Maximum supervision from the manager	• Clean the improper disposal of wastes and dispose at the designated location • Maximum supervision from manager	• Remind workers to manage and dispose the wastes of at the designated location • Maximum supervision from the manager

9. GOVERNING PARAMETERS

As discussed in the previous sections, storing and handling of petroleum products (gasoline and diesel fuel) have potential impacts on the environment. It could affect the air, water and soil, as well as the health and safety of employees and the community.

In the absence of national environmental quality standards which are relevant to the proposed projects, for future reference on environmental assessment criteria the company intends to comply with available international guidelines, such as WHO ambient air quality guidelines for assessing the ambient air quality emissions.

➤ Ambient Air Quality

Table 7. WHO Ambient Air Quality guidelines

WHO Ambient Air Quality Guidelines		
	Averaging Period	WHO Guidelines Values
Particulate Matter PM _{2.5} PM ₁₀	1 – year	10 µg/m ₃
	24 – hour	25 µg/m ₃
	1 – year	20 µg/m ₃
	24 – hour	50 µg/m ₃
Ozone (O ₃)	8 – hour daily maximum	100 µg/m ₃
Nitrogen dioxide (NO ₂)	1 – year	40 µg/m ₃
	1 – hour	200 µg/m ₃
Sulfur dioxide (SO ₂)	24 – hour	20 µg/m ₃
	10 minute	500 µg/m ₃
Carbon monoxide (CO)	8 – hour	9 ppm or 10.31 mg/m ₃

Based on the measurement in the field that conducted by the Hersege consultant shown that the result of particle matter (**PM 2.5**) in the project location is **3 ug/m³**, and **CO₂** in the project location is **450 ppm**. Based on the parameter on the AIRRADIO measurement both result shown that for the PM 2.5 and CO₂ measurement is still in the normal category.



Figure 16. Air Quality Measurements by Airradio

Furthermore, the drinking water quality parameters are selected in accordance with the water quality study conducted by the Ministry of Health, Environmental Health Division of Timor-Leste in collaboration with the WHO Regional Office for South East Asia. For groundwater monitoring, there is National Groundwater Monitoring guide available. It provides basic information such as what groundwater is, different types of bore drilling and monitoring methods, how to measure groundwater levels and how to sample and test the quality of groundwater.

➤ **Drinking Water Quality**

Table 8. Water quality parameters

Water quality parameters that are identified as of concern to Timor-Leste		
Chemical Parameters	Unit	Timor-Leste Recommended value
pH	pH	6.5 – 8.5
TDS	mg/L	600 (WHO)
Temperature	°C	-
Turbidity	NTU	5
Iron	mg/L	0.3
Sulfate	mg/L	250
Fluoride	mg/L	1.5
Nitrate	mg NO ₃ /L	10
Arsenic	mg/L	0.01

Table 9. WHO classification of bacteriological water quality

WHO classification of bacteriological water quality	
Thermo tolerant Coliform per 100ml, CFU/100ml	Risk classification
0	In accordance with WHO guidelines
1 – 10	Low risk
10 – 100	Intermediate risk
>100	High risk

➤ **Soil Parameter**

Soil pH is considered a master variable in soils as it affects many chemical processes. It specifically affects plant nutrient availability by controlling the chemical forms of the different nutrients and influencing the chemical reactions they undergo. The optimum pH

range for most plants is between 5.5 and 7.5; however, many plants have adapted to thrive at pH values outside this range.

Based on the measurement in the field that conducted by the consultant the result of **pH** measurement in the project location is **6.5**, this shown that pH in the project location is **Slightly Acidic** based on the soil pH parameter range by the United States Department of Agriculture (UDSA). The type of soil that observed in the proposed location is alluvial soil with fine grand soil consist of several main alluvial material such as clay, chalk and sand.



Figure 17. FLO 10 pH measurements (Source: Hersege Consultant 2020)

Table 10. Soil pH Parameter (The United States Department of Agriculture (UDSA))

Denomination	pH range
Ultra acidic	< 3.5
Extremely acidic	3.5–4.4
Very strongly acidic	4.5–5.0
Strongly acidic	5.1–5.5
Moderately acidic	5.6–6.0
Slightly acidic	6.1–6.5
Neutral	6.6–7.3
Slightly alkaline	7.4–7.8
Moderately alkaline	7.9–8.4
Strongly alkaline	8.5–9.0
Very strongly alkaline	> 9.0

➤ **Noise Level**

Sound level meters are commonly used in noise pollution studies for the quantification of different kinds of noise, especially for industrial, environmental, mining and aircraft noise.

The current international standard that specifies sound level meter functionality and performances is the IEC 61672-1:2013. The first noise measurement point is inside the project area. Noise source is from the operated motor vehicle that passes through the main road and to the fuel filling area. Total of the 120 data collected from the noise level meter within the 10 minutes time frame. By using formula based on the “*Lampiran II Keputusan Menteri Negara Lingkungan Hidup No. : KEP-4/MENLH/11/1996 Tentang Baku Tingkat Kebisingan Tanggal 25 Nopember 1996*”, the result of measurement is **42.48 dBA**. This number does not exceed the IFC Noise Level Guidelines for industrial activity (70 dBA) see Table 11.

Table 11. IFC Noise Level Guidelines

Receptor	One Hour L_{Aeq} (dBA)	
	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00
Residential; institutional; educational ⁵⁵	55	45
Industrial; commercial	70	70

In addition the temperature at the project location when conducted the measurement is 29°C, the humidity is 66% RH, with the wind speed is 0.6 to 2.5 m/s and the wind blows from North to South.

10. MONITORING PROGRAM

The monitoring program is established to measure the impacts that may occur as a result of the project. It serves as the company's ways of showing its commitment in the health, safety and the environmental protection and to comply with the legal requirements. Furthermore, the effectiveness of proposed mitigation measures can be gauged through the monitoring program. The project's owner and the designated officers/staffs are responsible for developing, implementing and maintaining the monitoring programs.

A scope is provided for each of the monitoring programs that is created or performed in the following table.

Table 12. Monitoring Program

No	Monitoring Program	Scope	Responsibility
1	Inspection	Oil/water separator • Ensure the oil/water separator is clean and free of debris, • Remove the accumulated oil in the oil/water separator and disposed it as recommended	
		Drainage/gutters • Check drains are not blocked or full	
		Floors • Floor area where there is possibility of spills such as dispensing and unloading of bulk delivery area is cemented and graded to contain polluted runoff, • The cemented surface ground need to be maintained so that no cracks or faulty joints between concrete slabs that would allow liquid penetration (sign of deterioration), • Ensure that the marking for safety zones on the pavement are visible	
		Lightning • Check lighting system to ensure that all areas have adequate lighting level	
		Monitoring well • Monitoring well should be checked regularly for identifying the leaking from the underground storage tanks	
		Water level monitoring • check stored fuels for water content by using special paste and dipstick • check the interstitial space of double wall tanks for accumulation of fuel or water • water level monitoring should be done daily or weekly in order to avoid unacceptable water content in the storage tanks and monitoring result should be recorded	
		Dispensers • Remove panels to check for sign of leaks and general condition of electrics (signs of overheating), and the integrity of seal	
		Dispensers Hoses • Ensure hoses are in reasonable conditions, they are not badly chafed, split or worn, • Check nozzles terminate delivery when return to its holsters, • Check nozzle cut off device is working, • all staff should ensure that dispensers' hoses are laid on the filling areas and on pump islands' flood at any time	
		Pipework and vent pipes • Check the condition of pipes and valves for sign of leaks, corrosion or damage. For vent pipes (above ground level)	

		pay special attention to sign of corrosion at ground level	
		Storage tanks and filling points	
		• Properly label filling points, • Check tank fill pipes are locked, • Check manhole covers are seated correctly and can easily lifted using appropriate lifting device	
		Notice and signs	
		• Ensure that none of the notices and signs posted are missing, damage or illegible, • Emergency telephone number are up to date and displayed	
2	Emergency response plan and its procedures	Firefighting equipment	
		• Ensure that fire extinguishers are present in the correct number, fully charged and no sign of damage, • Check that the bucket is filled with sufficient dry sand to cover accidental leakage of liquid fuel and present for each of fuel dispenser, • Carry out a regular inspection on the fire extinguishers (at least once a month) and inform a competent third party who is responsible in providing services on fire extinguishers if there is any damage or malfunction on it	
		Emergency equipment	
		• Check contents of first aid kit are all present and correct (i.e. include necessary supplies and medication), • Check all emergency switches and loud speaker or alarm system and telephone are functioning properly	
		Equipment and procedures	
		• Description of emergency response equipment, function(s) and how to operate, • Identify fixed firefighting facilities, such as raising alarm system, electrical shut down of pumps/dispensers or other equipment, emergency routes and assembly point for staffs and customers, • Portable fire fighting and spill facilities, including fire extinguishers, its type and location, and spill containment system, e.g. dry sand or other suitable and proper absorbent material, • Ensure that emergency procedures are understood by all employees on site, for instance by using appropriate language and/or utilize pictogram	
		Training and practice in emergency procedure	
		• Provision of training to the employees, include but not limited to (i) the function, operation and use of electrical and other devices for controlling or regulating delivery of fuel products to vehicles' fuel tank or to underground storage; (ii) practical experience of using portable fire extinguishers; (iii) familiarity with different classes of fire and appropriate type of fire extinguishers for each class; (iv) safe dispensing procedures and unloading procedures; (v) recognizing and reporting fault in equipment; (vi) dealing with small spills	

		• Ensure all the employees have attended first aid training • All employers should attend firefighting training and refreshment training and should have certificate	
3	Maintaining records and documentation	Documents • Records of maintenance history, faults detected and repairs or modifications carried out at the site, • Incident reporting, • Inventory check on the fuel stock, • Up to date Health, Safety and Environmental (HSE) Plan	
4	Traffic monitoring	Traffic safety • Ensure accesses are not obstructed in any manner, including obstruction by parked vehicles, • Ensure the vehicles are parked in a designated area while refuelling, • Place restriction on circulation of people and other vehicles at the unloading zone during the unloading of liquid fuel from tanker into the storage tanks,	
5	Implementation of current procedures in place	Procedures • Filling the fuel to storage tank through the fuel tanker, • Filling the fuel to the tank of vehicles, • Count the volume of fuel in the storage tank and record the result, • Make the inspection to the fire extinguisher, • Job Safety Analysis and reporting	

11. REPORTING REQUIREMENTS

The environmental management plan would require reporting arrangements for the purposes of assisting with effective implementation and with external reporting. All reports must be filed by the operator/company in a place where they can be easily retrieved and to be made available for scrutiny by relevant authorities. The types of reporting that need to be prepared include:

- ✓ Internal monitoring and inspection
- ✓ Incident, accident and emergency reporting
- ✓ Performance indicators
- ✓ Training programs

The following table specifies the reporting frequencies and types of reports for reporting to the environmental authorities and other relevant authorities.

Table 13. Reporting Requirements

No	Type of reports		Reporting frequency	
			Internal report	External reporting (authority/regulator)
1	Internal monitoring and inspection	Report faults detected and repairs or modification carried out	When such activities are performed	When requested
2		Inventory report on the fuel stock	Daily record	
3		Well monitoring	Daily/weekly record	
4	Incident, accident and emergency reporting	Report of accident products spills or leakage	A report must be filed soon after the incident /accident /emergency has been handled to the company's management	in the event of serious incident occurs, relevant authorities must be verbally informed at the time of incident/accident/emergency as soon as possible and a report must be filed after it has been handled
5		Fire or other emergency report		
6		Traffic incident report		
7		Violence and/or vandalism report		
8	Reporting on performance indicator	Incident rate report	A report on indicators is done yearly or it may be earlier when needed	
9		Training records		
10		Complaints and grievance records		
11	Training programs	Training report on fire fighting, first aid and etc		A report including the evidence (e.g., copy of training certificate) is filed to relevant authorities, when there are new training or refresher training (recommended)

12. RESPONSIBILITIES FOR MITIGATION AND MONITORING

The company, Carrier Fuel, has primary responsibilities for implementation of the proposed mitigation measures and monitoring programs. The company also is in liaison with other relevant institutions and authority bodies to ensure that the installation and operation of the automotive fuel filling station is aligned with the national laws and regulations, and industrial best practice.

The following institutions and authorities (as mentioned earlier in the section of institutional roles and responsibilities) have roles and responsibilities in safeguarding the social wellbeing, economic, and the environmental protection relevant to the proposed project.

