SHWE TAUNG MINING COMPANY LIMITED

Mudstone Quarry
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 All previous issues are hereby superseded and are to be destroyed.

Rev	Date	Description	Prepared by	Checked by	Approved by
0	November 2024	Bi-annual reporting to ECD	 Hein Latt Environmental Manager	- Head of HSE	 Kyaw Naing Soe Deputy MD of STM

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၁ စီမံကိန်း မိတ်ဆက်

၁.၁ အကျဉ်းချုပ်အစီရင်ခံစာ

ရွှေတောင်ဘိလပ်မြေကုမ္ပဏီလီမိတက်သည် မြန်မာနိုင်ငံ၌ကဏ္ဍမျိုးစုံတွင် စီးပွားရေးလုပ်ငန်းအမျိုးမျိုးတို့ကို ပိုင်ဆိုင်လုပ်ကိုင်လည်ပတ်နေသော Shwe Taung Group (STG) ၏ အစိတ်အပိုင်းတစ်ရပ်အနေဖြင့် မြန်မာနိုင်ငံ၊ မန္တလေးတိုင်းဒေသကြီး၊ သာစည်မြို့နယ်၊ ပြည်ညောင်ကျေးရွာတွင် ၎င်း၏ တည်ရှိနေပြီးသော ရွှံ့ကျောက်ထုတ်လုပ်မှုကို တိုးချဲ့ဆောင်ရွက်လျက်ရှိပါသည်။ စီမံကိန်းသည် ရွှံ့ကျောက်ထုတ်လုပ်မှုကို တစ်နှစ်လျှင် တန် ၉၇,၀၀၀ မှ တန် ၂၉၀,၀၀၀ ထိ တိုးချဲ့ ထုတ်ယူရန် လျာထားပါသည်။ စီမံကိန်းတည်နေရာကို ပုံ ၁ တွင် ဖော်ပြထားပါသည်။

STC သည် ရွှံ့ကျောက်တူးဖော်ထုတ်လုပ်မှုစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) ကို Environmental Resources Management (ERM)- Hong Kong Limited ဖြင့် ဆောင်ရွက်ခဲ့ပါသည်။

ရွှံ့ကျောက်လုပ်ကွက် သည် STC ဘိလပ်မြေစက်ရုံ၏ အနောက်ဘက်တွင် တည်ရှိပါသည်။ ရွှံ့ကျောက်လုပ်ကွက်နှင့် STC ဘိလပ်မြေစက်ရုံ အရှေ့ဘက်ရှိ ထုံးကျောက်လုပ်ကွက် နှင့် စစ်ကိုင်းတိုင်းဒေသကြီး၊ ကလေးဝမြို့နယ်ရှိ ကျောက်မီးသွေးသတ္တုလုပ်ကွက်တို့သည် ကုန်ကြမ်းများကို ထောက်ပံ့ပေးလျက် STC ဘိလပ်မြေစက်ရုံထုတ်လုပ်မှုကို အထောက်အပံ့ပြုဆောင်ရွက်လျက်ရှိပါသည်။

ရွှေတောင် သတ္တုတူးဖော်ထုတ်လုပ်ရေး ကုမ္ပဏီလီမိတက် (STM) သည် ရွှံ့ကျောက်ထုတ်လုပ်မှုလုပ်ငန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာကို ၂၀၂၂ ခုနှစ် နိုဝင်ဘာလ ၁၈ ရက်နေ့တွင် သယံဇာတနှင့်သဘာဝ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC)၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD) ထံမှ အတည်ပြုချက်ရယူခဲ့ပြီး ECC ရရှိနိုင်ရေးအတွက် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ ညွှန်ကြားချက်နှင့်အညီ ဆက်လက်ဆောင်ရွက်လျက်ရှိပါသည်။ ရွှံ့ကျောက်ထုတ်ယူခွင့်လိုင်စင်သည် ၂၀၂၂ ခုနှစ် နိုဝင်ဘာ ၁၅ ရက်တွင် သက်တမ်းကုန်ဆုံးခဲ့ပြီး ၂၀၂၃ ခုနှစ် ဇွန် ၂၈ ရက်တွင် MONREC မှ လိုင်စင်သက်တမ်းတိုးခြင်းကို လက်ခံရရှိခဲ့ပါသည်။ ထို့ကြောင့် ရွှေတောင်သတ္တုတူးဖော်ရေးကုမ္ပဏီလီမိတက်သည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ လုပ်ငန်းစဉ်များ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေနှင့် နည်းဥပဒေများ၊ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်များကို လိုက်နာဆောင်ရွက်လျက်ရှိပြီး ၂၀၂၄ ခုနှစ်၊ နိုဝင်ဘာလမှ ၂၀၂၅ ခုနှစ်၊ ဧပြီလအတွက် ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးခြင်း အစီရင်ခံစာကို တင်ပြခြင်း ဖြစ်ပါသည်

1. Introduction

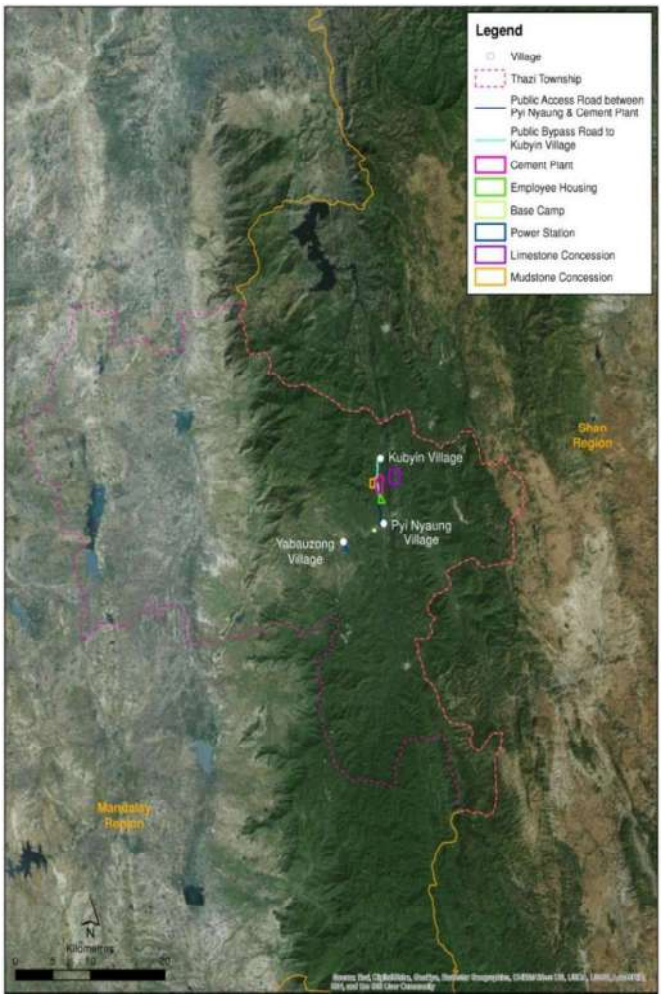
1.1 Executive Summary

Shwe Taung Cement Company Ltd. (STC), is planning an expansion of the mudstone production at its existing mudstone quarry in Pyi Nyaung Village, Thazi Township in the Mandalay region of Myanmar (the Project). The Project expanded extraction of mudstone from 97,500 tonnes to 290,000 tonnes per year. The location of the Project is shown in Figure 1. STC has commissioned Environmental Resources Management (ERM)-Hong Kong, Limited to undertake the Environmental Impact Assessment (EIA) for the mudstone quarry Project.

The mudstone quarry is located to the west of the STC cement plant (Figure 1). The limestone and mudstone quarries as well as a coal mine in Kalaywa township of Sagaing region are operated by Shwe Taung Mining (STM), subsidiary of Shwe Taung Cement (STC) which supply raw materials exclusively to the STC cement plant. The limestone quarry, mudstone quarry and coal mine of STM are thus considered as associated facilities of the STC cement plant.

Shwe Taung Mining (STM) Co., Ltd. received the approval letter from Environmental Conservation Department (ECD), Ministry of Natural Resources and Environmental Conservation (MONREC) for the project of the Mudstone Quarry EIA report on 18th November 2022 and now processing to get ECC in line with the instruction of ECD. However, the Mudstone Extraction License was expired on 15th November 2022 and received the license renewal from MONREC on 28th June 2023. STM 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.

Figure-1: Location of the Mudstone Quarry (Township Level)



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 Department.
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.

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 STM 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.

2. 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.

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 Mining 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.

