

SHWE TAUNG CEMENT COMPANY LIMITED

Biannual Environmental Monitoring Report

(November 2024 to April 2025)

This page is a record of all revisions of this document. All previous issues are hereby superseded and are to be destroyed.

0	May 2025	Bi-annual reporting to ECD			
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Rev	Date	Description	Prepared by	Checked by	Approved by

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO., LTD.
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အကျဉ်းချုပ်အစီရင်ခံစာ

ရွှေတောင်ဘိလပ်မြေကုမ္ပဏီလီမိတက် (STC) သည် မြန်မာနိုင်ငံရှိ စီးပွားရေးကဏ္ဍအသီးသီးတွင် လုပ်ငန်းမျိုးစုံကို လုပ်ကိုင်ဆောင်ရွက်နေသော ရွှေတောင်ကုမ္ပဏီအုပ်စု၏ လုပ်ငန်းတစ်ခုဖြစ်ပြီး မန္တလေးတိုင်းဒေသကြီး သာစည်မြို့နယ်၊ ပြည်ညောင်ကျေးရွာရှိ ဘိလပ်မြေစက်ရုံ စီမံကိန်းသည် STC ၏ clinker ထုတ်လုပ်မှုစွမ်းရည်ကို တစ်ရက်လျှင် တန်ချိန် ၁,၅၀၀ မှ တန် ၅,၅၀၀ နှင့် ဘိလပ်မြေပမာဏ တစ်နေ့လျှင် ၂,၈၀၀ တန် မှ ၇,၂၀၀ တန် အထိ တိုးချဲ့ရန် ရည်ရွယ်ပါသည်။ စီမံကိန်း၏တည်နေရာကို ပုံ (၁) တွင် ဖော်ပြထားပါသည်။

STC သည် ဘိလပ်မြေစက်ရုံတိုးချဲ့စီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) ကို ဆောင်ရွက်ရန် အတွက် Environmental Resources Management (ERM)-Hong Kong, Limited အား တာဝန်ပေးအပ်ခဲ့ပါသည်။

ဘိလပ်မြေစက်ရုံ ဧရိယာသည် ၂၀၁၆ ခုနှစ် မတ်လ ၃၁ ရက်နေ့တွင် သစ်တောဦးစီးဌာနမှ နှစ် ၅၀ သဘောတူညီချက်အရ ငှားရမ်းထားသော ဧက ၄၀၀ အတွင်း တည်ရှိပြီး ဘိလပ်မြေစက်ရုံ ပထမလှိုင်းမှ အသုံးပြုသည့် ၄၅ ဧက အပါအဝင် ဒုတိယလှိုင်းမှ ၁၅ ဧက၊ ရေအရင်းအမြစ် ဧက ၅၀၊ ဝန်ထမ်းအိမ်ရာနှင့် စားသောက်ဆောင်အတွက် (၈) ဧက ခွဲဝေပေးထားပြီး ကျန် ၂၈၂ ဧကကို လမ်းပန်းဆက်သွယ်ရေးနှင့် သစ်ပင်စိုက်ပျိုးခြင်းအတွက် အသုံးပြုပါသည်။ ၂၀၁၆ ခုနှစ် မတ်လ ၃၁ ရက်နေ့တွင် သစ်တောဦးစီးဌာနမှ နှစ် ၅၀ သဘောတူညီချက်အရ ငှားရမ်းထားသော ၅၅ ဧကကို ဝန်ထမ်းများ၏ မိသားစုအိမ်ယာနှင့် အပန်းဖြေနေရာများအတွက် ခွဲဝေပေးထားပါသည်။

မန္တလေးတိုင်းဒေသကြီး သာစည်မြို့နယ် ကူပြင်ကျေးရွာတွင် တည်ရှိသော ရွှေတောင်ဘိလပ်မြေကုမ္ပဏီ လီမိတက်၏ ဘိလပ်မြေ ၂၈၀၀ တန်မှ ၇၂၀၀ တန်အထိ တိုးချဲ့ထုတ်လုပ်မည့် စီမံကိန်းအတွက် ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာသည် ၂၀၁၉ ခုနှစ်၊ နိုဝင်ဘာလ၊ ၂၂ ရက်နေ့တွင် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၊ သယံဇာတနှင့်သဘာဝ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ၏ အတည်ပြုချက် ရရှိခဲ့ပြီး ၂၀၂၃ ခုနှစ်၊ ဩဂုတ်လ၊ ၂၅ ရက်နေ့တွင် ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာဆောင်ရွက်မှု သက်သေခံလက်မှတ်ကိုလည်း ရရှိခဲ့ပြီးဖြစ်ပါသည်။ သို့ဖြစ်ပါ၍ STC သည် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာတွင် ဖော်ပြထားသော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် (EMP) နှင့်အညီ ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးမှု ကိစ္စရပ်များ (Environmental & Social Monitoring Program) ကို လိုက်နာဆောင်ရွက်ခဲ့ပြီး ယခုအခါတွင် ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဥပဒေနှင့် နည်းဥပဒေများ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ ချမှတ်ထားသော လုပ်ထုံးလုပ်နည်းများ အတိုင်း ၂၀၂၄ ခုနှစ် နိုဝင်ဘာလမှ ၂၀၂၅ ခုနှစ် ဧပြီလအထိ ဆောင်ရွက်ခဲ့သော ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှု စစ်ဆေးခြင်းအစီရင်ခံစာကို တင်ပြခြင်းဖြစ်ပါသည်။

ယခုအခါ Shwe Taung Cement Co., Ltd အနေဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာဆောင်ရွက်မှု သက်သေခံလက်မှတ် (Environmental Compliance Certificate-ECC) မှာ ၁၄-၁၁-၂၀၂၄ ရက်နေ့တွင် သက်တမ်း ကုန်ဆုံးသွားပါသဖြင့် သက်တမ်းတိုးခွင့်ပြုနိုင်ပါရန် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနသို့ လိုအပ်သောအချက်အလက် များနှင့်တကွ ၁၃-၁-၂၀၂၅ ရက်နေ့တွင် တင်ပြထားပြီးဖြစ်ပါသည်။ စာကို Appendix A1 တွင် ဖော်ပြထားပါသည်။

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1. Introduction

1.1 Executive Summary

Shwe Taung Cement Company Ltd. (STC), part of the Shwe Taung Group (STG) which owns and operates a variety of businesses across various sectors in Myanmar, is planning a brownfield expansion of cement production at its existing cement plant in Pyi Nyaung Village, Thazi Township in the Mandalay region of Myanmar. The Project aims to expand STC's clinker production capacity from 1,500 tonnes per day (tpd) to 5,500 tpd and cement capacity from 2,800 tpd to 7,200 tpd. The location of the Project is shown in Figure-1.

STC commissioned Environmental Resources Management (ERM)-Hong Kong, Limited to undertake the Environmental Impact Assessment (EIA) for the cement plant expansion Project.

The cement plant area covers 400 acres leased under a 50-year agreement from the Forest Department on 31 March 2016 (following three lease agreements renewed annually) including 45 acres used by the cement plant first line, 15 acres to be used by the second line (the Project) and 50 acres of dedicated water resources. Eight (8) acres are allocated for employee housing and catering services and the remaining 282 acres are planted or used for access roads. An adjacent area of 55 acres leased under a 50-year agreement from the Forest Department on 31 March 2016 is allocated to employees' family housing and recreation activities.

Shwe Taung Cement Co., Ltd (STC) received the approval from Ministry of Natural Resources and Environmental Conservation (MONREC) for the project of cement production and expansion of cement capacity from 2800 tpd to 7200 tpd per day in Ku Pyin Village Tract, Thazi Township, Mandalay Region on 22nd November 2019 and received Environmental Compliance Certificate on 25th August 2023. Therefore, STC conducted environmental monitoring program in line with Environmental Management Plan and comply Environmental Conservation Law and Rules, the Procedure of ECD and submit this biannual environmental monitoring report for November 2024 to April 2025.

The Environmental Compliance Certificate (ECC) for Shwe Taung Cement Co., Ltd expired on 14 November 2024. In accordance with regulatory requirements, STC submitted a formal request for extension, along with all required supporting documents, to Environmental Conservation Department on 13 January 2025. A copy of the submission letter is provided in Appendix A1.

1.2 Purpose of Environmental Monitoring

Monitoring is a means of verifying the effectiveness of the management and mitigation measures contained within the management plans listed in STC EIA for Cement Plant.

- 1) The Environmental Engineers from HSE department of Cement Plant shall do the following:
 - Monitor and implement the this ESMP at site;
 - Conduct Environmental monthly inspection checklist audit;
 - Monitor laboratory personnel while conducting their water sampling and testing method;
 - Assist and monitor the implementation of Waste Management; and
 - Monitor and review the air emission test result for compliance recommendation.
- 2) All inspection checklist audit finding that needs rectification shall be recorded in Environmental and Social tracker and will be assigned by Environmental Manager to concerned department head for rectification.
- 3) All water, effluent and air emission test results will be compiled for review and analyses by Environmental Manager and approved by Head of HSE.
- 4) All generated waste according to their classification and final disposal will be entered to waste management matrix for monthly report.
- 5) The Environmental Executive will be implementing and monitoring within the project area, new infestation and according to BAP.

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1.3 Health, Social and Environment (HSE) Department

Shwe Taung Cement Co., Ltd. established HSE Department and responsibility of HSE Department are as follows.

- 1) Implementation of Environmental Management Plans of approved EIA report of STC Cement Plant, Comply Rules and Regulations of Environmental Conservation, report Environmental Monitoring
- 2) Supervise third party stakeholders, contractors and other organizations for environmental monitoring program
- 3) Monitoring environmental impact and report the relevant documents
- 4) Promote the ability of employees by conducting knowledge sharing training and awareness on environmental conservation.

1.4 Environmental Performance Indicators and Monitoring Schedule

Physical, biological and social environmental management components of particular significance have been identified as performance indicators. A comprehensive monitoring plan for each performance indicator has been prepared for all phases of the Project, presented in Table -1.

Table -1: Environmental and Social Monitoring Programme (Construction and Operation Phase)

Project Stage/ Component	Potential Impact	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Construction and Operation / Cement Plant	Inspection of mitigation compliance	General compliance with mitigation measures presented in the ESMP.	Project activity areas	Visual inspection of all active work areas and inspection of records. This includes the bulk storage of fuels and chemicals for protection of soil quality.	Weekly	HSE Team of Appointed Contractor And STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Stack emission from kiln system.	NO _x , SO ₂ , PM _{2.5} , PM ₁₀ and O ₂	Discharge to kiln stack at new and existing plant	Real-time monitoring system	Continuous monitoring	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Stack emission from kiln system.	Check compliance with Myanmar National Environmental Quality (Emission) Guidelines (2015) for Cement and Lime Manufacturing (for NO _x , SO ₂ , PM _{2.5} , PM ₁₀)	Stack emissions from existing and new kilns.	Standard analytical methods	Monthly	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Stack emission from kiln system.	Check compliance with Myanmar National Environmental Quality (Emission) Guidelines (2015) for Cement and Lime Manufacturing for: i. Cadmium + Thallium ii. Dioxins / Furans iii. Dust iv. Hydrogen Chloride v. Hydrogen Fluoride vi. Mercury vii. Nitrogen Oxides viii. Particulate Matter PM 10 ix. Sulphur Dioxide x. Total Metals xi. Total Organic Carbon	Stack emissions from existing and new kilns.	Standard analytical methods	Within 12 months of operation commencement and then annually for the following two years (i.e. a total of three monitoring)	STC HSSE Department Head and Environmental Manager

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Operation / Cement Plant	Dust impacts	Dust deposition	Cement Plant, Kubyin and Pyi Nyaung Villages (Figure 12.1)	Dust deposition gauge	Monthly	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Dust impacts	Wind speed and direction	AQ1 (worker accommodation) (Figure 5.1)	Standard analytical methods	Continuous monitoring	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Discharge of runoff.	Check compliance with Myanmar National Environmental Quality (Emissions) Guidelines for site runoff and wastewater discharges (for BOD, COD, TSS, oil and grease, pH, total coliform bacteria, total nitrogen, total phosphorus). Volume of wastewater and treated wastewater discharged.	Treated wastewater discharge points at: 1. Coal Storage Area and Materials Handling Yards 2. Fuel Storage Area 3. Reservoir 4. Sedimentation Pond	Standard analytical methods	Monthly	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Discharge of treated wastewater	Check compliance with selected parameters (include BOD, COD, pH, SS, oil and grease, TN, TP and residual chlorine) of NEQEQ for Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (General Application). Check compliance with the full list of parameters on the NEQEQ for Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (General Application). Volume of wastewater and treated wastewater discharged.	Treated wastewater samples from: 1. Centralized tank of the wastewater treatment system.	Standard analytical methods	Monthly for selected parameters. Annually for full list of parameters	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Discharge of sludge	Check compliance with the full list of parameters on the NEQEG for Biosolids and Sludge Disposal.	Dewatered sludge samples from: 1. Each modular tank of the wastewater treatment system.	Standard analytical methods	Annually	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Discharge of treated wastewater.	Check compliance with effluent levels specified in Myanmar National Environmental Quality (Emission) Guidelines (2015)	Treated industrial wastewater discharge point from cement manufacturing process.	Standard analytical methods	Monthly	STC HSSE Department Head and Environmental Manager

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		for Cement and Lime Manufacturing (for TSS, pH, temperature increase). Volume of treated wastewater discharged.				
Operation / Cement Plant	Air Quality Impacts at ASR	Check compliance with levels specified in Myanmar National Environmental Quality (Emission) Guidelines (2015) for NO ₂ , SO ₂ , PM _{2.5} , and PM ₁₀ .	AQ1 (worker accommodation), Kubyin Village and Pyi Nyaung Village (<i>Figure 5.1</i>)	Standard analytical methods	Monthly	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Noise	Check compliance with noise levels specified in Myanmar National Environmental Quality (Emission) Guidelines (2015) for noise.	AQ1 (worker accommodation), Kubyin Village and Pyi Nyaung Village (<i>Figure 5.1</i>)	Standard analytical methods	Twice per year	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Traffic Volume	Vehicle types and movements	Base camp and access road to the cement plant (<i>Figure 9.13</i>)	Count of vehicles for 24 hours	Once within 6 months of operation	STC HSSE Department Head and Environmental Manager
Operation / Cement Plant	Waste Management	1. Volumes of waste (per waste stream – i.e. hazardous and nonhazardous) disposed of at non-hazardous solid waste management facility (on-site / off-site) and/or incinerated and not reused, recycled or reclaimed; 2. Volume of waste (per waste stream – i.e. hazardous and nonhazardous) reused, recycled or reclaimed; 3. Percent change of volume of waste (per waste stream – i.e. hazardous and nonhazardous) produced compared to previous year; 4. Percent change of volume of waste reused, recycled, reclaimed and disposed of compared to the previous year; 5. Volume of contaminated soils generated and treated on-site; 6. Description of implementation of segregation of waste streams (recyclables, general waste and hazardous waste): excellent / good / not good;	Cement Plant	Waste volume records	Quarterly	STC HSSE Department Head and Environmental Manager

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		7. Reports of hazardous waste being mixed with general waste and vice versa: number; and 1. Reports of illegal dumping of wastes: number.				
Operation / Cement Plant	Occupational Health and Safety	Monitor medical check data of Staffs Monitor incident related to 1. Indoor Air Quality 2. Heat 3. Noise and Vibration 4. Physical impact 1. Chemical Usage	Cement Plant	Medical check Review of incident statistics	Before joining STC, workers will undertake a preemployment medical check. For all workers, medical check will be undertaken every 36 months. For workers engaged in noisy works (e.g. hammering, grinding of raw materials), workers potentially exposed to radiation, welder and industrial vehicle drivers, medical check will be undertaken every 12 months.	STC Medical Doctor STC HSSE Department Head and Environmental Manager
Construction and Operation / Cement Plant	Biodiversity	Please refer to <i>Table 8.1</i> and <i>Table 8.2 of Annex E.</i>	Please refer to <i>Table 8.1</i> and <i>Table 8.2 of Annex E.</i>	Please refer to <i>Table 8.1</i> and <i>Table 8.2 of Annex E.</i>	Please refer to <i>Table 8.1</i> and <i>Table 8.2 of Annex E.</i>	Please refer to <i>Table 8.1</i> and <i>Table 8.2 of Annex E.</i>

This includes the parameters to be measured, methods to be utilized, sampling locations, frequency of measurements, detection limits and responsibilities for implementation and supervision.

Impact monitoring will be undertaken during the life of the Project to verify the predicted levels of residual impacts from the Project and the effectiveness of the various management plans and mitigation measures.

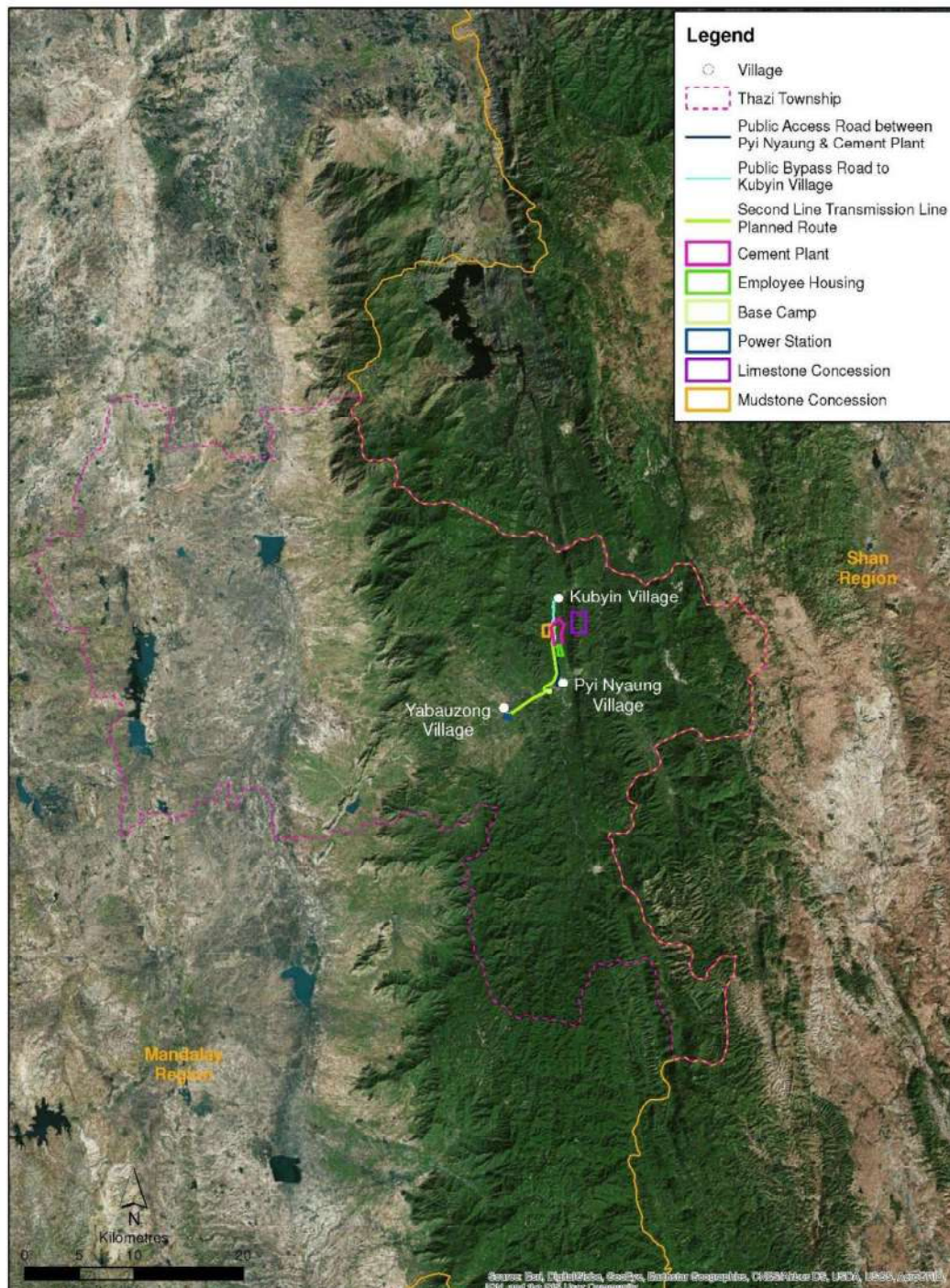
Shwe Taung Cement Co., Ltd. will prepare an environmental monitoring report and submit to the Ministry of Natural Resources and Environmental Conservation, MONREC in every six months as per the EIA Procedure requirements.

2. Project Information

2.1 Project Location

Shwe Taung Cement Co., Ltd. Located in Kupyin Village Tract, Tharzi Township, Meikhtila District, Mandalay Region. The cement plant area covers 400 acres leased under a 50-year agreement from the Forest Department on 31 March 2016 (following three lease agreements renewed annually) including 45 acres used by the cement plant first line, 15 acres to be used by the second line (the Project) and 50 acres of dedicated water resources. Eight acres are allocated for employee housing and catering services and the remaining 282 acres are planted or used for access roads. An adjacent area of 55 acres leased under a 50-year agreement from the Forest Department on 31 March 2016 is allocated to employees' family housing and recreation activities. The cement plant is situated in a valley surrounded by a mudstone quarry to the west and a limestone quarry to the east, which falls within the Tha Pyae mountain range (*Figure -1*).

Figure-1: Location of STC Cement Plant



2.2 Project Description

STC manufactures cement with clinker, gypsum and limestone (additive). Clinker is produced from limestone, mudstone, laterite and other materials. The clinker production and cement grinding capacity of the existing plant are 1,500 tpd and 2,800 tpd, respectively. The Project involves expanding the clinker production capacity to 5,500 tpd and 7,200 tpd of cement through the construction of a new rotary kiln and associated facilities. A dry process is used for the cement production and the second line will adopt a similar dry process as the first line, with additional facilities installed to achieve the increased capacity. These additional facilities will be installed within the existing 455-acre site.

All land leased to date by the company is state-owned forest land. With the exception of a small amount of land to accommodate the new transmission line, no new land is required to accommodate the expanded facilities.

Project components of the existing and expanded cement plant are shown in Figure-2. These include raw materials crushing area, handling area, clinker production area, cement grinding area, cement packing and dispatch area, coal staging area and office building.

During the reporting period, cement plant is operating stage.

Figure – 2: Project Components of the Existing and Expanded STC Cement Plant



Index

	Existing Cement Line Facilities		Expansion Cement Line
1	- Raw Materials Crushing Area	1	- Raw Material Crushing Area
2	- Handling Area	2	- Handling Area
3	- Clinker Production Area	3	- Clinker Production Area
4	- Cement Grinding Area	4	- Cement Grinding Area
5	- Cement Packing and Dispatch Area	5	- Cement Packing and Dispatch Area
6	- Coal Staging Area		- Expansion Conveyor Line
7	- Office		- Boundary Line

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3. Environmental Monitoring Program

3.1 Air Quality Monitoring

Cement industry is a potential anthropogenic source of air pollution. Cement manufacturing is a highly energy intensive process in other word intensive fuel consumption for clinker making and resulting in emissions. The cement dust produced by cement manufacturing unit i.e. calcining, crushing, grinding, packing, loading/unloading are considered one of the most pollutants such as PM10, PM2.5, SO2 and NO2 which affect the surrounding environment.

Stack Emission monitoring from Kiln System is measured with Testo PG-350 Portable Combustion and Emission Analyzer. Ambient Air Quality monitoring is measured with portable HAZ-SCANNER™ EPAS device.

Continuous Emission Monitoring System (CEMS) was ordered in July 2019 and arrived to cement plant in November 2019. There was a flood disaster at manufacturing factory of CEMS at India, and that manufacturing delay issue was reported to ECD, MONREC. Sampling gases were not included in the CEMS procurement package and there was no supplier available in Myanmar. So STC has applied the import permit to Ministry of Commence, Myanmar with the recommendation of MONREC in March 2020, and those gases were arrived to cement plant in July 2020. The supplier from India couldn't come to Myanmar for installation, testing and commissioning of CEMS due to COVID19 situation in India and travel restriction in Myanmar. STC plant operation team was progressively installing the CEMS with the remote support of supplier from India. It took months to install as some of CEMS associated accessories such as piping system, electrical cables of sampling gases were not available in local market as those sampling gases are special gases and not many local suppliers are kept in-stock in Myanmar. So, we have ordered from China and some were still not arrived to cement plant and STC cement plant has been own locked down to prevent COVID19 situation during the reporting period. STC has lifted the lockdown on middle of March 2022 and is planning to complete the Testing & Commissioning within 2022.

