



Max Myanmar Manufacturing
Co., Ltd



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Environmental Quality Monitoring Report for Limestone Mining at Taung Philar Mountain

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CHAPTER 1

ENVIRONMENTAL QUALITY MONITORING REPORT

1.1. INTRODUCTION

Max Myanmar Manufacturing Co., Ltd (project proponent) received a letter of approval from the Ministry of Natural Resource and Environmental Conservation, Environment Conservation Department of Naypyitaw on September 14, 2021 for the Environmental Management Plan (EMP) report of the limestone mining area. A monitoring report has already been drawn up once for the first (6) months last January (24th to 27th, 2022). The project proponent requested Hexagonal Angle International Consultants Co., Ltd. to implement the second time Environmental Monitoring Report for the limestone mining.

The project proponent has responsibility to carry out regular monitoring in the limestone mining area and monitoring period is within 6 months after receiving the approval letter of EMP report. In addition, the proponent has implemented monitoring various environmental items with the specific time frame to know the environmental conditions in and around the area. The environmental quality monitoring includes outdoor air quality measurement, temperature, noise measurement, vibration measurement, soil quality measurement (surface soil), water quality testing as well as monitoring programs on wastes management, occupational health and safety. During the monitoring period, the average temperature of project location was 27.7°C and humidity was 83.9%.

The outdoor air quality monitoring, the parameters are TSP, CO₂, CO, NO₂, O₃, PM₁₀, PM_{2.5}, SO₂, VOCs, Wind Speed, Wind Direction and measured by OCENUS-AQM-09 station. Noise measurement was conducted by the Digital Sound Level Meter (GM-1356) and vibration measurement was carried out by the BENETECH vibration meter (GM-63B). The water quality samples are collected and analyzed by the various methods of each parameter in Eco Lab (Alarm) Laboratory. The detailed information of the measurement results and measurement devices are mentioned in the **Appendix A**.

1.2. PURPOSE

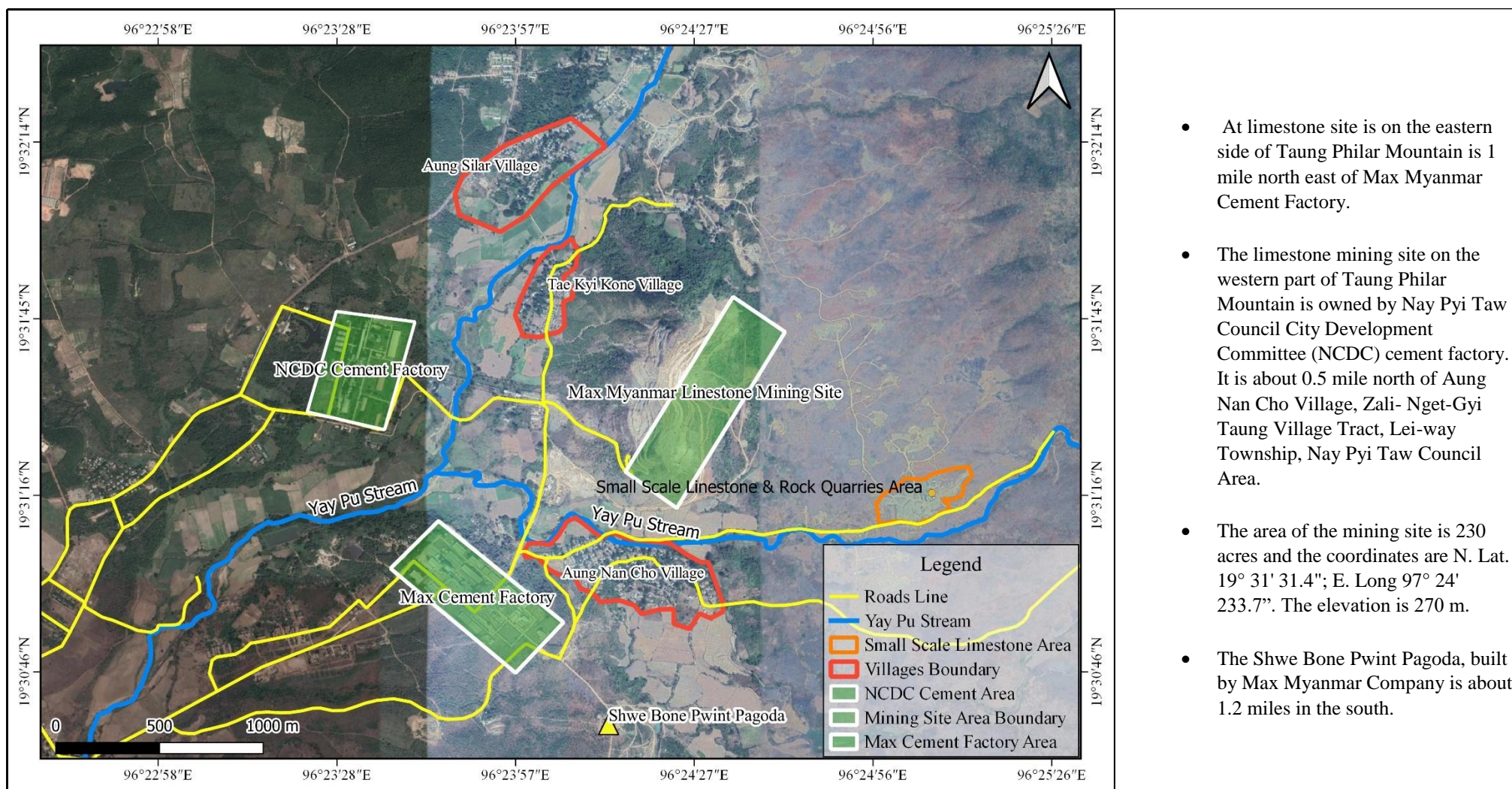
The purpose of the monitoring report is to evaluate the existing environmental conditions in the limestone mining area. This report will be provided to proponent and employees to assist them in carrying out the project to avoid or minimize the impacts to environment, to make a monitoring report every 6 months according to the Environmental Impact Assessment (EIA) procedure. To assess the impact on the operation stage of the limestone mining area to the surrounding environment, air quality, noise and vibration level had been monitored as second time in the same places from September 26th to 29th, 2022. The outlines of monitoring item are shown in Table 1-1.

Table 1-1 Outlines of Monitoring Item in the monitoring report

Monitoring Date	Monitoring Item	Parameters	Number of Point	Location	Duration	Monitoring Methodology
26 th September 2022 – 29 th September 2022	Air Quality	TSP, CO ₂ , CO, NO ₂ , O ₃ , PM ₁₀ , PM _{2.5} , SO ₂ , VOCs, Wind Speed and Wind Direction	3	Mining area, Aung Nan Cho village and Tae Kyi Kone village	4 Days	OCEANUS-AQM-09 station
26 th September 2022 – 29 th September 2022	Noise Level	L _{Aeq} (dB)	3	Mining area, Aung Nan Cho village and Tae Kyi Kone village	24 hours	24-hour measurement by “BENETECH GM-1356 digital sound level meter”
26 th September 2022	Vibration Level	L _{v10} (dB)	3	Mining area, Aung Nan Cho village and Tae Kyi Kone village	24 hours	On-site measurement by “BENETECH vibration meter-GM-63B”
27 th September 2022	Water Quality	pH, COD, BOD, Suspended Solids, Phosphate, Nitrate and Oil & Grease	1	Yay Pu Stream	-	Laboratory test
28 th -29 th September 2022	Soil Quality	Moisture, pH, texture, total Nitrogen & nutrients	2	Aung Nan Cho village and Tae Kyi Kone village	-	Laboratory test

1.2.1. Overview of the Project Area

Environmental quality monitoring for operation stage was conducted by Hexagonal Angle Consulting Team at limestone mining site of Max Myanmar Manufacturing Co., Ltd. from September 26th to 29th, 2022. The proposed project site is elongated in shape from north to south and the size is 230 acres at the coordinates Lat 19° 31' 25" N, long. 96° 24' 26" E and it is on the eastern slope of Taung Philar Mountain range, Taung Philar area, Leiway Township, Nypyidaw and 2 miles away from the Max Cement factory. One mile away in the south is Aung - Nan -Cho Village, under the Zali-Nget-Gyi Taung Village tract as well as located 10 miles east of the Yangon-Mandalay highway which is 25.5 miles southeast of Naypyidaw. The location map of the project area as shown in Figure 1-1.



- At limestone site is on the eastern side of Taung Philar Mountain is 1 mile north east of Max Myanmar Cement Factory.
- The limestone mining site on the western part of Taung Philar Mountain is owned by Nay Pyi Taw Council City Development Committee (NCDC) cement factory. It is about 0.5 mile north of Aung Nan Cho Village, Zali- Nget-Gyi Taung Village Tract, Lei-way Township, Nay Pyi Taw Council Area.
- The area of the mining site is 230 acres and the coordinates are N. Lat. 19° 31' 31.4"; E. Long 97° 24' 233.7". The elevation is 270 m.
- The Shwe Bone Pwint Pagoda, built by Max Myanmar Company is about 1.2 miles in the south.

Figure 1-1 Overview map of the Project Area

CHAPTER 2

ENVIRONMENTAL QUALITY MONITORING PROGRAM

2.1. OBJECTIVES

The objectives of the environmental monitoring and data collection are to describe the current environmental conditions of the project site during its operation phase which may potentially be affected by the project activities; and to compare the baseline data of the previous Environmental Monitoring Report (EMR) with data obtained from this semi-annual monitoring during the operation phase of the limestone mining site.

In this semi-annual monitoring, outdoor air quality measurement, noise quality measurement, vibration measurement, soil measurement and water sample collecting are conducted as well as monitoring programs on wastes management, occupation health and safety training and programs are monitored and documented.

2.2. OUTDOOR AIR QUALITY

2.2.1. Methodology for Ambient Air Quality Monitoring

By using the OCEANUS-AQM-09, the outdoor air quality measurement was conducted from September 26th to 29th, 2022 at three locations, namely the limestone mining site which is 0.8 km far from the Max Myanmar Cement Factory, Aung Nan Cho village and Tae Kyi Kone village from 0.7 km and 0.9 km far from the limestone mining site respectively.

These measurements were made in accordance with the guidelines of National Environmental Quality (Emission) Guidelines (2015) in the project site. The locations of air points and the parameters to be measured are shown in Table 2-1 and Table 2-2. The air quality monitoring stations and measurement photos are described in Figure 2-1 and Figure 2-2.

Table 2-1 Location Point of Air Monitoring Measurement

No.	Location	Latitude	Longitude	Duration	Monitored Date	Monitoring Method
1.	Limestone Mining Site	19°31'30.54"N	96°24'0.67"E	24 Hour	26 .09.2022 - 27.09.2022	OCEANUS-AQM-09 station
2.	Aung Nan Cho Village	19°30'56.19"N	96°24'28.50"E	24 Hour	27 .09.2022 - 28.09.2022	OCEANUS-AQM-09 station
3.	Tae Kyi Kone Village	19°31'48.26"N	96°24'5.73"E	24 Hour	28 .09.2022 - 29.09.2022	OCEANUS-AQM-09 station

Table 2-2 Ambient Air Quality Parameters

Ambient Air Quality	
Gas Emission	CO, CO ₂ , NO ₂ , O ₃ , SO ₂ , VOC
Dust Emission	PM _{2.5} , PM ₁₀ , TSP
Metrological Data	Air Pressure, Temperature, Humidity, Wind Speed, Wind Direction

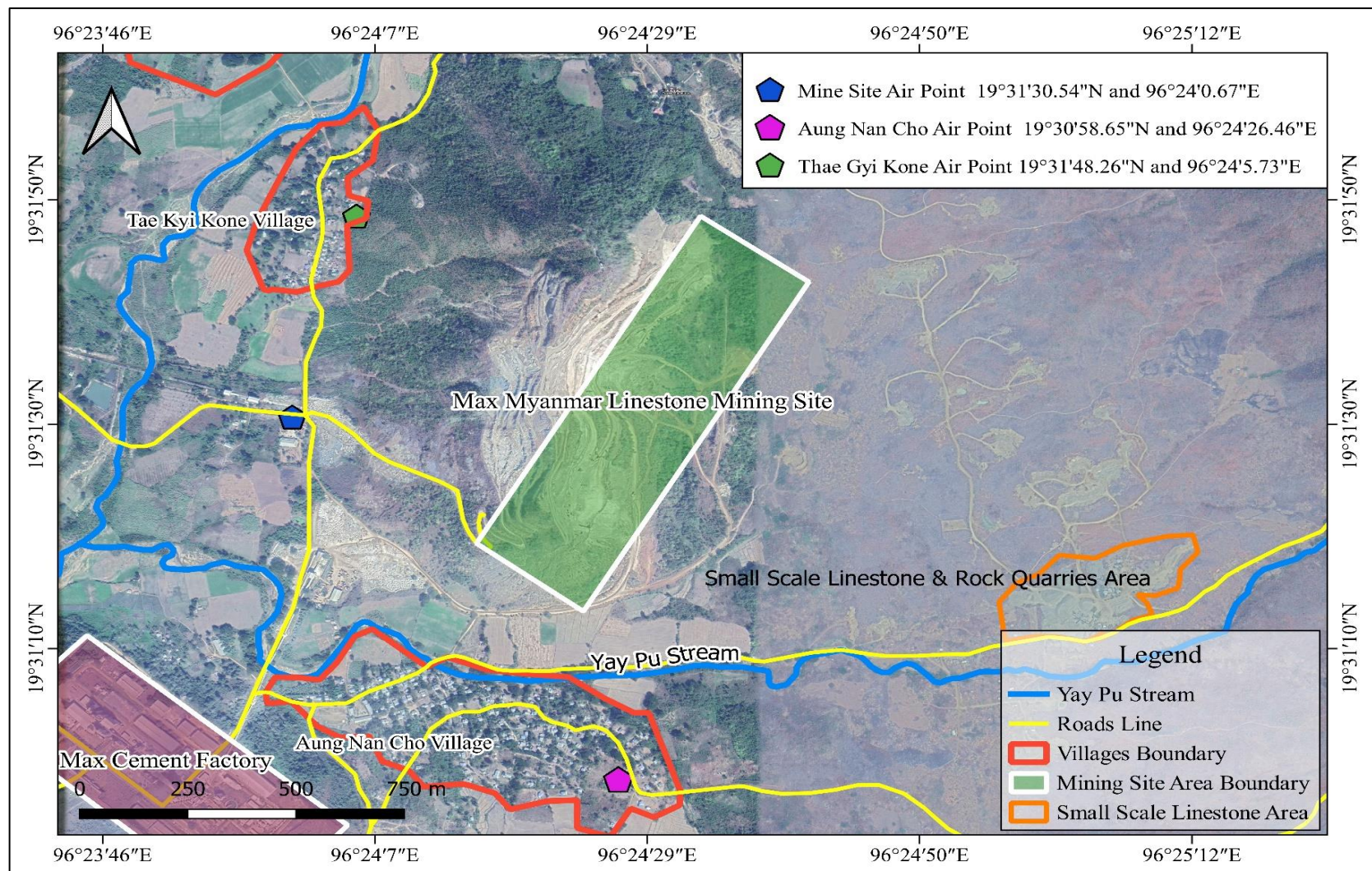


Figure 2-1 Outdoor Air Quality Measurement Location (24 Hours Measurement)