Table-1: Environmental Monitoring Program

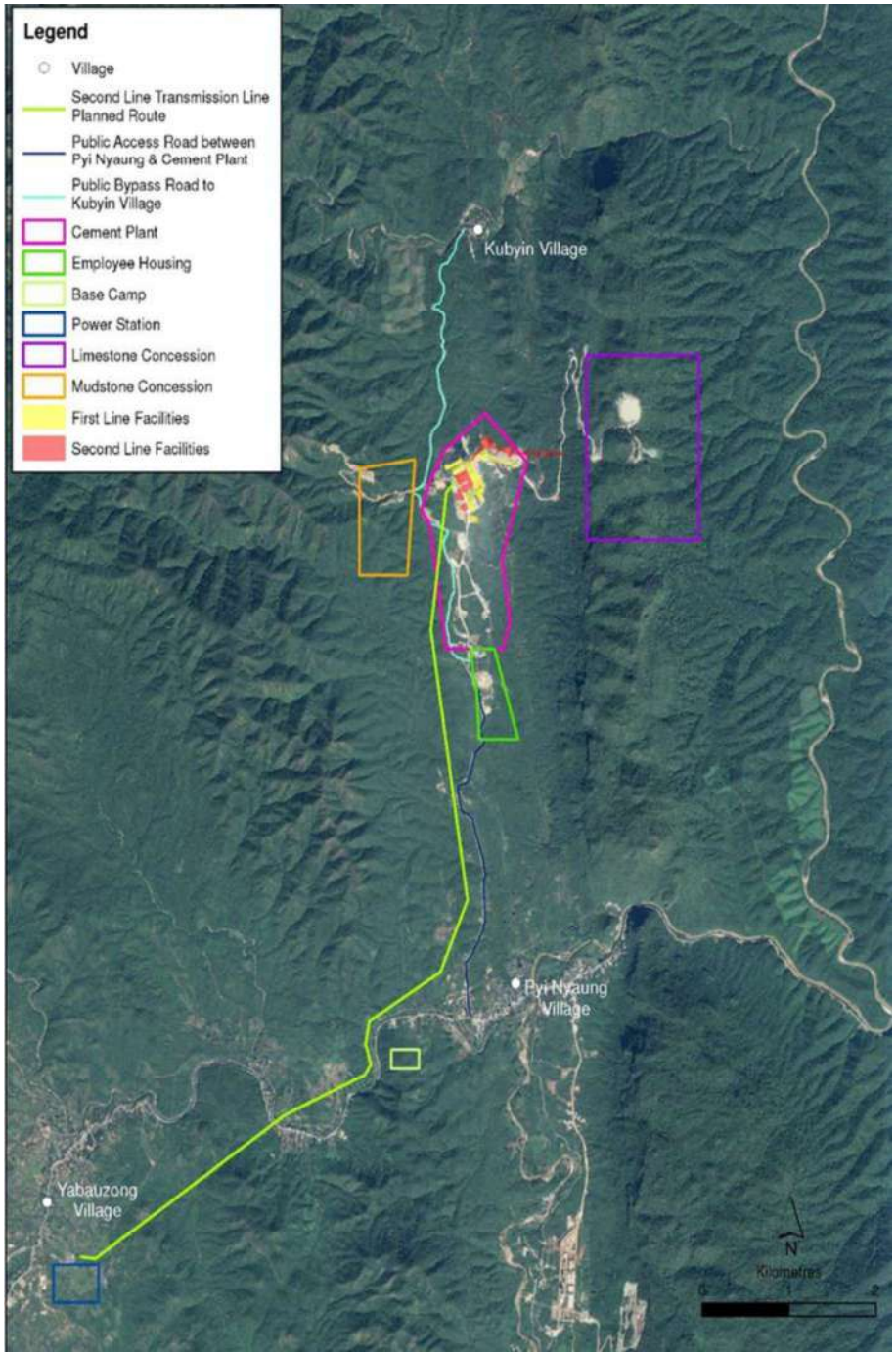
Project Stage/ Component	Potential Impact	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Operation / Mudstone Quarry	Inspection of mitigation compliance	General compliance with mitigation measures presented in the ESMP.	Project activity areas	Visual inspection of all active work areas and inspection of records	Weekly	HSE Team of Appointed Contractor and STM HSSE Department Head and Environmental Manager
Operation / Mudstone Quarry	Dust Impacts	Dust deposition	Cement Plant, Ku Pyin and Pyi Nyaung Villages	Dust deposition gauge	Monthly	STM HSSE Department Head and Environmental Manager
Operation / Mudstone Quarry	Discharge of treated wastewater and 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)	Sampling at: 1. Ku Pyin River, 2. Reservoir, and 3. Pyi Nyaung Village 4. Ye Shin Chaung creek 5. Mudstone runoff area	Standard analytical methods	Monthly	STM HSSE Department Head and Environmental Manager
Operation / Mudstone Quarry	Noise and vibration	Check compliance with noise levels specified in Myanmar National Environmental Quality (Emission) Guidelines (2015) for noise.	Ku Pyin Village and Pyi Nyaung Village	Standard analytical methods	Twice per year	STM HSSE Department Head and Environmental Manager
Operation / Mudstone Quarry	Soil and sediment	As per parameters in Section 5.5	At mudstone quarry run off area	Standard analytical methods	Twice per year	STM HSSE Department Head and Environmental Manager

3. Project Information

3.1 Project Location

The 165-acre mudstone quarry is located west of the STC cement plant (Figure 2). The concession to operate the mudstone quarry is renewed annually with the Forest Department since the concession was initially granted on 31 October 2013. An operating agreement for small-scale production of mineral was signed on 13 December 2017 with No. (1) Mining Enterprise of the Ministry of Natural Resources and Environmental Conservation (MONREC) for a five (5) year term. New medium-scale production of mineral was signed on 28 June 2023 with No. (1) Mining Enterprise of the Ministry of Natural Resources and Environmental Conservation (MONREC).

Figure -2: Location of STM Mudstone Quarry



3.2 Project Description

Mudstone extraction is currently undertaken by open excavation approximately 500 m above sea level to provide raw material for the existing cement plant. The extracted mudstone is transported by truck to the cement plant, which requires 97,500 tonnes of mudstone per annum to meet the current production capacity. Expansion of the STC Cement Plant with a second kiln will require an additional 262,260 tonnes of mudstone per year bringing the total to 359,760 tonnes of required mudstone per year. The life of the mudstone quarry is estimated at around 55 years based on annual mining volumes of approximately 290,000 tonnes.

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.

4. Environmental Monitoring Program

4.1 Dust Monitoring

Potential impacts to air quality in the vicinity of the mudstone quarry may arise from clearing and excavating of surface materials, bulldozing surface materials, drilling, blasting, loading and unloading haul trucks with mudstone and waste rock, vehicle movements over unpaved surfaces, wind erosion from mudstone and waste rock stockpiles. Major pollutants will be Dust, PM10 and PM2.5 which can affect the surrounding environment.

Dust deposition gauges have been installed in plant area, Kubyin and Pyi Nyaung Villages and STM monitored dust deposition with 6 points on surrounding area in plant site, quarries and plant accommodation area, Ku Pyin and Pyi Nyaung village.

4.1.1 Monitoring Result for Dust Deposition Monitoring

STM monitored dust deposition with 6 points at cement plant, housing/ accommodation area, Ku Pyin and Pyi Nyaung village. 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 the Table 3 for dust deposition monitoring results from November 2024 to April 2025.

Table-2: Monitoring Location

No	Monitoring Location	Latitude	Longitude
1	STM Accommodation (Ingyin Hostel)	20°51'23.1"N	96°23'34.7"E
2	STM 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-3: Dust Deposition Monitoring

Table-3: Dust Deposition Monitoring results at Workers 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**
STM Accommodation (Ingyin Hostel)	1.191 (g/m2/Day)	0.64	0.89	0.78	0.65	0.47	0.99
STM 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

4.2 Ambient Air Monitoring

4.2.1 Monitoring Location

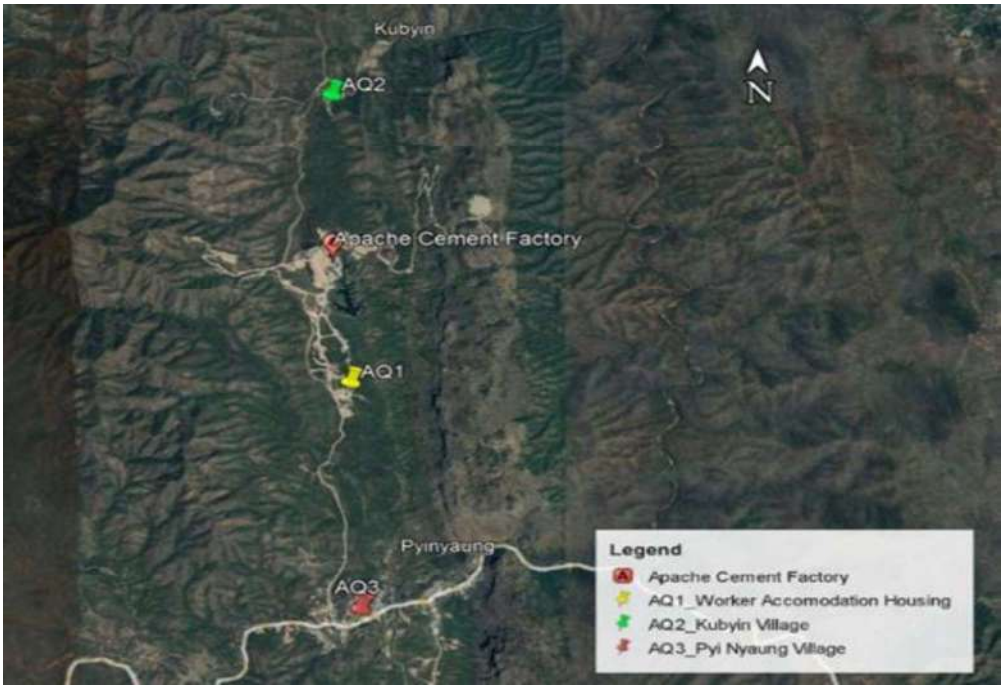
Ambient Air Quality monitoring is measured with portable HAZ-SCANNER™ EPAS device. Ambient air quality monitoring location had been selected by identifying potentially affected with consideration given to the prevailing wind conditions through Operation and Construction activities.