(1) <i>Agência Nacional de Licenciamentu Ambiental (ANLA)</i>	Carry out inspection and monitoring to safeguard the environment, health and safety
(2) <i>Secretario Estado do Meio Ambiente (SEA)</i>	
(3) <i>Autoridade Nacional do Petróleo e Minerais (ANPM) Direcção Downstream</i>	The regulatory authority for the petroleum and natural gas and related products, and mining Industries Carry out inspection and monitoring on downstream activities
(4) <i>Ministério do Petróleo</i>	
(5) <i>Direcção Nacional de Servicos de Águas e Saneamento (DNSAS)</i>	Responsible for the national management of water resources. It also formulates sector policy, manages the distribution for human consumption, and monitor water quality through DNSAS laboratory
(6) <i>Ministério da Saúde</i>	Responsible for public health
(7) <i>Direcção Nacional da Protecção Civil (which include the fire fighters)</i>	Responsible for fire hazard and emergency

13. EMERGENCY PLAN

This emergency plan will be used as a basis to respond to or control an emergency situation that may occur at the Carrier Fuel Unipessoal Lda.

The following scenarios are considered to constitute an emergency:

- ✓ Fire or ignition source on the forecourt
- ✓ Significant spillage of flammable fuels
- ✓ Spill on clothing
- ✓ Explosion
- ✓ Threat of violence, personal injury or robbery
- ✓ Natural disaster

The responsible persons for managing emergencies at the Carrier Fuel Unipessoal Lda are: (1) the Representative of the company – Adolfo Antonio Belo; (2) the Site Manager –

Julio A. Da Silva De Jesus; and (3) the staffs or personnel on site. These personnel should have the power to stop and direct works so that they can manage emergencies effectively. The employer has the responsibility to provide necessary training to the employees and ensure that the emergency procedures in place are well understood, implemented and maintained.

➤ **Emergency response procedures**

The emergency response procedures indicate the emergency actions to be carried out upon becoming aware of the emergencies.

i. Emergency contact

The emergency contact details for the available emergency services:

- ☐ Police -112/7731 2358
- ☐ Fire Department -115/4130069
- ☐ Ambulance -110/3311044

Outline of how to interact with emergency services, such as the police, firefighters and ambulance: (1) first making them aware of the emergency scenario, (2) clearly stated the location of the fuel filling station, namely Carungulau, Metiaut, Cristo Rei and Dili (3) providing the contact detail of the manager of the fuel filling station:

Representative of Company : **Adolfo Antonio Belo**

Mobile number : **+670 78277666**

ii. Fire and explosion

In the event of fire, cease the operation of refueling and disconnect the electricity in the general area. Alert the personnel and clients about the emergency situation. If it is a small fire, the trained personnel should extinguish the fire using the fire extinguishers. An accident report should be filed to further assess the cause and actions taken for future reference. If the fire is large and cannot be contained, follow the evacuation procedures and immediately contact the fire department. Provide first aid when needed.

iii. Spillage of flammable liquid fuels

Oil spills may occur during: (1) refueling/dispensing fuel into vehicles' tanks, (2) damage to equipment or pipes leaking, or (3) transferring of fuels from the road tankers into

the fuel storage tanks. In the event of oil spill, cease the activity that causes fuel spillage and immediately isolate the area, contain the source of spill and removing the spill using absorbent (bucket of dry sand) if it is minor. If the spill is significant, immediately report the situation to the relevant authorities, activate the emergency procedures and suspend all the activity at the facility until the emergency situation has been handled.

iv. Spill on clothing

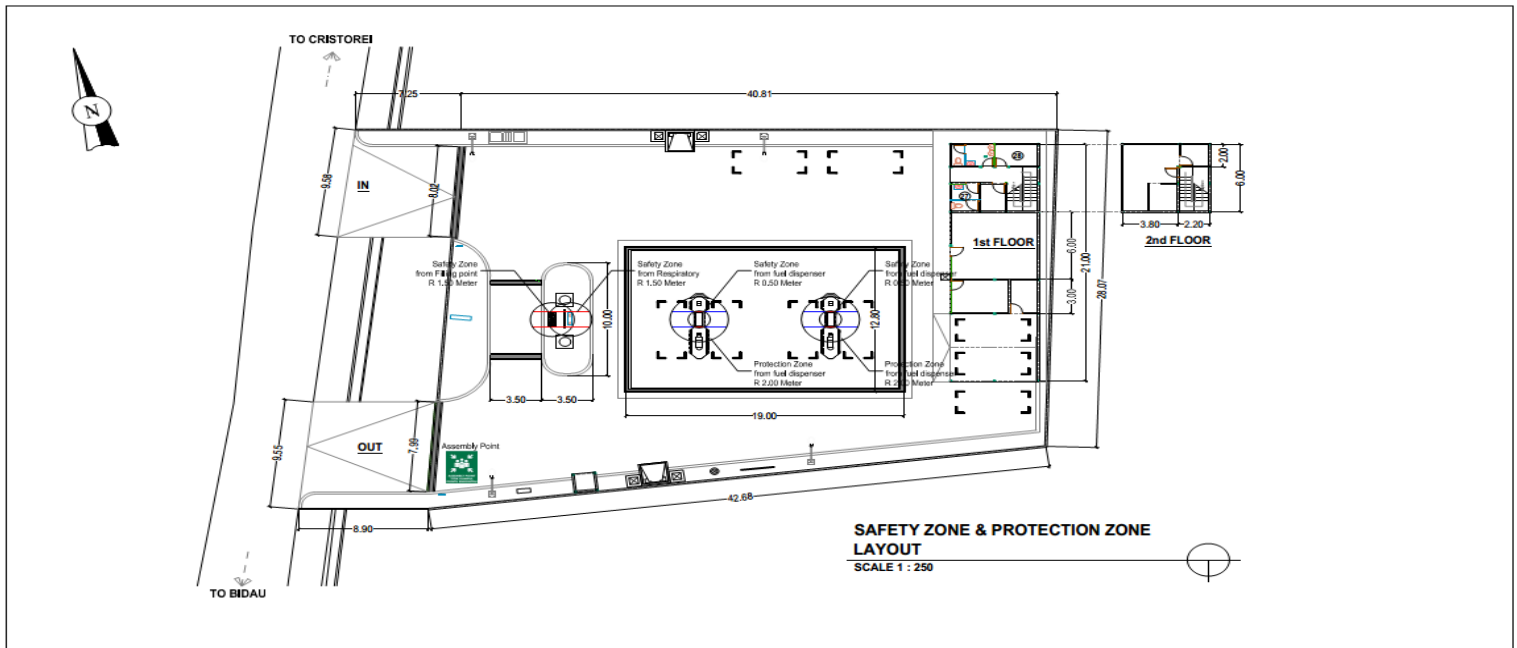
For flammable spill, remove the clothes and wash the skin to prevent from absorbing the fuel product, air the clothes before cleaning it. If clothes are soaked with fuel, make sure to wet the clothes thoroughly before removing it to avoid vapor being ignited by static.

v. Natural Disaster

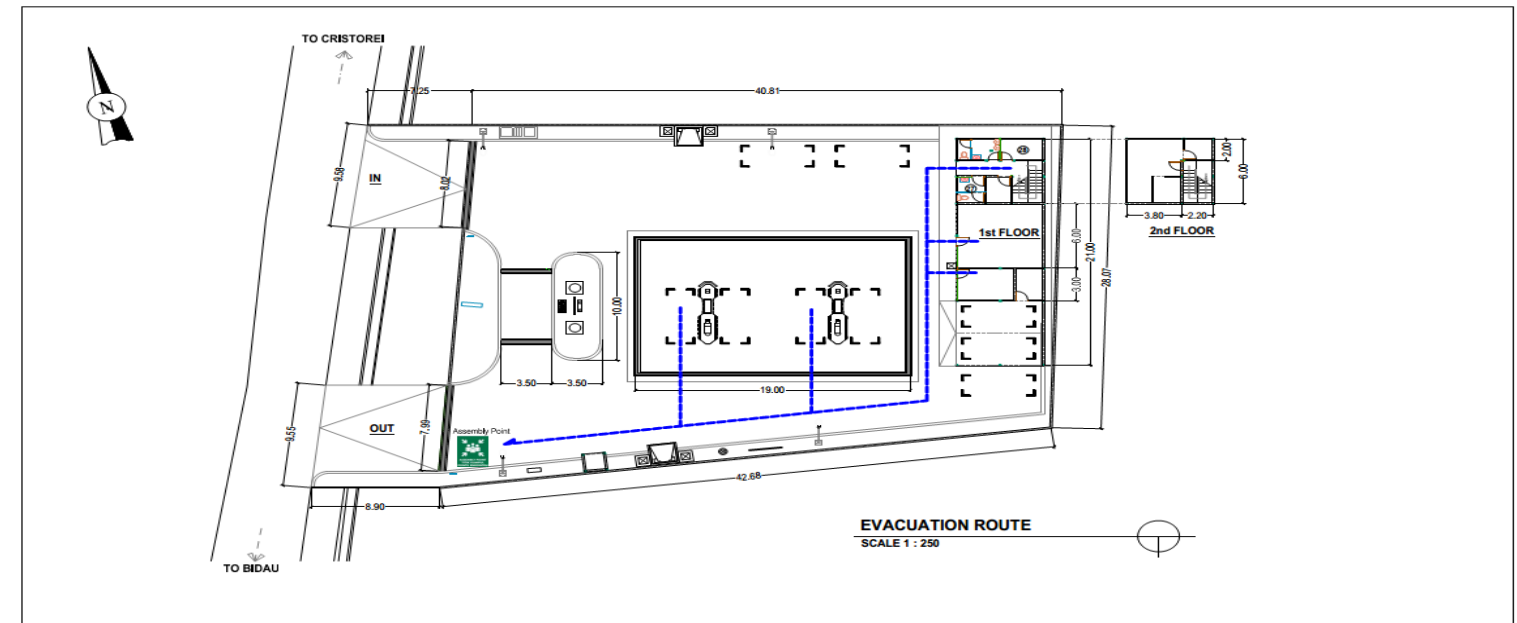
The emergency response plan was prepared to also encompass the natural disaster, such as flooding or earthquake. If such events occur, suspend the activity at the fuel filling station and only disconnect the electricity when it is safe. Everyone should evacuate to a safe place, administer first aid to those who are injured and contact emergency services if further assistance is needed. If there is damage to the facility (*e.g.* storage tanks, dispensers, *etc.*), the incident needs to be reported to the ANPM – Downstream Directorate.

vi. Threat of violence, personal injury or robbery

If such events occur, contact the emergency services and refrain from engage in any actions that can further aggravate the situation.



PREPARED BY	PROJECT OWNER	PROJECT TITLE	DRAWING TITLE		SCALE	AUTORIDADE NACIONAL DO PETROLEO E MINERAIS TIMOR-LESTE		NOTE
TECHNICAL & HSSE DEPARTMENT PERTAMINA INTERNATIONAL TIMOR,SA	 CARRIER FUEL	CARRIER FUEL FUEL STATION	SAFETY ZONE & PROTECTION ZONE LAYOUT		1 : 250	CHECKED BY	APPROVED BY	
		PROJECT LOCATION	DRAWN BY	CHECKED BY	DRAWING NO	CESALTINO BABO Downstream Project & Facility Appraisal DATE:		
		METAUT, DILI TIMOR - LESTE	FADILIAHI	RABD ABUDARM	SF-02			
			DATE:	DATE:				



PREPARED BY	PROJECT OWNER	PROJECT TITLE	DRAWING TITLE		SCALE	AUTORIDADE NACIONAL DO PETROLEO E MINERAIS TIMOR-LESTE		NOTE
TECHNICAL & HSSE DEPARTMENT PERTAMINA INTERNATIONAL TIMOR,SA	 CARRIER FUEL	CARRIER FUEL FUEL STATION	EVACUATION ROUTE		1 : 250	CHECKED BY	APPROVED BY	
		PROJECT LOCATION	DRAWN BY	CHECKED BY	DRAWING NO	CESALTINO BABO Downstream Project & Facility Appraisal DATE:		
		METAUT, DILI TIMOR - LESTE	FADILIAHI	RABD ABUDARM	SF-03			
			DATE:	DATE:				

Figure 18. Emergency Exit Plan

14. DECOMMISSIONING PLAN

Where equipment for storing or dispensing fuels is taken out of use, either permanently or on a temporary basis, it shall be carried out safely and that the equipment is left in a safe state. The decommissioning process is taking place after operation has ceased and a notification shall be given to the relevant authority six months prior to any of decommissioning activity. Any work associated with decommissioning the fuel containment system should be done by competent persons. It is also paramount to carry out a risk assessment taking into consideration all matters concerning health, safety and environmental protection.