At 16.9.2022, Continuous Emission Monitoring System (CEMS) was started to install both Line-1 and Line-2. The installation of the Continuous Emission Monitoring System (CEMS) was completed in September 2023. During the testing phase, several issues were identified: the data output cable is malfunctioning, and there is a need to change the sampling gas. STC has already notified the service provider. Currently, we are in the process of importing calibration/sampling specialty gases from overseas and awaiting resolution of licensing issues related to importing.

As per monitoring program, STC need to check compliance with Myanmar National Environmental Quality (Emission) Guidelines (2015) for Cement and Lime Manufacturing for Cadmium + Thallium, Dioxins / Furans, Dust, Hydrogen Chloride, Hydrogen Fluoride, Mercury, Nitrogen Oxides, Particulate Matter PM 10, Sulphur Dioxide, Total Metals and Total Organic Carbon. However, there is no local service provider to analyze these full parameters for stack emission. Therefore, STC is still looking for oversea service providers to follow the monitoring program for air quality.

3.1.1 Monitoring Location

3.1.1.1 Stack Emission

Figure 3 and 4 show the location of Kiln Stack Emission Monitoring and Ambient Air Monitoring monthly by Myanmar National Environmental Quality (Emission) Guidelines (2015) for Cement and Lime manufacturing (for NOx, SO2, PM2.5, PM10 etc.) are the parameters measured.

Figure – 3: Location of Kiln Stack Emission Monitoring



Line 1



Line 2

3.1.1.2 Location Map for Ambient Air Monitoring

Ambient air quality monitoring location had been selected by identifying potentially affected with consideration given to the prevailing wind conditions through Operation and Construction activities.

Figure – 4: Location Map of Ambient Air Monitoring at STC Cement Plant

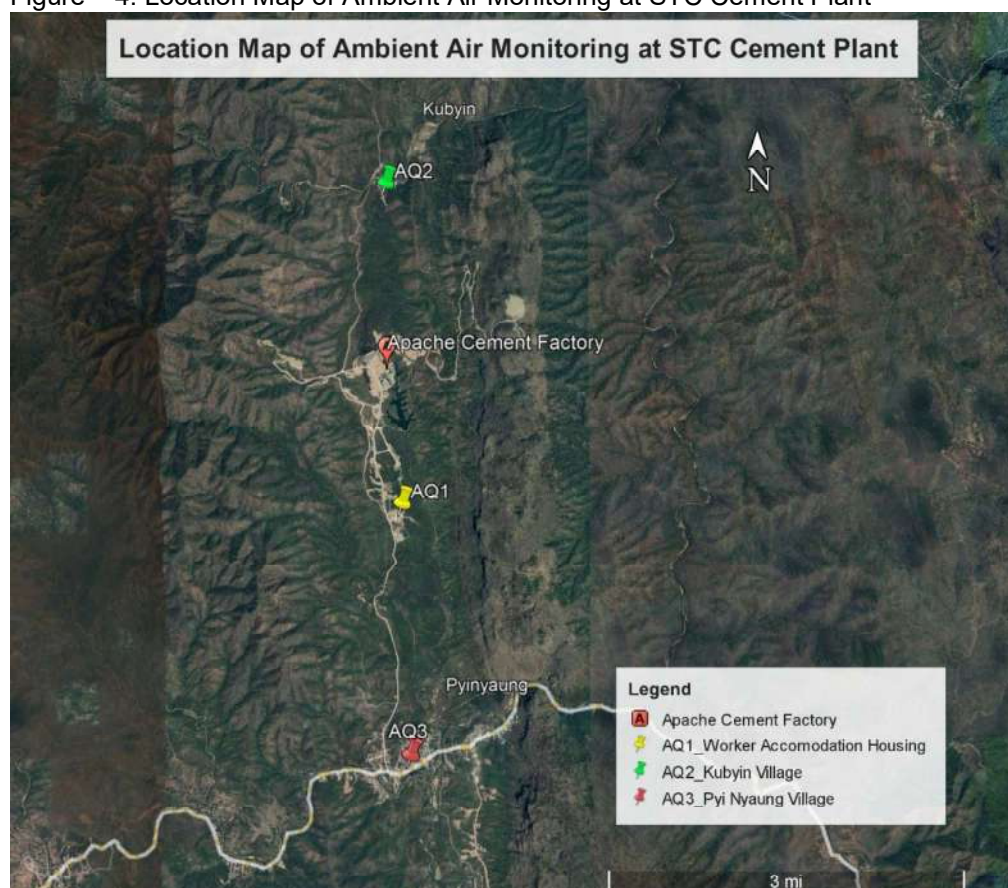


Table-2: Monitoring Location

No	Monitoring Location	Latitude	Longitude
1	AQ1_Worker Accommodation	20°50'56.15"N	96°23'35.97"E
2	AQ2_Ku Pyin Village	20°53'25.83"N	96°23'25.07"E
3	AQ3_Pyi Nyaung Village	20°49'8.19"N	96°23'51.55"E

3.1.2 Monitoring Method

Stack emission monitoring is measured by Testo PG-350 Portable Combustion and Emission Analyzer. The instrument consists of the control unit (control unit for displaying readings and controlling the analyzer box) and the analyzer box (measuring instrument). Plug-type contacts, data cable or Bluetooth (option) are used to connect the control unit to the analyzer box.

Web link: <https://www.manualslib.com/manual/1284324/Testo-350.html>

The portable HAZ-SCANNER™ EPAS wireless environmental perimeter air station is easily deployed as an ambient air quality monitor to measure and document critical U.S. EPA criteria pollutants including nitrogen dioxide, sulfur dioxide, ozone, carbon dioxide, particulates, VOCs, and more. The EPAS provides direct readings in real time with data logging capabilities.

Web link: <https://www.skinc.com/catalog/pdf/instructions/EPAS%20manual%20v.3.1.pdf>

3.1.3 Monitoring Result for Kiln Stack Emission

Stack emission monitoring device was sent to Thailand since December 2023 for calibration. All results are within Myanmar National Environmental Quality (Emission) Guidelines (2015).

Table – 3: Summary of Stack Emission Monitoring for Line 1 Kiln Stack

STACK EMISSION AIR QUALITY MONITORING								
ECD/WHO/IFC/SGN Guideline			Production Line 1 Kiln Stack					
Parameter	Averaging Period	Value	Test Result					
			Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
Carbon dioxide	1 hour	%	8.88	11.9	11.9	11.9	11.89	Shut Down
Oxygen	1 hour	%	5.33	Sensor Error	Sensor Error	Sensor Error	Sensor Error	
Carbon monoxide	1 hour	625 mg/Nm3	61.25	5.72	57.5	52.5	196.25	
Nitrogen oxides	1 hour	600 mg/Nm3	103.18	0	45.56	143.38	42.88	
Sulphur dioxide	1 hour	400 mg/Nm3	2.86	5.72	2.86	14.3	2.86	

Table – 4: Summary of Stack Emission Monitoring for Line 2 Kiln Stack

STACK EMISSION AIR QUALITY MONITORING								
ECD/WHO/IFC/SGN Guideline			Production Line 2 Kiln Stack					
Parameter	Averaging Period	Value	Test Result					
			Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
Carbon dioxide	1 hour	%	11.9	11.89	11.9	11.9	11.89	11.88
Oxygen	1 hour	%	Sensor Error	Sensor Error	Sensor Error	Sensor Error	Sensor Error	Sensor Error
Carbon monoxide	1 hour	625 mg/Nm3	63.75	115	7.5	15	196.25	386.25
Nitrogen oxides	1 hour	600 mg/Nm3	187.6	206.36	18.76	6.7	131.32	46.9
Sulphur dioxide	1 hour	400 mg/Nm3	5.72	5.72	2.86	0	5.72	0

3.1.4 Monitoring Result for Ambient Air Quality Monitoring

Table – 5: Summary of Ambient Air Quality Monitoring at Plant Site

Ambient Air Monitoring by Haz-scanner									
Machine Name: Haz-scanner (EPAS)				Operator: Nay Hlaing Oo					
				Location: Worker Accommodation					
	ECD/ WHO / IFC Guideline			Test Result					
Parameter	Average Period	Guideline Value in µg/m3	Baseline	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
Nitrogen dioxide	24 hours	200	3.63	118.68	58.53	58.44	81.67	84.96	85.28
Ozone		100	-	77.94	28.59	32.38	33.67	35.10	38.10
PM10		50	-	5.27	63.28	49.34	117.34	122.60	92.39
PM2.5		25	-	2.08	4.78	5.32	6.21	6.71	9.04
Sulphur dioxide		20	<DL	2.48	7.98	4.59	14.39	41.36	62.78
Carbon dioxide		ppm	-	0	7.79	6.29	134.18	141.72	46.55
Carbon monoxide		10 ppm	-	0.10	0.07	0.09	0.24	0.35	0.35

Table – 6: Summary of Ambient Air Quality Monitoring at Pyi Nyaung village

Ambient Air Monitoring by Haz-scanner									
Machine Name: Haz-scanner (EPAS)				Operator: Nay Hlaing Oo					
				Location: Pyi Nyaung Village					
	ECD/ WHO / IFC Guideline			Test Result					
Parameter	Average Period	Guideline Value in µg/m3	Baseline	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
Nitrogen dioxide	24 hours	200	10.1	54.53	64.48	59.62	67.49	114.86	145.15
Ozone		100	-	34.35	30.21	30.42	30.75	42.52	50.00
PM10		50	76.3	43.74	51.86	84.13	160.95	135.58	Sensor Error
PM2.5		25	37.4	7.59	6.80	6.49	7.77	8.89	7.17
Sulphur dioxide		20	<DL	16.60	10.95	31.68	75.51	119.34	33.97
Carbon dioxide		ppm	-	0.03	0.80	70.69	136.06	48.97	21.66
Carbon monoxide		10 ppm	-	0.08	0.11	0.22	0.41	0.62	0.23

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Table – 7: Summary of Ambient Air Quality Monitoring at Ku Pyin village

Ambient Air Monitoring by Haz-scanner									
Machine Name: Haz-scanner (EPAS)				Operator: Nay Hlaing Oo					
				Location: Ku Pyin Village					
	ECD/ WHO / IFC Guideline			Test Result					
Parameter	Average Period	Guideline Value in µg/m3	Baseline	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
Nitrogen dioxide	24 hours	200	10.3	83.30	67.18	63.51	73.08	87.93	111.15
Ozone		100	-	48.19	33.82	32.06	35.69	33.53	48.11
PM10		50	32.2	19	24.24	33.29	69.54	61.13	37.51
PM2.5		25	19.9	5.71	4.92	7.23	8.77	7.71	8.97
Sulphur dioxide		20	<DL	19.93	6.14	8.92	24.57	43.93	54.30
Carbon dioxide		ppm	-	0.039	2.18	81.88	129.43	14.55	48.30
Carbon monoxide		10 ppm	-	0.1	0.08	0.12	0.22	0.27	0.18

*Note: This data submitted to ECD on a monthly basis

Ambient air quality results are attached in Appendix-C.

3.1.5 Air Quality Index

The HAZ-SCANNER™, ambient air quality monitoring system, provides a comprehensive data of current air contaminants in a project location. Then, air monitoring data of pollutants is processed into a dimensionless unit called the “Air Quality Index” (AQI); it serves as an information medium for the people to know the air quality health of their location and takes preventative steps accordingly (public participation). As instructed from Meiktila ECD to HSE Department in September 2023, STC has updated this bi-annual monitoring report and verified with Meiktila ECD on the reporting format during last quarter of 2023. Meiktila ECD accepted the updated report during January 2023. Therefore, STC has updated the AQI results in all bi-annual monitoring reports of STC Cement Plant.

The AQI is divided into six categories. Each category corresponds to a different level of health concern. Each category also has a specific color. Thus, the AQI is a beneficial tool for the company, public, stakeholders, and regulators to understand the current state of air quality. The color makes it easy for people to quickly determine whether air quality is reaching unhealthy levels in their communities.

Figure – 5: AQI Basics for Ozone and Particle Pollution

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

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Table – 8: Summary of AQI at Plant Site

Air Quality Index (AQI)									
Machine Name: Haz-scanner (EPAS)			Operator: Nay Hlaing Oo						
			Location: Worker Accommodation						
			AQI Results						Sensitive Group
Parameter	Averaging Period	Unit	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	
PM ₁₀	24 hour	ug/m3	5	55	45	82	84	69	People with respiratory disease are the group most at risk.
PM _{2.5}	24 hour	ug/m3	11	26	29	34	37	50	People with respiratory or heart disease, the elderly and children are the groups most at risk.
Carbon monoxide	8 hour	ppm	1	0	0	2	3	3	People with heart disease are the group most at risk.
Ozone	8 hour	ppb	36	13	15	16	16	18	Children and people with asthma are the groups most at risk.
Nitrogen dioxide	1 hour	ppb	61	29	29	41	42	42	People with asthma or other respiratory diseases, the elderly, and children are the groups most at risk.
Sulphur dioxide	1 hour	ppb	0	4	1	7	21	33	People with asthma are the group most at risk.

Table – 9: Summary of AQI at Pyi Nyaung Village

Air Quality Index (AQI)									
Machine Name: Haz-scanner (EPAS)			Operator: Nay Hlaing Oo						
			Location: Pyi Nyaung Village						
			AQI Results						Sensitive Group
Parameter	Averaging Period	Unit	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	
PM ₁₀	24 hour	ug/m3	40	47	65	103	91	Sensor Error	People with respiratory disease are the group most at risk.
PM _{2.5}	24 hour	ug/m3	42	37	36	43	49	39	People with respiratory or heart disease, the elderly and children are the groups most at risk.
Carbon monoxide	8 hour	ppm	0	1	2	5	7	2	People with heart disease are the group most at risk.
Ozone	8 hour	ppb	16	14	14	14	19	23	Children and people with asthma are the groups most at risk.
Nitrogen dioxide	1 hour	ppb	27	32	29	33	58	76	People with asthma or other respiratory diseases, the elderly, and children are the groups most at risk.
Sulphur dioxide	1 hour	ppb	9	6	17	40	62	17	People with asthma are the group most at risk.

Table – 10: Summary of AQI at Ku Pyin Village

Air Quality Index (AQI)									
Machine Name: Haz-scanner (EPAS)			Operator: Nay Hlaing Oo						
			Location: Ku Pyin Village						
			AQI Results						
Parameter	Averaging Period	Unit	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	Sensitive Group
PM ₁₀	24 hour	ug/m3	18	22	31	58	54	34	People with respiratory disease are the group most at risk.
PM _{2.5}	24 hour	ug/m3	32	27	40	48	43	49	People with respiratory or heart disease, the elderly and children are the groups most at risk.
Carbon monoxide	8 hour	ppm	1	0	1	2	2	1	People with heart disease are the group most at risk.
Ozone	8 hour	ppb	22	16	15	17	16	22	Children and people with asthma are the groups most at risk.
Nitrogen dioxide	1 hour	ppb	42	33	31	36	43	56	People with asthma or other respiratory diseases, the elderly, and children are the groups most at risk.
Sulphur dioxide	1 hour	ppb	10	3	4	13	23	29	People with asthma are the group most at risk.

3.1.6 Monitoring Result for Dust Deposition

STC monitored dust deposition with 15 points at cement plant and limestone quarry, cement plant housing/ accommodation area, Ku Pyin and Pyi Nyaung village. The use of fabric/bag filter system and electrostatic precipitator to collect and control fine suspended particulate emissions are implemented in both lines of cement plant. Water suppression was also undertaken on the roads by using the water from sedimentation ponds to mitigate dust emission on surrounding area in plant site, quarries and plant accommodation area.

Please refer Table - 12 for dust deposition monitoring results from November 2024 to April 2025.

Table – 11: Dust Monitoring Locations

No	Monitoring Location	Latitude	Longitude
1	STC Accommodation (Ingyn Hostel)	20°51'23.1"N	96°23'34.7"E
2	STC Accommodation (55acres)	20°50'54.5"N	96°23'34.8"E
3	Ku Pyin (Behind Library)	20°53'26.9"N	96°23'24.8"E
4	Ku Pyin (Primary School)	20°53'25.7"N	96°23'33.6"E
5	Pyi Nyaung (Near Main Road)	20°49'09.5"N	96°23'50.9"E
6	Pyi Nyaung (Information Center)	20°49'03.9"N	96°23'40.6"E

Figure – 6: Dust Deposition Monitoring



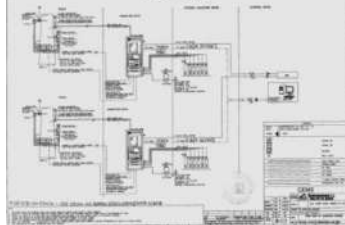
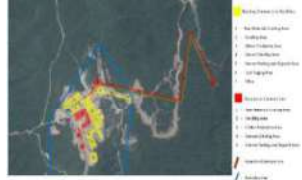
Table – 12: Dust Deposition Monitoring results at Cement Plant Accommodation, Ku Pyin and Pyi Nyaung villages from November 2024 to April 2025

Samplers: Nay Hlaing Oo		Dust Deposition Monitoring					
		Test Result					
Parameter	Australia & New Zealand Guideline (g/m2/Day)	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
STC Accommodation (Ingyin Hostel)	1.191 (g/m2/Day)	0.64	0.89	0.78	0.65	0.47	0.99
STC Accommodation (55acres)		0.43	0.71	0.62	0.42	0.42	0.66
Ku Pyin (Behind Library)		0.23	0.16	0.47	1.42	0.52	0.37
Ku Pyin (Primary School)		0.39	1.58	0.34	0.51	0.40	0.32
Pyi Nyaung (Near Main Road)		0.70	0.80	0.67	0.62	0.68	Damage
Pyi Nyaung (Information Center)		0.42	0.43	0.35	0.64	Damage	1.23

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3.1.7 Air Quality Mitigation Measures

Table – 13: Air Quality Management

Affected Aspect	Mitigation Measures	Action Taken	Photos
Air Quality	- The discharge to kiln stack at both new and existing plant will be fitted with continuous emission monitoring capable of real-time measurement of NO₂, SO₂, Particulate Matter and O₂ and transmitted to the operator control room. They will not exceed those outlined in Myanmar National Environmental Quality Emission Guidelines (2015) for cement and lime manufacturing and should be further reduced as far as practicable. - New kiln stack shall be fitted with sampling platform and two sampling ports at 90 degrees. Sampling ports should be four-inch (minimum) inner diameter threaded pipe connections with a cap. This is primarily to allow calibration of in stack continuous monitoring systems but was also allow for monitoring of additional parameters if needed in the future.	The Continuous Emission Monitoring System (CEMS) was ordered in July 2019 and arrived at the cement plant in November 2019. A flood at the CEMS manufacturing factory in India caused delays, reported to ECD, MONREC. Sampling gases were not included in the procurement package, and no local supplier was available, so STC applied for an import permit in March 2020. The gases arrived in July 2020. Due to COVID-19 travel restrictions, the Indian supplier couldn't come for installation, which STC's team handled with remote support. Installation was delayed due to unavailable accessories, which were ordered from China. STC lifted its lockdown in March 2022, planning to complete testing and commissioning within the year. Installation of CEMS on both lines started on September 16, 2022, and was completed in September 2023. During testing, issues with the data output cable and sampling gas were identified. STC notified the service provider and is currently importing calibration gases, awaiting resolution of licensing issues.	 
	Emission concentrations of NO_x, SO₂ and PM from existing and proposed kiln system and clinker cooler will exceed those outlined in Myanmar National Environmental Quality Emission Guidelines (2015) for cement and lime manufacturing and should be further reduced as far as practicable.	Regular monitoring (See in Section 3.1.3 for stack emission monitoring results)	
	An occupational exposure monitoring program for workers will be put in place to monitor indoor air quality.	Completed by HR & OHS. Result TBA ECD conducted test for Exposure Limits	
	Reduce number of material transfer points by simple, linear layout for material handling operations;	Completed and installed for line 1 and line 2 design	
	Use of enclosed belt conveyors for material transportation and emission controls at transfer points;	Implementation on line 2	
	Regular cleaning of conveyor belt systems;	Included in PME scope (Regular Maintenance of bag filter and electrostatic precipitator, see in Appendix)	

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Crushed and blended raw materials should be stored in covered or closed bays;	Additional silo constructed in line 2	
Pulverized coal should be stored in silos or closed storage;	Implemented	
Clinker should be stored in covered or closed bays or silos with dust extractions;	Implemented	
Routine plant maintenance to keep air leaks and spills to a minimum;	Included in PME and PRD scope (Regular Maintenance of bag filter and electrostatic precipitator, see in Appendix)	 
Material handling processes including crushing operations, raw milling and clinker grinding should be undertaken in enclosed systems maintained under negative pressure by exhaust fans. Dust should be removed using cyclones and bag filters; and	Equipped with cyclones and bag filters (Regular Maintenance of bag filter and electrostatic precipitator, see in Appendix)	
Implementation of automatic bag filling and handling systems;	Implemented both line 1 and line 2	
Use of electrostatic precipitators (ESPs) or fabric filter systems to collect and control fine suspended particulate emissions in the kiln gases;	Installed (Regular Maintenance of bag filter and electrostatic precipitator, see in Appendix)	
Use of cyclones to separate larger particulates of cooler gases followed by fabric filters and finally	Equipped with cyclones and bag filters line 1 and line 2 (Regular Maintenance of bag filter and electrostatic precipitator, see in Appendix)	
Mild dust should be captured and recycled using fabric filters within the mill.	Equipped with bag filters (Regular Maintenance of bag filter and electrostatic precipitator, see in Appendix)	

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3.1.8 Evaluation

According to Air Quality Monitoring of Stack Emission and Ambient Air Quality Monitoring, the results of stack emission monitoring are under guideline value while those of AAM are exceeded in some values during summer season. Ambient Air monitoring was monthly tested at location of Sensitive Air Respecters such as Cement Plant Accommodation, and nearby villages which are Pyi Nyaung and Ku Pyin as in Cement Plant EIA report. All results are within Myanmar National Environmental Quality (Emission) Guidelines (2015), except higher results of PM₁₀ and SO₂ during summer season. These increases are likely attributable to frequent forest fires initiated by some local villagers for land clearing, as well as slash-and-burn practices conducted by Forest Department for teak plantation management near the STC area.

Figure – 7: Forest Fire affected the Ambient Air Quality around STC Cement Plant



STC has investigated the reason of SO₂ result more than Myanmar National Environmental Quality (Emission) Guidelines (2015) as STC uses the low Sulphur content in coal that used as fuel for cement production as stated in STC Cement Plant EIA report. STC has analyzed the monitoring results from the portable HAZ-SCANNER™ EPAS device and found out that SO₂ results were a lot higher during day time and less value at night time. This indicate that the plant is operating 24hours and it couldn't be less during night time.

AQI across the globe considers the number of pollutants (most of the developed countries and some developing countries considers PM_{2.5} to measure the overall status of air quality being monitored), averaging time for which pollutants are measured, calculation method to compute air quality indices for each pollutant, calculation mode to aggregate the overall index, scale of an index, categories, color coding scheme, and related descriptive terms of the pollutants. There are many air quality index models to represent air quality level in the world. STC selected to assess ambient air quality results in Pyi Nyaung area based on AirNow, which is a partnership with the U.S. Environmental Protection Agency (EPA), color-coded index standards.

By analyzing all the AQI results, it is noted that PM_{2.5} values are majorly impacted by human activities (forest firing & open burning, etc.) from surrounding environment. STC will raise the public

awareness among cement plant community and also disclosed these air quality monitoring results and AQI results at Pyi Nyaung Information Center and Ku Pyin library according to STC Stakeholder Engagement Plan.

STC engaged 3rd party Environmental consultant as auditor and the auditor advised that this was the case as forest fires in the hills surrounding the plant were numerous at the time of the audit and consistent haze was present over the general area. The Auditor considered that the forest fires are contributing to elevated particulate readings being recorded by STC and elevated readings cannot be solely apportioned to emissions from cement plant and associated facilities.

Therefore, STC was looking other factors that can be impacting on SO₂ results and found out that it was related to emission of mobile vehicles that were higher SO₂ than Kiln emission by using Testo PG-350 Portable Combustion and Emission Analyzer at STC Apache cement plant. There were a lot of heavy machineries and trailer trucks movement during day time and only trailer trucks movement during night time. So STC has raised awareness among the vehicle drivers to stop when they are parking or waiting, with sticker campaign “Turn Off Your Engine While Waiting or Parked” at Apache Cement plant.

These were a notable deterioration in regional air quality was found at Pyi Nyaung area. Moreover, cold air during the cold season can't hold as much moisture, and so the air is usually drier during winter. These habits were also noted on contributing factors of higher results of PM₁₀ and PM_{2.5}.

Moreover, there were regular device servicing and maintenance with NANOVA, authorized supplier of Myanmar of EPAS device, in January and March 2020. STC noted the Haz-scanner EPAS SO₂ sensor has some issue as the ambient air quality monitoring result of SO₂ was complied with Myanmar National Environmental Quality (Emission) Guidelines (2015) after NANOVA, the local authorized support of Myanmar.