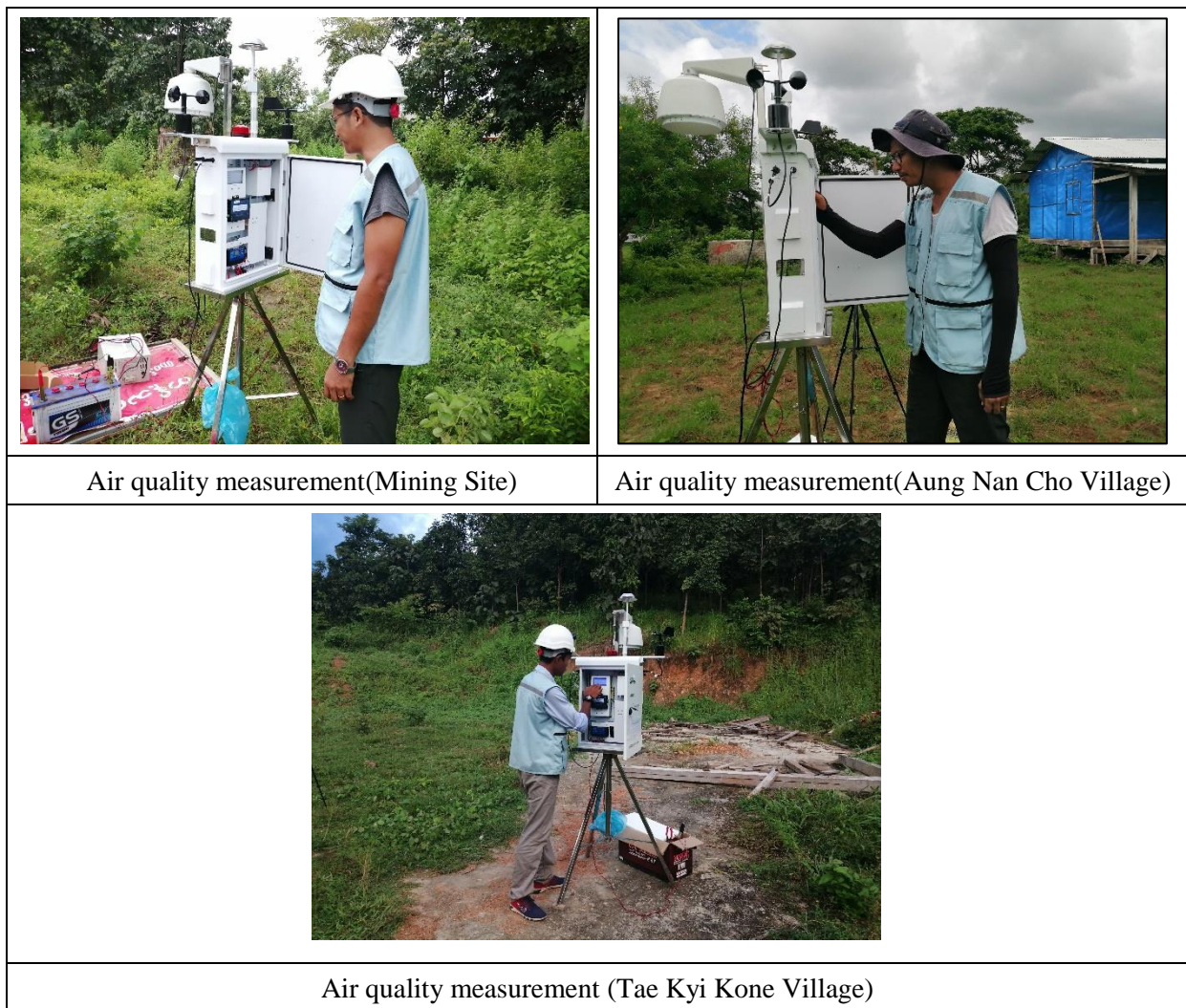


Figure 2-2 Air Quality Monitoring (26th to 29th September 2022)

2.2.2. Result of the Air Quality Measurement

The limestone industry has some air emissions which produce several harmful gaseous pollutants into the atmosphere especially particulate matters release from the mine site areas and using vehicles for transportation and it may cause some major health issues related with respiratory system. HA's Environmental Team and Max Myanmar environmental monitoring team conducted the outdoor air quality measurements such as TSP, CO₂, CO, NO₂, O₃, PM₁₀, PM_{2.5}, SO₂, VOCs, Wind Speed and Wind Direction and these were measured by OCEANUS-AQM-09 station.

The results of nitrogen dioxide (NO₂), ozone (O₃), and particulate matters (PM₁₀, PM_{2.5}) are compared the standards of the NEQG (2015) and WHO Guideline for Ambient (Outdoor) Air Pollution (2021). The measurement result of carbon dioxide (CO₂) is compared with the OSHA Permissible Exposure Limit (PEL) and ACGIH Threshold Limit

Value (TLV) for 8-hour exposure due to the guidelines for CO and CO₂ are not given in NEQG (2015) and WHO Guideline for Ambient (Outdoor) Air Pollution.

Wind Speed and wind direction's average value of Mining Site (0.14m/s, 213.63 degree), Aung Nan Cho Village (0.47m/s, 196.98 degree) and Tae Kyi Kone Village (0.72m/s, 175.04 degree) respectively. The previous results and current results of air quality measurements are compared in Table 2-3 and Table 2-4 and to conduct mitigation measure for the parameters that above the guideline.

Table 2-3 Previous Results of the Outdoor Air Monitoring Measurement (24th to 26th January 2022)

Sr	Parameter	Existing Values			NEQG Guideline Value $\mu\text{g}/\text{m}^3$	ACGIH TLV	Remark
		At Mining Site	At Aung Nan Cho Village	At Tae Kyi Kone Village			
1	CH ₄ (ppm)	26857.2	26718.8	26218.9	NG	-	
2	PM ₁₀ (ug/m ³) (24-hour)	58.9	63.8	66.8	50	-	Above the guide line
3	CO (ug/m ³) (8-hour)	0.0	0.1	0.1	30000 ppb	-	Under the guideline
4	CO ₂ (ppb) (8 hour)	0.0	0.0	0.0	-	-	
5	HC (ppb)	450.3	367.9	388.1	NG	-	
6	H ₂ S (ppb)	0.0	0.0	0.0	NG	-	
7	NO ₂ (ug/m ³)	5.8	8.5	27.1	40 (1-Year) 200 (1-hour)	-	Under the guideline
8	O ₂	0.0	0.0	0.0	NG	-	
9	SO ₂ (ug/m ³)	59.5	26.8	71.7	20 (24-hour) 500 (10-minute)	-	Above the guide line

*National Environmental Quality (Emission) Guidelines (2015)

NG=No Guideline

Table 2-4 Current Results of the Outdoor Air Monitoring Measurement (24th to 26th September 2022)

No.	Parameter	Analyzed Period	Results of Current Monitoring (24 th to 26 th September 2022)			Unit	Average Period		WHO Guideline Value ^a	NEQG Guideline Value ^b	ACGIH TLV	Remark
			At Mining Site	At Aung Nan Cho Village	At Tae Kyi Kone Village							
1	Particulate Matter PM ₁₀	24-hr	5.23	9.39	8.88	µg/m ³	1	Year	5 µg/m ³	20 µg/m ³	-	Within the Guideline
							24	Hour	15 µg/m ³	50 µg/m ³	-	
2	Particulate Matter PM _{2.5}	24-hr	1.95	3.03	6.93	µg/m ³	1	Year	15 µg/m ³	10 µg/m ³	-	Within the Guideline
							24	Hour	45µg/m ³	25 µg/m ³	-	
3	Total Suspended Particulate (TSP)	24-hr	9.06	15.7	14.78	µg/m ³	24 Hours		NG	NG	-	-
4	Sulphur Dioxide (SO ₂)	24-hr	31.25	19	55	µg/m ³	10	Mins	NG	500 µg/m ³	-	Above the Guideline
							24	Hours	40 µg/m ³	20 µg/m ³	-	
5	Nitrogen Dioxide (NO ₂)	1-hr	31.58	41	15	µg/m ³	1	Year	10 µg/m ³	40 µg/m ³	-	Within the Guideline
							24	Hour	25 µg/m ³	NG	-	
							1	Hour	NG	200 µg/m ³	-	

No.	Parameter	Analyzed Period	Results of Current Monitoring (24 th to 26 th September 2022)			Unit	Average Period	WHO Guideline Value ^a	NEQG Guideline Value ^b	ACGIH TLV	Remark
			At Mining Site	At Aung Nan Cho Village	At Tae Kyi Kone Village						
6	Carbon Monoxide (CO)	24-hr	0.06	0.001	0.01	ppm	24 Hours	NG	NG	-	-
7	Carbon Dioxide (CO ₂)	24-hr	336.64	356.29	323.77	ppm	24 Hours	NG	NG	5000 ppm	Within the Guideline
8	Ozone (O ₃)	8-hr	22	16	13	µg/m ³	8 Hours Daily Maximum	100 µg/m ³	100 µg/m ³	-	Within the Guideline
9	Volatile Organic Compounds (VOCs)	24-hr	0.12	0.11	0.16	ppm	-	NG	NG	-	-
10	Relative Humidity	24-hr	90.26	86.6	74.9	Rh%	-	NG	NG	-	-
11	Temperature	24-hr	26.6	27.4	28.99	°C	-	NG	NG	-	-
12	Wind Direction	24-hr	213.63	196.98	175.04	Degree	-	NG	NG	-	-
13	Wind Speed	24-hr	0.14	0.47	0.72	m/s	-	NG	NG	-	-

^a WHO Air Quality Guidelines: Global Update 22 Sep, 2021

^b National Environmental Quality (Emission) Guidelines (2015) - (General Guidelines for Air Emissions)

^c ACGIH – American Conference of Governmental Industrial Hygienists – Threshold Limit Value for CO₂

2.2.2.1. Result on Fugitive Emission and Particulate Matters

The particulate matters release from the operation process of the mining site, using vehicles for transportation and it may cause some major health issues related with respiratory system. HA's Environmental Team conducted on the outdoor air quality measurements and data analysis on particulate matters (TSP, PM₁₀, PM_{2.5}), and gases (CO₂, CO, O₂, NO₂, SO₂) and VOC), displayed in Table 2-4.

According to the results, values of particulate matters (PM₁₀, PM_{2.5}) are within the NEQG General Guidelines for Air Emissions) (2015). The analyzed graphs for Mining Site, Aung Nan Cho Village and Tae Kyi Kone Village of Particulate Matters are shown in Figure 2-3, Figure 2-4 and Figure 2-5.

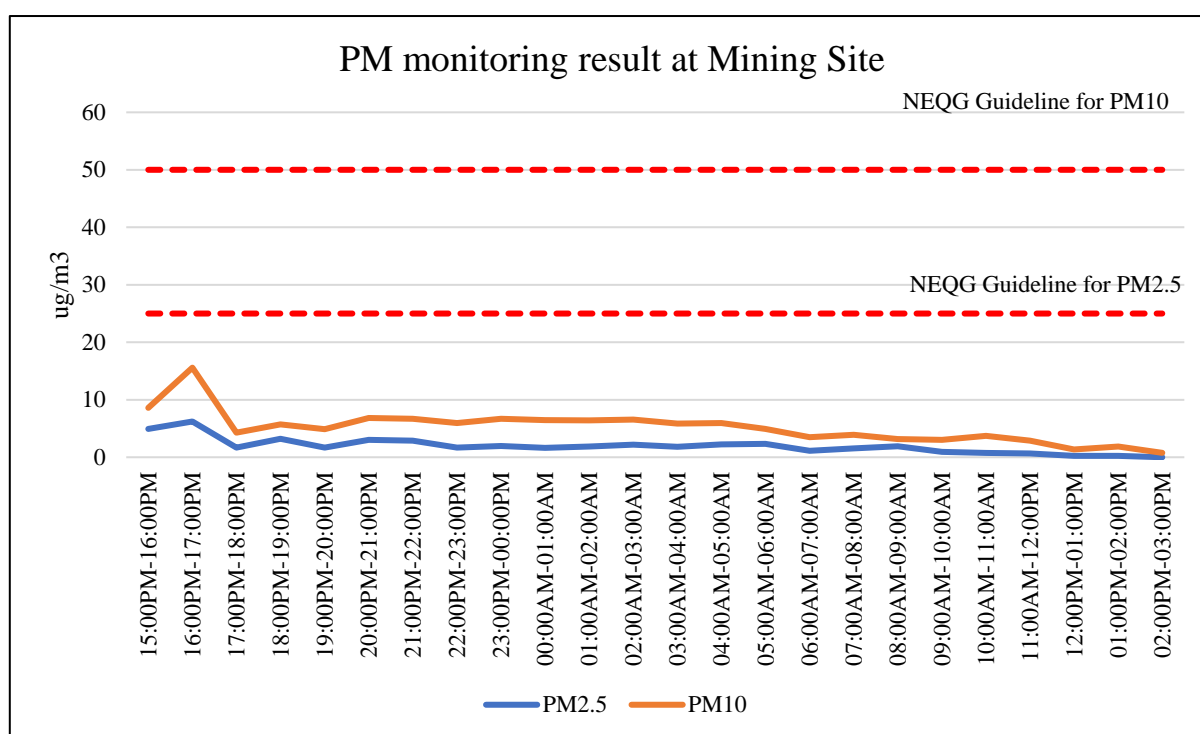


Figure 2-3 Demonstration Graph for Dust Emission (Mining Site)

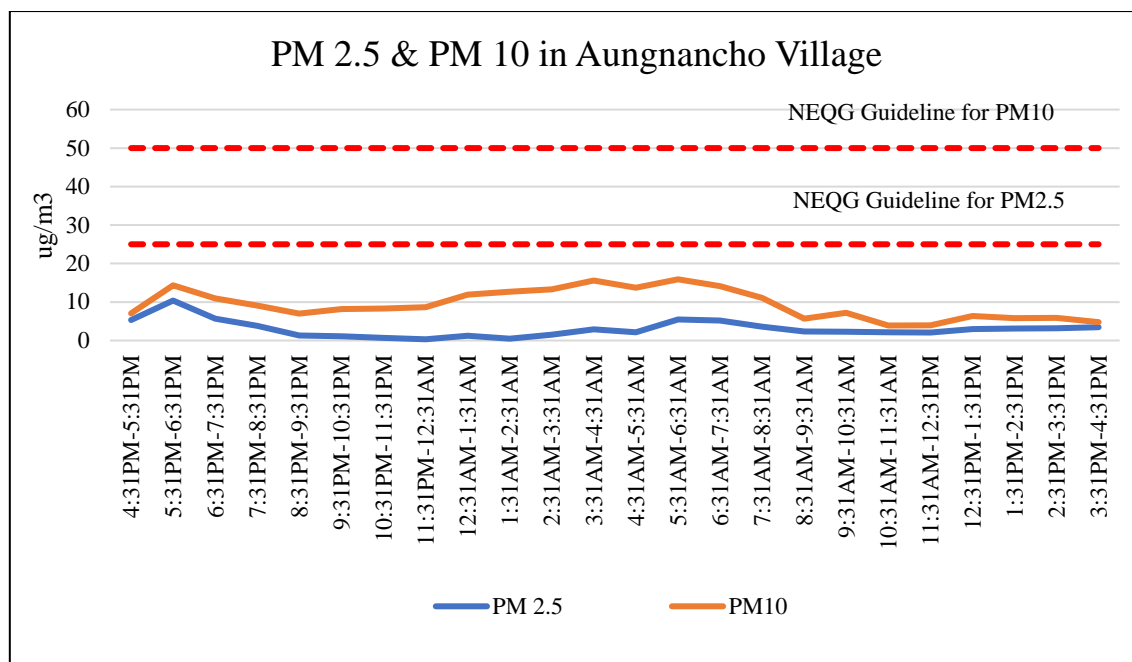


Figure 2-4 Demonstration Graph for Dust Emission (Aung Nan Cho Village)