There are two phases in the decommissioning plan:

- i. Dismantling of the fuel containment system (the installation is decommissioned)
 - During the excavation and removal of underground storage tank care should be taken to ensure that any contaminated material is contained and not allow migrating to other areas, this risk could be minimized by preventing rainwater build-up within the excavation.
 - Before any work is carried out to render the storage tanks safe all residual fuel should, so far as is reasonably practicable, be removed from the tank and an underground tank should be inserted to reduce the risk of explosion.
 - The removal of pipework should only be carried out after it has been drained and isolated from sources of fuel. It is likely for a flammable atmosphere or residual petrol to be present in pipework and as a precautionary measure of flushing with water should precede the removal and dismantling work
 - The electricity supply in the site should be disconnected prior to the commencement of the decommissioning activity
 - Dispensers may be removed from the site with precautions to ensure that the site is maintained in a safe condition
 - The oil/water separator should be removed when it serve no purpose in connection with any intended future use of the site. Beforehand, arrangement should be made for disposal of any liquid or sludge contained in the chambers of the oil/water separator.

ii. Abandoning and restoring the site

The location of abandoned underground tanks or pipework should be brought back to its existing condition. Any residual materials from the site shall be disposed in accordance with the health, safety and the environmental plan and the environmental regulations.

15. CAPACITY DEVELOPMENT AND TRAINING

Carrier Fuel Unipessoal Lda is committed to facilitate all of its employees at the fuel filling station with training courses from accredited training providers. Every employee is obligated to attend and complete the training while actively working at the fuel filling station. The training which will be offered by the company is tailored to the role of the employees.

The purpose of these training is to ensure that they understand their responsibilities when implementing the environmental management plan. The list of training provided is as follow:

- i. First Aid training
- ii. Safety course
- iii. Customer service course
- iv. Basic training on fire fighting

The company would also offer refresher courses for existing employees as recommended in the training certificates, which would normally valid for a year or more depending on the training.

In addition, the employer has the responsibility to induct the staffs regarding the key points of environmental value and ensure that everyone is aware of the environmental incident emergency response procedures.

16. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

According to **Ministerial Diploma No.47/2017**, in preparing drafts for SEIS and EMP, ANPM requested the proponent to complete the existing requirements, by holding public consultations with local residents, government institutions, local authorities, intellectuals and other relevant government agencies. , with the reason that in the preparation stage of the SEIS and EMP documents, it is very necessary for these activities so that the proponent can understand the situation and condition of the area from the surrounding community, of a development project or investment in certain areas, especially in the Metiaut area. The purpose of the public consultation held by the company is to hear, understand and accept suggestions, criticisms and constructive solutions, for the vision or business strategy plan prepared by the company so far.

That way, on February 25, 2021, the proponent made a plan to complete the requirements requested by ANPM to hold a public consultation forum, from the preparations made by the proponent for smooth running of the event, the first thing the proponent made was to coordinate between the proponents. with the local authority, and also with the ANPM to determine the day and date to realize the event. From the public consultations which took place from February 25, 2021, while during the event there were many questions, suggestions and constructive criticism submitted from the surrounding community, people's representatives or local authorities as well as explanations on environmental laws from ANPM. from the suggestions and criticisms submitted by the guests at the event, among others, as follows;

1. Mr. Julio da Costa Xavier (Chefe Suco Metiaut);

On that occasion the head of the village of Metiaut, emphasized and reminded the director of the Carrier Fuel company, to be committed to the business, another thing he said was, the company must be honest in the required workforce recruitment system, establish cooperation between the company and local authorities , build good coordination between the two parties in order to avoid problems that can occur at any time.

2. Mr. Agapito.C.R (Lia Nain Suco Metiaut);

From the suggestions, the first thing he conveyed was, he was very happy with the investment or business in the Metiaut area, the second thing he conveyed was, after recruiting the necessary workforce, it is recommended for the company to improve human resources for these employees so that can contribute to the company and the

workforce in the future, while the last thing he said was, the Carrier Fuel company is a local company that really understands the customs and traditions of the indigenous people of Timor Leste, from there he said that before carrying out construction until the construction phase, company operations must complete the requirements of the adat leader or lia nain metiaut for the smooth running of the business in the future.

3. Mr. Antonio De O. Soares (Delegadu);

From the sentence conveyed by him in general terms, the company must build good coordination for several aldeia heads near the project area, the company must avoid the prevailing nepotism system, the last is to develop human resources from good work experience there is.

4. Sra. Francisca Carlota Barreto (Chefe Juventude Feto);

Mrs. Francisca suggested that the company should preserve the environment, while for the equipment used, she emphasized that the company should use high-quality equipment in accordance with factory standards and required requirements. The last suggestion she gave was that the company should make a concrete and good design or management for the green space area for proposed area/project.

5. Sr. Jose Figueredo from ANPM/Downstream Staff;

From that opportunity, representatives from government institutions/ANPM, namely; Mr. Jose, he explained in great detail the requirements or permits, especially in the downstream sector related to the Environmental Permit Proposal which was applied until a permit was issued for activities related to existing government institutions.

At the last opportunity before the closing of the event, the Director of Carrier Fuel Company, namely; Mr. Adolfo accepts all inputs with a big heart, and Mr. Adolfo conveys that the Carrier Fuel company is highly committed with a clear vision and business strategy, building and developing human resources for the community around the project area and the Metiaut community in general. Carrier Fuel has a great business spirit, high integrity in doing business, Carrier Fuel also has work experience in the business of preparing and supplying fuel oil for government institutions to public consumption.

Public consultation is conducted by project owner and supported by the consultant with the objective to obtain constructive opinion or comments from affected community including negative and positive comments. The method of public consultation is door to door or face to face and by forum also, opinion and comments attached in this Project Document.

There are several respondents were interviewed on their concerns regarding the impacts due to the proposed project activity. Most of the correspondents are pleased with the presence of the fuel filling station and the job opportunity that might be created. However, they suggested constructing the proper fuel filling station, since they are concerned on the impact that may occur in the future such as fire and others accident and control the quality and price of the fuel.

a) Public Consultation by Face to Face



Figure 19. Public Consultations via Face to Face (Source: Hersege Consultant 2020)

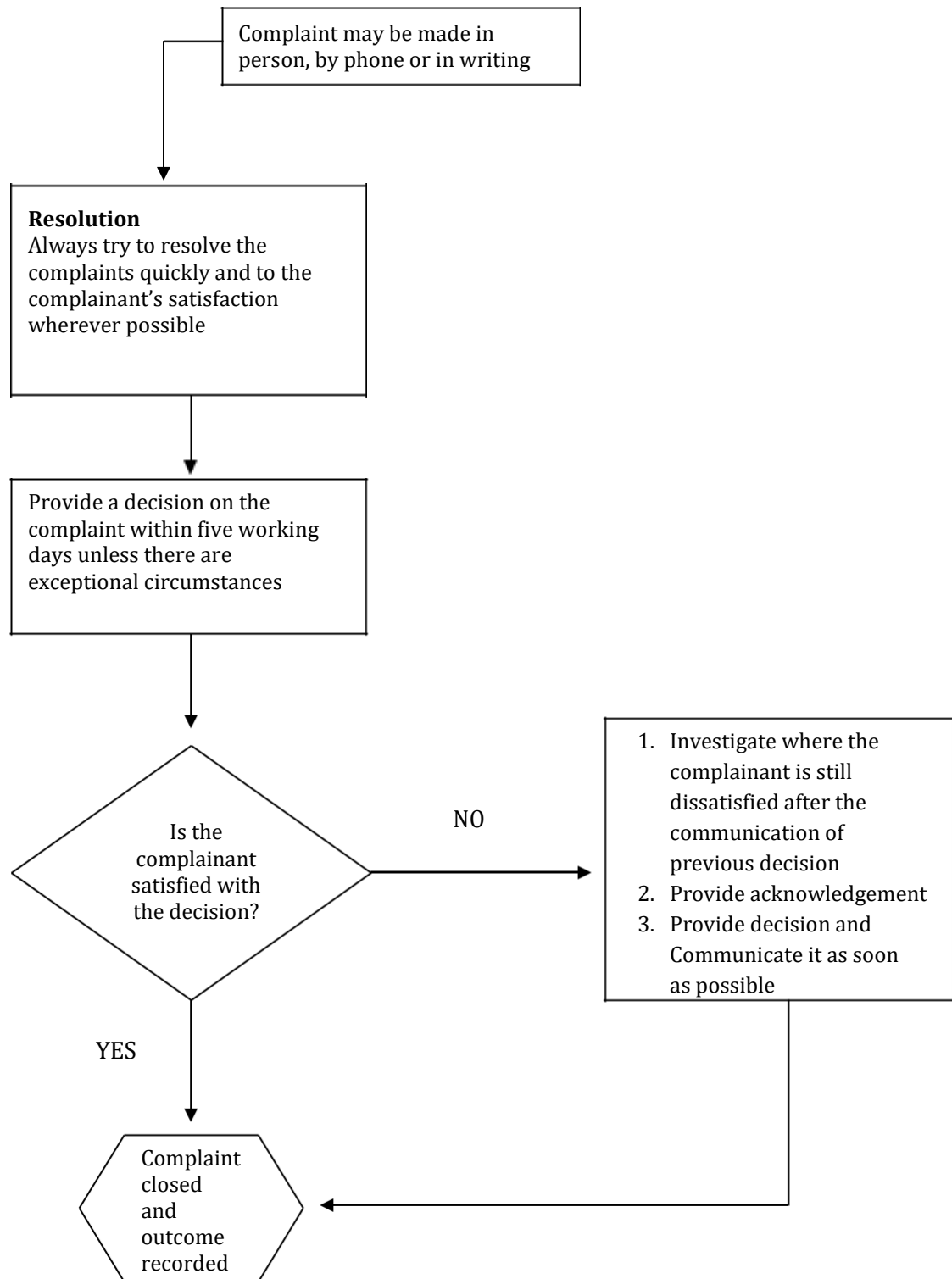
b) Public Consultation by Forum



Figure 20. Public Consultations by Forum with Local Community, Local Authority and ANPM
(Source: Carrier Fuel and Hersege Consultant 2021)

17. COMPLAINTS AND GRIEVANCES MECHANISMS

Complaints handling procedure flowchart



18. WORK PLAN AND IMPLEMENTATION SCHEDULE

Table 14. Working Plan and Implementing Schedule

	Pre-Construction, Construction and Operational Phase					
	Jan 2020	Oct 2020	May 2021	Jun 2021	Aug 2021	First operated
Land Survey, and Agreement and Consultation with Local Authorities						
Land Clearing and Installation of Supporting Facilities						
Installation of underground storage tanks						
Installation of atmospheric vents (respirators)						
Installation of drainage at forecourt area						
Installation of dispensers and product lines						
Installation of oil catcher						
Operation of automotive fuel filling station						
Mitigation and monitoring program						

19. COST ESTIMATE

The total investment of Carrier Fuel Unipessoal Lda is equal to \$300,000 which will covered construction of the Carrier Fuel and its supporting facilities, training of staff, component of fuel station facilities.

20. REVIEW OF THE EMP

A review or amendment to the EMP may be needed during the life of the project as a part of important aspect for improving the fuel filling station's environmental management. The review of the EMP would be submitted to the Environmental Authority for approval. Review of the EMP would be undertaken:

- Following significant environmental incidents
- When there is a need to improve performance in an area of environmental impacts
- Periodically for actions undertaken over long timeframes, such as 2 years
- When there is a major renovation on main component of the facilities
- After major incidents in the facility

21. NON-TECHNICAL SUMMARY

Sumáriu Naun-Tékniku

1. This is a non-technical summary for an environmental management plan which is prepared on behalf of Carrier Fuel filling station. The aim is to provide the public and regulators proper understanding on the company's commitment to manage the potential impacts from the installation and operation of a fuel filling station.

The non-technical summary is part of environmental management plan that is required for an environmental licensing process. The proposed plan is primarily on the management of a automotive fuel filling station during its operational and decommissioning phase.