Carried out sensor checking, testing using zeroing filter and internal tube cleaning by supplier 3 times due to sensor error reading of Haz-scanner devices.

The use of fabric filter system and electrostatic precipitator to collect and control fine suspended particulate emissions are implemented. Water suppression are also undertaken on the roads to mitigate dust emission on surrounding area in plant site and accommodation area. (See in Appendix-A2)

Moreover, to safeguard occupational health, STC collaborates with the Social Security Board to conduct health check-ups using a mobile medical unit and arranges necessary medical care for employees as needed.

Figure – 8: Occupational Health Care Records by Social Security Board



3.2 Water Quality Monitoring

Monitoring of water quality regularly is quite necessary for the assessment of water quality for beneficial purposes. Operation is dry process and do not generate wastewater. Sanitary wastewater from office and household are discharged to bio tank and treated wastewater are monitored in compliance with the NEQEG on BOD, COD, pH, SS, oil & grease, TN & TP and as per WHO Drinking water guidelines.

3.2.1 Monitoring Location

As per monitoring program, STC monthly monitor Sedimentation Pond 5 near coal storage area and reservoir for discharge of runoff, Sedimentation Pond 7 for industrial wastewater and biotank effluent for discharge of treated wastewater. In addition, STC monitors water quality in Ku Pyin and Ye Shin Streams to support community health and safety. Figure 9 illustrates the locations of the water quality sampling points. The monitoring parameters are based on WHO Drinking Water Guidelines and IFC Effluent Discharge Standards, and include pH, color, turbidity, iron, BOD, COD, and other relevant indicators.

Table-14: Water Sampling location

No	Sampling Location	Latitude	Longitude
1	Ku Pyin Stream	20°53'22.92"N	96°23'23.92"E
2	Ye Shin Stream	20°50'24.08"N	96°23'26.81"E
3	Supply Water (Reservoir)	20°51'35.3"N	96°23'37.70"E
4	Sedimentation Pond 5 (Coal Storage Area)	20°52'10.60"N	96°23'16.67"E
5	Sedimentation Pond 7 Effluent (Industrial Wastewater)	20°51'54.88"N	96°23'32.49"E
6	Biotank Effluent	20°50'51.17"N	96°23'45.02"E

3.2.1.1 Location Map of Water Quality Sampling Points

Figure – 9: Water Quality Sampling Points



3.2.2 Monitoring Result for Water Quality

Table-15: Ku Pyin Stream Water Quality Monitoring Result

Ku Pyin Stream Water Supply Water Analysis									
ITEM	WHO Drinking Water Guideline	EQEG Guideline	Baseline Results	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
pH	6.5 – 8.5	6 - 9	6.3	8.3	7.4	7.9	No Water	No Water	7.4
Color	15 PCU	-	-	5	0	0			5
Turbidity	5 NTU	-	-	0.48	1.18	2.25			2.11
Calcium hardness	500 mg/l	-	-	*	*	*			*
Chloride (Cl)	250 mg/l	-	-	*	*	*			*
Sulphate (SO4)	200 mg/l	-	-	10	10	10			10
TSS	50 mg/l	50 mg/l	23	1	0	6			6
Nitrate	50 mg/l	-	-	11.9	8.1	9.3			4
Remark: According to the current situation in Myanmar, there is an issue to buy some chemical reagent to analyze some water quality parameters. Therefore, we express as "*" for "No stock of chemical reagents"									

Table-16: Ye Shin Stream Water Quality Monitoring Result

Ye Shin Stream Supply Water Analysis (Near Pyi Nyaung)								
ITEM	WHO Drinking Water Guideline	EQEG Guideline	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
pH	6.5 – 8.5	6 - 9	8	7.1	7.8	7.3	7.7	7.2
Color	15 PCU	-	0	0	0	5	20	5
Turbidity	5 NTU	-	3.41	2.06	0.71	0.6	0.85	0.83
Calcium hardness	500 mg/l	-	*	*	*	*	*	*
Chloride (Cl)	250 mg/l	-	*	*	*	*	*	*
Sulphate (SO4)	200 mg/l	-	20	10	10	20	10	10
TSS	50 mg/l	50 mg/l	12	3	2	2	1	3
Nitrate	50 mg/l	-	6.3	4.2	9.9	3.3	11.8	5.2
Remark: According to the current situation in Myanmar, there is an issue to buy some chemical reagent to analyze some water quality parameters. Therefore, we express as "*" for "No stock of chemical reagents"								

Table-17: Lower Reservoir Water Quality Monitoring Result

Lower Reservoir Supply Water Analysis									
ITEM	WHO Drinking Water Guideline	EQEG Guide line	Baseline Results	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
pH	6.5 – 8.5	6 - 9	7.6	8.2	7.5	7.4	7.7	8.6	7.6
Color	15 PCU	-	-	20	20	20	35	55	30
Turbidity	5 NTU	-	-	2.8	4.31	5.56	5.22	10.9	2.13
Calcium hardness	500 mg/l	-	-	*	*	*	*	*	*
Chloride (Cl)	250 mg/l	-	-	*	*	*	*	*	*
Sulphate (SO ₄)	200 mg/l	-	-	10	20	20	10	10	10
TSS	50 mg/l	50 mg/l	11	11	16	15	17	43	31
Nitrate	50 mg/l	-	-	4.9	4.7	3.6	4.8	13.5	6
Remark: According to the current situation in Myanmar, there is an issue to buy some chemical reagent to analyze some water quality parameters. Therefore, we express as "*" for "No stock of chemical reagents"									

Lower reservoir supply water test results from external laboratories are attached in Appendix-(B-4).

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Table-18: Sedimentation Pond-5 Surface Water Test Result

Sedimentation Pond 5 Surface Water Test Result									
Parameters	IFC Waste Water Guideline	EQEG Guide line	Baseline Results	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
pH	6 ~ 9	6 ~ 9	7.6	8.2	7.5	7.4	7	7.2	7.5
Chemical Oxygen Demand (COD)	0~125 mg/l	125 mg/l	41.5	*	*	*	*	*	*
Biological Oxygen Demand (BOD)	0~30 mg/l	30 mg/l	6.5	*	*	*	*	*	*
Total Suspended Solid (TSS)	Max 50 mg/l	50 mg/l	215.5	35	15	46	23	25	36
Total Nitrogen	10 mg/l	10 mg/l	1.7	2.03	1.94	0.65	0.86	2.09	1.2
Total Nitrate	44.29 mg/l	-	-	9	8.6	2.9	3.8	9.3	5.3
Total Phosphorous	2 mg/l	2	0.06	0.2	0.3	0.2	*	*	*
Oil and grease	10 mg/l	10 mg/l	DL	*	*	*	*	*	*
Total Coliform Bacteria	-	100 ml	45.50	*	*	*	*	*	*
Remark: According to the current situation in Myanmar, there is an issue to buy some chemical reagent to analyze some water quality parameters. Therefore, we express as "*" for "No stock of chemical reagents"									

Table – 19: Sedimentation Pond 7 Effluent Water Test Result

Sedimentation Pond 7 Effluent Water									
Parameters	IFC Waste Water Guideline	EQEG Guide line	Baseline Results	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
pH	6 ~ 9	6 ~ 9	-	8.5	8.2	8.1	8.8	8.0	7.9
Chemical Oxygen Demand (COD)	0~125 mg/l	125 mg/l	-	*	*	*	*	*	*
Biological Oxygen Demand (BOD)	0~30 mg/l	30 mg/l	-	*	*	*	*	*	*
Total Suspended Solid (TSS)	Max 50 mg/l	50 mg/l	-	5	2	10	8	10	10
Total Nitrogen	10 mg/l	10 mg/l	-	2.46	2.69	0	3.14	2.3	1.7
Total Nitrate	44.29 mg/l	-	-	10.9	11.9	0	13.9	10.2	7.5
Total Phosphorous	2 mg/l	2	-	0.4	0.2	0.1	*	*	*
Oil and grease	10 mg/l	10 mg/l	-	*	*	*	*	*	*
Total Coliform Bacteria	-	100 ml	-	*	*	*	*	*	*
Remark: According to the current situation in Myanmar, there is an issue to buy some chemical reagent to analyze some water quality parameters. Therefore, we express as "*" for "No stock of chemical reagents"									

Table – 20: Bio Tank Effluent Discharge to Sedimentation Pond 9 Test Results

Bio Tank Effluent Discharge to Sedimentation Pond 9									
Parameters	IFC Waste Water Guideline	EQEG Guide line	Baseline Results	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025
pH	6 ~ 9	6 ~ 9	-	8.8	7.2	8.1	7.4	7.4	7.2
Chemical Oxygen Demand (COD)	0~125 mg/l	125 mg/l	-	*	*	*	*	*	*
Biological Oxygen Demand (BOD)	0~30 mg/l	30 mg/l	-	*	*	*	*	*	*

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Total Suspended Solid (TSS)	Max 50 mg/l	50 mg/l	-	63	73	143	276	141	142
Total Nitrogen	10 mg/l	10 mg/l	-	2.37	10.16	2.71	3.88	2.66	8.85
Total Nitrate	44.29 mg/l	-	-	10.5	45	12	17.2	11.8	39.2
Total Phosphorous	2 mg/l	2	-	1.2	7.4	3.4	*	*	*
Oil and grease	10 mg/l	10 mg/l	-	*	*	*	*	*	*
Total Coliform Bacteria	-	100 ml	-	*	*	*	*	*	*

Remark: According to the current situation in Myanmar, there is an issue to buy some chemical reagent to analyze some water quality parameters. Therefore, we express as "*" for "No stock of chemical reagents". Biotank Sludge results from external laboratory are attached in Appendix-B8.

Laboratory results for water quality are attached in Appendix-B.

3.2.3 Water Quality Mitigation Measures

Table – 21: Water Quality Management

Affected Aspect	Mitigation Measures	Action Taken	Photos
Surface Water Quality	- Implementing storm water management practices to manage the flow of storm-water, prevent uncontrolled migration and minimize erosion and sediment transport from project facilities and disturbed areas. - Construction of a dedicated drainage network to intercept and diversion runoff;	Constructed stormwater drains around the cement plant channel to sedimentation ponds	  Figure (2) Drainage for catchment area
	Divert runoff from the mudstone quarry to an appropriately sized and maintained sedimentation pond to allow adequate retention time for suspended solids to settle;	Constructed sedimentation pond dual stage.	Sedimentation pond from storm water runoff to allow adequate retention time for suspended solids to settle before entering downstream area. Location Map of Sedimentation Pond at STC Site  Layout Plan for Stormwater Discharge Area at STC 

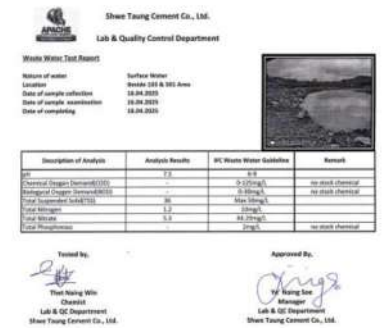
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	Divert runoff from the limestone quarry to the wetland created by STM via a weir to remove suspended solids before entering the wetland;	Constructed sedimentation pond dual stage.	 Figure (2) Drainage for containment area
	Baffles or other measures to reduce the velocity of runoff downhill slopes should be installed to minimize scouring;	Visual monitoring by MNE	 Figure (1) Zoning for slope protection measures
	Exposed areas and overburden dumps should be revegetated as quickly as possible.	Tree planting during monsoon season	
	STM will prepare and implement a Storm water Management Plan considering the mitigation committed above.	Plan have been developed and construction on progress for Line 2 area. Line 1 area was constructed since 2014.	 Figure 2.2 Storm water flow, contour plan and limestone mining area
	All areas used to store and/or handle coal, laterite and limestone should be paved and surrounded by perimeter drains. For the coal storage area, it should be covered;	Implemented and covered during monsoon season	
	Runoff from the laterite and limestone staging areas shall be diverted to retention ponds and may be used for greening, dust suppression or discharged to the onsite reservoir.	Constructed sedimentation pond dual stage and reuse for gardening and dust control.	

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	For the coal storage area, STM has agreed to cover this area. Water from the roof will be diverted via storm water drains to retention ponds and may be used for greening, dust suppression or discharged to the onsite reservoir. Runoff collected by the interceptor drains (small volume) within the covered coal storage area will be diverted for treatment at the wastewater treatment plant.	Upgraded sedimentation pond near coal storage area.	
	Discharges into the reservoir and any runoff discharged to surface streams should be monitored monthly for compliance with Myanmar National Environmental Quality (Emissions) Guidelines for site runoff and wastewater discharges (for TSS, oil and grease, pH).	Conducted and monitored by LQC result documented (See in 4.3.2 water result)	
	Lightning protection should be installed at all areas used to store bulk fuel and other flammables;	Installed at fuel depot.	 Constructed bunded hardstand with containment for 110% of the volume of stored fuel and equipped with oil-water separator. Installed lightning protection post.
	The fuel storage facility should be constructed on bunded hardstand with containment sufficient for 110% of the volume of the single largest tank;	Equipped.	 Constructed bunded hardstand with containment for 110% of the volume of stored fuel and equipped with oil-water separator. Installed lightning protection post.
	Discharges from this bunded area should pass through an oil-water separator;	Installed	 Constructed bunded hardstand with containment for 110% of the volume of stored fuel and equipped with oil-water separator. Installed lightning protection post.
	Spill Response Plan should be developed and implemented; (conducted awareness training and deliver pamphlet to relevant employees in the plant)	Approved and implemented	
	Discharges from the coal staging area should be monitored monthly for compliance with Myanmar National Environmental	Conducted and monitored by LQC result documented	

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	Quality (Emissions) Guidelines for site runoff and wastewater discharges (for TSS, oil and grease, pH).	(See in Section 4.3.2 for water test result)	
	Sanitary wastewater (includes toilet, sink, shower) should be discharged to the wastewater treatment plant and not be directly discharged to any water bodies. Kitchen flows should be discharged for treatment at dedicated grease trap / water purification unit and not be directly discharged to any water bodies.	Constructed Bio Tank for treatment of sanitary wastewater.	
	Treated wastewater will be monitored monthly at the centralized treated wastewater tank to check compliance with the NEQEG on BOD, COD, pH, SS, oil and grease, TN, TP and residual chlorine and monitored annually for compliance with the full list of parameters on the NEQEG for Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (General Application). Sludge generated from the wastewater treatment units will be dewatered to meet with the Myanmar NEQEG for Bio solids and Sludge Disposal before disposal to the non-hazardous solid waste management facility. Sludge samples from each modular tank will be checked yearly for compliance with the NEQEG for Bio solids and Sludge Disposal.	Conducted and monitored by LQC result documented (See Section 3.2.2 for water result)	(See Section 3.2.2 for water result)

Notice: Presently all the discharge from bund wall areas directly channel to sedimentation pond.

3.2.4 Evaluation

The establishment of sewage and sanitary waste management and storm water management is executing in plant site. Since the dry process is used for the cement production and the second line is also adopted a similar dry process as the first line, do not generate wastewater from first line and second line production. Discharge sanitary wastewater from plant office and household accommodation are diverted for treatment at bio tank and monthly monitored in compliance with the NEQEG guideline. Wheel washing bay shall be installed at the cement plant guardhouse to avoid cement trail trucks tracking dirt onto public sealed roads and generating dust.

3.3 Noise Monitoring

The nearest representative noise sensitive receptors (NSRs) that may potentially affect by the noise impact due to the Project are identified as Pyi Nyaung and Ku Pyin villages. STC operate noise monitoring twice a year in accordance with Mudstone Environmental Monitoring Plan and results are shown in Table 20 below:

3.3.1 Location Map of Noise Quality Monitoring Points

Figure – 10: Noise Quality Sampling Points



Table – 22: Noise Monitoring Locations

No	Noise Monitoring Location	Latitude	Longitude
1	Ku Pyin Village	20°53'20.47"N	96°23'27.58"E
2	Pyi Nyaung Village	20°49'4.58"N	96°23'40.42"E
3	Worker Accommodation	20°50'56.15"N	96°23'35.97"E

Table – 23: Noise Monitoring Results in Ku Pyin and Pyi Nyaung village

Noise Monitoring	Machine Name: GM1356-0/GM1356, Operator: Nay Hlaing Oo					
	Ku Pyin Village		Pyi Nyaung Village		Worker Accommodations	
	Day	Night	Day	Night	Day	Night
Monitoring Result	48	41	53	43	56	43
Baseline Result	-	-	-	-	58	57
NEQEG (Residential)	55	45	55	45	55	45
NEQEG (Industrial)	70	70	70	70	70	70

3.3.2 Evaluation

Noise monitoring was conducted at Ku Pyin and Pyi Nyaung Village using a calibrated Sound Level Meter (Model: GM1356-0/GM1356). The monitoring aimed to assess compliance with the Myanmar National Environmental Quality (Emission) Guidelines for both residential and industrial areas. All measured values were within the NEQEG limits for residential areas, and significantly lower than the limits for industrial areas. These results indicate that the current noise levels at the selected monitoring locations do not pose a significant impact on the surrounding communities and remain compliant with national environmental standards.

3.4 Waste Management Monitoring

3.4.1 Generation of Non- Hazardous Waste

In Shwe Taung Cement Factory, collect non-hazardous waste generated from plant site and accommodation area every day and dispose them to Temporary Non-hazardous Storage Area. For kitchen wastes, compost or use as animal feed in nearby villages. On the other hand, dispose laboratory and clinical wastes to Meikhtila Incinerator, Meikhtila District, Mandalay Region, approved by Meikhtila City Development Committee and have plan to dispose hazardous wastes to Golden Dowa Eco-system Myanmar Co., Ltd., Accredited Waste Management Company. Figure 11, 12 and 13 shows location maps of waste disposal area and waste collection points.

Figure – 11: Location Map of Collection Points of All Generated Wastes from Plant Site and Accommodation Area

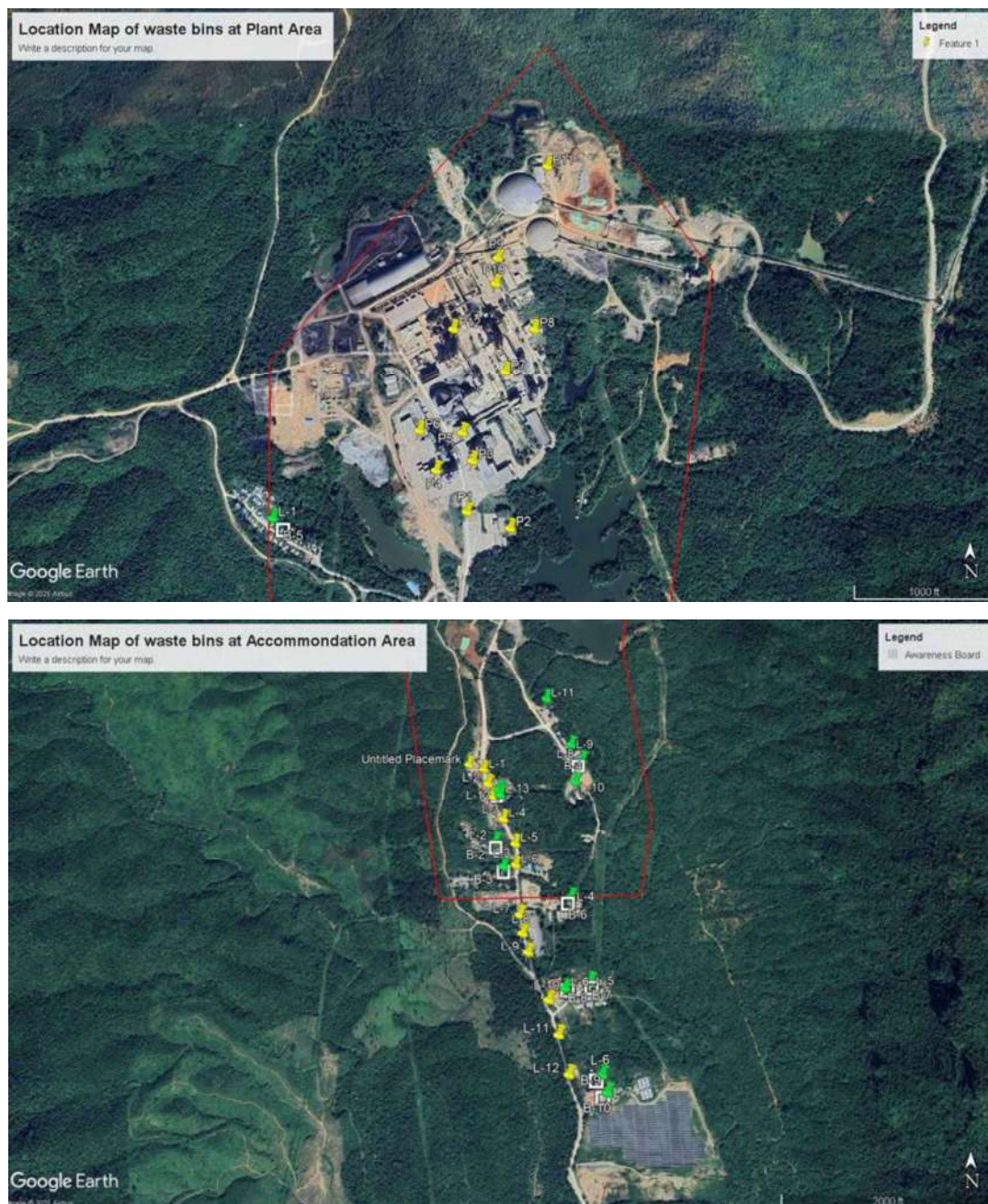


Figure – 12: Location Map of Disposal Sites for Waste from Plant and Accommodation Area



Figure – 13: Location Map of Site Waste Dumping Area (Scrap Yard)



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Table – 24: Generated Non-Hazardous Waste

STC Non-hazardous Waste Generated from November 2024 to April 2025				
Month	Generated Waste (kg)	Reduction waste (kg)	Landfill Waste (kg)	Remark
November 2024	16,880	4,246	12,634	Disposed to Temporary Non-hazardous Solid Waste Storage Area
December 2024	16,920	4,246	12,674	
January 2025	20,620	4,246	16,374	
February 2025	14,240	4,246	9,994	
March 2025	16,540	4,246	12,294	
April 2025	12,220	4,246	16,466	

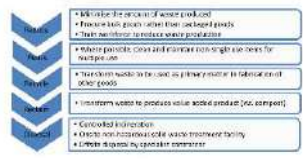
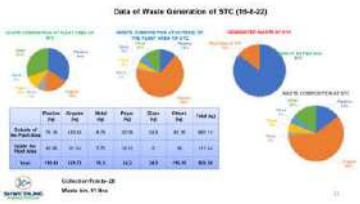
3.4.2 Generation of Hazardous Waste

Table – 25: Generated Hazardous Waste

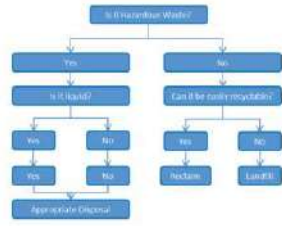
STC Generated Hazardous Waste						
Sr.	Date	Type of Waste	Quantity	Amount (kg)	Treatment Facility	Remarks
1	9 January 2025	Clinical, Laboratory and Contaminated Oil rags	-	760 kg	Meikhtila Municipal Incinerator	Disposal

3.4.3 Waste Management Mitigation Measures

Table – 26: Waste Management Mitigation Measures

Affected Aspect	Mitigation Measures	Action Taken	Photos																											
Waste Management	A waste management plan (WMP) for the project has been developed that include the following as a minimum:	Approved waste management plan	 • Reduce the amount of waste produced • Reuse waste products rather than packaged goods • Treat and recycle waste products • Reuse waste products and materials rather than use them for disposal • Use clean water to be used as primary material in fabrication of other goods • Reuse water to produce value added product (not compost) • Composted in incinerator • Use non-hazardous solid waste treatment facility • Dispose waste by operation contractor																											
	• A waste inventory should be created to establish the types of wastes;	Established (dispose Non-hazardous waste to Temporary N-H Solid Waste Storage area whereas Hazardous waste will be disposed to DOWA, accredited waste management company. Clinical and Laboratory waste are disposed to Meikhtila Incinerator, approved for disposal by Meikhtila City Development Committee)	  Data of Waste Generation of STC (194-22) <table border="1"> <thead> <tr> <th>Category</th> <th>Waste Type</th> <th>Amount (kg)</th> <th>Percentage (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Solid Waste</td> <td>General Waste</td> <td>10,000</td> <td>50.00</td> </tr> <tr> <td>Construction Waste</td> <td>5,000</td> <td>25.00</td> </tr> <tr> <td>Industrial Waste</td> <td>5,000</td> <td>25.00</td> </tr> <tr> <td rowspan="2">Liquid Waste</td> <td>Wastewater</td> <td>10,000</td> <td>50.00</td> </tr> <tr> <td>Chemical Waste</td> <td>5,000</td> <td>25.00</td> </tr> <tr> <td rowspan="2">Gas Waste</td> <td>Exhaust Gas</td> <td>10,000</td> <td>50.00</td> </tr> <tr> <td>Other Gas</td> <td>5,000</td> <td>25.00</td> </tr> </tbody> </table>	Category	Waste Type	Amount (kg)	Percentage (%)	Solid Waste	General Waste	10,000	50.00	Construction Waste	5,000	25.00	Industrial Waste	5,000	25.00	Liquid Waste	Wastewater	10,000	50.00	Chemical Waste	5,000	25.00	Gas Waste	Exhaust Gas	10,000	50.00	Other Gas	5,000
Category	Waste Type	Amount (kg)	Percentage (%)																											
Solid Waste	General Waste	10,000	50.00																											
	Construction Waste	5,000	25.00																											
	Industrial Waste	5,000	25.00																											
Liquid Waste	Wastewater	10,000	50.00																											
	Chemical Waste	5,000	25.00																											
Gas Waste	Exhaust Gas	10,000	50.00																											
	Other Gas	5,000	25.00																											

