MOUNTAIN TOP GLOBAL LIMITED

ENVIRONMENTAL MANAGEMENT PLAN

FOR

FOOTWEAR MANUFACTURING FACTORY PROJECT, PLOT NO.(176), BLOCK NO.(49), WATAYAR INDUSTRIAL ZONE, SHWEPYITHAR TOWNSHIP, YANGON REGION

Oct 2021

National Engineering & Planning Services Co., Ltd, Myanmar

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ABBREVIATIONS AND ACRONYMS

Abbreviations	
BPC	Bio-Physical and Chemical
CO	Carbon Monoxide
CO_3	Carbon Dioxide
CSR	Corporate Social Responsibility
CMP	Cutting, Making and Packing
EERT	External Emergency Response Team
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMO	Environmental Management Officer
ERT	Emergency Response Team
ERTL	Emergency Response Team Leader
ESO	Environmental Site Officer
GoM	Government of Myanmar
HSE	Health, Safety and Environment
IFC	International Finance Corporation
ESIA	Environmental and Social Impact Assessment
NEQEG	National Environmental Quality Emission Guideline
MONREC	Ministry of Natural Resources and Environmental Conservation

MOEE	Ministry of Electricity and Energy
O_3	Ozone
OH & S Code	Occupational Health and Safety Code
PCM	Public Consultation Meeting
pH	Measurement of Acidity and Alkalinity
PM_{10}	Particulate Matter < 10 µ m
$PM_{2.5}$	Particulate Matter < 2.5 µ m
RO	Reverse Osmosis
SO_2	Sulfur Dioxide
SIA	Social Impact Assessment
TSP	Total Suspended Particulate
TDS	Total Dissolved Solid
VOCs	Volatile Organic Compounds

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ENVIRONMENTAL MANAGEMENT PLAN (EMP) REPORT ON FOOTWEAR MANUFACTURING FACTORY PROJECT, WATAYAR INDUSTRIAL ZONE, SHWEPYITHAR TOWNSHIP, YANGON REGION

1. EXECUTIVE SUMMARY

1.1 Summary of Project Description

The Project Proponent "Mountain Top Global Limited" is situated at Plot No. 176, Block No. 49, Wartayar Industrial Zone, Shwepyithar Township, Yangon Region for manufacturing all kinds of footwear products on CMP (Cutting-Making-Packing) basis with client-ordered design.

Amount of foreign capital investment for Mountain Top Footwear Manufacturing Factory Project is 2.922 Million USD (100% Foreign Investment Company Mountain Top Global Limited). Land and buildings are leased by the project proponent with an initial thirty (30) years and extendable for two times for ten (10) years counting from the date of signing the Lease Agreement between Daw Thi Thi Han (Lessor) and Mountain Top Global Limited (Lessee).[1]

For manufacturing of varieties of shoes to be exported on CMP System, the factory infrastructures have already been constructed and its completion of construction phase is 100% now. Infrastructures constructed at project site which is an area of 2.752 acres (11136 m^2) includes:

- Warehouse Factory A (94,500 mm x 35,000 mmm) two storey building;
- Warehouse Factory B (94,500 mm x 41,000 mm) two storey building;
- Dormitory Building (8,000 mm x 35,000 mm) three storey building.

The machinery, spare parts, raw materials and other accessories are intended to be imported from foreign country to produce the finished products at this factory. These raw materials are certified to ensure safe transportation to the project site as non-hazardous materials. Moreover, total types of 67 machineries will be used for production of footwear.

At the project site, Tube well water is being treated by RO treatment plant and is supplied from purified water distribution to the entire project site. The required electrical power supply is from the National Grid Line (33KV) with 2000 KVA transformer and also a generator is being installed for emergency cases. Furthermore, the factory has health clinic for workers and for those who are sick, they are sent to Social Welfare Hospital for care.

[1] Appendix A: Project Document, the Yangon Region Investment Committee at its meeting (2/2019) held on 23rd Jan 2019.

The project has completed the construction phase of all infrastructures including warehouse, dormitory, factory and offices. Now it is in its operational phase. Emergency Response Procedures and Fire Fighting and Prevention Equipment are being supplied and carried out systematically.

1.2 Summary of Baseline Physical and Social Environment

Soil Quality: The soil types and the soil characteristics of representative soils in the project area are available in detail respectively. According to soil types and soil characteristics of Myanmar, Ministry of Agriculture and Irrigation, March 2004, the soils of the project area are Lateritic soils which are prominent and Meadow and Meadow alluvial soils at 10 km range of the project site. The area demarcated as Wartayar Industrial Zone has lateritic soil which is a zone soil, formed in warm, temperature and tropical regions and rich in iron and aluminum, low in silica and chemically acidic. Meadow soil which occur near the river plains with occasional tidal flood are non-carbonate and contain more plant nutrient than that of upper Myanmar.

Meteorology: Climate of the project area is subtropical climate; hot and humid weather with recorded maximum temperature of 41°C and recorded minimum temperature of 30°C.

Annual rainfall over the area averages 67.67 inches (171.90 mm) during the past four years. Most rainfall results from tropical systems during the period of May and October. Annual wind speed at Shwe Pyi Thar, generally ranges from maximum wind speed of 2.9 kmph and minimum wind speed of 1.8 kmph with mean annual relative humidity of 79%.

Water Quality: Since the production process is a dry process, the water sample was collected from drinking water pipe for workers at the project site and it was tested in Pro Lab Analytical Laboratory in 27th September, 2021. Water quality assessment parameters are pH, acidity, alkalinity, electric conductivity, total dissolved solid, total suspended solids, calcium hardness, chloride, carbonate, magnesium hardness, manganese, phosphate, iron, salinity, sodium chloride, sulfate and turbidity. The analyzed parameters are compared with WHO Drinking Water Guidelines. According to the test result, all of the chemical and physical parameters are within the limit range of WHO Standards, 2018. Therefore, the water quality assessment indicated that the water is chemically fit for drinking purposes or industrial uses.

Air Quality[2]*:* Environmental quality monitoring, i.e., ambient air pollution and noise level tests at the project area was conducted by the Hexagonal Angle Consulting Team on 25th September of 2021. The OCEANUS^{TM} AQM-09 was used for air measuring survey and the measurement station is located at the project area and monitoring point is located in the loading / uploading place between two production factories. During the assessment, the average temperature was 30.2°C and relative humidity was 76.6%. The measured parameters are dust particles such as TSP, PM_{10}, $PM_{2.5}$, and the gaseous pollutants such as NO_2, SO_2, CO and O_3, relative humidity, air pressure and temperature etc., for outdoor air quality.

[2] *Appendix E Environmental Quality Monitoring Report: Ambient Air Quality Analysis Results*

Measurements were recorded in the operation with duration of 24 hours between consecutive measurements and the results are compared with National Environmental Quality (Emission) Guideline and World Health Organization Guideline. According to the result, the observed level of the ambient air quality parameters meet permissible limits of both Guidelines, making environmentally safe for the workers.

***Noise Quality**:* Baseline noise quality was measured at loading and uploading place in the shoe factory using BENTECH GM 1356 Digital Sound Level Meter. At present sound level results of minimum is 44.7 dBA and maximum is 85.1 dBA with average noise level of 64.25 dBA during day time. For industrial and commercial area, the maximum permissible sound level hourly by day and night is 70 dBA respectively. Noise levels at the site and in nearby areas are also found to be within the permissible limits as National Environmental Quality (Emission) Guideline for Industrial Area.

Sensitive Ecosystem: Except from Hlawgar National Park, which is situated at about 5 km from the project site, there is no sensitive ecosystem including wildlife sanctuaries, migratory routes of wildlife, biosphere reserve, tiger reserve, elephant reserve, and wetlands are present in this township. University of Computer Studies and Hlawga National Park at its eastern part and West Yangon University and Shwe Lin Ban Industry Zone at its southwest which are within 10 km range of the project site.

Flora and Fauna: There is no significant flora and fauna observed around the vicinity area. The native plants of Shwe Pyi Thar Township are ma-gyi, ta-ma, kokku, mayzali, pine and other green trees. However, the specific study area has already been urbanized with human activities and land used over the past years. Nowadays, the site within the industrial area has no significant vegetation or habitat for wildlife and its vegetation mainly comprises of the road side vegetation and prominent vegetation pattern is bushy and continuous on both sides of the road.

Socioeconomic Data: The proposed site is located in Shwe Pyi Thar Township, Yangon Region, Myanmar and the site is bordered by four townships namely: Mingalardon Township to its east, Hthantabin Township and Hlaing River to its west, Insein Township to its south and Hmawbi Township to its north. Since the project site falls administratively on the west part of Shwe Pyi Thar Township in the Watayar Industrial Zone, most of the surrounding areas are occupied by factories and there is no human settlement inside and around the environment.

Socio-Economic Status[3]: According to 2019 social study, the total population of the study area is 284922 with total household of 61496. Male female ratio of the study area is 1:1.14 as of 2019. The ethnicity of almost 94% is Bamah and others make less than 6% including foreigners. Out of the total population, the number of people who can work is 135028 and the unemployment rate is 13.53%. Main livelihoods are government services, industrial worker,

[3] *2019 Shwe Pyi Thar Township Data*

merchant, livestock breeding, agriculture, casual labor and others.

This township is a developing township in economic status. The important sectors for the economic development of the vicinity area are industrial worker and merchant. Commodities are the major productions of this township which are mainly exported to the vicinity townships and most of the materials are imported from Yangon. There are many water resources in this township and most of water supply for the township is mainly from surface water. The township has 13 waste trucks with 118 municipal workers. Major crop productions are paddy (monsoon/ summer) and beans. The project area has good transportation and can be accessed through railway and roads. There are hospital, clinics and rural healthcare centers, and INGO and NGO in this township. Three well-known pagodas and one monastery are in this township; however, there are no main historical and archeological structures with 10 km range of the project site.

Land use: The total land use area in Shwe Pyi Thar Township is 16484 acres. Almost 72% of its total area covers urban and built-up area, 0.36% of grassland, 11.27% of agriculture land, 15.88% of industrial area and 1.18% of religious land area. Forest area percentage in this township is deemed negligible.

1.3 Summary of Direct Environmental Impacts resulting from the Project Operation, Mitigation and Management Plan

The impacts have been assessed according to four parameters: Extent, Duration, Magnitude and Probability. These four parameters of environmental significance are assigned a score from 1 to 3 based on a grading, which is illustrated in the table below; this then allows an assessment of overall significance to emerge.

SCORE	*Extent*	*Duration*	*Magnitude*	*Probability*
1	Direct impact zone: Within the works/site area or immediate surroundings	Short: The impact is short term (0- 12 months) or intermittent	Low: No or negligible alterations to No or minimal change to socio-economic condition	Low
2	Locally: Effects measurable/noticeable outside the works area and immediate surroundings	Medium: Medium term (1-2 years)	Medium: Natural ecosystems are modified Changes are experienced to socio-economic	Medium
3	Wide Area: The activity has impact on a larger scale	Long: the impact persists beyond the construction phase for years or the operational life of the project area may be continuous	High: Environmental functions altered Socio-economic conditions highly modified. Effects may be permanent or irreversible	High

Based on the scores related to extent, duration, magnitude and probability of a specific impact, the significance of the impact is expressed as an indicator given by:

Significance indicator = (Extent + Duration + Probability) x Magnitude

The Summary of the Impact Assessment for the Bio-Physical and Chemical, Socio-Economic and Cultural parameters are as follows:

Operational Phase		
Ref.	**Impact/Issue**	**Significance**
Bio-Physical & Chemical		
BPC/1	Changes in surface water quality	low
BPC/2	Changes in groundwater quality	low
BPC/3	Changes to drainage patterns	low
BPC/4	Risk of Soil erosion and siltation	low
BPC/5	Changes to air quality	medium
BPC/6	Changes to ambient noise levels	low
BPC/7	Changes to aquatic biota	low
BPC/8	Changes to terrestrial biota	low
BPC/9	Changes to disease vector populations	medium
BPC/10	Changes to land cover	low
BPC/11	Changes in natural heritage site	low
Socio-Economic & Cultural		
SEC/1	Changes involving loss of private assets	low
SEC/2	Changes involving loss of cultural heritage	low
SEC/3	Changes involving displacement of people	low
SEC/4	Changes to local traffic patterns	low
SEC/5	Changes in local wage labour incomes/livelihood opportunities	medium
SEC/6	Changes in local trade/commercial incomes/opportunities	medium
SEC/7	Changes in visual amenity	medium
SEC/8	Changes to public infrastructure/community resources	medium

Note: Impacts are negative unless indicated with shading in green color in the above impact matrix table.

The mitigation measures for the above identified impacts are based on the environmental practice for improving safety, health and working environment in the informal footwear sector[4].

Operational Phase Mitigation Measures:

- Periodically clear drainage at dumping / storage site;
- Practice good housekeeping: Keep workshop environmentally clean, prohibit dust;
- Implement Health and Safety Routines for the site:
- Protect workers' occupational health with good lighting, safe drinking water, clean air and sanitation facilities;

[4] *ILO, "Improving safety, health and working environment in the informal footwear sector"*

- Conduct public awareness raising on environment;
- Community safety monitoring to be carried out;
- Periodically checking of storage site and related structure;
- Check no interference with private / public assets;
- Ensure emergency response plan;
- Prioritized loading and unloading during daylight hours;
- Ensure vehicle and engine exhausts fully operational;
- Consider integrated waste management for footwear industry: prevention, minimization/reduction, reuse, recycling, energy recovery, and disposal;
- Ensure safe drinking water provision by testing the drinking water for its physical, chemical and also microbiological analysis at least twice a year;
- Ensure production workers' occupational health and safety by provision of mask and relevant personal protective equipment.

1.4 Summary of Key Informant Interview (KII)

The following notes are responses from the key informant interviews at the project site during Sept-Oct 2021:

Mountain Top Global Limited: mostly produces Ladies footwear (boots, shoes and summer footwear) with CMP (Cutting-Making-Packing) procedure according to its ordered-footwear designs.

Working Hours: Working time starts from 7:30 AM to 4:30 PM with 1 hour lunch-break.
Salary Rate: start minimum 144,000 kyats to maximum 220,000 kyats. At present, we have 62 workers (labors) and 1 Chinese employee.

The production process: is just cut, glue, and stitch; and produce the output product according to ordered footwear design.

Dormitory: The foreign employee stays in the Factory but the local labors attend work from home.
Staff Welfare: We have 62 staff, and those who live outside the factory come to work by their own initiatives. We don't have separate dining room for staff to eat our lunch during break-time at noon but we provide a place for lunch including dining tables and chairs. The staff brings their own meals from home. Currently we don't have ferry for 62 staffs but we will arrange it if there are more than 200 staffs.

Solid Waste Management: Since our CMP process for production of footwear is a dry process, we have mostly solid waste generated from the cutting stage. These are all collected by our local contractors and sent for recycling work. However, the domestic wastes are being collected by the local municipality regularly for its hygienic disposal to relevant landfill site.

Health Clinic: There is a health clinic inside the compound, with a certified nurse in-charge to take care of our staff's health.

Fire Fighting System: We have regular fire-fighting training administered to our staff.

Electrical Supply: We have 2000 KVA transformer to run the factory. The electrical power source is from the national grid (33 KV cable) as our factory is located in the Wartayar Industrial Zone area.

Water Resources: Water from our two wells is pumped and stored to 12 Nos. x 11' x7' x7' rectangular ground tanks. Then it is pumped to the overhead tanks (2000L x 4 nos. + 3000L steel tanks) and distributed to the entire factory by gravity flow.

Drainage: We have masonry drainage constructed around the compound, which drains out the effluent into the Wartayar Industrial Zone drainage system and ultimately into the nearby water body.

1.5 Summary of Environmental and Social Management Plan

The EMP organization or cell will be set up for the project proponent or the implementation of the EMP***:***

- ***Environmental Auditor*** to monitor the EMP Performance (can be internal or independent external);
- ***Environmental Management Officer (EMO),*** who will manage the performance of the EMP, hired by the proponent (internal);[5]
- ***Environmental Site Officer (ESO),*** who will assist EMO and carry out the environmental management on site[6].

Environmental Management Plans for each identified impact[7]***:***

1. Water Quality Management and Ground Water Protection Plan;
2. Erosion, siltation and drainage Pattern Management Plan;
3. Air Quality Management Plan;
4. Waste Management Plan;
5. Traffic Management Plan;
6. Community Engagement and Development Plan;
7. Occupational Health and Safety Plan;
8. Emergency and Rescue Plan;
9. Corporate Social Responsibility (CSR) and Funding;
10. Restoration and Replantation Plan;
11. Environmental Monitoring Plan.

[5] Chapter 7.4.1 of this report: “EMO Roles and Responsibilities"
[6] Chapter 7.4.2 of this Report; “ESO Roles and Responsibilities"
[7] Chapter 8 of this Report: “Environmental Management, Monitoring and Budget Allocation"

The following contents of the above mentioned sub plans of the EMP are incorporated in Chapter 8 of this Report:

- Objective of each sub plan;
- Relevant Legal Requirements;
- Implementation Schedule of the sub plan;
- Management Action of the sub plan;
- Monitoring Plan of the sub plan;
- Indicator Parameters for each sub plan;
- Location of Sampling for testing work / analysis;
- Frequency of Monitoring work;
- Estimated Budget Allocation of each sub plan;
- Responsible Person / Organization for the sub plan Environmental Management.

Overall Annual Budget Estimate for implementation of the EMP and monitoring is 22 Million Kyats. However, if the project is beyond the current estimated cost, the necessary funds are deemed to be duly expanded by the project proponent.

EXECUTIVE SUMMARY IN MYANMAR LANGUAGE

အကျဉ်းချုပ်အစီရင်ခံစာ

၁.၁။ နိဒါန်း

အဆိုပြုစီမံကိန်းကိုဆောင်ရွက်နေသည့် မောင်တိန်တော့(ပ်)ဂလိုဘယ်လီမီတက်သည် ရန်ကုန်တိုင်းဒေသကြီး၊ ရွှေပြည်သာမြို့နယ်၊ ဝါးတရာစက်မှုဇုန်၊ မြေတိုင်းရပ်ကွက်အမှတ်(၄၉)၊ မြေကွက်အမှတ်(၁၇၆)တွင် အဓိက အားဖြင့် ဖိနပ်အမျိုးမျိုးကို ပယ်ယူသူဖက်မှ အပ်နှံထားသောဒီဇိုင်းအတိုင်း ဖြတ်/ချုပ်/ထုတ်ပိုးသည့် စနစ် (CMP system) ဖြင့် ချုပ်လုပ်သော ဖိနပ်ချုပ်စက်ရုံဖြစ်ပါသည်။

စီမံကိန်းအတွက် စုစုပေါင်းမတည်ငွေပမာဏမှာ အမေရိကန်ဒေါ်လာ ၂.၉၂၂ သန်း (ရာခိုင်နှုန်းပြည့် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု)ဖြစ်ပါသည်။ စီမံကိန်းမြေနေရာနှင့် အဆောက်အဦများကို ဒေါ်သီသီဟန်ထံမှ မြေဖက ၂.၇၅၂ (၁၁၁၃၆စတုရန်းမီတာ)ကို မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံရေးကော်မရှင်၏ခွင့်ပြုချက်နှင့်အညီ မြေပိုင်ရှင်နှင့် မြေဌားရမ်းသူတို့၏ နှစ်ဦးနှစ်ဖက် သဘောတူစာချုပ်လက်မှတ် ရေးထိုးသည့်ရက်မှစတင်၍ ပထမနှစ်(၃၀)စာ (၁၀နှစ်တစ်ကြိမ် မြေဌားစာချုပ်သက်တမ်းအား နှစ်ကြိမ်တိုးခြင်း) ဖြင့် ဌားရမ်းထားခြင်းဖြစ်ပါသည်။

CMP system ဖြင့် ဖိနပ်အမျိုးမျိုးချုပ်လုပ်ပြီး ပြည်ပသို့တင်ပို့ရန်အတွက် စက်ရုံကို ဆောက်လုပ်ထားပြီးဖြစ်ပြီး ယခုအချိန်တွင် အခြားအဆောက်အဦများနှင့် စက်ပစ္စည်းတပ်ဆင်ခြင်းလုပ်ငန်းများပြီးစီးမှုမှာ ၁၀၀% ရှိပါသည်။ စီမံကိန်းတည်နေရာရှိ အဆောက်အဦများမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

- (အလျား ၉၄၅၀၀ မီလီမီတာ × အနံ ၃၅၀၀၀ မီလီမီတာ) နှစ်ထပ်အလုပ်ရုံ၊ အဆောက်အအုံ- အေ၊
- (အလျား ၉၄၅၀၀ မီလီမီတာ × အနံ ၄၁၀၀၀ မီလီမီတာ) နှစ်ထပ်အလုပ်ရုံ၊ အဆောက်အအုံ- ဘီ၊
- (အလျား ၈၀၀၀ မီလီမီတာ × အနံ ၃၅၀၀၀ မီလီမီတာ) သုံးထပ်အဆောင်နှင့် စားဖိုဆောင်

ဖိနပ်အမျိုးမျိုးထုတ်လုပ်ရန်အတွက် အသုံးပြုသောစက်ယန္တရားများ၊ ကုန်ကြမ်းပစ္စည်းများနှင့် အခြားလိုအပ်သောပစ္စည်းများကို နိုင်ငံခြားမှ တင်သွင်းမည်ဖြစ်ပါသည်။ တင်သွင်းလာသော ကုန်ကြမ်းပစ္စည်းများသည် သက်ဆိုင်ရာမှ အန္တရာယ်ကင်းရှင်းမှုရှိကုန်ပစ္စည်းများဖြစ်ကြောင်း ထောက်ခံချက်ရရှိထားပြီးဖြစ်ပါသည်။ ဖိနပ် ထိုပြင်၊ ဖိနပ်ထုတ်လုပ်ရန်အတွက် စက်ယန္တရားပေါင်း (၆၇)ခုကို အသုံးပြုမည်ဖြစ်ပါသည်။

စက်ရုံဇရိယာအတွင်းရှိ အဂိစိတွင်းမှ ရရှိသောရေများကို ရေသန့်စက်(RO treatment plant) ဖြင့်သန့်စင်ပြီး အထွေထွေသုံးရေအဖြစ် အသုံးပြုပါသည်။ လုပ်ငန်းသုံးအတွက် လိုအပ်သောလျှပ်စစ်မော်တော်အားကို လျှပ်စစ်နှင့်စွမ်းအင်ဂန်ကြီးဌာနမှ ရရှိသည့်အပြင် အရေးပေါ်သုံးရန်အတွက် ဗို့အား (၂၀၀၀)KVA ရှိသည့် အရန်မီးစက်တစ်လုံး ရှိပါသည်။ ထို့နောက်၊ စက်ရုံရှိ အလုပ်သမားများ၏ကျန်းမာရေးအတွက် ဆေးပေးခန်းလည်း ထားရှိပေးပါသည်။

ယခုအချိန်တွင် အဆောက်အအုံများ၊ သိုလှောင်ရုံ၊ ရုံးခန်း၊ အဆောင်နှင့် စက်တပ်ဆင်မှုများ ဆောက်လုပ်မှုပြီးစီးပြီဖြစ်ပါသည်။ မီးဘေးအန္တရာယ်ကာကွယ်ရန်နှင့် အရေးပေါ်ကိစ္စများအတွက် ကြိုတင်ပြင်ဆင်မှုများလည်း စနစ်တကျ ဆောင်ရွက်ပေးလျက်ရှိပါသည်။

၁.၂။ စီမံကိန်းအနီးပတ်ဝန်းကျင်နှင့် လူနေမှုအခြေအနေအကျဉ်းချုပ်

မြေအရည်အသွေး။ ။၂၀၁၄ခုနှစ်၊ မတ်လတွင် လယ်ယာစိုက်ပျိုးရေးနှင့်ဆည်မြောင်းဝန်ကြီးဌာနမှ ထုတ်ပြန်ထားသော "မြန်မာနိုင်ငံတွင် တွေ့ရှိရသောမြေအမျိုးအစားများနှင့် မြေအမျိုးအစားများ၏ လက္ခဏာများ" အရ စက်ရုံတည်ရှိသောနေရာ၏ မြေအမျိုးအစားမှာ ဂဝံမြေအမျိုးအစားဖြစ်ပြီး စက်ရုံ၏ (၁၀)ကီလိုမီတာ ပတ်ဝန်းကျင်ရှိ မြေအမျိုးအစားများမှာ လယ်မြေမြေအမျိုးအစားဖြစ်ပါသည်။ စီမံကိန်းတည်ရှိသည့် ဝါးတစ်ရာစက်မှုဇုန်၏ မြေအမျိုးအစားသည် အပူပိုင်းဒေသများတွင် တွေ့ရပြီး သံနှင့်အလူမီနီယံဓာတ်များပြီး၊ ဓာတုနည်းအရ အက်စစ်ဓာတ်များသော ဂဝံမြေအမျိုးအစားဖြစ်ပါသည်။ လယ်မြေအမျိုးအစားမှာမူ လှိုင်မြစ်နှင့်နီးသောဒေသများတွင် တွေ့ရပြီး အဆိုပါမြေအမျိုးအစားသည် စိုက်ပျိုးရေးအတွက် ကောင်းမွန်ကြောင်း တွေ့ရပါသည်။

ရာသီဥတု။ ။ စီမံကိန်းတည်နေရာသည် ပူအိုက်စိုစွတ်သောရာသီဥတုရှိပြီး အမြင့်ဆုံးအပူချိန်မှာ ၄၁ ဒီဂရီစင်တီဂရိတ် နှင့် အနိမ့်ဆုံးအပူချိန် ၃၀ ဒီဂရီစင်တီဂရိတ်ရှိပါသည်။ လွန်ခဲ့သော(၄)နှစ်အတွင်း နှစ်စဉ်ပျမ်းမျှ မိုးရေချိန် ၁၇၁.၉၀ မီလီမီတာ (၆၇. ၆၇လက်မ) ရှိပြီး နှစ်စဉ် မေလနှင့် အောက်တိုဘာလတို့တွင် မိုးအများဆုံး ရွာသွန်းလေ့ရှိပါသည်။ နှစ်စဉ်လေတိုက်နှုန်း အမြင့်ဆုံးနှင့်အနိမ့်ဆုံးမှာ တစ်နာရီ ၂.၉ ကီလိုမီတာ နှင့် တစ်နာရီ ၁.၈ ကီလိုမီတာ အသီးသီးရှိပြီး၊ နှစ်စဉ်ပျမ်းမျှစိုထိုင်းစ ၇၉ ရာခိုင်နှုန်းရှိပါသည်။

ရေအရည်အသွေး။ ။အဆိုပြုစီမံကိန်းသည် ဖိနပ်ချုပ်လုပ်သည့်လုပ်ငန်းဖြစ်သည့်အတွက် ရေအရည်အသွေးစမ်းသပ်ရန်အတွက်မူ စက်ရုံအတွင်းဖြန့်ဝေသော သောက်သုံးရေကို ၂၀၂၁ခုနှစ်၊ စက်တင်ဘာလ (၂၇) ရက်နေ့တွင် Pro Lab Analytical Laboratory တွင် ပြုလုပ်ခဲ့ပြီး တိုင်းတာမှုပြုလုပ်သောပါရာမီတာများသည် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်နှင့် ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့မှ ထုတ်ပြန်ထားသော သောက်သုံးရေစံနှုန်းများနှင့် ကိုက်ညီမှုရှိပါသည်။ ထို့ကြောင့် စက်ရုံပတ်ဝန်းကျင်မှ ရရှိသော တွင်းရေသည် သောက်သုံးရေအတွက် အသုံးပြုနိုင်ကြောင်းတွေ့ရှိရသည်။

လေထုအရည်အသွေး။ ။ ၂၀၂၁ခုနှစ်၊ စက်တင်ဘာလ(၂၅)ရက်နေ့တွင် စီမံကိန်းပတ်ဝန်းကျင်အတွင်းရှိ လေထုအရည်အသွေးနှင့် ဆူညံမှုတိုင်းတာရန်အတွက် Haxagonal Angle Consulting Team မှ OCEANUS™ AQM-09 နှင့် BENTECH GM 1356 စက်များဖြင့် စက်ရုံအတွင်း ရွေးချယ်ထားသော ကုန်ပစ္စည်းအတင်/အချ ပြုလုပ်သည့်နေရာတွင် တိုင်းတာမှုပြုလုပ်ခဲ့ပါသည်။ လေထုအတွင်းရှိ အမှုန်များနှင့် အဆိပ်သင့်နိုင်သော အငွေ့ များအား တိုင်းတာပြီး ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့နှင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့် နှိုင်းယှဉ်ထားပါသည်။ အဆိုပါတိုင်းတာမှု ပြုလုပ်နေချိန်တွင် စက်ရုံပတ်ဝန်းကျင် အပူချိန် မှာ ၃၀.၂ ဒီဂရီစင်တီဂရိတ် နှင့် ပျမ်းမျှစိုထိုင်းစ ၇၆.၆ ရာခိုင်နှုန်း ရှိပါသည်။ ရရှိသောတိုင်းတာမှုရလဒ်များ သည် အထက်ဖော်ပြပါလေထုအရည်အသွေးညွှန်းကိန်းလမ်းညွှန် ချက်များနှင့် ကိုက်ညီမှုရှိပြီး စက်ရုံလုပ်ငန်းလုပ်ကိုင်ရန်အတွက် သင့်တော်သော ပတ်ဝန်းကျင်အနေအထားရှိကြောင်း တွေ့ရှိရသည်။

ဆူညံမှုတိုင်းတာခြင်း။ ။ BENTECH GM 1356 စက်၏ ဆူညံမှုတိုင်းတာရလဒ်အရ စက်ရုံအတွင်းနေ့အချိန် အသံဆူညံမှုနှုန်း အနည်းဆုံး နှင့် အများဆုံးမှာ ၄၄.၇ dBA နှင့် ၈၅.၁ dBA အသီးသီးရှိပြီး၊ ပျမ်းမျှအားဖြင့် အသံဆူညံမှုနှုန်း ၆၄.၂၅ dBA ရှိပြီး အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်၏ သတ်မှတ်တန်ဖိုးဖြစ်သော ၇၀ dBA အောက်ရှိသောကြောင့် တိုင်းတာမှုရလဒ်ကောင်းမွန်ကြောင်း တွေ့ရှိရသည်။

ထိခိုက်ပျက်စီးလွယ်သည့် ဧရိယာစနစ်။ ။ ထို့ပြင်၊ အနီးပတ်ဝန်းကျင်(၁၀)ကီလိုမီတာပတ်လည်တွင် စီမံကိန်း တည်နေရာ၏ အရှေ့ဖက်ခြမ်းတွင်ရှိသော ကွန်ပျူတာတက္ကသိုလ်နှင့် လှော်ကားအမျိုးသားဥယျာဉ်၊ အနောက်တောင်ဖက်ခြမ်းတွင်ရှိသော အနောက်ပိုင်းတက္ကသိုလ်နှင့် ရွှေလင်ဗန်းစက်မှုဇုန်များမှအပ အခြား ထိခိုက်ပျက်စီးလွယ်သည့်ဧရိယာစနစ်များ မရှိကြောင်းတွေ့ရှိရသည်။

သဘာဝပေါက်ပင်နှင့်တိရစ္ဆာန်များ။ ။ အဆိုပြုစီမံကိန်းဖြစ်သည့်ဖိနပ်စက်ရုံသည် မြို့ပြနှင့်စက်မှုဇုန်အနီး တစ်ဝိုက်တွင် တည်ဆောက်ထားခြင်းဖြစ်သောကြောင့် စက်ရုံအနီးပတ်ဝန်းကျင်တွင် သိသာထင်ရှားသော အပင်နှင့်သားရဲတိရစ္ဆာန်များမရှိကြောင်း တွေ့ရှိရသည်။ လက်ရှိအချိန်တွင် စက်ရုံအနီးပတ်ဝန်းကျင်တွင် မြို့ပြ ဖွံ့ဖြိုးတိုးတက်မှုကြောင့် လမ်းမတစ်လျှောက် စိုက်ပျိုးထားသော သစ်ပင်များနှင့် အခြားအပင်ငယ်များသာ ရှိပါသည်။

လူမှုပတ်ဝန်းကျင်အခြေအနေ။ ။ အဆိုပြုစီမံကိန်းဖြစ်သည့် ဖိနပ်စက်ရုံသည် ရွှေပြည်သာမြို့နယ်အတွင်း တည်ရှိပြီး အရှေ့ဘက်တွင် မင်္ဂလာဒုံမြို့နယ်၊ အနောက်ဘက်တွင် ထန်းတပင်မြို့နယ်နှင့်လှိုင်မြစ်၊ တောင်ဘက်တွင် အင်းစိန်မြို့နယ်၊ မြောက်ဘက်တွင် မှော်ဘီမြို့နယ်တို့နှင့်ထိစပ်လျက်ရှိပါသည်။ အဆိုပြု စီမံကိန်းသည် ရွှေပြည်သာမြို့နယ်အနောက်ဖက်ခြမ်းနှင့် ဝါးတရာစက်မှုဇုန်နယ်မြေတွင် တည်ရှိသောကြောင့် အနီးပတ်ဝန်းကျင်သည် လူများအခြေချနေထိုင်ခြင်းနည်းပြီး စက်မှုကဏ္ဍဖွံ့ဖြိုးတိုးတက်သောနေရာ ဖြစ်ပါသည်။

လူမှုစီးပွားရေးအခြေအနေ။ ။ ၂၀၁၉ ခုနှစ်၊ စက်တင်ဘာလဒေသဆိုင်ရာအချက်အလက်များအရ မြို့နယ် အတွင်းရှိ လူဦးရေမှာ (၂၈၄၉၂၂) ဦး နှင့် အိမ်ထောင်စုပေါင်း (၆၁၄၉၆) ရှိပါသည်။ မြို့နယ်အတွင်းရှိ ကျား/မ ဦးရေအချိုးမှာ (၁း၁.၁၄) ဖြစ်ပါသည်။ အများစုနေထိုင်သူမှာ ဗမာလူမျိုး (၉၄%) နှင့် နိုင်ငံခြားအပါအဝင် အခြား လူမျိုး (၆%) နေထိုင်ကြပါသည်။ စုစုပေါင်းနေထိုင်သူများအနက် အလုပ်လုပ် နိုင်သောလူဦးရေ (၁၃၅၀၂၈)ဦး ရှိ ပြီး အလုပ်လက်မဲ့ရာခိုင်နှုန်း (၁၃.၅၁)ရှိပါသည်။ ဒေသခံနေထိုင်သူများ၏ အဓိကအသက်မွေးဝမ်းကြောင်း လုပ်ငန်းများမှာ အစိုးရဝန်ထမ်း၊ စက်ရုံအလုပ်သမား၊ ကုန်သည်၊ မွေးမြူရေးလုပ်ငန်း၊ စိုက်ပျိုးရေးနှင့် ကျပန်းအလုပ်သမားစသည်တို့ဖြစ်ပါသည်။

ရွှေပြည်သာမြို့နယ်သည် စီပွားရေးကဏ္ဍများတွင် ဖွံ့ဖြိုးတိုးတက်လျက်ရှိသော မြို့နယ်ဖြစ်ပါသည်။ မြို့နယ် အနီးတစ်ဝိုက်တွင် စီးပွားဖွံ့ဖြိုးတိုးတက်မှု၏အရေးကြီးဆုံးကဏ္ဍမှာ စက်ရုံအလုပ်သမားနှင့် ကုန်သည် တို့ဖြစ်ပါသည်။ ရန်ကုန်မြို့နယ်မှ ကုန်ကြမ်းပစ္စည်းများကို တင်သွင်းပြီး အဓိကထုတ်ကုန်များဖြစ်သော လူသုံးကုန်ပစ္စည်းများကို အနီးဝန်းကျင်မြို့နယ်များသို့ အများဆုံးတင်ပို့ရောင်းချလျက်ရှိပါသည်။ အထွေထွေ အသုံးပြုသည့်ရေအဖြစ် မြစ်ရေကို အများဆုံးအသုံးပြုပါသည်။ မြို့နယ်အတွင်း အမှိုက်ယာဉ် (၁၃)စီးနှင့် သန့်ရှင်းရေးအလုပ်သမား (၁၁၈)ဦး ရှိပါသည်။ စီမံကိန်းတည်နေရာသည် လမ်းပမ်းဆက်သွယ်ရေး ကောင်းမွန်သောပြီး မော်တော်ယာဉ်၊ မီးရထား တို့ဖြင့် သွားလာနိုင်သည့်နေရာတွင် တည်ရှိပါသည်။ ကျန်းမာရေးကဏ္ဍအနေဖြင့် ဆေးရုံ၊ ဆေးပေးခန်းနှင့် ကျေးလက်ကျန်းမာရေးအဖွဲ့များလည်းရှိပါသည်။ စီမံကိန်းတည်နေရာအနီးတစ်ဝိုက်တွင် သမိုင်းဝင်ထင်ရှားသည့် အဆောက်အဦ၊ ရှေးဟောင်းအမွေအနှစ် အဆောက်အဦများ မရှိသော်လည်း (၁၀)ကီလိုမီတာပတ်လည် တွင် ထင်ရှားသည့်ဘုရား (၃)ဆူ ရှိပါသည်။

မြေအသုံးချမှု။ ။ ရွှေပြည်သာမြို့နယ်၏ စုစုပေါင်းမြေဧက (၁၆၄၈၄) တွင် မြို့ပြနှင့်တည်ဆောက်ရေး အတွက် ၇၂%ကျော်၊ စားကျက်မြေ ၀.၃၆%၊ စိုက်ပျိုးမြေ ၁၁.၂၇% ခန့်၊ စက်မှုဇုန်ဧရိယာ ၁၅.၈၈%၊ နှင့် သာသနာ့ပိုင် မြေဧရိယာ ၁.၁၈% ခန့်ရှိပြီး၊ သစ်တောဖုံးလွှမ်းဧရိယာနည်းပါးကြောင်း တွေ့ရှိရပါသည်။