Sumáriu naun-tékniku ida ne'e ba Planu Jestaun Ambiental nebe prepara em nome hosi postu abastesimentu kombustivel, Carrier Fuel. Objetivu mak atu fornese ba publiku no regulador entendementu loloos kona-ba empreza nia komprimisu atu jere impaktu potensial hosi instalasaun no operasaun iha postu abastesimentu kombustivel ida ne'e. Sumáriu naun-tékniku nu'udar parte husi Planu Jestaun Ambiental nebe nesessaria mos ba prosesu lisensamentu ambiental. Proposta planu prinsipalmente mak kona-ba jestaun retallu estasaun ense kombusitivel automotive faze operasaun no dezativasaun.

2. This environmental management plan is established to facilitate monitoring and assess whether management actions are being implemented. It could also provide assurance

to regulators that the requirements to environmental and social performances would be met.

Planu Jestaun Ambiental ida ne'e estabesele atu fasilita monitorizasaun no avaliasaun konaba asaun jestaun sira ne'ebe implementa dadaun. Nia bele mos fo garantia ba regulador sira katak rekizitu ba dezempeñu ambiental no sosial sei kumpri.

3. The scope of the environmental management plan to be covered in this section is as follow:

The description of the project

- ✓ Legal framework
- ✓ Potential impacts
- ✓ Proposed mitigation measures and monitoring

Iha ambitu Planu Jestaun ambiental sei kobre iha seksaun ida ne'e mak hanesan tuir mai:

Deskrisaun kona-ba projetu

- ✓ Enkuadramentu legal
- ✓ Impaktu Potensiál
- ✓ Medidas mitigasaun ne'ebe propoin no monitorizasaun

4. The automotive fuel filling station called Carrier Fuel Unip Lda is a privately owned enterprise which is located at Carungulau, Metiaut, Cristo Rei, Dili - Timor-Leste. It covers a total land of approximately 1,499 m² where facilities including a total of 15,000 L capacity of underground fuel (Gasoline and Diesel) storage tanks, two fuel dispensers to discharge gasoline, minimarket and a simple canopy are installed.

Postu abastesimentu kombustivel ho naran Carrier Fuel Unip Lda mak empreza privadu nebe lokalizadu iha Aldeia Carungulau, Metiaut, Cristo Rei, Dili Timor-Leste. Nia kobre total area ho medida 1,499 m² nebe inklui rezervatoriu ba armazenagen iha rai okos (rua) ho total Kapasidade 15,000 L, bomba kombusitvel rua ne,ebe uza ba deskarga gazolina, no fatin, minimerkadu ho kobertura simples ida instala ona.

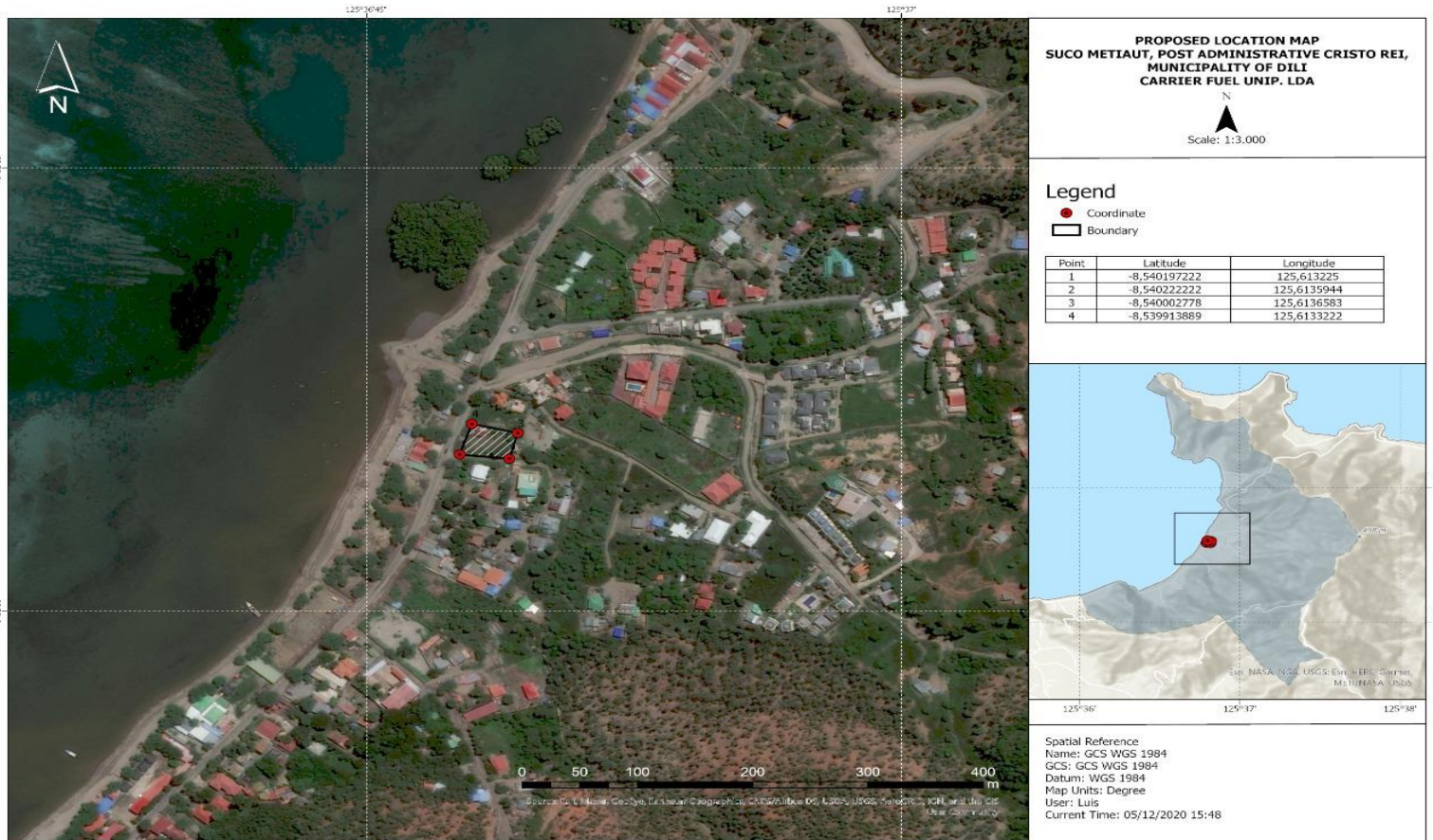


Figure 21. Map showing the location of Carrier Fuel
 Figura 21. Mapa nebe hatudu lokalizasaun husi Postu abastesimentu kombustivel Carrier Fuel



Figure 22. Photograph of proposed Carrier Fuel
 Figura 22. Fotografia proposta Carrier Fuel ninia lokalizasaun

5. The following diagram shows the hierarchy of environmental law in Timor-Leste. The Constitution of the Republic Democratic of Timor-Leste recognizes the need to preserve and protect the environment as stated in Section 16. The country also enacted Basic Environmental Decree-Law and Environmental Licensing Decree-Law. The Ministerial Diploma on General Regulations for Environmental Assessment is the primary guideline used for the preparation of the environmental management plan.

Diagrama hirak tuir mai ne'e hatudu hierarkia ba lei ambientál iha Timor-Leste. Konstituisaun Repúblika Demokrátika Timor-Leste rekoñese nesesidade atu prezerva no proteje ambiente, hanesan preve iha Seksaun 61. Nasaun aprova mós Dekretu-Lei Báziku Ambientál no Dekretu-Lei Lisensiamentu Ambientál. Diploma Ministeriál kona-ba Regulamentu Jerál ba Avaliasaun Ambiental mak orientasaun prinsipál nebe uza ba preparasaun planu jestaun ambiental.

Constitution-RDTL (sec.61)

1. Everyone has the right to a humane, healthy, and ecologically balanced environment.
2. The state shall recognize the need to preserve it for the benefit of the future generation.
3. The state shall promote actions aimed at protecting the environment and safeguarding the sustainable development of the economy

**Basic Environmental Decree Law (DL,
No.26/2012)** Article 13: Strategic Environmental Assessment
Article 15: Environmental Assessment and Licensing

**Environmental Licensing
Decree Law (DL,
No.5/2011)**

**Ministerial Diploma on
General Regulations for
Environmental Assessment**

Konstituisaun RDTL

Artigu 61
(Meiu-ambiente)

1. Ema hotu-hotu iha direitu atu moris iha ambiente ema moris nian ne'ebé moos, nabelun-di'ak hó natureza, no iha obrigasaun atu proteje no halo di'ak ba jersaun loraun ikus nian.
2. Estadu rekoñese katak iha nesesidade atu tau matan didi'ak no fó valór ba ita-nia rain nia riku-soin.
3. Estadu tenki fó-sai buat ne'ebé mak sei halo atu defende natureza maibé sei hodi hala'o mós nia ekonomia.



Dekretu-Lei Basiku Ambiental (Dekretu-Lei No. 26/2012)
Artigu 13: Strategia Avaliasaun Ambiental Artigu 15:
Avaliasaun Ambiental no Lisensamentu



Dekretu-Lei Lisensamentu Ambiental (Dekretu-Lei
No.5/2011)



Diploma Ministerial
sobre Regulamentu
Jeral ba Avaliasaun
Ambiental

6. The potential environmental impacts from the automotive fuel filling station are primarily resulted from storing and handling of fuels on site. The impacts may affect the air quality, water quality, the soil properties, and/or the marine environment due to the emission generated by the petroleum products and/or other chemicals, accidental spills or leaks of fuels during the installation and operation of the fuel filling station. These activities may also have socio-economic impacts. The primary concern is the health and safety of the workers, customers and the surrounding community, who may be directly or indirectly affected by the emission of hazardous materials released by the liquid fuels and the risk of fire and explosion at the fuel station.

Impaktu ambientál potensíal husi postu abastesimentu kombustivel prinsipalmente rezulta husi armazenandu no tratamentu kombustibel iha terenu. Impaktu sira bele afeta qualidade ar, qualidade be'e, propriedade rai nian, no/ka ambiente tasi nian tanba emisaun hosi produktu petrolíferu no/ka kimiku sira seluk, kombustivel asidentalmente nakfakar ou suli sai durante instalasaun no operasaun postu abastesimentu kombustivel. Atividade hirak ne'e mós bele iha impaktu sosio-ekonomiku. Preokupasaun prinsipál mak saúde no seguransa ba traballador, kliente no comunidade sira seluk, nebe mak bele diretamente ka indiretamente afetadu husi emisaun kona-ba material perigozus nebe liberadu/hasai husi kombustível líkuidu no risku ba ahi han no esplosaun iha estasaun kombustível

Potential Hazards and Risks <i>Potensial Perigus no Risku</i>
Leak from underground storage tank <i>Suli husi rezervatoriu ba armazenagen kombustivel hakoi iha rai okos</i>
Leak from above ground storage tank <i>Suli husi rezervatoriu ba armazenagen kombustivel iha rai leten</i>
Failure of tanks or pipework associated with corrosion or stress of metal parts <i>Faillansu husi tanki/rezervatoriu ba armazenagen kombustivel ou pipa nebe assosiadu ho korosaun ou presaun husi parte besi.</i>
Overfill (during bulk fuel unloading) which may cause uncontrolled vapor release <i>Excesu enximentu (durante deskarga kombustivel) nebe sei kauza liberaun vapor nebe labele kontrola.</i>
Surface spillage during the vehicle tank refilling or dispensing fuel into unsuitable container <i>Nakfakar iha rai leten durante diskarga kombustivel (mina) ba iha tanki veikulu ou</i>

<i>ense kombustivel ba kontentor nebe la apropiadu</i>
Leaks and spills associated with misuse or damage of dispensers <i>Suli no nakfakar assosiadu husi uza sala ou estraga bomba kombustivel</i>
Vehicular impacts <i>Impaktu husi veikular</i>
Fire/explosion <i>Ahi han/Esplosaun</i>

7. The mitigation measures that are proposed to moderate and alleviate the potential impacts, notably those resulted from accidental spillage or leakages of fuels are prescribed in the following table.

The monitoring programs involve (1) visual inspection which covers items, such as: oil separator, drainage, surface floor, lighting, dispenser, hoses, pipework and vent pipes, storage tanks and fill points, notices and signs, firefighting and emergency equipment; (2) Emergency response procedures; and (3) Traffic monitoring. These monitoring programs are designed to ensure the effectiveness of the mitigation measures proposed.