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	Identify disposal routes (including transport options and disposal sites) for all wastes generated;	Identified waste streams (See Figure-11 & 12 for waste collection point and disposal site)	 <pre> graph TD A[Is it Hazardous Waste?] -- Yes --> B[Is it flammable?] A -- No --> C[Can it be counter-transported?] B -- Yes --> D[Is it flammable?] B -- No --> E[Is it flammable?] D -- Yes --> F[Is it flammable?] D -- No --> G[Is it flammable?] E -- Yes --> H[Is it flammable?] E -- No --> I[Is it flammable?] F -- Yes --> J[Is it flammable?] F -- No --> K[Is it flammable?] G -- Yes --> L[Is it flammable?] G -- No --> M[Is it flammable?] H -- Yes --> N[Is it flammable?] H -- No --> O[Is it flammable?] I -- Yes --> P[Is it flammable?] I -- No --> Q[Is it flammable?] J -- Yes --> R[Is it flammable?] J -- No --> S[Is it flammable?] K -- Yes --> T[Is it flammable?] K -- No --> U[Is it flammable?] L -- Yes --> V[Is it flammable?] L -- No --> W[Is it flammable?] M -- Yes --> X[Is it flammable?] M -- 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	Segregate wastes and recycle wherever possible;	Segregated scrap materials for resale and reuse (See Figure-13 for Scrap Yard Area)	 
	Hazardous wastes should be segregated and disposed separately from non-hazardous wastes using a license contractor;	Hazardous waste treatment by DOWA and non-hazardous waste, municipal waste disposed at Temporary Non-hazardous solid waste storage area. Medical and laboratory waste dispose to Meikthila Incinerator, approved by Meikthila City Development Committee)	
	Hazardous wastes shall be labelled and stored in sealed containers that are stored on bunded hardstand. Hazardous wastes that are unsuitable for disposal in the cement kiln (such as waste oil drums) shall be returned to the manufacturer or trucked to Mandalay for appropriate disposal at a hazardous waste facility;	Hazardous waste is collected and deposited to dispose to Meikthila Incinerator, approved by Meikthila City Development Committee.	 
	Waste oil should be used for kiln start-up;	Resale by Warehouse Department (WHS)	

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Organic waste for composting or use as animal feed in nearby villages;	Organic waste (vegetables waste) are collected and composed to use as a fertilizer. Organic waste (food waste) are collected by locals for as animal feed.	
Waste suitable for use as fuel should be considered; and	Used waste oil resale to local merchant	
The existing landfill is not lined and should be only used for inert (non-reactive) and non-hazardous waste only.	Implemented (Constructed Old Temporary Non-hazardous solid storage area for disposing Non-hazardous waste and operated it from 2012 to June 2019. Replantation in old place after closure. After inspection of New Temporary Non-hazardous solid storage area from ECD and governmental organizations in 5 July 2019, operate that one until now.)	   Former landfill was backfilled with top soil and conducted re-plantation. Constructed Temporary Solid Non-hazardous waste storage area adjacent with the first. Temporary Solid Non-hazardous waste storage inspected by ECD and other government entities for the approval of EIA.

3.4.4 Evaluation

Implementing principles of the waste hierarchy in the most responsible manner (reduce, reuse, recycle, reclaim, dispose) in the plant site by conducting in-house training for hazardous and non-hazardous waste management, tool box talk, delivering pamphlet, offering waste bin in each plant site department and accommodation area, undertaking simultaneous mass housekeeping campaigns occasionally, using waste manifest form, daily conducting housekeeping in the site and surrounding area to get awareness on waste reduction, segregation, collection and disposal practices that avoid impacts on the physical, biophysical and social environments.

Figure – 14: Training Record

General Waste Management & Housekeeping Training



Training Title	General Waste Management & Housekeeping
Trainer	Daw Yuzana Wai
Date	24 th March 2025
# to be trained	87 (HODs, Managers, TLs)
Leave	8
Absent	6
Attended	73



4. Biodiversity Action Plan Implementation

STC is continuous implementing Biodiversity Action Plan (BAP) with regular Transect Survey, Invasive Survey, Wildlife Market Survey, maintaining the Ecosystem Restoration Plantations and 3 nurseries, and raising biodiversity conservation activities around the Limestone and Mudstone Quarry operation.

4.1 Transact Survey

A transact survey was carried out in the limestone quarry area of the cement plant as part of the environmental monitoring program, with a focus on assessing local biodiversity and habitat conditions. The survey was conducted along predefined transect lines across disturbed and undisturbed areas surrounding the quarry. One of the key observations during the survey was the presence of migratory bird species utilizing the area as a seasonal stopover or feeding ground, indicating that the habitat remains in relatively good ecological condition. Their presence suggests minimal impact from quarry operations and highlights the need for continued implementation of the Biodiversity Action Plan (BAP) to preserve and enhance habitat quality.

Figure – 15: Migratory Birds Records from Transact Survey



Black Hooded Oriole



Blue Rock Thrush



Greenish warbler



Grey Headed Paraket



Black-winged Cuckoo shrike



Red Vented Bulbul

Table – 27: Wildlife Records from Transact Survey

No.	Common Name	Scientific Name	Family	IUCN Status (version 2024-2)	Types of Occurrence
1	Black Hooded Oriole	<i>Oriolus xanthornus</i>	Oriolidae	Least Concern	Rest
2	Blue Rock Thrush	<i>Monticola solitarius</i>	Muscicapidae	Least Concern	Rest
3	Greenish warbler	<i>Phylloscopus trochiloides</i>	Phylloscopidae	Least Concern	Rest
4	Grey Headed Paraket	<i>Psittacula finschii</i>	Psittaculidae	<i>Near Threatened</i>	Rest
5	Lineated Barbet	<i>Psilopogon lineatus</i>	Megalaimidae	Least Concern	Rest
6	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Least Concern	Rest
7	Black-winged Cuckooshrike	<i>Lalage melaschistos</i>	Campephagidae	Least Concern	Feeding
8	Red Muntjac	<i>Muntiacus muntjak</i>	Cervidae	Least Concern	Feces

4.2 Ecosystem Restoration Plantations

STC has successfully implemented an ecosystem restoration initiative by establishing plantations for land leased agreement with the government since 2016. The maintenance of these plantations is diligently carried out through routine operations, including weeding, patching, and fire protection across all areas.

Table-28: Ecosystem Restoration Plantation List by years

No.	Year	Acre	No. of trees	Remark
1	2016	33	17820	
2	2017	15	5950	
3	2018	50	60500	
4	2019	115	50100	
5	2020	150	81100	
6	2021	150	81100	
7	2023	65	35100	
	2024 (Total)	578	331670	

Table-29: Maintenance of Ecosystem Restoration Plantations (ERP)

Location	Particular	Patched Area	Nov 2024	Dec 2024	Jan 2025	Feb 2025	March 2025	Apr 2025
			-	3rd Weeding	Weeding for Fire Protection	Road Clearing for Fire Protection	Fire Protection Activities	Fire Protection Activities
Near Apache	ERP 33 Ac	7 Ac	-	7 Ac	7 Ac	7 Ac	-	-
Near Apache	ERP 65 Ac	33 Ac	-	33 Ac	33 Ac	33 Ac	-	-
South Pyi Nyaung	ERP 100 Ac	16 Ac	-	16 Ac	16 Ac	16 Ac	16 Ac	16 Ac
		9 Ac	-	9 Ac	9 Ac	9 Ac	9 Ac	9 Ac
Wundwin	ERP 25 Ac	25 Ac	-	25 Ac	25 Ac	25 Ac	25 Ac	25 Ac
Mahlaing	ERP 40 Ac	40 Ac	-	40 Ac	40 Ac	40 Ac	40 Ac	40 Ac

During the reporting period from November 2024 to April 2025, ecosystem restoration plantations (ERP) were maintained and protected through scheduled weeding and fire prevention activities across various locations. At the Apache site, a total of 40 acres underwent third weeding in December, followed by repeated fire protection activities from January to February. In South Pyi Nyaung, 100-acre ERP site received consistent maintenance, with fire protection measures conducted monthly from January through April. Similarly, the ERP site in Wundwin (25 acres) and Mahlaing (40

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acres) were consistently managed throughout the reporting period, with weeding and fire protection actions conducted from December onward. These activities contributed to the ongoing preservation and resilience of restored ecosystems in areas impacted by quarry operations.

Figure – 16: Maintenance activities at Ecosystem Restoration Plantations



STC took zero burning practice in all plantation to protect carbon emission from our activities. It may lead to develop slow growth of some species such as Kyun and Myanmar Kokko. The grow rate of Sein Pan is the best growth rate that average is about 7 ft in South Pyi Nyaung plantation. Mazili grow rate is the best in plantation 65 acre near cement plant. Padauk was damage due to domestic buffalo from near village. STC will mitigate to get better growth rate plantation in next year by changing of planting pattern, selection of species, preparation of soil before planting.

STC has operated fire protection roads for all patched area in ecosystem restoration plantations to protect forest fire in summer season. STC use local contractors to give job opportunity from our activities.

4.3 Biodiversity Awareness Training

STC conducted in-house training sessions on the Biodiversity Policy and Action Plan for new employees, as well as biodiversity awareness programs for local communities, particularly children, in Ku Pyin and Pyi Nyaung Villages. These programs aimed to enhance understanding of local wildlife species found in and around the STC and STM project areas. As part of the awareness activities, a coloring contest was organized for children, with awards presented to outstanding participants. The children actively engaged in the program, contributing to its success and fostering greater appreciation for biodiversity conservation.

Figure – 17: Biodiversity Awareness Training Records

Biodiversity Policies & Action Plan Training to All STBM New Employees

Training Title	Biodiversity Polices & Action Plan (Annual Training)
Trainer	Naing Htay Linn (Environmental Executive)
Number of Training	3 Times
Date	12, 13 December 2024
Number of Attendance	81 persons
Status of Completed	Completed 76 persons among 81 persons (93 % Completed)
Trained Dept	ADM, BDD, , CPP, ELE, F&A, FME, HME, HRD, HSE, LGS, LQC, MNE, PCM, PME, PRD, SLE, WHS
Training Location	Main Office, Training Room



Biodiversity Policies & Action Plan Training



- To aware the STC's Biodiversity Action Plan and Biodiversity Policies
- To raise awareness continuously for the conservation of forest, biodiversity (flora and fauna) and surrounding environment areas;
- To encourage local people and staffs not to conduct illegal logging activities and poaching.
- To monitor signs of potential wildlife conflict, illegal logging and poaching at project area regularly.

Awareness Raising Training At Pyi Nyaung Village & Ku Pyin Village

Title	Awareness for King Cobra (<i>Ophiophagus hannah</i>) & Coloration Competition		Awareness for Shan State Langur (<i>Trachypitecus phayrei</i> spp. <i>shanicus</i>) & Coloration Competition	
Date	Conducted on 21 st Jan 2025	Conducted on 5 th February 2025	Conducted on 26 th March 2025	Conducted on 28 th April 2025
Audience	Grade – 1 Students (Male-16/Female-12)	Grade – 1 Students (Male-14/ Female-14)	Grade – 2, 3, 4 Students (Male-15/Female-5)	Grade – 1, 2, 3, 4 & 5 Students (Male-11/Female-15)
Location	At Ku Pyin Village – Basic Education Middle Branch School	At Pyi Nyauung Village – Information Center & Library	At Ku Pyin Village – Monastery	At Pyi Nyauung Village – Information Center & Library



5. Corporate Social Responsibility

STC cement plant implements Corporate Social Responsibility (CSR) to communities and release newsletter in quarterly, see in Appendix – D.

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6. Occupational Health and Safety

Workers are at risk of occupational health and safety incidents. Such incidents may be linked to the physical environment in which they operate, the procedures they have to abide by or the on-site health and safety culture.

Shwe Taung has existing occupational health and safety policies and procedures in place at the mudstone quarry and these are applicable for the expansion project. These procedures include requirements in terms of operational safety (blasting, excavator, ladder, crane and forklift management, working at height, personal protective equipment use, lifting operation, emergency management, etc.).

Generally, there is one to two daytime blasting occurred at limestone quarry within two to three months. Blasting is thus infrequent and will be managed under the Standard Operating Procedure (SOP) for blasting and excavation to ensure safety of staff and community.

6.1 Fire Safety Measures

In compliance with the directives of the Myanmar Fire Services Department, STC has implemented a series of fire safety measures to mitigate fire hazards in the workplace. These measures include conducting regular fire drills and maintaining firefighting equipment.

The main objective of regular fire drills is to ensure all staff are familiar with fire safety protocols and the use of firefighting equipment. Training were conducted to familiarize staff with the operation of a fire truck in case of an emergency. Moreover, all employees were trained on the correct procedures to follow upon hearing the fire alarm. This includes how to safely evacuate to the nearest assembly area within a short timeframe. Staff were also trained to identify and use firefighting facilities such as fire hydrants, fire extinguishers, and other related equipment. Activities during the drill were meticulously documented, and photographs were taken to provide a visual record of the procedures and participation. Please see the updated "Emergency Preparedness Fire Drill Exercise Reports" in "Appendix – E"

6.2 Occupational Hazard Prevention and First Aid Training

Ensuring the safety and well-being of our employees is paramount. STC conducts comprehensive training programs focused on occupational hazard prevention and first aid. These programs are meticulously documented with detailed procedures and photographic evidence to uphold high standards of health and safety compliance.

OHS training at STC encompasses a broad spectrum of critical safety topics. Employees receive training on energy isolation to prevent accidental startups, and on confined space and rescue equipment to ensure safe operations in restricted areas. Office safety training covers best practices for maintaining a safe work environment, while working at height training emphasizes the use of proper safety measures and equipment. Training for riggers and signalmen ensures safe rigging practices and effective communication during lifting operations. Hot work training covers procedures and precautions for tasks involving open flames or heat, and safety inductions provide new employees with essential safety knowledge.

Additional training includes belt conveyor guarding and machine cover to enhance machinery safety, first aid for immediate response to injuries, and scaffolding safety for the proper erection and use of scaffolds. Programs such as "Take 2 Minutes" encourage employees to assess risks before starting tasks, and safety interaction and observation promote proactive safety discussions. Electrical safety training addresses procedures for working with electrical systems, while manual handling training teaches proper techniques to prevent injuries. Risk management training focuses on identifying, assessing, and mitigating workplace risks.

Internally, STC conduct annual employee safety inductions to refresh safety protocols, permit to work training to ensure understanding of the permit system for hazardous tasks, and safe work procedure training. Risk assessment training is provided to develop techniques for evaluating and mitigating risks. Lototo (Lock Out, Tag Out, Try Out) training ensures the safe de-energization of

equipment, and specific electrical training addresses managing electrical hazards. Regular office safety training and fire drills are also conducted to reinforce these practices.

A key component of STC's training is first aid. First aid training program equips employees with the skills necessary to provide immediate assistance in the event of an injury or health emergency. This includes basic first aid techniques, CPR, and the use of first aid equipment. Employees learn how to respond to a variety of medical situations, ensuring that they are prepared to act swiftly and effectively. This training is crucial in minimizing the impact of workplace injuries and can be life-saving in critical situations. Moreover, to safeguard occupational health, STC collaborates with the Social Security Board to conduct health check-ups using a mobile medical unit and arranges necessary medical care for employees as needed.

Figure –18: OHS, First Aid Trainings Records and Medical check-ups from Ministry of Health



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7. Conclusion and Recommendation

STC cement plant demonstrates the implementation of Environment Monitoring Plan in which they are operating and has properly assessed the key potential environmental and social impacts associated with the cement plant operation. It is ensuring that the Myanmar environmental legislative compliance and IFC standards of good practice during the cement plant expansion project and operations in Thazi Township, Mandalay Region.

Mitigation measures are properly implemented as per stated in EMP, it is expected that the environmental and social impacts are managed by STC with robust environmental management system that is implemented by a well-resourced, integrated and competent HSE staffs as per compliance of STC Cement Plant EIA report.

The Environment Management Plan concludes that no major direct impacts are anticipated from this Project and all environmental impacts have been properly and progressively mitigated. These monitoring results will be properly communicated to stakeholders, especially local community, as per Stakeholders Engagement Plan. Moreover, biannual environmental monitoring reports are disclosed to community at Information Centers in Pyi Nyaung and Ku Pyin villages and has uploaded in Apache Cement Website <https://www.apachecement.com/> . The “Status of Cement Plant Biannual Environmental Monitoring Reports Submission to ECD” can be seen in the Appendix-A3. Monitoring photo records can be seen in the Appendix-F.

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8. Appendix

APPENDIX-A

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX-A1

Submission Letter for Cement ECC Extension



အစီရင်ခံစာ (၁၀) စောင် ကို မိတ္ထီလာခရိုင်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၊ လက်ထောက်ညွှန်ကြားရေးမှူးရုံးသို့ မပျက်မကွက် အစီရင်ခံစာတင်ပြထားရှိပြီး ဖြစ်ပါသည်။

၂။ ယခုအခါ မိမိတို့ Shwe Taung Cement Co., Ltd အနေဖြင့် မန္တလေးတိုင်းဒေသကြီး၊ သာစည်မြို့နယ်၊ ကူပြင်ကျေးရွာအုပ်စုအတွင်း တစ်ရက်လျှင် ဘီလပ်မြေ တန် ၂၈၀၀ မှ တန် ၇၂၀၀ အထိ တိုးချဲ့တည်ဆောက်ခြင်းနှင့် ထုတ်လုပ်ခြင်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာ၏ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာဆောင်ရွက်မှု သက်သေခံလက်မှတ် (Environmental Compliance Certificate-ECC) မှာ ၁၄-၁၁-၂၀၂၄ ရက် နေ့တွင်သက်တမ်းကုန်ဆုံးသွားပါသဖြင့် အဆိုပါ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာလိုက်နာဆောင်ရွက်မှု သက်သေခံ လက်မှတ်အား သက်တမ်းတိုး ခွင့်ပြုနိုင်ပါရန် အောက်ဖော်ပြပါ လိုအပ်သောအချက်အလက်များနှင့်တကွ ပူးတွဲတင်ပြ အပ်ပါသည်။

စဉ်	အကြောင်းအရာ	လက်ရှိ အခြေအနေ
(က)	လက်ရှိ စီမံကိန်းအဆိုပြုသူအမည် ပြောင်းလဲမှု ရှိ/မရှိ	စီမံကိန်း အဆိုပြုသူအမည် ပြောင်းလဲမှု မရှိပါ။
(ခ)	အဆိုပြုစီမံကိန်းသည် လက်ရှိအချိန်တွင် တည်နေရာ ပြောင်းလဲမှု ရှိ/မရှိ၊ စီမံကိန်းတိုးချဲ့ ဆောင်ရွက်ခြင်း ရှိ/မရှိနှင့် ထုတ်လုပ်မှုလုပ်ငန်းစဉ်ပမာဏ ပြောင်းလဲခြင်း ရှိ/မရှိ	စီမံကိန်း တည်နေရာ ပြောင်းလဲမှု မရှိပါ။ စီမံကိန်း တိုးချဲ့ ဆောင်ရွက်ခြင်း မရှိပါ။ ထုတ်လုပ်မှုလုပ်ငန်းစဉ် ပမာဏ ပြောင်းလဲခြင်း မရှိပါ။
(ဂ)	ခွင့်ပြုမိန့်/ လုပ်ငန်းလိုင်စင် ထုတ်ပေးထားသည့် ဌာနများ၏ သက်တမ်းရှိ ခွင့်ပြုမိန့်/ လုပ်ငန်းလိုင်စင် အထောက်အထားများ	Line-1 နှင့် Line-2 တို့အတွက် စက်မှုလုပ်ငန်း မှတ်ပုံတင်လက်မှတ်များ ကို ပူးတွဲ (၁) ဖြင့် ဖော်ပြထားပါသည်။ (Line-1 အတွက် စက်မှုလုပ်ငန်း မှတ်ပုံတင် လက်မှတ် သက်တမ်းတိုးကို ၁၉-၁၂-၂၀၂၄ ရက်နေ့တွင် မိတ္ထီလာခရိုင် စက်မှုကြီးကြပ်ရေးနှင့် စစ်ဆေးရေးဦးစီးဌာနမှ သက်တမ်းတိုး ကွင်းဆင်းစစ်ဆေး လာရောက်ခဲ့ပြီးဖြစ်ပြီး သက်တမ်းတိုး လက်မှတ်ရရှိနိုင်ရေးအတွက် အဆင့်ဆင့် ဆောင်ရွက်လျက်ရှိကြောင်း တင်ပြအပ်ပါသည်။)
(ဃ)	အတည်ပြုသည့် အချိန်မှစ၍ ယနေ့အထိ ဌာနသို့ (၆) လလျှင် တစ်ကြိမ် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ များ တင်ပြဆောင်ရွက်မှု အခြေအနေ	အတည်ပြုသည့် အချိန်မှစ၍ ယနေ့အထိ မိတ္ထီလာခရိုင်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာနသို့ (၆) လလျှင် တစ်ကြိမ်

		စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ (၁၀) စောင် တင်ပြထားရှိပြီး ဖြစ်ပြီး အစီရင်ခံ စာများကို ရည်ညွှန်း(၃)၊ (၄) နှင့် (၅) ပါစာများဖြင့် တင်ပြထားပါသည်။
(c)	စီမံကိန်းအဆိုပြုသူ၏ (အပြာရောင် နောက်ခံဖြင့် 1.3” x 1.5” အရွယ်အစား) ဓာတ်ပုံ (၃) ပုံ	ပူးတွဲ (၂) ဖြင့် တင်ပြအပ်ပါသည်။

ပူးတွဲ (၁) - Line-1 နှင့် Line-2 တို့အတွက် စက်မှုလုပ်ငန်း မှတ်ပုံတင်လက်မှတ်များ

ပူးတွဲ (၂) - စီမံကိန်းအဆိုပြုသူ၏ ဓာတ်ပုံ (၃) ပုံ

လေးစားစွာဖြင့်



(ကျော်နိုင်စိုး)

ဒုတိယအုပ်ချုပ်မှုဒါရိုက်တာ

ရွှေတောင်ဘိလပ်မြေကုမ္ပဏီလီမိတက်



- မိတ္တူ - လက်ထောက်ညွှန်ကြားရေးမှူးရုံး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ မိတ္ထီလာခရိုင်
- ညွှန်ကြားရေးမှူးချုပ်ရုံး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ နေပြည်တော်
 - ရုံးလက်ခံ

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APPENDIX-A2

Mitigation Measures for Air Quality Impact

Figure: Water Suppression Map to mitigate dust emission in plant site



Table: Water Suppression Record from November to April 2025 to mitigate dust suppression in plant site.