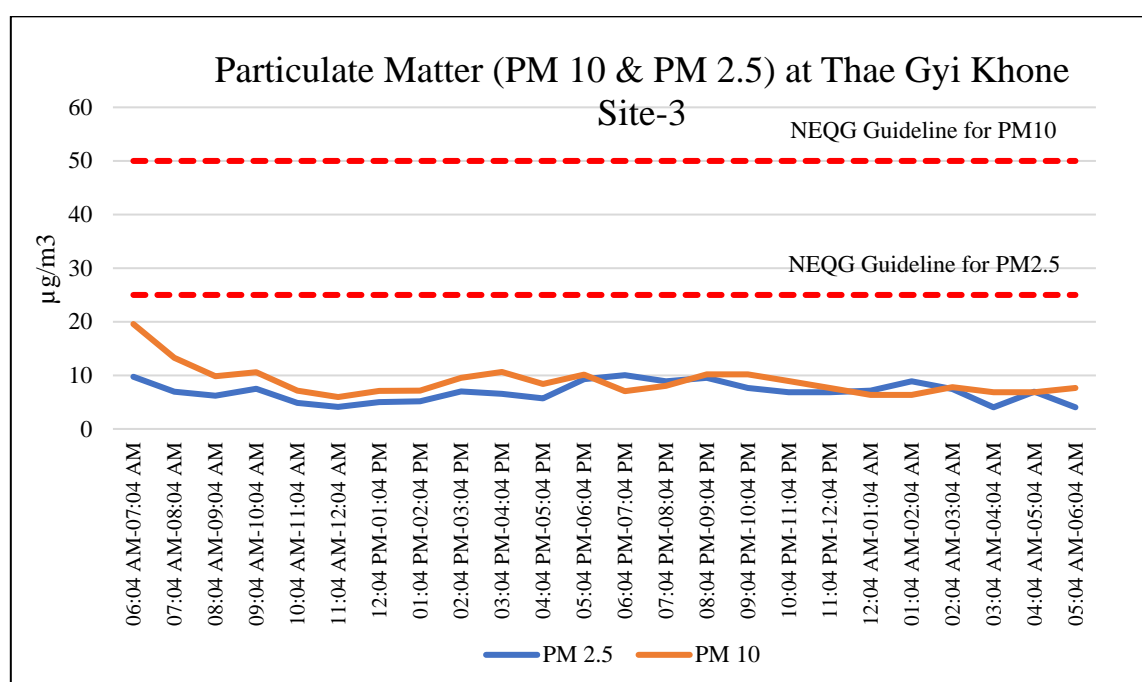


Figure 2-5 Demonstration Graph for Dust Emission (Tae Kyi Kone Village)

2.2.2.2. Result on Gas Emission

According to the analyzed result of gases, nitrogen dioxide (NO₂) and ozone (O₃) in mining site are 31.58 µg/m³ and 22 µg/m³ respectively and it is within the standards of the NEQG (General Guidelines for Air Emissions) (2015) and WHO

Guideline for Ambient (Outdoor) Air Pollution (2021). The average result of volatile organic compounds (VOCs) measured at the Mining Site is 0.12 ppm. The results of carbon monoxide (CO) and carbon dioxide (CO₂) at mining site are 0.06 ppm and 336.64 ppm. The average result of Sulphur dioxide (SO₂) in mining site is 31.25 µg/m³, exceeding the standards of the NEQG (General Guidelines for Air Emissions). The highest measurement value of Sulphur dioxide (SO₂) in mining site is 174.76 µg/m³ around 5:00 p.m and the lowest measurement value of Sulphur dioxide (SO₂) is 2.41 µg/m³ around 8 a.m. The exceeding result of SO₂ is caused by due to the limestone mining and mineral processing.

In Aung Nan Cho Village, nitrogen dioxide (NO₂) and ozone (O₃) are 41 µg/m³ and 16 µg/m³ respectively and it is within the standards of the NEQG (General Guidelines for Air Emissions) (2015) and WHO Guideline for Ambient (Outdoor) Air Pollution (2021). The average result of volatile organic compounds (VOCs) measured at the Aung Nan Cho village is 0.11 ppm. The result of carbon monoxide (CO) is 0.001 ppm and carbon dioxide (CO₂) are 356.29 ppm. The average result of Sulphur dioxide (SO₂) in Aung Nan Cho Village is 19 µg/m³, within the standards of the NEQG (General Guidelines for Air Emissions). The highest measurement value of Sulphur dioxide (SO₂) in Aung Nan Cho village is 33.27 µg/m³ around 5:00 p.m and the lowest measurement value of Sulphur dioxide (SO₂) is 1 µg/m³ around 1 a.m.

In Tae Kyi Kone Village, nitrogen dioxide (NO₂) and ozone (O₃) are 15 µg/m³ and 13 µg/m³ respectively and it is within the standards of the NEQG (General Guidelines for Air Emissions) (2015) and WHO Guideline for Ambient (Outdoor) Air Pollution (2021). The average result of volatile organic compounds (VOCs) measured at the Tae Kyi Kone is 0.16 ppm. The result of Tae Kyi Kone Village's carbon monoxide (CO) is 0.01 ppm and carbon dioxide (CO₂) are 323.77 ppm, respectively. The average result of Sulphur dioxide (SO₂) in Tae Kyi Kone Village is 55 µg/m³, exceeding the standards of the NEQG (General Guidelines for Air Emissions). The highest measurement value of Sulphur dioxide (SO₂) in Tae Kyi Kone village is 153.05 µg/m³ at 7:00 a.m and the the lowest measurement value of Sulphur dioxide (SO₂) is 4.89 µg/m³ around 2 p.m. The average Sulphur dioxide (SO₂) level in the Tae Kyi Kone

village is exceeded due to the passing of cars, motorcycles and the burning of garbage near the monitoring station.

Demonstration graphs of Sulphur dioxide (SO₂) emission in mining site, Aung Nan Cho village and Tae Kyi Kone village are shown in Figure 2-6, Figure 2-7 and Figure 2-8.

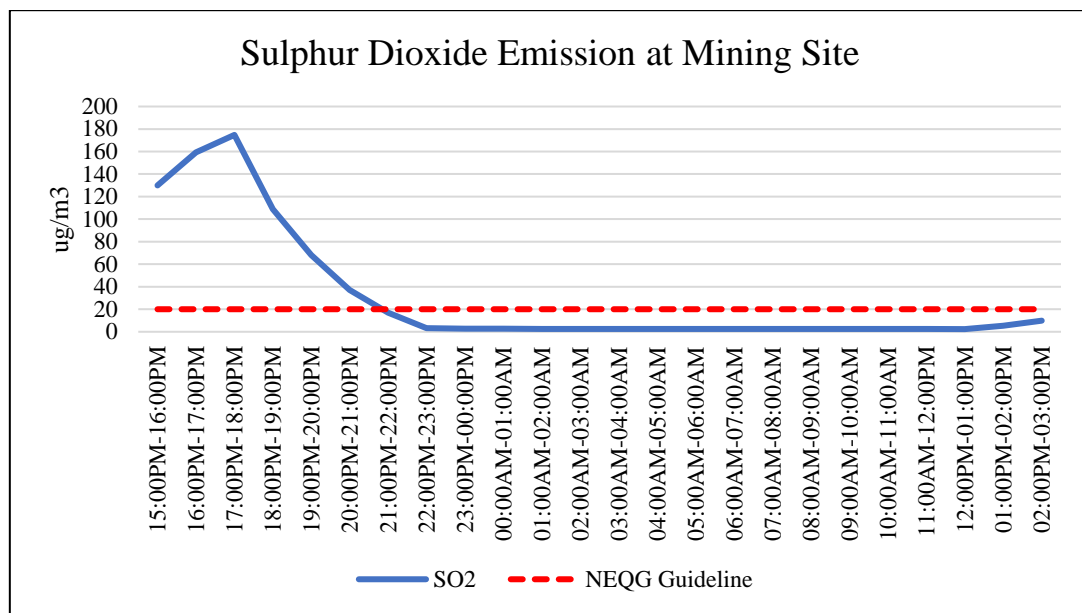


Figure 2-6 Demonstration Graph for SO₂ Emission (Mining Site)

Remark: The sources of sulfur dioxide emissions include vehicle exhaust from mining process and fuel combustion. Many types of vehicles are used including bulldozers, excavators, drills, graders, trucks and front-end loaders are indispensable to mining operation and thus, vehicle emissions are unavoidable. Therefore, the following appropriate mitigation measure to control SO₂ emission is required to implement during the operation period.

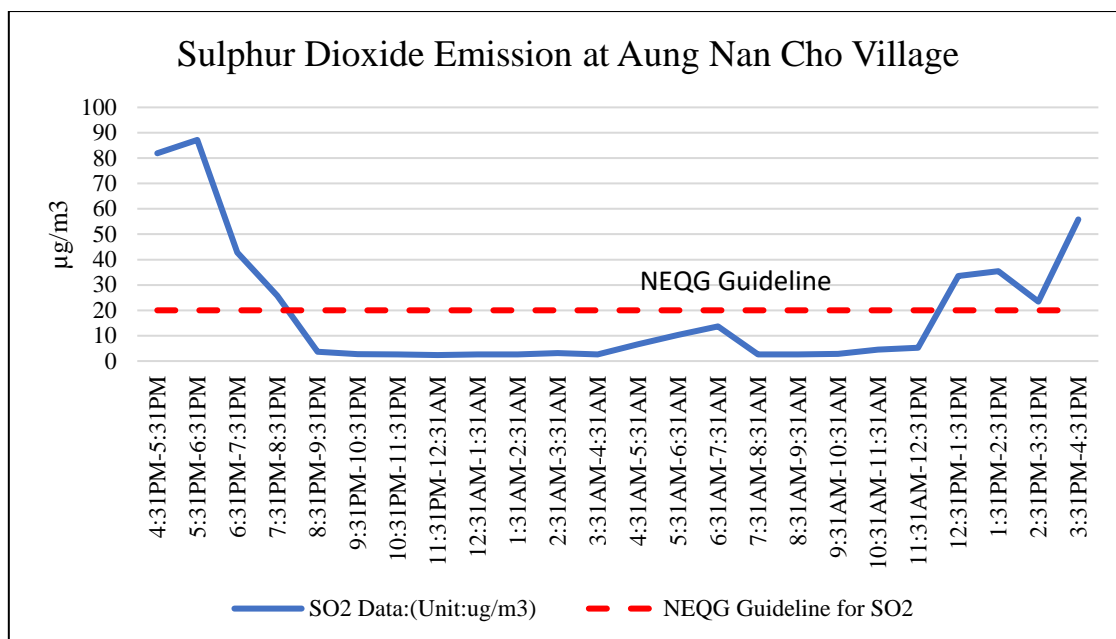


Figure 2-7 Demonstration Graph for SO₂ Emission (Aung Nan Cho Village)

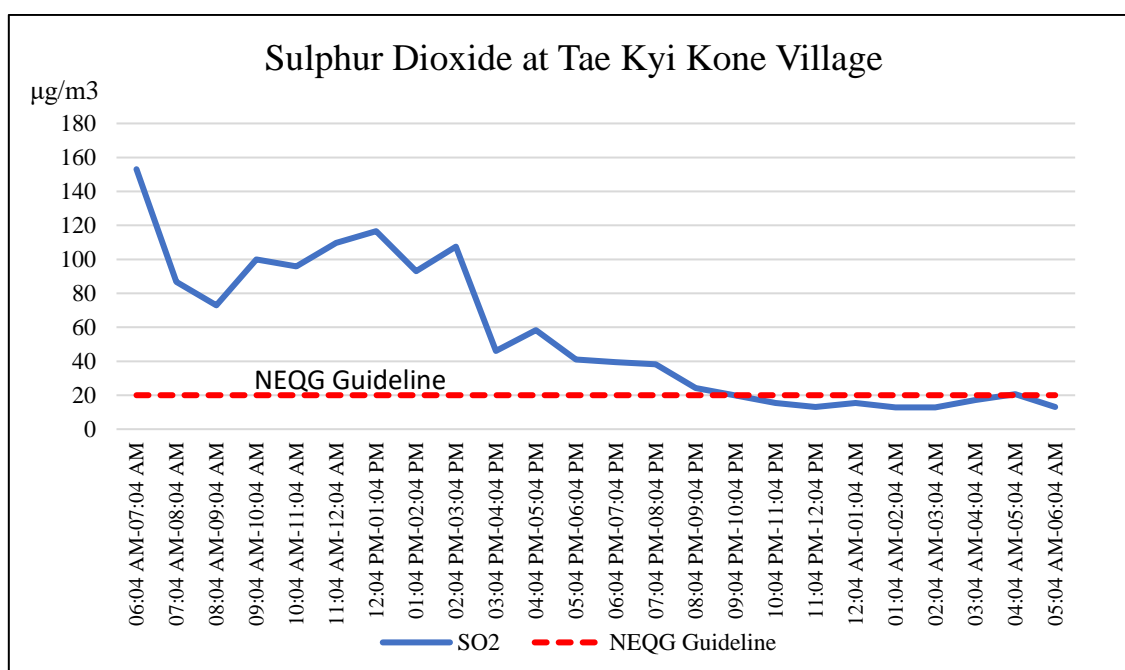


Figure 2-8 Demonstration Graph for SO₂ Emission (Tae Kyi Kone Village)

Remark: The sources of sulfur dioxide emissions include the passing of cars, motorcycles along the village road and the burning of garbage near the monitoring station in Tae Kyi Kone village.

Mitigation Measure

- ✓ Regular checkups and maintenance on all vehicles with fossil fuel usage are needed.
- ✓ Use fuel oil with low Sulphur (if possible)
- ✓ To reduce SO₂ emission is to burn low-Sulphur fuel such as natural gas, low Sulphur oil or low-sulfur coal
- ✓ Use environmentally friendly state of the art instruments and machines (such as engines with higher fuel efficiency, machinery that emit lower noise level), if possible
- ✓ Equip instruments, machines, and vehicles with air pollution control devices to minimize exhaust emissions. (These may not available but should be considered in advanced for the near future)
- ✓ To conserve fuel and to prevent unnecessarily emission of gas (smoke) never let vehicles and instruments left running unnecessarily
- ✓ Avoid open burning of all kind of solid wastes; reuse and recycle them as far as possible and finally dispose them at approved land fill (dump site)
- ✓ Provide adequate PPE (masks, mouth and nose covers) to workers

2.2.2.3. Wind Speed and Wind Direction

Wind is an integral part of the thermodynamic mechanism of the atmosphere by which cloud, heat, moisture, and particles are carried from one place to another. The exchange of pollutants and other environmentally important trace gases are also affected by wind speed and wind direction. The data are collected by using OCEANUS-AQM09 inside the area of three location, limestone mining, Aung Nan Cho Village and Tae Kyi Kone Village. The observation period is from 26th Sept – 29th Sept, 2022.

Wind speed and wind direction's average values of mine site are (0.14 m/s, 213.63 degree) the wind is blowing about 0.23 meter per second from the North East and South West direction. At the Aung Nan Cho village are (0.47 m/s, 196.98 degree) the wind is blowing about 0.43 meter per second from the South West direction and at Tae Kyi Kone Village are (0.72 m/s, 175.04 degree) the wind is blowing about 0.72

meter per second from the South East direction, respectively. The result of the analyzed wind speed and wind direction graphs are as shown in Figure 2-9, Figure 2-10 and Figure 2-11.