Medida mitigasaun hirak nebe mak propoin hela atu reduz no alivia impaktu potensial, espesialmente sira nebe rezulta hosi asidental nakfakar ka suli sai kombustível ne'e mak define iha tabela tuir mai.

Programa monitorizasaun ne'e envolve (1) inspesaun visual nebe kobre asuntu, hanesan: separador hidrokarbonetus, drenajen, terenu superficie no pavimentu, iluminaun, bomba kombustivel, mangeiras, pipa no kanu ventilaun, rezervatoriu ba armazenagen kombustivel no bokal ka valvula enximentu rezervatoriu ba armazenagen, avizu no sinais, ekipamentu bombeiros; (2) Prosedimentu Responde Emerjénsia; no (3) Monitorizasaun Tráfiku. Programa monitorizasaun ne'e dezeńha atu bele garante efikásia ba medidas mitigasaun nebe propoin.

8. Overall, the Carrier Fuel Unipessoal Lda fuel filling station project is likely to only have limited significant adverse impacts on the environment (by implementing a series of mitigation measures proposed to avoid and minimize those identified negative effects) and there are also some notably benefits such as creating employment opportunities to the local, business opportunities, participating and contributing to economic development of Timor Leste and to ensure the availability and easy access for automotive fuel.

Jeralmente, projetu ba postu abastesimentu kombustivel Carrier Fuel Unipessoal Lda ne'e iha deit possibilidade ba impaktu adversu nebe kiik ba meu-ambiente (liu husi implementasaun oin-oin medidas mitigasaun nebe propoin atu evita no hamenus efeitu negativu sira nebe identifika tiha ona), no iha mos benefísiu balun hanesan kria oportunidade empregu ba ema lokal, oportunidade negosiu, partisipa no kontribui ba dezvoltamentu ekonomiku Timor-leste no atu garante disponibilidade no asesu fasil ba kombustível automotivo.

9. The monitoring program is established to measure the impacts that may occur as a result of the project.

Programa Monitorijasaun ne'e estabesele atu sukat impaktu ne'ebe bele akontese husi projetu

No	Programa monitorizasaun	
1	<i>Inspeksaun visual</i>	Separador Olio/bee <i>Komfirma katak separador ne mos husi fatuk no rai rahun, no hamos akumulasaun bee no olio iha separador no soe ba fatin nebe rekomena ona.</i> Drainagen/ kanal <i>Hare bebeik drainagen atu la intupido no la nanoku</i> Rai <i>Raibe nebe iha área refere possibilidade atu nakfakar mina no fatin hatun mina tente tau sementi hotu atu nune atu prevene polusaun no erosaun.</i> <i>Halo manutensaun ba rai nebe tau tiha ona cementu atu nune la iha nakfera atu nune liquido ruma la tama ba iha rai laran.</i> <i>Komfirma katak iha rai leten iha sinal zona seguranca nebe hare mos no klaru.</i> Naroman <i>Hare bebeik sistema naroman iha fatin atu nune bele suficiente ba area ne.</i> Dispenser <i>Halo inspeksaun ba dispenser ho rapido, hasai nia panel atu hare nia sinal kuak ruma no kondisaun jeral eletricidade (sinal mana liu) no integridade sela (segel)</i> Mangeira dispenser nian <i>Komfirma katak mangeira sira ne iha kondisaun diak nia laran, no la iha nakfera, kuak ou kleuk.</i> <i>Hare nozel tau fali iha nia fatin wainhira hasai ona mina</i> <i>Hare nozel nia taka loke funsaun ho diak</i> Kanu mina no kanu ventilasaun <i>Hare kondisaun kanu no nia junta atu detekta mina turu, feruzin no perigozu seluk. Ba kanu ventilasaun (iha rai leten) tau atensaun maximu atu hare nia feruzin.</i> Tanke armazenamento no pontu enche

		• Tau sinal iha enche fatin ba iha tanke armajenamento • Hare kanu enche ba iha tanke tenke cheve metin • Hare tanke matan lolos no facil hodi hasai tanke matan ho fácil hasai tanque matan ho facilidade apropriado. Avisu no sinal sira • Komfirma katak sinal sira ne la iha ida mak lakon, at no le la mos • Faoun Numeru emerjensia sira no taka iha fatin Ekipamento Hamate Ahi • Komfirma katak extintor nia kuantidade numeru nebe los, nakonu, la iha sinal perigu iha extintor, asesu ba iha extintor facil. • Hare balde hira nebe tau rai henek maran iha laran atu resolve asidente mina nakfakar iha dispenser ida idak. • Hare no manutensaun ba extintor (fulan ida dala ida) no informa ma kompetente sira atu wainhira enxtintor ne at ou la funsiona ho diak Ekipamento emerjensia • Hare ekipamento primeiro sukuro nian lolos (exemplo inklui necessidade sira sempre iha no aimoruk la falta) • Hare tombol emergenja sira, kuluna, sistema alarma telefone funciona ho diak.
2	Planu emergengia no nia procedimentu	• Deskrisaun ekipamento ba responde emerjensia, nia funsaun no oinsa atu opera • Identifika lolos facilidade hamate ahi, hanesan sistema sirene, hamate eletricidade, hamate dispenser no ekipamento seluk, tute mergenja no fatin halibur ba staff no konsumidores sira • Facilidade simples hamate ahi, inklui extintor nia tipo no nia lokalizasaun, sistema tahan mina fakar, exemplo rahenek maran iha balde no material nebe bele uza ba hamos mina nakfakar, • Komfirma katak service nain sira hotu komprende ho diak procedimeto emergenja hirak ne iha terenu, no uza lianguagem nebe simples atu bele komprende. Treinamento no pratika ba procedimento emergenja • Fo treinamento ba staff sira, inklui maibe la limite ba (i) funsaun, operasaun no uza sasan eletrisidade atu kontrola no regula tau mina ba iha tanke veikulu sira no tanke rai okos. (ii) esperensia pratika atu uza extintor ho simples, (iii) familiar ho diferente klase extintor tipo klas extintor apropriado (iv) asegura procedimento dispenser nian no enche mina iha tanke armagenamanto (v) hatene no fo relatorio failansu iha ekipamento (vi) akontesimentu ho mina fakar nebe uituan.
3	Implementasaun iha terenu	Prcedimentu ba : • Enche mina husi kareta tanke ba iha tanke armagenamento rai Okos • Husi dispenser ba iha veikulu sira • Hatene volume mina iha tanke armagenamento rai okos no hakerek nia resultado • Inspeksaun ba extintor • Investiga insidente no halo relatorio
4	Manutensaun no dokumentasaun	• Lalahok manutensaun, detekta failansu, ho hadiak ou modifikasaun iha terenu • Relatoriu incidente • Hare inventariu ba mina nia stok

		Hafoun saude seguranca no ambiente. (HSE)
5	Monitorizasaun ba trafiku	- Komfirma karak assesu sira ne la entrompe no inklui mos la para iha dalan. - Komfirma katak veikulu sira para iha fatin nebe determina ona wanhira enche mina - Minimiza fatin sikulasaun ba ema no veikulu iha fatin enche mina ba iha tanke armamento

10. The environmental management plan would require reporting arrangements for the purposes of assisting with effective implementation and with external reporting

Planu Jestaun ambiental sei presija atu aranja relatoriu ho objetivu atu asiste implementasaun ne'ebe efetivu no relatoriu external

Tipo Relatoriu	Frekuensia ba relatoriu	
	Relatoriu internal	Relatoriu external (aturidade/ regulador)
Monitorizasaun Internal no Inspesaun 1. Relatoriu ba lalaok manutensaun, deteksa failansu, hadiak ou halo modifikasaun 2. Inventariu ba mina nia stok	Bainhira atividade lao Relatoriu loron loron	bainhira husu
Incidente, acidente no relatoriu emergjenia Incident, accident and emergency reporting 1. Relatoriu ba acidente mina nakfakar 2. Ahi lakan no emergjenia seluk 3. Incidente trafiku 4. Violencia ou vandalism seluk	Relatoriu hirak ne tenke rai kedan wanhira acindete / incidente akontece ona, no managementu kompanha halo kedan kombate ba emergjenia ne	Iha incidente seriu nebe akontese, tenke fo hatene kedan ba autoridade relevante depois akontesimentu no rai relatoriu atu kombate.
Relatoriu ba performasaun indikator 1. Incidente 2. Trainamentu 3. Hato'o keixa no nia relatoriu	Relatoriu ba performasaun indikator presija iha tinan tinan ou relatoriu pronto wainhira presija	
Treinamentu	Kada tinan	Relatoriu inklui mos evidencia (ex; copy certificado) no rai ba autoridade relevante wainhira renova treinamentu.

- 11.** The company, Carrier Fuel has primary responsibilities for implementation of the proposed mitigation measures and monitoring programs. The company also is in liaison with other relevant institutions and authority bodies to ensure that the installation and operation of the automotive fuel filling station is aligned with the national laws and regulations, and industrial best practice.

Kompania Carrier Fuel iha responsabilidade atu implementa proposta mitigasaun no programa monitorizaun. Kompania mos iha linha kordenasaun ho instituisaun relevante no autoridade atu garante ba instalasaun no operasaun husi fatin abastesimentu kombustivel alinhadu ba lei no regulamentu nomos industriais praktika nebe diak.

- 12.** The responsible persons for managing emergencies at the Carrier fuel filling station are: (1) the Representative of the company – Adolfo Antonio Belo; and the Site Manager – Julio A. Da Silva De Jesus; and (3) the staffs or personnel on site

Ema ne'ebe responsavel atu jere emergencia iha fatin abastesimentu Carrier Fuel mak: (1) Representa Kompania:- Adolfo Antonio Belo no (2) Manager Julio A. Da Silva De Jesus (3) trabalhador ou ema ne'ebe iha fatin abastesimentu kombustivel

- 13.** Carrier Fuel is committed to facilitate all of its employees at the fuel filling station with training courses from accredited training providers. Every employee is obligated to attend and complete the training while actively working at the fuel filling station.

Carrier Fuel iha komitmentu atu fasilita nia trabalhador iha fatin abastesimentu kombustivel ho treinamentu husi fatin ne'ebe akreditadu. Trabalhador hotu iha obrigasaun atu atende no kompleta treinamentu wainhira sei servisu ativa iha fatin abastesimentu kombustivel.

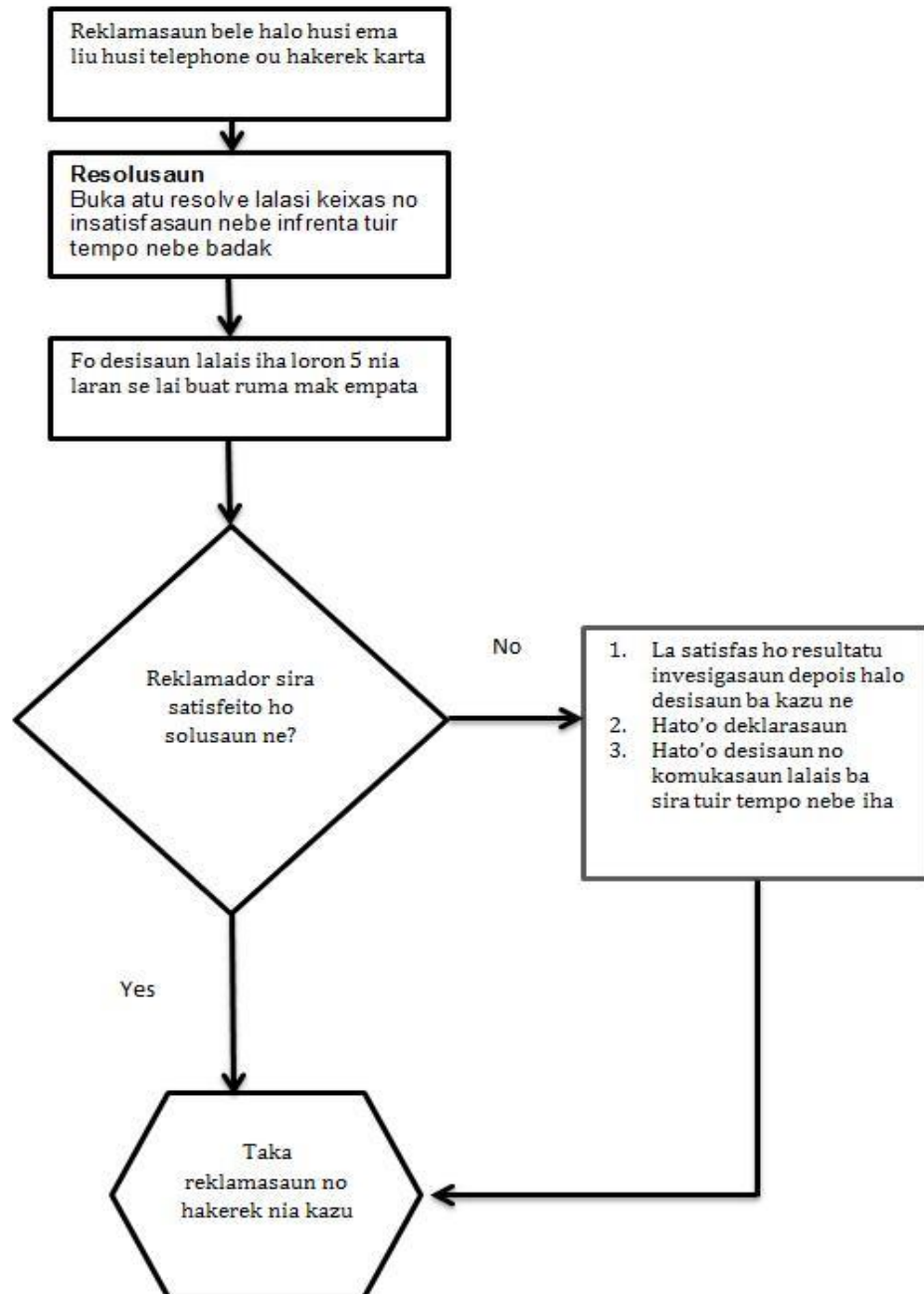
- 14.** Public consultation is conducted by project owner and supported by Hersege Consultant with the objective to obtain constructive opinion or comments from affected community including negative and positive comments. The method of public consultation is door-to-door or face-to-face and by forum as well.