Water Suppression Record 2024-2025												
Month	Vehicle No. Remark											
	5B -4174 (Capacity: 2200 gal)		6C-1052 (Capacity: 4000 gal)		2R-5191 (Capacity: 800 gal)		1P-4508 (Capacity: 4500 gal)		2R-5193 (Capacity: 800 gal)		7G-9512 (Capacity: 2800 gal)	
	Total Load	Water Consumption	Total Load	Water Consumption	Total Load	Water Consumption	Total Load	Water Consumption	Total Load	Water Consumption	Total Load	Water Consumption
Nov 2024	-	-	19	76000	-	-	110	495000	214	171200	-	-
Dec 2024	-	-	55	220000	54	43200	110	495000	291	232800	-	-
Jan 2025	82	180400	-	-	-	-	109	450500	224	179200	217	607600
Mar 2025	177	389,400	-	-	-	-	110	495,000	273	218,400	124	347,200
Apr 2025	39	85,800	60	240,000	-	-	110	495,000	193	154,400	144	403,200

Note: Source of water supply from Sedimentation Ponds

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Table: Bag Filter Maintenance Record

No	Month	Location	Qty	Unit
1	May	Line-1, Coal Mill Bag Filter & Cage	1536	Nos
2	June	Cement Mill-2, Bag Filter & Cage	1792	Nos
3	October	Cement Mill-1, Bag Filter & Cage	256	Nos

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APPENDIX-A3

Status of Cement Biannual Environmental Monitoring Reports Submission to ECD

Table: Status of Cement Biannual Environmental Monitoring Reports Submission to ECD

ဝန်ကြီးရုံး အတည်ပြုချက် ရရှိသည့် ရက်စွဲ	(၆) လပတ် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ တင်ပြသည့် ရက်စွဲ	(၆) လပတ် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ တင်ပြသည့် အကြိမ်အရေအတွက်	စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာ တင်ပြသည့် အချိန်ကာလ အပိုင်းအခြား	မှတ်ချက်
၂၂.၁၁.၂၀၁၉	၂၉.၂.၂၀၂၄	ပထမအကြိမ်	၂၀၂၀ ခုနှစ် ဇန်နဝါရီလ မှ ၂၀၂၀ ခုနှစ် ဇွန်လအထိ	
		ဒုတိယအကြိမ်	၂၀၂၀ ခုနှစ် ဇူလိုင်လ မှ ၂၀၂၀ ခုနှစ် ဒီဇင်ဘာလအထိ	
		တတိယအကြိမ်	၂၀၂၁ ခုနှစ် ဇန်နဝါရီလ မှ ၂၀၂၁ ခုနှစ် ဇွန်လအထိ	
		စတုတ္ထအကြိမ်	၂၀၂၁ ခုနှစ် ဇူလိုင်လ မှ ၂၀၂၁ ခုနှစ် ဒီဇင်ဘာလအထိ	
		ပဉ္စမအကြိမ်	၂၀၂၂ ခုနှစ် ဇန်နဝါရီလ မှ ၂၀၂၂ ခုနှစ် ဇွန်လအထိ	
		ဆဌမအကြိမ်	၂၀၂၂ ခုနှစ် ဇူလိုင်လ မှ ၂၀၂၂ ခုနှစ် ဒီဇင်ဘာလအထိ	
		သတ္တမအကြိမ်	၂၀၂၃ ခုနှစ် ဇန်နဝါရီလ မှ ၂၀၂၃ ခုနှစ် ဇွန်လအထိ	
		အဋ္ဌမအကြိမ်	၂၀၂၃ ခုနှစ် ဇူလိုင်လ မှ ၂၀၂၃ ခုနှစ် ဒီဇင်ဘာလအထိ	
	၂၈.၆.၂၀၂၄	နဝမအကြိမ်	၂၀၂၃ ခုနှစ် နိုဝင်ဘာလမှ ၂၀၂၄ ခုနှစ် ဧပြီလအထိ	ဝန်ကြီးရုံးအတည်ပြုသည့် ရက်စွဲအရ ပြန်လည်ညှိနှိုင်း ပြင်ဆင်တင်ပြခဲ့ပါ သည်။
	၂၉.၁၁.၂၀၂၄	ဒဿမအကြိမ်	၂၀၂၄ ခုနှစ် မေလမှ ၂၀၂၄ ခုနှစ် အောက်တိုဘာလအထိ	
	၂၀၂၅ ခုနှစ် မေလ	၁၁ ကြိမ်မြောက်	၂၀၂၄ ခုနှစ် နိုဝင်ဘာလမှ ၂၀၂၅ ခုနှစ် ဧပြီလအထိ	
	ဆက်လက်တင်ပြရန်	၁၂ ကြိမ်မြောက်	၂၀၂၅ ခုနှစ် မေလမှ ၂၀၂၅ ခုနှစ် အောက်တိုဘာလအထိ	၂၀၂၅ ခုနှစ် နိုဝင်ဘာလအတွင်း တင်ပြရန်

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APPENDIX-B

Water Quality Results

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APPENDIX - (B-1)

(Ku Pyin Stream Water Quality Results)



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water	Stream Water
Location	Ku Pyin Village
Date of sample collection	22.11.2024
Date of sample examination	23.11.2024
Date of completing	26.11.2024

Description of Analysis	Analysis Results	WHO Drinking water Guideline
p ^H	8.3	6.5 ~8.5
Colour(True)	5 PCU	15 PCU
Turbidity	0.48 NTU	5 NTU
Sulphate(as SO ₄)	10 mg/l	200mg/l
Total Suspended Solid(TSS)	1 mg/l	50mg/l
Nitrate	11.9 mg/l	50mg/l

Tested by

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By

Ye Naing Soe
Team Leader

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Stream Water
Location Ku Pyin Village
Date of sample collection 13.12.2024
Date of sample examination 14.12.2024
Date of completing 18.12.2024

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.4	6.5 ~ 8.5	
Colour(True)	0 PCU	15 PCU	
Turbidity	1.18 NTU	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	10 mg/l	200mg/l	
Total Suspended Solid(TSS)	0 mg/l	50mg/l	
Nitrate	8.1 mg/l	50mg/l	

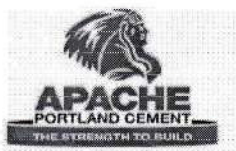
Tested by

Han Ko Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By

Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Water Quality Test Report

Nature of water Stream Water
Location Ku Pyin Village
Date of sample collection 21.01.2025
Date of sample examination 22.01.2025
Date of completing 23.01.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.9	6.5 ~ 8.5	
Colour(True)	0 PCU	15 PCU	
Turbidity	2.25 NTU	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	10 mg/l	200mg/l	
Total Suspended Solid(TSS)	6 mg/l	50mg/l	
Nitrate	9.3 mg/l	50mg/l	

Tested by

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By

Ye` Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Stream Water
Location Ku Pyin Village
Date of sample collection 17.04.2025
Date of sample examination 17.04.2025
Date of completing 19.04.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.4	6.5 ~ 8.5	
Colour(True)	5	15 PCU	
Turbidity	2.11	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	10	200mg/l	
Total Suspended Solid(TSS)	6	50mg/l	
Nitrate	4	50mg/l	

Tested by

Thet Naing Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.

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	Bi-Annual Environmental Monitoring Report	

APPENDIX - (B-2)

(Ye Shin Stream Water Results)



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water	Stream Water
Location	Near Pyin Nyaung Village
Date of sample collection	22.11.2024
Date of sample examination	23.11.2024
Date of completing	26.11.2024

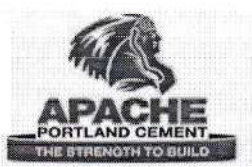
Description of Analysis	Analysis Results	WHO Drinking water Guideline
p ^H	8	6.5 ~ 8.5
Colour(True)	0 PCU	15 PCU
Turbidity	3.41 NTU	5 NTU
Sulphate(as SO ₄)	20 mg/l	200mg/l
Total Suspended Solid(TSS)	12 mg/l	50mg/l
Nitrate	6.3 mg/l	50mg/l

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water	Stream Water
Location	Near Pyin Nyaung Village
Date of sample collection	13.12.2024
Date of sample examination	14.12.2024
Date of completing	18.12.2024

Description of Analysis	Analysis Results	WHO Drinking water Guideline
p ^H	7.1	6.5 ~ 8.5
Colour(True)	0 PCU	15 PCU
Turbidity	2.06 NTU	5 NTU
Calcium Hardness	-	500 mg/l as CaCO ₃
Chloride(as Cl)	-	250mg/l
Sulphate(as SO ₄)	10 mg/l	200mg/l
Total Suspended Solid(TSS)	3 mg/l	50mg/l
Nitrate	4.2 mg/l	50mg/l

Tested by,

Han Ko Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water **Stream Water**
Location **Near PN Village**
Date of sample collection **21.01.2025**
Date of sample examination **22.01.2025**
Date of completing **23.01.2025**

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.8	6.5 ~ 8.5	
Colour(True)	0 PCU	15 PCU	
Turbidity	0.71 NTU	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	10 mg/l	200mg/l	
Total Suspended Solid(TSS)	2 mg/l	50mg/l	
Nitrate	9.9 mg/l	50mg/l	

Tested by,

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



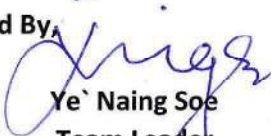
Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water	Stream Water
Location	Near Pyin Nyaung Village
Date of sample collection	21.02.2025
Date of sample examination	22.02.2025
Date of completing	26.02.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline
pH	7.3	6.5 ~ 8.5
Colour(True)	5 PCU	15 PCU
Turbidity	0.6 NTU	5 NTU
Calcium Hardness	-	500 mg/l as CaCO ₃
Chloride(as Cl)	-	250mg/l
Sulphate(as SO ₄)	20 mg/l	200mg/l
Total Suspended Solid(TSS)	2 mg/l	50mg/l
Nitrate	3.3 mg/l	50mg/l

Tested by, 
Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By, 
Ye Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water	Stream Water
Location	Near Pyin Nyaung Village
Date of sample collection	18.03.2025
Date of sample examination	19.03.2025
Date of completing	21.03.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline
pH	7.7	6.5 ~ 8.5
Colour(True)	20	15 PCU
Turbidity	0.85	5 NTU
Calcium Hardness	-	500 mg/l as CaCO ₃
Chloride(as Cl)	-	250mg/l
Sulphate(as SO ₄)	10	200mg/l
Total Suspended Solid(TSS)	1	50mg/l
Nitrate	11.8	50mg/l

Tested by,

Han Ko Win
T- Leader

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye Naing Soe
Manager

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water	Stream Water
Location	Near Pyin Nyaung Village
Date of sample collection	17.04.2025
Date of sample examination	17.04.2025
Date of completing	19.04.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline
p ^H	7.2	6.5 ~ 8.5
Colour(True)	5	15 PCU
Turbidity	0.83	5 NTU
Calcium Hardness	-	500 mg/l as CaCO ₃
Chloride(as Cl)	-	250mg/l
Sulphate(as SO ₄)	10	200mg/l
Total Suspended Solid(TSS)	3	50mg/l
Nitrate	5.2	50mg/l

Tested by,

Thet Naing Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By, -

Ye Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX - (B-3) **(Supply Water (Lower Reservoir))**



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Lower Reservoir/Non Potable Water
Location Infront of Pump Station.
Date of sample collection 22.11.2024
Date of sample examination 23.11.2024
Date of completing 26.11.2024

Description of Analysis	Analysis Results	WHO Drinking water Guideline
pH	8.2	6.5 ~8.5
Colour(True)	20 PCU	15 PCU
Turbidity	2.8 NTU	5 NTU
Sulphate(as SO ₄)	10 mg/l	200mg/l
Total Suspended Solid(TSS)	11 mg/l	50mg/l
Nitrate	4.9 mg/l	50mg/l

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Lower Reservoir/Non Potable Water
Location Infront of Pump Station.
Date of sample collection 13.12.2024
Date of sample examination 14.12.2024
Date of completing 18.12.2024

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.8	6.5 ~8.5	
Colour(True)	20 PCU	15 PCU	
Turbidity	4.31 NTU	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	20 mg/l	200mg/l	
Total Suspended Solid(TSS)	16 mg/l	50mg/l	
Nitrate	4.7 mg/l	50mg/l	

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By

Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Lower Reservoir/Non Potable Water
Location Infront of Pump Station.
Date of sample collection 14.01.2025
Date of sample examination 15.01.2025
Date of completing 18.01.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.4	6.5 ~ 8.5	
Colour(True)	20 PCU	15 PCU	
Turbidity	5.56 NTU	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	20 mg/l	200mg/l	
Total Suspended Solid(TSS)	15 mg/l	50mg/l	
Nitrate	3.6 mg/l	50mg/l	

Tested by,

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Lower Reservoir/Non Potable Water
Location Infront of Pump Station.
Date of sample collection 21.02.2025
Date of sample examination 22.02.2025
Date of completing 26.02.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.7	6.5 ~ 8.5	
Colour(True)	35 PCU	15 PCU	
Turbidity	5.22 NTU	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	10 mg/l	200mg/l	
Total Suspended Solid(TSS)	17 mg/l	50mg/l	
Nitrate	4.8 mg/l	50mg/l	

Tested by,

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Lower Reservoir/Non Potable Water
Location Infront of Pump Station.
Date of sample collection 18.03.2025
Date of sample examination 19.03.2025
Date of completing 21.03.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
P ^H	8.6	6.5 ~ 8.5	
Colour(True)	55	15 PCU	
Turbidity	10.9	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	10	200mg/l	
Total Suspended Solid(TSS)	43	50mg/l	
Nitrate	13.5	50mg/l	

Tested by 

Thet Naing Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,


Ye' Naing Soe
Manager

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.
Lab & Quality Control Department

Water Quality Test Report

Nature of water Lower Reservoir/Non Potable Water
Location Infront of Pump Station.
Date of sample collection 17.04.2025
Date of sample examination 17.04.2025
Date of completing 19.04.2025

Description of Analysis	Analysis Results	WHO Drinking water Guideline	Remark
p ^H	7.6	6.5 ~ 8.5	
Colour(True)	30	15 PCU	
Turbidity	2.13	5 NTU	
Calcium Hardness	-	500 mg/l as CaCO ₃	no stock chemical
Chloride(as Cl)	-	250mg/l	no stock chemical
Sulphate(as SO ₄)	10	200mg/l	
Total Suspended Solid(TSS)	31	50mg/l	
Nitrate	6	50mg/l	

Tested by,

Thet Naing Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By, -

Ye' Naing Soe
Manager

Lab & QC Department
Shwe Taung Cement Co., Ltd.

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX - (B-4)
(Supply Water (Lower Reservoir))
Tested by External Laboratories

Report No. : GEM-LAB-202408095

Revision No. : 1

Report Date : 22 August, 2024

Application No. : 0235-C001

Test Report

Client Name : Shwe Taung Cement Co.,Ltd
Address : No.108, Corner of Min Ye Kyaw Swar Road & Hnin Si Gone Street, Saw Yan Paing (East) Ward, Alone
Project Name : Shwe Taung Cement Water Quality Test
Sample Description
Sample Name : Supply Water
Sample No. : W-2408079
Waste Profile No. : -

Sampling Date : 7 August, 2024
Sampling By : Withdraw GEM
Sample Received Date : 7 August, 2024
Analytical Date : 7-22/08/2024

No.	Parameter	Method	Unit	Result	LOQ
1	Temperature	Instrument Analysis Method	°C	26.8	0.0
2	pH	APHA 4500 H+ B (Electrometric Method)	-	8.31	0.00
3	SS	APHA 2540D (Dry at 103-105°C Method)	mg/l	12	-
4	BOD (5)	HACH Method 10099 (Respirometric Method)	mg/l	10.35	0.00
5	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	30.7	0.7
6	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	<3.1	3.1
7	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	<0.05	0.05
8	Ammonia	HACH Method 10205 (Silicylate TNT Plus Method)	mg/l	<0.02	0.02
9	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
10	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
11	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.010	0.010
12	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
13	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
14	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.010	0.010
15	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
16	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
17	Nickel	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
18	Silver	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
19	Iron	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.274	0.002
20	Cyanide	HACH 8027 (Pyridine -Pyrazalone Method)	mg/l	<0.002	0.002
21	Total Cyanide	Distillation Process: APHA 4500-CN- C. Total Cyanide after Distillation, Determining Cyanide Concentration Process: HACH 8027 (Pyridine -Pyrazalone Method)	mg/l	<0.002	0.002
22	Hexavalent Chromium (Cr6+)	ISO 11083:1994 (Determination of chromium(VI) Spectrometric method using 1,5-diphenylcarbazide)	mg/l	<0.05	0.05

REPORT RESULT IS ONLY OF THE SAMPLE SUBMITTED FOR ANALYSIS.

THIS ANALYSIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY OF
GOLDEN DOWA ECO-SYSTEM MYANMAR CO.,LTD.

Report No. : GEM-LAB-202408095

Revision No. : 1

Report Date : 22 August, 2024

Application No. : 0235-C001

Test Report

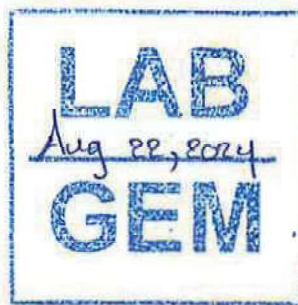
Client Name : Shwe Taung Cement Co., Ltd
Address : No.108, Corner of Min Ye Kyaw Swar Road & Hnin Si Gone Street, Saw Yan Paing (East) Ward, Alone
Project Name : Shwe Taung Cement Water Quality Test
Sample Description
Sample Name : Supply Water
Sample No. : W-2408079
Waste Profile No. : -
Sampling Date : 7 August, 2024
Sampling By : Withdraw GEM
Sample Received Date : 7 August, 2024
Analytical Date : 7-22/08/2024

No.	Parameter	Method	Unit	Result	LOQ
23	Fluoride	USEPA SPANDS 2 Method	mg/l	0.227	0.014
24	Total Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	0.1	0.1
25	Sulphide	HACH 8131 (USEPA Methylene Blue Method)	mg/l	0.019	0.005
26	Phenols	USEPA Method 420.1 (Phenolics (Spectrophotometric, Manual 4AAP With Distillation))	mg/l	0.006	0.002
27	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)	mg/l	54000.0	1.8

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Cherry Myint Thein
Assistant Manager

*** End Of Document ***

Approved By :

Ni Ni Aye Lwin Aug 22, 2024
Manager

WTL-RE-001

Issue Date - 01-12-2012
Effective Date - 01-12-2012
Issue No - 1.0/Page 1 of 2

W0824 167

WATER QUALITY TEST RESULTS FORM

Client Shwe Taung Cement
Nature of Water ဆည်ရေ
Location ပြည်ညောင်ကျေးရွာ၊ သာစည်မြို့နယ်။
Date and Time of collection 6.8.2024 (10:30 AM)
Date and Time of arrival at Laboratory 7.8.2024
Date and Time of commencing examination 8.8.2024
Date and Time of completing 9.8.2024

Results of Water Analysis

WHO Drinking Water Guideline (Geneva - 1993)

pH		6.5 - 8.5
Colour (True)	TCU	15 TCU
Turbidity	NTU	5 NTU
Conductivity	micro S/cm	
Total Hardness	mg/l as CaCO ₃	500 mg/l as CaCO ₃
Calcium Hardness	mg/l as CaCO ₃	
Magnesium Hardness	mg/l as CaCO ₃	
Total Alkalinity	mg/l as CaCO ₃	
Phenolphthalein Alkalinity	mg/l as CaCO ₃	
Carbonate (CaCO ₃)	mg/l as CaCO ₃	
Bicarbonate (HCO ₃)	mg/l as CaCO ₃	
Iron	0.88 mg/l	0.3 mg/l
Chloride (as CL)	mg/l	250 mg/l
Sodium Chloride (as NaCL)	mg/l	
Sulphate (as SO ₄)	mg/l	500 mg/l
Total Solids	mg/l	1500 mg/l
Total Suspended Solids	mg/l	
Total Dissolved Solids	mg/l	1000 mg/l
Manganese	mg/l	0.05 mg/l
Phosphate	mg/l	
Phenolphthalein Acidity	mg/l	
Methyl Orange Acidity	mg/l	
Salinity	ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature:

Name:

Hein
Zaw Hein Oo
B.Sc (Chemistry)
Sr.Chemist

Approved by

Signature:

Name:

Arin
Thinzar Theint Theint
B.E (Civil)
Assistant Technical Officer
ISO Tech Laboratory

(a division of WEG Co., Ltd.) **ISO Tech Laboratory**

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.

Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

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WATER QUALITY TEST RESULTS FORM

Client Shwe Taung Cement
Nature of Water ဆည်ရေ
Location ပြည်ညောင်ကျေးရွာ၊ သာစည်မြို့နယ်။
Date and Time of collection 6.8.2024 (10:30 AM)
Date and Time of arrival at Laboratory 7.8.2024
Date and Time of commencing examination 8.8.2024
Date and Time of completing 9.8.2024

Results of Water Analysis

WHO Drinking Water Guideline (Geneva - 1993)

Temperature (°C)		°C	
Fluoride (F)	0.4	mg/l	1.5 mg/l
Lead (as Pb)		mg/l	0.01 mg/l
Arsenic (As)	0.005	mg/l	0.01 mg/l
Nitrate (N.NO ₃)		mg/l	50 mg/l
Chlorine (Residual)	Nil	mg/l	
Ammonia Nitrogen (NH ₃)	0.15	mg/l	
Ammonium Nitrogen (NH ₄)		mg/l	
Dissolved Oxygen (DO)		mg/l	
Chemical Oxygen Demand (COD)		mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)		mg/l	
Cyanide (CN)	0.011	mg/l	0.07 mg/l
Zinc (Zn)		mg/l	3 mg/l
Copper (Cu)	Nil	mg/l	2 mg/l
Silica (SiO ₂)		mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature: Henry

Name:

Zaw Hein Oo
B.Sc (Chemistry)
Sr.Chemist
ISO Tech Laboratory

Approved by

Signature: Thinzar Theint Theint

Name:

Thinzar Theint Theint
B.E (Civil)
Assistant Technical Officer
ISO Tech Laboratory

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX - (B-5) **(Sedimentation Pond 5 Water Results)**



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Surface Water
Location Beside 103 & 501 Area
Date of sample collection 27.11.2024
Date of sample examination 28.11.2024
Date of completing 29.11.2024



Description of Analysis	Analysis Results	IFC Waste Water Guideline
pH	8.2	6-9
Total Suspended Solid(TSS)	35 mg/L	Max 50mg/L
Total Phosphorous	0.2 mg/L	2 mg/L
Total Nitrogen	2.03 mg/L	10mg/L
Total Nitrate	9 mg/L	44.29mg/L

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Surface Water
Location Beside 103 & 501 Area
Date of sample collection 17.12.2024
Date of sample examination 18.12.2024
Date of completing 20.12.2024



Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.5	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	15 mg/L	Max 50mg/L	
Total Nitrogen	1.94 mg/L	10mg/L	
Total Nitrate	8.6 mg/L	44.29mg/L	
Total Phosphorous	0.3 mg/L	2mg/L	

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

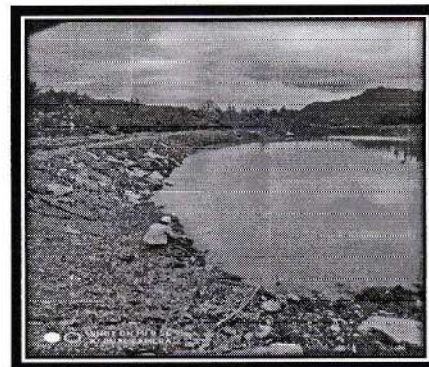


Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Surface Water
Location Beside 103 & 501 Area
Date of sample collection 14.01.2025
Date of sample examination 15.01.2025
Date of completing 19.01.2025



Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.4	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	46 mg/L	Max 50mg/L	
Total Nitrogen	0.65 mg/L	10mg/L	
Total Nitrate	2.9 mg/L	44.29mg/L	
Total Phosphorous	0.2 mg/L	2mg/L	

Tested by,

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.

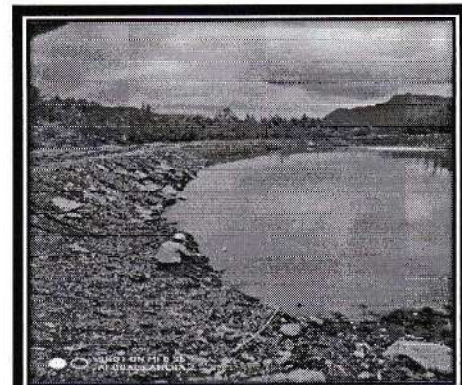


Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Surface Water
Location Beside 103 & 501 Area
Date of sample collection 16.02.2025
Date of sample examination 16.02.2025
Date of completing 20.02.2025



Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	23 mg/L	Max 50mg/L	
Total Nitrogen	0.86 mg/L	10mg/L	
Total Nitrate	3.8 mg/L	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.

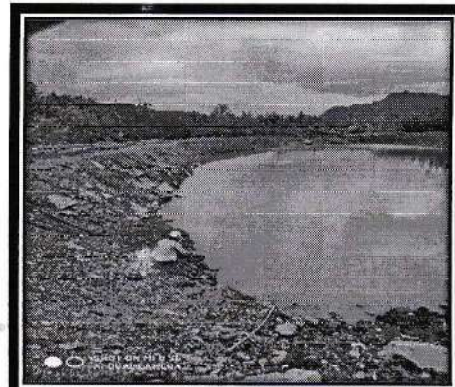


Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Surface Water
Location Beside 103 & 501 Area
Date of sample collection 15.03.2025
Date of sample examination 15.03.2025
Date of completing 20.03.2025



Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.2	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	25 mg/L	Max 50mg/L	
Total Nitrogen	2.09 mg/L	10mg/L	
Total Nitrate	9.3 mg/L	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

Thet Naing Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Surface Water
Location Beside 103 & 501 Area
Date of sample collection 16.04.2025
Date of sample examination 16.04.2025
Date of completing 18.04.2025



Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.5	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	36	Max 50mg/L	
Total Nitrogen	1.2	10mg/L	
Total Nitrate	5.3	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

Thet Naing Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager

Lab & QC Department
Shwe Taung Cement Co., Ltd.