Table-4: 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°53'20.47"N	96°23'27.58"E
3	AQ3_Pyi Nyaung Village	20°49'4.58"N	96°23'40.42"E

Figure-4: Ambient Air Quality Monitoring

Figure-5: Location Map of Ambient Air Monitoring at STM Mudstone



4.2.2 Monitoring Method

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.skcinc.com/catalog/pdf/instructions/EPAS%20manual%20v.3.1.pdf

4.2.3 Monitoring Result for Ambient Air Quality Monitoring

Table-5: Summary of Ambient Air Quality Monitoring at Worker Accommodation

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

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.

4.2.4 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, STM 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, STM has updated the AQI results in all bi-annual monitoring reports.

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-6: 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.

Table-8: Summary of AQI at Plant Site from November 2024 to April 2025

Air Quality Index (AQI)									
Machine Name: Haz-scanner (EPAS)			**Operator:** Nay Hlaing Oo						
			Location: Worker Accommodation						
			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	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 November 2024 to April 2025

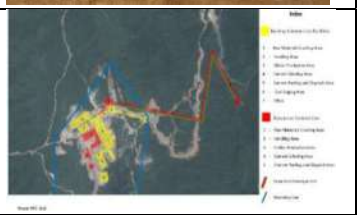
Air Quality Index (AQI)									
Machine Name: Haz-scanner (EPAS)			**Operator:** Nay Hlaing Oo						
			Location: Pyi Nyaung Village						
			AQI Results						
Parameter	**Averaging Period**	**Unit**	**Nov 2024**	**Dec 2024**	**Jan 2025**	**Feb 2025**	**Mar 2025**	**Apr 2025**	**Sensitive Group**
PM_{10}	24 hour	ug/m3	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 November 2024 to April 2025

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.

4.2.5 Air Quality Mitigation Measures

Table-11: Air Quality Management

Affected Aspect	Mitigation Measures	Action Taken	Photos
Air Quality	• Water suppression should be used on unpaved roads and work areas in dry and windy conditions;	Water suppression are undertaken on the roads to mitigate dust emission on surrounding area in plant site and accommodation area. (See in Appendix A).	
	• Drop heights during loading and transfer of materials should be minimized to no more than 0.5 m and shielded against the wind	Completed and installed for line 1 and line 2 design	
	• Storage of dusty materials (i.e. stockpiles) should be enclosed or operated with efficient dust suppression measures;	Implemented	
	• Stockpile heights should be kept to a minimum of no more than 3 m	Implemented	
	• Regular cleaning of conveyor belt systems;	Included in PME scope (Regular Maintenance of bag filter and electrostatic precipitator, see in Appendix)	

	• 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)	

4.2.6 Evaluation

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: Human activities affected the Ambient Air Quality around STM Mudstone Quarry

STM has investigated the reason of SO_2 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. STM has analyzed the monitoring results from the portable HAZ-SCANNER™ EPAS device and found out that SO_2 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. STM 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. STM will raise the public awareness among Mudstone Quarry community and also disclosed these air quality monitoring results and AQI results at Pyi Nyaung Information Center and Ku Pyin library according to STM Stakeholder Engagement Plan.

STM 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 STM and elevated readings cannot be solely apportioned to emissions from Mudstone Quarry and associated facilities.

Therefore, STM was looking other factors that can be impacting on SO_2 results and found out that it was related to emission of mobile vehicles that were higher SO_2 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 STM 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 PM_{10} 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. STM 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.

Water suppression are also undertaken on the roads to mitigate dust emission on surrounding area in plant site and accommodation area. (See in Appendix A).

Moreover, to safeguard occupational health, STM 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




4.3 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.

4.3.1 Monitoring Location

As per monitoring program, STM monthly monitor Ku Pyin and Pyi Nyaung Stream, Ye Shin Stream, Reservoir, Sedimentation Pond 5 and 6 for mudstone runoff area. Figure 9 and 10 show the location of 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.

In accordance with the commitment outlined in approval letter, STM requires to monitor parameters including Arsenic, Cadmium, Chromium (VI), Copper, Cyanide (total, free, and weak acid dissociable), Iron (total), Lead, Mercury, Nickel, and Zinc in Mudstone Runoff Discharge and Ye Shin Stream on biannual basis. Therefore, STM has collected water samples from these locations and samples were submitted to an accredited external laboratory for analysis of the full range of required parameters. The test results will be incorporated into the upcoming Environmental Monitoring Report.

Table-12: Sampling locations

No	Sampling Location	Latitude	Longitude
1	Ku Pyin Stream	20°53'22.92"N	96°23'23.92"E
2	Pyi Nyaung Stream	20°49'23.18"N	96°23'46.25"E
3	Ye Shin Stream	20°50'24.08"N	96°23'26.81"E
4	Supply Water	20°51'35.3"N	96°23'37.7"E
5	Sedimentation Pond 5	20°52'10.60"N	96°23'16.67"E
6	Sedimentation Pond 6	20°51'47.52"N	96°23'25.02"E

4.3.1.1 Location Map of Water Quality Sampling Points

Figure-9: Overview Map of sampling point for Stream Water and Supply Water Quality

Figure-10: Overview Map of sampling point for Sedimentation Pond Water Quality

Figure-11: Water Quality Sampling Record

4.3.2 Monitoring Result for Water Quality

Table-13: Ku Pyin Stream Water Quality Monitoring Result

Ku Pyin Stream 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-14: Pyi Nyaung Stream Water Quality Monitoring Result

Ye Shin Stream Water (Near Pyi Nyaung) Analysis								
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-15: Ye Shin Stream Water Quality Monitoring Result

Ye Shin Stream Water (Near 6 Unit) Analysis								
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	7.5	No Water	No Water	No Water	7.5
Color	15 PCU	-	15	15				10
Turbidity	5 NTU	-	2.15	10				1.94
Calcium hardness	500 mg/l	-	*	*				*
Chloride (Cl)	250 mg/l	-	*	*				*
Sulphate (SO4)	200 mg/l	-	20	10				20
TSS	50 mg/l	50 mg/l	6	26				6
Nitrate	50 mg/l	-	1.6	6.8				5.3
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: 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

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 (SO4)	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-5).

Table-17: 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-18: Sedimentation Pond 6 Surface Water Test Result

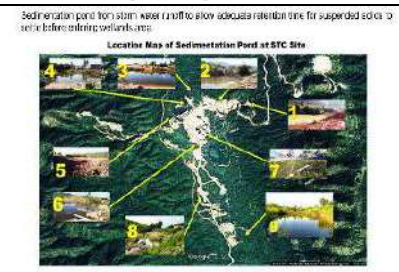
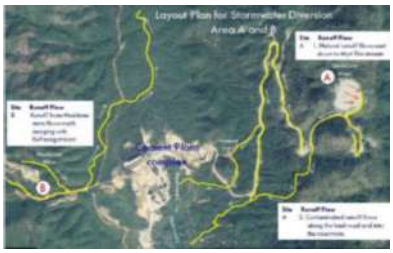
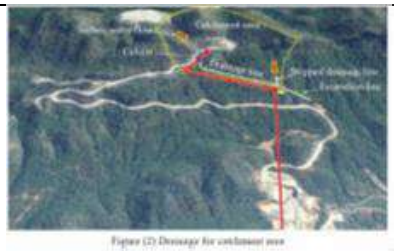
Sedimentation Pond 6 Surface Water Test Result									
Parameters	**IFC Waste Water Guideline**	**EQEG Guide line**	**Baseline Results**	**Nov 2024**	**Dec 2024**	**Jan 2025**	**Feb 2025**	**Mar 2025**	**Apr 2025**
pH	6 ~ 9	6 ~ 9	5.6	9.5	8.8	8.6	8	8.4	8.2
Chemical Oxygen Demand (COD)	0~125 mg/l	125 mg/l	2.5	*	*	*	*	*	*
Biological Oxygen Demand (BOD)	0~30 mg/l	30 mg/l	1	*	*	*	*	*	*
Total Suspended Solid (TSS)	Max 50 mg/l	50 mg/l	9	167	131	128	8.4	44	57
Total Nitrogen	10 mg/l	10 mg/l	0.3	2.21	ND	2.33	Can't Test	2.15	0.72
Total Nitrate	44.29 mg/l	-	-	9.8	ND	10.3	Can't Test	9.5	3.2
Total Phosphorous	2 mg/l	2	0.01	0	*	0.0	*	*	*
Oil and grease	10 mg/l	10 mg/l	DL	*	*	*	*	*	*
Total Coliform Bacteria	-	100 ml	ND	*	*	*	*	*	*
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"									

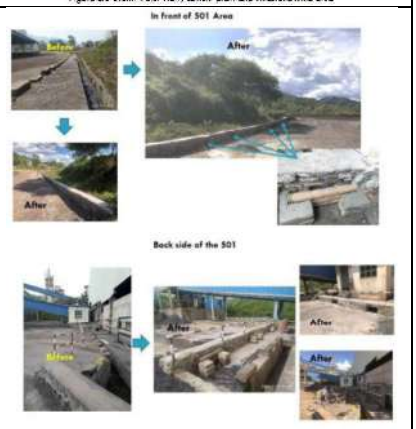
** Not for drinking water. No effect for Health & Environment.*