Konsultasaun publika halao husi projetu nain no suporta husi Hersege Konsultant ho objetivu atu hetan opiniaun ou komentariu ne'ebe konstrutivo husi comunidade ne'ebe afeitadu no komentariu ne'ebe positive ou negative. Metodu husi konsultasaun publika husi uma ba uma ou entrevista direita nomos konsultasaun public via forum.

- 15.** The mechanisms are set in complaints handling procedure flowchart to address the complaints from the affected persons or communities.

Mekanizmu sira estabelese ona iha prosedinamentu tratadu reklamasoens flowchart atu responde ba reklamasaun hosi pesoal ou comunidade afetadu

Fluxograma procedimento no tratamento ba reklamasaun



16. Carrier Fuel is planning to establish the fuel station in Metiaut on 2020. Therefore, the company has started to arrange the relevant licensing to operate the fuel filling station.
- Carrier Fuel iha planu atu estabese fatin abastesementu kombustivel iha tinan 2020 Tamba ne'e, kompania komesa aranja ona licensa relevante atu halo operasaun ba fatin abastesementu kombustivel.*

17. The total estimated costs of items relevant to the control and mitigation measures at the fuel filling station is \$ 45,000

Total estimasaun kustu ba item ne'ebe relevante atu kontrola no halao nia mitigasaun ba fatin abastesimentu kombustivel mak \$ 45,000

18. A review or amendment to the EMP may be needed during the life of the project as a part of important aspect for improving the fuel filling station's environmental management. The review of the EMP would be submitted to the Environmental Authority for approval.

Revisaun ba alterasaun PJA sei persija durante projetu lao hanesan parte aspeitu importante iha fatin abastesimentu kombustivel husi jestaun ambiental. Revisaun ba PJA sei submete ba autoridade ambiental para aprova

19. Responsabilidade Proponente

Categoria B – Automovel Abastesimentu Kombustivel

- ✓ Prepara Projetu Dokumentu no submisaun
- ✓ Hala'o Konsultasaun Publika (Opsional)
- ✓ Implementa Survei Ambiental, prediksaun ba impaktu ambiental no evalua ba impaktu ne'ebe identifika ona
- ✓ Prepara planu jestaun ambiental
- ✓ Implementa monitorizasaun: hala'o monitorizasaun ba aspeitu ambiente ne'ebe identifika ona and submete relatorio monitorizasaun ba autoridade ambiental

Funsaun Autoridade Relevante no ninia Responsabilidade

<i>Agença Nacional de Licenciamentu Ambiental (ANLA)</i>	Hala'o inspeksaun no monitorizasaun atu garantia ba Saude, seguransa no Ambiental
<i>Secretario Estado do Meio Ambiente (SEA)</i>	
Autoridade Nacional do Petróleo e Minerais (ANPM)	Autoridade regulador ba petrole no natural gas no produto ne'ebe relasionado no indutria mineiro
<i>Direcção Downstream</i>	Hala'o inspeksaun no monitorizasaun ba atividade
<i>Ministério do Petróleo</i>	Downstream
<i>Direcção Nacional de Servicos de Águas e Saneamento (DNSAS)</i>	Responsabiliza ba nacional jestaun rekurso be. Elabora mos seitor regulamentu, managementu, distribusaun ba consume no monitoriza kualidade be liu husi Laboratoriu DNSAS
<i>Ministério da Saúde</i>	Responsabiliza ba saude publiku
Direcção Nacional da Protecção Civil (which include the fire fighters)	

20. Sumariu impaktu

Pre-konstrusaun ho konstrusaun

Automotive Fuel Filling Station Facility/Activity		Source	Pathway	Receptor - Impacts	Target
Kualidade Ar	(1)	Movimentu husi rai, rai henek no fatuk durante konstrusaun, balde de areia ba konstrusaun, trafiku sae no operasaun husi ekipamentu durante konstrusaun	Domina diresaun anin	Rai rahun no emisaun Be iha rai leten no kualidade be	○ Laiha vehicle ida ne'ebe kompania nian hasai suar metan ○ Laiha sinal rai rahun husi balenseadu ne'ebe sai ○ Laiha registu ba keixa husi trabalhador no uma ne'ebe besik
Lori Mina ou deskarega mina husi tanki kareta ba tanki armazenentu	(2)	Nakonu to fakar	Dranagem ba be rai leten	Kualidade ar iha fatin servisu no area ne'ebe besik	
	(3)	La kontrola liberaun husi vapor		Membru puliku, trabalhador, propiedade, no biodeviridade	
Sistema tratamentu ba residuas (be)	(1)	Mal preserva separador ba mina/be	Taes Be rai leten	Be iha rai leten no kualidade be	Garantia be mos antes husik ba liur
	(2)	Mal manutensaun ba sistema drainagem			
Dispenser	(1)	Nakfakar iha area durante tanki kareta karega	Dranagem ba be rai leten	Be iha rai leten no kualidade be	○ Laiha signal kuak husi mina, lubrikante, no seluk tan iha facilidade sira
Reabastesementu	(2)	Karega mina ba fatin ne'ebe la adekuadu		Kualidade ar iha fatin servisu no area ne'ebe besik	○ Laiha signal kuak husi mina, lubrikante, no seluk tan iha draiagem
	(3)	Kuak no fakar asosiadu ho mal utilizaun ou a'at husi dispenser (ex. Impaktu vehiculo) Mal instalasaun		Membru puliku, trabalhador, propiedade, no biodeviridade	○ Area armagem mos laiha sinal husi material perigoju ou mina restu ne'ebe bele fakar ba area sira
	(4)	Lakontrola liberaun vapor, ahi/explosaun kauza husi ignasaun vapor tuir la kontrola liberaun husi mina (nakfakar)	Domina diresaun anin		
Operasaun ho Manutensaun					
Automotive Fuel Filling Station Facility/Activity		Source	Pathway	Receptor - Impacts	Target
Tanki rai okos	(1)	Kuak husi tanki rai okos Falha husi tankiou pipa asosiadu husi korosaun (karat) ou tensaun iha parte metal	Estratus permeveis iha nivel be nia leten	Be iha rai leten no kualidade be	○ Laiha vehicle ida ne'ebe kompania nian hasai suar metan ○ Laiha sinal rai rahun husi balenseadu ne'ebe sai
Lori Mina ou deskarega mina husi tanki kareta ba tanki armazenentu	(2)	Nakonu to fakar	Dranagem ba be rai leten	Kualidade ar iha fatin servisu no area ne'ebe besik	○ Laiha registu ba keixa husi trabalhador no uma ne'ebe besik
	(3)	Lakontrola liberaun	Domina	Membru puliku,	

		vapor, ahi/explosaun kauza husi ignasaun vapor tuir la kontrola liberaun husi mina (nakfakar)	diresaun anin	trabalhador, propiedade, no biodeviridade	○ Laiha signal kuak husi mina, lubrikante, no seluk tan iha facilidade sira ○ Laiha signal kuak husi mina, lubrikante, no seluk tan iha draiagem
Sistema tratamentu ba residuas (be)	(1) (2)	Mal preserva separador ba mina/be Mal manutensaun ba sistema drainagem	Taes Be rai leten	Be iha rai leten no kualidade be	Garantia be mos antes husik ba liur
Dispenser Reabastesementu	(1) (2) (3) (4)	Nakfakar iha area durante tanki kareta karega Karega mina ba fatin ne'ebe la adekua Kuak no fakar asociadu ho mal utilizaun ou a'at husi dispenser (ex. Impaktu vehiculo) Mal instalasaun Lakontrola liberaun vapor, ahi/explosaun kauza husi ignasaun vapor tuir la kontrola liberaun husi mina (nakfakar)	Dranagem ba be rai leten Domina diresaun anin	Be iha rai leten no kualidade be Kualidade ar iha fatin servisu no area ne'ebe besik Membru puliku, trabalhador, propiedade, no biodeviridade	○ Laiha signal kuak husi mina, lubrikante, no seluk tan iha facilidade sira ○ Laiha signal kuak husi mina, lubrikante, no seluk tan iha draiagem ○ Area armagem mos laiha sinal husi material perigoju ou mina restu ne'ebe bele fakar ba area sira

21. Proposta Mitigasaun Pre konstrusaun

Activity/Aspect	Objective	Mitigation Measures		Parameters for
Description			Commitments/ Actions/ Controls	Monitoring
Survei dahuluk no identifika possibilidade fatin ba estabelese fatin abastesementu kombustiovel	Atu identifika fatin ne’ebe adekuadu ba projetu no evita ba konflitu sosial	(1) (2) (3) (4) (5)	Konsultasaun ho rai nain no autoridade lokal Identifika ema ne’ebe afeitadu, fatin kultura no infrastrutura ne’ebe ejisti Aplika ba lisensiamentu ne’ebe nesesita Marka area ne’ebe aprova ona Fo kompesasaun ne’ebe propiu	Filkalizasaun, Visual inspeksaun no entrevista
Mobiliza trabalhador no estabelese fatin abastesementu kombustivel no nia atividade relevante	Identifika possibilidade ba comunidade local atu involve iha projetu no evita konflitu sosial	(1) (2) (3) (4)	Konsultasaun, respeita regra local no tradisaun Perioridade ba rekruka trabalhador husi comunidade ne’ebe hela besik Adekuado sinal no seguransa ba fatin projetu Rekruta esperensia no profissionais trabalhador	Filkalizasaun, Visual inspeksaun no entrevista
Demarkasaun ba fatin projetu, hamos no ke’e and hamos fatin projetu	Atu minimiza lakon husi vegetasaun, erosaun ba rai	(1) (2) (3) (4)	Limita trabalhador iha fatin ne’ebe aprova, prevene atu tesi ai iha fatin projetu nia liu Minimiza uja ekipamentus bo’ot husi eskavasaun manual Ateru no kaptasaun (Halo metin) Propio sistema drainage no kontrolu	Visual Inspeksaun