၁.၃။ လုပ်ငန်းလည်ပတ်သည့်ကာလအတွင်း အဓိကဖြစ်ပေါ်နိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုများနှင့် ထိခိုက်မှုလျော့ချရေးနည်းလမ်းများ

ထိခိုက်မှုများကိုဆန်းစစ်လေ့လာရာတွင် တိုက်ရိုက်သက်ရောက်နိုင်သည့်ဧရိယာ၊ သွယ်ဝိုက်သက်ရောက်နိုင် သည့်ဧရိယာများအတွက် အဓိကအချက်များအနေဖြင့် ရုပ်ဇီဝနှင့် ဓာတုဗေဒဆိုင်ရာထိခိုက်မှုများနှင့် လူမှုစီးပွား ရေးနှင့် ယဉ်ကျေးမှုဆိုင်ရာထိခိုက်မှုများစသည့်ဖြင့် အမျိုးအစားလေးမျိုးခွဲ၍ အမှတ်ပေးစနစ်ဖြင့် ခွဲခြားသတ် မှတ်ပြီး အကဲဖြတ်တိုင်းတာရရှိပါသည်။ ပတ်ဝန်းကျင်အပေါ် ထိခိုက်သက်ရောက်မှုများအား အကဲဖြတ်ရရှိမှု များကို အောက်ပါဇယားတွင် ဖော်ပြထားပါသည်။

ရမှတ်	ထိခိုက်နိုင်သည့် အတိုင်းအတာ	အချိန်ကာလ	ပမာဏ	ဖြစ်နိုင်စွမ်း
၁	တိုက်ရိုက်ထိခိုက်မည့်ဇုံ (လုပ်ငန်းခွင်အတွင်း သို့မဟုတ် လုပ်ငန်းခွင်အနီး ပတ်ဝန်းကျင်)	ကာလတို - ထိခိုက်မည့်အချိန်ကာလ (၀- ၁၂ လ ကြား)	နိမ့် - လူမှုစီးပွားရေးအပေါ် ပြောင်းလဲမှုမရှိခြင်း (သို့မဟုတ်) မသိသာသော ပြောင်းလဲမှုဖြစ်ပေါ်ခြင်း	နိမ့်
၂	ထိခိုက်မည့်အနီးဆုံးနေရာ (လုပ်ငန်းအနီးတစ်ဝိုက် သိသာသောနေရာနှင့် လုပ်ငန်းခွင် အနီး ပတ်ဝန်းကျင်)	ထိခိုက်မည့်အချိန်ကာလ (၁ -၂ နှစ် ကြား)	အလယ်အလတ် - သဘာဝဂေဟစနစ်များ ပြောင်းလဲမှုဖြစ်ပြီး လူမှု စီးပွားရေးအပေါ် သက်ရောက်မှုရှိခြင်း	အလယ် အလတ်
၃	လုပ်ငန်းတည်နေရာမှစ၍ စကေးကျယ်ပြန့်စွာ ထိခိုက်မှု ရှိခြင်း	ကာလရှည် - ထိခိုက်မှုသည် လုပ်ငန်းတည် ဆောက်ပြီးကာလ နောက် ပိုင်း (သို့မဟုတ်) လုပ်ငန်းလည် ပတ်ဆဲကာလ ပြီးနောက် နှစ်တော်တော် များများ ဆက်လက်ထိခိုက် နေခြင်း	မြင့် - သဘာဝပတ်ဝန်းကျင်ဆိုင် ရာ လုပ်ဆောင်ချက်ပြောင်း လဲမှုများကြောင့် လူမှုစီးပွား ရေး အခြေအနေ ပြင်းထန် စွာ ထိခိုက်ခြင်း၊ စဉ်ဆက် မပြတ် ထိခိုက်ခြင်း	မြင့်

အဓိကဖြစ်ပေါ်နိုင်သောထိခိုက်မှုများ၏ ရလဒ်ပေါ်မူတည်၍ အဆင့်သတ်မှတ်ချက်ကို အောက်ပါ အတိုင်း ဖော်ပြနိုင်ပါသည်။

အဆင့်သတ်မှတ်ချက် = (ထိခိုက်နိုင်သည့်အတိုင်းအတာ + အချိန်ကာလ + ဖြစ်နိုင်စွမ်း) x ပမာဏ

စီမံကိန်းလည်ပတ်သည့်ကာလအတွင်း အဓိကဖြစ်ပေါ်နိုင်သောထိခိုက်မှုများကို လေ့လာဆန်းစစ်ရာတွင် ရုပ်ဇီဝနှင့်ဓာတုဗေဒဆိုင်ရာထိခိုက်ခြင်း၊ ဂေဟစနစ်နှင့် လူမှုစီးပွားရေး၊ ယဉ်ကျေးမှုနှင့်ဆိုင် သောအချက်များ စသည်တို့အပေါ်တွင် သိသာထင်ရှားသည့် သက်ရောက်မှုများအကဲဖြတ်ခြင်းကို အောက်ပါဇယားတွင် အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

စီမံကိန်းလည်ပတ်သည့်ကာလ		
စဉ်	စီစစ်သည့် အဓိကအချက်များ	အဆင့်သတ်မှတ်ချက်
ရုပ်ဇီဝနှင့် ဓာတုဗေဒဆိုင်ရာ ထိခိုက်မှု		
၁	မျက်နှာပြင်ရေအရည်အသွေး ပြောင်းလဲမှု	နိမ့်
၂	မြေအောက်ရေ အရည်အသွေး ပြောင်းလဲမှု	နိမ့်
၃	ဒေသအတွင်း ရေစီးရေလာ ပြောင်းလဲမှု	နိမ့်
၄	ရေတိုက်စားမှုနှင့် အနည်ကျမှု	နိမ့်
၅	လေအရည်အသွေး ပြောင်းလဲမှု	အလယ်အလတ်
၆	ပတ်ဝန်းကျင်အသံညစ်ညမ်းမှု	နိမ့်
၇	ရေနေသတ္တဝါ ပြောင်းလဲမှု	နိမ့်
၈	ကုန်းနေသတ္တဝါ ပြောင်းလဲမှု	နိမ့်
၉	ရောဂါကူးစက်နိုင်မှု အခြေအနေ	အလယ်အလတ်
၁၀	မြေမျက်နှာပြင် ပြောင်းလဲမှု	နိမ့်
၁၁	အမွေအနှစ်နေရာ ပြောင်းလဲမှု	နိမ့်
လူမှုစီးပွားရေးနှင့် လူမှုရေးဆိုင်ရာ ထိခိုက်မှုများ		
၁	ကိုယ်ပိုင်ပစ္စည်းများ ပျက်စီးဆုံးရှုံးခြင်းအရပြောင်းလဲမှု	နိမ့်
၂	ယဉ်ကျေးမှုအမွေအနှစ်များ ပြောင်းလဲမှု	နိမ့်
၃	လူအများ ပြောင်းရွှေ့နေထိုင်မှု	နိမ့်
၄	ယာဉ်သွားယာဉ်လာ/ ယာဉ်ကြော ပိတ်ဆို့မှု	နိမ့်
၅	ဒေသအတွင်း အသက်မွေးဝမ်း ကျောင်းအခွင့်အလမ်းများ၊ဝင်ငွေနှင့် လုပ်အားခများပြောင်းလဲခြင်း	အလယ်အလတ်
၆	ဒေသအတွင်း ကုန်သွယ်စီးပွား ဝင်ငွေ /အခွင့်အလမ်းများပြောင်းလဲခြင်း	အလယ်အလတ်

၇	မျက်စိပသာဒနရှိမှုများ ပြောင်းလဲခြင်း	အလယ်အလတ်
၈	လူနေအဆောက်အဦ/ ဆက်သွယ်ရေးအရင်းအမြစ်များ ပြောင်းလဲခြင်း	အလယ်အလတ်

မှတ်ချက် ။ ဇယားတွင်ဖော်ပြထားသောထိခိုက်မှုဇယားတွင် အစိမ်းရောင်အကွက်ခြယ်ထားသော သင့်လျော်ကောင်းမွန်သော သက်ရောက်ထိခိုက်မှုများမှအပ ကျန်ရှိသောထိခိုက်မှုများသည် စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော အဓိကထိခိုက်မှုများဖြစ်ပါသည်။

အထက်တွင်ဖော်ပြထားသော ထိခိုက်မှုများလျော့ချရေးနည်းလမ်းများသည် ဖိနပ်ထုတ်လုပ်ခြင်းလုပ်ငန်းအတွက် ကျန်းမာရေးနှင့်ညီညွတ်၍ လုံခြုံစိတ်ချရသော လုပ်ငန်းခွင်ဖြစ်စေရေးအတွက် ပတ်ဝန်းကျင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများကို အခြေခံထားပါသည်။

စီမံကိန်းလည်ပတ်သည့်ကာလအတွင်း ထိခိုက်မှုများလျော့ချရေးနည်းလမ်းများမှာ -

- စွန့်ပစ်သည့်နေရာ/သိုလှောင်သည့်နေရာအနီးရှိ ရေနူတ်မြောင်းများကို ပုံမှန်ရှင်းလင်းပေးရန်။
- စက်ရုံအတွင်း/အပြင် သန့်ရှင်းသပ်ရပ်မှုရှိစေရန်နှင့် ဖုန်/အမှိုက်များ မရှိစေရန်။
- စက်ရုံအတွင်း ကျန်းမာရေးနှင့် လုံခြုံရေးအတွက် လုပ်ရိုးလုပ်စဉ်များ ထားရှိပေးရန်။
- အလုပ်သမားများ၏ ကျန်းမာရေးအတွက် လေကောင်းလေသန့်နှင့် အလင်းရောင်ရရှိမှု ကောင်းမွန်သောအလုပ်ခွင်နေရာ၊ သန့်ရှင်းသောသောက်သုံးရေ၊ သန့်ရှင်းသပ်ရပ်သော ကျန်းမာရေးနှင့် ပတ်သက် သည့် အခြားပန်ဆောင်မှုများထောက်ပံ့ပေးရန်။
- ပတ်ဝန်းကျင်နှင့်ပတ်သက်၍ ပြည်သူများအားအသိပေးနှိုးဆော်ခြင်းများ တိုးမြှင့်လုပ်ဆောင်ပေးရန်။
- အများပြည်သူဘေးကင်းလုံခြုံရေးအတွက် စောင့်ကြပ်ကြည့်ရှုမှုများဆောင်ရွက်ရန်။
- သိုလှောင်ရုံများနှင့်သက်ဆိုင်သော အဆောက်အဦများကို ပုံမှန်စစ်ဆေးခြင်းများ ပြုလုပ်ပေးရန်။
- စီမံကိန်းနေရာသည် အများပြည်သူ/ပုဂ္ဂိုလ်ကပိုင်ဆိုင်မှုများနှင့် သက်ဆိုင်မှုမရှိစေရန် စစ်ဆေး ဆောင်ရွက်ရန်။
- အရေးပေါ်ကယ်ဆယ်ရေးအစီအစဉ်များ ထားရှိရန်။
- ကုန်တင်/ကုန်ချလုပ်ငန်းများကို နေ့အချိန်တွင် ဦးစားပေးဆောင်ရွက်ရန်။
- မော်တော်ယာဉ်/စက်များ ကောင်းမွန်စွာလည်ပတ်မှုရှိစေရန်။
- ဖိနပ်စက်ရုံမှထုတ်လာသော စွန့်ပစ်ပစ္စည်းများအတွက် ပိုမိုကောင်းမွန်သောစီမံခန့်ခွဲမှုထားရှိရန် - ကာကွယ်ခြင်း၊ လျော့နည်းစေခြင်း/လျော့ချခြင်း၊ ပြန်လည်အသုံးပြုခြင်း၊ စွမ်းအင်ခွေတာခြင်းနှင့် ကောင်းမွန်စွာ စွန့်ပစ်ခြင်း။
- စက်ရုံအလုပ်သမားများအတွက် သန့်ရှင်းသော သောက်သုံးရေရရှိနိုင်ရေးအတွက် တစ်နှစ်နှစ်ကြိမ်ရေ အရည်အသွေးစစ်ဆေးခြင်းများ ပြုလုပ်ရန်။
- အလုပ်သမားများ၏ ကျန်းမာရေးနှင့်လုံခြုံရေးအတွက် နှာခေါင်းစည်းများနှင့် အခြားလိုအပ်သည့် ကာကွယ်ရေးပစ္စည်းများ လုံလောက်အောင် ထောက်ပံ့ပေးရန်။

၁.၄။ စီမံကိန်းနှင့်ပတ်သက်သည့် ပုဂ္ဂိုလ်များနှင့်တွေ့ဆုံမေးမြန်းမှု အကျဉ်းချုပ်

အောက်ပါအချက်များသည် ၂၀၂၁ ခုနှစ် စက်တင်ဘာလမှ အောက်တိုဘာလအတွင်း အဆိုပြုစီမံကိန်း ဖြစ်သည့် စက်ရုံရှိ ပုဂ္ဂိုလ်များနှင့်တွေ့ဆုံမေးမြန်းမှုမှ တုံ့ပြန်မှုများဖြစ်ပါသည်။

- မောင်တိန်တော(ပ်)ဂလိုဘယ်လီမိတက်သည် အဓိကအားဖြင့် အမျိုးသမီးစီးဖိနပ်အမျိုးမျိုးကို CPM စနစ် ဖြင့် ဝယ်ယူသူဖက်မှာအပ်နှံသည့် ဒီဇိုင်းအတိုင်း ချုပ်လုပ်ပါသည်။
- စက်ရုံအလုပ်ချိန်သည် မနက်(၇း၃၀)နာရီမှစတင်၍ နေ့လည်တစ်နာရီ နားချိန်အပါအဝင် ညနေ (၄း၃၀)နာရီ အထိ လုပ်ငန်းလည်ပတ်လျက်ရှိပါသည်။
- လစာနှုန်းထားမှာ အနည်းဆုံး ၁၄၄၀၀၀ကျပ် မှ အများဆုံး ၂၂၀၀၀၀ ကျပ်ဖြစ်ပါသည်။ လက်ရှိတွင် အလုပ်သမား (၆၂)ယောက်နှင့် တရုတ် (၁)ဦး တို့ဖြင့် လုပ်ငန်းလည်ပတ်လျက်ရှိပါသည်။
- လက်ရှိစက်ရုံသည် အော်ဒါမှာသောဒီဇိုင်းအတိုင်း ပုံစံဖြတ်ခြင်း၊ ကော်ကပ်ခြင်း၊ စက်ချုပ်ခြင်းဖြင့် ဖိနပ် ထုတ်လုပ်ခြင်းဖြစ်ပါသည်။
- နိုင်ငံခြားဝန်ထမ်းသာ စက်ရုံအလုပ်သမားအဆောင်တွင် နေထိုင်လျက်ရှိပါသည်။
- လက်ရှိအချိန်တွင် အလုပ်သမား(၆၂)ယောက်အတွက် အလုပ်ခွင်သွားလာရေးကားများ စီစဉ်ထားခြင်း မရှိသော်လည်း အလုပ်သမားဦးရေ(၂၀၀)ကျော်လျှင် စီစဉ်ပေးရန် လျာထားပါသည်။ စက်ရုံအတွင်း စားဖိုဆောင်သတ်သတ် ထားရှိခြင်းမရှိသော်လည်း ထမင်းစားစာပွဲနှင့်ထိုင်ခုံများ ထားရှိပေးပါသည်။
- လုပ်ငန်းစွန့်ထုတ်အမှိုက်များကို ကွန်ထရိတ်ထားများနှင့် ချိတ်ဆက်၍ စွန့်ပစ်ပစ္စည်းများပြန်လည်အသုံးချ နိုင်သည့်နေရာများသို့ စွန့်ပစ်ထားပါသည်။ စက်ရုံအတွင်းရှိ စွန့်ထုတ်ပစ္စည်းများကိုမူ ရန်ကုန်မြို့တော် စည်ပင်သာယာရေးကော်မတီ နှင့်ချိတ်ဆက်လျက် စွန့်ပစ်ပါသည်။
- အဂိစိတွင်း (၂)တွင်းမှ တူးဖော်ရရှိသောတွင်းရေများကို (Reverse Osmosis System) ရေသန့်စက်ဖြင့် သန့်စင်စေပြီးမှ စက်ရုံတစ်ဝန်းတွင် လိုအပ်သလို အသုံးပြုနိုင်ရန် ဖြန့်ဝေပေးပါသည်။
- စက်ရုံဆေးပေးခန်းတွင် အလုပ်ချိန်တစ်လျှောက်ဝန်ထမ်းများနှင့်အလုပ်သမားများ၏ ကျန်းမာရေးစောင့် ရှောက်ရန် သူနာပြုဆရာမတစ်ဦးထားရှိပါသည်။
- မီးဘေးအန္တရာယ်ကာကွယ်ရန်အတွက် ဝန်ထမ်းများအား မီးငြိမ်းသတ်လေ့ကျင့်မှုများရှိပါသည်။
- လျှပ်စစ်ထောက်ပံ့ရေးအတွက် စက်ရုံလည်ပတ်ရန် ၂၀၀၀ kVA ထရန်ဖောမာ ရှိပါသည်။ စက်ရုံသည် ဝါးတရာစက်မှုဇုန်ဇရိယာအတွင်း တည်ရှိသောကြောင့် လျှပ်စစ်မာတ်အားအရင်းအမြစ်သည် အမျိုးသား လျှပ်စစ်မာတ်အားလိုင်း(၃၃kVA ကောဘယ်)မှ ဖြစ်ပါသည်။
- ရေတွင်း (၂)တွင်းမှ ရေကို (၁၁ x ၇ x ၇)ပေ ပတ်လည်ရှိ စတုဂံမြေပြင်ကန်(၁၂)ကန်သို့ စုပ်ယူပြီး သိုလှောင် ထားပါသည်။ ထို့နောက် (လီတာ ၂၀၀၀၀ဆုံ ၄ လုံး + လီတာ ၃၀၀၀၀ဆုံ ၁ လုံး) overhead tanks သို့ စုပ်တင်ပြီး ၄င်းမှတစ်ဆင့် စက်ရုံတစ်ခုလုံးကို ဖြန့်ဝေပါသည်။
- ထွက်လာသော ရေဆိုးများကို ဝါးတရာစက်မှုဇုန် ရေနုတ်မြောင်းသို့ စွန့်ထုတ်ပြီး နောက်ဆုံးတွင် အနီးနားရှိ ရေတွင်းထဲသို့ စွန့်ထုတ်ပေးသည့် အုတ်ရေနုတ်မြောင်းများကို စက်ရုံးဝန်းအတွင်းတွင် ဖောက်လုပ်ထား ပါသည်။

၁.၅။ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်

သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ် ပြီးမြောက်စေရန်အတွက် အဆိုပြုစီမံကိန်းတင် သွင်းသူနှင့် ဆောက်လုပ်ရေးပိုင်းဆိုင်ရာ တာဝန်ယူဆောင်ရွက်မည့်သူများမှ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်ဖြစ်မြောက်ရေးအဖွဲ့အား ဖွဲ့စည်းရမည် ဖြစ်ပါသည်။

- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်လုပ်ဆောင်ချက်များကို သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ အကဲဖြတ်သူမှ စောင့်ကြပ်ကြည့်ရှုရန်ဖြစ်ပါသည်။
- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်ဆောင်ရွက်မှုများကို သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲသည့်အရာရှိ **(EMO)** ထားရှိ၍ ၄င်းမှ စီမံခန့်ခွဲပေးရန်ဖြစ်ပါသည်။
- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာလုပ်ငန်းခွင်အရာရှိ **(ESO)** ထားရှိ၍ ၄င်းမှ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲသည့်အရာရှိ **(EMO)** အား ကူညီဆောင်ရွက်ပေးမည် ဖြစ်ပါသည်။

လေ့လာတွေ့ရှိရသော ပတ်ဝန်းကျင်ထိခိုက်မှုများအတွက် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ် များမှာ အောက်ပါအတိုင်း ဖြစ်ပါသည်။

၁။ ရေအရည်အသွေးစီမံခန့်ခွဲမှု၊ မြေအောက်ရေထိန်းသိမ်းမှုနှင့် သန့်ရှင်းသောသောက်သုံးရေ ရရှိရေး အစီအစဉ်
၂။ ရေနူတ်မြောင်းပုံစံ စီမံခန့်ခွဲမှုအစီအစဉ်
၃။ လေထုအရည်အသွေး စီမံခန့်ခွဲမှုအစီအစဉ်
၄။ စွန့်ပစ်အညစ်အကြေးများ စီမံခန့်ခွဲမှုအစီအစဉ်
၅။ ယာဉ်လမ်းကြော စီမံခန့်ခွဲမှုအစီအစဉ်
၆။ အများပြည်သူများနှင့်တွေ့ဆုံမှု နှင့် ဖွံ့ဖြိုးတိုးတက်စေရေးအစီအစဉ်
၇။ လုပ်ငန်းခွင် လုံခြုံရေးနှင့် ကျန်းမာရေးအစီအစဉ်
၈။ အရေးပေါ်ကယ်ဆယ်ရေးအစီအစဉ်
၉။ အသင်းအဖွဲ့၏လူမှုရေး တာဝန်ခံမှု
၁၀။ ပြန်လည်ပြုပြင်မွမ်းမံခြင်း အစီအစဉ်
၁၁။ ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်

အထက်တွင်ဖော်ပြထားသော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်ခွဲများကို အောက်တွင် ဖော်ပြ ထားသည့်ကဏ္ဍအလိုက် ဤအစီရင်ခံစာ၏ အခန်း (၈) တွင် ထည့်သွင်းဖော်ပြထား ပါသည်။

- EMP အစီအစဉ်ခွဲအသီးသီးတို့၏ ရည်ရွယ်ချက်
- သက်ဆိုင်ရာဥပဒေနှင့်ညီညွတ်သော လိုအပ်ချက်များ
- EMP အစီအစဉ်ခွဲများပြီးမြောက်ရေး လုပ်ငန်းစဉ်
- EMP အစီအစဉ်ခွဲများ စီမံခန့်ခွဲသည့် လုပ်ဆောင်ချက်
- EMP အစီအစဉ်ခွဲများအား စောင့်ကြပ်ကြည့်ရှုသည့် အစီအစဉ်
- EMP အစီအစဉ်ခွဲများအား ရည်ညွှန်းဖော်ပြသည့်အချက်များ
- EMP စမ်းသပ်မှုပြုလုပ်သည့် နေရာများ
- စောင့်ကြပ်ကြည့်ရှုမှုပြုလုပ်သည့် အကြိမ်အရေအတွက်
- EMP အစီအစဉ်ခွဲများအတွက် ခွဲဝေချမှတ်ပေးသည့် ခန့်မှန်းကုန်ကျငွေ

- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်ခွဲများအတွက် တာဝန်ရှိသည့်ပုဂ္ဂိုလ်များ အဖွဲ့များ

စီမံကိန်း၏ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်ပြီးမြောက်နိုင်ရေးအတွက် နှစ်စဉ်ခန့်မှန်းကုန်ကျစရိတ်မှာ မြန်မာငွေကျပ် (၂၂) သန်းဖြစ်ပါသည်။ သို့သော်၊ စီမံကိန်းကုန်ကျစရိတ်သည် လက်ရှိခန့်မှန်းပမာဏထက်ကျော်လွန်ခဲ့ပါက အဆိုပြုတင်သွင်းသူဖက်မှ လိုအပ်သလို ကုန်ကျခံ မည်ဖြစ်ပါသည်။ အကယ်၍ တစ်ချို့ဆောင်ရွက်ရမည့် လျော့ချရေးနည်းလမ်းများသည် လုပ်ငန်းခွင်တွင် ရှိထားခဲ့ပြီးဖြစ်လျှင် ခန့်မှန်းကုန်ကျစရိတ်အား သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲသည့်အရာရှိ (EMO) မှ သင့်လျော်သလို လျော့ချရမည်ဖြစ်ပါသည်။

2. PROJECT DESCRIPTION

2.1 Project Background

The Project Proponent “Mountain Top Global Limited” has leased the land and its three buildings at Plot No. 176, Block No. 49, Wartayar, Shwepyithar Township, Yangon Region to produce footwear, mostly Lady Boots, Lady Shoes and Summer Shoes by CMP (Cutting-Making-Packing) system with manufacturing by client-ordered design.

Infrastructures already constructed at project site (100% completed):

- Warehouse Factory A (94,500mm x 35,000mmm) two storey building;
- Warehouse Factory B (94,500mm x 41,000mm) two storey building;
- Dormitory Building (8,000mm x 35,000mm) three storey building.

The Factory infrastructure has already been constructed for manufacturing of varieties of shoes to be exported on (CMP) System. The area of the project area is 2.752 acres (11,136 sq. meters).

The following Raw Materials per norm of product would be used to manufacture the footwear:

Norm of Product.	Raw Material List
Ladies Boots	Synthetic Leather 0.4 m2, Buckle 0.2kg, Bag (PE, non-woven) 1pr, Cutting Board 0.1u, Foam 0.5 m, Heel & Top 1pr, Hang Tag & Loop 0.5 pr, Insole 1 pr, Iron Core 0.07 kg, Label 2 pr, Leather tier 0.03 kg, Lace 1 pr, non-woven 0.2 m, Out sole 1 pr, Paper 0.2 u, PVC Sheet 0.5 pr, PU Leather 0.2m, Rubber Sheet 0.07 kg, Silica Gel 0.09 kg, Sponge 0.1 kg, Tape(OPP, Magic) 0.1m, Textile 0.8m, thread 0.08 u, Welt 0.08 kg.
Ladies Shoes	Synthetic Leather 0.4 m2, Bronzing Paper 0.02 kg, Band Elastic & Rubber 0.4 kg, Bag (PE, non-woven) 1 pr, Canvas Welt 0.2 pr, Foam 0.5 pr, Heel & Top 1 pr, Hang Tag & Loop 0.5 pr, Inner Box 1 pr, Insole 1 pr, Label 2 pt, Leather Tier 0.03 kg, Lace 1 u, Leather Wax 0.01 pr, Non-woven 0.2 pr, Outsole 1 pr, PE Leather 0.2 pr, Stick 0.02 kg, Sole Sheet 0.06 pr, Sample Shoe 0;01 kg, Textile 0.8 m.
Ladies Summer Shoes	Synthetic Leather 0.4 m2, Bronzing paper 0.02 kg, Band Elastic & Rubber 0.4 kg, Bag (PE, non-woven) 1 pr, Canvas Welt 0.2 pr, Foam 0.5 pr, Hang Tag & Loop 0.5 pr, Inner Box 1u, Insole 1 u, Label 2 u, Leather Tier 0.03m, Leather Wax 0.01 u, Non-woven 0.2 u, Outsole 1pr, PU Leather 0.2 pr, Stick 0.02 pr, Sole Sheet 0.08 pr, Sample (Shoes) 0.01 kg, Textile 0.8 pr, Thread 0.08 kg, Wax 0.003 u.

The following Machinery will be imported for production of footwear in this factory:

Sr. No.	Machine and Accessories for Footwear Production	Unit	Quantity
1.	Single Needle Drive Roller Sewing Machine	u	84
2.	Double Needle Drive Roller Sewing Machine	u	6
3.	Single Needle Post Bed Direct Drive Sewing Machine	u	24
4.	Double Needle Post-Bed Direct Drive Sewing Machine	u	12
5.	TTY-801 Skiving Machine	u	24
6.	Lock-Stich Zigzag	u	12
7.	Lining Trimming Machine	u	12
8.	TTY-310 Flattening & Hammering	u	12
9.	TTY-513A Single Needle Feed Lock Stich	u	12
10.	TTY-25 Seam Opening & Tape	u	2
11.	TTY-25 RF Computer Control	u	4
12.	TTY-787 Intelligentized Automatic Edge Folder Machine	u	2
13.	TTY-839 Middle Bottom Sewing	u	2
14.	Hand Table	u	186
15.	Manual Roughing Machine with Dust Shield collector	u	1
16.	Cleaner Frequency Conversion	u	6
17.	Last Machine	u	24
18.	Lacquer Table	u	4
19.	Hydraulic Sewing arm cutting	u	14
20.	Hydraulic Plane Cutting Machine	u	14
21.	Edge Grinding Machine	u	16
22.	Hydraulic Automatic Upper Moulding Machine	u	4
23.	Air Pressure Automatic Upper Moulding Machine	u	2
24.	Upper Attaching Machine	u	4
25.	Needle Conveyor (22m)	u	2
26.	Needle Conveyor (18m)	u	6
27.	Buckle Machine	u	2
28.	Dehumidification Machine	u	6
29.	White Glue Machine	u	1
30.	Yellow Glue Machine	u	6
31.	Bronzing Machine	u	4
32.	Drying Machine	u	20
33	Floating Bottom Scribing	u	2
34	Bottom Grooving Machine	u	1
35	Double Ended Tail Drawing	u	2

36	20T Embossing Machine	u	1
37	Shoe Heel Machine	u	2
38	High Speed Edge Trimmer	u	2
39	MC-703 Rubber Belt	u	2
40	MC-939 Advanced	u	2
41	Rotary Upper Attaching Machine	u	2
42	MC-821	u	2
43	MC-703 Rubber Belt	u	2
44	MC-969 Two Layer	u	2
45	MC-823 Overhead	u	2
46	MC-703 Rubber Belt	u	2
47	MC-825K Aerial	u	2
48	9-Pincers Toe Lasting Machine	u	4
49	Hydraulic Heel Lasting	u	2
50	Two Hot and Two Cold Toe Moulding Machine	u	2
51	Two Hot and Two Cold Counter Moulding Machine	u	2
52	Automatic Toe Flattening Machine	u	2
53	Automatic Heel Seat Flattening	u	2
54	Edge Grinding Machine with dust shield collector	u	4
55	Manual Roughing Machine Dust	u	3
56	Universal Oil Hydraulic Attaching Machine	u	2
57	Hydraulic Lasting Hot Pressing	u	2
58	Automatic Hydraulic Heel Nailing Machine	u	1
59	Steam Conditioning Machine	u	4
60	Steel nest Conveyor with Holder	u	4
61	Infrared Oven 2m	u	8
62	Drilling rig	u	4
63	Bubbling Cotton Machine	u	2
64	Vertical Milling Machine	u	2
65	Pointed Machine	u	2
66	Side Lasting Machine	u	8
67	Toe Lasting Machine	u	8

The machinery, spare parts, raw materials and others necessary are imported from foreign country. These raw materials are certified to ensure safe transportation to the project site as non-hazardous materials.

2.1.1 Project Details

Project Detail

Project Site:	Plot No. 176, Block No. 49, Wartayar Industrial Zone, Shwepyithar Township, Yangon Region.
Project Proponent:	Mountain Top Global Limited.
Description of Project:	Footwear Production Factory Project
Project Site Area:	2.752 acres
Project Investment:	2.922 Million USD (100% Foreign Investment Company Mountain Top Global Limited.)
Land Acquisition:	Lease land and building from Daw Thi Thi Han (Lessor, Wartayar Industrial Zone) for 2.752 acres (11,136 m^2) at initial thirty (30) years + 10 years (extendable two times) for USD 33,408 USD per annum, calculated at the rate of 3 USD per square meter per year)[8]
Project Completion:	Completion of Construction Phase is 100% {Warehouse Factory A (94,500mm x 35,000mmm) two storey, Warehouse Factory B (94,500mm x 41,000mm) two storey, Dormitory (8,000mm x 35,000mm) three storey buildings.
Project Water Supply:	Tube well water, treated by RO treatment Plant and aerated for domestic water consumption[9]
Electrical Power Supply:	National Grid (Transformer) (2000 KVA + Gen-sets)
Solid Waste Disposal:	Solid Waste generated by production process (from cutting) is collected by relevant contractors for recycling work. Domestic waste accumulated collected systematically by local municipality.
Health care:	Provide clinic at the factory for workers and for those who are sick, they will be sent to Social Welfare Hospital for care.

2.2 Project Implementation Program

The project has completed the construction phase of all infrastructures including warehouse, dormitory, factory and offices. Now it is in its operational phase. Emergency Response Procedures and Fire Protection Equipment are being supplied and carried out systematically.

2.2.1 Installations, Technology, Infrastructure

The installation of factory machineries and the construction of infrastructures at the project site are conducted by the proponent with local construction company.

[8] YRIC-1/E-148/2019 Yangon Region Investment Committee Letter dated 7 Feb 2019:
[9] Appendix E of this Report: Water Quality Test Result

2.2.2. Proponent Information

The project proponent " Mountain Top Global Limited." has signed a Building and Land Lease Agreement with Daw Thi Thi Han for 2.752 acres (11136 m^2) at 30 years + 10 years (extendable two times) for USD 33,408 per annum, calculated at the rate of 3 USD per square meter per year (measuring on total area of 4.005 acres for 2.752 acres).

Director of Mountain Top Global Limited: Mr. Yang Chih-Chiang
Manager / Interpreter: Daw Win Win Shein
Site Officer (HR): U Kyaw Zeya

Address : Plot No. 176, Block No. 49, Watayar, Shwe Pyi Thar Township, Yangon Region, Myanmar
Mobile : +95 9 782880750
Email : hlahlaaye@stl-myanmar.com

2.2.3 Investment Plan and Economic Feasibility

Project investment is 2.922 Million USD (by 100% Foreign Investment Company Mountain Top Global Limited).