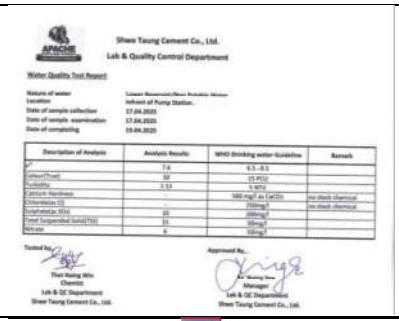
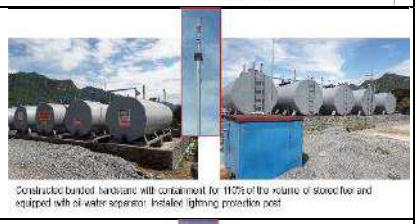
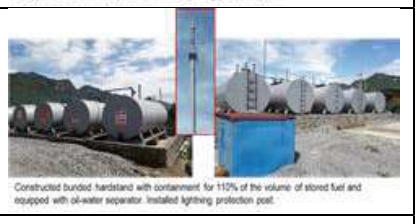
** STM has tested the surface water quality from the sedimentation ponds for using water with water truck to suppress dust around the cement plant and quarry sites. Laboratory results for water quality are attached in Appendix-B.*

4.3.3 Water Quality Mitigation Measures

Table-19: 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.	 
	• 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.	
	• 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.	
	• 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.	
	• 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.	
	• The fuel storage facility should be constructed on bunded hardstand with containment sufficient for 110% of the volume of the single largest tank;	Equipped.	
	• Discharges from this bunded area should pass through an oil-water separator;	Installed	
	• 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 Quality (Emissions) Guidelines for site runoff and wastewater discharges (for TSS, oil and grease, pH).	Conducted and monitored by LQC result documented (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 NEQEQ 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 4.3.2 for water result)

**Data from Environment shared google drive*

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

4.3.4 Evaluation

At mudstone quarry site, stormwater management practices are in place to control surface runoff, prevent uncontrolled discharge, and reduce erosion and sediment transport from project facilities and disturbed areas. A dedicated drainage network has been constructed to intercept and divert runoff, including diversion of runoff from the mudstone quarry to a properly sized and maintained sedimentation pond, ensuring sufficient retention time for suspended solids to settle before discharge.

Sanitary wastewater generated from the plant office and staff accommodations is directed to bio-tanks for treatment prior to discharge. Monthly water quality monitoring is conducted at Ku Pyin, Pyi Nyaung, Ye Shin Stream and the plant's reservoir to ensure compliance with the World Health Organization (WHO) drinking water guidelines and the Myanmar National Environmental Quality (Emission) Guidelines (NEQEG) – General Application. In addition, surface water samples from sedimentation ponds are also monitored monthly in accordance with NEQEG standards and compared with baseline data. Elevated levels of Total Suspended Solids (TSS) are occasionally observed during the dry seasons (winter and summer), which may be attributed to reduced water flow rates during these periods.

4.4 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. STM operate noise monitoring twice a year in accordance with Mudstone Environmental Monitoring Plan and results are shown in Table 20 below:

4.4.1 Location Map of Noise Quality Monitoring Points

Figure-12: Noise Quality Sampling Points

Table – 20: 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

Table-21: Noise Monitoring Results in Pyi Nyaung and Ku Pyin villages

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

4.4.2 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.

4.5 Soil Quality Monitoring

In accordance with the commitment outlined in approval letter, STM requires to monitor parameters including pH, Moisture Content (dried @ 103° C), Electrical Conductivity, Cadmium, Copper, Lead, Zinc and Iron at mudstone runoff area on biannual basis. Therefore, STM has collected soil samples from that area and Ku Pyin village, and samples were submitted to Department of Agriculture (Land Use) laboratory for analysis of the full parameters. The locations for soil sampling are provided in Figure 13. The test results will be incorporated into the upcoming Environmental Monitoring Report.

Soil quality monitoring was undertaken in April 2023 in Ku Pyin village. Two soil samples were taken at each sampling location These samples were sent to the laboratory analyzed by Department of Agriculture (Land Use), Ministry of Agriculture, Livestock and Irrigation (MOALI). Parameters measured included Moisture, pH, Electrical Conductivity, Organic Carbon, Humus, Total Nitrogen, Ca^{2+}, Mg^{2+}, K^{+}, P, K_2O, Water Soluble SO_4^{2-}. Soil quality monitoring results for laboratory analyzed parameters are shown in Table 22.

4.5.1 Location Map of Soil Quality Monitoring Points

Figure-13: Soil Quality Sampling Points

Table – 22: Soil Monitoring Results in Ku Pyin village

Parameter	Unit	Baseline	Sample A	Sample B	Sample C	Sample D	Sample E	Remark
Moisture %	%	14.6	3.13	2.23	2.64	4.99	2.65	
pH	pH	6.6	7.12	6.90	7.28	7.99	6.66	
Electrical Conductivity	dm/s	0.77	0.08	0.06	0.09	0.15	0.06	
Organic Carbon%	%	1.62	1.37	1.04	1.89	1.98	1.25	
Humus	%	-	2.36	1.79	3.25	3.41	2.15	
Total N%	%	-	0.108	0.107	0.107	0.165	0.107	
Ca^{2+}	Meq/100gm	-	14.43	9.53	13.68	22.43	15.06	
Mg^{2+}	Meq/100gm	-	2.75	0.68	1.37	1.40	2.74	
K^{+}	Meq/100gm	-	0.54	0.41	0.43	0.47	0.41	
P	ppm	-	0.41	0.41	0.41	0.42	0.41	
K_2O	mg/100gm	-	25.39	19.02	20.33	22.11	19.12	
Water Soluble SO_4^{2-}		-	0.04	0.08	0.08	ND	0.04	

4.5.2 Evaluation

Agronomist stated that the current outcomes are satisfactory and that it would be beneficial for STM to implement small-scale plantations in the Ku Pyin area if STM can demonstrate the success of planting as a model plantation. He then responded that all test results have been reliable for at least a year.

4.6 Waste Management Monitoring

4.6.1 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 14, 15 and 16 show location map of waste disposal area and waste collection points.

Figure-14: Location Map of Collection Points of All Generated Wastes from Plant Site and Accommodation Area

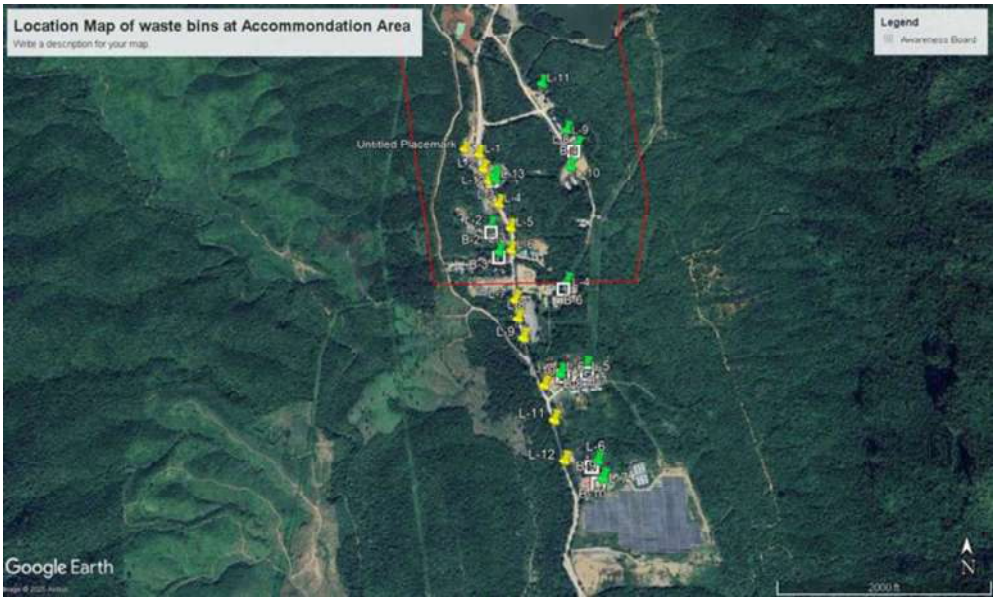


Figure-15: Location Map of Disposal Sites for Waste from Plant and Accommodation Area

Figure-16: Location Map of Site Waste Dumping Area (Scrap Yard)

Table-23: 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	

4.6.2 Generation of Hazardous Waste

Table-24: Generated Hazardous Waste

STM 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

4.6.3 Waste Management Mitigation Measures

Table-25: 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	

	• 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 Hazardoous 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)	  
	• 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)	
	• 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 Meikhtila 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 are collected and deposed to dispose to Meikthila Incinerator, approved by Meikhtila City Development Committee.	 

	• Waste oil should be used for kiln start-up;	Resale by ADM	 
	• 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 in the Mudstone Quarry 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.)	  Temporary Solid Non-hazardous wastes storage inspected by ECD and other government entities for the approval of EIA.

4.6.4 Evaluation

Implementing principles of the waste hierarchy in the most responsible manner (reduce, reuse, recycle, reclaim, dispose) in the plant site by conducting tool box talk, delivering pamphlet, offering waste bin in each plant site department and accommodation area, undertaking simultaneous mass housekeeping 9 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.

5. 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.