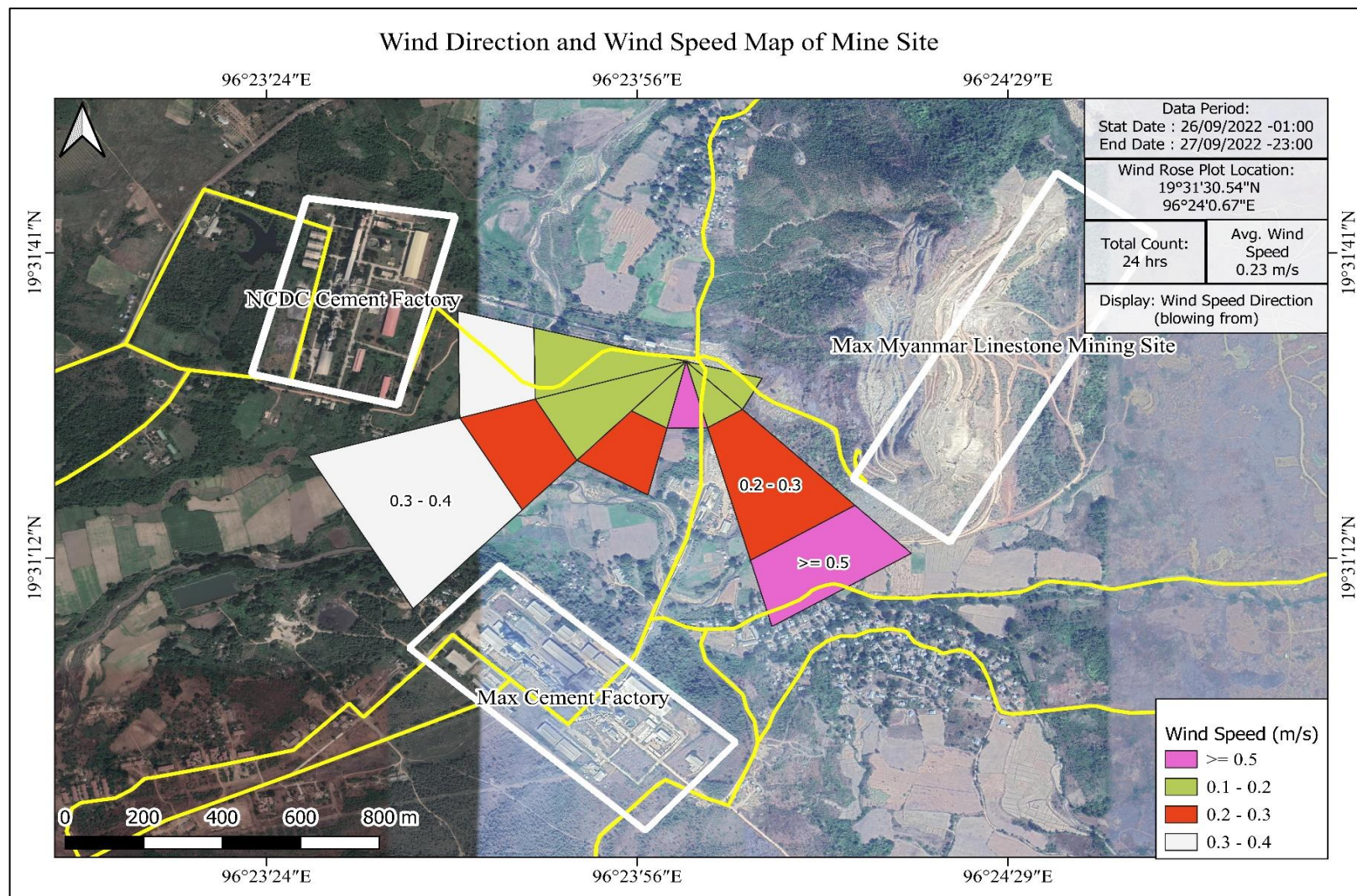


Figure 2-9 Wind Direction and Wind Speed Map of Mining Site

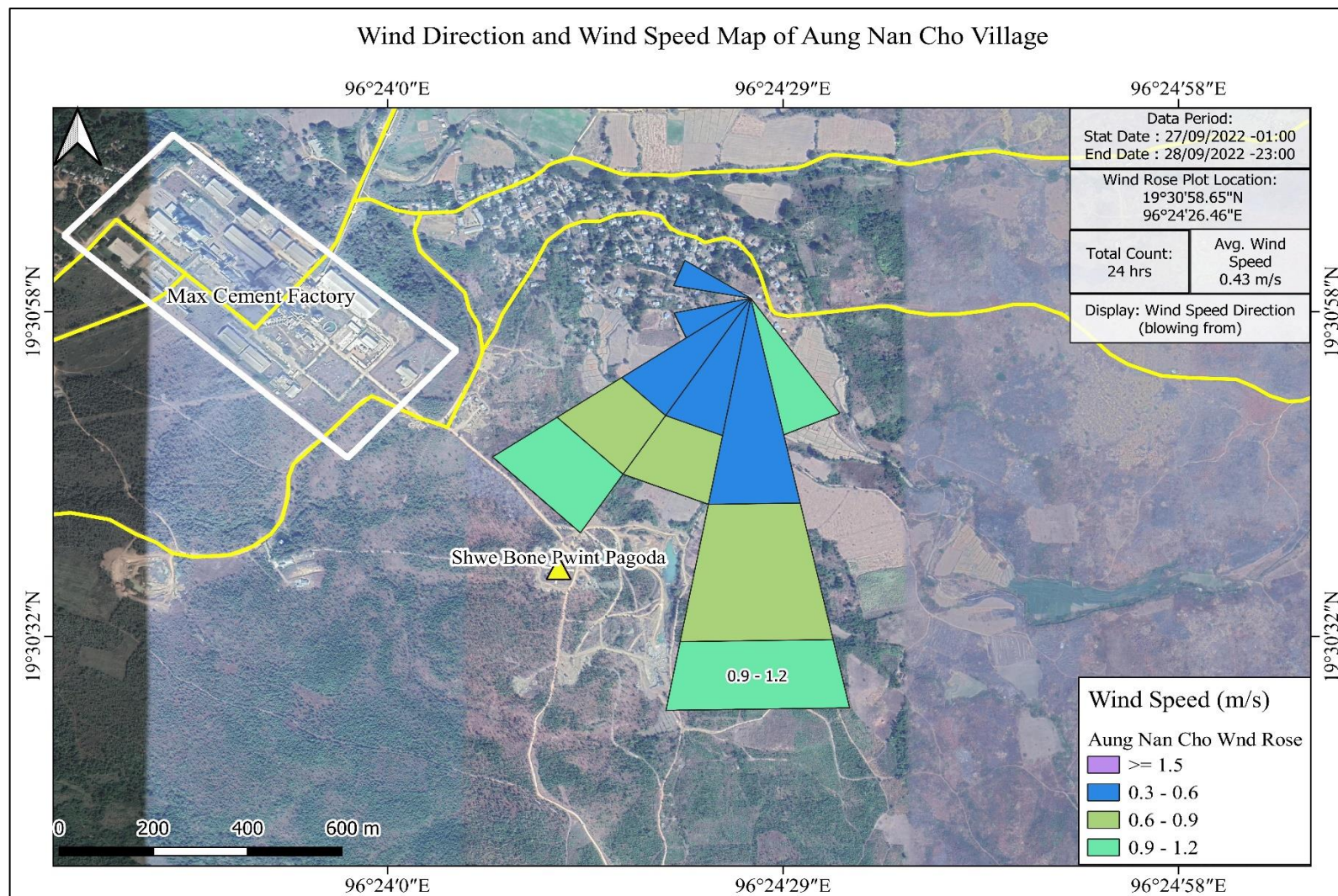


Figure 2-10 Wind Direction and Wind Speed Map of Aung Nan Cho Village

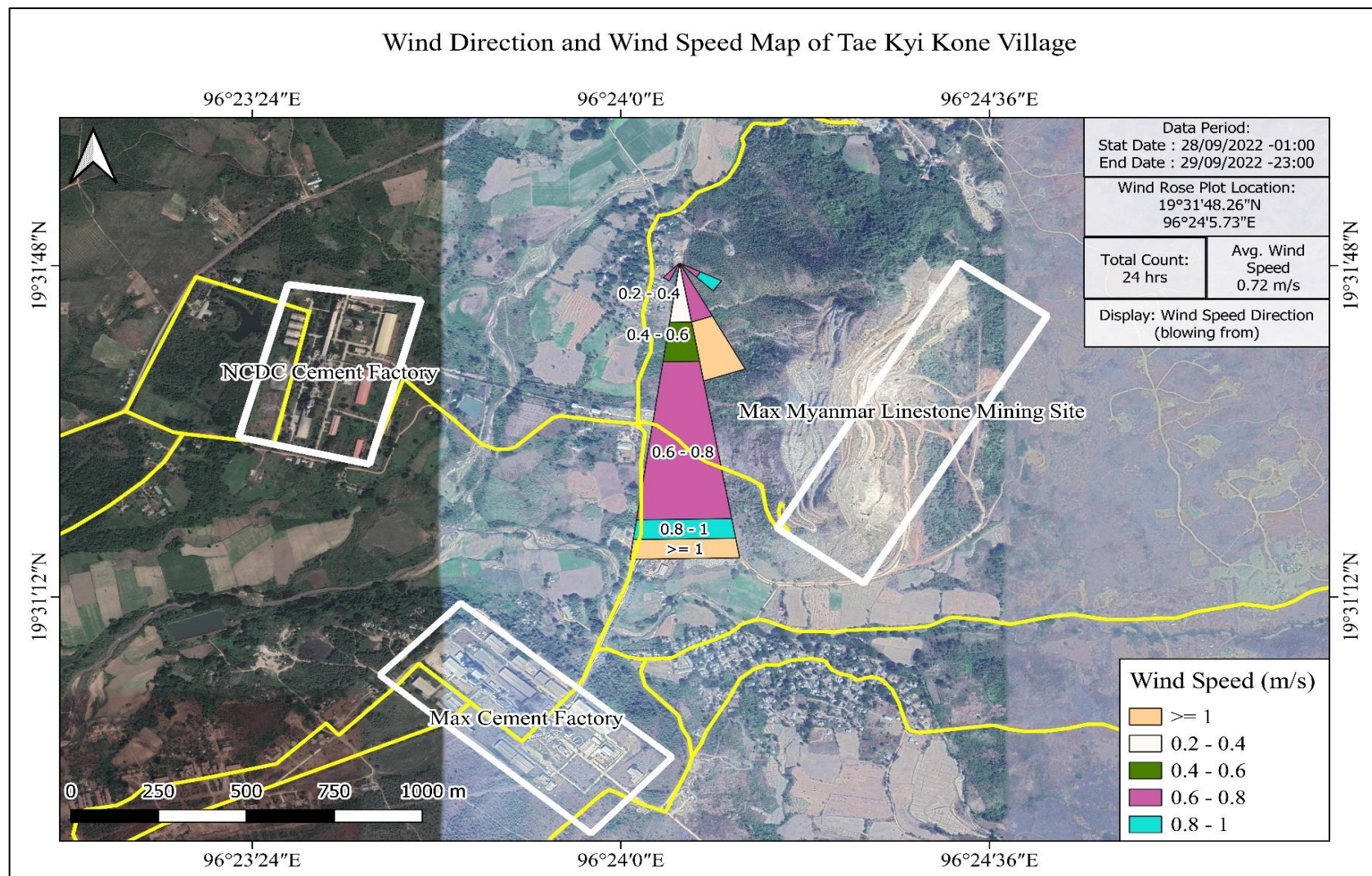


Figure 2-11 Wind Direction and Wind Speed Map of Tae Kyi Kone Village

2.3. NOISE

WHO has described noise pollution as an underestimated threat that can cause hearing loss, cardiovascular problems, cognitive impairment, stress and suffering from depression. Noise pollution can affect people in several ways, some of which includes cardiovascular diseases and sleep disturbances. MONREC (Ministry of Natural Resources and Environmental Conservation) has issued National Environmental Quality (Emission) Guidelines (2015) to provide the basis for regulations and control of noise level. Noise impacts should not exceed the levels presented in Table 2-5.

Table 2-5 Noise Level Standard of NEQG Guideline (2015)

Receptor	One Hour LAeq (dBA) ^a	
	Daytime 07:00-22:00 (10:00-22:00 for Public Holidays)	Nighttime 22:00 – 07:00 (22:00 – 10:00 for Public Holidays)
Residential, Institutional, educational	55	45
Industrial, commercial	70	70

^aan Equivalent continuous sound level in decibels

2.3.1. Methodology for Noise Level Measurement

The noise level measurements were conducted always near the air monitoring machine. There are three locations, mining site, Aung Nan Cho village and Tae Kyi Kone village. Noise measurement at mining site was conducted from 26th September 2022 to 27th September 2022 and noise measurement at the Christian Church of Aung Nan Cho Village was conducted from 27th September 2022 – 28th September 2022. Final noise measurement was conducted in front of the monastery in the Tae Kyi Kone village from 28th September 2022 – 29th September 2022.

These measurements were measured in accordance with the guidelines of National Environmental Quality (Emission) Guidelines (2015). Noise measurements are needed to make in the worksite and surrounding environment as it helps in identifying work locations where there are noise problems, employees who may be affected, and in checking the compliance with noise regulations, noise control, and

community annoyance. It is also important to determine that if noise is a potential problem in the workplace. Equipment that is used to measure ambient noise measurement is as shown below in Figure 2-12. The stations which were conducted noise measurements are shown in Table 2-6 and the photos in the field visit are shown in Figure 2-14 as well as noise level measurement locations are described in Figure 2-13.



Figure 2-12 Equipment Used to Measure Noise Levels

Table 2-6 Location Point of Outdoor Noise Level Measurement

Sr	Name	Location (Lat/ Long)
1	Mining Site	Lat. 19°31'30.54"N, long. 96° 24' 0.67"E
2	Aung Nan Cho Village	Lat. 19° 30' 58.65"N, E. Long. 96° 24' 26.46"E
3	Tae Kyi Kone Village	Lat. 19°31'48.26"N, E. Long. 96° 24' 5.73"E

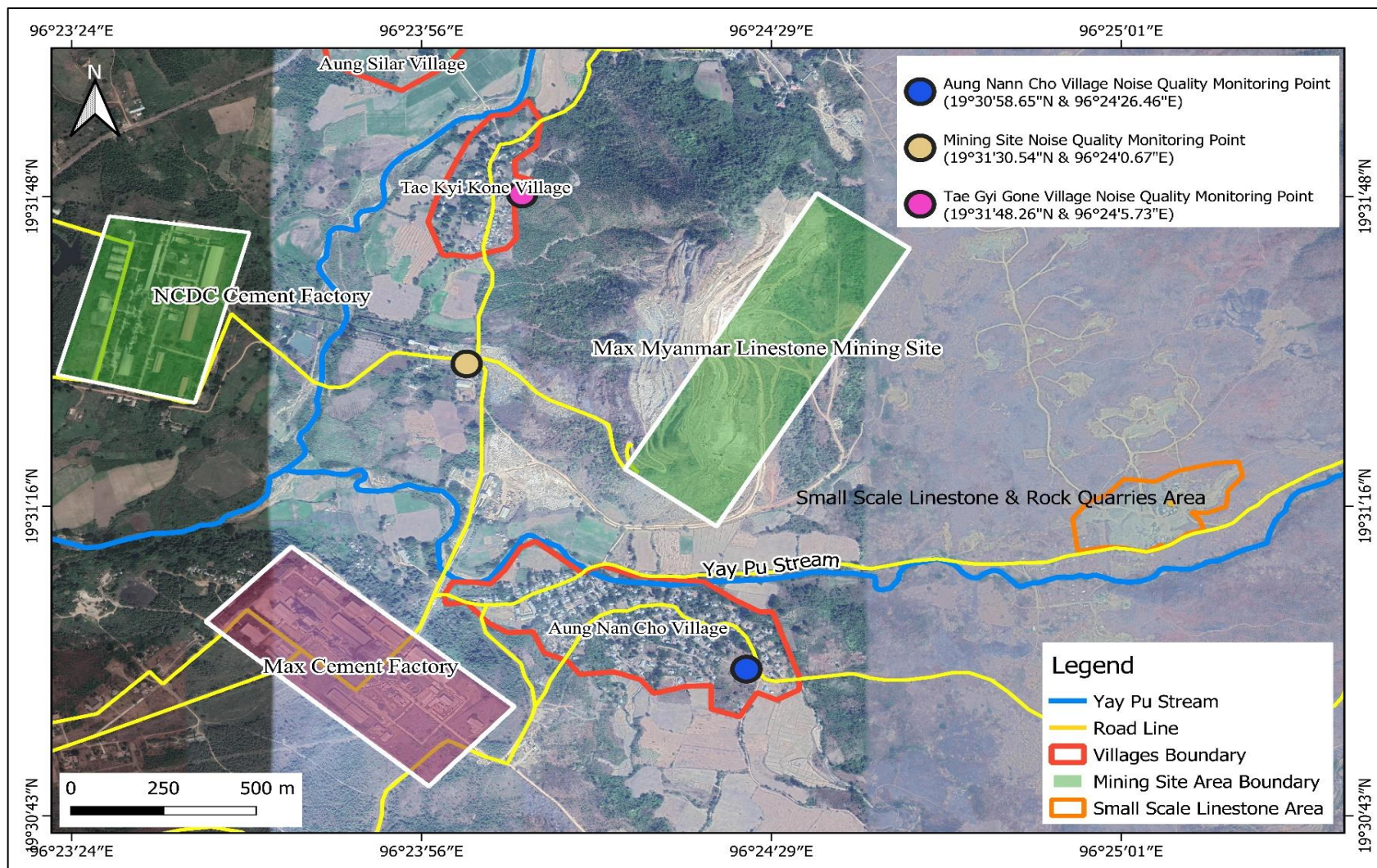


Figure 2-13 Noise Quality Measurement Point

	
<p>Noise Monitoring at near the mining site</p>	<p>Noise Monitoring at Aung Nan Cho Village</p>
	