2.3 Identification of EMP Experts from third party NEPS

Table 1: EMP Report Preparers

Members of EMP preparation				
Team Leader of the team				
Name (Sur name, Given name)	Registration / License No. by ECD	Organization	Contact Detail	Area of expertise
U Aye Myint	0035	NEPS	01 8562407	Senior Water Resource Engineer, General Supervision of EIA Works, Consultant for Policy and Legal issues
Member of the team (except the team leader)				
Name (Sur name, Given name)	Registration / License No. by ECD (if registered)	Organization	Contact Detail	Area of expertise
Dr. Khin Maung Swe	035	NEPS	01 8562407	Biodiversity Expert: Head of Flora and Fauna Survey Team
U Kyaw Win	035	NEPS	01 8562407	Health Assessment Expert, Waste Management, Risk Analysis along supply chains
U Aye Ko	0035	NEPS	01 8562407	Senior Geologist, Engineering Geology, Geomorphology, Geological formation analysis

Daw Khin Khin Cho	0035	NEPS	01 8562407	Senior Engineer Hydrologist, Water Resources Engineer, Climate Change Analysis
Daw Phyu Phyu Aye	0035	NEPS	01 8562407	Senior Engineer Environmentalist, Risk Assessment and Hazard Management, Waste Management
Daw Myat Mon Swe	0035	NEPS	01 8562407	Hazard identification Expert, Pollution Control, Public Consultation Meeting,
Daw Haymar Hnin	0035	NEPS	01 8562407	Engineer Environmentalist, Socio Economic Surveyor, Discussion and explanation of public consultation meeting
Daw Aye Thet Wai	0035	NEPS	01 8562407	GIS Specialist, Maps, Photographs, Satellite Images, Aerial Photographs, Topography condition
Daw Esther Ro Hniang	0035	NEPS	01 8562407	Water Resources Engineer**,** Ecology and Biosecurity, Risk Assessment and Hazard Management
U Akkar	0035	NEPS	01 8562407	Soil and water quality survey, Noise and air pollution analysis, socio economic analysis.
U Kyaw Zin Tun	0035	NEPS	01 8562407	Socio economic survey, Stakeholders Meeting

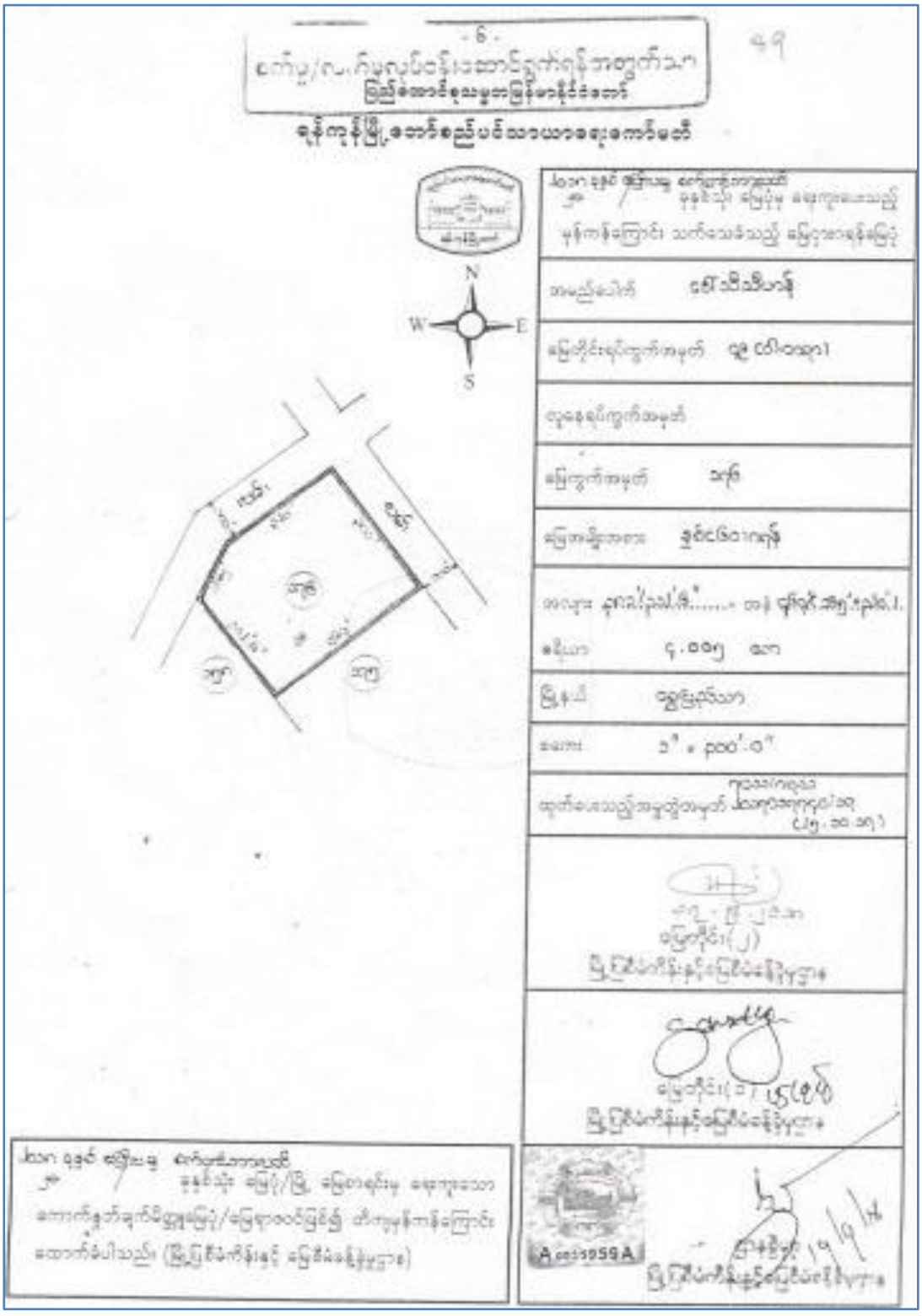

Figure 1: Project Site Location and Land Acquisition

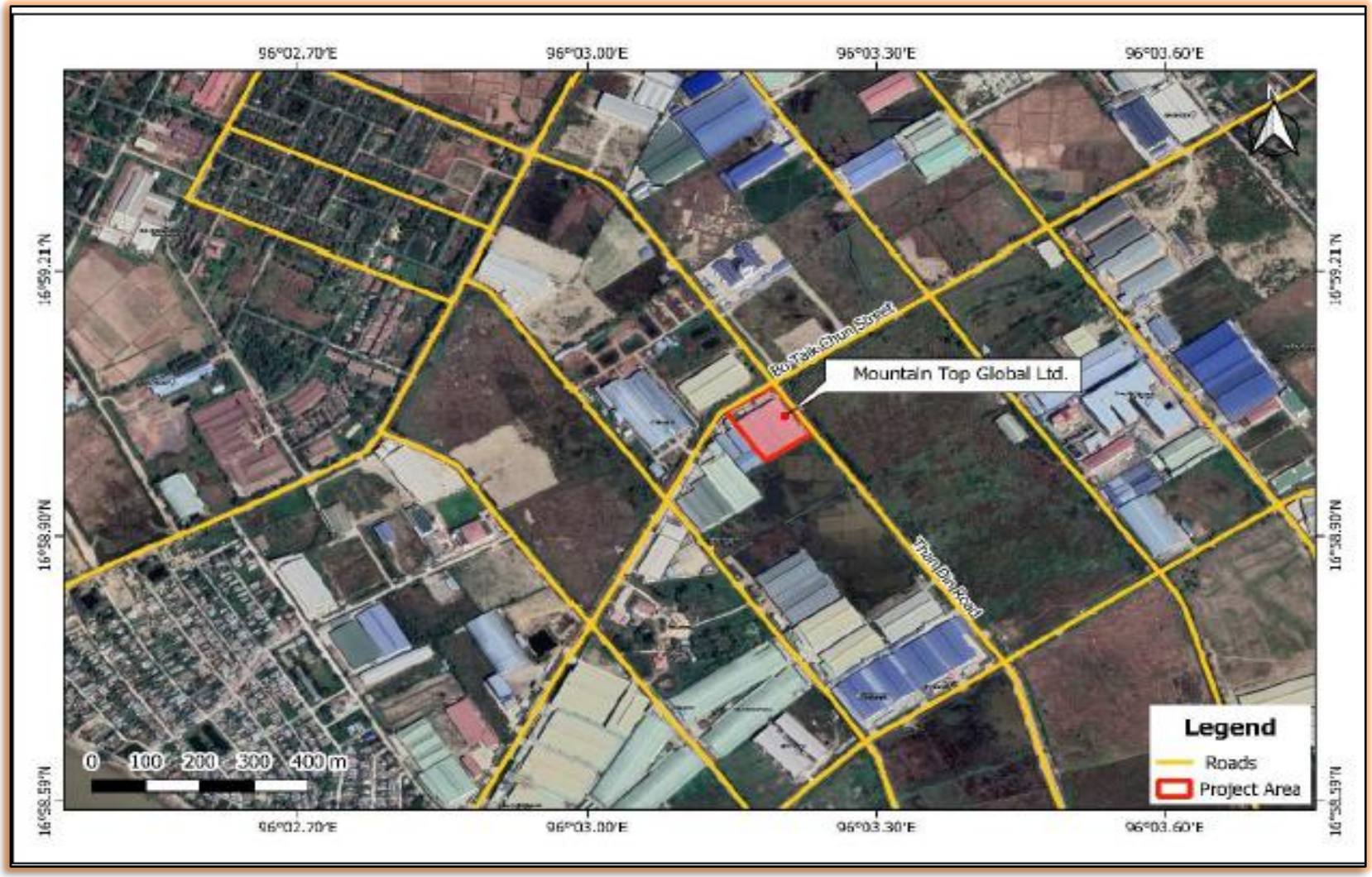

Figure 2: Satellite Image of Project Site and its surroundings

Figure 3: Project Building Site Overview

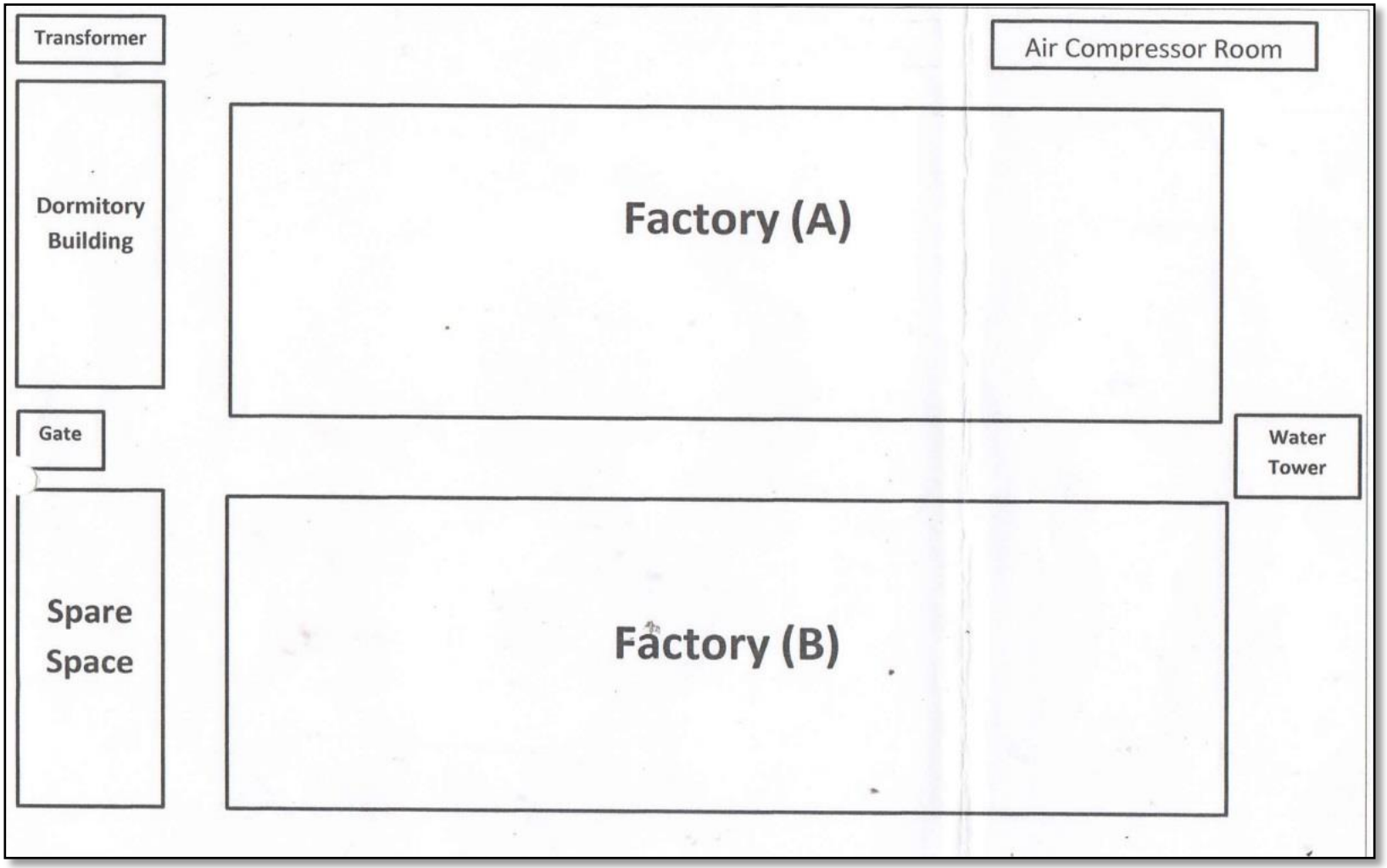

Figure 4: Project Layout Plan

Figure 5: Electricity Control Room and Emergency Power Generation Gen-set

Figure 6: Fire Protection Equipment

Water Tank

Reverse Osmosis water treatment plant

Deep Well

Figure 7: Water Supply with Reverse Osmosis Water Treatment System

Figure 8: Masonry Drainage at Project Site

Figure 9: Project Store for Raw Materials

Figure 10: Store Shelves

Figure 11: Raw Material Store Fabric and Pu Leather

Figure 12: Staff Working

Figure 13: Project Staff in Production Process Line

Figure 14: Cutting of Pu Leather and Fabric by Machines

Figure 15: Pressing by Machine after Glueing in Manufacturing Process

Figure 16: Finished Product Sample Ladies Footwear

Figure 17: Hygienic and Sanitation Facilities for Project Staff

3. HEALTH POLICIES AND COMMITMENTS, LEGAL AND INSTITUTIONAL ARRANGEMENTS

3.1 Environmental, health and Social Policy of Project Proponent

The environment and social status shall not be endangered due to implementation of the project. To fulfill the environmental objectives of the project, the proponent aims:

- To reduce carbon emission and hazardous materials through an initiative role of coping with climate change;
- To protect the occupational health of the project staff;
- To develop a green business for securing new growth engines;
- To reinforce an eco-friendly supply chain management (SCM) and green partnership;
- To manage social responsibility and reinforce the stakeholders' network by opening job opportunities to local youths.

The following mentioned protection and prevention measures are declaration of project proponent in regard with ensuring of mitigating environmental and social adverse impacts and enhancing beneficial impacts:

A. *Protection of Environment*

We, Mountain Top (Hong Kong) Co., Ltd shall be responsible for the protection as well as preservation of environment in and around the area of the project site. We shall be able to protect pollution of air, water and land and not to cause environmental degradation. Our company takes necessary measures in order to fulfill environment protection to keep the project site to be environmentally friendly. The project ground will have suitable shady side walks, flowering plants and trees and ever green arbors.

B. *Fire Hazard Prevention*

With regard to the matter – Mountain Top (Hong Kong) Co., Ltd will be undertaking the project works under the normal basic guide lines and for the purpose we have applied for approval of Myanmar Investment Commission.

Regarding Fire Hazard Prevention, Mountain Top (Hong Kong) Co., Ltd follows the National standard and we have fire-fighting equipment and prevention initiatives in place at project site.

C. *CSR Fund*

We, the Mountain Top (Hong Kong) Co., Ltd shall use 2% of annual net profit to be appointed as CSR fund from the commencing year of our business. It should be funded at around 10 lakh kyats. The amount should be contributed in factors tentatively as an example like; 350,000kyats per year in education, 300,000 kyats per year in health care and 350,000 kyats per year in protection of environment.

The project is being implemented with authorization from the relevant Government Departments[10].

Myanmar has developed a Goals and Policies to uplift the country's economy in all aspects. The relevant policies are described below and the Project Proponent commits to support and meet these goals.

1. The National Environment Policy, 2019
2. Myanmar Climate Change Policy, 2019
3. The Constitution of the Republic of the Union of Myanmar, 2008

3.2 National Laws and Regulations

The Project is being conducted in line with HSE Management Policy, the requirements of the Myanmar regulatory requirements, and international conventions, standards, and guidelines. EIA Procedure (2015), National Environmental Quality Emissions Guidelines (2015) are the main governing body. Myanmar National Drinking Water Quality Standard (2014, Ministry of Health) will be taken as guideline. The Laws, regulations relevance to the EMP of the Project are summarized below:

1. The Environmental Conservation Law, 2012
2. The Environmental Conservation Rules, 2014
3. EIA Procedure (2015)
4. National Environmental Quality (Emissions) Guidelines (2015)
5. Myanmar Investment Law, 2016
6. Myanmar Investment Rules, 2017
7. The Import and Export Law, 2012
8. The Forest Law (2018)
9. Conservation of Water Resources and Rivers Law (2006)
10. The Protection and Preservation of Antique Objects Law (2015)
11. The Protection and Preservation of Ancient Monument Law (2015)
12. Myanmar Fire Force Law, 2015
13. Prevention from Danger of Hazardous Chemical and Associated Material Law (2013)
14. Myanmar Insurance Law (1993)
15. The Law on Standardization (2014)
16. Motor Vehicle Law (2015)
17. Public Health Law (1972)
18. The Protection and Prevention of Communicable Disease Law, 1995
19. The Control of Smoking and Consumption of Tobacco Product Law, 2006
20. Employment and skill development law (2013)
21. The Settlement of Labour Dispute Law (2012)
22. The Workmen Compensation Act, 1923 (amend 2005)

[10] **Appendix A of this Report**

23. Labour Organization Law (2011)
24. Minimum Wages Law (2013)
25. Payment of Wages Law (2016)
26. Social Security Law (2012)
27. Law Protecting Ethnic Right (2015)
28. Monogamy Law (2015)
29. Buddhist Women special Marriage Law (2015)
30. Religious Conservation Law (2015)
31. Population Control Healthcare Law (2015)
32. Leaves and Holiday Act (1951)
33. Occupational Safety and Health, 2019

3.3 International Guidelines and International Agreements

It is also customary to adhere to International Guidelines from IFC (International Finance Corporation) such as the Environmental, Health and Safety Guidelines for General EHS Guidelines: Introduction, or other similar organizations such as International Programme on the Elimination of Child Labour (IPEC) from ILO (International Labour Office).

3.3.1 International Agreements and Treaty:

Relevant international conventions to which Myanmar is a signatory include those related to waste management, biodiversity conservation and labour conventions. The key international conventions of relevance to the Project and commitment to adhere with Project Compliance are described below:

Table 2: International Convention of Relevance to the Project

Legislation	Relevance	Ratification Status (in Myanmar)	Project Compliance
Environmental			
Vienna Convention for the Protection of the Ozone Layer 1988 and Montreal Protocol on Substances that Deplete the Ozone Layer 1989	Not relevant to the Project as the Project will not use any ozone depleting substances.	Accession 16th Sep 1998 (Vienna) & Accession 24th Nov 1993 (Montreal)	The Project commits not to utilize ozone depleting substances.
Convention on Biological Diversity 1992	The Project will be undertaken in habitats for biodiversity.	Ratified 25th Nov 1994	The Project commits to comply as per Myanmar's
Basel Convention on the Control of Trans-	The Project may generate	Entered into force 6th	The Project commits to

Legislation	Relevance	Ratification Status (in Myanmar)	Project Compliance
boundary Movements of Hazardous Wastes and Their Disposal	hazardous wastes.	April 2015	comply as per Myanmar's
United Nations Framework Convention on Climate Change 1992 (UNFCCC) and Kyoto Protocol 1997	The Project will form part of Myanmar's total emissions output.	Entered in force 23rd Feb 1995 (UNFCCC) and 16th Feb 2005 (Kyoto Protocol)	The Project commits to comply as per Myanmar's
Asia Least Cost Greenhouse Gas (GHG) Abatement Strategy (ALGAS) 1998	The Project will produce air emissions from the vessels.	1998	The Project commits to comply as per Myanmar's

3.4 Proponent's contractual and other commitments

The Project Proponent will comply with the Myanmar Environmental Conservation Law, Environmental Conservation Rules, Environmental Quality (Emission) Standards and all necessary international standards.

The Project commits to comply, undertake the following:

- The Project Proponent will comply with commitments, mitigation measures and management plans stated in this EIA report.
- The Project Proponent is responsible for its actions and omissions and those of its contractors, Sub-contractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the company acting for or on behalf of the Project.
- Support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts.
- Fully implement the EMP, all Project commitments, and conditions, and is liable to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project.
- Be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.
- Timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.

- Respect and comply with the customs, traditions and traditional culture of the ethnic groups in the Union;

- Abide by the terms and conditions, stipulations of special licenses, permits, and business operation certificates issued to them, including the rules, notifications, orders, and directives and procedures issued by the MIC and the applicable laws, terms and conditions of contract and tax obligations;

- Carry out in accordance with the stipulations of the relevant department if it is, by the nature of business or by other need, required to obtain any license or permit from the relevant Union Ministries government departments and governmental organizations, or to carry out registration;

- Immediately inform the Commission if it is found that natural mineral resources or antique objects and treasure trove not related to the investment permitted above and under the land on which the investor is entitled to lease or use and not included in the original contracts.

- To inform the village administrative office and the Department of Historical Research if any historical thing is found during the project operations;

- Abide by the applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage;

- Close and discontinue the investment only after payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce;

- Pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directives and so forth during the period of suspension of investment for a credible reason;

- Pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease and death due to the work;

- Supervise foreign experts, supervisors and their families, who employ in its investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar;

- Respect and comply with the labor laws;

- Have the right to sue and to be sued in accordance with the laws;

- Pay effective compensation for loss incurred to the victim, if there is damage to the natural environment and socioeconomic losses caused by logging or extraction of natural resources which are not related to the scope of the permissible investment, except from carrying out the activities required to conduct investment in a Permit or an Endorsement.

- Ensure equal rights for local workers and avoid salary bias, i.e. ensure that local and foreign workers have the same salary at the same level.

- Ensure that all foreign employees apply for the proper work permit and visa through the Myanmar Investment Commission (MIC).

- Provide rights and benefits including but not limited to, leave, holidays, overtime pay, compensation and social security. Most of the relevant particulars are in the Myanmar Companies Act.

- Settle disputes, within the law, between workers, employers, consulting experts or any other personnel involved in the business operation.

3.5 Proponent's Environmental and Social Standards

MONREC has established environmental quality standards, the National Environmental Quality Emission Guidelines (2015) (NEQEG). The NEQEG provide the basis for regulation and control of noise and air emissions and effluent discharges from projects in order to prevent pollution and protect the environment and public health.

The Project Proponent will implement the project by complying as per NEQEG for all phases (construction, operation, disclosure and post-disclosure) where applicable.

In NEQEG guideline, there prescribe the limit for Tanning and Leather Finishing (2.3.2.2) in Garments, Textile and Leather Products (2.3.2). This guideline applies to textile manufacturing using natural fibers (made entirely from chemicals), and regenerated fibers (made from natural materials by processing these materials to form a fiber structure). It does not include polymer synthesis and natural raw material production.

4. DESCRIPTION OF THE ENVIRONMENT

4.1 Physical Environment

4.1.1 Climate and Hydrology

The project area is located at Shwe Pyi Thar Township of Yangon Region; having subtropical climate with recorded maximum temperature of 41°C and Recorded minimum temperature of 30°C.

Shwe Pyi Thar climate and hydrological data were collected from Department of Hydrology and Meteorology for the environmental management plan assessment of footwear production project. The data was analyzed based on the available rainfall, temperature, relative humidity, and wind speed in the study area.

4.1.2 Rainfall and Temperature

Table 3: Mean Yearly Rainfall and Temperature

Sr.No	Year	Rainfall		Temperature	
		Rainy Days	Total Rainfall (inches)	Summer	Winter
				Highest (°C)	Lowest (°C)
1	2015 - 2016	105	84.91	34	30
2	2016 - 2017	116	85.89	34	30
3	2017 - 2018	97	86.70	38	30
4	2018 - 2019	69	1320	41	30

Table 4: Mean Monthly Rainfall in mm at Shwe Pyi Thar (1967-2018 Average)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	6	2	9	26	280	498	562	555	342	168	54	5	2507

Table 5: Monthly Rainfall in millimeter at Shwe Pyi Thar (Mean Year, Wet Year, Dry Year)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Year	5	3	12	28	266	494	597	551	341	174	56	4	2531
Wet Year	12	1	9	22	405	554	598	625	427	188	77	2	2920
Dry Year	6	1	2	22	199	456	415	498	258	128	22	11	2017

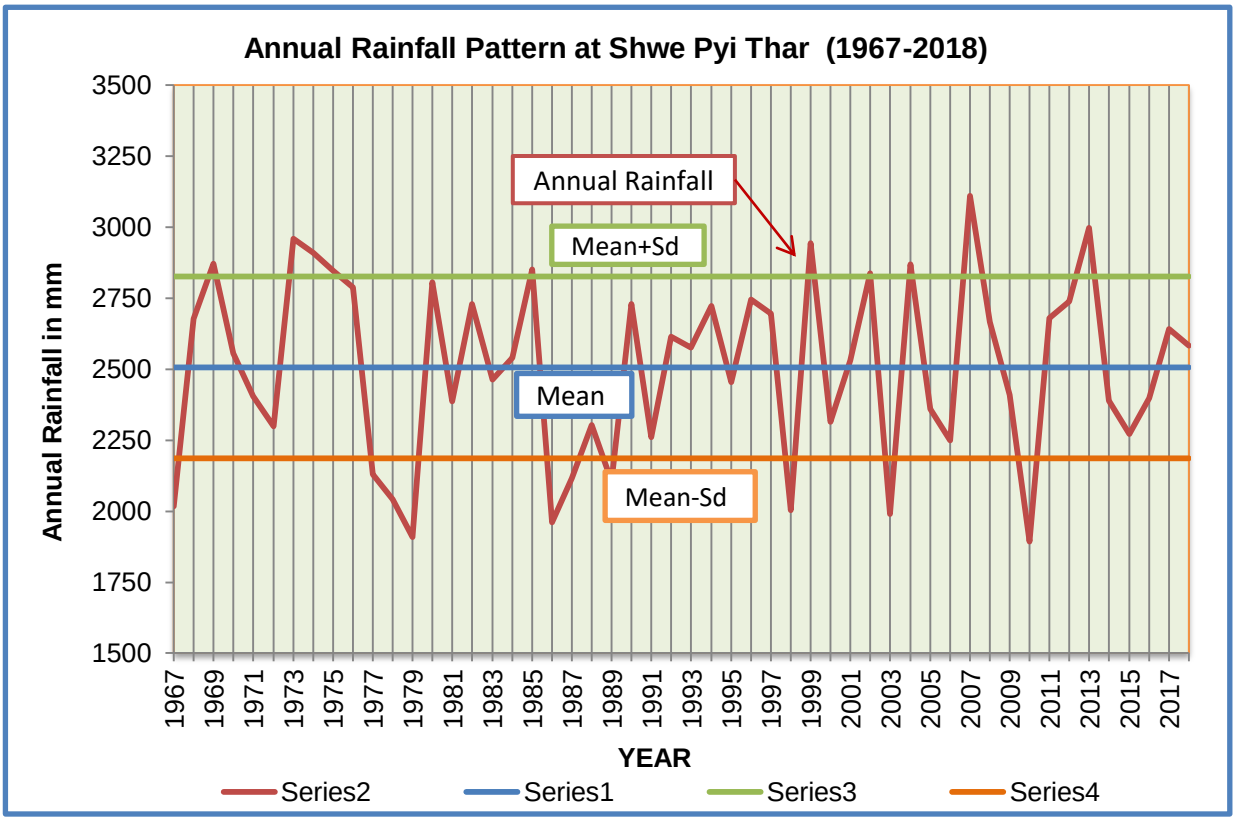

Figure 18: Annual Rainfall Pattern at Shwe Pyi Thar (1967-2018)

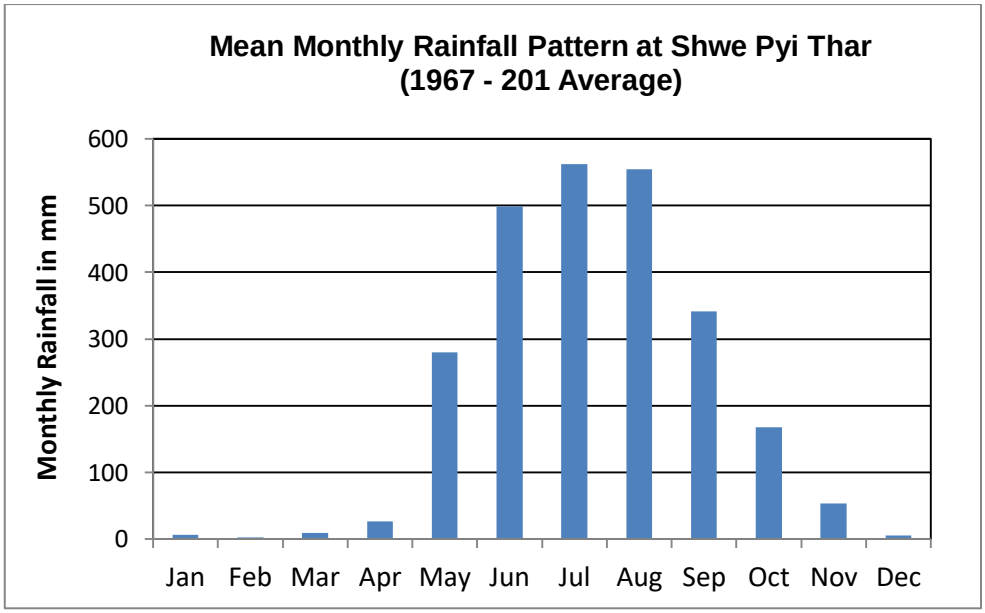

Figure 19: Mean Monthly Rainfall Pattern at Shwe Pyi Thar (1967-2018)

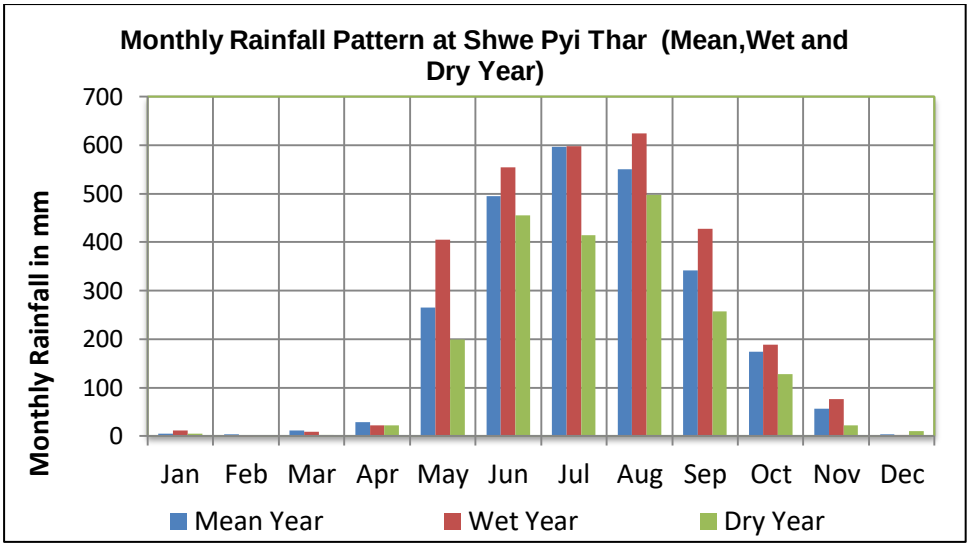

Figure 20: Monthly Rainfall Pattern at Shwe Pyi Thar (Mean, Wet and Dry Year)

Table 6: Monthly Mean, Maximum and Minimum Temperature at Shwe Pyi Thar in °C

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	24.7	26.1	29.1	30.5	28.7	27.9	27.4	27.3	27.8	28.4	27.6	24.9	27.5
Maximum	32.9	35.0	37.3	37.6	33.2	31.3	30.4	30.5	31.1	32.8	34.2	33.0	33.3
Minimum	16.5	17.2	20.9	23.4	24.2	24.5	24.5	24.2	24.4	23.9	20.9	16.8	21.8

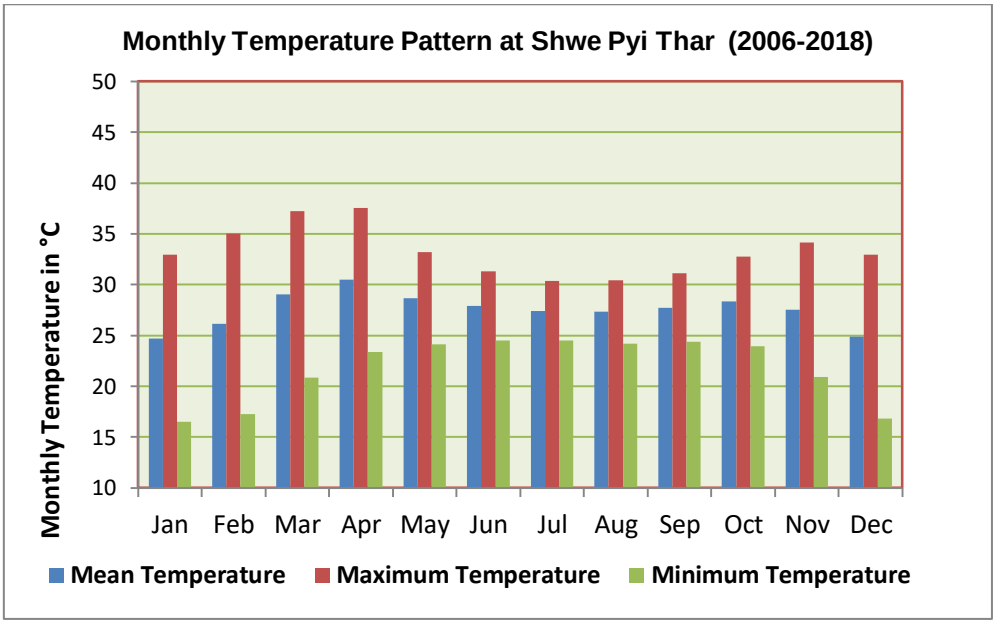

Figure 21: Monthly Mean, Maximum and Minimum Temperature Pattern

Table 7: Monthly Mean Relative Humidity at Shwe Pyi Thar in % (2006-2016)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	69	70	74	69	79	88	91	91	88	83	74	70	79

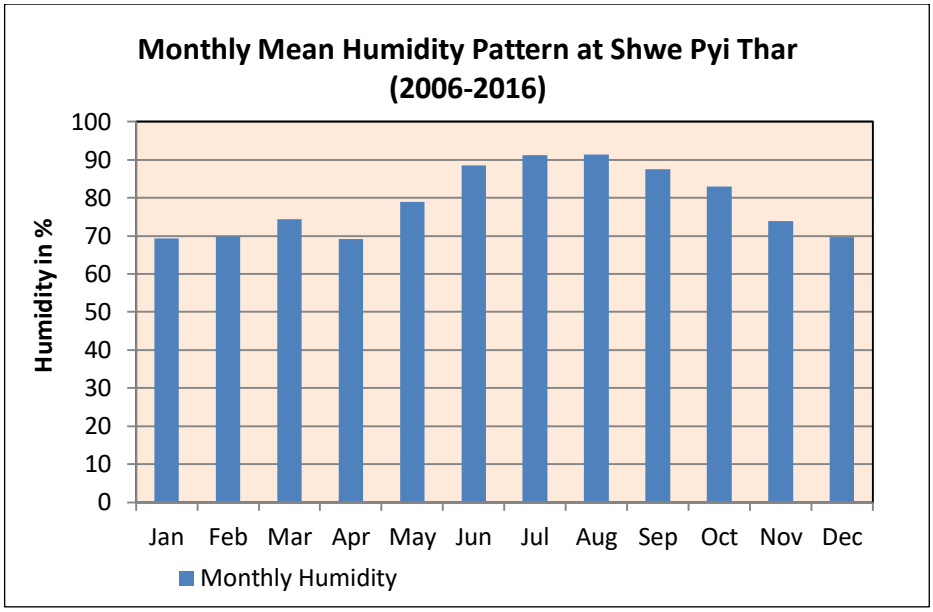

Figure 22: Monthly Humidity Pattern at Shwe Pyi Thar (2006-2016)

Table 8: Monthly Mean Wind Speed (m.p.h) and Direction at Shwe Pyi Thar (2006-2018)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean	1.8	1.8	2.2	2.8	2.9	2.9	2.8	2.7	2.4	2.1	1.8	1.7
Direction	NE	SW	SE	SW	SW	SW	SW	SW	SW	SE	NE	NW

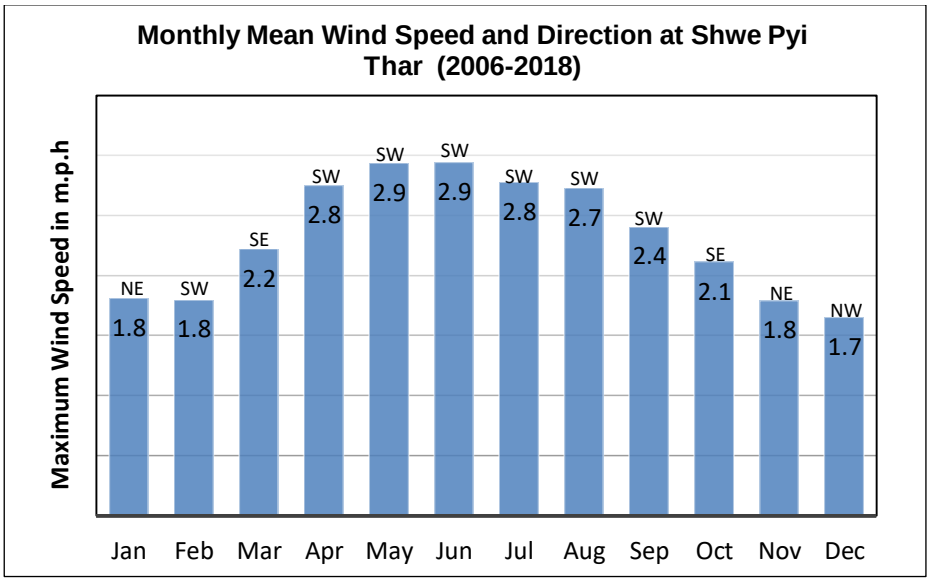

Figure 23: Monthly Mean Wind Speed and Direction Pattern at Shwe Pyi Thar (2006-2018)

Source: Meteorological and Hydrological Department

5. Baseline Data: Physical, Ecological and Social Status of the Environment

5.1 Baseline Data: Physical, Ecological and Social Status of the Environment

The baseline environmental data generation has been done during September 2021. The study area within a 10 km radius around the proposed terminal site has been considered as general impact zone and 2 Km radius as specific impact zone for the impact study. Primary and secondary data has been collected for both the zone. However, focus of primary data generation has been more for 2 Km radius.

The Salient Environmental Features of Footwear Factory Project within 500m, 2 Km and 10 Km radius is summarized at Table 8 below.

Table 9: Salient Environmental Features of Footwear Factory Project Site

Sr. No.	Environmental Features	Within 500 m area around Proposed project site	Within 2 km area around Proposed project site	Within 10 km area around Proposed project site
1.	**Physical Environment**			
A	Road connectivity	The site is well connected by roads.	Bo Taik Chun Street is connected from east to west.	Pathein road and No (4) road are connected along its western part and eastern part of the site respectively.
B	Rail connectivity	None	Railway line is running along the	Yangon - Pyay Railway line is running along the
C	Defense Installation	None	None	None
D	Densely Populated Area/ Industrial Area	None	None	Mingalardong Township, Htantabin Township, Hmawbi Township Insein Township
E	Topography	Mainly flat with ground elevation ranging around 100 feet above mean sea level	Mainly flat with ground elevation ranging around 100 feet above mean sea level	Mainly flat with ground elevation ranging around 100 feet above mean sea level
F	Seismicity	Low magnitude	Low magnitude	Low magnitude
G	Surface Water Resources (Rivers)	None	About 2 km from the project site, Hlaing River is flowing from north to south direction.	None

H	Groundwater	The groundwater resources found below the natural ground surface.		
I	Soil and Land Used [11]	Lateritic Soils Land use in 500 m of site is under road, industrial use and settlements.	Lateritic Soil, Meadow & Meadow alluvial soil Land use in 2 km area of site is under road, industrial use, and settlements.	Meadow & Meadow alluvial soil Land use in 10 km of site is under agriculture, settlement, water bodies and rest of the land is under other uses.
2.	**Ecological/ Biological Environment**			
J	Presence of Wildlife Sanctuary / National Park /	None	None	Hlawga National Park
K	Reserved /Protected Forests	None	None	None
L	Wetland of state and national interest	None	None	None
M	Migratory route for wild animals	None	None	None
N	Migratory routes for birds	None	None	None
O	Presence of Terrestrial Fauna	None	None	None
P	Presence of Aquatic Fauna	None	None	None
Q	Tree cover	Yes: General road side plantation	Yes: General road side plantation	Yes: General sparse vegetation and road side plantation.
3.	**Social Environment**			
R	Physical Setting	Industrial /Urban	Industrial / Urban	Urban / Rural / Industrial Settings
S	Physical Sensitive Receptors	None	Yes (Temples, Schools, College, Hospital)	Yes (Temples, Schools, College, Hospital)
T	Archaeological Monuments	None	None	None

[11] *Soil Types and Soil Characteristics of Myanmar, Ministry of Agriculture and Irrigation, March 2004*

5.1.1 Physical Environment

5.1.1.1 Land

(a) Soil Quality: The soil types and the soil characteristics of representative soils in the project area are available in details respectively. According to soil types and soil characteristics of Myanmar, Ministry of Agriculture and Irrigation, March 2004, the soils of the project area are Lateritic soils which are prominent and Meadow and Meadow alluvial soils at 10 km range of the project site. The area demarcated as Watayar Industrial Zone has lateritic soil which is a zone soil, formed in warm, temperature and tropical regions and rich in iron and aluminum, low in silica and chemically acidic. Meadow soil which occur near the river plains with occasional tidal flood are non-carbonate and contain more plant nutrient than that of upper Myanmar.