5.1 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 – 17: 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 – 26: Wildlife Records from Transact Survey

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

5.2 Ecosystem Restoration Plantations

STM 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-27: 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-28: 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 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 – 18: Maintenance activities at Ecosystem Restoration Plantations

STM 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. STM will mitigate to get better growth rate plantation in next year by changing of planting pattern, selection of species, preparation of soil before planting.

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

5.3 Biodiversity Awareness Training

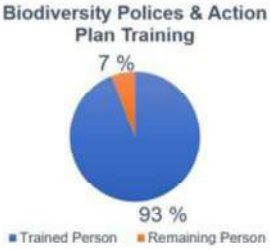
STM conducted in-house training sessions on the Biodiversity Policy and Action Plan for new employees, as well as biodiversity awareness programs for local communities, particularly children, in Ku Pyin and Pyi Nyaung Villages. These programs aimed to enhance understanding of local wildlife species found 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 Polices & 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

- 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 (Ophlophagus hannah) & Coloration Competition		Awareness for Shan State Langur (Trachypithecus phayrei spp. shanicus) & Coloration Competition	
Date	Conducted on 21th Jan 2025	Conducted on 5th February 2025	Conducted on 26th March 2025	Conducted on 28th 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 Nyaung Village – Information Center & Library	At Ku Pyin Village – Monastery	At Pyi Nyaung Village – Information Center & Library

Recorded Event Photos

Awareness Vinyl Board

6. Corporate Social Responsibility

STM Mudstone Quarry implements Corporate Social Responsibility (CSR) to communities and release newsletter in quarterly, see in Appendix-D.

7. 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.). With the support of the IFC, STM has retained international consultants to assist with the review, update and implementation of its occupational health and safety procedures.

Generally, there is one to two daytime blasting occurred at mudstone 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.

7.1 Fire Safety Measures

In compliance with the directives of the Myanmar Fire Services Department, STM 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”.

7.2 Occupational Hazard Prevention and First Aid Training

Ensuring the safety and well-being of our employees is paramount. STM 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 STM 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, STM 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 STM'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, STM 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 –19: OHS, First Aid Trainings Records and Medical check-ups from Social Security Board using Mobile Medical Unit

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သို့

OHS Manager
အပါချီဘိလပ်မြေစက်ရုံ
Shwe Taung Cement Co. ltd

အကြောင်းအရာ။ **အပါချီဘိလပ်မြေစက်ရုံတွင် လုပ်ငန်းခွင်ပတ်ဝန်းကျင်စိစစ်ခြင်း၊ လုပ်သားများအား ကျန်းမာရေးစစ်ဆေးပေးခြင်းနှင့် လုပ်ငန်းခွင်ရှေးဦးသူနာပြုသင်တန်းပို့ချခြင်း လုပ်ငန်းများ ဆောင်ရွက်မည်ဖြစ်ကြောင်း အကြောင်းကြားခြင်း**

ရည်ညွှန်းချက်။ Shwe Taung Cement Co. ltd ၏ (၈-၁-၂၀၂၅) ရက်စွဲပါ စာအမှတ်၊ (STBN/ OHS/ 001/ 2025)

အထက်အကြောင်းအရာပါကိစ္စနှင့်စပ်လျဉ်း၍ ရည်ညွှန်းပါစာအရ မန္တလေးတိုင်းဒေသကြီး၊ သာစည်မြို့နယ်ရှိ၊ ရွှေတောင်ကုမ္ပဏီလီမိတက်ပိုင် အပါချီဘိလပ်မြေစက်ရုံသို့ ပြည်သူ့ကျန်းမာရေးဦးစီးဌာန၊ လုပ်ငန်းခွင်နှင့်ပတ်ဝန်းကျင်ကျန်းမာရေးဌာနခွဲမှ ဆရာဝန်များ၊ သူနာပြုများ၊ ပတ်ဝန်းကျင်စိစစ်ရေးဝန်ထမ်းများသည် လုပ်ငန်းခွင်ပတ်ဝန်းကျင်စိစစ်ခြင်း၊ လုပ်သားများအား ကျန်းမာရေးစစ်ဆေးပေးခြင်းနှင့် လုပ်ငန်းခွင်ရှေးဦးသူနာပြုသင်တန်းပို့ချခြင်း လုပ်ငန်းများကို (၃-၃-၂၀၂၅) ရက်နေ့မှ (၇-၃-၂၀၂၅)ရက်နေ့အထိ လာရောက်ဆောင်ရွက်မည်ဖြစ်ပါကြောင်း ညှိနှိုင်းအကြောင်းကြားအပ်ပါသည်။

(ဒေါက်တာကော်နိုင်ဒေး)
ညွှန်ကြားရေးမှူး

မိတ္တူ
- ရုံးလက်ခံ
- မျှောစာတွဲ

8. Conclusion and Recommendation

STM Mudstone Quarry 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 Mudstone Quarry operation. It is ensuring that the Myanmar environmental legislative compliance and IFC standards of good practice during the Mudstone Quarry 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 STM with robust environmental management system that is implemented by a well-resourced, integrated and competent HSE staffs as per compliance of STM Mudstone Quarry 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 Mudstone Biannual Environmental Monitoring Reports Submission to ECD” can be seen in the Appendix-A2. Monitoring photo records can be seen in the Appendix-F.

9. Appendix

APPENDIX-A

APPENDIX-A1

Mitigation Measures for Air Quality Impact

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

Table: Water Suppression Record from May 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

APPENDIX-A2

Status of Mudstone Biannual Environmental Monitoring Reports Submission to ECD

Table: Status of Mudstone 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
၁၁.၁၁.၂၀၂၂	၂၉.၂.၂၀၂၄	ပထမအကြိမ်	၂၀၂၂ ခုနှစ် ဒီဇင်ဘာလမှ ၂၀၂၃ ခုနှစ် မေလအထိ	
		ဒုတိယအကြိမ်	၂၀၂၃ ခုနှစ် ဇွန်လမှ ၂၀၂၃ ခုနှစ် နိုဝင်ဘာလအထိ	
	၂၈.၆.၂၀၂၄	တတိယအကြိမ်	၂၀၂၃ ခုနှစ် နိုဝင်ဘာလမှ ၂၀၂၄ ခုနှစ် ဧပြီလအထိ	ဝန်ကြီးရုံးအတည်ပြု သည့် ရက်စွဲအရ ပြန်လည်ညှိနှိုင်း ပြင်ဆင်တင်ပြခဲ့ပါသည်။
	၂၉.၁၁.၂၀၂၄	စတုတ္ထအကြိမ်	၂၀၂၄ ခုနှစ် မေလမှ ၂၀၂၄ ခုနှစ် အောက်တိုဘာလအထိ	
	၂၀၂၅ ခုနှစ် မေလ	**ပဉ္စမအကြိမ်**	**၂၀၂၄ ခုနှစ် နိုဝင်ဘာလမှ ၂၀၂၅ ခုနှစ် ဧပြီလအထိ**	
	ဆက်လက်တင်ပြရန်	***ဆဋ္ဌမအကြိမ်***	***၂၀၂၅ ခုနှစ် မေလမှ ၂၀၂၅ ခုနှစ် အောက်တိုဘာလအထိ***	***၂၀၂၅ ခုနှစ် နိုဝင်ဘာလအတွင်း တင်ပြရန်***

APPENDIX-B

APPENDIX - (B-1)

(Ku Pyin Stream Water Quality Results)

APACHE
PORTLAND CEMENT
THE STRENGTH TO BUILD

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.

APPENDIX - (B-2)

(Pyi Nyaung Stream Water Quality Results)

APACHE
PORTLAND CEMENT
THE STRENGTH TO BUILD

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
P^H	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.

APACHE
PORTLAND CEMENT
THE STRENGTH TO BUILD

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
P^H	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.

APPENDIX - (B-3)

(Ye Shin Stream Water Results)

Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Water Quality Test Report

Nature of water	**Stream Water(Ye Chin)**
Location	**Near 6 Unit(Family Housing)**
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)	15 PCU	15 PCU
Turbidity	2.15 NTU	5 NTU
Sulphate(as SO_4)	20 mg/l	200mg/l
Total Suspended Solid(TSS)	6 mg/l	50mg/l
Nitrate	1.6 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(Ye Chin)**
Location	**Near 6 Unit(Family Housing)**
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	7.5	6.5 ~ 8.5	
Colour(True)	15 PCU	15 PCU	
Turbidity	10 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)	26 mg/l	50mg/l	
Nitrate	6.8 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(Ye Chin)**
Location	**Near 6 Unit(Family Housing)**
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	7.5	6.5 ~ 8.5	
Colour(True)	10	15 PCU	
Turbidity	1.94	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	200mg/l	
Total Suspended Solid(TSS)	6	50mg/l	
Nitrate	5.3	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.

APPENDIX - (B-4)

(Supply Water (Lower Reservoir) Results)

APACHE
PORTLAND CEMENT
THE STRENGTH TO BUILD

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
P^H	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.

APACHE PORTLAND CEMENT
THE STRENGTH TO BUILD

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.