<p>Noise Monitoring at Tae Kyi Kone Village</p>	

Figure 2-14 Noise Level Measurements in the field

Table 2-7 Previous Monitoring Measurement results of Noise (dBA)

No.	Measurement Place	Current activity during monitoring	Noise Level (dBA)						NEQG ¹ standard		
			Day Time						Residential, Institutional, educational		Industrial, commercial
			Minimum dBA		Maximum dBA		Average dBA				
			Day	Night	Day	Night	Day	Night	Day	Night	
1	At Mining Site	Operation running, Vehicle movement (Day)/ Small scale factory operation	33.08	36.2	86	60.2	65.0	40.8	55	45	70
2	At Aung Nan Cho Village	Motorcycle, truck (Day)/ Young people play guitar (Night)	63.9	48.2	64.6	54.8	65.5	54.8	55	45	70
3	At Tae Kyi Kone Village	Motorcycle (Day/Night)	42.9	43.5	49.4	44.7	48.3	43.0	55	45	70

¹National Environmental Quality (Emission) Guidelines, 29 Dec 2016

Table 2-8 Current Monitoring Measurement results of Noise (dBA)

No.	Measurement Place	Current activity during monitoring	Noise Level (dBA)						NEQG ¹ standard		
			Day Time						Residential, Institutional, educational		Industrial, commercial
			Minimum dBA		Maximum dBA		Average dBA				
			Day	Night	Day	Night	Day	Night	Day	Night	
1	At Mining Site	Backhoe Vehicle movement (Day)/ heard a loud mine explosion	44.58	52.30	60.23	56.71	53.54	53.98	55	45	70
2	At Aung Nan Cho Village	Motorcycle, truck (Day)/ (Night)	39.25	52.15	59.60	53.23	47.06	52.75	55	45	70
3	At Tae Kyi Kone Village	Motorcycle and Car crossing (Day/Night)	36.81	38.02	52.51	41.91	41.44	39.68	55	45	70

2.3.2. Result of Noise Level Measurement

To know the noise pollution level in the mining site and its vicinity, the noise quality was measured in the mining site, Aung Nan Cho and Tae Kyi Kone villages with BENETECH GM-1356 digital sound level meter and compared with NEQG/ECD guideline values. The coordinates are the same as mentioned for ambient air earlier.

In measuring noise at the mining site, it is noted that minimum noise level at daytime is 44.58 dBA and at night time is 52.30 dBA. The maximum noise measurement results at the mining site are 60.23 dBA at daytime and 56.71 dBA at night time. There are heavy activities on the mountain, raw crushing process and mine explosion (but no vibration). The average noise level at mining site is 53.54 dBA at daytime and 53.98 dBA at night time. Thus, the average noise measurement results are relevant to the standard noise level. Max Myanmar Manufacturing Co., Ltd is also planted to absorb the noises, and support noise protective equipment in noisy areas. The control measures to reduce sound and vibration are as shown in Figure 2-20.

In measuring noise at Aung Nan Cho village, the average noise level at day time is 47.06 dBA and average noise level at night time is 52.75 dBA. It is also within the NEQG guideline. In measuring noise measurement at Tae Kyi Kone village, the average noise result is under the guideline, specifically average noise level at day time is 41.44 dBA and average noise level at night time is 39.68 dBA. The previous and current measurement results are compared in Table 2-7 and Table 2-8 respectively. The demonstration of the 24-hour monitoring point is shown in the following Figure 2-15 and Figure 2-16.

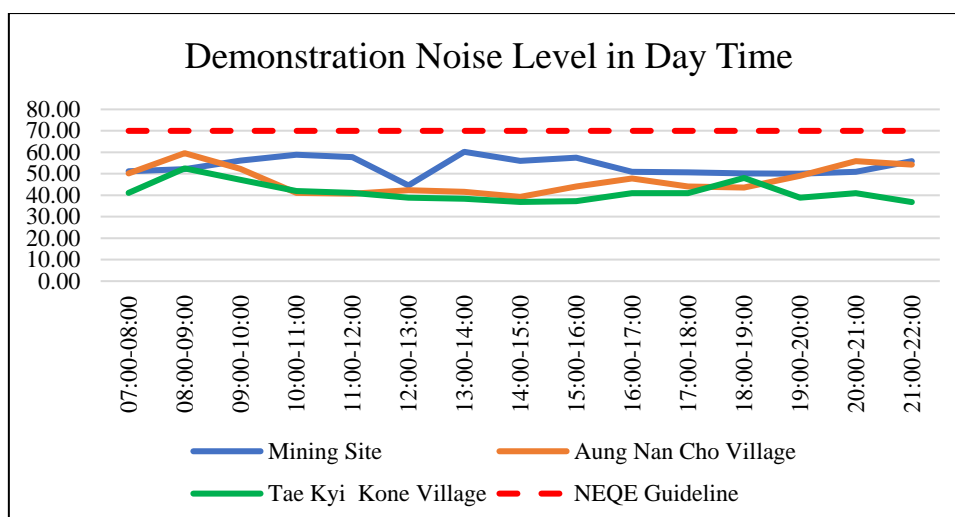


Figure 2-15 Demonstration Noise Level in Day Time

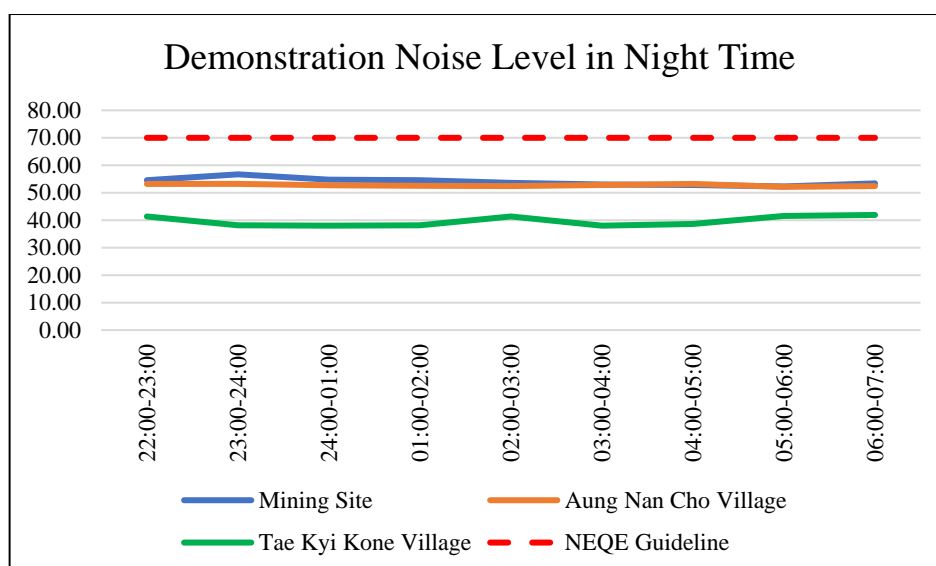


Figure 2-16 Demonstration Noise Level in Night Time

2.3.3. Vibration

BENETECH vibration meter was used for measuring vibration at the same points for air quality measurement and noise level measurement, specifically at the mining site, Aung Nan Cho village and Tae Kyi Kone village. The current measurement results are 0.3mm/s at mining, 0.2mm/s at Aung Nan Cho Village and there is no vibration in Tae Kyi Kone Village. However, explosion induced tremors are frequent. The current vibration measurement results are lower than the previous results. The results of the previous vibration measurement were 4.5 mm/s at mining site, 2.4 mm/s at Aung Nan Cho village and 1.1mm/s at Tae Kyi Kone village respectively. Equipment

used for measuring vibration is Figure 2-17. The measurement made in the field visit are shown in Figure 2-18. The location of the vibration points map is shown in Figure 2-19.



Figure 2-17 Vibration Meter



Figure 2-18 Vibration measurement in the field

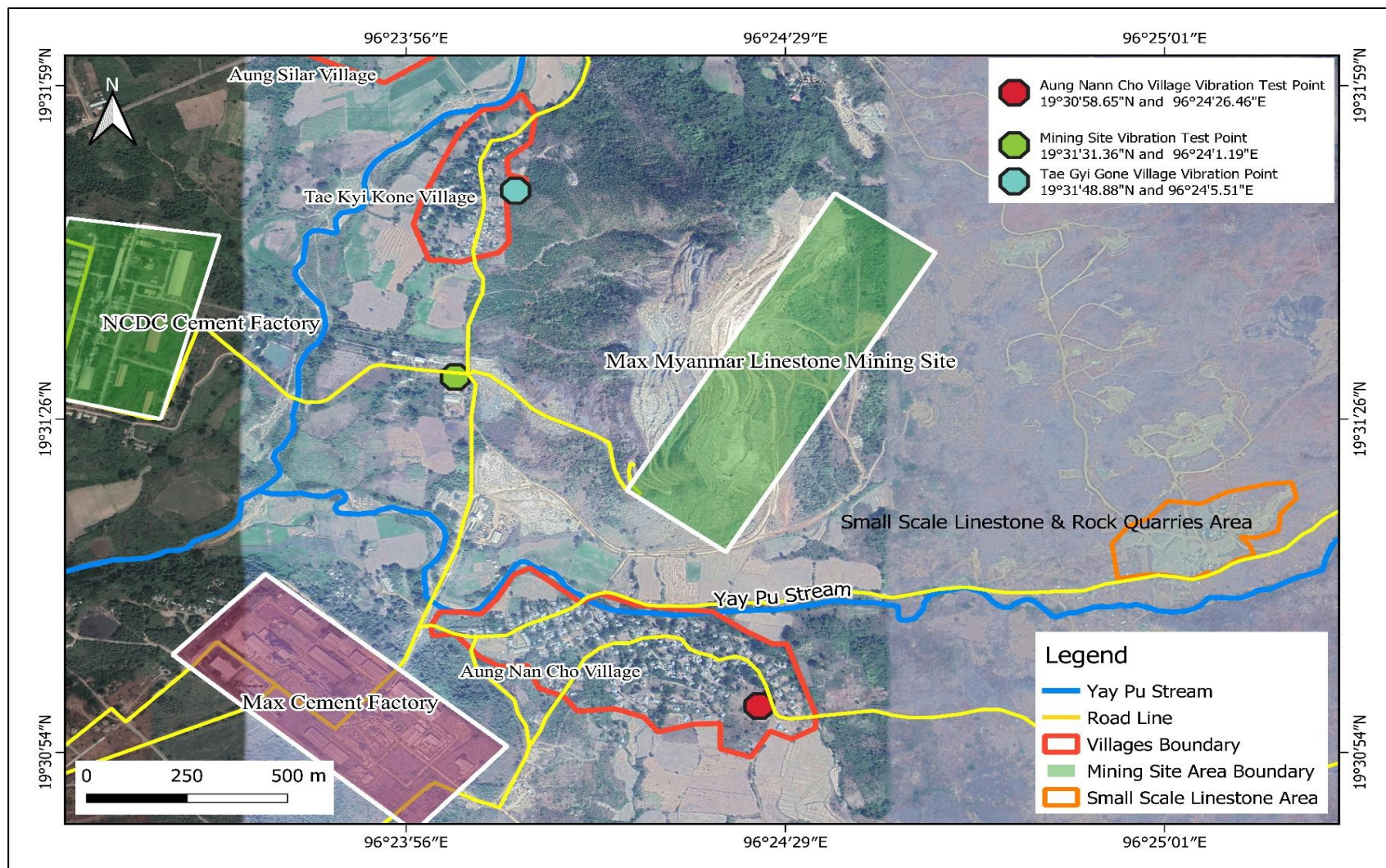


Figure 2-19 Location of vibration measurement points

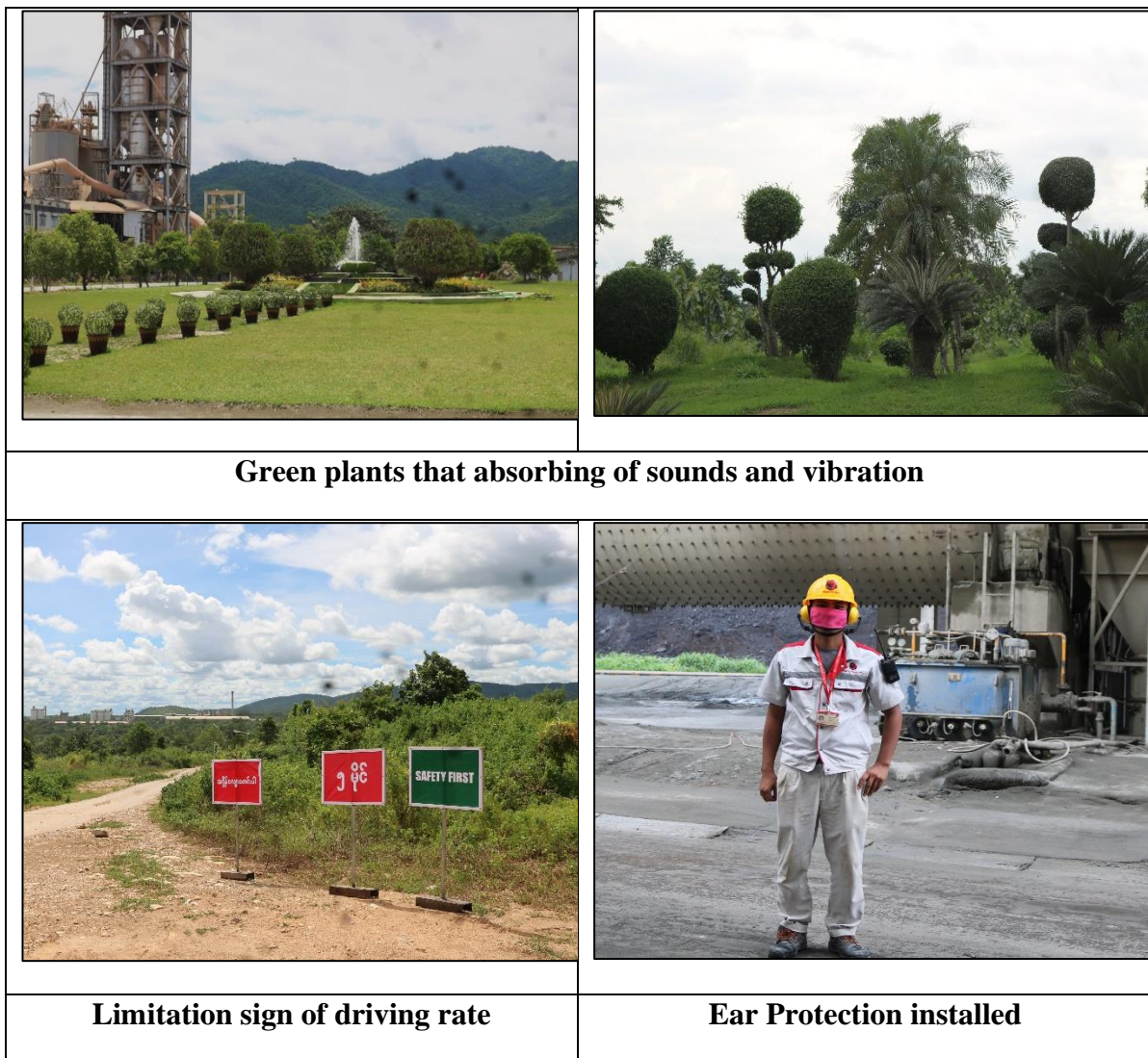


Figure 2-20 Control measures to reduce sound and vibration

2.4. WATER QUALITY

Water sample was collected in the Yay Pu Stream which is Lat. 19° 31' 12.00" N, long. 96° 24' 5.63" E. As the lime stone mining production process does not produce wastewater, the stream water samples were collected to know the water quality of the mining site environment as shown in Figure 2-21. The process was conducted on 27th September 2022 then sent to the Alarm Ecological Laboratory. As the result, pH level of water is on the margin of the standard value and the other parameters such as Total Suspended Solid (TSS), Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Nitrate (NO₃), Phosphate (PO₄), oil and grease are under the guideline. Water sample location map and collecting photo are as shown in Figure 2-21 and Figure

2-22. The results of current water quality and previous water quality are shown in the following Table 2-10 and compared with the guideline value of NEQG Effluent Guideline values prescribed by ECD. Photos of activities to reduce the water pollution in the project area are shown in Figure 2-23. Original laboratory test result is attached in **Appendix B**.