5.1.1.2 Water

***(a) Meteorology*:** Climate of the project area is subtropical climate with maximum temperature of 41°C and minimum temperature of 30°C. During the rainy season, the rainy days last consecutively for 69-116 days. Annual rainfall over the area averages 67.67 inches (171.90 mm) during the past four year. Most rainfall in Yangon results from tropical systems during the period of May and October. Annual wind speed at Shwe Pyi Thar generally ranges from maximum wind speed of 2.9 kmph and minimum wind speed of 1.8 kmph with mean annual relative humidity of 79% according to 2019. Dominant wind direction of the study area is SW during post-monsoon and NE & NW during pre-monsoon period.

(b) *Water Quality*: Since the production process does not have wastewater, the water sample was collected from drinking water pipe for workers at the project site and it was tested in Pro Lab Analytical Laboratory in 27th September, 2021. Water quality assessment parameters are pH, acidity, alkalinity, electric conductivity, total dissolved solid, total suspended solids, calcium hardness, chloride, carbonate, magnesium hardness, manganese, phosphate, iron, salinity, sodium chloride, sulphate and turbidity. The analyzed parameters are compared with WHO Drinking Water Guidelines. According to the test result, all of the chemical and physical parameters are within the limit range of WHO Standards, 2018. Therefore, the water quality assessment indicated that the water is suitable for drinking purposes or industrial uses.

5.1.1.3 Air and Noise

***(a) Air Quality*[12]:** Environmental quality monitoring, i.e., ambient air pollution and noise level tests at the project area was conducted by the Hexagonal Angle Consulting Team on 25th September of 2021. The OCEANUS™ AQM-09 was used for air measuring survey and the measurement station is located at the project area and monitoring point is located in the loading/ uploading place between two production factories. During the assessment, the average temperature was 30.2°C and relative humidity was 76.6%. The measured

[12] *Environmental Quality Monitoring Report, Appendix E of this Report*

parameters are dust particles such as TSP, PM_{10}, $PM_{2.5}$, and the gaseous pollutants such as NO_2, SO_2, CO and O_3, relative humidity, air pressure and temperature etc., for outdoor air quality. Measurements were recorded in the operation with duration of 24 hours between consecutive measurements and the results are compared with National Environmental Quality (Emission) Guideline and World Health Organization Guideline. According to the result, the observed level of the ambient air quality parameters meet permissible limits of both Guidelines, making environment safe for the workers.

***(b) Noise Quality*:** Baseline noise quality was measured at loading and uploading place in the shoe factory using BENTECH GM 1356 Digital Sound Level Meter. At present minimum sound level results is 44.7 dBA and maximum is 85.1 dBA with average noise level of 64.25 dBA during day time. For industrial and commercial area, the maximum permissible sound level hourly by day and night is 70 dBA respectively. Noise levels at the site and in nearby areas are also found to be within the permissible limits as National Environmental Quality (Emission) Guideline for Industrial Area.

5.1.2 Ecological/ Biological Environment

5.1.2.1 Sensitive Ecosystem

Except from Hlawgar National Park which is situated at about 5 km from the project site, there is no sensitive ecosystem including wildlife sanctuaries, migratory routes of wildlife, biosphere reserve, tiger reserve, elephant reserve, and wetlands are present in this township. University of Computer Studies and Hlawga National Park at its eastern part and West Yangon University and Shwe Lin Ban Industry Zone at its southwest which are within 10 km range of the project site.

5.1.2.2 Flora and Fauna

Since the project area is situated closed to urban area, there is no significant flora and fauna around the vicinity area. The native plants of Shwe Pyi Thar township are ma-gyi, ta-ma, kokku, mayzali, pine and other green trees. However, the specific study area has already been urbanized with human activities and land used over the past years. Nowadays, the site within the industrial area has no significant vegetation or habitat for wildlife and its vegetation mainly comprises of the road side vegetation and prominent vegetation pattern is bushy and continuous on both sides of the road.

5.1.3 Socioeconomic Data

5.1.3.2 Social Environment

The proposed site is located in Shwe Pyi Thar Township, Yangon Region, Myanmar and the site is bordered by four townships namely: Mingalardon Township to its east, Hthatanin Township and Hlaing River to its west, Insein Township to its south and Hmawbi Township to its north. Since the project site falls administratively on the west part of Shwe Pyi Thar Township, most of the surrounding areas are occupied by factories and there is human

settlement inside and around the environment.

5.1.3.2 Socio-Economic Status

According to 2019 social study, the total population of the study area is 284922 with total household of 61496. Male female ratio of the study area is 1:1.14 as of 2019. The ethnicity of almost 94% is Bamah and others make less than 6% including foreigners. Out of the total population, the number of people who can work is 135028 and the unemployment rate is 13.53%. Main livelihoods are government services, industrial worker, merchant, livestock breeding, agriculture, casual labor and others.

This township is a developing township in economic status. The important sectors for the economic development of the vicinity area are industrial worker and merchant. Commodities are the major productions of this township which are mainly exported to the vicinity townships and most of the materials are imported from Yangon. There are many water resources in this township and most of water supply for the township is mainly from surface water. The township has 13 waste trucks with 118 municipal workers. Major crop productions are paddy (monsoon/ summer) and beans. The project area has good transportation and can be accessed through railway and roads. There are one hospital, 120 clinics and 9 rural healthcare centers, and 4 INGO and NGO in this township. Three well-known pagodas and one monastery are in this township; however, there are no main historical and archeological structures with 10 km range of the project site.

5.1.3.3 Land Use

Land use refers to the type of human activity that occurs on the land. On the other hand, land use changes are mostly from human developments such as agricultural operations, forestry, urbanization, industrialization and so on. The total land use area in Shwe Pyi Thar Township is 16484 acres. Almost 72% of its total area covers urban and built-up area, 0.36% of grassland, 11.27% of agriculture land, 15.88% of industrial area and 1.18% of religious land area. Forest area percentage in this township is deemed negligible.

6. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS ASSESSMENT

6.1 Summary of Potential Impacts

6.1.1 Impact Identification[13]

The impacts have been assessed according to four parameters. The four parameters are assigned a score from 1 to 3 based on a grading, which is illustrated in the table below; this then allows an assessment of overall significance to emerge.

Table 10: Impact Assessment Table Key

SCORE	Extent	Duration	Magnitude	Probability
1	Direct impact zone: Within the works/site area or immediate surroundings	Short: The impact is short term (0- 12 months) or intermittent	Low: No or negligible alterations to no or minimal change to socio-economic condition	Low
2	Locally: Effects measurable/noticeable outside the works area and immediate surroundings	Medium: Medium term (1-2 years)	Medium: Natural ecosystems are modified Changes are experienced to socio-economic	Medium
3	Wide Area: The activity has impact on a larger scale	Long: the impact persists beyond the construction phase for years or the operational life of the project area may be continuous	High: Environmental functions altered Socio-economic conditions highly modified. Effects may be permanent or irreversible	High

Based on the scores related to extent, duration, magnitude and probability of a specific impact, the significance of the impact is expressed as an indicator given by:

Significance indicator = (Extent + Duration + Probability) x Magnitude

Impacts are negative unless indicated with shading in the impact matrix.

Table 11: Summary of Impact Assessment Matrix

Operational Phase		
Ref.	**Impact/Issue**	**Significance**
Bio-Physical & Chemical		
BPC/1	Changes in surface water quality	low
BPC/2	Changes in groundwater quality	low
BPC/3	Changes to drainage patterns	low
BPC/4	Risk of Soil erosion and siltation	low
BPC/5	Changes to air quality	medium

[13] **Adapted from RIAM (Rapid Impact Assessment Matrix) developed by DHI in Denmark**

BPC/6	Changes to ambient noise levels	low
BPC/7	Changes to aquatic biota	low
BPC/8	Changes to terrestrial biota	low
BPC/9	Changes to disease vector populations	medium
BPC/10	Changes to land cover	low
BPC/11	Changes in natural heritage site	low
Socio-Economic & Cultural		
SEC/1	Changes involving loss of private assets	low
SEC/2	Changes involving loss of cultural heritage	low
SEC/3	Changes involving displacement of people	low
SEC/4	Changes to local traffic patterns	low
SEC/5	Changes in local wage labour incomes/livelihood opportunities	medium
SEC/6	Changes in local trade/commercial incomes/opportunities	medium
SEC/7	Changes in visual amenity	medium
SEC/8	Changes to public infrastructure/community resources	medium

Note: Impacts are negative unless indicated with shading in green color in the above impact matrix table.

Table 12: Operational Phase Impact Assessment of Proposed Project

OPERATIONAL PHASE IMPACTS for Environmental and Social Impact Assessment of Bolly Footwear Production Project, Hmawbi Township							
		Green for positive impact	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	
Ref.	**Impact/Issue**	**Comment/Description of Impact**	**Extent**	**Duration**	**Magnitude/ Intensity**	**Probability**	**Significance**
Bio-Physical & Chemical							
BPC/1	Changes in surface water quality	Risk of changes in water quality to nearby water body	1	3	1	2	low
BPC/2	Changes in groundwater quality	No significant potential polllution to ground water sources	1	3	1	2	low
BPC/3	Changes to drainage patterns	Changes to drainage pattern due to operation of factory	1	3	1	2	low
BPC/4	Changes in rates of erosion and siltation	Risk of soil erosion and siltation	0	0	0	0	low
BPC/5	Changes to air quality	Potential gas emission from CMP process for footwear production	2	3	2	2	medium
BPC/6	Changes to ambient noise levels	Significant changes in noise level due to operation of machines and equipment	2	3	1	2	low
BPC/7	Changes to aquatic biota	Soil erossion, sedimentation and siltation to nearby Creek	0	0	0	0	low
BPC/8	Changes to terrestrial biota	No significant changes in terrestrial biota	0	0	0	0	low
BPC/9	Changes to disease vector populations	Significant occupational health risk to factory staff (noise/ air)	1	3	2	2	medium
BPC/10	Changes to land cover	No further land cover change during operational phase of manufacturing of electrical equipment	0	0	0	0	low
BPC/11	Changes to areas of natural habitat	No further significant impacts on natural habitat in project area	0	0	0	0	low
Socio-Economic & Cultural							
SEC/1	Changes involving loss of private assets	No potential impact	0	0	0	0	low
SEC/2	Changes involving loss of cultural heritage	No impact in operational phase.	0	0	0	0	low
SEC/3	Changes involving displacement of people	No potential social impact	0	0	0	0	low
SEC/4	Changes to local traffic patterns	Potential changes in traffic patterns due to transport vehicles	2	3	1	2	low
SEC/5	Changes in local wage labour incomes/livelihood opportunities	Possibility of Increased income and livelihood opportunities due to the project.	2	3	2	2	medium
SEC/6	Changes in local trade/commercial incomes/opportunities	Possibility of Increased income and livelihood opportunities due to the project.	2	3	2	2	medium
SEC/7	Changes in visual amenity	Enhanced infrastructure appears with natural landscape.	2	3	2	2	medium
SEC/8	Changes to public infrastructure/community resources	Expected infrastructure development	2	3	2	2	medium

6.2 Operational Phase Impacts

Bio-Physical Impacts

BPC/1 Changes in surface water quality

Risk of changes in water quality to nearby water body

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/1	1	3	1	2	Low

BPC/2 Changes in groundwater quality

Significant potential pollution to ground water sources

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/2	1	3	1	2	Low

BPC/3 Changes to drainage patterns

Significant changes in drainage pattern during operation period.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/3	1	3	1	2	Low

BPC/4 Changes in rate of erosion and siltation

Risk of soil erosion and siltation

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/4	0	0	0	0	Low

BPC/5 Changes to air quality

Potential gas emission from CMP process for footwear production

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/5	2	3	2	2	Medium

BPC/6 Changes to ambient noise levels

Noise level due to operation of machines and equipment

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/6	2	3	1	2	Low

BPC/7 Changes to aquatic biota

Soil erosion, sedimentation and siltation to nearby Creek

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/7	0	0	0	0	Low

BPC/8 Changes to terrestrial biota

Effect on terrestrial biota

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/8	0	0	0	0	Low

BPC/9 Changes to disease vector populations

Occupational health risk to workers

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/9	1	3	2	2	Medium

BPC/10 Changes to land cover

No further land cover change during operational phase

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/10	0	0	0	0	Low

BPC/11 Changes to areas of natural habitat

No other significant impact in proposed project area

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/11	0	0	0	0	Low

Socio-Economic Impacts

SEC/1 Changes involving loss of private assets

No potential impact

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/1	0	0	0	0	Low

SEC/2 Changes involving loss of cultural heritage

No impact in operational phase.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/2	0	0	0	0	Low

SEC/3 Changes involving displacement of people

No potential social impact

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/3	0	0	0	0	Low

SEC/4 Changes to local traffic patterns

Potential change in traffic patterns

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/4	2	3	1	2	Low

SEC/5 Changes in local wage labor incomes/livelihood opportunities

Possibility of Increased income and livelihood opportunities due to the project

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/5	2	3	2	2	Medium

SEC/6 Changes in local trade/commercial incomes/opportunities

Possibility of Increased income and livelihood opportunities due to the project

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/6	2	3	2	2	Medium

SEC/7 Changes in visual amenity

Amenity changes to vision operation period.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/7	2	3	2	2	Medium

SEC/8 Changes to public infrastructure/community resources

Expected infrastructure development

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/8	2	3	2	2	Medium

The EMP sets out what should be done (and what should not be done) and how those actions should be performed to avert environmental impacts and harm or to keep it to an acceptable minimum.

The main responsibility for producing the EMP falls on the project proponents. This responsibility is fulfilled:

- By ensuring that social and environmental aspects are integrated with project planning and design
- By observing approved measures throughout the operational period to period mitigate impacts

The EMP enables environmental mitigation measures to be effectively integrated into project implementation. As compliance with provisions of the EMP it is ultimately the responsibility of the proponent of the project company must extend this to bind contractors and sub-contractors.

7. COMPONENTS OF ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES

7.1 Health, Safety and Environment

7.1.1 Awareness

Environmental and Social awareness play an important role in achieving compliance for environmental management. In this regard the following steps shall be taken to ensure all contractor and sub-contractor staff are informed and trained appropriately:

- Environmental and Social Awareness Orientation shall be given to all employees, sub-contractors and consultants as part of their general orientation. The proponent has to verify the HSE procedure for Training and Induction of the contractor.
- Basic environmental and social auditing and compliance training should be provided to the Safety Officers on site and persons responsible for the day to day monitoring of the environmental and social performance.
- The Environmental manager should have the necessary training to conduct compliance audits throughout the duration of the project.
- The Environmental manager will promote onsite environmental and social awareness through talks / meetings and promotions throughout the extent of the project.
- All environmental and social incidents that occur on site, or adjacent areas, will be reported and addressed through the HSE reporting procedure of the contractor
- A register will be maintained that will log all environmental and social complaints raised by stakeholders or the general public in connection with project activities. This register will be available to project proponent for periodic review.
- The register shall be regularly updated and shall maintain records including the name of the complainant, his or her domicile and contact details, the nature of the complaint and any action that was taken to rectify the problem.
- The Environment manager in conjunction with the HSE manager will be responsible for drafting the environmental and social complaints report, handling complaints and maintaining the register.

7.1.2 Health and Safety of Local Populations

Lack of care or lack of information can cause accidents (e.g. traffic incidences, electrocution where they may suffer injury, and risk of fire hazard). Thus, people or workers under direct influence of project should be informed by project proponent or their appointed representative regarding appropriate security precautions for example: Using appropriate PPE (Personal Protective Equipment) during operation; Participation of training programs regarding adhering to emergency response procedures and activities; Abiding to good and standard practice and procedures for relevant machineries and equipment; and Monitoring of alarm system for emergency conditions.

7.2 Occupational Health and Safety for footwear sector and mitigation measures

Footwear Production[14]

Generally, footwear is designed according to the needs of customers. An informal sector footwear manufacturer may have various models designed to market the products and finding potential new customers. Shoemaking can comprise numerous process steps. A simplified production flowchart is illustrated in the below Figure.

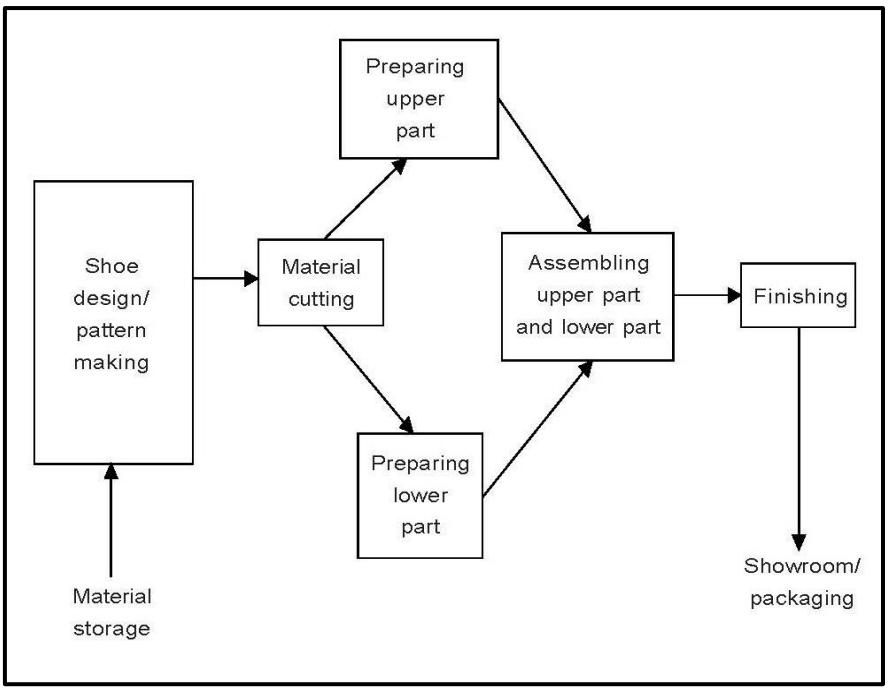

Figure 24: Footwear Production Flowchart

A pattern determines the shape and size of the footwear upper-part; this can be produced by the shoemaker or ordered outside. The upper-part style is drawn on the material (e.g. leather, polyurethane, PVC, etc.) according to the pattern, which is then cut with scissors.

After cutting, the outer area of the material is often thinned with a skiving machine. The uppers and linings are sewn together; eye-letting, button-holing, and decorating may be carried out. The uppers and lowers are assembled together primarily by gluing, but also by stitching, nailing, or screwing. Before assembling, the sole parts may be smoothened with a grinder. Those soles that are not ground are often treated with primer: a glue-bonding. Once glue has been spread on the sole part, it is heat-treated in an oven to further increase the bond strength. Then, glue assembled footwear is often compressed tightly with a pressing machine. Finishing may include such tasks as cleaning, polishing, waxing, coloring, and paint spraying. Finally, the footwear is packed into boxes or plastic bags and transported to the customer.

A. Physical Environment

[14] ILO, "Improving Safety, Health and Working Environment in the informal footwear Sector"

Dust: Footwear grinding machines produce a lot of leather, rubber, and textile dust. Other dust generating tasks include skiving and cutting operations. Any dust exposure is hazardous as dust can irritate or damage worker's lungs and upper airways (e.g. leather dust exposure has been associated with nasal cancer). Dust negatively affects machinery functions, thus, requiring more maintenance. It may also negatively affect the quality of raw materials and finished products.

Mitigation measure: remove dust, clean properly (don't spread dust):

- Introduce / improve local exhaust ventilation at the dust-generating work station, in particular the footwear grinding work;
- Enclose or isolate footwear grinding or any other dust generating tasks;
- Consider utilizing a grinder equipped with dust bag, guard to protect eyes, and seat with appropriate positioning for maximum protection, comfort and workability;
- Clean regularly and implement rigorous daily housekeeping practice. Use water when cleaning. Do not spread dust;
- If the local exhaust ventilation is not possible, make use of wind direction and blowers to reduce exposure to find dust.

Chemicals: In shoemaking, the serious chemical hazard exposure is mostly caused by organic solvents used in glues, primers, degreasers, cleaners, and paints. Vapors spread throughout the workshop – the solvent exposure is not only to gluing, cleaning, and polishing work. Footwear chemicals have serious long-term health effects that may manifest years afterwards: damages in the nervous system (e.g. intellectual capacity, memory problems, weakening of senses, etc.), skin, liver, kidneys, lungs, immune system, etc.

Incorrect disposal of chemicals harms the environment outside the workplace. Footwear chemicals are also flammable and represent a serious fire hazard. Keep them away from any ignition sources: burning cigarettes, open flames, sparks, etc.

All chemical containers should be adequately labelled indication clearly ingredients used, manufacturer information, as well as safety and health precautions.

Mitigation measure: Protect workers from chemical hazards:

- Check that all chemical containers are properly labelled and material safety data sheets are provided for all chemical products. If not, inform the inspectorate and manufacturer about this;
- Seek possibilities to use safer, water-based chemicals instead of solvent-based ones. Introduce and improve local exhaust ventilation. Keep containers covered;
- Change the work method in order to reduce direct handling of hazardous materials. Rotate work tasks;
- Provide workers with and use suitable protective clothing and gloves to avoid direct contact with hazardous materials;

- If local exhaust ventilation is not possible, use fans and wind direction to reduce exposure.

Noise: The high noise levels created by machines can damage the hearing. It can also affect the health of workers in other ways, for example creating high blood-pressure, headaches, nervousness, and stress. Noise can interfere with warning shouts, signals, and communication. This can cause accidents and affect production quality. If workers standing at arm's length from each other cannot talk in a normal voice tone, the noise level is too high. In the footwear workshops, some sole pressing machines, hammering, and grinding can create high noise levels. In larger footwear factories, noise level is usually high due to the use of various machines.

Mitigation measure: Ensure that noise does not harm workers:

- Reduce noise at the source by using properly designed, maintained, and adjusted tools or machines;
- Screen or isolate the noise source as much as possible;
- Reduce noise reflection by raising the ceiling or using sound-absorbing materials;
- As a last resort, use ear muffs or ear plugs when necessary.

Heat: Heat influences working capacity and decreases productivity. It increases fatigue, this, human errors and accidents. Heat-related health hazards include dehydration, heat exhaustion, cramps, and rash. Especially in a tropical climate, it is important to provide available means of protection against excessive exposure to heat. In the shoe workshops, try by all means possible to keep indoor temperature lower than 30°C, which is already a very uncomfortable working environment.

Mitigation measure: Protect the workers from excessive heat:

- Increase natural ventilation by having more openings, windows, or open doorways;
- Insulate or screen heat-producing objects, machinery or equipment;
- Use ventilators or fans to have good air flow;
- Remember that trees, bushes, and flowers can help in reducing that harmful sun radiation, hot winds, and create a more pleasant environment at the same time.

Lighting: Sufficient lighting improves workers' comfort and performance, making the workplace a pleasant place to work. It also reduces work errors, thus, improves quality. Additionally, poorly lit or dark places cause accidents, especially when materials are being moved.

Mitigation measure: Increase lighting to improve quality and prevent accidents.

- Maximize the use of daylight with: (i) properly located machines and work stations, (ii) higher roof and bigger windows, and (iii) installation of skylights (e.g. with translucent plastic sheets);
- Clean regularly windows and maintain lamps and other light sources regularly;
- Eliminate glare or reflections which strain the workers' eyes;

- Improve general artificial lighting or provide spot lighting.

Housekeeping: When a workplace is free from clutter, work proceeds safely and comfortably. Valuable space will be free of obstacles and workers can easily find the right tool for the job. When the workplace is in good order there is less fire and accident hazards. An orderly workplace leaves a good impression on your clients.

Mitigation measure: Remove all unnecessary items and provide a proper place for everything.

- Remove all unnecessary items from your workplace;
- Assign daily or more frequent responsibility for clean-up to specific workers for specific areas;
- Provide convenient places and storage racks for tools, raw materials, parts and products;
- Keep paths and aisles clear and wide enough to allow proper transport.

Waste Disposal: Waste, scrap, and liquid spills on the floor not only represent a material loss and work obstacle, but are also a significant accident cause. Conveniently placed, easy-to-empty waste containers help in housekeeping and create free space.

Mitigation measure: Establish a good waste disposal system:

- Provide enough waste containers of adequate size;
- Establish regular system for removing waste out from the workplace;
- Specify clear responsibilities for waste disposal.
- Avoid waste-mountain outside of a shoe-workshop. Proper waste management practices enhance community well-being as well.

B. ***Premises: Roof***: For workers health, well-being, the correct temperature and humidity inside the work premises is important. A proper roof can protect from direct and indirect heat-up effect of sunlight. When it rains and if the roof is not in the good condition, there is a risk of damage materials and products.

Mitigation measure: Protect your workers and products from outside heat and rain:

- Improve roof to give protection from the sunlight and rain;
- Heat and cold penetration can be considerably reduced by insulating walls and roof panels and providing air gaps between wall and backing. This is a better alternative;
- Construction of a ceiling is another effective way of reducing heat and cold penetration from above;
- Raise the roof to increase natural indirect lighting and ventilation in work premises.

Premises: Floor and Drainage: Inappropriate floor surfaces or poorly maintained floors can be a major source of accidents, work interruptions, and product damage.

Mitigation measure: Improve your workshop floor for productive and safe work:

- Improve your floor for better strength and resistance to wear and abrasion;
- Keep floors clear from obstacles;
- Keep floors in good condition to avoid accidents and damages for works, materials, and products.

Drainage: A good drainage system is important to keep work premises dry, achieve good hygiene, reduce the incidence of infectious diseases, and avoid accidents.

Mitigation measure: Improve drainage system to keep your workplace dry and clean:

- Provide for proper waste water drainage outside work premises and remember that it should only be used as a passage for water disposal;
- Provide a rain water drainage system;
- Keep the drainage clean and clear on a regular basis.

Premises: Fire Prevention: Fire prevention is the best insurance against fire accidents. When fire occurs, it often causes deaths, significant material damage, thus, major financial loss.

Mitigation measure: Protect your business from fire accidents:

- Keep premises in good order by housekeeping;
- Acquire basic fire-fighting equipment, for example fire extinguisher, water bucket, and blankets or install a systematic fire-fighting system;
- Train workers in fire prevention and fighting;
- Check that all electrical appliances are properly insulated;
- Provide proper storage for flammable chemicals and other materials; such as: all solvent-based footwear chemicals, fuels, and gases. Keep them away from ignition sources;
- Avoid use of extension cords over-loaded with various electrical appliances as these can be sources of sparks and cause fire;
- Avoid serious fire hazards from rampant cigarette smoking in the workshop / factory.

C. Ergonomics: Lifting, Carrying and Moving: Heavy lifting and wrong lifting methods cause fatigue and back injuries. This can cost you a great deal, as you may lose working ability for a long period.

Mitigation measure: Prevent workers from breaking their backs:

- Train workers to use their legs rather than their backs when lifting;
- Raise and lower materials slowly in front of the body without twisting or deep bending;
- Instead of lifting or carrying heavy weight, divide them into smaller packages, containers, or baskets which allow a use of power grip, instead of pinch grip when handled manually;

- Use carts, hand trucks and other wheeled devices or rollers when moving heavy materials;
- Combine lifting with physically lighter tasks to avoid injury, fatigue, and to increase efficiency. Rotate work tasks.
- Right lifting method[15]: i) Keep feet far enough apart to give a balanced distribution of weight; ii) The knees and hips should be bent, the back kept as straight as possible; iii) The arms should be held as near to the body as possible. This helps sustain the load by allowing friction between the load and clothing; iv) Lift should be made smoothly, no jerks or snatches should occur.

Ergonomic – Hazardous Postures and Seats: When work is done in a natural posture, with weight on both feet and without bending or twisting, this produces less fatigue and higher productivity. Arrange for good hand positions to allow a natural posture.

Mitigation measure: Avoid bad postures as this decrease efficiency and comfort:

- Avoid strenuous work or prolonged unnatural working postures;
- Avoid work requiring high hand positions for standing workers by providing foot stands or platforms;
- Put materials within easy reach of workers, using racks if necessary;
- Assign work tasks to create opportunities to alternate between standing and sitting postures.

Seats: Seated work seems comfortable compared with other forms of work. However, sitting for long hours is also tiring. Good seats with a proper and sturdy backrest reduce fatigue and increase job satisfaction.

Mitigation measure: Provide good seats for everybody:

- Provide chairs or benches of the correct height or make seats height individually adjustable;
- Choose the seat surface and / or provide a cushion for comfort and support;
- Provide chairs with backrest of proper size which provides low back support.

Ergonomic – Working Surface: Work consists of a variety of tasks. A stable work surface that allows the work to be carried out on an elbow height is needed. Too narrow or unsteady surface results in tome loss and more effort, thus reducing work productivity and increasing fatigue.

Mitigation measure: Provide a stable work surface at each workstation:

- At each workstation, provide a stable work surface of an appropriate size;
- Avoid a narrow or unsteady surface;
- Avoid bending postures for standing workers by raising the height of equipment, controls, or work surfaces;

[15] **ILO-WISE Manual**

- Provide work tables of suitable height for seated workers so that too high or low hand positions and bending postures are avoided.

Work Tools: Tools adapted to the particular operation and well-maintained are safe to use. When cutting tools are kept sharp, less force is required to use them. Children should not be working with sharp tools. Large and softer handles in footwear tools such as knives, scissors, and tongs are more comfortable to work with. An uncomfortable tool with small and hard handles (e.g. wooden or metal) is un-ergonomic and less productive. Vices and clamps reduce accidents, as they prevent slippage of material, reduce the need for maintaining a bad posture and provide better control over the work item and tools.

Mitigation measure: Utilize safe and ergonomic tool for maximum production:

- Use safe power tools and make sure that safety guards are used (e.g. Skiving machine (for material thinning): the moving parts, like the belt in this skiver, should be properly guarded or enclosed);
- Choose tools of appropriate size and shape for easy and safe use;
- Improve tools or use locking devices to reduce gripping or handling force;
- Provide a "home" for each tool;
- Make sure that tools are maintained and repaired and that no worn-out tools are used.

D. Welfare Facilities – Toilets: Well- maintained toilets meet some of workers' most essential needs. Conveniently located toile facilities also save working time. Sufficient, clean and well-maintained toiles is a must in all decent workplaces***.***

Mitigation measure: Ensure toilet facilities serve their purpose:

- Provide sufficient toilet facilities close to the working area;
- Provide sufficient separate had washing facilities with soap or hand cleaners;
- Ensure that toilet and hand washing facilities are regularly cleaned and in good sanitary conditions;
- Provide separate toilet for men and women. Ensure privacy when using the toilet.

Welfare Facilities – ***Washing***: Washing facilities that are conveniently located and regularly used help to prevent chemicals from being absorbed through the skin or being ingested during snacks and meals. Well-maintained washing facilities have also positive effects for work satisfaction.

Mitigation measure: Ensure washing facilities are functional for essential hygiene and health:

- Check that sufficient, clean, and well-maintained washing facilities are near the worksite;
- When you rearrange or build again your workshop, provide good washing facilities t ensure hygiene and tidiness;

- Maintain and clean up washing facilities or showers properly.

Welfare Facilities – Drinking Water: Good drinking facilities can do much to prevent fatigue and maintain workers' health. Especially in a hot environment, work results in considerable loss of water. This can affect both the workers' health and productivity if clean drinking water is not available.

Mitigation measure: Ensure potable drinking water for workers:

- Provide proper facilities for drinking water near the work area;
- Ensure that there is always safe drinking water available and that the water cannot be contaminated by dust, chemicals, or dirt or example spread by insects.

Welfare Facilities – Food Hygiene: Shoe manufacturers spend a substantial part of their everyday life at the workplace. They need to drink, eat, and take a rest. Clean and hygienic cooking facilities and eating areas are essential. Eating, drinking, and smoking in the work process is dangerous and can result in ingestion of hazardous chemicals and dust.

Mitigation measure: Ensure food hygiene at workplace as good hygiene is important for work and health:

- Ensure that the food is always prepared in a clean and hygienic place;
- Provide a separate are for meals near the work area, but away from the workstations;
- Keep washing facilities clean to ensure food hygiene.

E. ***Personal Protective Equipment (PPE):*** For hazards which cannot be eliminated or reduced by engineering controls or by administrative controls, appropriate PPE must be selected and used. Each type of PPE is designed to protect certain parts of the body (e.g. hands, feet, eyes) and only against certain hazards.

Mitigation measure: Provide PPE that gives adequate protection:

- Provide adequate number and appropriate types of protective goggles, face shields, masks, earplugs, finger cups (when using a needle), safe footwear, and gloves;
- Ensure regular use of PPE through adequate instruction and training;
- Ensure that all PPE is easily available, well-maintained, and its use is regularly monitored;
- Clearly mark areas requiring the use of PPE;
- Remember that PPE is always a last resort control measure. Replace PPE with local exhaust ventilation, built-in guards, isolating hazards, or other engineering hazard control measures whenever possible.

F. ***Work Organization – Work / Rest Cycles:*** Prolonged work leads to fatigue and raises the accident risks. Short rest pauses can improve concentration and increase work quality and productivity. Taking short breaks at relatively short intervals (say five minutes in every hour) is better than taking a long break after the worker reaches a stage of excessive fatigue.

Mitigation measure: Have the workers take frequent short pauses to avoid fatigue and to work with renewed energy:

- Avoid daily or weekly working hours which are too long (about eight hours in a day is recommended);
- Consider taking short breaks in addition to a long break for meals;
- Tea short, spontaneous pauses during the working period.

Work Organization – Skills Development and Training: By training workers in new skills, it is easier to organize new work systems, which are productive and safer. By acquiring new skills, worker can do multiple jobs. In this way, job rotation can be more easily organized and absent workers more easily replaced, without looking for additional workers. Task enlargement and job enrichment lead to a greater worker motivation and well-being.

Mitigation measure: Provide opportunities for workers to learn new skills and work tasks:

- Improve job content by training workers to do maintenance, adjustment, and task planning in addition to their routine manual work;
- Train workers to do multiple job tasks;
- Ensure that workers are trained about safety and health hazards as well as protective measures.

Work Organization: Interaction and Communication: Well-planned work provides opportunities for workers to communicate with other workers without leaving their work station. This stimulates the workers without interrupting work. Interaction in work has positive effects on job satisfaction and problem solving.

Mitigation measure: Ensure good communication at workplace as it has many positive effects:

- Provide opportunities for workers to talk with each other while they are working;
- Avoid layouts or job assignments which require work in isolation;
- Provide workers with frequent feedback on the quality and quantity of their work.

G. ***Health Promotion – Safety and Health Committee***: An Occupational safety and health (OSH) committee can be an effective medium in exchanging ideas on how to make the working environment safer and healthier. The committee can be established both at the workplace and the community level.

Mitigation measure: Consider forming an occupational safety and health (OSH) Committee[16]:

- Members of an OSH committee are nominated by the workers or community members;

[16] An OSH Committee can be a medium to improve the work environment and advocate safety and health measures

- An OSH committee member should represent different parts of the workplace. A community-based committee should represent members from different villages;
- A committee should meet regularly (for example twice a month and be responsible for organizing safety and health activities;
- A committee is an important contact point for the Government officers who are responsible for safety, health, and environmental issues.

Health Promotion – First Aid: Even if safety and health measures are well organized in a workplace, there is still always a possibility for an accident. If an accident happens, loss can be minimized by quick corrective action. First-aid is the first skilled assistance given to an injured or sic person before taking the victim to the hospital for medical treatment.

Mitigation measure: Provide first aid as essential provision at workplace / shoe workshop:

- Ensure that there is at least one trained first aider in every workplace;
- Provide an adequately furnished first-aid box;
- Ensure that workers have an easy access to medical care, if necessary***.***

Health Promotion – Health Service: Protecting the workers against any health hazards which may arise in or out of the workplace can be done only by professional occupational health personnel.

Mitigation measure: Provide well-organized health services / clinic as it is important for workers' well-being:

- Establish a regulate system for identifying and controlling work hazards and to protect workers' health;

- Establish a record keeping of accidents and diseases in the workplace or in the community for example, through the OSH Committee;

- The OSH Committee should seek professional advice from health services on occupational health issues. Cooperation between the OSH Committee and health professionals is essential.

7.3 Environmental Mitigation Plan

Table 13: Mitigation Measures for Impacts during Operational Phase

Mitigation Measures		Physical Environment			Socio-Economic Environment			
		Air Quality		Water Quality				
		Noise and vibration generation	Dust, odor and exhaust emissions	Impacts on water quality	Temporary Flooding	Impacts on factory performance	Impact on utilities	Public and Worker Health and Safety
1	Periodically clear drainage at dumping / storage site			▲	▲			
2	Conduct public awareness raising on environment							▲
3	Ensure nearby water body protection			▲				
4	Community safety monitoring						▲	▲
5	Periodical checking of storage site and related structure	▲					▲	▲
6	Check no interference with private / public assets							▲
7	Ensure emergency response plan							▲
8	Prioritize working hour during daylight	▲	▲				▲	▲
9	Ensure vehicle and engine exhausts fully operational	▲	▲					▲
10	Implements Health & Safety routines for the site						▲	▲
11	Landfill or dispose of solid waste as appropriate			▲				▲
12	Collect and treat any contaminated liquid run-off			▲				▲
13	Provide favorable working place and amenities for profitable and safe work							▲
14	Supply sanitary and hygienic services			▲				▲
15	Provide well planned schedule and skills development training					▲		

7.4 EMP Organization

This section defines the organization set up by the EMP if necessary and as required, for the proponent and the Construction Contractors for the implementation of the EMP and the roles and responsibilities devoted to each position involved in the process.

Three levels of organization, fully complementary, are set-up by the EMP.