APPENDIX - (B-5)

(Supply Water (Lower Reservoir))

Tested by External Laboratories

GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.
Lot No E1. Thilawa SEZ Zone A, Yangon Region, Myanmar.
Phone No Fax No: (+95) 1 2309051

motivate our planet

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, Determine 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

GEM

GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.
Lot No E1. Thilawa SEZ Zone A, Yangon Region, Myanmar.
Phone No Fax No: (+95) 1 2309051

motivate our planet

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

LAB
Aug 22, 2024
GEM

Approved By :

Ni Ni Aye Lwin Aug 22, 2024
Manager

*** End Of Document ***

ISO TECH LABORATORY

Laboratory Technical Consultant: U Saw Christopher Maung
B.Sc Engg: (Civil), Dip S.E(Delft) Lecturer of YIT (Retd). Consultant (Y.C.D.C). LWSE 001.
Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

ISO 9001:2015 Cert. No.688283

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

Approved by
Signature:
Name: Thinzar Theint Theint
B.E (Civil)
Assistant Technical Officer
ISO Tech Laboratory

ISO TECH LABORATORY

Laboratory Technical Consultant: U Saw Christopher Maung
B.Sc Engg: (Civil), Dip S.E(Delft) Lecturer of YIT (Retd). Consultant (Y.C.D.C), LWSE 001.
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WTL-RE-001
Issue Date - 01-12-2012
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Issue No - 1.0/Page 2 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)
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:

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

Approved by

Signature:

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

APPENDIX - (B-6)

(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
Biologycal 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
Biologycal 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
Biologycal 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,

for

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

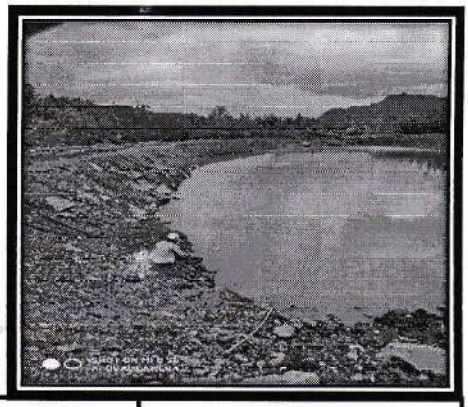
Approved By,

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**
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
Biologycal 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
Biologycal 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.

APPENDIX - (B-7)

(Sedimentation Pond 6 Water Results)

Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	**Surface Water**
Location	**Infront of Main Office**
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	9.5	6-9
Total Suspended Solid(TSS)	167 mg/L	Max 50mg/L
Total Phosphorous	0.0 mg/L	2 mg/L
Total Nitrogen	2.21 mg/L	10mg/L
Total Nitrate	9.8 mg/L	44.29mg/L

Tested by,

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

Approved By,

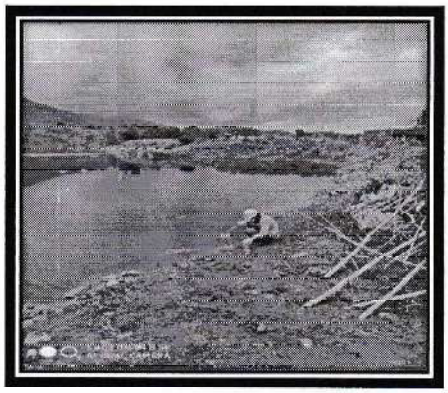
Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	**Surface Water**
Location	**Infront of Main Office**
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	8.8	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biologycal Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	131 mg/L	Max 50mg/L	
Total Nitrogen	ND	10mg/L	Can't Test
Total Nitrate	ND	44.29mg/L	Can't Test
Total Phosphorous	0.0 mg/L	2mg/L	

Tested by,

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

Approved By,

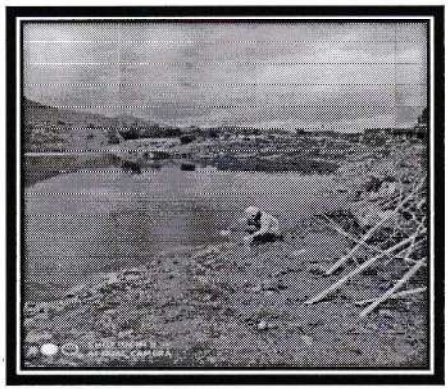
Ye' Naing Soe
Team Leader
Lab & QC Department
Shwe Taung Cement Co., Ltd.

Shwe Taung Cement Co., Ltd.

Lab & Quality Control Department

Waste Water Test Report

Nature of water	**Surface Water**
Location	**Infront of Main Office**
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	8.6	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biologycal Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	128 mg/L	Max 50mg/L	
Total Nitrogen	2.33 mg/L	10mg/L	Can't Test
Total Nitrate	10.3mg/L	44.29mg/L	Can't Test
Total Phosphorous	0.0 mg/L	2mg/L	

Tested by,

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

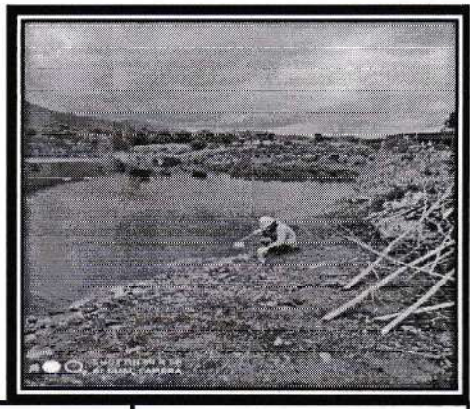
Approved By,

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	**Infront of Main Office**
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	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biologycal Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	**8.4 mg/L**	Max 50mg/L	
Total Nitrogen	-	10mg/L	Can't Test
Total Nitrate	-	44.29mg/L	Can't Test
Total Phosphorous	-	2mg/L	no stock chemical

Tested by,

for

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

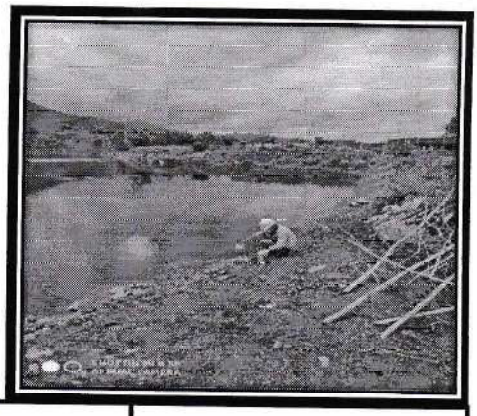
Approved By,

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**
Location	**Infront of Main Office**
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	8.4	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biologycal Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	**44mg/L**	Max 50mg/L	
Total Nitrogen	2.15mg/L	10mg/L	Can't Test
Total Nitrate	9.5mg/L	44.29mg/L	Can't Test
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	**Infront of Main Office**
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	8.2	6-9	
Chemical Oxygen Demand(COD)	-	0-125mg/L	no stock chemical
Biologycal Oxygen Demand(BOD)	-	0-30mg/L	no stock chemical
Total Suspended Solid(TSS)	**57**	Max 50mg/L	
Total Nitrogen	0.72	10mg/L	Can't Test
Total Nitrate	3.2	44.29mg/L	Can't Test
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.

APPENDIX- C

Ambient Air Quality Results

APPENDIX - (C-1)

Ambient Air Quality Results of Worker Accommodation

Main | Preferences | Header | Data | Report

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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 AM	**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

APPENDIX - (C-2)

Ambient Air Quality Results of Pyi Nyaung Village

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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Environmental Report

Record Cnt 1440

Start Date 18-03-2025 2:51:00 PM

End Date 19-03-2025 2:50:00 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	**135.584**	**8.88541**	**48.9666**	**.615916**	**61.0951**	**21.6937**	**45.5506**	**0**	**48.7020**	**26.9180**	**117.461**	**.019027**	**10.1363**	**0**	**0**	**0**	**0**
Max	371	55	117	1.87	139	41	140	0	89	35	353	.9	10.7	0	0	0	0
Min	2	1	0	0	2	1	0	0	12	19	3	0	9.3	0	0	0	0
EPAS 919217	**135.584**	**8.88541**	**48.9666**	**.615916**	**61.0951**	**21.6937**	**45.5506**	**0**	**48.7020**	**26.9180**	**117.461**	**.019027**	**10.1363**	**0**	**0**	**0**	**0**
	371	55	117	1.87	139	41	140	0	89	35	353	.9	10.7	0	0	0	0
	2	1	0	0	2	1	0	0	12	19	3	0	9.3	0	0	0	0
Daily Tue, Mar 18, 2025	**160.568**	**18.9052**	**36.9162**	**.785409**	**40.1730**	**17.8524**	**46.1912**	**0**	**38.9617**	**28.5701**	**118.127**	**.004189**	**10.4058**	**0**	**0**	**0**	**0**
	371	55	85	1.87	103	32	75	0	65	35	297	.3	10.7	0	0	0	0
	42	1	0	.22	2	1	26	0	17	22	10	0	9.9	0	0	0	0
Ave Period 24 18-03-2025 11:59 PM	**160.568**	**18.9052**	**36.9162**	**.785409**	**40.1730**	**17.8524**	**46.1912**	**0**	**38.9617**	**28.5701**	**118.127**	**.004189**	**10.4058**	**0**	**0**	**0**	**0**
	371	55	85	1.87	103	32	75	0	65	35	297	.3	10.7	0	0	0	0
	42	1	0	.22	2	1	26	0	17	22	10	0	9.9	0	0	0	0
Daily Wed, Mar 19, 2025	**120.189**	**2.71156**	**56.3916**	**.511481**	**73.9865**	**24.0606**	**45.1560**	**0**	**54.7037**	**25.9001**	**117.050**	**.028170**	**9.97037**	**0**	**0**	**0**	**0**
	350	18	117	1.28	139	41	140	0	89	35	353	.9	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	12	19	3	0	9.3	0	0	0	0
Ave Period 24 19-03-2025 02:50 PM	**120.189**	**2.71156**	**56.3916**	**.511481**	**73.9865**	**24.0606**	**45.1560**	**0**	**54.7037**	**25.9001**	**117.050**	**.028170**	**9.97037**	**0**	**0**	**0**	**0**
	350	18	117	1.28	139	41	140	0	89	35	353	.9	10.3	0	0	0	0
	2	1	0	0	2	1	0	0	12	19	3	0	9.3	0	0	0	0