Table 2-9 The location of water sample collected point

Project Name	Water Quality Measurement GPS Location	Date
Max Myanmar Manufacture Limestone Mining Site.	19°31'11.89"N 96° 24'5.65"E	27th September 2022



Figure 2-21 Water Sample Collection from Yay Pu Stream

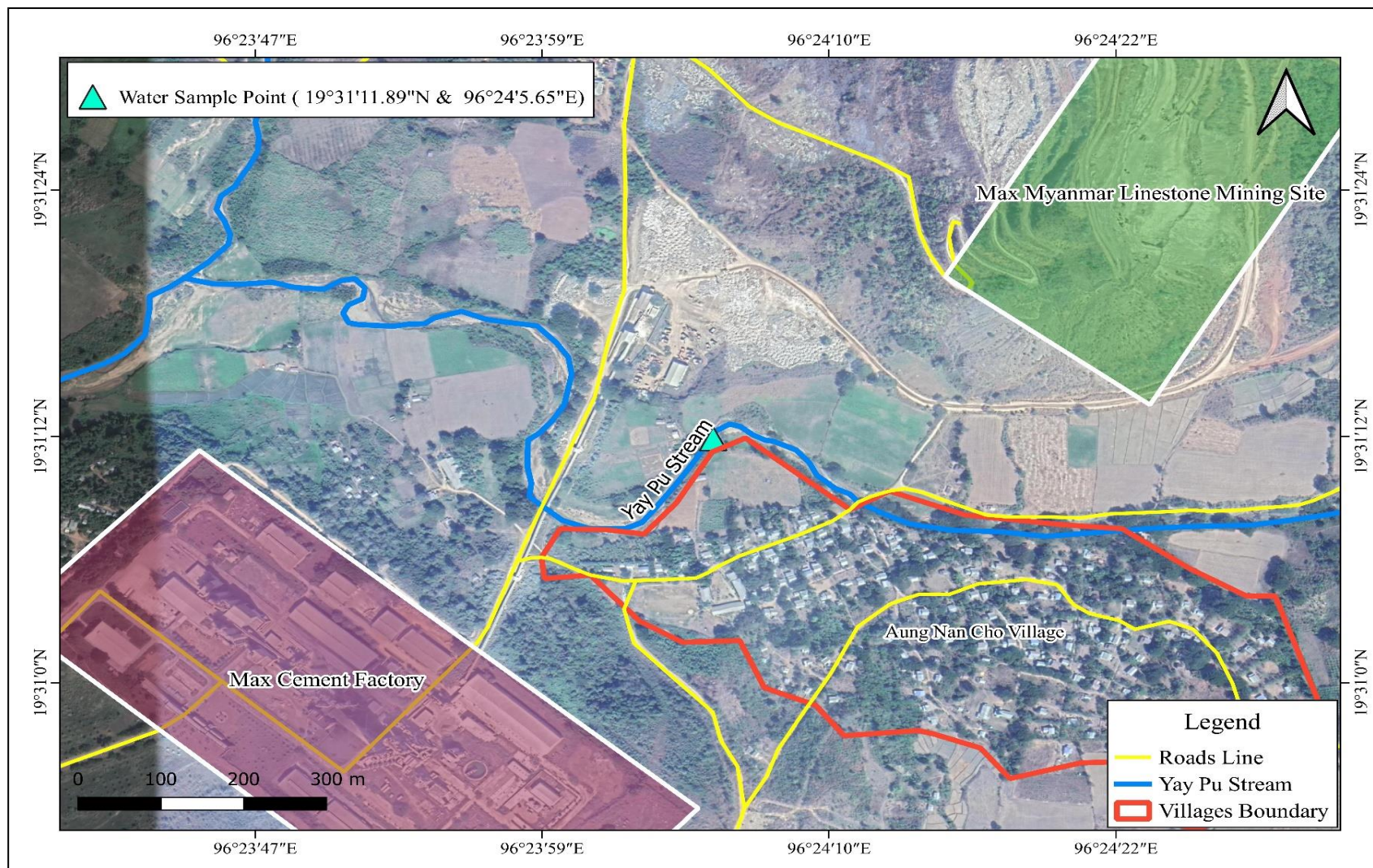


Figure 2-22 Location of Water Sample Collect point

Table 2-10 Current and previous water quality results

No.	Parameter	Current Result (24th to 26th January, 2022)	Previous Result (26th to 29th September, 2022)	Unit	Method	WHO Guideline Value	Remark
1	PH	6.5	8	S. U	pH meters	6.5-8.5c	Normal
2	Total Suspended Solids	0	45	mg/L	Lovibond Spectro Direct Method No. 385	500mg/l	Normal
3	BOD	3	8	mg/L	Estimated by Eco-Lab with Jenway Dissolved Oxygen Meter (Model 970)	50mg/l	Normal
4	COD	<30	34	mg/L	Lovibond Spectro Direct Method No.130~132	250mg/l	Normal
5	Nitrate	0.5	2	mg/L	Lovibond Spectro Direct Method No. 265,267	50mg/l	Normal
6	Phosphate	0.53	0.95	mg/L	Lovibond Spectro Direct Method No. 320, 321	-	-
7	Oil & Grease	2	3	mg/L	Hexane Extraction Method	10 mg/l	Normal

*WHO Guideline Value

No Reference Standard

	
<p>Recycling Water Used for Cooling Water</p>	<p>Warning Sign not to throw garbage in the stream</p>
	
<p>Properly made with bund to prevent oil leakage in the stream</p>	<p>Cleaning to improve water flow and inspection and repair of pipes</p>

Figure 2-23 Photo of activities to reduce the water pollution

2.5. SOIL SAMPLE (SURFACE SOIL)

Soil samples were collected at Aung Nan Cho village and Tae Kyi Kone village (the soil at mining site is sheer limestone rock). The coordinate for the soil sample collecting spots were the same as those for air monitoring places shown in Table 2-11 and it is also the same coordinates with the previous soil sample collecting points. The soil sample were brought back to Yangon and analyzed at Department of Agricultural (Land use) laboratory. The soil sample location point map is shown in Figure 2-24Figure 2-24. The current soil sample results and soil analytical data sheet are shown in Table 2-12 and Table 2-13. The previous soil sample results are also shown in Table 2-14 and

Table 2-15 to compare the current soil results. The detailed information of the soil measurement results is mentioned the **Appendix C**.

Table 2-11 Location of soil sample collecting places

Sr	Name	Location (Lat / Long)
1	Aung Nan Cho Village	N. Lat. 19° 31' 5", E. Long. 96° 24' 12"
2	Tae Kyi Kone Village	N. Lat. 19° 31' 48", E. Long. 96° 24' 5"

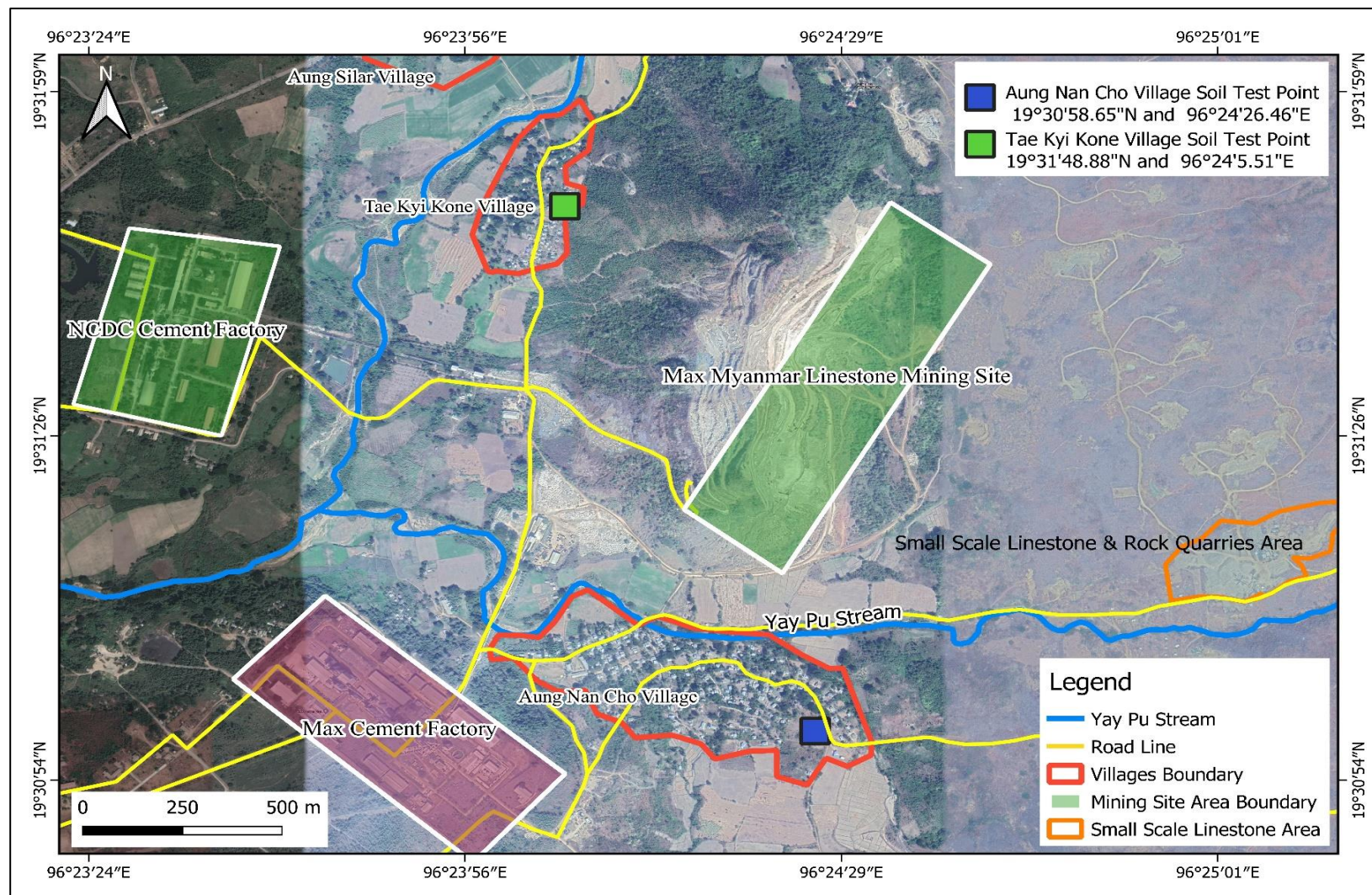


Figure 2-24 Location of soil sample collect point

Table 2-12 Current soil test results

Sr. No	Sample	PH Soil: Water 1:2:5	Texture	Total N	Available Nutrients
					p
1	Aung Nan Cho Village	Moderately Alkaline	Loamy Sand	Low	Very High
2	Tae Kyi Kone Village	Moderately Alkaline	Sandy Loam	Low	Very High

Table 2-13 Current soil analytical data sheet

Sr No.	Sample	Moisture %	pH Soil: Water 1:2.5	Texture				Total N %	Available Nutrients
				Sand %	Silt %	Clay %	Total %		P (ppm) (O)
1	Aung Nan Cho Village	1.56	7.81	76.76	19.7	3.54	100	0.195	38.62
2	Tae Kyi Kone Village	2.12	8.37	66.86	29.5	3.64	100	0.160	112.07

O = Olsen Method

Table 2-14 Previous soil test results

Sr. No	Sample	PH	Texture	Total N	Available Nutrients
					p
1	Aung Nan Cho Village	Slightly Acid	Sandy Loam	Low	Low
2	Tae Kyi Kone Village	Slightly Alkaline	Sandy Loam	Low	High

Table 2-15 Previous soil analytical data sheet

Sr No.	Sample	Moisture %	pH Soil; Water 1:2.5	Texture				Total N %	Available Nutrients
				Sand %	Silt %	Clay %	Total %		P (ppm)
1	Aung Nan Cho Village	3.02	6.49	68.22	19.78	12.0	100	0.14	5.36(B)
2	Tae Kyi Kone Village	4.44	7.52	58.42	29.88	11.70	100	0.17	19.27 (o)

B = Bray & Kurtz Method

O = Olsen Method

2.6. SOLID WASTE MANAGEMENT

The improper management and lack of disposal technique of the waste pollutes to the environment. It affects the water bodies. It also changes the physical, chemical, and biological properties of the water bodies. There is top soil generated in the production process but it generates small amount. In addition, domestic wastes generate such as leftovers, plastic bottles, tissues, wastes from kitchen and sanitary pads etc. The domestic waste generation measurement was conducted at staff accommodation and office to know generation rate per person/day. The number of staff live in staff accommodation are 35 people and the number of staff work in office are 28 people.

The average domestic waste generation results are 0.12 kg per person/day in office and 0.16 kg per person/day in staff accommodation respectively. Domestic wastes are disposed to the disposal site inside the project area one time per day and leftovers from workers' food are used as animal foods. The domestic waste generation measurement photo is shown in Figure 2-25 and the domestic waste measurement result graphs are shown in Figure 2-26 and Figure 2-27 . The detailed information of the trash records are described in the **Appendix D**.