- The Environmental Auditor (may be internal or independent external)
- The Environmental Management Officer (EMO),
- The Environmental Site Officer (ESO)

General organization is presented in the following figure:

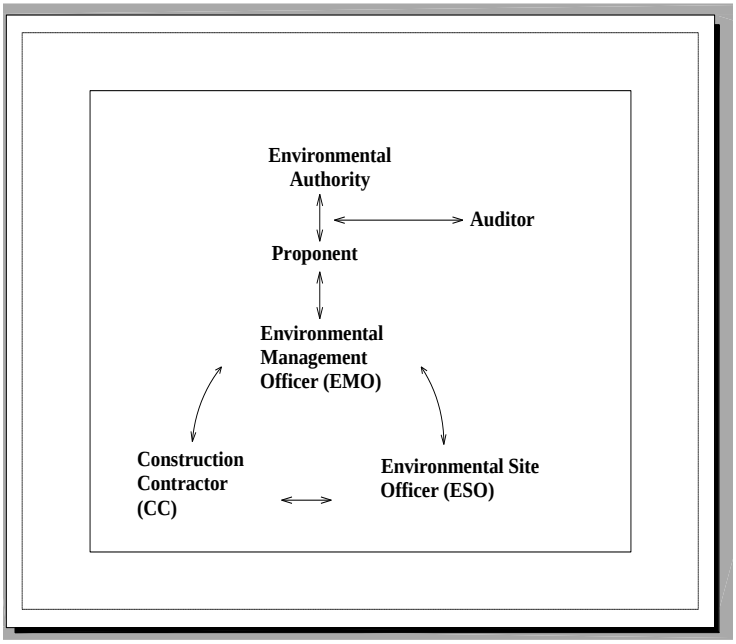

Figure 25: EMP Organization

The Environmental Management organization described above includes an Environmental Management Officer (EMO) and an Environmental Site Officer (ESO). The EMO function is for the duration of the construction period plus post-construction audit and operational period.

The EMO role is executed by:

- An environmental management officer attached to the Project who may be an external specialist or a suitably qualified or oriented staff member from the Proponents organization;
- Support from the site construction supervision staff.

The EMO coordinates (directly or through the site construction supervision staff) with the various CCs and with the ESO(S) appointed by the Construction Contractors. The overall

role of the EMO is to oversee and monitor adherence to, and implementation of, the EMP by the CCs (which includes compliance with the relevant obligations contained in the EMP).
The EMO is assisted by the site supervision staff and the ESO on the CC's side, responsible for monitoring construction-related activities and implementing environmental measures on site as part of the EMP conditions.

The ESO is the CC's focal point for all environmental matters, and coordinates directly with the EMO and CE. The ESO is routinely on-site for the duration of the construction works.
ESOs are appropriated technical officers (often the CC site engineer), who has the knowledge of environment issues on the project site. The ESO carries out regular inspections of the CC activities in relation to environmental issues, and provides day-to-day advice to Contractor personnel about environmental issues. Verification is provided by the EMO.

7.4.1 EMO Roles & Responsibilities

The EMO should be responsible for monitoring, reviewing and verifying compliance with the EMP by the Construction Contractor. The ESO should also ensure compliance (as per the construction contractor). The EMO's duties in this regard, and working with the CE, who will have day-to-day interaction through supervisory staff, should include the following:

- Ordering the removal of person(s) and / or equipment not complying with the specifications;
- Verifying Environmental Compliance
- The issuing of penalties for contraventions of the EMP;
- Taking decisions in case of severe non-compliances to the EMP are detected;
- Providing input for on-going internal review of the EMP
- Stopping works in case of emergency or if significant environment impacts are apparent or imminent.

The EMO ensures the CC has all plans, procedures, approvals, and documentation in place to ensure EMP compliance prior to commencement of any work. The EMO's duties here include the following:

- Supervising updating and maintenance of the EMP;
- Monitoring and verifying that the EMP is adhered to at all times and taking action if the specifications are not followed;
- Monitoring and verifying that environmental impacts are kept to a minimum
- Sampling sites and surrounding areas regularly with regard to compliance with the EMP;

- Recommending to stop work in emergencies or if significant environmental impacts are apparent or imminent;
- Preparing the background information for the Reports
- Participating, upon request in meetings with the environmental authorities as requested.

7.4.2 ESO Roles & Responsibilities

The ESO(s) has the principal responsibility for observing construction activities and ensuring that those activities are in compliance with the EMP requirements. To accomplish this, each ESO should be familiar with the EMP and contract specifications.

The specific responsibilities of the ESO are to:

1. Monitor implementation of environmental measures by CC construction staff against contractual obligations by:
2. Performing regular monitoring activities;
3. Detecting non-conformance and approving corrective action (with advice from EMO if necessary)
4. Evaluating CC environmental efforts and effectiveness; and
5. Identifying circumstance requiring management decisions to evaluate variance or compliance issues.
6. Compile documentation of monitoring observations by:

Collecting any specific date that the ESO is assigned to monitor;

- Interface with EO to assist in field interpretation of environmental requirements, provide advice regarding corrective actions and resolving non-compliance situations, and issue specific formal instructions to the CC workforce;
- Interface with CC manager to help communicate requirements, obtain a hands-on view of special problems so that implementation difficulties can be communicated to the EMO to aid in problem resolution especially in situations where adjustment of compliance requirements may be necessary;
- Communicate to EMO by:

  Interaction with EMO as needed to define corrective action recommendation for any identified non-compliance situation.
- Implementation for environmental controls and measures specified in the EMP, Sub-Plans.
- Ensuring measures to protect project staff health are implemented.

8. ENVIRONMENTAL MANAGEMENT, MONITORING AND BUDGET ALLOCATION

8.1 Water Quality Management Plan

Surface Water Quality Management, Ground Water Protection Plan and Ensure safe drinking water

Objective	To reduce discharge of wastes that impact water quality and to determine if additional implementation of management practices are necessary to improve and/or protect water quality. Ensure safe drinking water, which is essential for good health.
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	▪ Put a set of procedure for the stockpiling and removal of waste material (particularly liquid, solid and human waste) from project site; and establishing sewerage facilities on site; ▪ Regularly inspect the accumulated solid waste for periodic removal from site for proper waste treatment or disposal for recycling; ▪ Installation of proper waste water drainage outside work premises. ▪ Provide a rain water drainage system. Keep the drainage clean and clear on a regular basis; ▪ Chemically contaminated run-off should be intercepted and discharged where it will not leak to contaminate ground water. ▪ Provide proper facilities for drinking water near the work area; ▪ Ensure that there is always safe drinking water available and that the water cannot be contaminated by dust, chemicals, or dirt for example spread by insects.
Monitoring Plan	Monitor the waste water from the project area before discharging into the nearby water body. Monitor the solid waste from footwear production process and ensure that they are systematically disposed for recycling and environmental protection measures. Ensure safe drinking water adhering to National Environmental Quality Guidelines, 2015 for safe drinking water and waste water effluent.

Parameters for waste water and drinking water	▪ Turbidity, EC, Total hardness, Total dissolved Solids, Chloride, Sulfate, Calcium, Magnesium, BOD, COD, pH, Temperature, Ammonia for waste water; ▪ Physico-Chemical parameters (e.g. Turbidity, EC, Total hardness, Total dissolved Solids, pH, Temperature, Iron (as Fe), SO_4, Nitrates (as NO_3), Fluoride (F), etc. and Microbiological parameters (E-coli and total coliforms) for drinking water.
Location	One sample at outlet of Project Area (surface water), and one sample for drinking water
Frequency	Twice per year
Budget Allocation	100,000 Kyats / test (100,000 x 2 x 2 Kyats per Year) = 400,000 Ks
Responsibilities	Monitoring by EMP Organization or Third Party

8.2 Drainage Management Plan

Objective	To flow clean water outside the project area
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation Period
Management Action	Avoid removing and altering the natural features of the land as much as possible; Provide proper waste drainage outside work premises, provide a rain water drainage system, keep the drainage clean and clear on a regular basis; Periodically clear drainage, maintain channels to prevent seepage and reduce inefficiencies resulting from siltation and weeds, all access to channels for maintenance in design, application of effective litter prevention and control, implementation of secondary containment procedure that avoid accidental or intentional releases of contaminated containment fluids.
Monitoring Plan	Site supervision during operational period; once a week
Parameters	Good housekeeping and professional landscape and drainage design
Location	Site Project Area
Frequency	Weekly

Budget Allocation	500,000 Kyats/ year
Responsibilities	Monitoring by EMP Organization or Third Party

8.3 Air Quality Management Plan

Objective	To reduce the potential impacts of noise and dust; to reduce exposure to fine dust; to ensure clean physical environment; To monitor emissions from Project activities and establish measures to mitigate emissions from Project activities to meet air quality legislative requirements and to reduce the Project effects to reasonable levels.
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	The following are some mitigation measures : ▪ Implement rigorous daily housekeeping practice. Use water when cleaning. Take care not to spread dust; ▪ Clean properly at each workplace; avoid spreading of dust, especially from footwear grinding machines, skiving and cutting operations; ▪ Improve local exhaust ventilation at dust generating work station, in particular the footwear grinding work; Enclose or isolate footwear grinding or any other dust generating tasks; ▪ Reduce noise at the source by using properly designed, maintained, and adjusted tools or machines; ▪ Screen or isolate the noise source as much as possible; reduce noise reflection by raising the ceiling or using sound-absorbing materials, use relevant PPE (ear muffs / ear plugs) when necessary; ▪ Avoid burning of materials, vegetation or waste on site Odor management: ▪ Operators to use relevant PPE (Personal protective equipment) during operation and decommissioning phases; ▪ Keep glue / chemical containers covered. Avoid letting hazardous

	vapors escape around the workshop. Footwear Chemical management: ▪ Check all chemical containers are properly labelled and material safety data sheets are provided for all chemical products; ▪ Seek to use water-based chemicals instead of solvent-based ones. Introduce local exhaust ventilation. Keep containers covered; ▪ Change the work method in order to reduce direct handling of hazardous materials. Rotate work tasks; ▪ Provide workers with and use suitable protective clothing and gloves to avoid direct contact with hazardous materials. Dust Management Material handling has to be limited to as little as possible to prevent the generation of dust. Avoid spreading of dust.
Monitoring Plan	Monitoring of air quality at project site, and in general ventilation air, Air quality monitoring, including the occurrence of dust and possible air pollutants, will be carried out to establish the emissions associated with the site activities during Operation. Monitoring will occur on a yearly basis and results of the monitoring program will be recorded and reported annually. If adverse conditions are found in a particular area or process, adaptive management policies will be implemented.
Parameters	Nitrogen dioxide (NO_2), Ozone (O_3), Particulate Matter (PM_{10}), Particulate Matter ($PM_{2.5}$), Sulfur dioxide (SO2), Total Suspend Particulate (TSP), CO, Temp, Relative Humidity.

	NEQEG Noise Level Parameters Receptor / One hour LAeq (dBA)[a] Daytime 07:00 – 22:00 (10:00 - 22:00 for Public holidays) / Night Time 22:00 – 07:00 (22:00 - 10:00 for Public holidays) Residential, institutional, educational: 55 / 45 Industrial, commercial: 70 / 70 [a] Equivalent continuous sound level in decibels
Location	One sample is measured to cover the whole Project Area
Frequency	Once per year
Budget Allocation	1,500,000 Kyats x 1 / year = 1,500,000 Kyats / year
Responsibilities	Monitoring by EMP Organization or Third Party

8.4 Waste Management

Objective	Avoid exposure of waste to natural resources such as soil, air and water; due to waste produced from project site. Ensure proper waste management practices to enhance community well-being.
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	▪ Provide sufficient waste containers of adequate size. Establish a regular system for removing waste from the workplace; ▪ Specify clear responsibilities for waste disposal. The disposal of waste, dumping for solid waste produced from shoe making should be disposed periodically for recycling or municipal waste treatment plant and avoid waste-mountain outside the footwear workshop. ▪ Diversion and management of surface and waste water to minimize water pollution problems. Simple treatment to reduce the dis-charge of suspended solids may also be necessary.

Monitoring Plan	Collected and provided to a waste recycling facility when there is a sufficient quantity to warrant collection. Inspect solid and liquid waste disposal system on site (ensure segregation of waste: glue bins and waste-fabric separation, sewerage facilities functional) for safe environment.
Parameter	Waste generated at the Project is monitored on a weekly basis through waste disposal receipts.
Location	the whole Project Area
Frequency	Weekly
Budget Allocation	300,000 Kyats/ month {(3,600,000) Kyats/ Year}
Responsibilities	Monitoring by EMP Organization or Third Party

8.5 Traffic Management Plan

Objective	To ensure the safety of the traffic To prevent air pollution on transportation routes To have better services of traffic To Reduce disturbance and mortality related to roads and traffic
Legal Requirements	Social Security Law (2012)
Implementation Schedule	During Operation Phases
Management Action	To avoid traffic congestion in the project area, the speed of vehicles and the volume of loads will be limited by regulation. And regular checking on the capacity of trucks and drivers whether they will follow the rules and regulations or not. In addition, puddles and pits are frequently reclaimed and expand the truck routes.
Monitoring Plan	Designate specific roadways or provide alternate routes for light duty vehicles in high activity or congested areas. Adhere to all traffic rules, signals, speed limits and warnings. Design traffic patterns to reduce exposure to blindside hazards. Always ensure equipment is stopped in a safe area Always make eye contact or use hand signals before boarding equipment and again, wait for positive response.
Location	the whole Project Area

Frequency	Daily
Budget Allocation	500,000 Kyats (Lump sum per year)
Responsibilities	Monitoring by EMP Organization or Third Party

8.6 Community Engagement and Development Plan

Objective	To inform communities about footwear production activities, work schedules, potential health and safety issues and how to engage with the project for any grievances Community engagement plan, the following information will be conducted such as raising awareness campaign to local community to understand how they will get benefits developing the project in this areas and the best way to cooperate projects activities
Legal Requirements	Social Security Law (2012)
Implementation Schedule	During Operation Phases
Management Action	Community Engagement Community engagement can foster an open and meaningful dialogue that can not only help to build trust, respect and legitimacy for project operation, but also support effective decision making. This is because engagement can address community concerns, manage expectations, tap local knowledge and help negotiate a mutually beneficial future. In addition, show that where conflicts exist between the company and the local community, delays are common and there are often striking differences in perceptions between the company representatives and communities. Breakdowns in perception, communication and understanding are common. Community Development Employment: Communicate available opportunities at the Project in advance, so as to manage employment expectations; Employment of locals and an increase in salary earners; Maximize & monitor local recruitment Prevent nepotism/ corruption in local recruitment structures Promote the employment of women and youth

	The Company provided they meet the education and skills/experience criteria. The company will implement a multi-skill and entrepreneurship training program to all employees during working life to prepare them for work outside. Education: The company will seek to support schools in the neighborhood by addressing needy areas such as infrastructure development, offering a limited number of scholarships for exceptionally performing students/pupils as an incentive for hard work, sponsoring orphans and pupils from vulnerable families etc. Economic Development: Determine party responsible for relocation. For non-vulnerable households and individuals, negotiate a favorable outcome on a case-by-case basis. ***Health and Welfare*** Extensive HIV/ AIDS and other current health awareness campaign Cease construction activities before nightfall Clear identification of workers; prevention of loitering - Liaison with police Do not recruit laborers on-site.
Monitoring Plan	One of the most important aspects of stakeholder engagement is reporting and monitoring to measure progress and allow follow up. This can be done using meeting logs to report on formal meetings, informal meetings, telephone calls, visits of community members to the site or information office, emails or any other form of contact with the community. The meeting logs should also record the type of meeting, attendees/participants, date, issues and be supplemented by a commitment register, a meeting attendance register and an activity register, that lists the action points agreed to.
Location	Nearby Village or local community
Frequency	Regularly Monitoring and Annual Reporting
Budget Allocation	700,000 Kyats (Lump sum/year)
Responsibilities	Monitoring by EMP Organization or Third Party

8.7 Occupational Health and Safety

Objective	To reduce operation work-related deaths, injuries, and ill health
Legal Requirements	Social Security Law (2012) Employment and Skills Development Law (2013) The Occupational Explosive Material Law (June 2018)
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	Health and Safety of Population Lack of care or lack of information can cause accidents (e.g. traffic incidences, electrocution where they may suffer injury, and risk of fire hazard). Thus, people or workers under direct influence of project should be informed by project proponent or their appointed representative regarding appropriate security precautions for example: Using appropriate PPE (Personal Protective Equipment) during operation; Participation of training programs regarding adhering to emergency response procedures and activities; Abiding to good and standard practice and procedures for relevant machineries and equipment; and Monitoring of alarm system for emergency conditions. Occupational Health The manager must take effective steps to ensure the safety and health of the workplace. Workers should first be given training prior to the use of machinery / equipment for safety reasons and should report to relevant departments for accidental cases. Pre-employment and regular medical examinations shall be carried out on all plant employees. The Company will provide well-equipped sanitary facilities for its employees. Occupational Safety Minimum age of employment is 18 year of age (Children should not be working with footwear chemicals); - One day of rest per week - Limited working hours - Provision of clean water and medical facilities

	- Right of inspectors to survey safety and health Occupational Health and Safety Training The level of training that site personnel receive in emergency preparedness needs to be significantly increased. In particular emphasis should be placed on testing the whole emergency response system, especially under worst case scenarios such as night or weekend. Training shall consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site specific hazard or color coding in use shall be thoroughly reviewed as part of orientation training. Occupational Safety Wear  Area Signage Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors and the general public as appropriate.
Monitoring Plan	- Define the scope of the Management Plan including roles, responsibilities and time frame; - Prepare a list of potential community health, safety and security risks associated with the proposed Project - Discuss Project commitments, programs, operational procedures and guidance that respond to and mitigate the identified risks - Suggest monitoring and reporting procedures and identify Key Performance Indicators to measure the achievements of the proposed Project Commitments and Programs - Anticipate training requirements

Location	Direct Affected Area
Frequency	Regularly Monitoring and Quarterly Reporting
Budget Allocation	2,400,000 Kyats (Lump sum/year)
Responsibilities	Monitoring by EMP Organization or Third Party

8.8 Emergency and Rescue Plan

<table>
<tr><td>Objective</td><td>Ensure processes for requesting outside emergency support, notification of officials and incident documentation is clearly defined, communication tools are understood and the appropriate action is taken.
Ensure training is thorough and often with written instructions available in all areas to support immediate and effective response.</td></tr>
<tr><td>Legal Requirements</td><td>Natural Disaster Management Law (2013), National Fire Protection Agency (NFPA 58) standard</td></tr>
<tr><td>Implementation Schedule</td><td>During Operation Phase</td></tr>
<tr><td>Management Action</td><td>Emergency Contacts

EMO — Head
External Emergency Response Team (EERT) — Member
ESO (1 No.) — Member

<table>
<tr><th>Entity</th><th>Responsibilities</th></tr>
<tr><td>EMP Team (ERT)</td><td>Communicates / alerts the EERT.
Prepares the emergency site to facilitate the response action of the EERT, e.g., vacating, clearing, restricting site.
When necessary & requested by the EERT, lends support / provides assistance during EERT’s response operations</td></tr>
<tr><td>External Emergency Response Team (EERT)</td><td>Solves the emergency / incident</td></tr>
<tr><td>Resources</td><td>Provide and sustain the people, equipment, tools & funds necessary to ensure Project’s quick response to emergency situations.</td></tr>
</table>
</td></tr>
</table>

	Maintain good communication lines with the EERT to ensure prompt help response & adequate protection, by keeping them informed of Project progress.

Content

The most crucial aspect of the emergency system is the identification and communication of the emergency to the appropriate persons. Consequently, the names of the appropriate contact person together with their contact numbers would be prominently displayed around the facility. The contact details will be updated on a regular basis.

Each person's responsibility would be cleared with him/her beforehand and a copy of the emergency contingency plan would be distributed to each person, including the responsible and/or affected persons not associated with the Operator:

- Disaster management and firefighting agencies;
- Downstream water supply authorities
- Downstream users that could be affected in the case of an emergency such as local communities
- Relevant government authorities; and
- Approved professional person (engineer).

It must be ensured that operating and supervisory staff are familiar with the emergency plan, and that the content thereof is understood and familiar to them.

The emergency response plan will be updated as circumstances change or operating procedures are amended, and as a minimum in the event of:

- Any additional recommendations made by a professional engineer (annual safety inspections) or environmental auditors;
- Any change in operational procedures and/or management of the project activity;
- The identification of any issues of concern or additional risks as a result of regular inspections and/or monitoring results; and
- Any unplanned or unforeseen emergency situation.

Establish a planning team: Demonstrate management’s commitment to the project by appointing a competent team leader and authorizing the leader and the team he assembles to take the necessary steps to develop an emergency response plan. Management should provide the leader with expectations for deliverables and a deadline and budget, if required.

The team may elect to meet with municipal and provincial government agencies, first response organizations and others to obtain information. Meetings will also be held with other company personnel such as

	members, worker safety and health representatives, engineers, maintenance, human resources, purchasing and others. With management's directives and deadlines in mind, the team should also establish schedules and budget for their work and have these approved, if necessary. Training and competency: The level of training that project site personnel receive in emergency preparedness needs to be significantly increased. In particular emphasis should be placed on testing the whole emergency response system, especially under worst case scenarios such as night or weekend. There is an opportunity for providers of training in emergency management to develop courses for site personnel in emergency management for personnel other than for the major roles. This would generate a wider understanding of what happens in an emergency and what needs to happen in what order. Any whole of training in emergency management plans (EMP) should include the post incident analysis and investigation that may be required by the regulator. Documents to review: Health and safety policy Evacuation plan Fire protection and fire-fighting plans Security procedures Mutual aid agreements with other companies Risk management plan Records from previous incidents and drills Environmental policies Accident investigation records Records of past meetings with first responders (fire, police, medical, etc.) Identify hazards, estimate probability and assess potential impact on people, property and business. A good starting point is to create an inventory of emergencies which have or could have occurred in: Your facility The area adjacent to your facility The community The region Include the following if appropriate: Fire Chemical spills and leaks Hazardous materials Extreme weather Explosion

	Electrical emergency Water hazards and floods Mobile equipment Conveyor emergencies Confined space Widespread illness or pandemic Other(s) Take into account such factors as: Patterns of extreme weather such as freezing rain, drought, cyclones, excessive rain Proximity to flood plains, seismic faults, dams, water tables Proximity to companies which produce, use, store or transport dangerous goods The state of the roads leading to and from your facility – are they ever impassable due to heavy mist or reduced visibility – what is the local accident frequency? For isolated operations, the availability of emergency transportation such as ambulance or helicopter Typical employee drive time to and from work Identify emergency resources: More than listing telephone numbers in the emergency procedure, many companies maintain an active relationship with some or all emergency services, providing them with site plans, plant tours and notification when there are major changes to plant, process or materials. Many fire departments, for example, would welcome an opportunity to conduct a training session regarding footwear production work. Resources include but may not be limited to: Fire: may be full-time professional fire fighters; part-time volunteer departments; company employees trained and equipped to fight fires. Police: municipal or First National police forces SAR – Search and Rescue: teams of trained and equipped volunteers prepared to search for missing persons or respond to other types of emergencies Medical: provincial or local ambulance service; hospital; local doctor; air ambulance; company employees trained and equipped to provide first aid Municipal government, public works department: may provide assistance with situations involving water, sewer, or other services – may already have plans in place for large scale emergencies Electrical utility: Local municipal or regional electricity utility may provide assistance with situations involving overhead or underground power lines Telephone utility may be required to provide assistance with situations involving telephone or related service or telephone equipment Fuel supplier may be required to provide assistance with situations

	involving fuel, fuel storage or fuel transfer. Ministry of Labor may be consulted Ministry of the Environment: advice and assistance with situations involving release of materials into the air, water or ground. Review codes and regulations: Some emergency situations may be caused or complicated by failing to follow the dictates of one or more codes of practice. Legislation is in place to direct companies on procedures to follow and notification to be given in case of an emergency. Codes and regulations include but may not be limited to: ▪ National Fire Code: details fire prevention characteristics to be included in residential and commercial buildings as well as installation, testing and use of fire emergency systems , ▪ National Fire Protection Agency (NFPA 58) standard. Develop training programs: Everyone who works for the company requires some type of training. Even contractors and visitors may require some emergency response training and orientation. Training may include safety meetings, reviews of procedures, use of fire extinguishers, evacuation drills or full-scale disaster exercises. Some or all employees may be trained in fire preventive and emergency first aid training is already mandatory. Typically, a company will assign someone to be responsible for managing the emergency response training program. The training plan should speak to the following considerations: Who is to be trained Who will do the training; employees, contractors, community responders What training is required for all employees What training is required for specialist employees What training is required for contractors and their employees What orientation training is required for visitors How can members of the community first response teams be involved with the training programs How to evaluate training and re-training intervals The method of storing and the location of the training records Develop a communication strategy: Effective communication is essential to report emergencies to first response support teams, employees, neighboring businesses and residences, the community, news media and other interested parties such as employees' families and company customers. Even a temporary communication disruption can have a serious effect on the response process. An Emergency Response Organization Chart can play a major role in maintaining effective communication especially during a crisis.

	The first requirement is a means for alerting all personnel on the site to the emergency. A loud, open-air horn or siren may be effective for most people but operators inside cabs of mobile vehicles may not hear the warning especially if they have air conditioning running at the time. A general alert delivered on all working radio frequencies is effective. The system should be tested on a regularly-scheduled basis. Each employee participate in a fire drill at least once per year. Employees should know where to go when the alarm is sounded. Some notifications are required by law. A list of “Legislated Requirements for Incident Reporting” is included with this guideline as an addendum. Note that, in some cases, “immediate notification” is required. Someone on the emergency team should have responsibility for making reports as required by legislation. Dealing with the news media at the time of an emergency situation can present a special challenge. Experts recommend only one trained person be allowed to brief the media on behalf of the company. Media representatives should not be given free access to the job site. They must be provided with PPE and escorted at all times for their own safety. Where possible, information for media distribution should be printed and distributed as a press release. Write the plan: Every component of every emergency response plan requires the approval of some level of management. Plan development will proceed more smoothly and with fewer revisions if the approvals process and deadlines are established and understood beforehand. Not everyone is capable of writing clear, concise copy. Encourage everyone participating in the actual plan development to record information in point form. The project leader should assign the writing tasks to those who are most knowledgeable about sections of the content. Working from your lists of probable emergencies and resources available, develop an approach to deal with the situations. Include a step-by-step procedure, and state who is responsible for taking which actions. Implement the plan: There are several aspects to plan implementation: Management can indicate its “buy-in” to the plan by adding a launch covering letter signed and dated by the most senior manager for the site or operation The employee introduction to the emergency plan may take place through safety meetings, orientation meetings or specific training programs Emergency preparedness information from the plan may be distributed or promoted through posters, bulletin board showings and employee newsletters

	Supervisors should make a habit of asking employees what they would do if a fire (explosion, cyclone, etc.) occurred. Plan implementation should include a launch with police, fire, medical and other support services Emergency Training: One day of the week-long pre-production startup program will be devoted to refresher training in emergency procedures, fire-fighting and related programs. An emergency evacuation drill will be held at least once during production season. Fire Protection and Fire Fighting Plan: All employees will follow the procedure: In the event of a fire in equipment which has a built-in fire suppression system, (loaders, gen set) activate the system. If you discover a fire in its early stage, notify the office by radio then make the decision whether to fight it with a fire extinguisher – all employees should be familiar with extinguisher locations and how to use them – when in doubt evacuate. For any fire which cannot be fought with hand-held extinguishers, the local municipal fire department will be called – if required, an employee will be designated to lead the fire department to the scene of the fire using a company truck. The company has offered its property for fire fighter training purposes. Incident and Injury Plan: First aid kits are located at the site plant, gen set trailer and in each company vehicle. For minor injuries (scrapes, shallow cuts, etc.) all employees are authorized to use materials in any first aid kit but must make a note of the injury and materials used in the kit's log book. For any injury more serious than the above, call the office for assistance. Current-trained first-aiders will determine whether an injury can be treated on site, treated in hospital or requires an ambulance. Security Procedures: Only the main gate will be opened for vehicle access. All other gates at entries to the property will be closed and locked at all times. Report any damage to gates or perimeter fences Incoming customer trucks for pickup must stop at the office. Drivers are not allowed to leave the cabs of their vehicles at any time while on Company property. All other visitors are required to park near the office for check-in and check-out when leaving. All visiting vehicles must be accompanied by a Company vehicle when traveling on company property. Hard hats and safety glasses are available for visitors in the office. No explosives are stored on the company property. Interruption of Electrical Supply: Electrical systems in the office are

	designed to switch over to power supplied by our generators in the event of a failure of utility-supplied power. Emergency response and preparedness: If Accidents, injuries or health effects and natural disasters occur during the operation, must be prepared to act in a timely manner. In case of emergencies, the first-aid nurses in the workplace and the clinic staff will take charge; and patients will be treated and must be taken to the nearest hospital for a serious condition.
Monitoring Plan	There are several aspects to Monitoring plan: Management can indicate its "buy-in" to the plan by adding a launch covering letter signed and dated by the most senior manager for the site or operation The employee introduction to the emergency plan may take place through safety meetings, orientation meetings or specific training programs Emergency preparedness information from the plan may be distributed or promoted through posters, bulletin board showings and employee newsletters Supervisors should make a habit of asking employees what they would do if a fire (explosion, cyclone, etc.) occurred. Plan implementation should include a launch with police, fire, medical and other support services
Location	Direct Affected Area
Frequency	Regularly Monitoring and Quarterly Reporting
Budget Allocation	2,400,000 Kyats (Lump sum/year)
Responsibilities	Monitoring by EMP Organization or Third Party

8.9 Corporate Social Responsibility (CSR) and Funding

In the implementation of the CSR, the contribution made by society through the business activities and investment of the company has improved many years ago throughout the world. CSR is a social, environmental and an effect of various economic pressures.

Development Companies should also share some of the benefits of the business with the social, economic, education, health and environmental benefits of the local people and employees. By contributing these activities, it will facilitate better relations between the locals and the company. Therefore, the company should interview the people and the authorities from the local village and take care of their needs.

The project proponent shall use maximum 2% of annual net profit to be allocated as CSR fund starting from the project operation. It is basically suggested to be funded at around 10 lakh kyats. The amount should be contributed in factors tentatively as an example like; 350,000 kyats per year in education, 300,000 kyats per year in health care and 350,000 kyats per year in protection of environment.

8.10 Restoration and Replantation plan

(1) In the field, nursery garden shall be established seedlings for planting substitutes

(2) Measuring the area for planting suitable trees in the region with the guidance of the relevant township department of forestry.

(3) Planting seedlings in designated areas.

(4) Maintaining the water that comes from the production through the sewer pond for watering.

(5) Employment of a local day laborer to monitor the growth of the plant.

(6) As a daily laborer should be monitored and replaced of crop failure and other condition.

(7) The company will provide support to local daily laborers who will look after the trees.

Table 14: Annual Replantation Programme

No.	Year	Planned Green Area (m^2)	Project Area	Arable Area (m^2)	Total Seedlings
1	First	200	Native Perennial Trees / Floriculture	200	10
2	Second	200	Native Perennial Trees / Floriculture	200	10
3	Third	200	Native Perennial Trees / Floriculture	200	15
4	Fourth	200	Native Perennial Trees / Floriculture	200	15
Project's Total Planned Green Area = 10% of Project Area		800		800	

8.11 Environmental Monitoring Plan

For the Footwear production operation requires an adequate level of monitoring to ensure a safe and healthy environment.

It is important that the environmental works should be supervised and monitored at all times, in order to ensure that the greatest possible benefits are gained from the Environmental Management process. General guidelines are provided below, as to how the EMP can be managed and monitored.

The Consultant recommends that a person responsible for Environmental management at all works sites, should be seconded to the work program.

This person should have adequate experience in environmental management, and in dealing with relevant project works. This person would also have knowledge in monitoring social / occupational health issues, both on site and with adjacent areas, associated with footwear production work and protection of the environment.

8.11.1 Site Inspection and Audits

The contractor must develop appropriate protocols for regular site inspections and monitor compliance with environmental and social legislation and best practice, which includes World Bank safeguards standards. The project proponent personnel should participate in this process in the context of capacity building for environmental management.

Table 15: Environmental Monitoring Plan

Indicator	Location and Data Collection	Frequency	Parameters	Institution
Operation Phase				
Monitoring EMP Implementation				
1. Mitigation Measures 2. Enhancement Measures	Project Area (Direct Affected Area)	Daily monitoring and documenting, and Bi-Annual reporting		EMP Organization or Third Party
3. Surface Water, Drinking water	Two samples (wastewater and drinking water) are measured to cover the whole Project Area	Twice per year	▪ Turbidity, EC, Total hardness, Total dissolved Solids, Chloride, Sulfate, Calcium, Magnesium, BOD, COD, pH, Temperature, Ammonia for waste water; ▪ Physico-Chemical parameters (e.g. Turbidity, EC, Total hardness, Total dissolved Solids, pH, Temperature, Iron (as Fe), SO_4, Nitrates (as NO_3), Fluoride (F), etc. and Microbiological parameters (E-coli and total coliforms) for drinking water.	EMP Organization or Third Party
4. Drainage Management	Project Area (Direct Affected Area)	Daily	▪ Good housekeeping and professional landscape and drainage design	EMP Organization or Third Party
5. Air	One sample is measured to cover the whole Project Area	Yearly	▪ Nitrogen dioxide (NO_2), Ozone (O_3), Particulate Matter (PM_{10}), Particulate Matter ($PM_{2.5}$), Sulfur dioxide (SO2), Total Suspend Particulate (TSP), CO, Temp, Relative Humidity.	EMP Organization or Third Party
6. Noise and Vibration	One sample is measured to cover the whole Project Area	Yearly	NEQEG Noise Level Parameters	EMP Organization or Third Party

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<tr><td>Receptor</td><td colspan="2">One hour LAeq (dBA)[a]</td></tr>
<tr><td></td><td>Daytime 07:00 – 22:00 (10:00 - 22:00 for Public holidays)</td><td>Night Time 22:00 – 07:00 (22:00 - 10:00 for Public holidays)</td></tr>
<tr><td>Residential, institutional, educational</td><td>55</td><td>45</td></tr>
<tr><td>Industrial, commercial</td><td>70</td><td>70</td></tr>
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an Equivalent continuous sound level in decibels
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<tr><td>7. Waste Management</td><td>the whole Project Area</td><td>Weekly</td><td colspan="2">Waste generated at the Project is monitored on a monthly basis through waste disposal receipts</td><td>EMP Organization or Third Party</td></tr>
<tr><td>8. Traffic Management</td><td>Transportation Route</td><td>Daily</td><td colspan="2"></td><td>EMP Organization or Third Party</td></tr>
<tr><td>9. Community Engagement</td><td>Direct Effected Area and In-directed Affected Area</td><td>Regularly Monitoring and Quarterly Reporting</td><td colspan="2"></td><td>EMP Organization or Third Party</td></tr>
<tr><td>10. Occupational Health and Safety</td><td>Direct Effected Area</td><td>Regularly Monitoring and Quarterly Reporting</td><td colspan="2"></td><td>EMP Organization or Third Party</td></tr>
<tr><td>11. Emergency and Rescue Plan</td><td>Direct Effected Area</td><td>Regularly Monitoring and Quarterly Reporting</td><td colspan="2"></td><td>EMP Organization or Third Party</td></tr>
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8.12 EMP and Monitoring Cost

The estimated costs of developing a monitoring program are as follows:

Table 16: Estimated Environmental Management Plan and Monitoring Cost (Operational Phase)

Estimated Environmental Management and Monitoring Cost (Operational Phase)

Section	*Description of Monitoring Cost*	*Unit Cost (Ks)*	*Unit*	*Amount (Ks)*	*Note*
8.1	Water Quality Management Plan	100,000	2x2	400,000	Yearly
8.2	Drainage Management Plan	500,000	1	500,000	Yearly
8.3	Air Quality (including Noise) Management Plan	1,500,000	1	1,500,000	Yearly
8.4	Waste Management Plan	300,000	12	3,600,000	Yearly
8.5	Traffic Management Plan	500,000	1	500,000	Yearly
8.6	Community Engagement and Health Care Plan	700,000	1	700,000	Yearly
8.7	Occupational Health and Safety Plan	2,400,000	1	2,400,000	Yearly
8.8	Emergency Response Plan	2,400,000	1	2,400,000	Yearly
8.9	Corporate Social Responsibility Plan	1,000,000	1	1,000,000	Yearly
6.5	Salary for EMO and ESO (EMP Organization)	700,000	12	8,400,000	Yearly
810	Restoration and Replantation Programme	500,000	1	500,000	Yearly
Total Estimated Annual Budget for EMP and Monitoring (Kyats)				21,900,000	Kyats

Say 22,000,000 Kyats

Estimated Annual Budget Allocation for EMP and Monitoring is 22,000,000 Kyats (Twenty-Two Million Kyats only)

Note: If the project is beyond the current estimated cost, the necessary funds will be expanded. The Environmental Auditor is assumed to be from project proponent's office. However, if some of the works have already been in place, the EMP Budget may be duly budgeted accordingly by the EMO.

8.13 Summary KII (Key Informant Interview) Notes

KIIs (Key Informant Interviews) were carried out by the Consultant Team during the Social Survey work.