Qualidade Ar	Kontrolu emisaun husi vehiklu no rai rahun	(1) (2) (3)	Trabalhadores tenke ekipadu ho maskara ba rai rahun Opreasaun husi vehiklu kontrusaun ne'ebe manutensaun diak atu evita polusaun Propiu empilha (piling) husi estragus servisu rai nian	Visual Inspeksaun
Rai ho Kualidade be (be rai leten no be rai okos)	Minimiza impaktu ba rai, be rai leten, no be rai okos ne'ebe bele akontese rejulta husi kuak no fakar	(1) (2) (3) (4) (5) (6)	Operasaun husi motorize ne'ebe hetan manutensaun diak ne'ebe ekipamentu no vehiklu regulmente verifika ou cek ba kuak husi mina no petensiu operasaun seluk ne'ebe perigu relasiona ba kuak ne'ebe iha. Implementa prosedur ne'ebe propiu ba karega no troka oliu ne'ebe kuak no fakar tenke minimiza. Provisaun ba area ne'ebe linhadu ho konkretu atu kontrola fakar husi lubrikante no mina Potensiu material perigu seluk ba konstrusaun mak hanesan lubrikante, komposto kimikus tenke rai iha fatin ne'ebe mahon no rai iha montante ne'ebe propiu tuir spesifikasaun Fakar ruma ou la espera atu kuak husi substansia tenke hamos lalais. Operador tenke prosedur, hanesan mos ekipamentu hanesan material ne'ebe adekuaudu atu hamos oliu ne'ebe fakar tantu iha rai ou iha be rai leten. Be no rai ne'ebe kontamina tenke hasai ba fatin ne'ebe adekuaudu Prepara drainage ne'ebe propiu atu maneja runoff Halo tetuk: taka fi;la fali area ne'ebe nakloke (Kuak) kuando remata servisu	Visual Inspeksaun
Social Impact Impaktu sosial	Minimiza impaktu negative iha tempo badak durante pre-konstrusaun	(1) (2) (3) (4)	Konsultasaun ho rai nain no autoridade local Periodade ba rekruta trabalhador husi comunidade ne'ebe hela besik Sinal ne'ebe adekuaudu no segurnsa ba fatin projetu Kontaktu kedas numeru emergencia kuando akontese buat ne'ebe la espera	Filkalizasaun, Visual inspeksaun no entrevista
Servisu saude no seguransa	Minimiza risku servisu ba trabalhador, risku saude no seguransa ba konsumedor no comunidade ne'ebe hela besik	(1) (2) (3) (4)	Halo bareira (Lutu) atu prevene ema ne'ebe laiha autorizasaun atu tama ba fatin servisu Trafiku ba ema tenke halo dok husi fatin konstrusaun uja sinal ne'ebe apropiadu Primeiru sekurru sei aranja no tau iha fatin stratejiku to bele asesu ba trabalhador kuando iha acidente Trabalhadr ba konstrusaun tenke uja PPE ne'ebe propiu kuando atu	Trenamentu Certificado Seguransa no zona protesau

		(5)	halo servisu Minimiza espojisaun ba perigu husi halo rotasaun no limitasaun oras de servisu (Max oras 8)	
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		(6)	Provisaun treinamento ba uja ekipamentu ho propiu no seguransa ba uja ekipamentu	
Impaktu Barulhu	Hatun (redus) impaktu barulhu	(1)	Ekipamentus ne'ebe kria barulhu tenke ijola no manutensaun ho diak atu nune'e bele opera iha limitada barulhu ne'ebe projetadu atu opera	At discretion of all the staffs
		(2)	Operasaun husi ekipamentu ne'ebe kria barulhu tenke halo iha loron	
		(3)	Provisaun ba protesaun pesoal sukat husi barulhu ne'ebe ba trabalhador	
Trafiku asociadu ho movimentu vehiklu iha fatin servisu	Minimiza possibilidade ba trafiku akumulada no impaktu vehicular	(1)	Instalasaun sinal besik ba facilidade atu informa trafiku husi vehiklu konstrusaun bele halo asesu tama ou sai husi facilidade	Surveillance by the staffs
		(2)	Hili no hatudu ema ida atu ajuda trafiku sai durante vehiklu bot halo operasaun	

22. Konstrusaun

Activity/Aspect	Objective	Mitigation Measures		Parameters for
Description		Commitments/ Actions/ Controls		Monitoring
Mobiliza trabalhador no estabesele fatin abastesementu kombustivel no nia atividade relevante	Identifika possibilidade ba comunidade local atu involve iha projetu no evita konfliktu sosial	(1)	Konsultasaun, respeita regra local no tradisaun	Filikalizasaun, Visual inspeksaun no entrevista
		(2)	Perioridade ba rekruka trabalhador husi comunidade ne'ebe hela besik	
		(3)	Adekuado sinal no seguransa ba fatin projetu	
		(4)	Rekruta esperensia no profissionais trabalhador	
Qualidade Ar	Kontrolu emisaun husi vehiklu no rai rahun	(1)	Trabalhadores tenke ekipadu ho maskara ba rai rahun	Visual Inspeksaun
		(2)	Opreasaun husi vehiklu kontrusaun ne'ebe manutensaun diak atu evita polusaun	
		(3)	Propiu empilha (piling) husi estragus servisu rai nian	
Rai ho Kualidade be (be rai leten no be rai okos)	Minimiza impaktu ba rai, be rai leten, no be rai okos ne'ebe bele akontese rejulta husi kuak no fakar	(1)	Operasaun husi motorize ne'ebe hetan manutensaun diak ne'ebe ekipamentu no vehiklu regulmente verifika ou cek ba kuak husi mina no petensiu operasaun seluk ne'ebe perigu relasiona ba kuak ne'ebe iha.	Visual Inspeksaun
		(2)	Implementa prosedur ne'ebe propiu ba karega no troka oliu ne'ebe kuak no fakar tenke minimiza. Provisaun ba area ne'ebe linhadu ho konkretu atu kontrola fakar husi lubrikante no mina	
		(3)	Potensiu material perigu seluk ba konstrusaun mak hanesan lubrikante, komposto kimikus tenke rai iha fatin ne'ebe mahon no rai iha montante ne'ebe propiu tuir spesifikasaun	

		(4)	Fakar ruma ou la espera atu kuak husi substansia tenke hamos lalais. Operador tenke prosedur, hanesan mos ekipamentu hanesan material ne'ebe adekuadu atu hamos oliu ne'ebe fakar tantu iha rai ou iha be rai	
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23. Operasaun

Activity Aspect Description	Objective		Mitigation Measures Commitment/Action/Control	Parameter for Monitoring
Kualidade Ar	Minimiza impaktu ba kualidade ar ne'ebe rejulta husi libertasaun husi Komspostu Organika Verotil – Vapor Petroleo	(1)	Tanki rai okos tenke adekuadu respirador ou lina vent no sira tenke adekuado hanesen sei oin dok husi vizinhu no nia altura minimu 4 m husi rai.	Visual Inspesaun
		(2)	Garante katak tanke rai okos nia foka (seal) tenke iha kondisaun ne'ebe diak no nia matan teke foka (seal) apropiadu.	
		(3)	Respirador presaun monta iha pipa nia leten husi tanki rai okos. Respirdor nia matan and fiu screen interna tenke planu atu proteje linha respidor tanki husi intrusaun ou blokeadu husi be, restus ou animal kiik.	
		(4)	Presaun/vacu valvula sekurru mak instrument protesau tipikalmente montadu iha abertura nozel ida iha telhadu (leten) atmosferatanki armazonamentu. Objetivu primeiru mak atu proteje tanki ba rapture ou impliiaun husi fo tanki atu dada is ou repiraduru wainhira mudansa ba presaun iha tanki baseia ba normal operasaun (rekomendasaun).	
		(5)	Descarega mina ba taki armazonamentu partikulamente gazolina ne'e rekomenda atu halo iha dader/lokraik atu minima generasaun husi vapor husi tanki ou tanki vehiklu ne'ebe bele provoca ahi/esplosaun iha fasilidade.	
		(6)	Ema ne'ebe kompetensia tenke besik tanki durante dekarega.	
		(7)	Regularmente Monitorizasaun atu detekta kuak no implementa hadia durante period predefinidu.	
		(8)	Garante katak nozzle mina nian automatikamente takawainhira tanki nakonu.	
	Minimizaimpaktu iha Kualidade ar ne'ebe rejulta husi libertasaun emisaun husi vehiklu	(1)	Tanki sira hotu tenke halo manutensaun ne'ebe adekuadu atu redus libertasaun emisaun	Visual inspeksaun
	Minimiza impaktu iha kualidade ar ne'ebe rejulta husi rai rahun	(1)	Uja be atu rega – rega be atu kontrola material iha Estrada leten	Visual inspeksaun

Rai no Kualidade be (be rai leten no be rai okos)	Minimizaimpaktu ba rai, be rai leten, no be rai okos ne'ebe bele akontese rejulta husi kuak no fakar	(1) Halo instalasaun ba structura impermeavel iha okos no porvolta tanki rai okos. (2) Instalasaun Tanki armazanumentu tenke iha kobertura ne'ebe apropiadu hanesan protesaun ba korosaun. (3) Iha fakar ne'ebe signifkamente no incidente ba kuak tenke hato'o relatoriu ba autoridade relevante. (4) Nakonu to fakar no fakar durante deskaregamentu tenke prevene. (5) Akomplamentu proximu tenke uja wainhira transferidu husi tanki vehiklu ba armazenamentu tanki rai okos. (6) Ema ne'ebe kompetensia tenke besik bas tanke durante deskarega. (7) Sinal Kuidado tenke monta (hatudu) wainhira deskarega mina ba tanki armazenamentu. (8) Impermeavel rai leten (ne'ebe tau ona sumente) iha area ne'ebe dedikadu ba deskarega mina husi tanki ba iha tanki armazenamentu and karega mina fatin no husik drainage ba fatin sistema tratamentu be (9) Oliu/be separador tenke kontrola no teste atu garante katak ble servisu ho propiu. (10) Konteudu ne'ebe akumula iha oliu/be separador tebke hasai no tau iha fatin tratamentu ne'ebe apropiadu (absorbe iha raihenek). (11) Acidente kuak no fakar ne'ebe bele akontese iha patio tenke hamos kedas uja raihenek maran ne'ebe prepara iha armazenamentu ba dispenser ida-ida ne'ebe tenke rai propriu. (12) Ba objetivu atu detekta kuak, kuantidade mina ne'ebe lori, rai no karega tenke monitoriza no rekorda loron-loron no rekorda rai iha fatin servisu. (13) Inspeksaun regularmente ba bomba hotu-hotu no dispenser ba kuak. (14) Planu responde Emergencia tenke tau iha fatin ne'ebe klaru deskreve nia prosedur no inklui numeru kontaktu emergencia sira. (15) Sei kontaminasaun no kuak detekta ona, tenke halo tuir prosidementu emergencia. (16) Ema sira ne'ebe halo Atendimentu bomba tenke liu husi treinamentu ne'ebe apropiadu ne'ebe inklui treinamentu ba prevene fakar durante karega mina, no responde lais iha situaun emergencia ne'ebe bele mosu. (17) Doberadu xamada ba pipa atu prevene oliu fakar, pipa kuak no esplosaun. (18) Adekuado fatin tama ba kareta tanki ba area deskaregamentu no husik fatin sai	
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		(19) (20)	husi fatin abastesementu kombustivel ba area seguru liu husi bok an ba oin la persija atu halo maneuver oin-oin. Prepara sistema drainage ne'ebe apropiadu atu maneja Runoff. Halo tetuk: taka fila fali fatin ne'ebe nakloke depois de kompleta servisu.	
Rai no Kualidade be (be rai leten no be rai okos)	Minimiza impaktu ba rai, be rai leten, no be rai okos ne'ebe bele akontese rejulta husi kuak no fakar	(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16)	Halo instalasaun ba structura impermeavel iha okos no porvolta tanki rai okos. Instalasaun Tanki armazanumentu tenke iha kobertura ne'ebe apropiadu hanesan protesaun ba korosaun. Iha fakar ne'ebe signifkamente no Incidente ba kuak tenke hato'o relatoriu ba autoridade relevante. Nakonu to fakar no fakar durante Deskaregamentu tenke prevene. Akomplamentu proximu tenke uja wainhira transferidu husi tanki vehiklu ba armazenamentu tanki rai okos. Ema ne'ebe kompetensia tenke besik ba tanke durante deskarega. Sinal Kuidado tenke monta (hatudu) wainhira deskarega mina ba tanki armazenamentu. Impermeavel rai leten (ne'ebe tau ona sumente) iha area ne'ebe dedikadu b ab deskarega mina husi tanki ba iha tanki armazenamentu and karega mina fatin no husik drainage ba fatin sistema tratamentu be. Oliu/be separador tenke kontrola no teste atu garante katak ble servisu ho propriu. Kontuidu ne'ebe akumula iha oliu/be separador tebke hasai no tau iha fatin tratamentu ne'ebe apropiadu (absorbe iha raihenek). Acidente kuak no fakar ne'ebe bele akontese iha patio tenke hamos kedas uja raihenek maran ne'ebe prepara iha armazenamentu ba dispenser ida-ida ne'ebe tenke rai propriu. Ba objetivu atu detekta kuak, kuantidade mina ne'ebe lori, rai no karega tenke monitoriza no rekorda loron-loron no rekorda rai iha fatin servisu. Inspeksaun regularmente ba bomba hotu-hotu no dispenser ba kuak. Planu responde Emergencia tenke tau iha fatin ne'ebe klaru deskreve nia prosedur no inklui numeru kontaktu emergencia sira. Sei kontaminasaun no kuak detekta ona, tenke halo tuir prosidementu emergencia. Ema sira ne'ebe halo Atendimentu bomba tenke liu husi treinamentu	