Figure 2-25 Solid waste generation measurement photo

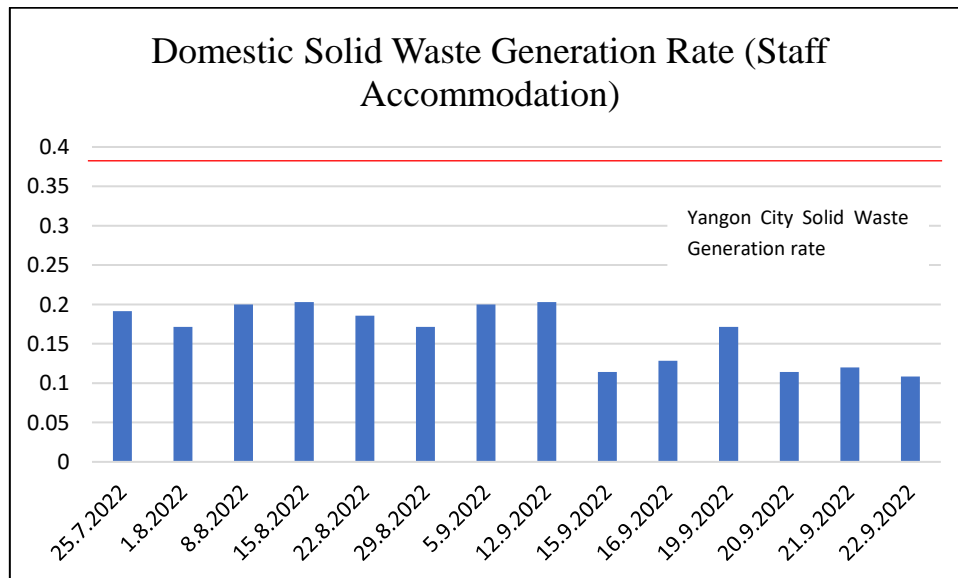


Figure 2-26 Domestic Waste measurement results graph (Staff Accommodation)

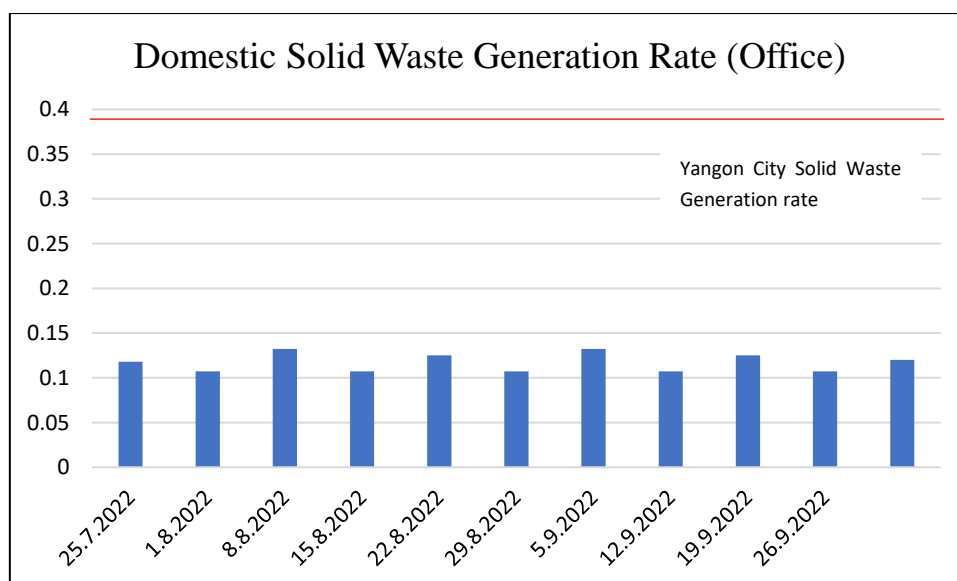


Figure 2-27 Domestic Waste measurement results graph (Office)

2.7. OCCUPATIONAL HEALTH AND SAFETY

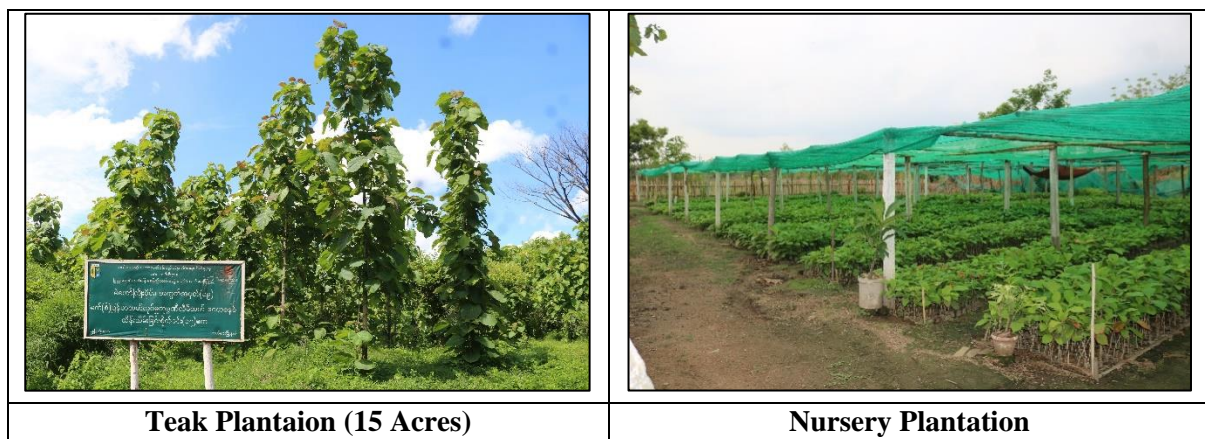
Max Myanmar Manufacturing Co., Ltd is establishing and implementing the occupational health and safety policy and programs. Records of health and safety training and policy are attached in the Appendix E. The group responsible for Occupational Health and Safety are listed in the following Table 2-16.

Max Myanmar Manufacturing Co., Ltd provides Personal Protective Equipment (PPE) such as safety gloves, adequate ear protection (ear plugs or muffs), safety hats and safety shoes to workers who are working in the excessive noise areas. The employees had access to environmental training, firefighting training, soft skill training, work operation training, first aid and fire safety training. The training photos are shown in Figure 2-28. The project site and public spaces are marked with safety signs for occupational health and safety. The record photos are as shown in Figure 2-30. Additionally, Max Myanmar Manufacturing Co., Ltd will connected with Social Security Board, Naypyitaw allow employees to receive health checks at the end of this year.

Teak plantation and nursery plantation are planted to improve ecological system and prevent landslide. Barriers also will be implemented and maintain to prevent landslide. The record photos of plantation are shown in Figure 2-29.



Figure 2-28 Occupational Health and Safety and Fire Safety Management





Teak Plantation

Figure 2-29 Ecosystem conservation plantation of project site



Measures of Occupational health and safety in the workplace



Construction of oxygen plants



Factory Dispensary

Health awareness lecture class



Welding class (Jan, 2021)

Electrical Expert Course (Mar, 2022)

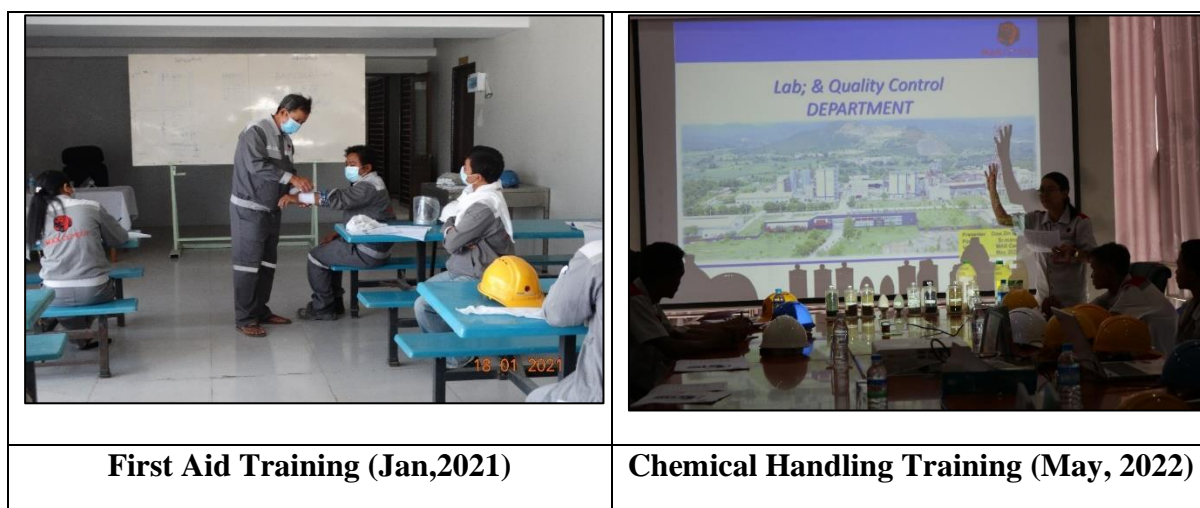


Figure 2-30 Occupational Health and Safety Record Photos

Table 2-16 The group responsible for Occupational Health and Safety (EMP Team)

No.	Name	Position	Responsibility
1.	U Win Ko	Safety Officer	OHS team leader
2.	Daw Nyo Nyo Win	Senior Manager	OHS member
3.	Daw Cho Cho Khaing	Assistant Manager	OHS member
4.	Daw Swe Swe Win	Medical Staff	OHS member
5.	U Thein Zaw	Supervisor Grade-2	OHS member

2.7.1. Emergency Response Team

Max Myanmar Manufacturing Co., Ltd has organized EMP team member, U Ko Ko Naing (Assistant Manager), one alternate member and five trained workers are responsible for implementing emergency plan. All other workers trained in firefighting, Red Cross training and all remaining workers will get involve in execution of emergency plan, emergency response, emergency procedures, and rescue operation in case of emergencies of natural disasters, flood, factory workers problems, unexpected events. The emergency training records are as shown in Figure 2-31.



Figure 2-31 Practical training records for emergency response planning

2.7.2. Grievance Redress Mechanism (GRM)

Max Myanmar manufacturing Co., Ltd is formed a committee to resolve the grievances and kept monthly records for development as shown in the following Table 2-17.

Table 2-17 **Committee to resolve grievances**

Name	Position	Remark
U Phyo Wai Win	Director	Head Office
Daw Aye Aye Khaing	General Manager	Head Office
U Naung Naung Aye	General Manager	Factory
Daw Mon Mon Thet	General Manager	Factory
U Thet Lel	Deputy General Manager	Factory
Daw Khin Mar Htay	Assistant General Manager	Factory
U Win Ko	Safety Officer	Factory
U Ko Ko Naing	Assistant Manager (Admin)	Factory
Daw Cho Cho Khaing	Assistant Manager (HR)	Factory

2.8. RELATIONS WITH THE VILLAGE COMMUNITY

Max Myanmar Manufacturing Co., Ltd provides the following opportunities for employees, workers and the village community.

- ✓ Providing a post office box for grievance complaints
- ✓ Occasionally, meetings from time to time and presenting/requesting.
- ✓ If there is an anniversary of the factory and other festivals, invite the villagers and build a good relationship.
- ✓ Factory heads and employees participating in religious festivals in the village; Funding for donations
- ✓ Fulfilling CSR activities to the best of our (Max Myanmar Manufacturing Co., Ltd) ability.
- ✓ Occasionally, asking and fulfilling the needs by phone.

The records photos are described in Figure 2-32.



Figure 2-32 Village public relations lecture

2.9. CORPORATE SOCIAL RESPONSIBILITIES (CSR)

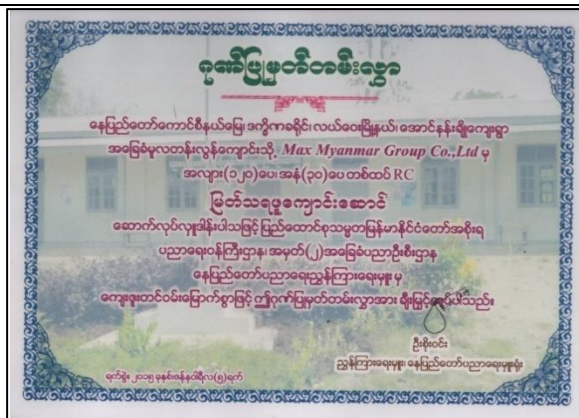
To meet the obligations of the EMP of the Max Myanmar Manufacturing Co., Ltd., the project proponents of the factory will conduct the following CSR program, described in the EMP. Max Myanmar Manufacturing Co., Ltd spent about Ks 525,860,000 in EMP report not including materials and kinds in donation, charity and community assistance works. And then, The Project Proponents will provide CSR fund which is (2%) of the net profit to use in the following purposes and social responsibility contribution records are as shown in Figure 2-33.

- (a) To provide the support in education sector around Nay Pyi Taw Region
- (b) To support the protection of the environment as well as from the fire around the Factory.
- (c) To develop the skill of the employees.
- (d) To provide educational grand for the employees' children.
- (e) To provide the employees' health examination.
- (f) To donate the clothes to the poor.

Remark: Due to the Covid-19 situation and other circumstances, the CSR program could not be implemented by the project. However, the CSR programs of EMP will be implemented, and local benefit activities will be further supported.



Since the mine site is a dirt road, sprinkling water to prevent the dust



Giving donations to factory employees and employee families who are Covid
(Positive)



Figure 2-33 Social responsibility contributions

2.10. ESTIMATED BUDGETS AND MONITORING TEAM FOR ENVIRONMENTAL MONITORING

Max Myanmar's environmental quality inspection fee is 5,500,000 once every 6 months and the estimated annual cost is 11,000,000 Kyats twice a year. Estimated budgets and monitoring team of Max Myanmar Manufacturing Co., Ltd are depicted in Table 2-18 and Table 2-19.

Table 2-18 Estimated Budget for Environmental Monitoring Program

No	Mitigation measures for environmental impacts	Monthly estimated budget (MMK)
Environmental Monitoring program		
1	Air quality monitoring	3,000,000
2	Noise monitoring	700,000
3	Water Quality Monitoring	1,000,000

No	Mitigation measures for environmental impacts	Monthly estimated budget (MMK)
4	Soil Quality Monitoring	800,000
Total		5,500,000

Table 2-19 Establishing the Monitoring Committee for the implementation of environmental protection activities

No.	Name	Position	Responsibility
1.	U Naung Naung Aye	Head of Cement Factory	Leader
2.	Daw Mon Mon Thet	General Manager	Member
3.	U Thet Lel	Deputy General Manager	Member
4.	Daw Khin Mar Htay	Asst; General Manager	Member
5.	U Pyae Phyo a Yar	Asst; Manager (Mining Engineer)	Member
6.	U Aye Myint Tun	Ward Administrator (Aung Nann Cho Village)	Member
7.	U Ye Min Soe	Villager	Member

CHAPTER 3

CONCLUSION AND RECOMMENDATION

The proposed project site is situated on the eastern slope of Taung Philar Mountain range, Taung Philar area, Leiway Township, Naypyidaw and 2 miles away from the Max Cement factory. The total area of land is 230 acres. Max Myanmar Manufacturing Co. Ltd need to conducted environmental quality measurements and monitoring to implement the environmental monitoring report and analyze the existing environmental conditions in the project area. So, the project's proponent requested Hexagonal Angle International Consultants Co., Ltd. For environmental monitoring programs.

The main objective of the study is to implement an environmental monitoring report and assess the existing environmental conditions in the mine site and surrounding area. This report will be assisting them in carrying out the project to avoid or minimize the impacts to environment, to make a monitoring report every 6 months according to the Environmental Impact Assessment (EIA) procedure.

In this EMR report study, the data of monitoring results were compared with National and Environmental Quality (emission) guideline (2015), international guideline standards and the air quality are within the standard guideline except for SO₂. The noise levels of the operation areas are agreed with the National and Environmental Quality (emission) guideline (2015).

The project proponents of the factory are implementing the health & safety programs and waste management programs and following the commitments described in the EMP.

In conclusion, it has been figured out that the proposed Max Myanmar Manufacturing Co., Ltd is going to generate and enhance capabilities and working skills of employees. Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended.

The analysis on the factory proved that the Project is carrying out the Environmental Monitoring Programs and abiding by its responsibilities under the EMP, and there is less likelihood that it will have a significant negative impact on the environment and society. The majority of environmental effects are intermittent and can be reduced to manageable levels by mitigating them

APPENDIX A
Outdoor Air Monitoring Result



HEXAGONAL ANGLE
INTERNATIONAL CONSULTANTS CO., LTD.

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Website: www.hexagonalangle.com

Project Name	Max Myanmar Manufacturing Co., Ltd.		
Air Sampling Location	3 locations, Limestone Mining Site, Aung Nan Cho Villge and Tae Kyi Kone Village		
Limestone Mining Site	Latitude	19°31'30.54"N	
	Longitude	96°24'0.67"E	
Aung Nan Cho Village	Latitude	19°30'56.19"N	
	Longitude	96°24'28.50"E	
Tae Kyi Kone Village	Latitude	19°31'48.26"N	
	Longitude	96°24'5.73"E	
Date	26.9.2022 to 29.9.2022		
Logging Duration (Hours)	24 Hour		
	Log on Time (Date, Time)	26 September 2022	8:43 AM
	Log off Time (Date, Time)	29 September 2022	9:00 PM
Air Quality Measuring Equipment	AQM-09 Air Quality Monitoring Station		

Table of Air Quality Monitoring Result

No.	Parameter	Analyzed Period	Result at Mining Site	Result at Aung Nan Cho Village	Result at Tae Kyi Kone Village	Unit	Average Period		NEQ(E) Guideline Value
1	Particular Matter PM ₁₀	24 Hour	5.23	9.39	8.88	µg/m ³	1 24	Year Hour	* 20 µg/m ³ * 50 µg/m ³
2	Particular Matter PM _{2.5}	24 Hour	1.95	3.03	6.93	µg/m ³	1 24	Year Hour	* 10 µg/m ³ * 25 µg/m ³
3	Total Suspended Particulate (TSP)	24 Hour	9.06	15.7	14.78	µg/m ³	24 Hours		NG
4	Sulphur Dioxide (SO ₂)	24 Hour	31.25	19	55	µg/m ³	10 24	Mins Hours	* 500 µg/m ³ * 20 µg/m ³
5	Nitrogen Dioxide (NO ₂)	1 Hour	31.58	41	15	µg/m ³	1 1	Year Hour	* 40 µg/m ³ * 200 µg/m ³
6	Carbon Monoxide (CO)	24 Hour	0.06	0.001	0.01	ppm	-		NG

DEVELOPING ALLIANCE, DELIVERING SUCCESS!