The summary notes from these interviews with different key stakeholders are as follows:

Table 17: Summary Notes from KII (Key Informant Interviews), Sept-Oct 2021

Item	Name of Key Informant / Stakeholder	Designation / Organization	Summary Notes
1	U Kyaw Zeya	Manager, Human Resources	Mountain Top Global Limited mostly produces Ladies footwear with CMP (Cutting-Making-Packing) procedure according to its ordered-footwear designs. ▪ Working Hours: Working time starts from 7:30 AM to 4:30 PM with 1 hour lunch-break. ▪ Salary Rate: start minimum 144,000 kyats to maximum 220,000 kyats. ▪ At present, we have 62 worker (labors) and 1 Chinese employee. ▪ The production process: is just cut, glue, and stitch; and produce the output product according to ordered footwear design. ▪ Dormitory: The foreign employee stay in the Factory and the local labors attend work from home. ▪ Water Supply: There are two deep well in our factory compound. Raw water from these wells are pumped into ground tanks and then stored in overhead tanks and then the water passes through the Reverse Osmosis water treatment plant and is distributed to the entire factory buildings and compound. ▪ The treated water is being tested for its physical-chemical and microbiological parameters for its drinkability. ▪ Staff Welfare: We have 62 staff, and those who live outside the factory come to work by their own initiatives. ▪ We don't have separate dining room for staff to eat our lunch during break-time at noon but we provide a place for lunch including dining tables and chairs. ▪ The staff brings their own meals from home. ▪ Currently we don't have ferry for 62 staffs but we will arrange it if there have more than 200 staffs.
2	Daw Thandar	Manager, Production Line	The quality of each step of the CMP process is controlled in each stage of the process. Process of CMP for footwear production: ▪ Raw Material Store: The fabric, cloth, leather

			are stored in the ground floor warehouse store of this factory building with temperature-control and fungus prevention; ▪ Cutting Section: a) The material for footwear production are cut / folded / thinned according to design measurements with different tools / machines; ▪ Sewing Section: Then the components are stitched and sewed to form a rough footwear nature. Then it is glued to its sole and heel. ▪ Shaping Section: The artificial foot (mould) is inserted into the rough shoe and heated, dried, pressed in successive conveyor-machines. Then the mould is dis-engaged from the shoe. Tissue / paper is inserted inside the shoe and then the finished shoe is stamped, fungus-prevent treated and boxed to be sent to the Packing Section. ▪ Glue Warehouse: The glue containers are stored in the Glue warehouse inside the compound. Safety instructions are posted for safe-handling and occupational health in the warehouse. ▪ The raw materials such as leather, fabric, cloth, glue (white/yellow/green) and relevant machinery/ equipment are imported from abroad. ▪ Solid Waste Management: Since our CMP process for production of footwear is a dry process, we have mostly solid waste generated from the cutting stage. These are all collected by our local contractors and sent for recycling work. However, the domestic waste are being collected by the local municipality for hygienic disposal.

3	U Kyaw Ko Ko Chit	Head, Labor Staff	▪ Project Staff: We have 62 staff and those who live outside the factory premises come to work from their homes. ▪ Health Clinic: There is a health clinic inside the compound, with a certified nurse in-charge to take care of our staff's health. ▪ Fire Fighting System: We have regular fire-fighting training administered to our staff. ▪ Electrical Supply: We have 2000 KVA transformer to run the factory. The electrical power source is from the national grid (33 KV cable) as our factory is located in the Watayar Industrial Zone area. ▪ Water Resources: Water from our well is pumped and stored in 12 Nos. x 11' x7' x7' rectangular ground tanks, after which is then treated by Reverse Osmosis treatment system. Then it is pumped to the overhead tanks (2000 lts x 4 nos. + 3000 lts steel tanks), and is being distributed to the entire factory by gravity flow. ▪ Drainage: We have masonry drainage constructed around the compound, which drains out its effluent into the Watayar Industrial Zone drainage system.

9. CONCLUSION AND RECOMMENDATION

Social Status: The proposed project land has no inhabitants living in the area and no resettlement issue identified since the project area lies in the Watayar Industrial Zone of Shwe Pyi Thar Township and has already settled all issues of land acquisition for implementation of the footwear production work by CMP process. The social survey was carried out in the environs of the project site during Sept-Oct 2021. It is observed that the people have no objection to the proposed project and they expect better operations of project to reduce the environmental and social impacts and having job opportunities for local people.

It is recommended that the project has to be operated according to Standing Law, Rules and Regulations of Country Government and relevant Government Departments and international standardized methods and procedures to prevent from potential impacts and risk caused by the proposed project. There will be job opportunities and capacity building for local people as the project proponent plans to train local youths to operate operation works.

Environmental Status: The proposed project site is already urbanized with human activities over the past many years. Therefore, only a few trees are observed during the baseline study during Aug-Sept 2020. And therefore, there is no sensitive or conservation worthy habitats in surrounding environ of the project area.

The project proponent is desirous to conserve the environment. The affirmation of project proponent regarding environment impact is that; we, the Mountain Top Global Limited shall be responsible for the protection as well as preservation of environment in and around the area of the project site. We shall be able to protect pollution of air, water and land and not to cause environment degradation. Our company takes necessary measures in order to fulfill environmental protection to keep the project site environment friendly by inclusion of replanting of trees program as describe in Chapter 8 of this EMP report. The project site grounds as well as the approach roads will have suitable shady side walks, flowering plants and trees and ever green arbors.

Waste generated from the CMP process is mainly from the cutting section and is being collected by the local contractors for recycling of waste products. For the domestic waste, the local municipality collects for safe disposal. However, the waste dumping site within the project premises should be monitored to preserve aesthetic beauty of the natural environment and enhance proper landscape of the locality.

All environmental impacts identified are capable of mitigation through a combination of adherence to relevant international design codes and an effective health safety and environment (HSE) policy by the operators.

Therefore, the Proposed Project need to start taking action complying with the basis of JICA or the World Bank Safe Guard Policies: Environmental Health and Safety Guidelines (EHS Guidelines) at website: www.ifc.org/ifcext/sustainability.nsf/Content/EnvironmentalGuidelines or other International Environmental Standards for Environmental and Social Considerations with conformity to The Environmental Conservation Law, July 2012 of the Republic of the Union of Myanmar and Rules Notification No. 50/2014 of MOECAF (Ministry of Environmental Conservation and Forestry) in order to fulfill the environmental objectives of the project proponent:

- To reduce carbon emission and hazardous materials through an initiative role of coping with climate change,
- To develop a green business for securing new growth engines,
- To reinforce an eco-friendly supply chain management (SCM) and green partnership, and
- To manage social responsibility and reinforce the stakeholders' network.

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APPENDICES

APPENDIX – A

ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်

Certificate of Incorporation

မောင်တိန် တော့ (ပ်) ဂလိုဘယ် လီမိတက်

MOUNTAIN TOP GLOBAL LIMITED

Company Registration No. 108145234

မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေ၂၀၁၇ အရ

မောင်တိန် တော့ (ပ်) ဂလိုဘယ် လီမိတက်

အား ၂၀၁၈ ခုနှစ် အောက်တိုဘာလ ၂၉ ရက်နေ့တွင်

အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ

အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့်ပြုလိုက်သည်။

This is to certify that

MOUNTAIN TOP GLOBAL LIMITED

was incorporated under the Myanmar Companies Law 2017 on 29 October 2018 as a Private Company Limited by Shares.

ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ

Registrar of Companies

ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန

Directorate of Investment and Company Administration

042379

The Government of The Republic of the Union of Myanmar
Ministry of Commerce
Department of Trade

CERTIFICATE OF EXPORTER/IMPORTER REGISTRATION

1. Enterprise Name (မြန်မာ/အင်္ဂလိပ်) MOUNTAIN TOP GLOBAL LIMITED.

2. Registration No: 108145234 (15-02-19)

3. Registration Term: FIVE YEAR

4. Start Date : 15-02-2019

5. End Date : 14-02-2024

6. Address : (မြန်မာ/အင်္ဂလိပ်) Plot No.176,Block No.49, Wartayar, Shwe Pyi Thar Township, Yangon Region,Myanmar

7. Business Registration No : 108145234

8. Type of Business : (မြန်မာ/အင်္ဂလိပ်)
- ☐ Sole Proprietorship(တစ်ဦးတည်းပိုင်)
- ☑ Partnership(အစုအစပ်)
- ☑ Limited Company(လီမိတက်ကုမ္ပဏီ)(Myanmar/~~Foreign~~)
- ☐ Co-operative Society(သမဝါယမအသင်း)
- ☐ Others(Please specify)အခြား(ဖော်ပြရန်) သင်းဖွဲ့မှတ်တမ်းပါလုပ်ငန်း( )မျိုး ဆောင်ရွက်ခွင့်ရှိသည်။

9. Type of Service : ◉ New ○ Extension ☑ Amendment

10. Contact No :

09-892962700, 09-765380539		thithihan86@gmail.com
Telephone No.	Fax No.	e-mail

11. Remarks :
YRIC Endorsement No.YGN-148/2019 Date (7-2-2019)

12. Terms and Conditions : စည်းကမ်းချက်များ

I hereby register the above mentioned enterprise as Exporter/Importer subject to the following terms and conditions: (အောက်ဖော်ပြပါစည်းကမ်းချက်များဖြင့် ပို့ကုန်သွင်းကုန် လုပ်ငန်းရှင်အဖြစ် မှတ်တမ်းတင်ခွင့်ပြုသည်)

(a) Line of goods permitted - all items except prohibited and restricted items.
ခွင့်ပြုသည့်ကုန်ပစ္စည်းအမျိုးအမည် - တားမြစ်ကန့်သတ်ထားသော ကုန်ပစ္စည်းအမယ်များမှလွဲ၍ ကျန်ကုန်ပစ္စည်းများအားလုံး

(b) The enterprise must abide by the Export/Import rules and Regulations prescribed for the registered Exporters/Importers.(လုပ်ငန်းရှင်သည် မှတ်ပုံတင် ပို့ကုန်သွင်းကုန်လုပ်ငန်းလုပ်ကိုင်သူများ လိုက်နာရမည့်စည်းကမ်းချက်များကို လိုက်နာရမည်)

Stamp

5.2.2019

For Director General
(ဒိုင်ရိုက်တာဦးစီးအရာရှိ)

5.7.20

EIREG02198EIREGEX12130012

လုပ်ငန်းရည်ရွယ်ချက်များမှာ

စီအမ်ပီစနစ်ဖြင့် ဖိနပ်အမျိုးမျိုးထုတ်လုပ်ခြင်း **လုပ်ငန်း**

Form (5-B)

THE REPUBLIC OF THE UNION OF MYANMAR
YANGON REGION INVESTMENT COMMITTEE
ENDORSEMENT

No. 094-9
Date 7.2.2019

Endorsement No. YGN –148/2019 Date 7 February 2019

This endorsement is issued by Yangon Region Investment Committee according to the section 25, sub-section (d) of the Myanmar Investment Law-

(1) Name of Investor MR.YANG CHIH-CHIANG

(2) Citizenship TAIWAN

(3) Residence Address NO. 52, THIN SHAN SQUARE ROAD, HOUJIE TOWN, DONGGUAN, GUANGDONG , TAIWAN , REPUBLIC OF CHINA.

(4) Name and Address of Principle Organization MOUNTAIN TOP GLOBAL LIMITED, LE SANALELE COMLEX, GROUND FLOOR, VAEA STREET, SALEUFI APIA, SAMOA AND TOP CHINA ENTERPRISE CORP, VISTRA CORPORATE SERVICES CENTRE, GROUND FLOOR NPF BUILDING, BEACH ROAD, APIA, SAMOA.

(5) Place of Incorporation SAMOA

(6) Type of business MANUFACTURING OF ALL KINDS OF FOOTWEAR PRODUCTS ON CMP BASIS

(7) Place(s) of investment Project PLOT NO. (176), BLOCK NO. (49) WARTAYAR , SHWE PYI THAR TOWNSHIP, YANGON REGION

(8) Amount of Foreign Capital US$ 2.922 MILLION

(9) Period for Foreign Capital to be brought in WITHIN ONE YEAR FROM THE DATE OF ISSUANCE OF ENDORSEMENT

(10) Total Amount of Capital (Kyat) EQUIVALENT IN KYAT OF US$ 2.922 MILLION

(11) Construction/ Preparation Period ONE YEAR

(12) Validity of Endorsement 30 YEARS

(13) Form of Investment WHOLLY FOREIGN OWNED

(14) Name of Company Incorporated in Myanmar MOUNTAIN TOP GLOBAL LIMITED

YRIC1482019

7/2/2019

(Phyo Min Thein)
Chairman

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
ရန်ကုန်တိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ
အတည်ပြုမိန့်

အတည်ပြုမိန့်အမှတ် ရကတ-၁၄၈ /၂၀၁၉ ၂၀၁၉ ခုနှစ် ဖေဖော်ဝါရီလ ၇ ရက်

ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှု ကော်မတီသည် မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ဥပဒေ ပုဒ်မ-၂၅ ပုဒ်မခွဲ (ဃ) အရ ဤအတည်ပြုမိန့်ကိုထုတ်ပေးလိုက်သည် -

(၁) ရင်းနှီးမြှုပ်နှံသူအမည် MR.YANG CHIH-CHIANG

(၂) နိုင်ငံသား TAIWAN

(၃) နေရပ်လိပ်စာ NO.52, THIN SHAN SQUARE ROAD, HOUJIE TOWN, DONGGUAN, GUANGDONG , TAIWAN , REPUBLIC OF CHINA.

(၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ MOUNTAIN TOP GLOBAL LIMITED, LE SANALELE COMLEX, GROUND FLOOR, VAEA STREET, SALEUFI APIA, SAMOA AND TOP CHINA ENTERPRISE CORP, VISTRA CORPORATE SERVICES CENTRE, GROUND FLOOR NPF BUILDING, BEACH ROAD, APIA, SAMOA.

(၅) ဖွဲ့စည်းရာအရပ် SAMOA

(၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား CMP စနစ်ဖြင့် ဖိနပ် အမျိုးမျိုး ထုတ်လုပ်ခြင်း လုပ်ငန်း

(၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ) မြေကွက်အမှတ် (၁၇၆)၊ မြေတိုင်းရပ်ကွက် အမှတ် (၄၉) ဝါးတရာ၊ ရွှေပြည်သာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး

(၈) နိုင်ငံခြားမတည်ငွေရင်း ပမာဏ အမေရိကန်ဒေါ်လာ ၂.၉၂၂ သန်း

(၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ အတည်ပြုမိန့် ရရှိသည့် နေ့မှ ၁ နှစ်အတွင်း

(၁၀) စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်) အမေရိကန်ဒေါ်လာ ၂.၉၂၂ သန်း နှင့် ညီမျှသော မြန်မာကျပ်ငွေ

(၁၁) တည်ဆောက်မှု/ ပြင်ဆင်မှုကာလ ၁ နှစ်

(၁၂) အတည်ပြုမိန့်သက်တမ်း ၃၀ နှစ်

(၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ရာခိုင်နှုန်းပြည့် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု

(၁၄) မြန်မာနိုင်ငံတွင် ဖွဲ့စည်းမည့် ကုမ္ပဏီအမည် MOUNTAIN TOP GLOBAL LIMITED

YRIC1482019

ဖြိုးမင်းသိန်း
ဥက္ကဋ္ဌ

DIRECTORATE OF INVESTMENT AND COMPANY ADMINISTRATION

Myanmar Companies Online Registry - Company Extract

Company Name (English)
MOUNTAIN TOP GLOBAL LIMITED

Company Name (Myanmar)
မောင်တိန် တော့ (ပ်) ဂလိုဘယ် လီမိတက်

Company Information

Registration Number	**Registration Date**	**Status**
108145234	29/10/2018	Registered
Company Type	**Foreign Company**	**Small Company**
Private Company Limited by Shares	Yes	-
Principal Activity	**Date of Last Annual Return**	**Previous Registration Number**
-	-	-

Addresses

Registered Office In Union	Wartayar, Plot No.176,Block No.49 Shwe Pyi Thar Township Yangon, Myanmar

Officers

Name:	CHANG,MEI-HUI	Type:	Director
Date of Appointment:	29/10/2018	Date of Birth:	16/07/1970
Nationality:	Taiwan	N.R.C./Passport:	305825335
Gender:	Female	Business Occupation:	Managing Director
Name:	YANG,CHIH-CHIANG	Type:	Director
Date of Appointment:	29/10/2018	Date of Birth:	02/10/1975
Nationality:	Taiwan	N.R.C./Passport:	306372991
Gender:	Male	Business Occupation:	Director
Name:	YANG,LONG-WU	Type:	Director
Date of Appointment:	29/10/2018	Date of Birth:	21/04/1961
Nationality:	Taiwan	N.R.C./Passport:	305825336
Gender:	Male	Business Occupation:	Director

Ultimate Holding Company

Name of Ultimate Holding Company	**Jurisdiction of Incorporation**	**Registration Number**
-	-	-

Share Capital Structure

Total Shares Issued by Company	**Currency of Share Capital**
20,000	USD

EXTRACT GENERATED ON 21/08/2019 AT 14:56

Myanmar Companies Online Registry - Company Extract

Company Name (English)
MOUNTAIN TOP GLOBAL LIMITED

Company Name (Myanmar)
မောင်တိန် တော့ (ပ်) ဂလိုဘယ် လီမိတက်

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	20,000	2,000,000.00	0.00

Members

Name of Company: MOUNTAIN TOP GLOBAL LIMITED
Registration Number: 78657 Jurisdiction of Incorporation: Samoa

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	8,000	800,000.00	0.00

Name of Company: TOP CHINA ENTERPRISE CORP
Registration Number: 35678 Jurisdiction of Incorporation: Samoa

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	4,000	400,000.00	0.00

Name: YANG , LONG - WU
Gender: Male Date of Birth: 21/04/1961
Nationality: Taiwan N.R.C./Passport: 305825336

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	8,000	800,000.00	0.00

Mortgages and Charges

Form / Filing Type	Effective Date

No records available

Details about all mortgages and charges can be accessed from the Company Profile Filing History at no charge.

Filing History

Form / Filing Type	Effective Date
C-3 | Change to share capital or register of members	15/08/2019
A-1 | Application for incorporation as a private company limited by shares	29/10/2018

DITECTORATE OF INVESTMENT AND COMPANY ADMINISTRATION

Myanmar Companies Online (MyCo)

HOME MYCOGUIDES COMPANYSEARCHHELP LOGOUT WELCOME, MOUNTAIN TOP GLOBAL LIMITED

COMPANY PROFILE

NEWFILING | ORDERDOCUMENTS | PRINT CERTIFICATE

Company Name (English)	Company Name (Myanmar)	Registration Number	RegistrationDate
MOUNTAING TOP GOLBAL LIMITED	မောင်တိန်တော့(ပ်)ဂလိုဘယ် လီမိတက်	108145234	29/10/2018

Company Type	Status	Foreign Company	Small Company
Private Company Limited by Shares	Registered	Yes	-

FILING HISTORY | ADDRESSES | OFFICERS | SHAREHOLDINGS | COMPANY AUTHORITY | MEMBERS | DOCUMENTS

Name	Type	Nationality	N.R.C. (For Myanmar Citizens)	Effective Date
YANG LONG WU	Director	Taiwan	305825336	29/10/2018
YANG CHIH CHIANG	Director	Taiwan	306372991	29/10/2018
CHANG MEI HUI	Director	Taiwan	305825335	29/10/2018

APPENDIX – B

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

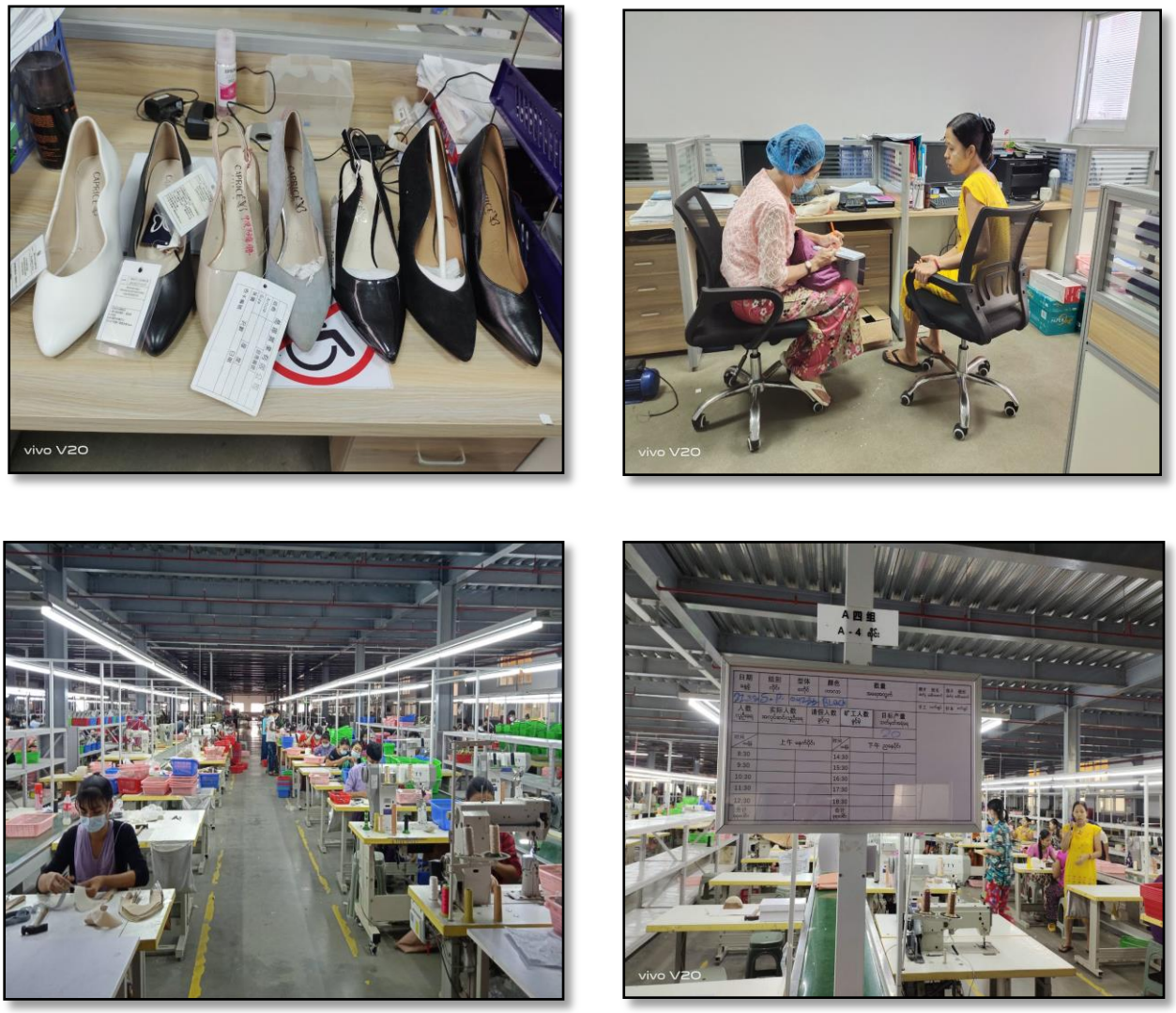


Figure 1: Factory Interior

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

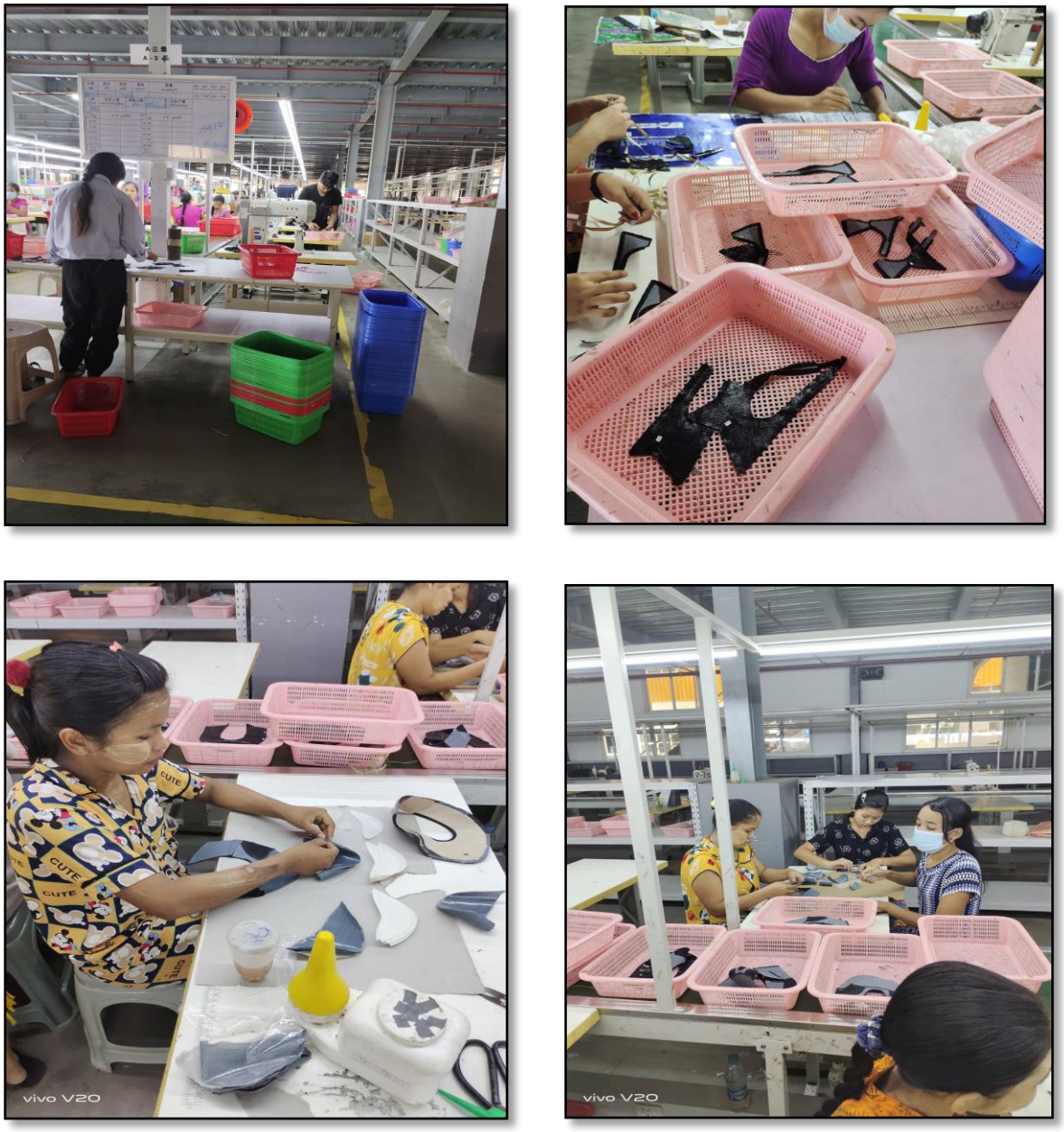


Figure 2 : Footwears Production

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

Figure 3: Fire Safety Equipments

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

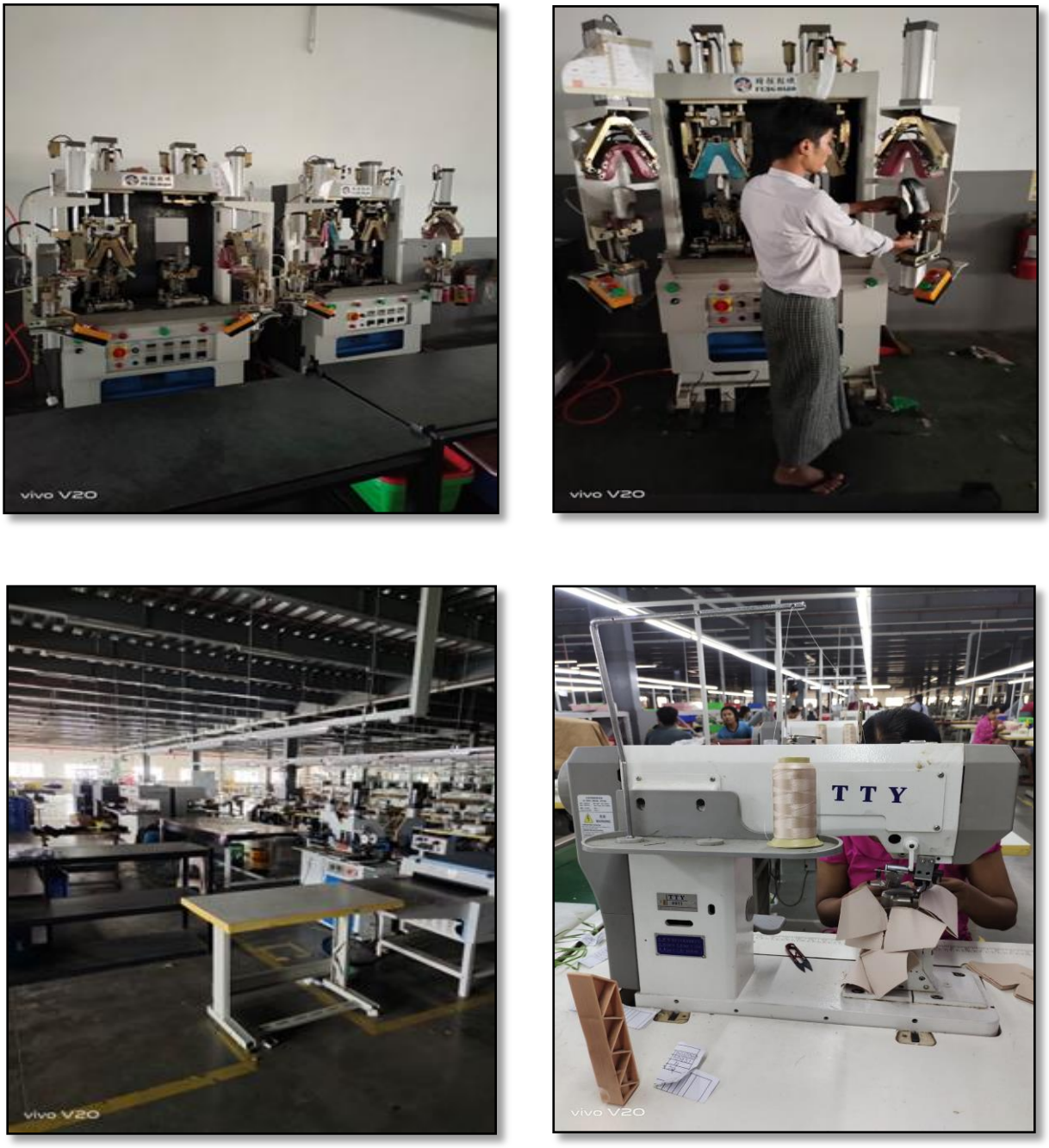


Figure 4: Machine Control

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

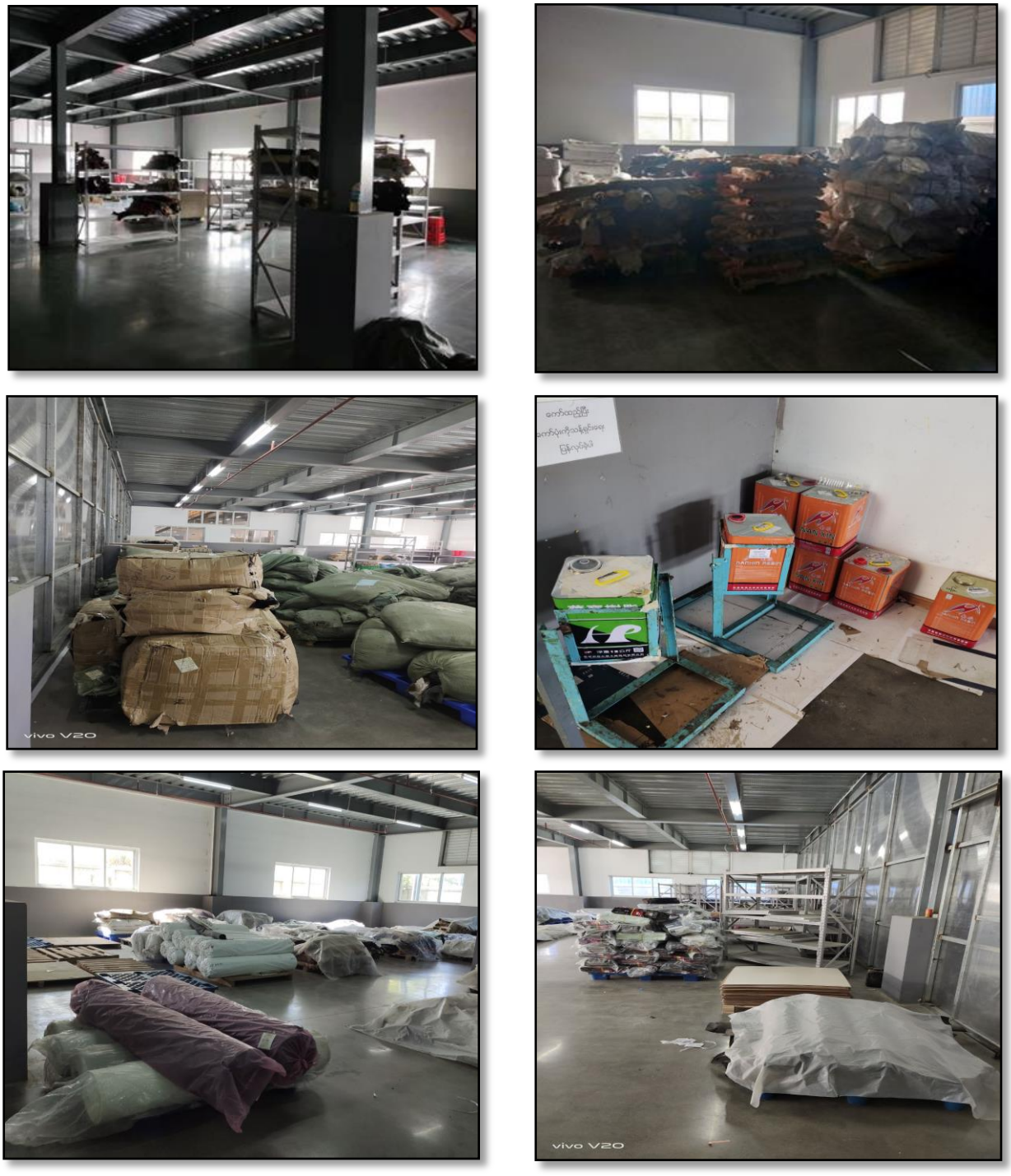


Figure 5: Storage Control

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

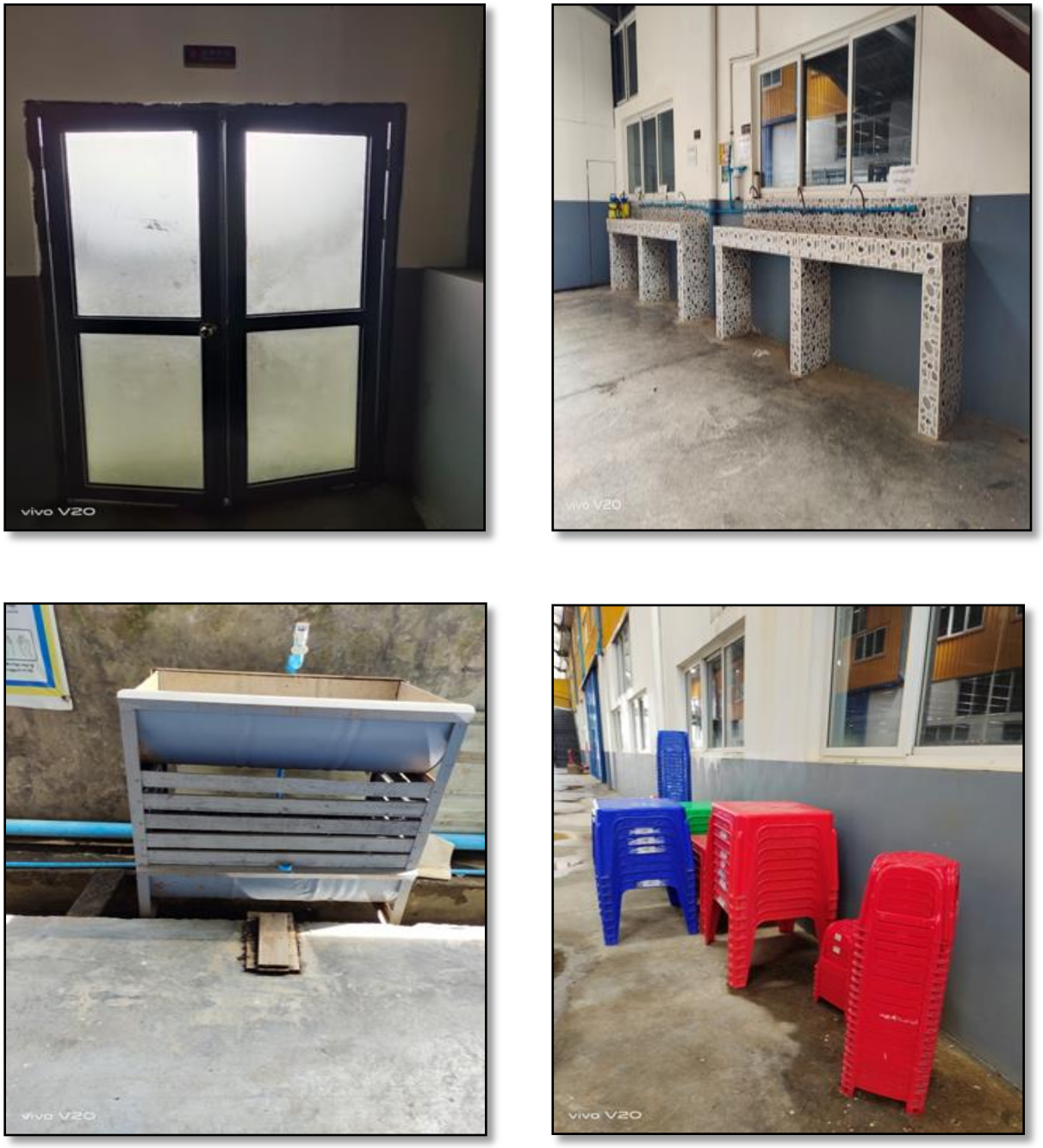


Figure 6: Personal Hygience (Toilet, Hand wash Basin, Canteen)

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

Figure 7: Private Locker for Staffs

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

Figure 8:Water Supply (Deep Well) with R.O Water Treatment System

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

Figure 9: Electric Supply

Photo Records of Footwear Manufacturing Factory Project, Watayar Industrial Zone, Shwe Pyi Thar Township, Yangon Region