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX - (B-6) **(Sedimentation Pond 7 Effluent Water Results)**



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Surface Water(Effluent Water)
Location	Between 401 & 405
Date of sample collection	27.11.2024
Date of sample examination	28.11.2024
Date of completing	29.11.2024

Description of Analysis	Analysis Results	IFC Waste Water Guideline
pH	8.5	6-9
Total Suspended Solid(TSS)	5 mg/L	Max 50mg/L
Total Phosphorous	0.4 mg/L	2 mg/L
Total Nitrogen	2.46 mg/L	10mg/L
Total Nitrate	10.9 mg/L	44.29mg/L

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Surface Water(Effluent Water)
Location	Between 401 & 405
Date of sample collection	17.12.2024
Date of sample examination	18.12.2024
Date of completing	20.12.2024

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	8.2	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	2 mg/L	Max 50mg/L	
Total Nitrogen	2.69 mg/L	10mg/L	
Total Nitrate	11.9 mg/L	44.29mg/L	
Total Phosphorous	0.2 mg/L	2mg/L	

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Surface Water
Location Between 401 & 405
Date of sample collection 14.01.2025
Date of sample examination 15.01.2025
Date of completing 19.01.2025



Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	8.1	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	10 mg/L	Max 50mg/L	
Total Nitrogen	0 mg/L	10mg/L	
Total Nitrate	0 mg/L	44.29mg/L	
Total Phosphorous	0.1 mg/L	2mg/L	

Tested by,

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Surface Water(Effluent Water)
Location	Between 401 & 405
Date of sample collection	16.02.2025
Date of sample examination	16.02.2025
Date of completing	20.02.2025

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	8.8	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	8 mg/L	Max 50mg/L	
Total Nitrogen	3.14 mg/L	10mg/L	
Total Nitrate	13.9 mg/L	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

for 

Han Ko Win
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,


Ye' Naing Soe
Manager

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Surface Water(Effluent Water)
Location	Between 401 & 405
Date of sample collection	15.03.2025
Date of sample examination	15.03.2025
Date of completing	20.03.2025

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	8.0	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	10 mg/L	Max 50mg/L	
Total Nitrogen	2.3 mg/L	10mg/L	
Total Nitrate	10.2 mg/L	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

Thet Naing Win
Associate
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Surface Water(Effluent Water)
Location	Between 401 & 405
Date of sample collection	16.04.2025
Date of sample examination	16.04.2025
Date of completing	18.04.2025

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.9	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	10	Max 50mg/L	
Total Nitrogen	1.7	10mg/L	
Total Nitrate	7.5	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

Thet Naing Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX - (B-7) **(Biotank Effluent Water Results)**



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Surface Water(Effluent Water)
Location	55 Acre (Bio Tank)
Date of sample collection	27.11.2024
Date of sample examination	28.11.2024
Date of completing	29.11.2024

Description of Analysis	Analysis Results	IFC Waste Water Guideline
pH	8.8	6-9
Total Suspended Solid(TSS)	63 mg/L	Max 50mg/L
Total Nitrogen	2.37 mg/L	10mg/L
Total Nitrate	10.5 mg/L	44.29mg/L
Total Phosphorous	1.2 mg/L	2mg/L

Tested by,

Han Ko Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Team Leader

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Effluent Water
Location	55 Acre (Bio Tank)
Date of sample collection	17.12.2024
Date of sample examination	18.12.2024
Date of completing	20.12.2024

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.2	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	73 mg/L	Max 50mg/L	
Total Nitrogen	10.16 mg/L	10mg/L	
Total Nitrate	45 mg/L	44.29mg/L	
Total Phosphorous	7.4 mg/L	2mg/L	

Tested by,

Han Ko Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Team Leader

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Waste Water
Location	55 Acre (Bio Tank)
Date of sample collection	14.01.2025
Date of sample examination	15.01.2025
Date of completing	19.01.2025

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	8.1	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	143 mg/L	Max 50mg/L	
Total Nitrogen	2.71 mg/L	10mg/L	
Total Nitrate	12 mg/L	44.29mg/L	
Total Phosphorous	3.4 mg/L	2mg/L	

Tested by,

Han Ko Win
Team Leader

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Waste Water
Location	55 Acre (Bio Tank)
Date of sample collection	22.02.2025
Date of sample examination	23.02.2025
Date of completing	25.02.2025

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.4	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	276 mg/L	Max 50mg/L	
Total Nitrogen	3.88 mg/L	10mg/L	
Total Nitrate	17.2 mg/L	44.29mg/L	
Total Phosphorous		2mg/L	no stock chemical

Tested by,

Han Ko Win
Team Leader

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager

Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water Waste Water
Location 55 Acre (Bio Tank)
Date of sample collection 15.03.2025
Date of sample examination 16.03.2025
Date of completing 20.03.2025

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.4	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	141 mg/L	Max 50mg/L	
Total Nitrogen	2.66 mg/L	10mg/L	
Total Nitrate	11.8 mg/L	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

Thet Naing Win
Chemist
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.



Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	Waste Water
Location	55 Acre (Bio Tank)
Date of sample collection	26.04.2025
Date of sample examination	27.04.2025
Date of completing	28.04.2025

Description of Analysis	Analysis Results	IFC Waste Water Guideline	Remark
pH	7.2	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biological Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	142	Max 50mg/L	
Total Nitrogen	8.85	10mg/L	
Total Nitrate	39.2	44.29mg/L	
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

Thet Naing Win
Chemist

Lab & QC Department
Shwe Taung Cement Co., Ltd.

Approved By,

Ye' Naing Soe
Manager
Lab & QC Department
Shwe Taung Cement Co., Ltd.

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED	 SHWE TAUNG CEMENT CO.,LTD.
	Bi-Annual Environmental Monitoring Report	

APPENDIX - (B-8) **(Biotank Sludge Results from External Laboratory)**

Report No. : GEM-LAB-202305002
Revision No. : 1
Report Date : 4 May, 2023
Application No. : 0235-C002

Analysis Report

Client Name : Shwe Taung Cement Co.,Ltd.
Address : Shwe Taung Cement Plant, Pyi Nyaung
Project Name : Shwe Taung Cement Samples

Sample Description

Sample Name : Bio-tank Sludge
Sample No. : S-2304001
Waste Profile No : -
Sampling Date : 24 April, 2022
Sampling By : Customer
Sample Received Date : 24 April, 2022
Analytical Date : 24/04-04/05/2023

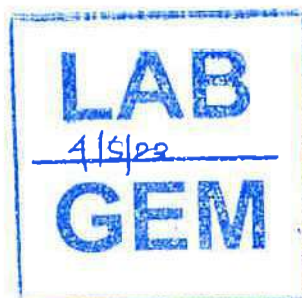
No.	Parameter	Method For Liquid Sample Preparation	Method of Measurement	Unit	Result	LOQ
1	Arsenic	EPA Method 3050 B (Acid Digestion of Sediments, Sludges, and Soils)	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/kg	≤0.34	0.34
2	Selenium			mg/kg	≤0.34	0.34
3	Zinc			mg/kg	47.736	0.068
4	Nickel			mg/kg	≤0.068	0.068
5	Copper			mg/kg	4.352	0.068
6	Cadmium			mg/kg	≤0.068	0.068
7	Mercury			mg/kg	≤0.068	0.068
8	Lead			mg/kg	≤0.068	0.068
9	Chromium			mg/kg	≤0.068	0.068
10	Total Coliform	APHA 9221B (Standard Total Coliform Fermentation Technique)		MPN Index/100ml	4900.0	1.8

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

EPA- The United States Environmental Protection Agency

Analysed By :

Cherry Myint Thein
Assistant Manager

Approved By :

Ni Ni Aye Lwin
Manager

	SHWE TAUNG CEMENT COMPANY LIMITED	 SHWE TAUNG CEMENT CO.,LTD.
	Bi-Annual Environmental Monitoring Report	

APPENDIX- C

Ambient Air Quality Results

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED	 SHWE TAUNG CEMENT CO.,LTD.
	Bi-Annual Environmental Monitoring Report	

APPENDIX - (C-1)

Ambient Air Quality Results of Plant Site



Environmental Report

Record Cnt 1440

Start Date 06-11-2024
2:05:00 PM

End Date 07-11-2024
2:04:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	5.27569	2.08472	0	.103534	63.1312	39.7736	.951388	.006687	99.75	20.45	245.747	.079166	10.2722	0	0	0	0
Max	52	18	0	.35	200	94	34	.13	100	22	359	2.4	10.6	0	0	0	0
Min	2	1	0	0	2	5	0	0	87	20	0	0	9.7	0	0	0	0
EPAS 919217	5.27569	2.08472	0	.103534	63.1312	39.7736	.951388	.006687	99.75	20.45	245.747	.079166	10.2722	0	0	0	0
	52	18	0	.35	200	94	34	.13	100	22	359	2.4	10.6	0	0	0	0
	2	1	0	0	2	5	0	0	87	20	0	0	9.7	0	0	0	0
Daily Tue, Jun 11, 2024	9.70756	3.43361	0	.126268	65.2453	46.1260	2.30252	.008184	100	20.2857	269.615	.128907	10.3783	0	0	0	0
	52	18	0	.35	200	94	34	.13	100	22	359	2.4	10.6	0	0	0	0
	2	1	0	.02	2	5	0	0	100	20	0	0	9.9	0	0	0	0
Ave Period 24 11-06-2024 11:59 PMA	9.70756	3.43361	0	.126268	65.2453	46.1260	2.30252	.008184	100	20.2857	269.615	.128907	10.3783	0	0	0	0
	52	18	0	.35	200	94	34	.13	100	22	359	2.4	10.6	0	0	0	0
	2	1	0	.02	2	5	0	0	100	20	0	0	9.9	0	0	0	0
Daily Thu, Jul 11, 2024	2.15502	1.13491	0	.087526	61.6426	35.3005	0	.005633	99.5739	20.5656	228.942	.044142	10.1975	0	0	0	0
	8	5	0	.19	129	54	0	.13	100	22	359	2.4	10.3	0	0	0	0
	2	1	0	0	2	16	0	0	87	20	0	0	9.7	0	0	0	0
Ave Period 24 11-07-2024 02:04 PMA	2.15502	1.13491	0	.087526	61.6426	35.3005	0	.005633	99.5739	20.5656	228.942	.044142	10.1975	0	0	0	0
	8	5	0	.19	129	54	0	.13	100	22	359	2.4	10.3	0	0	0	0
	2	1	0	0	2	16	0	0	87	20	0	0	9.7	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 12-12-2024 3:05:00 PM

End Date 13-12-2024 3:04:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	63.2798	4.77569	7.78541	.069798	31.1333	14.5868	3.04513	0	81.9520	19.8680	193.153	.268402	10.2555	0	0	0	0
Max	265	46	47	.47	64	28	46	0	100	30	360	4.7	10.7	0	0	0	0
Min	2	1	0	0	2	1	0	0	39	14	3	0	9.4	0	0	0	0
EPAS 919217	63.2798	4.77569	7.78541	.069798	31.1333	14.5868	3.04513	0	81.9520	19.8680	193.153	.268402	10.2555	0	0	0	0
	265	46	47	.47	64	28	46	0	100	30	360	4.7	10.7	0	0	0	0
	2	1	0	0	2	1	0	0	39	14	3	0	9.4	0	0	0	0
Daily Thu, Dec 12, 2024	87.1457	9.46915	3.54018	.070130	28.0803	15.5682	5.59626	0	86.3906	19.8242	165.631	.144672	10.4411	0	0	0	0
	265	46	35	.47	49	28	46	0	100	29	195	3.3	10.7	0	0	0	0
	13	1	0	0	2	1	0	0	39	15	111	0	9.9	0	0	0	0
Ave Period 24 12-12-2024 11:59 P.M.	87.1457	9.46915	3.54018	.070130	28.0803	15.5682	5.59626	0	86.3906	19.8242	165.631	.144672	10.4411	0	0	0	0
	265	46	35	.47	49	28	46	0	100	29	195	3.3	10.7	0	0	0	0
	13	1	0	0	2	1	0	0	39	15	111	0	9.9	0	0	0	0
Daily Fri, Dec 13, 2024	49.1712	2.00110	10.2950	.069602	32.9381	14.0066	1.53701	0	79.3281	19.8939	209.423	.341546	10.1458	0	0	0	0
	202	11	47	.27	64	28	17	0	100	30	360	4.7	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	39	14	3	0	9.4	0	0	0	0
Ave Period 24 13-12-2024 03:04 P.M.	49.1712	2.00110	10.2950	.069602	32.9381	14.0066	1.53701	0	79.3281	19.8939	209.423	.341546	10.1458	0	0	0	0
	202	11	47	.27	64	28	17	0	100	30	360	4.7	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	39	14	3	0	9.4	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 09-01-2025
4:50:00 PM

End Date 10-01-2025
4:49:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	49.3409	5.31944	6.29166	.087465	31.0868	16.5208	1.75208	0	77.2687	18.4798	73.3840	.016111	10.0240	0	0	0	0
Max	147	46	40	.52	72	31	51	0	100	29	358	1.4	10.5	0	0	0	0
Min	2	1	0	0	2	1	0	0	32	12	0	0	9.3	0	0	0	0
EPAS 919217	49.3409	5.31944	6.29166	.087465	31.0868	16.5208	1.75208	0	77.2687	18.4798	73.3840	.016111	10.0240	0	0	0	0
	147	46	40	.52	72	31	51	0	100	29	358	1.4	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	32	12	0	0	9.3	0	0	0	0
Daily Mon, Sep 1, 2025	71.3395	10.8581	.013953	.087883	33.8046	21.6720	5.16046	0	89.5697	17.0209	8.84186	0	10.1693	0	0	0	0
	147	46	3	.35	52	31	51	0	100	26	16	0	10.5	0	0	0	0
	34	1	0	0	2	1	0	0	42	14	0	0	9.6	0	0	0	0
Ave Period 24 01-09-2025 11:59 PMA	71.3395	10.8581	.013953	.087883	33.8046	21.6720	5.16046	0	89.5697	17.0209	8.84186	0	10.1693	0	0	0	0
	147	46	3	.35	52	31	51	0	100	26	16	0	10.5	0	0	0	0
	34	1	0	0	2	1	0	0	42	14	0	0	9.6	0	0	0	0
Daily Wed, Oct 1, 2025	39.9752	2.96138	8.96435	.087287	29.9297	14.3277	.300990	0	72.0316	19.1009	100.862	.022970	9.96227	0	0	0	0
	133	16	40	.52	72	30	9	0	100	29	358	1.4	10.2	0	0	0	0
	2	1	0	0	2	1	0	0	32	12	9	0	9.3	0	0	0	0
Ave Period 24 01-10-2025 04:49 PMA	39.9752	2.96138	8.96435	.087287	29.9297	14.3277	.300990	0	72.0316	19.1009	100.862	.022970	9.96227	0	0	0	0
	133	16	40	.52	72	30	9	0	100	29	358	1.4	10.2	0	0	0	0
	2	1	0	0	2	1	0	0	32	12	9	0	9.3	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 21-02-2025 4:40:00 PM

End Date 22-02-2025 4:39:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	117.343	6.20694	134.181	.243673	43.4416	17.1798	5.49305	0	63.7631	21.1375	294.590	.068680	10.0642	0	0	0	0
Max	285	41	222	.62	94	37	43	0	100	33	360	3.1	10.5	0	0	0	0
Min	2	1	73	0	2	1	0	0	18	13	0	0	9.6	0	0	0	0
EPAS 919217	117.343	6.20694	134.181	.243673	43.4416	17.1798	5.49305	0	63.7631	21.1375	294.590	.068680	10.0642	0	0	0	0
	285	41	222	.62	94	37	43	0	100	33	360	3.1	10.5	0	0	0	0
	2	1	73	0	2	1	0	0	18	13	0	0	9.6	0	0	0	0
Daily Fri, Feb 21, 2025	136.663	12.5045	123.086	.314568	39.5568	16.9022	13.7590	0	65.6045	20.3454	331.640	0	10.2565	0	0	0	0
	235	41	154	.58	83	32	43	0	90	31	345	0	10.5	0	0	0	0
	51	1	73	.1	2	1	0	0	22	15	175	0	9.7	0	0	0	0
Ave Period 24 21-02-2025 11:59 P.M.	136.663	12.5045	123.086	.314568	39.5568	16.9022	13.7590	0	65.6045	20.3454	331.640	0	10.2565	0	0	0	0
	235	41	154	.58	83	32	43	0	90	31	345	0	10.5	0	0	0	0
	51	1	73	.1	2	1	0	0	22	15	175	0	9.7	0	0	0	0
Daily Sat, Feb 22, 2025	108.842	3.436	139.064	.21248	45.151	17.302	1.856	0	62.953	21.486	278.289	.0989	9.9796	0	0	0	0
	285	19	222	.62	94	37	30	0	100	33	360	3.1	10.2	0	0	0	0
	2	1	81	0	2	1	0	0	18	13	0	0	9.6	0	0	0	0
Ave Period 24 22-02-2025 04:39 P.M.	108.842	3.436	139.064	.21248	45.151	17.302	1.856	0	62.953	21.486	278.289	.0989	9.9796	0	0	0	0
	285	19	222	.62	94	37	30	0	100	33	360	3.1	10.2	0	0	0	0
	2	1	81	0	2	1	0	0	18	13	0	0	9.6	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 06-03-2025 4:30:00 PM

End Date 07-03-2025 4:29:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	122.597	6.71041	141.723	.347034	45.1902	17.9097	15.7868	0	52.6604	22.1701	262.009	.203402	10.0780	0	0	0	0
Max	368	44	508	.77	107	36	61	0	100	33	359	3.1	10.6	0	0	0	0
Min	2	1	84	0	2	1	0	0	5	13	2	0	9.3	0	0	0	0
EPAS 919217	122.597	6.71041	141.723	.347034	45.1902	17.9097	15.7868	0	52.6604	22.1701	262.009	.203402	10.0780	0	0	0	0
	368	44	508	.77	107	36	61	0	100	33	359	3.1	10.6	0	0	0	0
	2	1	84	0	2	1	0	0	5	13	2	0	9.3	0	0	0	0
Daily Tue, Jun 3, 2025	165.788	14.3955	131.271	.431155	34.7644	14.1377	21.2422	0	48.6466	22.3066	229.091	.028666	10.3042	0	0	0	0
	368	44	159	.77	82	35	57	0	76	33	350	.9	10.6	0	0	0	0
	47	1	88	.13	2	1	0	0	12	16	2	0	9.7	0	0	0	0
Ave Period 24 03-06-2025 11:59 PMA	165.788	14.3955	131.271	.431155	34.7644	14.1377	21.2422	0	48.6466	22.3066	229.091	.028666	10.3042	0	0	0	0
	368	44	159	.77	82	35	57	0	76	33	350	.9	10.6	0	0	0	0
	47	1	88	.13	2	1	0	0	12	16	2	0	9.7	0	0	0	0
Daily Thu, Jul 3, 2025	102.965	3.21717	146.474	.308797	49.9292	19.6242	13.3070	0	54.4848	22.1080	276.971	.282828	9.97525	0	0	0	0
	235	19	508	.74	107	36	61	0	100	33	359	3.1	10.2	0	0	0	0
	2	1	84	0	2	1	0	0	5	13	4	0	9.3	0	0	0	0
Ave Period 24 03-07-2025 04:29 PMA	102.965	3.21717	146.474	.308797	49.9292	19.6242	13.3070	0	54.4848	22.1080	276.971	.282828	9.97525	0	0	0	0
	235	19	508	.74	107	36	61	0	100	33	359	3.1	10.2	0	0	0	0
	2	1	84	0	2	1	0	0	5	13	4	0	9.3	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 04-04-2025
4:56:00 AM

End Date 05-04-2025
4:55:00 AM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	92.3930	9.03680	46.5541	.353187	45.3631	19.4375	23.9631	0	41.6222	27.2298	163.543	1.42409	10.2463	0	0	0	0
Max	252	55	134	.87	112	36	67	0	74	36	360	13	10.5	0	0	0	0
Min	2	1	0	0	2	1	0	0	12	19	9	0	9.9	0	0	0	0
EPAS 919217	92.3930	9.03680	46.5541	.353187	45.3631	19.4375	23.9631	0	41.6222	27.2298	163.543	1.42409	10.2463	0	0	0	0
	252	55	134	.87	112	36	67	0	74	36	360	13	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	12	19	9	0	9.9	0	0	0	0
Daily Fri, Apr 4, 2025	110.135	9.00874	57.0104	.403828	56.4659	22.3986	24.1555	0	47.8470	25.4475	145.074	.318444	10.2621	0	0	0	0
	252	50	125	.87	112	36	55	0	74	36	359	6.5	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	13	19	19	0	9.9	0	0	0	0
Ave Period 24 04-04-2025 11:59 ****	110.135	9.00874	57.0104	.403828	56.4659	22.3986	24.1555	0	47.8470	25.4475	145.074	.318444	10.2621	0	0	0	0
	252	50	125	.87	112	36	55	0	74	36	359	6.5	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	13	19	19	0	9.9	0	0	0	0
Daily Sat, Apr 5, 2025	23.8209	9.14527	6.14189	.157466	2.45270	7.99324	23.2195	0	17.5641	34.1182	234.925	5.69729	10.1854	0	0	0	0
	60	55	134	.26	32	22	67	0	27	35	360	13	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	12	33	9	.8	9.9	0	0	0	0
Ave Period 24 05-04-2025 04:55 ****	23.8209	9.14527	6.14189	.157466	2.45270	7.99324	23.2195	0	17.5641	34.1182	234.925	5.69729	10.1854	0	0	0	0
	60	55	134	.26	32	22	67	0	27	35	360	13	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	12	33	9	.8	9.9	0	0	0	0

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX - (C-2)

Ambient Air Quality Results of Pyi Nyaung Village



Environmental Report

Record Cnt 1440

Start Date 22-11-2024
4:36:00 PM

End Date 23-11-2024
4:35:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	43.7416	7.5875	.031944	.083201	29.0125	17.5291	6.2625	0	82.7041	23.0763	235.471	.086111	10.2761	0	0	0	0
Max	148	75	4	.64	54	32	63	0	100	31	358	2.3	10.6	0	0	0	0
Min	2	1	0	0	2	1	0	0	39	19	4	0	9.7	0	0	0	0
EPAS 919217	43.7416	7.5875	.031944	.083201	29.0125	17.5291	6.2625	0	82.7041	23.0763	235.471	.086111	10.2761	0	0	0	0
	148	75	4	.64	54	32	63	0	100	31	358	2.3	10.6	0	0	0	0
	2	1	0	0	2	1	0	0	39	19	4	0	9.7	0	0	0	0
Daily Fri, Nov 22, 2024	51.2612	7.63963	0	.059527	33.5518	21.7432	4.22297	0	95.8738	21.8265	315.520	.000225	10.4281	0	0	0	0
	125	21	0	.55	54	32	52	0	100	26	328	.1	10.6	0	0	0	0
	14	1	0	0	2	10	0	0	69	20	258	0	9.9	0	0	0	0
Ave Period 24 22-11-2024 11:59 P.M.	51.2612	7.63963	0	.059527	33.5518	21.7432	4.22297	0	95.8738	21.8265	315.520	.000225	10.4281	0	0	0	0
	125	21	0	.55	54	32	52	0	100	26	328	.1	10.6	0	0	0	0
	14	1	0	0	2	10	0	0	69	20	258	0	9.9	0	0	0	0
Daily Sat, Nov 23, 2024	40.3895	7.56425	.046184	.093755	26.9889	15.6506	7.17168	0	76.8333	23.6335	199.787	.124397	10.2083	0	0	0	0
	148	75	4	.64	54	32	63	0	100	31	358	2.3	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	39	19	4	0	9.7	0	0	0	0
Ave Period 24 23-11-2024 04:35 P.M.	40.3895	7.56425	.046184	.093755	26.9889	15.6506	7.17168	0	76.8333	23.6335	199.787	.124397	10.2083	0	0	0	0
	148	75	4	.64	54	32	63	0	100	31	358	2.3	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	39	19	4	0	9.7	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 05-12-2024 2:47:00 PM