HEXAGONAL ANGLE

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No.	Parameter	Analyzed Period	Result at Mining Site	Result at Aung Nan Cho Village	Result at Tae Kyi Kone Village	Unit	Average Period	NEQ(E) Guideline Value
7	Ozone (O ₃)	8- Hour	22	16	13	µg/m ³	-	100 µg/m ³
8	Carbon Dioxide (CO ₂)	24-hour	336.64	356.29	323.77	ppm	24 hours	NG
9	Relative Humidity	24 Hour	90.26	86.6	74.9	%	-	NG
10	Temperature	24 Hour	26.6	27.4	28.99	Celsius	-	NG
11	Win Direction	24 Hour	213.63	196.98	175.04	Degree	-	NG
12	Win Speed	24 Hour	0.14	0.47	0.72	m/s	-	NG

NG = No Guideline

NEQ(E)Guideline- National Environmental Quality (Emission) Guidelines

Analyzed by

Pwint

Myat Noe Pwint
Environmental Geologist
Hexagonal Angle International Consultants Co., Ltd.

Checked by

Ei Ei Zaw

Ei Ei Zaw
General Manager (Environmental & Social Specialist)
Hexagonal Angle International Consultants Co., Ltd.

DEVELOPING ALLIANCE, DELIVERING SUCCESS!

APPENDIX B
Water Result

ALARM Ecological Laboratory

Water Testing Result Report



Report Number : EL-WR-22-00719

Date : October 3, 2022

Client Information

Client Name : Max Cement Factory, Naypyitaw
 Organization : Max Myanmar Manufacturing Co., Ltd
 Client ID : -
 Registration Date & Time : 28.9.2022 ; 11:15 AM
 Phone : 09263584400
 E - mail : -
 Testing Purpose : For Monitoring

Sample Information

Sample ID : 8539
 Sample Name : Surface Water
 Sample Type / Source : Raw
 Sampling Date & Time : 27.9.2022 ; 10:30 AM
 Sample Location : Yay Pu Stream, Taung Philar Limestone Deposit,
 Lewei Township, Naypyitaw
 Latitude : 19° 31' 12" N
 Longitude : 96° 24' 5.63" E

Testing Results




*This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.
 This report shall not be reproduced except in full, without written approval of the laboratory*

Sr.	Quality Parameters	Results	Units	Emission Standards	Remarks
1	pH ¹	8	S.U	6.0 - 9.0 ^d	Normal
2	TSS ³	45	mg/L	≤ 50 ^d	Normal
3	BOD ₅ ⁶	8	mg/L	≤ 50 ^d	Normal
4	COD ³	34	mg/L	≤ 250 ^d	Normal
5	Nitrate ³	2	mg/L	≤ 25 ^d	Normal
6	Phosphate ³	0.95	mg/L	-	-
7	Oil & Grease ⁹	3	mg/L	≤ 10 ^d	Normal

"ND" = Not Detected

"LOD" = Lower limit of detection

" - " = No Reference Standard

Tested by	Checked by	Approved by
 Daw May Myat Khine Lab. Technician II Ecological Laboratory ALARM	 Daw Lin Myat Myat Aung Lab. Technician I Ecological Laboratory ALARM	 Dr. Aye Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon.
 Tel: 09-407496078, Email: aelab.2022@gmail.com

APPENDIX C
Soil Result

DEPARTMENT OF AGRICULTURE (LAND USE)
SOIL ANALYTICAL DATA SHEET
Max Myanmar Manufacturing Co., Ltd (3.10.2022)

Division - နေပြည်တော်ကောင်စီနယ်မြေ။

Sheet No. 1

Township - လယ်ဝေးမြို့နယ်။

Sr No. S 1-2 / 2022

Sr No.	Sample	Moisture %	pH Soil:Water 1:2.5	Texture				Total N %	Available Nutrients
				Sand %	Silt %	Clay %	Total %		P (ppm) (O)
1	Aung Nan Cho Village	1.56	7.81	76.76	19.7	3.54	100	0.195	38.62
2	Tae Gyi Kone Village	2.12	8.37	66.86	29.5	3.64	100	0.160	112.07

O= Olsen Method

(ဒေါက်တာသန္တာညီ)
ဒုတိယညွှန်ကြားရေးမှူး
ဓာတ်ခွဲခန်းတာဝန်ခံ
မြေအသုံးချရေးဌာနခွဲ

DEPARTMENT OF AGRICULTURE (LAND USE)
SOIL INTERPRETATION OF RESULTS

Max Myanmar Manufacturing Co., Ltd (3.10.2022)

Division - နေပြည်တော်ကောင်စီနယ်မြေ။

Sheet No. 1

Township - လယ်ဝေးမြို့နယ်။

Sr No. S 1-2 / 2022

Sr No.	Sample	pH Soil:Water 1:2.5	Texttrure	Total N	Available Nutrients
					P
1	Aung Nan Cho Village	Moderately Alkaline	Loamy Sand	Low	Very High
2	Tae Gyi Kone Village	Moderately Alkaline	Sandy Loam	Low	Very High

(ဒေါက်တာသန္တာညီ)
ဒုတိယညွှန်ကြားရေးမှူး
ဓာတ်ခွဲခန်းတာဝန်ခံ
မြေအသုံးချရေးဌာနခွဲ

APPENDIX D
Trash Record

အမှိုက်စွန့်ပစ်မှုမှတ်တမ်း

(ဝန်ထမ်းအိမ်ယာ)

စဉ်	နေ့စွဲ	အမှိုက် အမျိုးအစား	ပမာဏ	အကြိမ် အရေအတွက်	သယ်ယူပို့ဆောင် သည့်ယာဉ်	စွန့်ပစ်သည့် နေရာ	ပို့ဆောင်သူ အမည်	လက်မှတ်
၁	၁၅.၉.၂၂	အစို	4 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၂	၁၆.၉.၂၂	အစို	4.5 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၃	၁၉.၉.၂၂	အစို	6 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၄	၂၀.၉.၂၂	အစို	4 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၅	၂၁.၉.၂၂	အစို	4.2 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၆	၂၂.၉.၂၂	အစို	3.8 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၇	၂၃.၉.၂၂	အစို	6 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၈	၂၆.၉.၂၂	အစို	5 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၉	၂၇.၉.၂၂	အစို	4.5 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		
၁၀	၂၈.၉.၂၂	အစို	3.8 kg	၁		တိရစ္ဆာန်အစာ အဖြစ်အသုံးပြုသည်		

အမှိုက်စွန့်ပစ်မှုမှတ်တမ်း

(ဝန်ထမ်းအိမ်ယာ)

စဉ်	နေ့စွဲ	အမှိုက် အမျိုးအစား	ပမာဏ	အကြိမ် အရေအတွက်	သယ်ယူပို့ဆောင် သည့်ယာဉ်	စွန့်ပစ်သည့် နေရာ	ပို့ဆောင်သူ အမည်	လက်မှတ်
၁	၂၅.၇.၂၂	အခြောက်	6.5 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၂	၁.၈.၂၂	အခြောက်	6 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၃	၈.၈.၂၂	အခြောက်	7 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၄	၁၅.၈.၂၂	အခြောက်	7.1 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၅	၂၂.၈.၂၂	အခြောက်	6.5 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၆	၂၉.၈.၂၂	အခြောက်	6 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၇	၅.၉.၂၂	အခြောက်	7 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၈	၁၂.၉.၂၂	အခြောက်	7.1 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၉	၁၉.၉.၂၂	အခြောက်	6 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၁၀	၂၆.၉.၂၂	အခြောက်	6.5 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	

အမှိုက်စွန့်ပစ်မှုမှတ်တမ်း

(ရုံး)

စဉ်	နေ့စွဲ	အမှိုက် အမျိုးအစား	ပမာဏ	အကြိမ် အရေအတွက်	သယ်ယူပို့ဆောင် သည့်ယာဉ်	စွန့်ပစ်သည့် နေရာ	ပို့ဆောင်သူ အမည်	လက်မှတ်
၁	၂၅.၇.၂၂	အခြောက်	3.3 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၂	၁.၈.၂၂	အခြောက်	3 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၃	၈.၈.၂၂	အခြောက်	3.7 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၄	၁၅.၈.၂၂	အခြောက်	3 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၅	၂၂.၈.၂၂	အခြောက်	3.5 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၆	၂၉.၈.၂၂	အခြောက်	3 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၇	၅.၉.၂၂	အခြောက်	3.7 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၈	၁၂.၉.၂၂	အခြောက်	3 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၉	၁၉.၉.၂၂	အခြောက်	3.5 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	
၁၀	၂၆.၉.၂၂	အခြောက်	3 kg	၁	M - 39	အမှိုက်ကျင်း	သက်နိုင်ထွန်း	

APPENDIX E
Health and Safety



Max Myanmar Manufacturing Co., Ltd.

Safety Committee (Factory)
Fire Extinguisher List

Date - 1.1.2022

Sr. No.	Location	Code No.	Type	Kg	Remark
	Mining Site				
1	Buckhole B-41		RF (MFZL)	3Kg	
2	Buckhole B-42		RF (MFZL)	3Kg	
3	Buckhole B-46		RF (MFZL)	3Kg	
4	Buckhole B-67		RF (MFZL)	3Kg	
5	Buckhole B-65		RF (MFZL)	3Kg	
6	Super Dumper K-09		RF (MFZL)	3Kg	အသစ်စာစားရန်
7	Super Dumper K-27		RF (MFZL)	3Kg	အသစ်စာစားရန်
8	Super Dumper K-38		RF (MFZL)	3Kg	အသစ်စာစားရန်
9	Super Dumper K-34		RF (MFZL)	3Kg	
10	(10)Wheels M-64		RF (MFZL)	3Kg	
11	(10)Wheels M-39		RF (MFZL)	3Kg	
			RF (MFZL)	3Kg	
12	Dozer D-07		RF (MFZL)	3Kg	
13	Dozer D-38		RF (MFZL)	3Kg	
14	Breaker B-26		RF (MFZL)	3Kg	



Max Myanmar Manufacturing Co., Ltd.

Safety Committee (Factory)

Fire Extinguisher Checklist (မီးသတ်ဆေးပုံးများ၏ အခြေအနေ စစ်ဆေးမှု မှတ်တမ်း)

Month . January

Page : 01 / 04

အမှတ် စဉ်	Department	အရွယ်အစား (Kg)	အမျိုးအစား	သက်တမ်း ကုန်ဆုံးသည့်နေ့	အသစ်ဖြည့် သွင်းသည့်နေ့	စစ်ဆေးသူ	စစ်ဆေးသူ လက်မှတ်	အတည်ပြုသူ လက်မှတ်
	Mining Site		RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
1	Buckhole B-41	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
2	Buckhole B-42	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
3	Buckhole B-46	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
4	Buckhole B-67	3Kg	RF (MFZL)	20.5.2023	20.6.2021	U Thein Zaw		
5	Buckhole B-65	3Kg						
6	Super Dumper K-09	3Kg	RF (MFZL)	1.11.2021	1.11.2020	U Thein Zaw		
7	Super Dumper K-27	3Kg	RF (MFZL)	1.11.2021	1.11.2020	U Thein Zaw		
8	Super Dumper K-38	3Kg	RF (MFZL)	1.11.2021	1.11.2020	U Thein Zaw		
9	Super Dumper K-34	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
10	(10) Wheels M-64	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
11	(10) Wheels M-39	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
12	Dozer D-07	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
13	Dozer D-38	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		
14	Breaker B-26	3Kg	RF (MFZL)	20.6.2023	20.6.2021	U Thein Zaw		



Max Myanmar Manufacturing Co., Ltd.

Safety Committee (Factory)

သက်ဆိုင်ရာဌာနများသို့ PPE ထုတ်ပေးသည့်စာရင်း

PPE အမျိုးအစား - *For Plug & Hammer*

Sr. No.	ထုတ်ယူသည့်ရက်စွဲ	ထုတ်ယူသူအမည်	ရာထူး	ဌာန	အရေအတွက်	ထုတ်ယူသည့်အကြောင်းအရာ	ထုတ်ယူသူလက်မှတ်	ထုတ်ပေးသူလက်မှတ်	မှတ်ချက်
1	10.1.2022	ဦးမျိုးစော	Operator 1	Mining Site	2	ဂျက်နီ ကာဆစ် ဖြန့်လျှော့ ထုတ်ပေး		<i>Just</i>	
2	"	ဦးနုလင်းစော	Operator 2	"	2	"		<i>Just</i>	
3	"	မိုးမေ	Driver 3	"	2	"		<i>Just</i>	
4	"	ဦးစွန်းစော	Driver 2	"	2	"		<i>Just</i>	
5	"	ကျော်စော	Driver 3	"	2	"		<i>Just</i>	
6	"	ဦးခန့်ကျော်	Driver 3	"	2	"		<i>Just</i>	
7	"	ဦးမြင့်စိုး	Operator 3	"	2	"		<i>Just</i>	
8	"	ဦးသန်းဦး	Operator 1	"	2	"		<i>Just</i>	
9	"	ဦးစိုးမင်းထွန်း	Operator 3	"	2	"		<i>Just</i>	
10	"	ဦးစိုး	Operator 2	"	2	"		<i>Just</i>	

FO-SF-01 REV-00



Max Myanmar Manufacturing Co., Ltd.

Safety Committee (Factory)

သက်ဆိုင်ရာဌာနများသို့ PPE ထုတ်ပေးသည့်စာရင်း

PPE အမျိုးအစား - *အောက်ကျွန်းသွင်း ရာဘာ ဝါဒီ*

Sr. No.	ထုတ်ယူသည့်ရက်စွဲ	ထုတ်ယူသူအမည်	ရာထူး	ဌာန	အရေအတွက်	ထုတ်ယူသည့်အကြောင်းအရာ	ထုတ်ယူသူလက်မှတ်	ထုတ်ပေးသူလက်မှတ်	မှတ်ချက်
1	10.1.2022	ဦးမျိုးစော	Operator 1	Mining Site	1 Set	ဂျက်နီ ကာဆစ် ဖြန့်လျှော့ ထုတ်ပေး		<i>Just</i>	
2	"	ဦးနုလင်းစော	Operator 2	"	1 Set	"		<i>Just</i>	
3	"	မိုးမေ	Driver 3	"	1 Set	"		<i>Just</i>	
4	"	ဦးစွန်းစော	Driver 2	"	1 Set	"		<i>Just</i>	
5	"	ကျော်စော	Driver 3	"	1 Set	"		<i>Just</i>	
6	"	ဦးခန့်ကျော်	Driver 3	"	1 Set	"		<i>Just</i>	
7	"	ဦးမြင့်စိုး	Operator 3	"	1 Set	"		<i>Just</i>	
8	"	ဦးသန်းဦး	Operator 1	"	1 Set	"		<i>Just</i>	
9	"	ဦးစိုးမင်းထွန်း	Operator 3	"	1 Set	"		<i>Just</i>	
10	"	ဦးစိုး	Operator 2	"	1 Set	"		<i>Just</i>	

FO-SF-01 REV-00