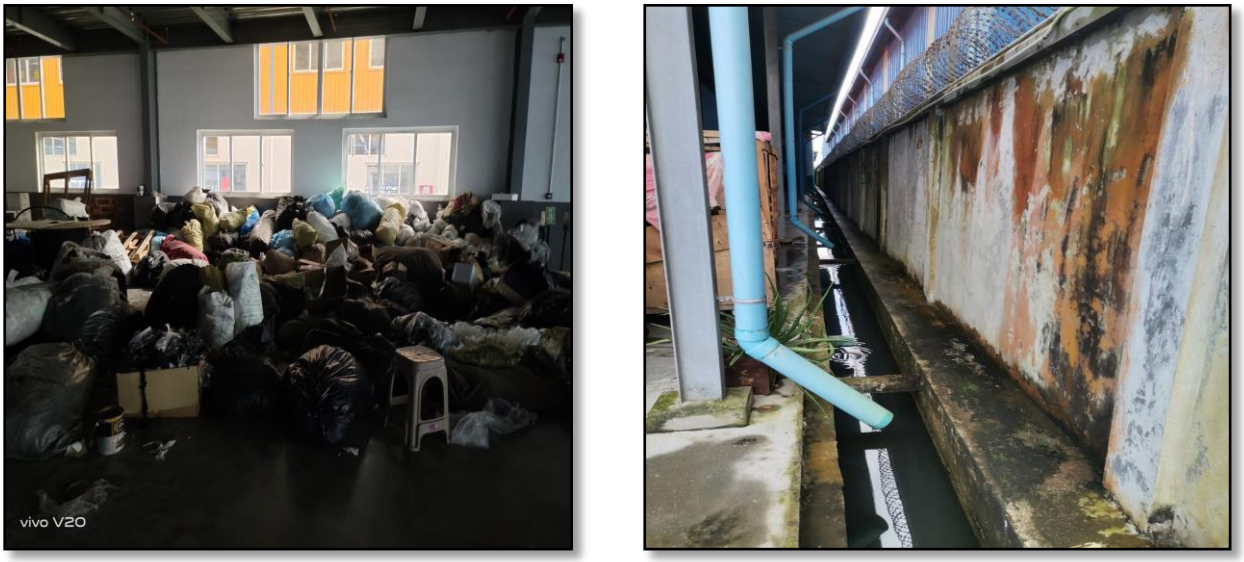


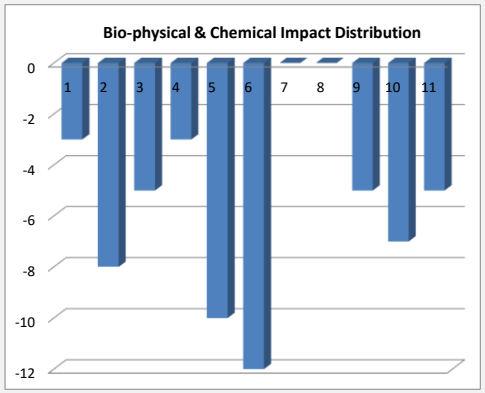
Figure 10: Factory Waste and Wastewater

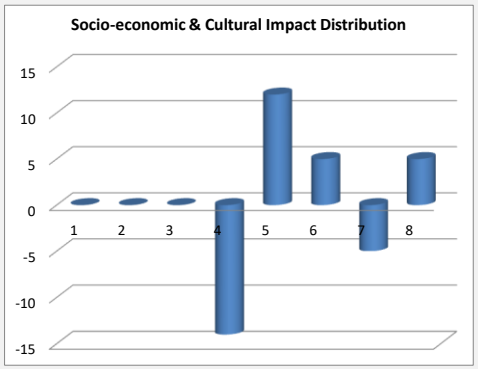
APPENDIX – C

Impact Assessment Matrix for Footwear Production Factory Project CMP

INSTALLATION PHASE IMPACTS for Environmental and Social Impact Assessment of Mountain Top Footwear Production Project, Shwe Pyi Thar Township

		Green for positive impact	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3		
Ref.	**Impact/Issue**	**Comment/Description of Impact**	**Extent**	**Duration**	**Magnitude/ Intensity**	**Probability**	**Significance**	Cumulative Score (default negative)
Bio-Physical & Chemical								
BPC/1	Changes in surface water quality	Installation of machines and electrical equipment for footwear production affects the surface water quality	1	1	1	1	**low**	-3
BPC/2	Changes in groundwater quality	Risk of disturbance to underground water resources due to installation of machines	1	1	2	2	**low**	-8
BPC/3	Changes to drainage patterns	Alteration of the natural drainage system due to installation of machines	1	2	1	2	**low**	-5
BPC/4	Changes in rates of erosion and siltation	Significant erosion and siltation due to installation of machinery (nearby channels)	1	1	1	1	**low**	-3
BPC/5	Changes to air quality	Air quaility will be changed because of dust, particulate matter during installation works	1	2	2	2	**medium**	-10
BPC/6	Changes to ambient noise levels	Noise levels will be significant during installation disturbing the biota in the environment	2	2	2	2	**medium**	-12
BPC/7	Changes to aquatic biota	No Change in aquatic biota due to installation works	0	0	0	0	**low**	0
BPC/8	Changes to terrestrial biota	No Significant changes expected in terrestrial biota and habitation due to installation of machines for project	0	0	0	0	**low**	0
BPC/9	Changes to disease vector populations	Health risk to labours during installation period (dust / noise)	1	2	1	2	**low**	-5
BPC/10	Changes to land cover	No significant changes in land cover due to installation works	2	3	1	2	**low**	-7
BPC/11	Changes to areas of natural habitat	Due to the changes in vegetation in land and water, natural habitat may change to a certain extent	1	2	1	2	**low**	-5
Socio-Economic & Cultural								
SEC/1	Changes involving loss of private assets	No significant private asset disburbed due to installation works	0	0	0	0	**low**	0
SEC/2	Changes involving loss of cultural heritage	No significant cultural heritage at proposed project area	0	0	0	0	**low**	0
SEC/3	Changes involving displacement of people	No displacement of inhabitants.	0	0	0	0	**low**	0
SEC/4	Changes to local traffic patterns	Installation of machines for manufacturing of electrical equipment may change traffic pattern to a certain extent.	2	3	2	2	**medium**	-14
SEC/5	Changes in local wage labour incomes/livelihood opportunities	Labours are employed.	2	2	2	2	**medium**	12
SEC/6	Changes in local trade/commercial incomes/opportunities	No significant local trade / commercial incomes during construction phase.	1	2	1	2	**low**	5
SEC/7	Changes in visual amenity	No significant amenity to vision during installation period; garbage appears instead of natural beauty of landscape.	1	2	1	2	**low**	-5
SEC/8	Changes to public infrastructure/community resources	Change in infrastructure due to installation works	1	2	1	2	**low**	5

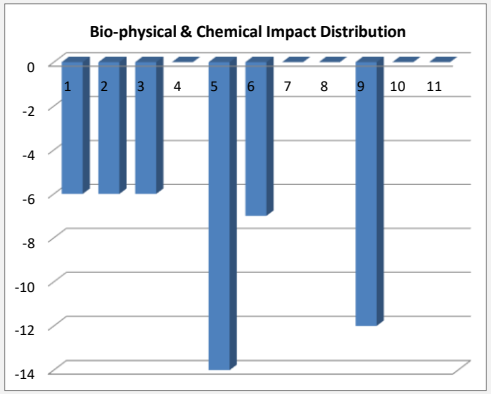


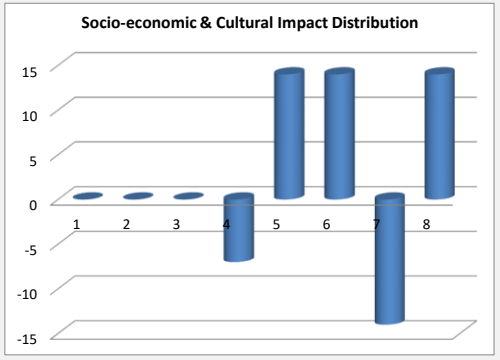


Impact Assessment Matrix for Footwear Production Factory Project CMP

OPERATIONAL PHASE IMPACTS for Environmental and Social Impact Assessment of Mountain Top Footwear Production Project, Shwe Pyi Thar Township

		Green for positive impact	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3		
Ref.	**Impact/Issue**	**Comment/Description of Impact**	**Extent**	**Duration**	**Magnitude/ Intensity**	**Probability**	**Significance**	Cumulative Score (default negative)
Bio-Physical & Chemical								
BPC/1	Changes in surface water quality	Risk of changes in water quality to nearby water body	1	3	1	2	**low**	-6
BPC/2	Changes in groundwater quality	No significant potential polllution to ground water sources	1	3	1	2	**low**	-6
BPC/3	Changes to drainage patterns	Changes to drainage pattern due to operation of factory	1	3	1	2	**low**	-6
BPC/4	Changes in rates of erosion and siltation	Risk of soil erosion and siltation (nearby channels)	0	0	0	0	**low**	0
BPC/5	Changes to air quality	Potential gas emission from CMP process for footwear production	2	3	2	2	**medium**	-14
BPC/6	Changes to ambient noise levels	Significant changes in noise level due to operation of machines and equipment	2	3	1	2	**low**	-7
BPC/7	Changes to aquatic biota	Soil erossion, sedimentation and siltation to nearby Creek	0	0	0	0	**low**	0
BPC/8	Changes to terrestrial biota	No significant changes in terrestrial biota	0	0	0	0	**low**	0
BPC/9	Changes to disease vector populations	Significant occupational health risk to factory staff (noise/ air)	1	3	2	2	**medium**	-12
BPC/10	Changes to land cover	No further land cover change during operational phase of manufacturing of electrical equipment	0	0	0	0	**low**	0
BPC/11	Changes to areas of natural habitat	No further significant impacts on natural habitat in project area	0	0	0	0	**low**	0
Socio-Economic & Cultural								
SEC/1	Changes involving loss of private assets	No potential impact	0	0	0	0	**low**	0
SEC/2	Changes involving loss of cultural heritage	No impact in operational phase.	0	0	0	0	**low**	0
SEC/3	Changes involving displacement of people	No potential social impact	0	0	0	0	**low**	0
SEC/4	Changes to local traffic patterns	Potential changes in traffic patterns due to transport vehicles	2	3	1	2	**low**	-7
SEC/5	Changes in local wage labour incomes/livelihood opportunities	Possibility of Increased income and livelihood opportunities due to the project.	2	3	2	2	**medium**	14
SEC/6	Changes in local trade/commercial incomes/opportunities	Possibility of Increased income and livelihood opportunities due to the project.	2	3	2	2	**medium**	14
SEC/7	Changes in visual amenity	Enhanced infrastructure appears with natural landscape.	2	3	2	2	**medium**	-14
SEC/8	Changes to public infrastructure/community resources	Expected infrastructure development	2	3	2	2	**medium**	14





Impact Assessment Matrix for Footwear Production Factory Project CMP

Guidance for Use				
Score	**Extent**	**Duration**	**Magnitude**	**Probability**
1	On site: Within the works/site area or immediate surroundings	Short: The impact is	Low: No environmental functions and processes are altered	Low
		short term (0- 12 months) or intermittent	No or minimal change to socio-economic condition	
2	Locally: Effects measurable/noticeable outside the works area and immediate surroundings	Medium: Medium term (1-2 years - construction phase)	Medium: Natural ecosystems are modified	Medium
			Changes are experienced to socio-economic condition	
3	Beyond: The activity has impact outside the project area	Long: the impact persists beyond the construction phase for years or the operational life of the project	High: Environmental functions altered	High
			Socio-economic conditions highly modified	
			Effects may be permanent or irreversible.	

APPENDIX – D

MOUTAIN TOP GLOBAL LIMITED

MACHINE LIST

Sr. No	DESCRIPTION OF GOOD	Quantity	
1	BRAND NEW SEWING MACHINES FOR FOOTWEAR SINGLE NEEDLE DRIVE ROLLER	84	U
2	BRAND NEW SEWING MACHINES FOR FOOTWEAR DOUBLE NEEDLE DRIVE ROLLER	6	U
3	BRAND NEW SEWING MACHINES FOR FOOTWEAR SINGLE NEEDLE POST-BED DIRECT DRIVE	24	U
4	BRAND NEW SEWING MACHINES FOR FOOTWEAR DOUBLE NEEDLE POST-BED DIRECT	12	U
5	BRAND NEW SEWING MACHINES FOR FOOTWEAR TTY-801 SKIVING MACHINE	24	U
6	BRAND NEW SEWING MACHINE FOR FOOTWEAR LOCKSTITCHT ZIGZAG	12	U
7	BRAND NEW SEWING MACHINES FOR FOOTWEAR LINING TRIMMING MACHINE	12	
8	BRAND NEW SEWING MACHINES FOR FOOTWEAR TTY-310 FLATTENING & HAMMERING	12	U
9	BRAND NEW SEWING MACHINES FOR FOOTWEAR TTY-513A SINGLE NEEDLE FEED LOCK-STITCH	12	U
10	BRAND NEW SEWING MACHINES FOR FOOTWEAR TTY-25 SEAM OPENING &TAPE	2	
11	BRAND NEW SEWING MACHINES FOR FOOTWEAR TTY-25 RF COMPUTER CONTROL	4	U
12	BRAND NEW SEWING MACHINES FOR FOOTWEAR TTY -787 INTELLIGENTIZED AUTOMATIC EDGE FOLDER MACHINE	2	U
13	BRAND NEW SEWING MACHINES FOR FOOTWEAR TTY-839 MIDDLE BOTTOM SEWING	2	U
14	BRAND NEW SEWING MACHINES FOR FOOTWEAR HAND TABLE	186	U
15	BRAND NEW SEWING MACHINES FOR FOOTWEAR MAUAL ROUGHING MACHINE DUST	1	U
16	BRAND NEW SEWING MACHINES FOR FOOTWEAR CLEANER FRFQUENCY CONVERSION	6	U
17	BRAND NEW SEWING MACHINES FOR FOOTWEAR LAST MACHINE	2	U
18	BRAND NEW SEWING MACHINES FOR FOOTWEAR LACQUER TABLE	4	U
19	BRAND NEW SEWING MACHINES FOR FOOTWEAR HYDRAULIC SEWING ARM CUTTING	14	U
20	BRAND NEW SEWING MACHINES FOR FOOTWEAR HYDRAULIC PLANE CUTTING MACHINE	14	U
21	BRAND NEW SEWING MACHINES FOR FOOTWEAR ENDGE GRINDING MACHINE	16	U
22	BRAND NEW SEWING MACHINES FOR FOOTWEAR HYDRAULIC AUTOMATIC UPPER MOULDING MACHINE	4	U

23	BRAND NEW SEWING MACHINES FOR FOOTWEAR AIE PRESSURE AUTOMATIC UPPER MOULSINF MACHINE	2	U
24	BRAND NEW SEWING MACHINES FOR FOOTWEAR UPPER ATTACHING MACHINE	4	U
25	BRAND NEW SEWING MACHINES FOR FOOTWEAR NEEDLE CONVEYOR (22M)	2	U
26	BRAND NEW MACHINES FOR FOOTWEAR NEEDLE CONVEYOR(18 M)	6	U
27	BRAND NEW SEWING MACHINES FOR FOOTWEAR BUCKLE MACHNE	2	U
28	BRAND NEW SEWING MACHINES FOR FOOTWEAR DEHUMIDIFICATION MACHINE	6	U
29	BRAND NEW SEWING MACHINES FOR FOOTWEAR WHITE GLUE MACHINE	1	U
30	BRAND NEW SEWING MACHINES FOR FOOTWEAR YELOW GLUE MACHINE	6	U
31	BRAND NEW SEWING MACHINES FOR FOOTWEAR BRONZING MACHINE	4	U
32	BRAND NEW SEWING MACHINES FOR FOOTWEAR DRYING MACHINE	20	U
33	BRAND NEW SEWING MACHINE FOR FOOTWEAR FLOATING BOTTOM SCRIBING	2	U
34	BRAND NEW SEWING MACHINES FOR FOOTWEAR BOTTOM GROOVING MACHINE	1	U
35	BRAND NEW SEWING MACHINES FOR FOOTWEAR DOUBLE ENDED TAIL DRAWING	2	U
36	BRAND NEW SEWING MACHINES FOR FOOTWEAR 20T EMBOSSING MACHINE	1	U
37	BRAND NEW SEWING MACHINES FOR FOOTWEAR SHOE HEEL MACHNE	2	U
38	BRAND NEW SEWING MACHINES FOR FOOTWEAR HIGH SPEED EDGE TRIMMER	2	U
39	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-703 RUBBER BELT	2	U
40	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-939 ADVNCED	2	U
41	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-939 ADVANCED	4	U
42	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-821	2	U
43	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-703 RUBBER BELT	2	U
44	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-969 TWO-LAYER	2	U
45	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC -823 OVERHEAD	2	
46	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-703 RUBBER BELT	2	U
47	BRAND NEW SEWING MACHINES FOR FOOTWEAR MC-825K AERIAL	2	U

48	BRAND NEW SEWING MACHINES FOFR FOOTWEAR 9-PINCERS TOE LASTING MACHINE	4	U
49	BRAND NEW SEWING MACHINES FOR FOOTWEAR HYDRAULIC HEEL LASTING	2	U
50	BRAND NEW SEWING MACHINES FOR FOOTWEAR TWO HOT AND TWO COLD TOE MOULDING MACHINE	2	U
51	BRAND NEW SEWING MACHINES FOR FOOTWEAR TWO HOT AND TWO COLD COUNTER MOULDING MACHINE	2	U
52	BRAND NEW SEWING MACHINES FOR FOOTWEAR AUTOMATIC TOE FLATTENING MACHINE	2	U
53	BRAND NEW SEWING MACHINES FOFR FOOTWEAR AUTOMATIC HEEL-SEAT FLATTENING	2	U
54	BRAND NEW SEWING MACHINES FOR FOOTWEAR MAUAL ROUGHING MACHINE DUST	3	U
55	BRAND NEW SEWING MACHINES FOR FOOTWEAR UNIVERSAL OIL HYDRAULIC ATTACHINE MACHINE	2	U
56	BRAND NEW SEWING MACHINES FOR FOOTWEAR HYDRAULIC LASTING HOT PRESSING	2	U
57	BRAND NEW SEWING MACHINES FOR FOOTWEAR AUTOMATIC HYDRAULIC HEEL-NAILING MACHINE	1	U
58	BRAND NEW SEWING MACHINES FOR FOOTWEAR STEAM CONDITIONING MACHINE	4	U
59	BRAND NEW SEWING MACHINES FOR FOOTWEAR STEEL NEST CONVEUYOR(WITH AND HOLDER)	4	U
60	BRAND NEW SEWING MACHINES FOR FOOTWEAR INFRARED OVEN-2M	8	U
61	BRAND NEW SEWING MACHINES FOR FOOTWEAR ENDGE GRINDING MACHINE	4	U
62	BRAND NEW SEWING MACHINES FOR FOOTWEAR PEELING MACHINE	4	U
63	BRAND NEW SEWING MACHINES FOR FOOTWEAR EDGE GRINDING MACHINE WITH DUST	4	U
64	BRAND NEW SEWING MACHINES FOR FOOTWEAR ROTARY UPPER ATTACHING MACHINE	2	U
65	BRAND NEW SEWING MACHINE FOR FOOTWEAR NEEDLE CONVEYOR(22M)	4	U
66	BRAND NEW SEWING MACHINES FOR FOOTWEAR AIR COMPRESSOR	2	U
67	BRAND NEW SEWING MACHINE FOR FOOTWEAR WHITE GLUE MACHINE	3	U
68	BRAND NEW SEWING MACHINES FOR FOOTWEAR PUNCHING MACHINE	6	U
69	BRAND NEW SEWING MACHINES FOR FOOTWEAR MIDSOLE FIXING MACHINE	2	U
70	BRAND NEW SEWING MACHINES FOR FOOTWEAR INNER BOX MACHINE	1	U
71	BRAND NEW SEWING MACHINES FOR FOOTWEAR DRILLING RIG	4	U
72	BRAND NEW SEWING MACHINES FOR FOOTWEAR BUBBLING COTTON MACHINE	2	U

73	BRAND NEW SEWING MACHINES FOR FOOTWEAR VERTICAL MILLING MACHINE	2	U
74	BRAND NEW SEWING MACHINES FOR FOOTWEAR POINTED MACHINE	4	U
75	BRAND NEW SEWING MACHINES FOR FOOTWEAR SIDE LASTING MACHINE	8	U
76	BRAND NEW SEWING MACHINES FOR FOOTWEAR TOE LASTING MACHINE		

Proposal Of The Promoter To Make Investment In The Republic Of The Union Of Myanmar

To Carry Out The Business Of:

"Manufacturing of all kinds of footwear products on CMP basis"

By

"Mountain Top Global Limited"

Mountain Top Global Limited

Norm of Products

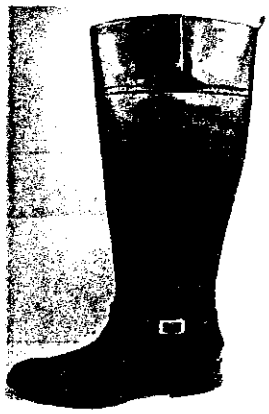
Photo	Product	No.	Raw Material Name	Unit	Norm Q'ty
	Lady Boot	1	SYNTHETIC LEATHER	M2	0.4
		2	BUCKLE	KG	0.2
		3	BAG (PE , NON WOVEN)	PR	1.00
		4	CUTTING BOARD	U	0.10
		5	FOAM	M	0.50
		6	HEEL & TOP	PR	1.00
		7	HANG TAG & LOOP	PR	0.50
		8	INNER BOX	PR	1.00
		9	INSOLE	PR	1.00
		10	IRON CORE	KG	0.07
		11	LABEL	PR	2.00
		12	LEATHER TIER	KG	0.03
		13	LACE	PR	1.000
		14	NON WOVEN	M	0.20
		15	OUT SOLE	PR	1.00
		16	PAPER	U	0.20
		17	PVC SHEET	PR	0.50
		18	PU LEATHER	M	0.20
		19	RUBBER SHEET	KG	0.07
		20	SILICA GEL	KG	0.090
		21	SPONGE	KG	0.10
		22	TAPE (OPP , MAGIC)	M	0.10
		23	TEXTILE	M	0.80
		24	THREAD	U	0.08
		25	WELT	KG	0.08
		26	ZIPPER	KG	0.08

Photo	Product	No.	Raw Material Name	Unit	Norm Q'ty
 02350 LKAC005 RA1029P A	Lady Shoes	1	SYNTHETIC LEATHER	M2	0.4
		2	BRONZING PAPER	Kg	0.020
		3	BAND(ELASTIC & RUBBER)	Kg	0.40
		4	BAG (PE , NON WOVEN)	M	1.00
		5	CANVAS WELT	Pr	0.20
		6	FOAM	Pr	0.50
		7	HEEL & TOP	Pr	1.00
		8	HANG TAG & LOOP	U	0.50
		9	INNER BOX	U	1.00
		10	INSOLE	U	1.00
		11	LABEL	M	2.00
		12	LEATHER TIER	U	0.03
		13	LACE	U	1.000
		14	LEATHER WAX	Pr	0.01
		15	NON WOVEN	Pr	0.20
		16	OUT SOLE	Pr	1.00
		17	PU LEATHER	Pr	0.20
		18	STICK	Kg	0.02
		19	SOLE SHEET	Pr	0.08
		20	SAMPLE (SHOES)	Kg	0.01
		21	TEXTILE	U	0.80
		22	THREAD	Kg	0.08
		23	WAX	Pr	0.003

Photo	Product	No.	Raw Material Name	Unit	Norm Q'ty
	Summer Shoes	1	SYNTHETIC LEATHER	M2	0.4
		2	BRONZING PAPER	Kg	0.020
		3	BAND(ELASTIC & RUBBER)	Kg	0.40
		4	BAG (PE , NON WOVEN)	M	1.00
		5	CANVAS WELT	Pr	0.20
		6	FOAM	Pr	0.50
		7	HANG TAG & LOOP	Pr	0.50
		8	INNER BOX	U	1.00
		9	INSOLE	U	1.00
		10	LABEL	U	2.00
		11	LEATHER TIER	M	0.03
		12	LEATHER WAX	U	0.01
		13	NON WOVEN	U	0.20
		14	OUT SOLE	Pr	1.00
		15	PU LEATHER	Pr	0.20
		16	STICK	Pr	0.02
		17	SOLE SHEET	Pr	0.08
		18	SAMPLE (SHOES)	Kg	0.01
		19	TEXTILE	Pr	0.80
		20	THREAD	Kg	0.08
		21	WAX	U	0.003

MOUNTAIN TOP GLOBAL LIMITED

PLOT NO.176,BLOCK NO.49, WARTAYAR, SHWE PYI THAR TOWNSHIP, YANGON REGION, MYANMAR

095011906, chiang02tw@yahoo.com.tw

နောက်ဆက်တွဲ (ခ)

ယခုလျှောချမည့်ထုတ်ကုန် အရည်အတွက် နှင့် တန်ဖိုး

NO	PARTICULAR	UNIT	YEAR-1			YEAR-2			YEAR-3		
			Unit Price	QTY	VALUE	Unit Price	QTY	VALUE	Unit Price	QTY	VALUE
1	Lady Boot	Pair	6.00	300000.00	1800000.00	6.00	330000.00	1980000.00	6.00	363000.00	2178000.00
2	Lady Shoes	Pair	4.00	200000.00	800000.00	4.00	220000.00	880000.00	4.00	242000.00	968000.00
3	Summer Shoes	Pair	1.50	75000.00	112500.00	1.50	82500.00	123750.00	1.50	90750.00	136125.00
TOTAL				575000.00	2712500.00		632500.00	2983750.00		695750.00	3282125.00

MR.YANG,LONG-WU

DIRECTOR

MOUNTAIN TOP GLOBAL LTD

MOUNTAIN TOP GLOBAL LIMITED

PLOT NO.176,BLOCK NO.49, WARTAYAR, SHWE PYI THAR TOWNSHIP, YANGON REGION, MYANMAR

095011906, chiang02tw@yahoo.com.tw

နောက်ဆက်တွဲ (ခ)　　နောက်ဆက်တွဲ (ခ)

ယခုလျှောချမည့်ထုတ်ကုန် အရည်အတွေ့ယခုလျှောချမည့်ထုတ်ကုန် အရည်အတွက် နှင့် တန်ဖိုး

NO	PARTICULAR	UNIT	YEAR-4			YEAR-5 to 10		
			Unit Price	QTY	VALUE	Unit Price	QTY	VALUE
1	Lady Boot	Pair	6.60	381150.00	2515590.00	7.26	400207.50	2905506.45
2	Lady Shoes	Pair	4.40	254100.00	1118040.00	4.84	266805.00	1291336.20
3	Summer Shoes	Pair	1.65	95287.50	157224.38	1.82	100052.00	182094.64
TOTAL				730537.50	3790854.38		767064.50	4378937.29

MR.YANG,LONG-WU

DIRECTOR

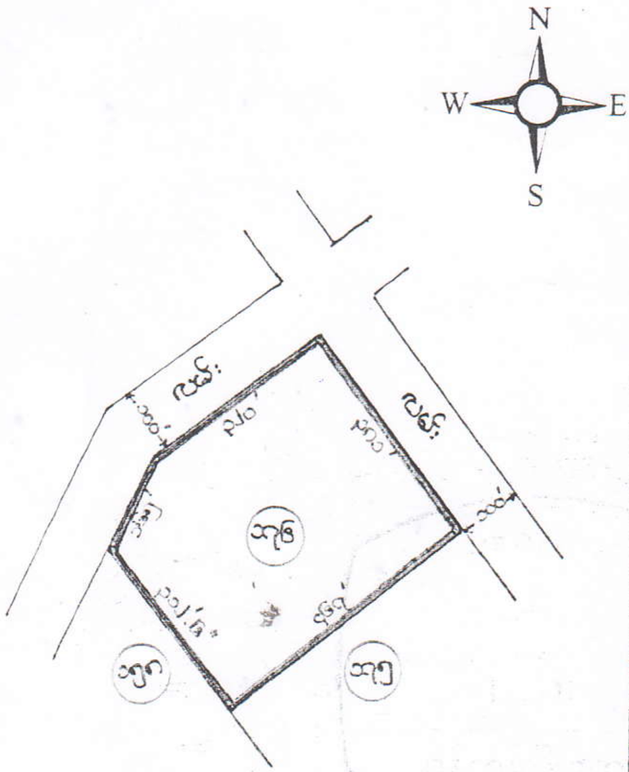
MOUNTAIN TOP GLOBAL LTD

APPENDIX: D-1

- ၆ -

စက်မှု/လက်မှုလုပ်ငန်းဆောင်ရွက်ရန်အတွက်သာ
ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

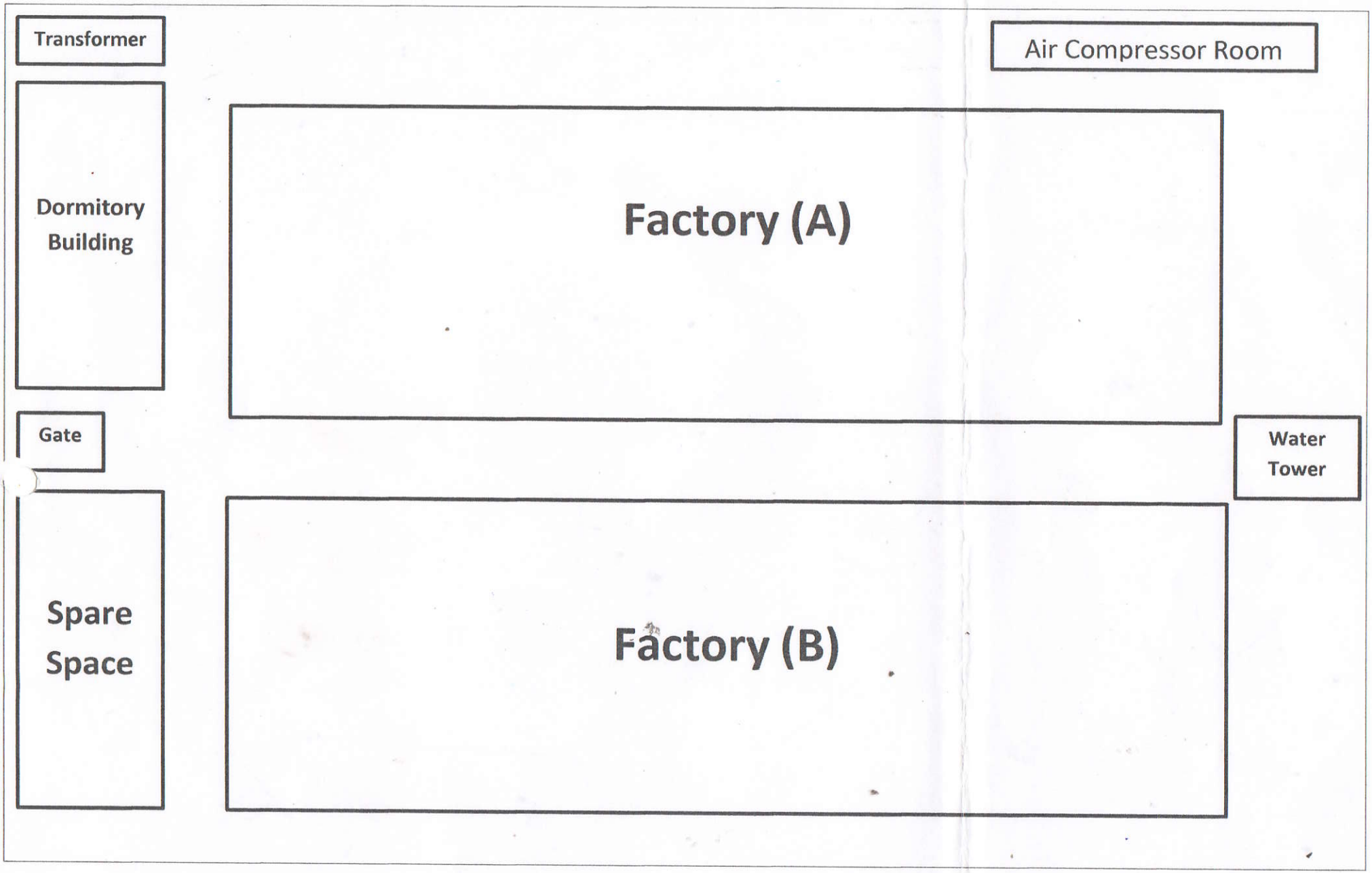
ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ



၂၀၁၈ ခုနှစ် [illegible] ၂၀ / ခုနှစ်သုံး မြေပုံမှ ရေးကူးပေးသည့် မှန်ကန်ကြောင်း သက်သေခံသည့် မြေငှားရန်မြေပုံ	
အမည်ပေါက်	[illegible]
မြေတိုင်းရပ်ကွက်အမှတ်	[illegible]
လူနေရပ်ကွက်အမှတ်	
မြေကွက်အမှတ်	၁၇၆
မြေအမျိုးအစား	[illegible]
အလျား	[illegible] × အနံ [illegible]
ဧရိယာ	၄.၀၀၅ ဧက
မြို့နယ်	ရွှေပြည်သာ
စကေး	၁" = ၃၀၀'.၀"
ထုတ်ပေးသည့်အမှုတွဲအမှတ်	[illegible]
[signature] မြေတိုင်း(၂) မြို့ပြစီမံကိန်းနှင့်မြေစီမံခန့်ခွဲမှုဌာန	
[signature] မြေတိုင်း(၁) မြို့ပြစီမံကိန်းနှင့်မြေစီမံခန့်ခွဲမှုဌာန	
A 0035959A [signature] ဌာနခွဲမှူး ၁၉/၉/၁၈ မြို့ပြစီမံကိန်းနှင့်မြေစီမံခန့်ခွဲမှုဌာန	

၂၀၁၈ ခုနှစ် [illegible] ၂၀ / ခုနှစ်သုံး မြေပုံ/မြို့ မြေစာရင်းမှ ရေးကူးသော ကောက်နုတ်ချက်မိတ္တူမြေပုံ/မြေရာဇဝင်ဖြစ်၍ တိကျမှန်ကန်ကြောင်း ထောက်ခံပါသည်။ (မြို့ပြစီမံကိန်းနှင့် မြေစီမံခန့်ခွဲမှုဌာန)

Layout Plan

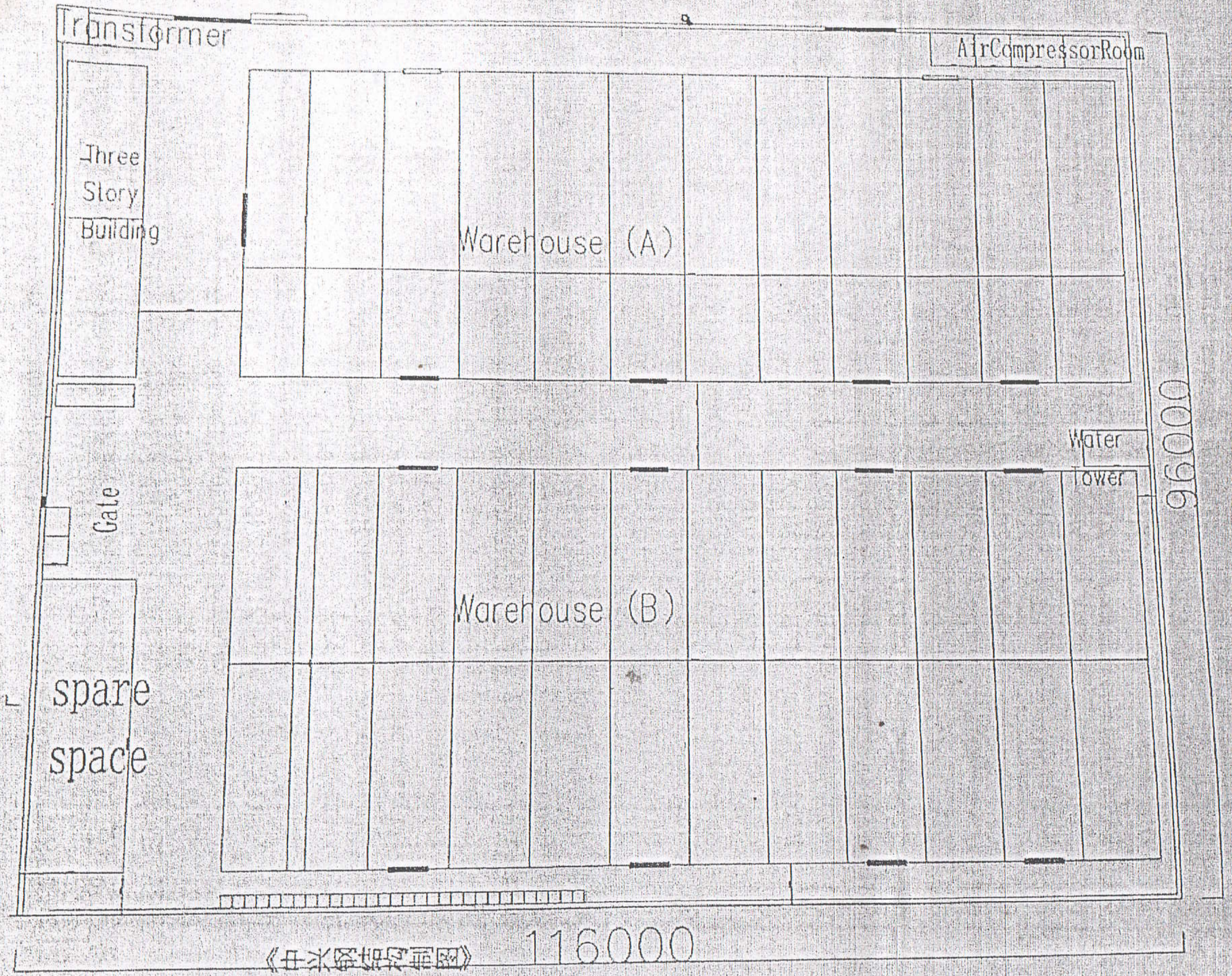

Transformer
Air Compressor Room
Dormitory Building
Factory (A)
Gate
Water Tower
Spare Space
Factory (B)