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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 PM	**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 AM	**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

APPENDIX - (C-3)

Ambient Air Quality Results of Ku Pyin Village

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 PM	**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

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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 PM	**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 AM	**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

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Environmental Report

Record Cnt 1440

Start Date 22-04-2025 4:25:00 AM

End Date 23-04-2025 4:24:00 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	**37.5131**	**8.97222**	**48.2965**	**.176875**	**59.1236**	**24.5451**	**20.7263**	**0**	**61.3590**	**29.2819**	**151.586**	**.68625**	**10.1879**	**0**	**0**	**0**	**0**
Max	101	56	153	.32	141	44	70	0	100	36	346	5.9	10.5	0	0	0	0
Min	2	1	0	0	2	1	0	0	23	24	1	0	9.7	0	0	0	0
EPAS 919217	**37.5131**	**8.97222**	**48.2965**	**.176875**	**59.1236**	**24.5451**	**20.7263**	**0**	**61.3590**	**29.2819**	**151.586**	**.68625**	**10.1879**	**0**	**0**	**0**	**0**
	101	56	153	.32	141	44	70	0	100	36	346	5.9	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	23	24	1	0	9.7	0	0	0	0
Daily Tue, Apr 22, 2025	**45.3276**	**10.68**	**59.1472**	**.178314**	**72.0068**	**29.8553**	**19.2417**	**0**	**68.0170**	**28.0170**	**144.324**	**.339063**	**10.1971**	**0**	**0**	**0**	**0**
	101	56	153	.32	141	44	70	0	100	36	346	4.1	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	23	24	1	0	9.7	0	0	0	0
Ave Period 24 22-04-2025 11:59 PM	**45.3276**	**10.68**	**59.1472**	**.178314**	**72.0068**	**29.8553**	**19.2417**	**0**	**68.0170**	**28.0170**	**144.324**	**.339063**	**10.1971**	**0**	**0**	**0**	**0**
	101	56	153	.32	141	44	70	0	100	36	346	4.1	10.5	0	0	0	0
	2	1	0	0	2	1	0	0	23	24	1	0	9.7	0	0	0	0
Daily Wed, Apr 23, 2025	**2.86415**	**1.4**	**.184905**	**.170490**	**2**	**1**	**27.3094**	**0**	**31.8377**	**34.8905**	**183.788**	**2.22566**	**10.1471**	**0**	**0**	**0**	**0**
	15	41	4	.24	2	1	53	0	38	36	268	5.9	10.2	0	0	0	0
	2	1	0	.1	2	1	3	0	27	33	37	.3	9.7	0	0	0	0
Ave Period 24 23-04-2025 04:24 AM	**2.86415**	**1.4**	**.184905**	**.170490**	**2**	**1**	**27.3094**	**0**	**31.8377**	**34.8905**	**183.788**	**2.22566**	**10.1471**	**0**	**0**	**0**	**0**
	15	41	4	.24	2	1	53	0	38	36	268	5.9	10.2	0	0	0	0
	2	1	0	.1	2	1	3	0	27	33	37	.3	9.7	0	0	0	0

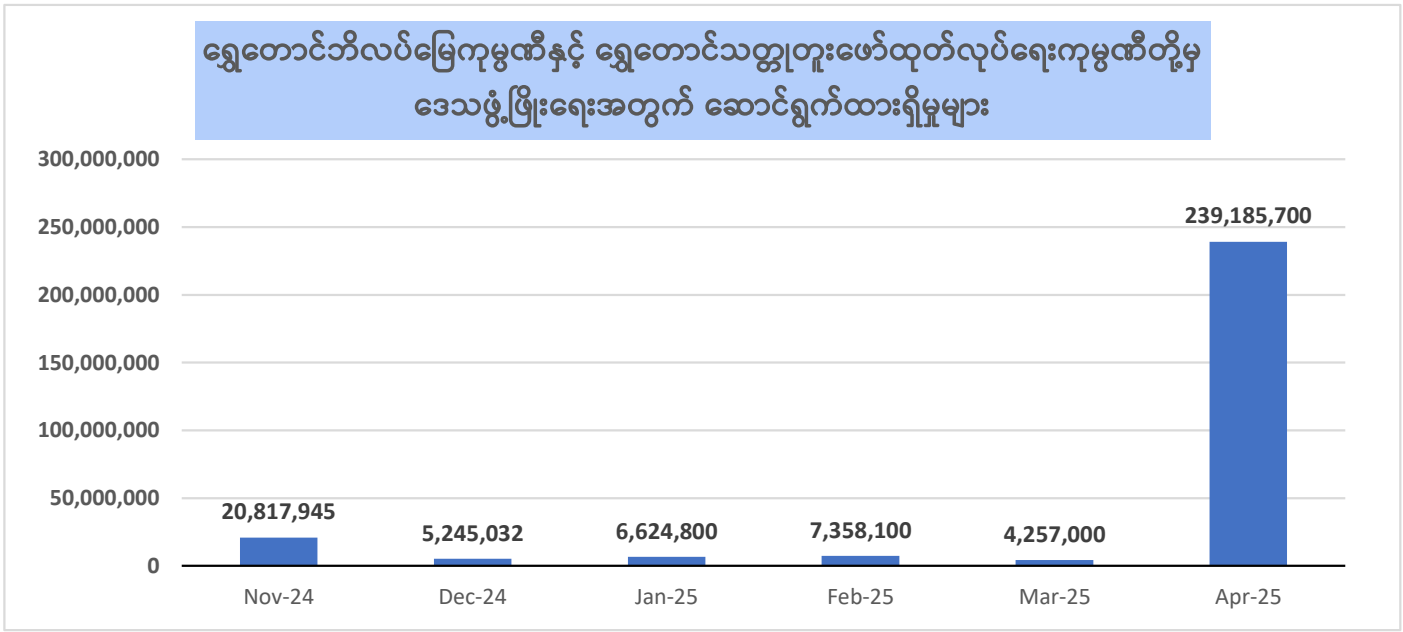
APPENDIX-D

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	ဘာသာသာသနာရေး အထောက်အကူပြု ဆောင်ရွက်ပေးနိုင်မှု	600,000	1,237,500		1,000,600	1,300,000		4,138,100
၈	သဘာဝဘေးအန္တရာယ်ကျရောက်ပျက်စီးမှုများ 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 ပံ့ပိုးကူညီဆောင်ရွက်ပေးခြင်း

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

ပုံ- ၂၀၂၄ခုနှစ်၊ ဒီဇင်ဘာလအတွင်း သာစည်မြို့နယ်၊ လှိုင်းတက်ကျေးရွာအုပ်စု၊ လှိုင်းတက်ကျေးရွာရှိ ကျေးရွာလမ်းအား ကွန်ကရစ်လမ်းခင်းရန်အတွက် လိုအပ်သော ဘိလပ်မြေအိတ်များကို 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- ၂၀၂၅ခုနှစ်၊ ဇန်နဝါရီလတွင် ပြည်ညောင်ကျေးရွာ၊ အခြေခံပညာအထက်တန်းကျောင်းတွင် ကျင်းပပြုလုပ်သော ပညာရေးစုံညီပွဲတော်အတွက် ရန်ပုံငွေ ထည့်ဝင်လှူဒါန်းပေးခြင်း။

ပုံ- ၂၀၂၅ခုနှစ်၊ 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- ၂၀၂၅ခုနှစ်၊ 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 - ကူပြင်ကျေးရွာနှင့် ပြည်ညောင်ကျေးရွာအတွင်းရှိ ဒေသနေပြည်သူများအား လစဉ် အခမဲ့ ကျန်းမာရေး စောင့်ရှောက်ပေးနေစဉ်။

ပြည်သူများ ရေရရှိရေး ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်စေရန် အထောက်အကူပြု ပံ့ပိုးကူညီ ဆောင်ရွက်ပေးခြင်း

ပုံ- ပြည်ညောင်ကျေးရွာ အခြေခံပညာအထက်တန်းကျောင်းအတွက် သုံးရေ ကူညီပံ့ပိုးပေးခြင်း။

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

ဘာသာသာသနာရေး အထောက်အကူပြု ပံ့ပိုးကူညီ ဆောင်ရွက်ပေးခြင်း

ပုံ- ကူပြင်ကျေးရွာ (၁၂)ကြိမ်မြောက် မဟာပဌာန်းရွတ်ဖတ်ပူဇော်ပွဲနှင့် 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 ပံ့ပိုးကူညီဆောင်ရွက်ပေးခြင်း

ပုံ- ပျော်ဘွယ်မြို့၊ မြို့ကန်ဦးကျောင်းတွင် လျင်ဘေးဒဏ်ကြောင့် ပျက်စီးသွားသော အဆောင်အဦများ ပြန်လည်ပြုပြင်တည်ထောင်ရေးအတွက် လှူဒါန်းခြင်း။

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

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

ပုံ- ပျော်ဘွယ်မြို့ပေါ်ရပ်ကွက်များရှိ လျင်ဘေးသင့်ပြည်သူများကို ထမင်းဘူးများ ဝေငှခြင်း။

Corporate Social Responsibility (CSR)

သဘာဝဘေးအန္တရာယ် ကျရောက်ပျက်စီးမှုများအတွက် အထောက်အကူပြု ပံ့ပိုးကူညီဆောင်ရွက်ပေးခြင်း



ပုံ- ပျော်ဘွယ်မြို့၊ မြို့ကန်ဦးကျောင်းနှင့် ပူးပေါင်း၍ ငလျင်ဘေးသင့် ပြည်သူများအတွက် ရေသန့်ကဒ် (၆၀)ကဒ်၊ 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၊ မြို့ကံဦးကျောင်းရှိ စာသင်သား ရဟန်းသံဃာများနှင့် ပျော်ဘွယ်မြို့နေ ပြည်သူလူထုများ သောက်သုံးရေသန့် အခက်အခဲမရှိစေရန်အတွက် တစ်နာရီ 1000 လီတာကျ ROသောက်ရေသန့်စက် တပ်ဆင်လှူဒါန်းပေးခြင်း။

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

APPENDIX-E

Emergency Preparedness Fire Drill Exercise Report

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

SHWE TAUNG
CEMENT CO.,LTD.