End Date 06-12-2024 2:46:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	51.8625	6.79861	.800694	.109694	34.3	15.4145	4.17916	0	84.7527	22.2138	294.670	.113402	10.2505	0	0	0	0
Max	245	58	13	.93	67	29	32	0	100	30	360	3.3	10.7	0	0	0	0
Min	2	1	0	0	2	1	0	0	44	18	1	0	9.6	0	0	0	0
EPAS 919217	51.8625	6.79861	.800694	.109694	34.3	15.4145	4.17916	0	84.7527	22.2138	294.670	.113402	10.2505	0	0	0	0
	245	58	13	.93	67	29	32	0	100	30	360	3.3	10.7	0	0	0	0
	2	1	0	0	2	1	0	0	44	18	1	0	9.6	0	0	0	0
Daily Sun, May 12, 2024	67.8535	13.3435	.010849	.171211	24.3598	13.1681	9.18083	0	87.6039	22.4177	307.144	.010849	10.3846	0	0	0	0
	245	58	2	.84	60	27	32	0	100	30	336	.6	10.7	0	0	0	0
	11	1	0	0	2	1	0	0	48	19	36	0	9.9	0	0	0	0
Ave Period 24 12-05-2024 11:59 P.M.	67.8535	13.3435	.010849	.171211	24.3598	13.1681	9.18083	0	87.6039	22.4177	307.144	.010849	10.3846	0	0	0	0
	245	58	2	.84	60	27	32	0	100	30	336	.6	10.7	0	0	0	0
	11	1	0	0	2	1	0	0	48	19	36	0	9.9	0	0	0	0
Daily Wed, Jun 12, 2024	41.8928	2.71815	1.29312	.071341	40.4971	16.8151	1.06087	0	82.9751	22.0868	286.892	.177339	10.1669	0	0	0	0
	138	38	13	.93	67	29	27	0	100	30	360	3.3	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	44	18	1	0	9.6	0	0	0	0
Ave Period 24 12-06-2024 02:46 P.M.	41.8928	2.71815	1.29312	.071341	40.4971	16.8151	1.06087	0	82.9751	22.0868	286.892	.177339	10.1669	0	0	0	0
	138	38	13	.93	67	29	27	0	100	30	360	3.3	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	44	18	1	0	9.6	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 13-01-2025
4:21:00 PM

End Date 14-01-2025
4:20:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	84.1312	6.49097	70.6916	.217020	31.7131	15.5229	12.0923	0	75.4645	17.9638	167.231	.002013	10.2833	0	0	0	0
Max	545	51	170	2.43	71	30	305	0	100	28	358	.4	10.7	0	0	0	0
Min	2	1	8	0	2	1	0	0	31	11	1	0	9.7	0	0	0	0
EPAS 919217	84.1312	6.49097	70.6916	.217020	31.7131	15.5229	12.0923	0	75.4645	17.9638	167.231	.002013	10.2833	0	0	0	0
	545	51	170	2.43	71	30	305	0	100	28	358	.4	10.7	0	0	0	0
	2	1	8	0	2	1	0	0	31	11	1	0	9.7	0	0	0	0
Daily Mon, Jan 13, 2025	85.7886	10.2570	52.9673	.229564	27.6230	15.4836	13.4379	0	81.2984	17.4727	155	0	10.4873	0	0	0	0
	177	38	83	1.12	56	27	118	0	100	26	155	0	10.7	0	0	0	0
	28	1	8	0	2	1	0	0	32	13	155	0	10	0	0	0	0
Ave Period 24 13-01-2025 11:59 PMA	85.7886	10.2570	52.9673	.229564	27.6230	15.4836	13.4379	0	81.2984	17.4727	155	0	10.4873	0	0	0	0
	177	38	83	1.12	56	27	118	0	100	26	155	0	10.7	0	0	0	0
	28	1	8	0	2	1	0	0	32	13	155	0	10	0	0	0	0
Daily Tue, Jan 14, 2025	83.3557	4.72884	78.9847	.211151	33.6269	15.5412	11.4627	0	72.7349	18.1936	172.954	.002956	10.1878	0	0	0	0
	545	51	170	2.43	71	30	305	0	100	28	358	.4	10.5	0	0	0	0
	2	1	20	0	2	1	0	0	31	11	1	0	9.7	0	0	0	0
Ave Period 24 14-01-2025 04:20 PMA	83.3557	4.72884	78.9847	.211151	33.6269	15.5412	11.4627	0	72.7349	18.1936	172.954	.002956	10.1878	0	0	0	0
	545	51	170	2.43	71	30	305	0	100	28	358	.4	10.5	0	0	0	0
	2	1	20	0	2	1	0	0	31	11	1	0	9.7	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 18-02-2025 2:20:00 PM

End Date 19-02-2025 2:19:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	160.945	7.77083	136.055	.410687	35.9006	15.6888	28.8215	0	57.8819	20.2409	181.107	.004583	10.1228	0	0	0	0
Max	452	52	218	1.81	82	33	99	0	100	33	359	.3	10.5	0	0	0	0
Min	2	1	77	0	2	1	0	0	8	11	0	0	9.6	0	0	0	0
EPAS 919217	160.945	7.77083	136.055	.410687	35.9006	15.6888	28.8215	0	57.8819	20.2409	181.107	.004583	10.1228	0	0	0	0
	452	52	218	1.81	82	33	99	0	100	33	359	.3	10.5	0	0	0	0
	2	1	77	0	2	1	0	0	8	11	0	0	9.6	0	0	0	0
Daily Tue, Feb 18, 2025	145.763	16.4413	120.379	.601034	21.6844	11.9120	48.1810	0	44.4568	22.5931	181.868	.003965	10.2915	0	0	0	0
	265	52	161	1.81	67	29	98	0	82	33	344	.3	10.5	0	0	0	0
	3	1	77	0	2	1	13	0	8	14	9	0	9.7	0	0	0	0
Ave Period 24 18-02-2025 11:59 PMA	145.763	16.4413	120.379	.601034	21.6844	11.9120	48.1810	0	44.4568	22.5931	181.868	.003965	10.2915	0	0	0	0
	265	52	161	1.81	67	29	98	0	82	33	344	.3	10.5	0	0	0	0
	3	1	77	0	2	1	13	0	8	14	9	0	9.7	0	0	0	0
Daily Wed, Feb 19, 2025	171.184	1.92325	146.627	.282313	45.4883	18.2360	15.7651	0	66.9360	18.6546	180.594	.005	10.0090	0	0	0	0
	452	9	218	1.13	82	33	99	0	100	33	359	.3	10.2	0	0	0	0
	2	1	82	0	2	1	0	0	8	11	0	0	9.6	0	0	0	0
Ave Period 24 19-02-2025 02:19 PMA	171.184	1.92325	146.627	.282313	45.4883	18.2360	15.7651	0	66.9360	18.6546	180.594	.005	10.0090	0	0	0	0
	452	9	218	1.13	82	33	99	0	100	33	359	.3	10.2	0	0	0	0
	2	1	82	0	2	1	0	0	8	11	0	0	9.6	0	0	0	0

Main			Preferences			Header			Data			Report		
Record Cnt 1440														
Start Date 18-03-2025 2:51:00 PM														
End Date 19-03-2025 2:50:00 PM														



Environmental Report

Record Cnt 1440

Start Date 28-04-2025 7:02:00 AM

End Date 29-04-2025 7:01:00 AM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	1160.97	7.16944	21.6631	.22675	77.2090	25.5125	12.9645	.007895	76.4986	25.7784	201.364	.227708	10.0988	0	0	0	0
Max	3399	63	325	12.84	329	51	62	.48	100	34	359	4.8	10.5	0	0	0	0
Min	2	1	0	0	2	1	0	0	28	21	0	0	9.6	0	0	0	0
EPAS 919217	1160.97	7.16944	21.6631	.22675	77.2090	25.5125	12.9645	.007895	76.4986	25.7784	201.364	.227708	10.0988	0	0	0	0
	3399	63	325	12.84	329	51	62	.48	100	34	359	4.8	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	28	21	0	0	9.6	0	0	0	0
Daily Mon, Apr 28, 2025	139.714	8.54813	26.8693	.192102	85.9440	27.1630	15.7396	.007691	81.5500	24.5687	217.890	.145874	10.1601	0	0	0	0
	1056	63	52	.86	158	45	62	.48	100	32	358	3.1	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	28	21	0	0	9.7	0	0	0	0
Ave Period 24 28-04-2025 11:59 P.M.	139.714	8.54813	26.8693	.192102	85.9440	27.1630	15.7396	.007691	81.5500	24.5687	217.890	.145874	10.1601	0	0	0	0
	1056	63	52	.86	158	45	62	.48	100	32	358	3.1	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	28	21	0	0	9.7	0	0	0	0
Daily Tue, Apr 29, 2025	3624.60	3.84360	9.10426	.310331	56.1374	21.5308	6.27014	.008388	64.3127	28.6966	161.497	.425118	9.95094	0	0	0	0
	3399	55	325	12.84	329	51	32	.24	100	34	359	4.8	10.2	0	0	0	0
	2	1	0	0	2	1	0	0	42	24	0	0	9.6	0	0	0	0
Ave Period 24 29-04-2025 07:01 A.M.	3624.60	3.84360	9.10426	.310331	56.1374	21.5308	6.27014	.008388	64.3127	28.6966	161.497	.425118	9.95094	0	0	0	0
	3399	55	325	12.84	329	51	32	.24	100	34	359	4.8	10.2	0	0	0	0
	2	1	0	0	2	1	0	0	42	24	0	0	9.6	0	0	0	0

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX - (C-3)

Ambient Air Quality Results of Ku Pyin Village



Environmental Report

Record Cnt 1440

Start Date 11-11-2024
3:04:00 PM

End Date 12-11-2024
3:03:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	19.0034	5.70763	.038888	.105041	44.3069	24.5868	7.61041	.000527	92.4555	23.9097	124.513	.157083	10.3109	0	0	0	0
Max	87	55	8	.67	128	56	49	.13	100	30	354	3.6	10.7	0	0	0	0
Min	2	1	0	0	2	1	0	0	57	21	0	0	9.7	0	0	0	0
EPAS 919217	19.0034	5.70763	.038888	.105041	44.3069	24.5868	7.61041	.000527	92.4555	23.9097	124.513	.157083	10.3109	0	0	0	0
	87	55	8	.67	128	56	49	.13	100	30	354	3.6	10.7	0	0	0	0
	2	1	0	0	2	1	0	0	57	21	0	0	9.7	0	0	0	0
Daily Mon, Nov 11, 2024	25.8227	8.71641	0	.095037	53.8675	27.7611	2.73507	.001417	100	23.1082	98.5074	.000373	10.4652	0	0	0	0
	72	44	0	.67	128	56	31	.13	100	25	332	.1	10.7	0	0	0	0
	3	1	0	0	13	16	0	0	100	22	36	0	9.9	0	0	0	0
Ave Period 24 11-11-2024 11:59 P.M.	25.8227	8.71641	0	.095037	53.8675	27.7611	2.73507	.001417	100	23.1082	98.5074	.000373	10.4652	0	0	0	0
	72	44	0	.67	128	56	31	.13	100	25	332	.1	10.7	0	0	0	0
	3	1	0	0	13	16	0	0	100	22	36	0	9.9	0	0	0	0
Daily Wed, Dec 11, 2024	14.9601	3.92367	.061946	.110973	38.6382	22.7046	10.5011	0	87.9823	24.3849	139.932	.25	10.2193	0	0	0	0
	87	55	8	.29	92	49	49	0	100	30	354	3.6	10.5	0	0	0	0
	2	1	0	.03	2	1	0	0	57	21	0	0	9.7	0	0	0	0
Ave Period 24 11-12-2024 03:03 P.M.	14.9601	3.92367	.061946	.110973	38.6382	22.7046	10.5011	0	87.9823	24.3849	139.932	.25	10.2193	0	0	0	0
	87	55	8	.29	92	49	49	0	100	30	354	3.6	10.5	0	0	0	0
	2	1	0	.03	2	1	0	0	57	21	0	0	9.7	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 02-12-2024 2:14:00 PM

End Date 03-12-2024 2:13:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	24.2392	4.91933	2.18776	.075618	35.7545	17.2649	2.33936	0	88.0563	22.3129	168.748	.212934	10.2846	0	0	0	0
Max	96	40	30	.29	67	30	40	0	100	29	359	4.2	10.6	0	0	0	0
Min	2	1	0	0	2	1	0	0	53	19	0	0	9.7	0	0	0	0
EPAS 919217	24.2392	4.91933	2.18776	.075618	35.7545	17.2649	2.33936	0	88.0563	22.3129	168.748	.212934	10.2846	0	0	0	0
	96	40	30	.29	67	30	40	0	100	29	359	4.2	10.6	0	0	0	0
	2	1	0	0	2	1	0	0	53	19	0	0	9.7	0	0	0	0
Daily Mon, Dec 2, 2024	35.2273	8.17094	3.26837	.074957	31.5179	18.4581	3.82735	0	91.6883	22.3264	83.9709	.035042	10.4104	0	0	0	0
	96	40	30	.29	63	29	40	0	100	28	359	1.6	10.6	0	0	0	0
	6	1	0	.02	2	1	0	0	58	19	0	0	9.9	0	0	0	0
Ave Period 24 02-12-2024 11:59 P.M.	35.2273	8.17094	3.26837	.074957	31.5179	18.4581	3.82735	0	91.6883	22.3264	83.9709	.035042	10.4104	0	0	0	0
	96	40	30	.29	63	29	40	0	100	28	359	1.6	10.6	0	0	0	0
	6	1	0	.02	2	1	0	0	58	19	0	0	9.9	0	0	0	0
Daily Tue, Dec 3, 2024	16.7033	2.68933	1.44665	.076072	38.6600	16.4466	1.31887	0	85.5697	22.3036	226.889	.334935	10.1983	0	0	0	0
	67	19	26	.23	67	30	13	0	100	29	358	4.2	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	53	19	0	0	9.7	0	0	0	0
Ave Period 24 03-12-2024 02:13 P.M.	16.7033	2.68933	1.44665	.076072	38.6600	16.4466	1.31887	0	85.5697	22.3036	226.889	.334935	10.1983	0	0	0	0
	67	19	26	.23	67	30	13	0	100	29	358	4.2	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	53	19	0	0	9.7	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 16-01-2025 2:47:00 PM

End Date 17-01-2025 2:46:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	33.2868	7.22847	81.8812	.116770	33.7840	16.3590	3.40277	0	74.9243	17.125	78.3562	.000069	10.2356	0	0	0	0
Max	202	54	129	.75	78	29	39	0	100	31	357	.1	10.7	0	0	0	0
Min	2	1	32	0	2	1	0	0	17	9	2	0	9.6	0	0	0	0
EPAS 919217	33.2868	7.22847	81.8812	.116770	33.7840	16.3590	3.40277	0	74.9243	17.125	78.3562	.000069	10.2356	0	0	0	0
	202	54	129	.75	78	29	39	0	100	31	357	.1	10.7	0	0	0	0
	2	1	32	0	2	1	0	0	17	9	2	0	9.6	0	0	0	0
Daily Thu, Jan 16, 2025	42.5569	15.3128	72.8716	.132730	28.1121	16.8119	5.19168	0	78.0813	17.6817	72.6980	0	10.4079	0	0	0	0
	72	54	104	.24	60	29	26	0	100	30	357	0	10.7	0	0	0	0
	2	1	43	.06	2	1	0	0	18	11	22	0	9.9	0	0	0	0
Ave Period 24 16-01-2025 11:59 PMA	42.5569	15.3128	72.8716	.132730	28.1121	16.8119	5.19168	0	78.0813	17.6817	72.6980	0	10.4079	0	0	0	0
	72	54	104	.24	60	29	26	0	100	30	357	0	10.7	0	0	0	0
	2	1	43	.06	2	1	0	0	18	11	22	0	9.9	0	0	0	0
Daily Fri, Jan 17, 2025	27.5073	2.18827	87.4983	.106820	37.3201	16.0766	2.28748	0	72.9560	16.7779	81.8838	.000112	10.1282	0	0	0	0
	202	11	129	.75	78	29	39	0	100	31	356	.1	10.3	0	0	0	0
	2	1	32	0	2	1	0	0	17	9	2	0	9.6	0	0	0	0
Ave Period 24 17-01-2025 02:46 PMA	27.5073	2.18827	87.4983	.106820	37.3201	16.0766	2.28748	0	72.9560	16.7779	81.8838	.000112	10.1282	0	0	0	0
	202	11	129	.75	78	29	39	0	100	31	356	.1	10.3	0	0	0	0
	2	1	32	0	2	1	0	0	17	9	2	0	9.6	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 27-02-2025
4:30:00 PM

End Date 28-02-2025
4:29:00 PM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	69.5608	8.76740	129.455	.217404	38.8983	18.2101	9.38900	0	60.6089	21.8851	193.716	.031106	9.98065	0	0	0	0
Max	161	68	184	.8	91	36	58	0	100	34	345	1.3	10.5	0	0	0	0
Min	2	1	86	0	2	1	0	0	13	13	3	0	9.3	0	0	0	0
EPAS 919217	69.5608	8.76740	129.455	.217404	38.8983	18.2101	9.38900	0	60.6089	21.8851	193.716	.031106	9.98065	0	0	0	0
	161	68	184	.8	91	36	58	0	100	34	345	1.3	10.5	0	0	0	0
	2	1	86	0	2	1	0	0	13	13	3	0	9.3	0	0	0	0
Daily Thu, Feb 27, 2025	68.3875	16.1648	121.398	.226770	33.7527	19.2449	15.4031	0	59.3095	21.1625	199.561	0	10.1763	0	0	0	0
	136	48	154	.8	76	36	37	0	89	32	262	0	10.5	0	0	0	0
	17	1	86	.06	2	1	0	0	16	15	131	0	9.6	0	0	0	0
Ave Period 24 27-02-2025 11:59 P.M.	68.3875	16.1648	121.398	.226770	33.7527	19.2449	15.4031	0	59.3095	21.1625	199.561	0	10.1763	0	0	0	0
	136	48	154	.8	76	36	37	0	89	32	262	0	10.5	0	0	0	0
	17	1	86	.06	2	1	0	0	16	15	131	0	9.6	0	0	0	0
Daily Fri, Feb 28, 2025	70.0941	5.40222	133.117	.213147	41.2368	17.7398	6.65587	0	61.1993	22.2135	191.060	.045242	9.89170	0	0	0	0
	161	68	184	.72	91	35	58	0	100	34	345	1.3	10.2	0	0	0	0
	2	1	87	0	2	1	0	0	13	13	3	0	9.3	0	0	0	0
Ave Period 24 28-02-2025 04:28 P.M.	70.0941	5.40222	133.117	.213147	41.2368	17.7398	6.65587	0	61.1993	22.2135	191.060	.045242	9.89170	0	0	0	0
	161	68	184	.72	91	35	58	0	100	34	345	1.3	10.2	0	0	0	0
	2	1	87	0	2	1	0	0	13	13	3	0	9.3	0	0	0	0



Environmental Report

Record Cnt 1440

Start Date 25-03-2025 4:59:00 AM

End Date 26-03-2025 4:58:00 AM

	PMA ug/m3		CO2 ppm	CO ppm	NO2 ppb	O3 ppb	SO2 ppb	PrpM mm	RH %	TmpC Deg. C	WDir Deg.	WSpd mph	Pwr V				
Ave	61.1298	7.70833	14.5493	.268826	46.7701	17.1090	16.7666	0	46.9159	26.7368	195.263	.018194	10.1642	0	0	0	0
Max	301	48	55	.74	127	36	66	0	100	36	359	1.7	10.5	0	0	0	0
Min	2	1	0	0	2	1	0	0	13	20	0	0	9.6	0	0	0	0
EPAS 919217	61.1298	7.70833	14.5493	.268826	46.7701	17.1090	16.7666	0	46.9159	26.7368	195.263	.018194	10.1642	0	0	0	0
	301	48	55	.74	127	36	66	0	100	36	359	1.7	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	13	20	0	0	9.6	0	0	0	0
Daily Tue, Mar 25, 2025	65.9062	8.74057	16.2243	.282620	55.2278	19.9675	19.3260	0	51.0806	25.5985	206.428	.016827	10.2019	0	0	0	0
	301	48	55	.74	127	36	66	0	100	36	359	1.7	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	13	20	0	0	9.7	0	0	0	0
Ave Period 24 25-03-2025 11:59 P.M.	65.9062	8.74057	16.2243	.282620	55.2278	19.9675	19.3260	0	51.0806	25.5985	206.428	.016827	10.2019	0	0	0	0
	301	48	55	.74	127	36	66	0	100	36	359	1.7	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	13	20	0	0	9.7	0	0	0	0
Daily Wed, Mar 26, 2025	42.9030	3.76923	8.15719	.216187	14.4949	6.20066	7	0	31.0234	31.0802	152.658	.023411	10.0204	0	0	0	0
	119	43	24	.28	91	29	26	0	56	35	358	.5	10.2	0	0	0	0
	3	1	0	.1	2	1	0	0	21	25	0	0	9.6	0	0	0	0
Ave Period 24 26-03-2025 04:58 A.M.	42.9030	3.76923	8.15719	.216187	14.4949	6.20066	7	0	31.0234	31.0802	152.658	.023411	10.0204	0	0	0	0
	119	43	24	.28	91	29	26	0	56	35	358	.5	10.2	0	0	0	0
	3	1	0	.1	2	1	0	0	21	25	0	0	9.6	0	0	0	0

Main		Preferences		Header		Data		Report											
																			
Record Cnt		1440																	
Start Date		22-04-2025																	
		4:25:00 AM																	
End Date		23-04-2025																	
		4:24:00 AM																	

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED	 SHWE TAUNG CEMENT CO.,LTD.
	Bi-Annual Environmental Monitoring Report	

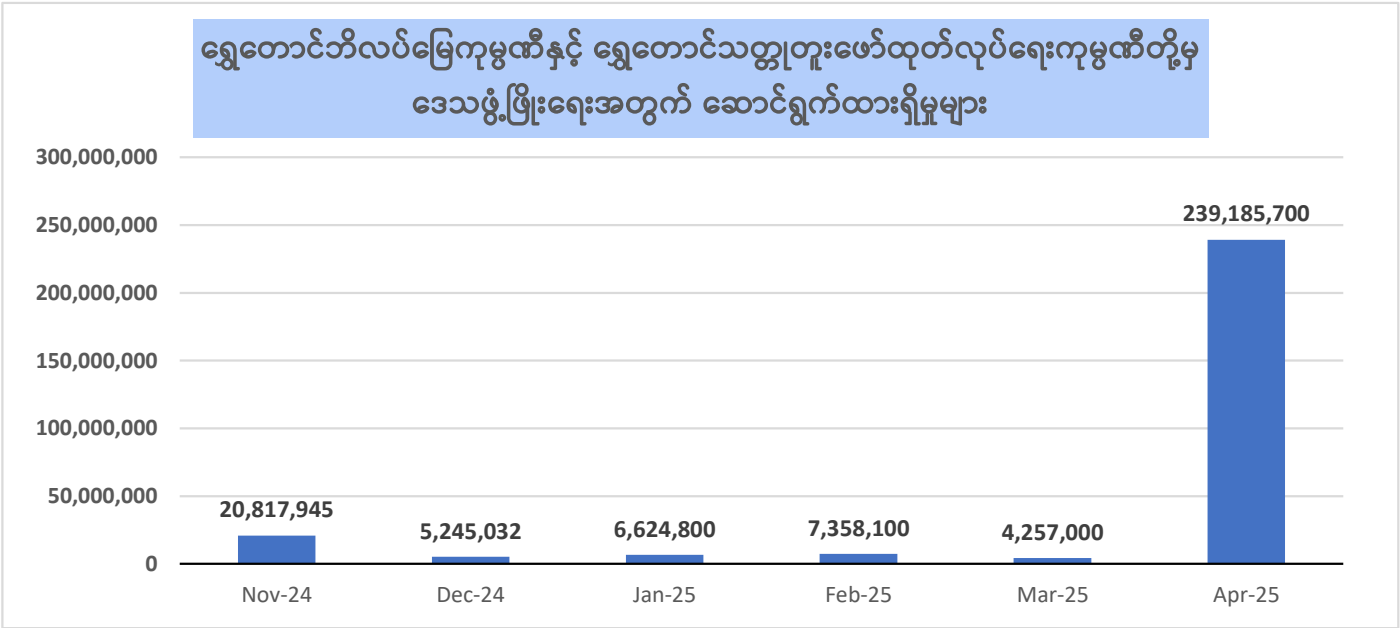
APPENDIX-D

Corporate Social Responsibility

Corporate Social Responsibility (CSR)

ရွှေတောင်ဘိလပ်မြေကုမ္ပဏီနှင့် ရွှေတောင်သတ္တုထုတ်လုပ်ရေးကုမ္ပဏီတို့မှ ဒေသဖွံ့ဖြိုးရေးအတွက် ဆောင်ရွက်ထားရှိမှုများ