		(17) ne'ebe apropiadu ne'ebe inklui treinamentu ba prevene fakar durante karega mina, no responde lais iha situasaun emergensia ne'ebe bele mosu. (18) Doberadu xamada ba pipa atu prevene oliu fakar, pipa kuak no esplosaun. (19) Adekuado fatin tama ba kareta tanki ba area deskaregamentu no husik fatin sai husi fatin abastesementu kombustivel ba area seguru liu husi bok an ba oin la persija atu halo maneuver oin-oin. (20) Prepara sistema drainage ne'ebe apropiadu atu maneja Runoff. Halo tetuk: taka fila fali fatin ne'ebe nakloke depois de kompleta servisu.	
Saude, Seguransa no Ambiental	Minimiza risku servisu ba trabalhador, risku saude no seguransa ba konsumedor no comunidade ne'ebe hela besik	(1) Ema ne'ebe atende bomba tenke iha Sertifikadu treinamentu ba primeiru sekurru no kursu seguransa (2) Trabalhores sira tenke prepara ho farda ne'ebe adekuado no ekipamentu protesau pesoal. (3) Monta notisia no sinal baseia ba sasukat seguransa iha fatin abastesementu kombustivel iha fatin ne'ebe fasil atu hare ba trabalhador no komsumedores. (4) Fatin abastesementu kombustive ne'ebe ekipadu ho extintor ne'ebe regularmente halo manutensaun no iha planu kontigensia ba ho ne'ebe informadu ba trabalhador sira. (5) Ema ne'ebe atende bomb abele hahu karega mina ba vehiklu depois de makina no fonte informasaun hamate hotu tena. (6) Fonte ignosaun (fuma) no componente elektronika prohibida iha zona seguransa fatin abastesementu kombustivel. (7) Durante distribuisaun husi karega no Diskarega husi tanki ba tanki armazenementu, kareta tanki tenke para iha fatin ne'ebe marka ona no sirkulasaun husi ema no vehiklu seluk prohibidu tebes no tenke prevene. (8) Treinamentu rutina ba primeiru sekurru no extintor/hamate ahi tuir validade husi sertifikadu rotasaun ba trabalhador atu prevene dada is ba gazolina durante tempu naruk. (9) Ema ne'ebe atende iha dispenser tenke tuir treinamento ba primeiru sekurru, treinamentu ba seguransa no hamate ahi Trabalhador sira percija uja PPE no farda durante halo atendenamentu. (10) Trabalhador tenke garante katak dispenser nia hose(mangera) labele monu ou nahe iha Pump Island. (1) Adekuado fatin tama ba kareta tanki ba area deskaregamentu no husik fatin sai	Certifikadu terinamentu Seguransa no zona protesau Visual inspeksaun
	Prevene Ahi han		

	durante ense combustivel husi kareta tanke ba iha tanke rai okos	(2) husi fatin abastesementu kombustivel ba area seguru liu husi bok an ba oin la persija atu halo maneuver oin-oin. Trabalhador tenke kontrola trafiku durante oras rame iha facilidade nia laran. (3) Descarega mina ba tanki armazonamentu partikulamente gazolina ne'e rekomenda atu halo iha dader/lokraik atu minima generaun husi vapor husi tanki ou tanki vehiklu ne'ebe bele provoka ahi/esplosaun iha facilidade. (4) Makina vehiklu sira tenke iha kondisaun mate durantedeskarga mina husi tank ba tanki armazaenamentu. (5) Vehiklu tama tenke hapara no nia makina tenke makina tenke hamate durante deskarga mina husi tanki ba tanki armazenamentu. (6) Sinal labele fuma no telephone tenke Hatudu. (7) Atividade sirea ne'ebe kauza ignisaun tenke para durante deskarega mina ba tanki. (8) Extintor tenke disponivel iha facilidade durante deskarega mina husi tanki ba tanki armanejamentu. (9) Ema ne'ebe treinadu no kompetensia deit mak bele uja extintor in tempo emergencia.	Seguransa no zona protesau
Trafiku asociadu ho movimentu vehiklu	Minimiza possibilidade trafiku akula no impaktu vehikular	(1) Fatin tama no sai ba vehiklu ba no husi fatin abstesimentukombustivel tenke assesu unidiresional (satu jualur). (2) La permite atu parke husi vehiklu iha dalan ba fatin abastesementu. (3) Adekuado fatin tama ba kareta tanki ba area deskaregamentu no husik fatin sai husi fatin abastesementu kombustivel ba area seguru liu husi bok an ba oin la persija atu halo maneuver oin-oin.	Observasaun husi Trabalhador
Barulhu	Minimiza impaktu barulhu	(1) Barulhu tenke halo ba minimu especialmente iha tempu kalan. (2) Evita musika ne'ebe makas ne'ebe rona mos los husi fatin abastesementu. (3) Evita simu mina ou distribusaun seluk iha kalan. (4) Dezemvolve mekanismu atu rekorda no responde ba reklamasoens. (5) Apropriadu operasaun ba Carrier Fuel mak loke iha 07:00 – 19:00.	Kriteriu ba Trabalhadores sira

24. Manutensaun

Activity/Aspect	Objective	No	Mitigation Measures	Parameters for Monitoring
			Commitment/Action/Control	
Potensiu impaktu Durante manutensaun ba komponente sira	Prevene prejudika ba Komponente sira, Minimiza risku ba Trabalhador no minimiza impaktu ba ambiente	(1)	Tanki Armazenamentu - Buka macula (stain) iha besi asu (steel) - Verifika base ba lavagen/detorizas - Loke tanki minimu oras rua loron-loron no halo visual inspeksaun ba tanki laran - Verifika ba detorasaun solda no korosaun - Sei tanki pinta tiha ona, verifika visualmente ba alha ou nakfera - Sei tanki iha foru de kontasaun, monitoriza kada semana verifika kuak - Halo manutensaun bazeia ba Espesifikasaun husi tanki armazenamentu (manutensaun ba tankiarmazanamentu kada tinan 5 –10 depende ba espesifikasaun tanki armazenamentu) - Halo registu ba inspeksaun no nia rejultadu - Installa sistema deteksaun ba kuak - Distribusaun mina tenke para - Distribusaun mina ba vehiklu tenke para - PPE propriu tenke uja durante manutensaun	Visual inspeksaun
		(2)	Manutensaun ba Pipa - verifika pipa ne'ebe asosiadu - Buka macula (stain) iha besi asu (steel) ne'ebe bele akontese kuak - Uja pipa ne'ebe espesifiku - Halo manutensaun bazeia ba espesifikasaun husi pipa (manutensaun ba tanki armazenamentu kada tinan 5-10 depende ba espesifikasaun pipa) - Registu inspeksaun no rejultadu	Visual inspeksaun
		(3)	Dispensers - Uja dispenser ne'ebe standar - Kalibrasaun ba dispenser kada fulan 3 - garante katak lina eletricidade tenke suficiente atu opera dispenser - Registu inspeksaun no rejultadu - Trabalhador tenke garante hose (manger) husi dispenser la monu (nahe) iha pump island - Distribusaun mina ba vehiklu tenke para - PPE propriu tenke uja durante manutensaun	Visual inspeksaun
		(4)	Maintenance of Canopy, Fences, pavements and all infrastructure to be constructed within the facility - Renovasaun ba edificiu (konstrusaun) kuando persija - Troka kedas kanopi ne'ebe kuak - Verifika instalasaun eletrisidade atu prevene sirkuitu - Pinta fila fali didin, lutu, sinal seguransa nsst ne'ebe lakon ona - Garante atividade hotu-hotu para	Visual inspeksaun

			wainha halo manutensaun ba kanopi • Garante barikade (lutu) atu uja lori prevene ema atu tama mai pump island • Barikade tenke uja envolta de manutensaun ba pavimentasaun; hanesan mos ba didin no lutu • PPE propriu tenke uja durante manutensaun • Sinal tenke hatudu wainhira halo manutensaun iha facilidade	
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25. DEKOMISAUN

Activity/Aspect	Objective		Mitigation Measures	Parameters for Monitoring
			Commitment/Action/Control	
Trafiku asociadu ho Hasai tanki Armazenamentu rai Okos no makina operasaun	Maneja potensiu Trafiku konjensaun No minimiza possibilidade impaktu vehicular	(1) (2) (3)	Kordenasaun ba movimentu husi vehiklu iha fatin servisu no liur atu hamenus risku ba trafiku ou potensiu seluk Instala sinais besik ba facilidade atu informa kona ba generalidade trafiku Hatudu ema ida atu ajuda kontrola trafiku durante iha movimentu husi vehiklu bo'ot.	Observasaun husi trabalhador, hanesan dekomisaunkontraktor Relatoriu insidente
Uja ho seguru husi tanki armazenamentu	Minimiza risku nakfakar drante hasai tanki	(1) (2) (3)	Hasai produktu mina husi tanki armazenamentu rai okos Desliga pipa no respirador antes hit no hasai tanki armazenamentu rai okos Seguru propriu tanki armazenamentu rai okos i Atu transporadu/lori sai husi fatin servisu	Asesmentu visual
Barulhu	Minimiza impaktu barulhu	(1) (2) (3) (4)	Atividade dekomisaun sei halo iha oras servisu (tuku 8 dader – tuku lokraik). Informa comunidade kona ba atividade dekomisaun no nia durasaun Exesivu barulhu tenke limita kuando posivel Uja earplug (taka tilun) nno ekipamentus seluk ne'ebe apropiadu (PPE)	Relatoriu insidente
Kualidade Rai no be	Hamenus potencia Kontaminasaun ba rai, no be iha rai leten no okos durante periodu dekomisaun	(1) (2) (3) (4) (5)	Produto residuaishusi tanki armazenamentu rai okos sei hasai no nia infraestrutura asociadu sira. Garante katak rai ne'ebe uja atu taka fali kuak la hetn impaktu Rega be mos ba sistema pipa no hamos tanki antes ba dekomisaun Garante katak rai ne'ebe kontamina hasai tiaha ona no rai iha fatin ne'ebe propriu Sei iha polusaun rai ou be ne'ebe detekta, tenke informa autoridade relevante	Asesmentu visual no Relatoriu insidente

Kualidade ar no kontrolo rai rahun	Limita emisaun rai rahun	(1) (2) (3)	Halo sasukat apropiadu atu minimiza generasaun ba rai rahun husi halo bokong rai leten ne'ebe afeitadu no coberta (taka) ho stockpile Uja PPE ne'ebe propriu Rega be ba fatin servisu	Emisaun rai rahun ne'ebe bele hare
Saude, Seguransa no Ambiente	Minimiza risku Servisu ba trabalhador, risku saude no seguransa ba konsumedor no comunidade ne'ebe hela besik	(1) (2) (3) (4)	Minimiza expojisaun ba perigu liu husi halo rotasaun ba trabalhador no oras servisu (oras 8). Provijaun terinamentu ba uja Equipamentu no ekipamentu seguransa Supervijaun adekuadu ba uja ekipamentu bo'ot Ajustamentu servisu no period deskansaba trabalhadores wainhira loron manas demais	Sertifikadu Treinamentu Seguransa no zona Protesaun
produs lixu (Limbah)	Minimiza produs lixu solidu no lixu likidu	(1)	Lixu solidu no likidu tenke maneja propriuno disposa ba fatin ne'ebe hatudu ona	Asesmentu visual
Impaktu visual	Minimiza impaktu visual husi resiptor	(1) (2)	Halo lutu ba area dekomisaun To'o remata desinstala no sobu strutura ne'ebe la persija	Asesmentu visual
Impaktu sosial	Minimiza impaktu negativu durante periodu dekomisaun	(1) (2) (3)	Konsulta ho autoridade local, comunidade no trabalhador kona ba planu dekomisaun Adekuadu sinal no seguransa Kontaktu kedas numeru emergensua kuando buat la espera akontese	