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

Contents

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

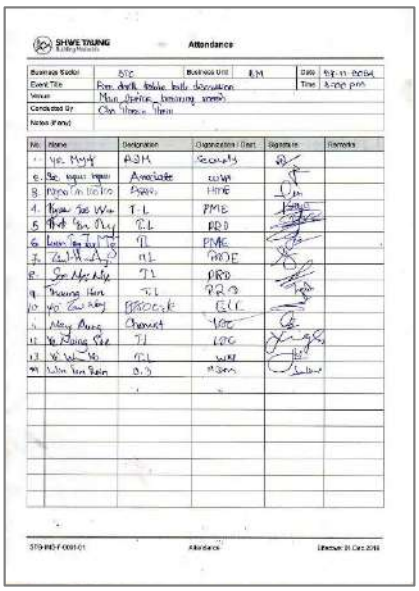
Table Talk Exercise

Below are the key information to be discussed and concluded:

- The date/time of the exercise was confirmed. The proposed date/time were to be scheduled on 28 Nov 2024 at approximately 8:30 am.
- All personnel involved in the premises are encouraged to participate promptly.
- The passing time criterion is 15 minutes sharp.
- Identification of the premises key roles/responsibilities.

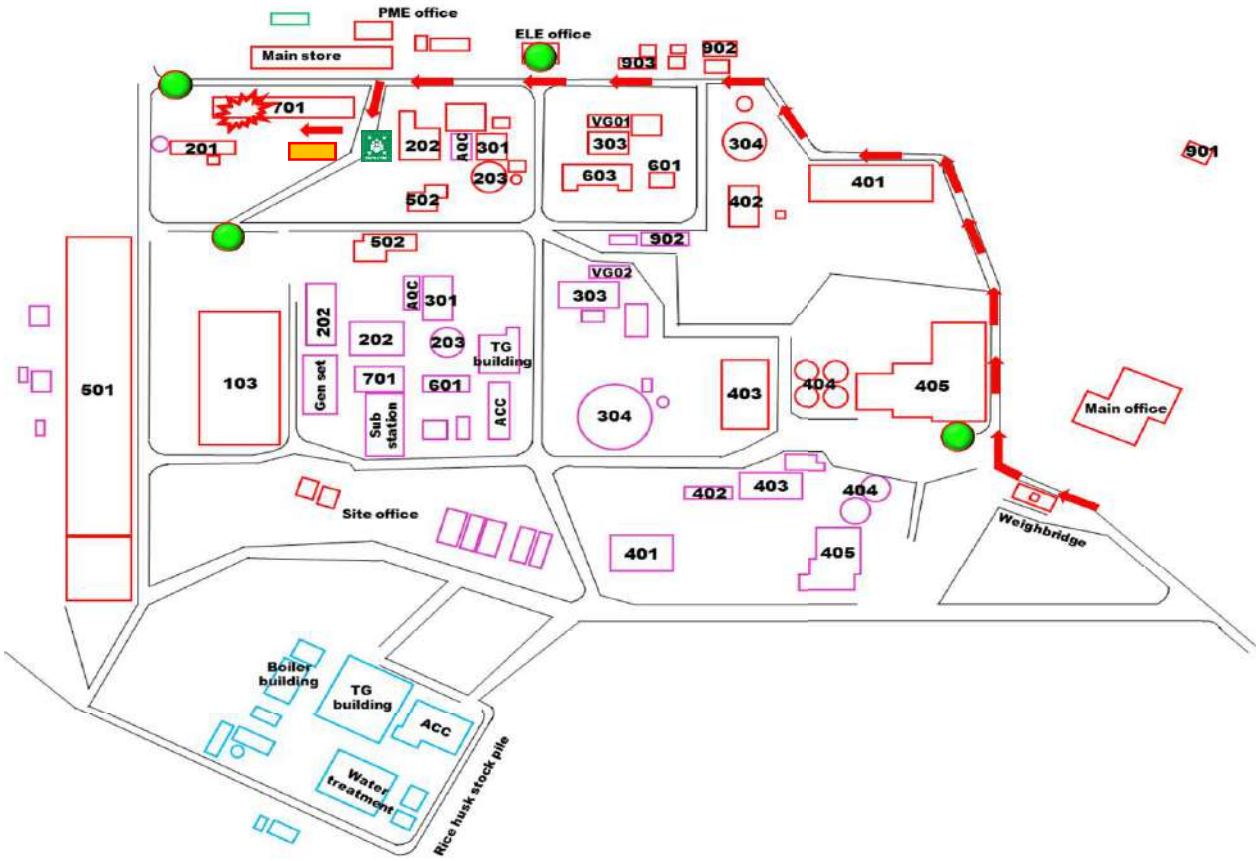
    a) ERT Controller
    b) Firefighting team leader/members
    c) Rescue team leader/members
    d) Traffic Control team leader/members
    e) Communication team leader/members
    f) Head count team leader/members
    g) Fire truck driver and ambulance

- The purpose of this exercise is to permit the contractors/staffs to understand the procedures and response as accordingly.
- To have a basic knowledge on how to operate a fire extinguisher/hose reel correctly.
- To have a basic knowledge on how to response effectively



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

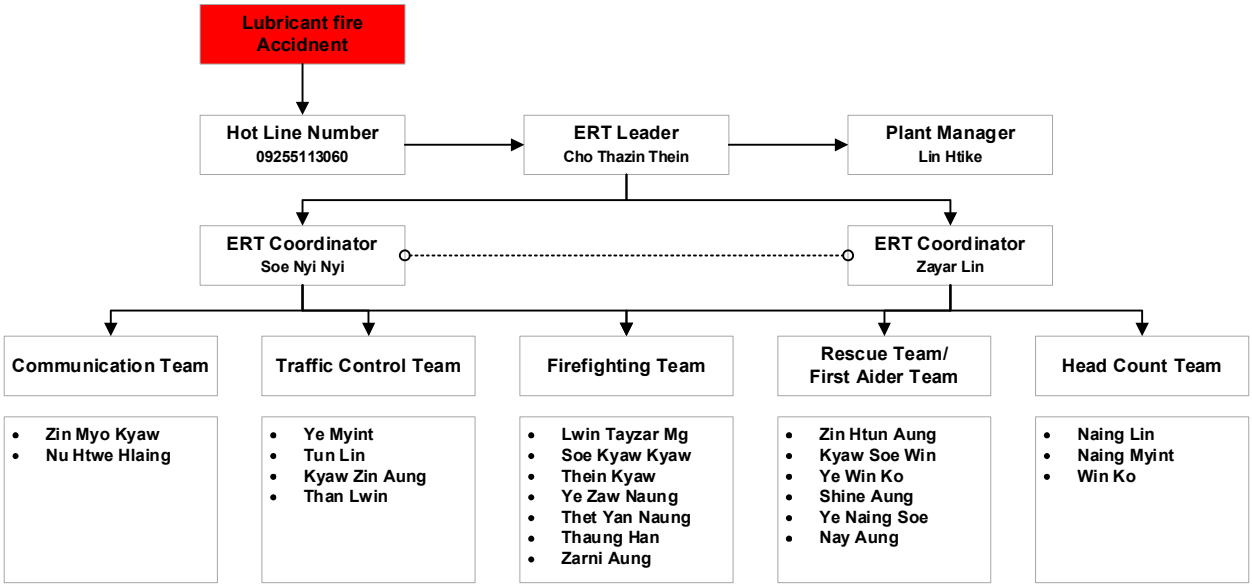
1. Total participation: 80
    a. Firefighting team: 7
    b. Traffic control team: 4
    c. Rescue team/ first aider team: 6
    d. Number of special fire warden: 2
2. Assemble Time Record: Approximately 15 ~ 20 minutes (inclusive of reporting head-count to ERT controller)

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


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 (Near Pyi Nyaung)

Ye Shin Stream (Near 6 Unit)

Supply Water (Reservoir)

Sedimentation Pond 5

Sedimentation Pond 6

Noise Monitoring Photo Record

Ku Pyin Village

Pyi Nyaung Village