စဉ်	အကြောင်းအရာ	Nov - 2024	Dec - 2024	Jan - 2025	Feb - 2025	Mar - 2025	Apr - 2025	Total
၁	လမ်းပန်းဆက်သွယ်ရေး တိုးတက်ကောင်းမွန်အောင် ဆောင်ရွက်ပေးနိုင်မှု	17,726,813	796,000	175,200	744,000			19,442,013
၂	ပြည်သူများ ရေရရှိမှု အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု	441,000	367,500	441,000	572,200			1,821,700
၃	လျှပ်စစ်မီးရရှိရေး အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု							0
၄	ပညာရေး ဖွံ့ဖြိုးတိုးတက်စေရန် အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု	1,645,600	1,602,400	2,090,500	4,761,500	958,600	703,800	11,762,400
၅	ကျန်းမာရေး ဖွံ့ဖြိုးတိုးတက်စေရန် အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု	220,532	319,132					539,664
၆	လူမှုရေးနှင့် ကယ်ဆယ်ရေး အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု	184,000	922,500	3,918,100	279,800	1,998,400	2,204,800	9,507,600
၇	ဘာသာသမာနာရေး အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု	600,000	1,237,500		1,000,600	1,300,000		4,138,100
၈	သဘာဝဘေးအန္တရာယ်ကျရောက် ပျက်စီးမှုများ အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု						236,277,100	236,277,100
စုစုပေါင်း		20,817,945	5,245,032	6,624,800	7,358,100	4,257,000	239,185,700	283,488,577



Corporate Social Responsibility (CSR)

လမ်းပန်းဆက်သွယ်ရေး ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်စေရန် အထောက်အကူပြု ပံ့ပိုးကူညီဆောင်ရွက် ပေးခြင်း



ပုံ - ၂၀၂၄ခုနှစ်၊ နိုဝင်ဘာလအတွင်း ကူပြင်ကျေးရွာသို့ သွားသည့် ကျေးလက်လမ်းအား လိုအပ်သည့်မြေနှင့်ကျောက်များဖြည့်၍ စက်ယန္တရားများဖြင့် မြေညှိပေးခြင်း။



ပုံ- ၂၀၂၄ခုနှစ်၊ ဒီဇင်ဘာလအတွင်း သာစည်မြို့နယ်၊ လှိုင်းတက်ကျေးရွာအုပ်စု၊ လှိုင်းတက်ကျေးရွာရှိ ကျေးရွာလမ်းအား ကွန်ကရစ်လမ်းခင်းရန်အတွက် လိုအပ်သော ဘီလပ်မြေအိတ်များကို လှူဒါန်းခြင်း။

ပညာရေး ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်စေရန် အထောက်အကူပြု ပံ့ပိုးကူညီဆောင်ရွက်ပေးခြင်း



ပုံ- ၂၀၂၄ခုနှစ်၊ ဇွန်လမှ ၂၀၂၅ခုနှစ်၊ မတ်လအထိ ပြည်ညောင်နှင့်ကူပြင်ကျေးရွာ အခြေခံပညာကျောင်းများမှ ကျောင်းသား/ကျောင်းသူ (၁၀)ဦးအား ပညာသင်ထောက်ပံ့ကြေးပေးအပ်ခြင်း။



ပုံ- ၂၀၂၄ခုနှစ်၊ ဇွန်လမှ ၂၀၂၅ခုနှစ်၊ မတ်လအထိ ပြည်ညောင်နှင့်ကူပြင်ကျေးရွာအခြေခံပညာကျောင်းများအတွက် လိုအပ်သော ဆရာ/ဆရာမများ ငှားရမ်းနိုင်ရန်အတွက် လစာငွေများ ထောက်ပံ့ပေးခြင်း။

Corporate Social Responsibility (CSR)

ပညာရေး ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်စေရန် အထောက်အကူပြု ပံ့ပိုးကူညီဆောင်ရွက်ပေးခြင်း



ပုံ- ၂၀၂၅နှစ်၊ ဇန်နဝါရီလတွင် ပြည်ညောင်ကျေးရွာ၊ အခြေခံပညာအထက်တန်းကျောင်းတွင် ကျင်းပပြုလုပ်သော ပညာရေးစုံညီပွဲတော်အတွက် ရန်ပုံငွေ ထည့်ဝင်လှူဒါန်းပေးခြင်း။



ပုံ- ၂၀၂၅နှစ်၊ ဇန်နဝါရီလတွင် ကူပြင်ကျေးရွာ၊ အခြေခံပညာအလယ်တန်းကျောင်းတွင် ကျင်းပပြုလုပ်သော ပညာရေးစုံညီပွဲတော်အတွက် ရန်ပုံငွေ ထည့်ဝင်လှူဒါန်းပေးခြင်း။



ပုံ- ကူပြင်ကျေးရွာ၊ အခြေခံပညာအလယ်တန်းကျောင်းမှ ပြည်ညောင်ကျေးရွာ၊ အခြေခံပညာအထက်တန်း ကျောင်းသို့ G5 နှင့် G9 ကျောင်းသား/သူများ စာမေးပွဲ သွားရောက်ဖြေဆိုနိုင်ရန်အတွက် အကြိုအပို့ ပြုလုပ်ပေးခြင်း။



ပုံ- ပြည်ညောင်ကျေးရွာ၊ အခြေခံပညာအထက်တန်းကျောင်းမှ ယင်းမာပင်ကျေးရွာ၊ အခြေခံပညာအထက်တန်း ကျောင်းသို့ G12 ကျောင်းသား/သူများ စာမေးပွဲ သွားရောက်ဖြေဆိုနိုင်ရန်အတွက် အကြိုအပို့ ပြုလုပ်ပေးခြင်း။



ပုံ- ၂၀၂၅နှစ်၊ ဖေဖော်ဝါရီလတွင် ကူပြင်စာသင်ကျောင်းတွင် “ကူးစက်တတ်သော ရောဂါများအကြောင်း သိကောင်းစရာ” ခေါင်းစဉ်ဖြင့် စာဖတ်ပွဲ ကျင်းပနေစဉ်။



ပုံ- ပြည်ညောင်ကျေးရွာ၊ အခြေခံပညာအထက်တန်းကျောင်းရှိ နှစ်ထပ်ကျောင်းဆောင်၏ ခေါင်မိုးနှင့် မျက်နှာကျက်များ ပြုပြင်ရန်နှင့် အိမ်သာ(၈)လုံးတွဲအတွက် အိမ်သာကျင်း အသစ်တည်ဆောက်ရန် လိုအပ်သော ငွေအား လှူဒါန်းခြင်း။

Corporate Social Responsibility (CSR)

ကျန်းမာရေး ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်စေရန် အထောက်အကူပြု ပံ့ပိုးကူညီဆောင်ရွက်ပေးခြင်း



ပုံ - ကုပြင်ကျေးရွာနှင့် ပြည်ညောင်ကျေးရွာအတွင်းရှိ ဒေသနေပြည်သူများအား လစဉ် အခမဲ့ ကျန်းမာရေး စောင့်ရှောက်ပေးနေစဉ်။

ပြည်သူများ ရေရရှိရေး ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်စေရန် အထောက်အကူပြု ပံ့ပိုးကူညီ ဆောင်ရွက် ပေးခြင်း



ပုံ- ပြည်ညောင်ကျေးရွာ အခြေခံပညာအထက်တန်းကျောင်းအတွက် သုံးရေ ကူညီပံ့ပိုးပေးခြင်း။



ပုံ- ကုပြင်ကျေးရွာရှိ သောက်ရေသန့်စက်တွင် ပြုပြင်ရန် လိုအပ်သော Magnetic connector အား ဝယ်ယူ၍ တပ်ဆင်ပေးခြင်း။

ဘာသာသာသနာရေး အထောက်အကူပြု ပံ့ပိုးကူညီ ဆောင်ရွက်ပေးခြင်း



ပုံ- ကုပြင်ကျေးရွာ (၁၂)ကြိမ်မြောက် မဟာပဋ္ဌာန်းရွတ်ဖတ်ပူဇော်ပွဲနှင့် ဆွမ်းဆန်စိမ်းလောင်းလှူသည့်ပွဲတွင် ဆန်နှင့် ဝတ္ထုငွေ လောင်းလှူခြင်း။



ပုံ- ပဲခူးမြို့၊ ပဲခူးတက္ကသိုလ်အနီး ဆုတောင်းပြည့်ကျောင်းတိုက်သို့ နဝကမ္မ အလှူငွေ ထည့်ဝင်လှူဒါန်းပေးခြင်း။

Corporate Social Responsibility (CSR)

လူမှုရေးနှင့်ကယ်ဆယ်ရေး ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်စေရန် အထောက်အကူပြု ပံ့ပိုးကူညီပေးခြင်း



ပုံ - ၂၀၂၄ခုနှစ်၊ အောက်တိုဘာလမှ စတင်၍ လစဉ် ကူပြင်ကျေးရွာရှိ အသက်အရွယ်ကြီးရင့်သော အဖိုးအဖွားများအား ကူညီထောက်ပံ့ပေးခြင်း။



ပုံ- ပြည်ညောင်ကျေးရွာ ဘောလုံးကွင်းအသစ် တည်ဆောက်ရာတွင် လိုအပ်သော ဘိလပ်မြေအိတ်များ လှူဒါန်းခြင်း။

သဘာဝဘေးအန္တရာယ် ကျရောက်ပျက်စီးမှုများအတွက် အထောက်အကူပြု ပံ့ပိုးကူညီဆောင်ရွက် ပေးခြင်း



ပုံ- ပျော်ဘွယ်မြို့၊ မြို့ကနဦးကျောင်းတွင် ငလျင်ဘေးဒဏ်ကြောင့် ပျက်စီးသွားသော အဆောင်အဦများ ပြန်လည်ပြုပြင်တည်ထောင်ရေးအတွက် လှူဒါန်းခြင်း။



ပုံ- ပျော်ဘွယ်မြို့၊ မြို့လယ်ဗလီ (မြင်းဘက်)တွင် ငလျင်ဘေးဒဏ်ကြောင့် ပျက်စီးသွားသော အဆောင်အဦများ ပြန်လည်ပြုပြင်တည်ထောင်ရေးအတွက် လှူဒါန်းခြင်း။



ပုံ- ပျော်ဘွယ်မြို့၊ မက်သဒစ်အသင်းတော် (မြင်းဘက်)တွင် ငလျင်ဘေးဒဏ်ကြောင့် ပျက်စီးသွားသော အဆောင်အဦများ ပြန်လည်ပြုပြင်တည်ထောင်ရေးအတွက် လှူဒါန်းခြင်း။



ပုံ- ပျော်ဘွယ်မြို့ပေါ်ရပ်ကွက်များရှိ ငလျင်ဘေးသင့်ပြည်သူများကို ထမင်းဘူးများ ဝေငှခြင်း။

Corporate Social Responsibility (CSR)

သဘာဝဘေးအန္တရာယ် ကျရောက်ပျက်စီးမှုများအတွက် အထောက်အကူပြု ပံ့ပိုးကူညီဆောင်ရွက် ပေးခြင်း



ပုံ- ပျော်ဘွယ်မြို့၊ မြို့ကနဦးကျောင်းနှင့် ပူးပေါင်း၍ ငလျင်ဘေးသင့် ပြည်သူများအတွက် ရေသန့်ကန် (၆၀)ကနီ၊ ဆန် (၅) အိတ်၊ ခေါက်ဆွဲခြောက် အထုပ် (၂၀၀၀) လှူဒါန်းခြင်း။



ပုံ- ပျော်ဘွယ်မြို့ရှိ ငလျင်ဘေးဒဏ်သင့်ခဲ့သော နေရာများအား ဖြိုဖျက်ရှင်းလင်းရန်အတွက် စက်ယန္တရားကြီးများ အသုံးပြု၍ ကူညီပေးခြင်း။

ပုံ- သာစည်မြို့ရှိ ငလျင်ဘေးဒဏ်သင့်ခဲ့သော နေရာများအား ဖြိုဖျက်ရှင်းလင်းရန်အတွက် စက်ယန္တရားကြီးများ အသုံးပြု၍ ကူညီပေးခြင်း။



ပုံ- ပျော်ဘွယ်မြို့၊ မြို့ကနဦးကျောင်းရှိ စာသင်သား ရဟန်းသံဃာများနှင့် ပျော်ဘွယ်မြို့နေ ပြည်သူလူထုများ သောက်သုံးရေသန့် အခက်အခဲမရှိစေရန်အတွက် တစ်နာရီ 1000 လီတာကျ ROသောက်ရေသန့်စက် တပ်ဆင်လှူဒါန်းပေးခြင်း။

ပုံ- သာစည်မြို့နယ်ရှိ ငလျင်ဘေးဒဏ်သင့်ခဲ့သော ဖြိုဖျက်/သေဆုံး စုစုပေါင်း အိမ် (၅၀) ထံသို့ ပစ္စည်း(၁၈)မျိုးအား လှူဒါန်းခြင်း။

 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED Bi-Annual Environmental Monitoring Report	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX-E

Emergency Preparedness Fire Drill Exercise Reports

EMERGENCY PREPAREDNESS FIRE DRILL EXERCISE REPORT

(28 Nov 2024, APACHE CEMENT FACTORY)



Prepare by	: Cho Thazin Thein
Position	: Safety Manager
Department	: OHS
Contact No	: 09255113710

Title: Lubricant caught fire at Line1 (701) Lubricant station area

Contents

1. Introduction
2. Objectives
3. Table Talk Exercise
4. Scenario
5. Event
6. Fire Drill Result
7. Debrief
8. Appendixes
 - a. Process details flow chart
 - b. Emergency contact list
 - c. Site in charge manage to extinguished lubricant fire using by fire extinguisher
 - d. Site supervisor inform to Hotline 09-255113060
 - e. Firefighter team and Rescue team conduct briefing and start to activate
 - f. Head count team roll call at assembly area
 - g. Firefighting team extinguished Lubricant fire by using fire truck and fire hydrant
 - h. Rescue team relocate injury person to the safe location given first aid treatment
 - i. OHS Manager explain usage of fire extinguisher and some of participant take part the demonstration on the usage of fire extinguisher
 - j. Plant Manager debrief about the fire drill on how important of fire drill in case of emergency

Introduction

Apache Cement Plant is situated at Pyi Nyaung Village, Thazi Township, Meiktila District, Mandalay Division.

This is recommended that ERT Emergency Response Team is prepared for any type of emergency that may occur.

Location of Apache Cement Factory

Name : Pyi Nyaung

Company Name : Shwe Taung Cement Co.Ltd
(Apache Cement)

City : Tharzi Township

State : Mandalay Devision

Country : Myanmar

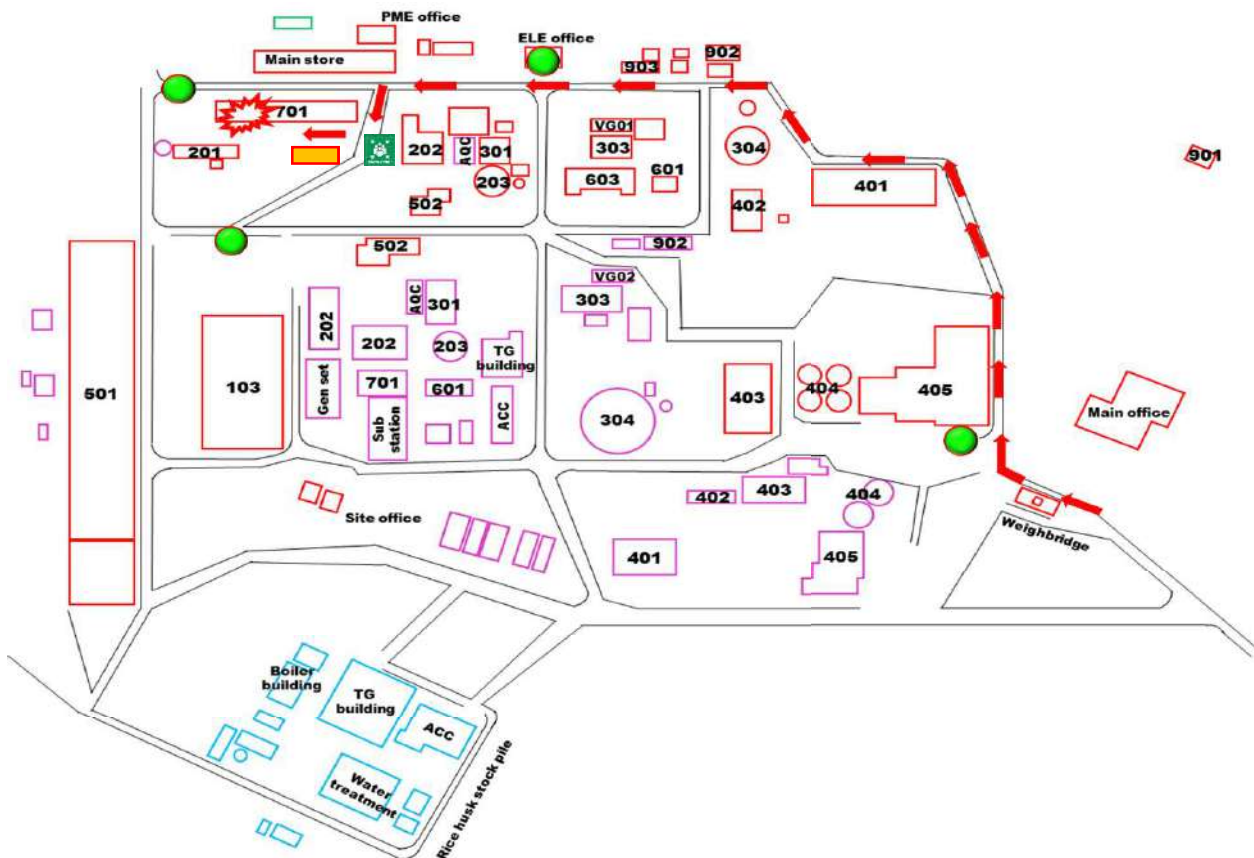


Objective

- To ensure that everyone knows what to do in case of emergency
- By practicing, people know how to escape safely and quickly
- To ensure all individuals in the workplace familiar with escape routes, emergency exits and safety protocols
- To practices everyone safety evacuate the nearest AA in an orderly manner
- Trained person aware on how to rescue injury person who trap inside the fire
- To familiarize on the usage of fire truck & fire fighting such as Fire Hose Reel and fire extinguisher

Drill Scenario

- About 8:30 am one of PME staff noticed some flame come out from lubricant storage place and some of PME staffs also inside the lubricant room by taking the lubricant.
- Immediately he manages to get Portable FE from nearest FE stand and put out the fire. However, 1 of the staff trap in the room and not easy to come out.
- Firstly, he try to rescue the trap person but the fire is growing bigger and can't get go in the lubricant room. He called for help and together with team manage to get fire hose reel by the nearest points to extinguish the fire.
- After sometime, ambulance arrived together with medical team



LEGEND	
	Assembly Point
	Fire catch area
	Fire engine route
	Fire truck
	Security check point

Event

The events are recorded and listed below:

Estimated Time	Events(s)
8:30 am	Fire Breakout Location Line1 (701) Lubricant station area
8:31 am	PME staff try to extinguished by fire extinguisher
8:33 am	PME in charge inform to STC hot line_09255113060
8:35 am	Activate firefighting team
8:37 am	Personnel proceed to the nearest Emergency Assembly Area (EAA)
8:38 am	Head count check each location and report to ERT
8:39 am	Fire truck and ambulance arrived on site with fully equipped
8:40 am	Fire was put up and Exercise cease
8:40 am	Rescue team relocate injury person to the safe location and given first aid treatment
8:45 am	Debrief by OHS Manager / Plant Manager

Fire Drill Result

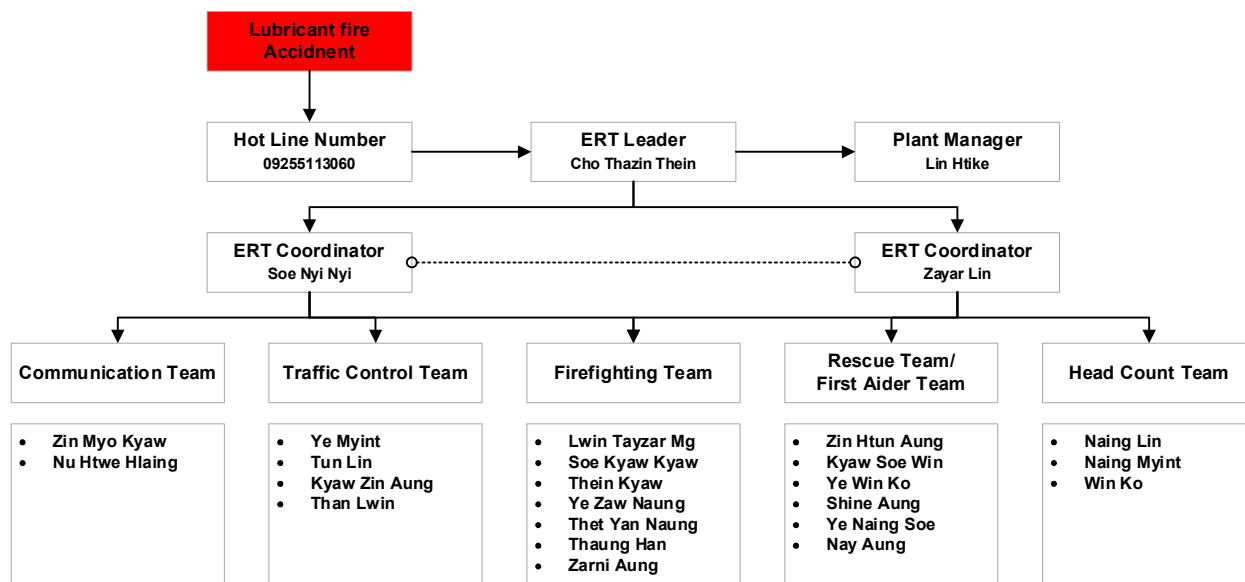
1. Total participation: 80
 - a. Firefighting team: 7
 - b. Traffic control team: 4
 - c. Rescue team/ first aider team: 6
 - d. Number of special fire warden: 2
2. Assemble Time Record: Approximately 15 ~ 20 minutes (inclusive of reporting head-count to ERT controller)

Debrief

1. Recap on the basic procedures when a fire alarm had activated:
 - a. When hear the alarm, stop work
 - b. Turn off the electrical supply in building
 - c. Turn off the equipment and machinery on site
 - d. Move to the assembly area; fast and slowly
 - e. At the assembly area, respective dept-in-charge will act as head count officer to take head count and register in the attendance sheet
 - f. Wait for further instructions by ERT coordinator / ERT controller
2. Emphasis on the objective of the exercise and importance to be prepared

Appendixes

a) Process details flow chart



b) STC Emergency contact list

STC Contact Numbers		
Name	Position	Contact numbers
U Lin Htike	Plant Manager	09255112918
Daw Nan Maw Maw Aye	Head of General Admin Division	09 255112651
Daw Cho Thazin Thein	OHS Manager	09255113710
U Mon Khan	Head of Division	09255112909
Nay Soe Naing	Head of occupational health & safety	09255112704
U Zaw Hlaing Oo	ELE Manager	09255111988
Thiha Soe	PME Manager	09255112897

Key Personnel	Pager / Hand phone
Police	199
Ambulance (Phyu Sin Myitta)	09968014931/09976897934
Rescue dept	0673404666/0673404777
Factory and general labour law inspection dept	095032471
Fire Service (Yin Mar Pin Station)	09445921400 /191
Meiktala General Hospital	095 84497
Fire Service (Thar Zi Station)	0642069131

c) Site in charge manage to extinguished lubricant fire using by fire extinguisher



d) Site supervisor inform to Hotline 09-255113060



e) Firefighter team, Rescue team and First aider team activate



f) Head count team roll call at assembly area



g) Firefighting team extinguished Lubricant fire by using fire truck



h) Rescue team relocate injury person to the safe location given first aid treatment



i) Participant demonstrate on the usage of fire extinguisher



j) OHS Manager / Plant manager debrief about fire drill



 SHWE TAUNG Building Materials	SHWE TAUNG CEMENT COMPANY LIMITED	 SHWE TAUNG CEMENT CO.,LTD.
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APPENDIX-F

Monitoring Photo Records

Ambient Air Monitoring Photo Records



Worker Accommodation



Pyi Nyaung Village



Ku Pyin Village

Water Quality Monitoring Photo Records



Ku Pyin Stream



Ye Shin Stream



Supply Water (Reservoir)



Sedimentation Pond 5 (Coal Storage Area)



Sedimentation Pond 7 Effluent (Industrial Wastewater)



Bio tank Effluent

Noise Monitoring Photo Record



Ku Pyin Village



Pyi Nyaung Village



Worker Accommodation