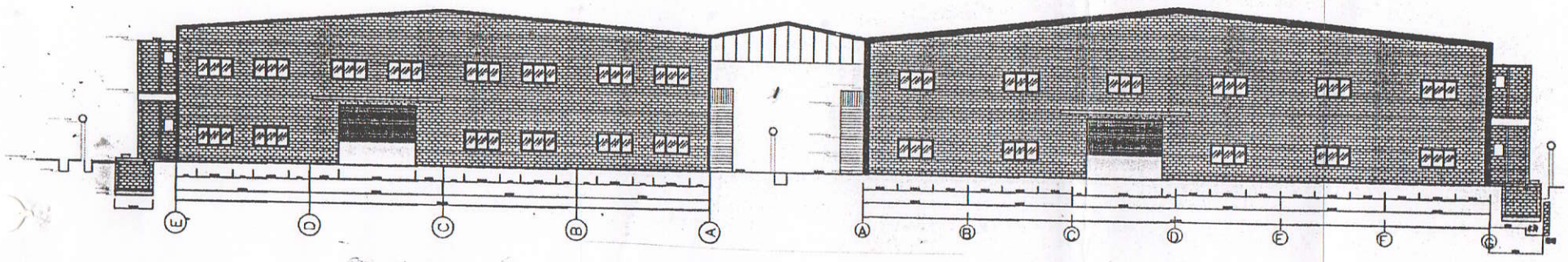
Building Measurement

(1) Factory A = (94500 mm x 35000 mm) (2 Storey Building)

(2) Factory B = (94500 mm x 41000 mm) (2 Storey Building)

(3) Dormitory Building = (8000 mm x 35000 mm) (Three Storey Building)

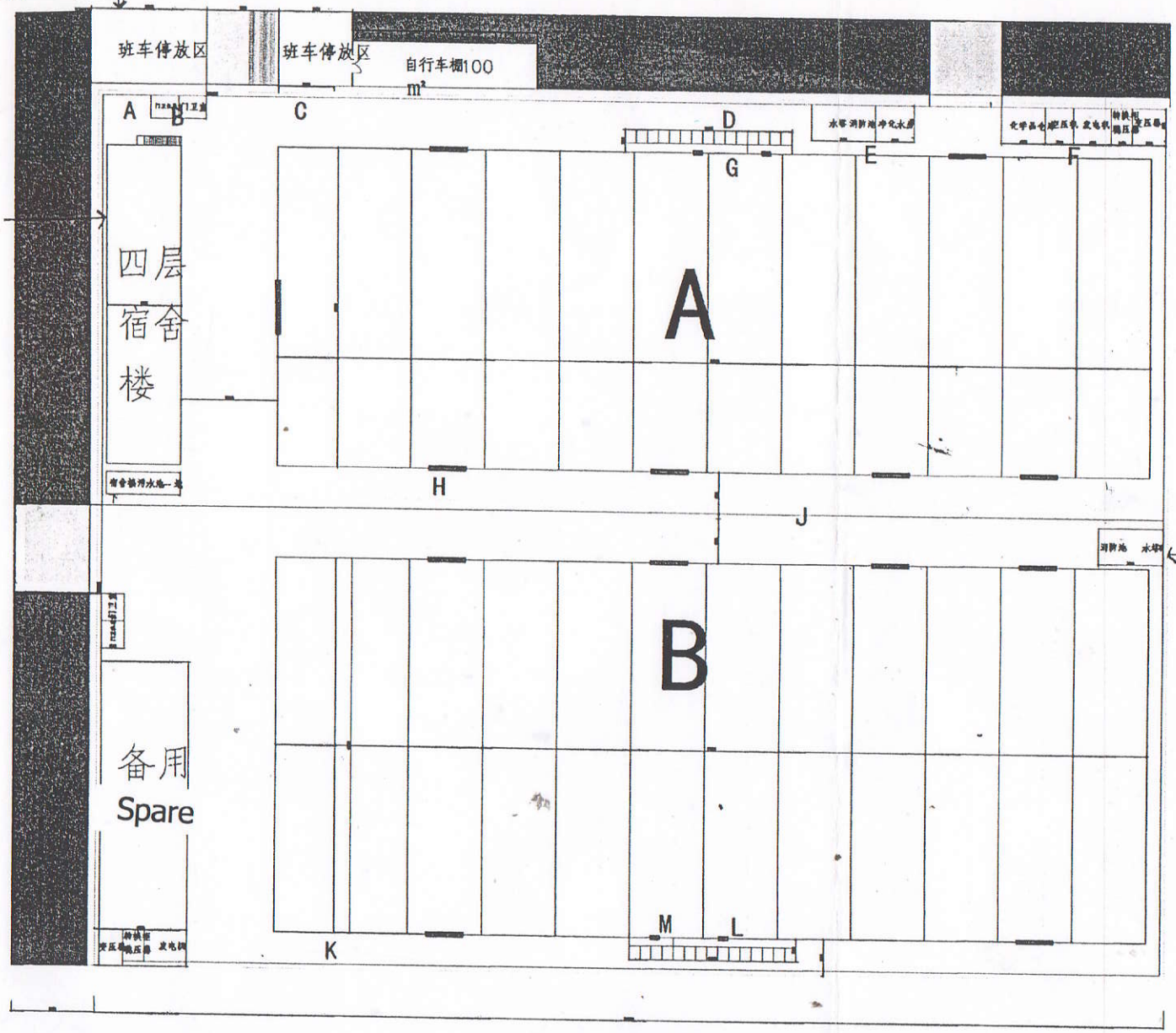

Transformer
Three Story Building
AirCompressorRoom
Warehouse (A)
Water Tower
Gate
Warehouse (B)
spare space
96000
116000
《中兴钢结构制图》



Overall Side View

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦迪亚工厂	图纸说明	整体立面布置图	设计		图号	乔娜002
				项目名称	整体立面图			审核		比列	
										日期	

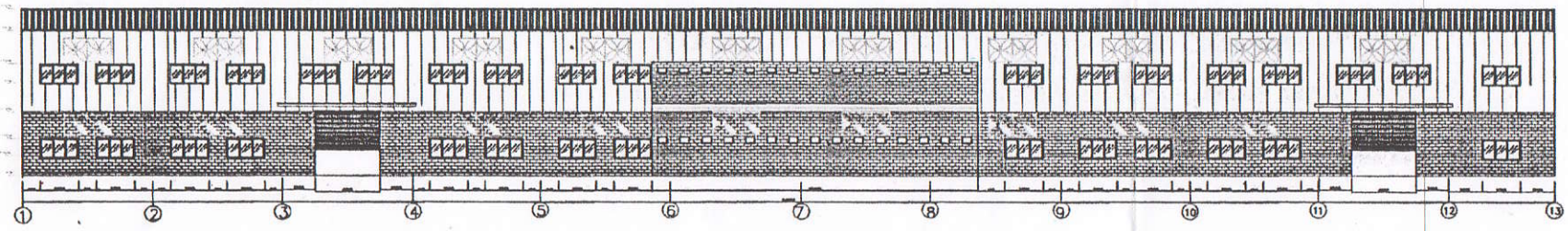
Shuttle Parking Area



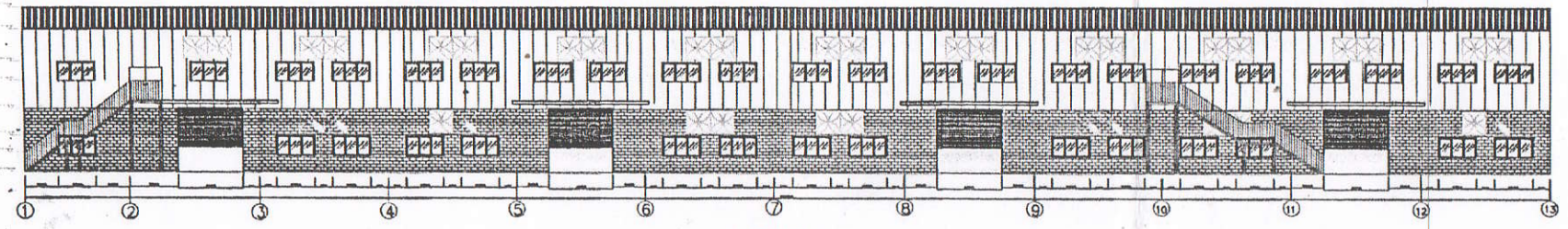
Four Story dormitory

Overall Plan

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司民建五工厂	图纸说明	整体平面布置图	设计		图号	乔娜001
				项目名称	整体平面图			审核		比例	
										日期	



1-13轴后立面



1-13轴后立面

Front and rear Facade analysis renderings

一、说明：

1、本工程地面标高+4000mm内，墙体为240厚红砖块红砖块，砌筑的砂浆等级不低于DM M5混合砂浆。

2、地面标高+4000mm至+9000mm之间采用840型暗黄色彩钢瓦单板，厚度为0.426mm

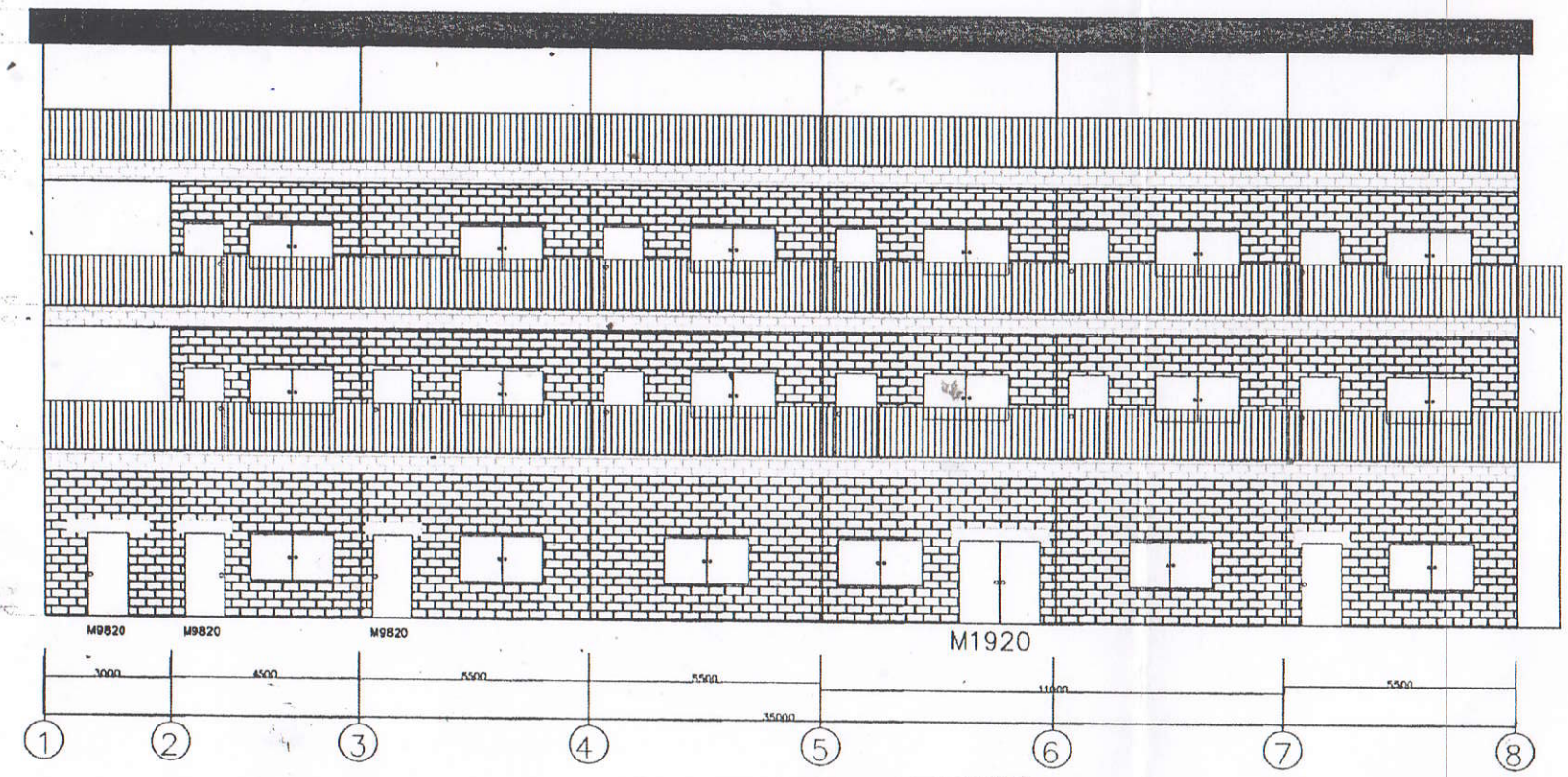
3、本图尺寸单位为毫米

4、我公司因有实体工厂在仰光，所以可以将单瓦机设备运至工地生产，保证无接点，更利于防水处理和防锈处理

5、外门采用4000mm*4000mm镀锌管双开门

6、窗采用塑钢窗1200mm*2350mm

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦迪亚工厂二车间	图纸说明	前后立面分板效果图	设计		图号	乔娜003
				项目名称	二车间			审核		比列	
										日期	



Front Facade rendering

说明：

1、本工程前后墙肩高地面标高+13800mm
2、裙墙外挑1000mm，檐口天沟托架高度1000mm
3、本图尺寸单位为毫米
4、钢柱钢梁为H350*175*7*11（国Q235B）
5、地面标高+11000mm内，墙体为240厚红砖块红砖块，砌筑的砂浆等级不低于DM M5混合砂浆。
6、外门采用980mm*2050mm防盗门，内门1.4mm铝合金800mm*2000mm
7、窗采用1.4mm铝合金，前窗1000mm*2000mm，后窗1000mm*1000mm

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司民迪亚亚工厂二车间	图纸说明	前立面效果图	设计		图号	乔娜101
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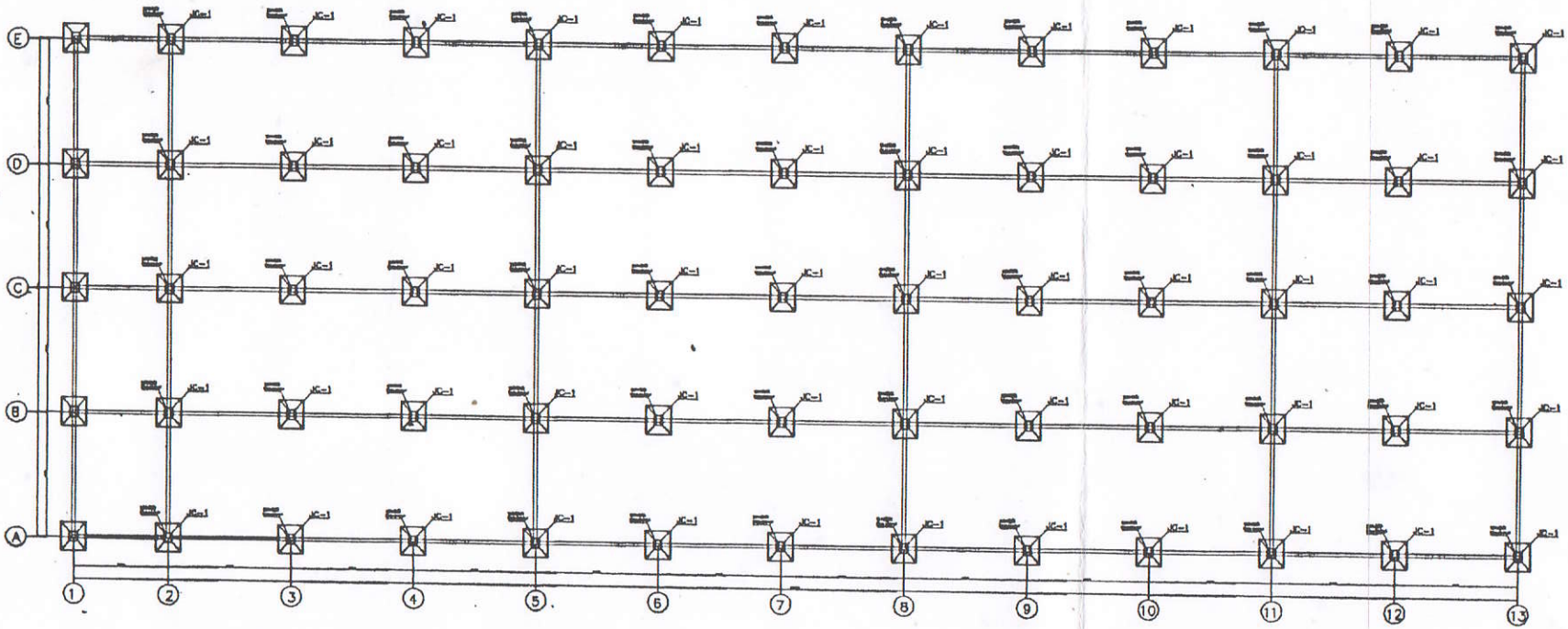

Foundation Circel

一、说明：

1、本工程采用独立基础，基础的混凝土为C25

2、垫层用C25混凝土，厚度为100mm

3、本图尺寸单位为毫米

4、短柱型心与基础型心重合

5、基础圈梁标高为+50mm

6、预留柱的箍筋密度及其形式和底层柱的箍筋相同

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司氏诗瓦工厂二车间	图纸说明	基础图梁平面布置图	设计		图号	乔娜009
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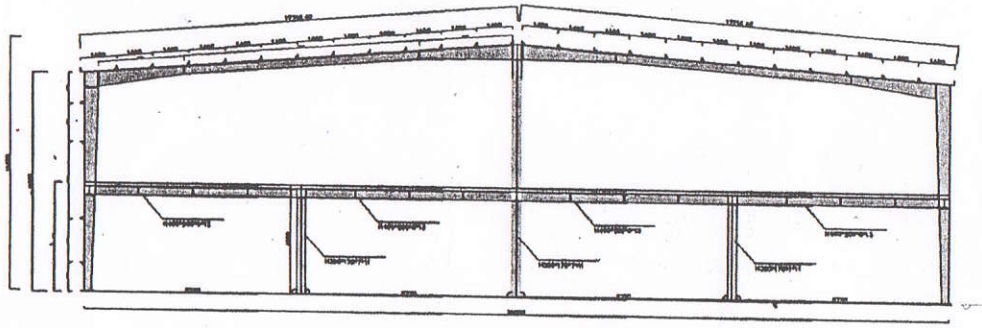
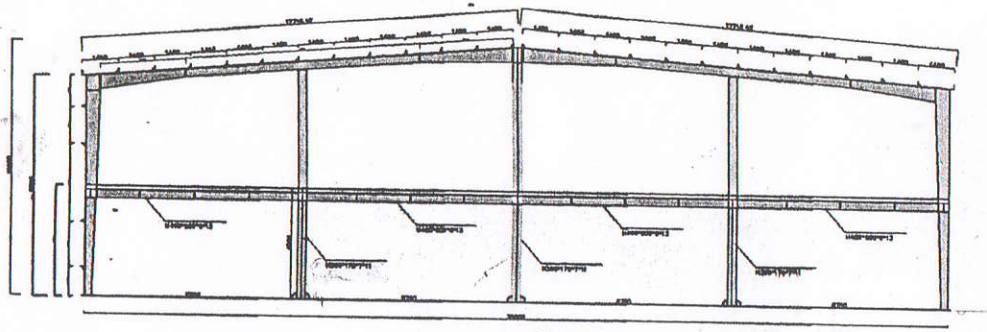
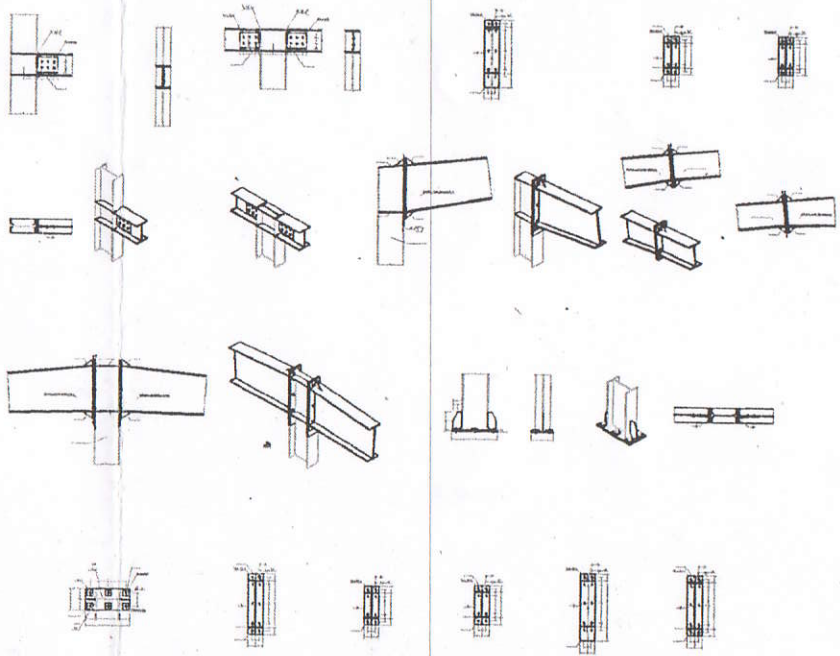


②-②轴剖面图



①-③轴剖面图



Side Facade Steel Frame renderings

说明：

1、本工程前后墙肩高地面标高+9000mm，脊高11400mm
2、本图尺寸单位为毫米
3、主钢柱为H400*200*8*13（国Q235B）
4、抗风柱为H350*175*7*11（国Q235B）
5、主钢梁为H400*200*8*13（国Q235B）
6、次钢梁为H350*175*7*11（国Q235B）
7、所有连接板均为（Q345B）钢板，规格不等

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦城亚工厂二车间	图纸说明	侧立面钢架效果图	设计		图号	乔娜004
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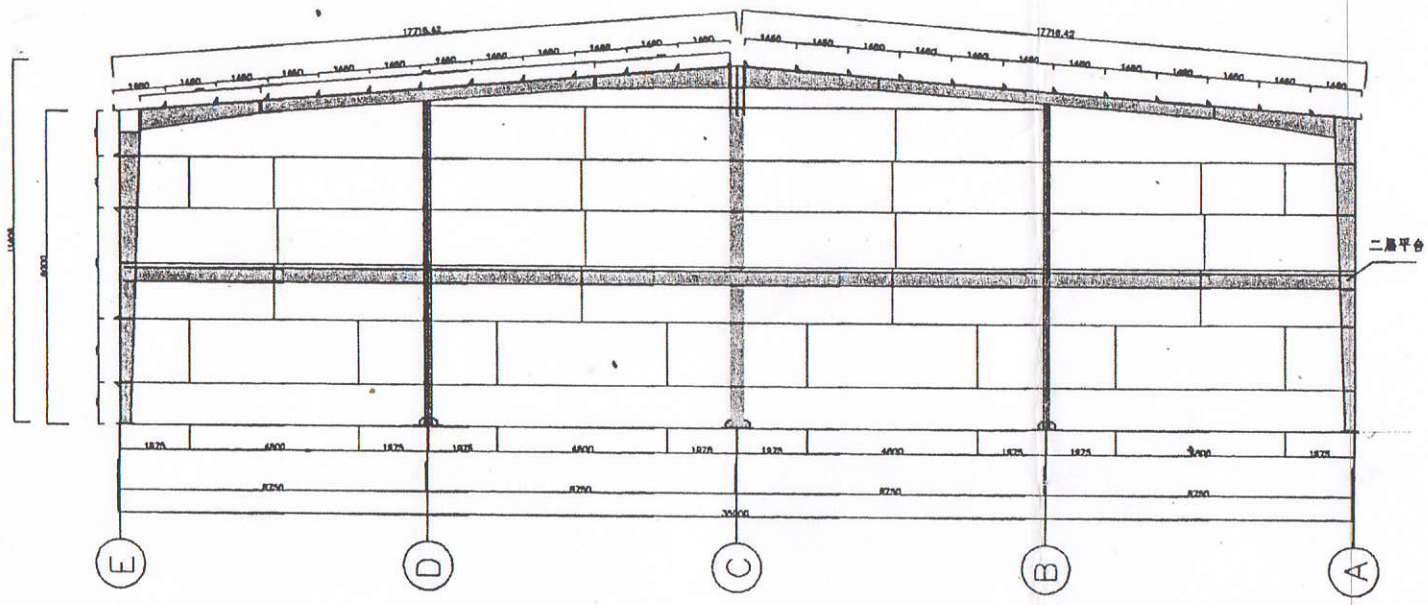

A-E axis double side rafter distribution map

一、说明：

1、本工程前后墙肩高地面标高+9000mm，脊高11400mm

2、裙墙外挑1000mm，檐口天沟托架高度1000mm

3、本图尺寸单位为毫米

4、钢柱为H400*200*8*13（国Q235B）

5、抗风柱为H350*175*7*11（国Q235B）

6、主钢梁为H400*200*8*13（国Q235B）

7、檩条为C型钢(镀锌)C250*50*20*1.8mm，檩间撑杆Φ20

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦迪亚工厂二车间	图纸说明	侧立面钢架檩条效果图	设计		图号	乔娜005
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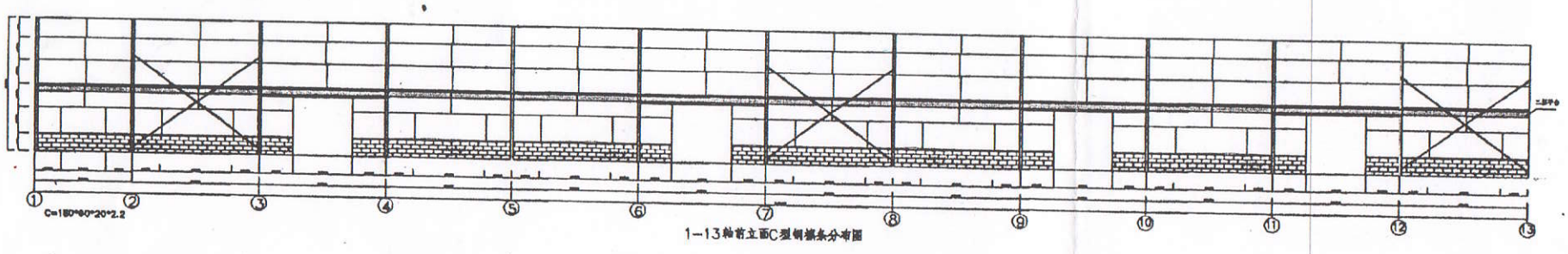
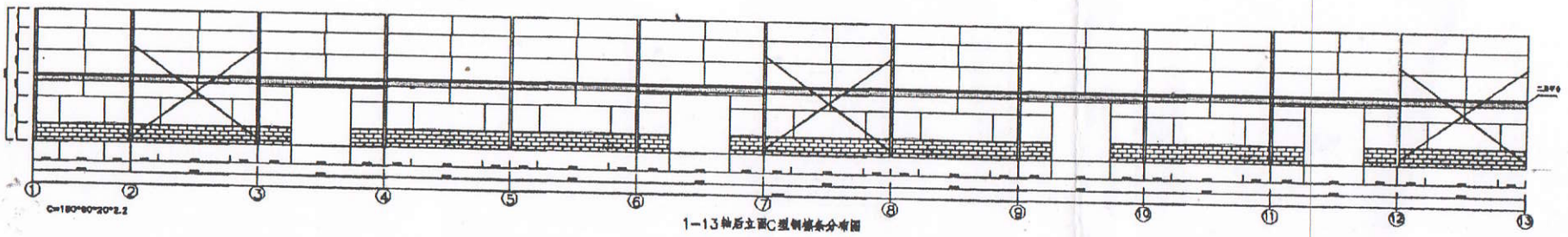


1-13轴前立面C型钢檩条分布图



1-13轴后立面C型钢檩条分布图

Front and rear elevation Steel Frame renderings

一、说明：

1、本工程前后墙肩高地面标高+9000mm

2、裙墙外挑1000mm，檐口天沟托架高度1000mm

3、本图尺寸单位为毫米

4、钢柱为H400*200*8*13（国Q235B），檩条为C型钢(镀锌)C250*50*20*1.8mm，檩间撑杆Φ20

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦德亚工厂二车间	图纸说明	前后立面钢架效果图	设计		图号	乔娜002
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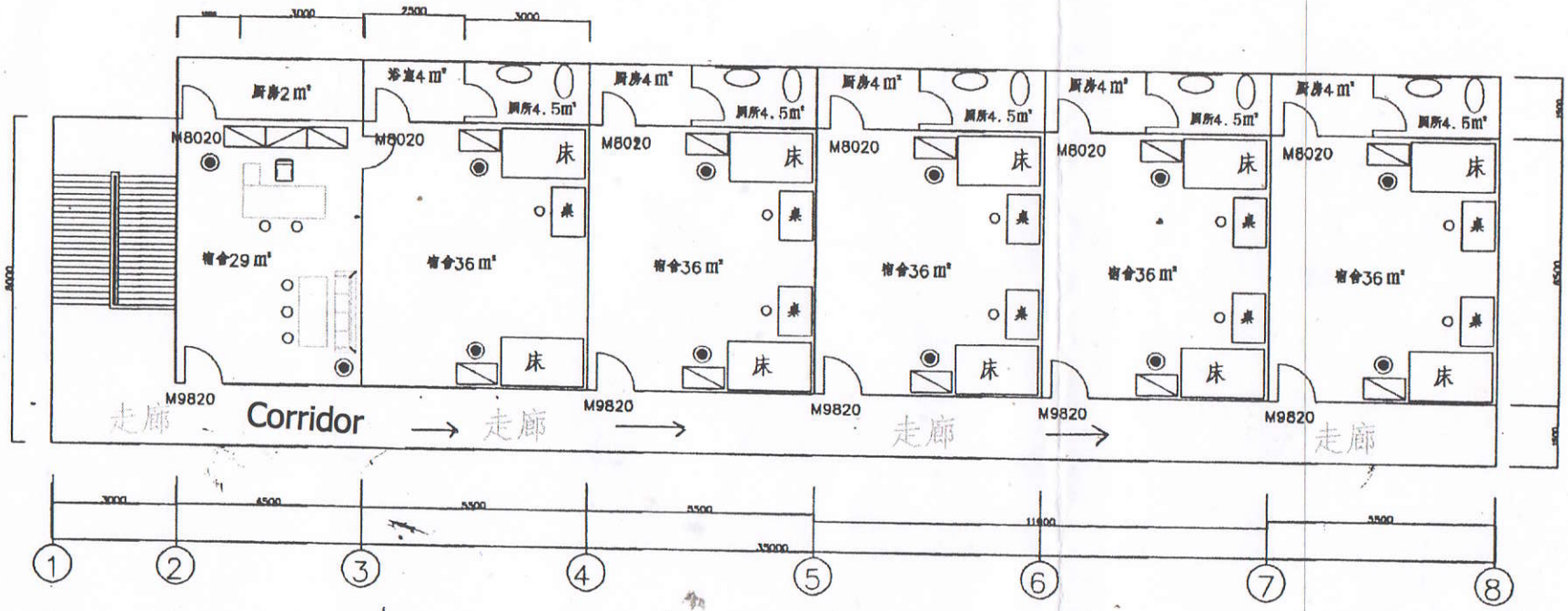

Three tier Layout

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦迪亚工厂二车间	图纸说明	三层平面效果图	设计		图号	乔娜104
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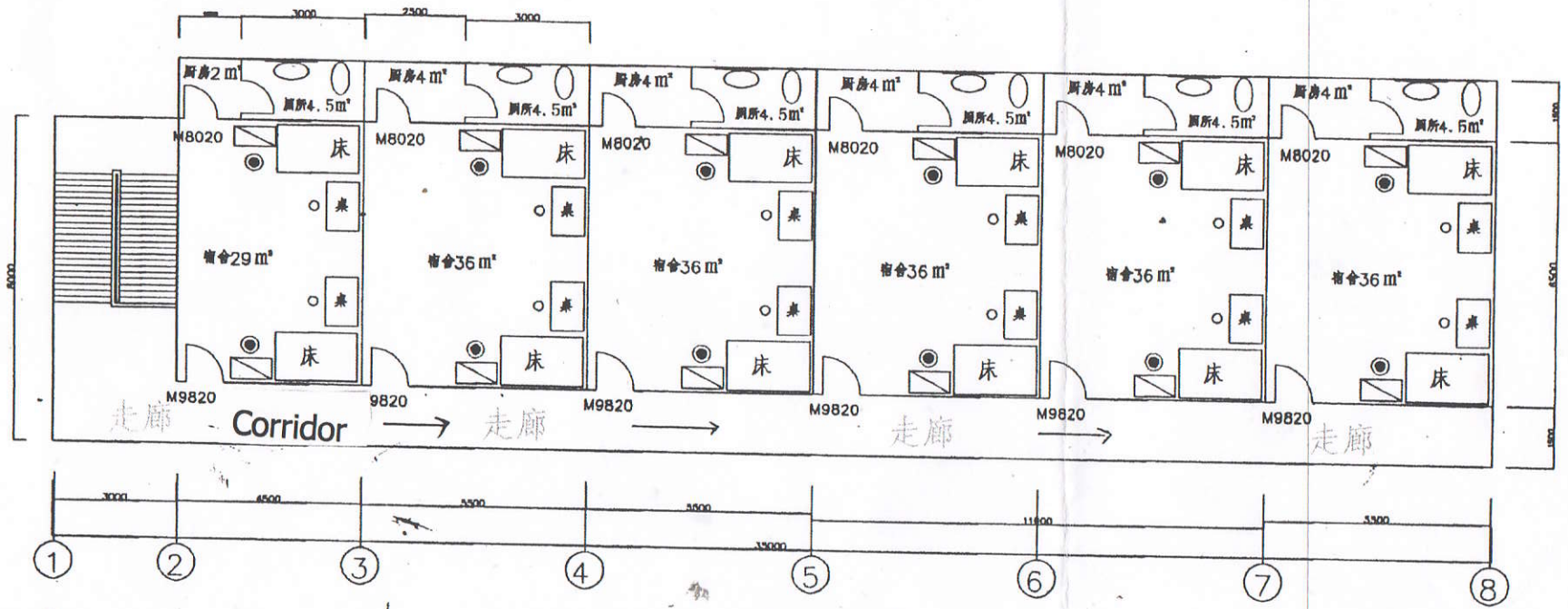

Second Floor Plan

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦迪亚工厂二车间	图纸说明	二层平面效果图	设计		图号	乔娜104
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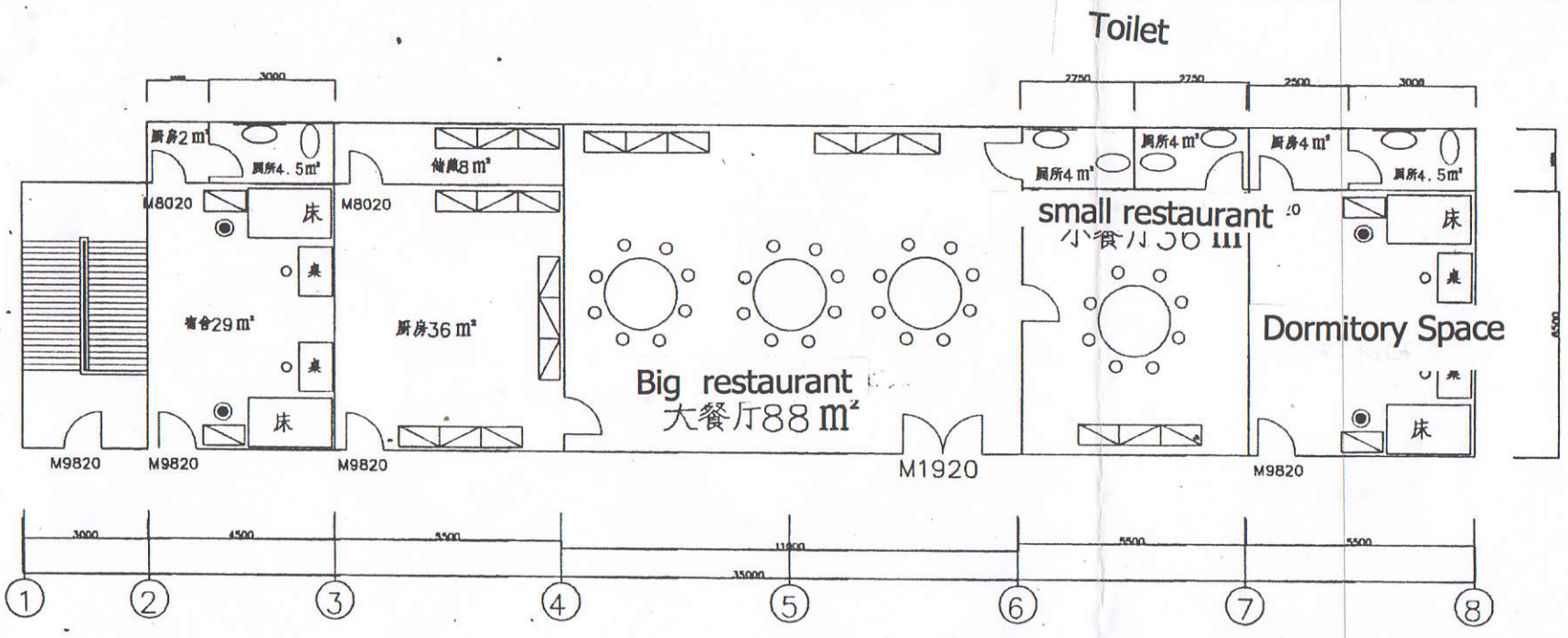

One Floor Layout

说明：

1、本工程一层长35000mm*8000mm，面积为276m²，共分为五间

2、外墙体为240mm厚红砖块，内墙体为120mm厚红砖块，砌筑的砂浆等级不低于DM M5混合砂浆。

3、本图尺寸单位为毫米

4、地面为600*600瓷砖，厕所厨房为防滑地砖，2000mm高墙瓷砖。

5、吊顶目前暂定玻璃丝棉复合板

6、外门采用980mm*2050mm防盗门，内门1.4mm铝合金800mm*2000mm

7、窗采用1.4mm铝合金，前窗1000mm*2000mm，后窗1000mm*1000mm

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦地亚工厂二车间	图纸说明	一层平面效果图	设计		图号	乔娜103
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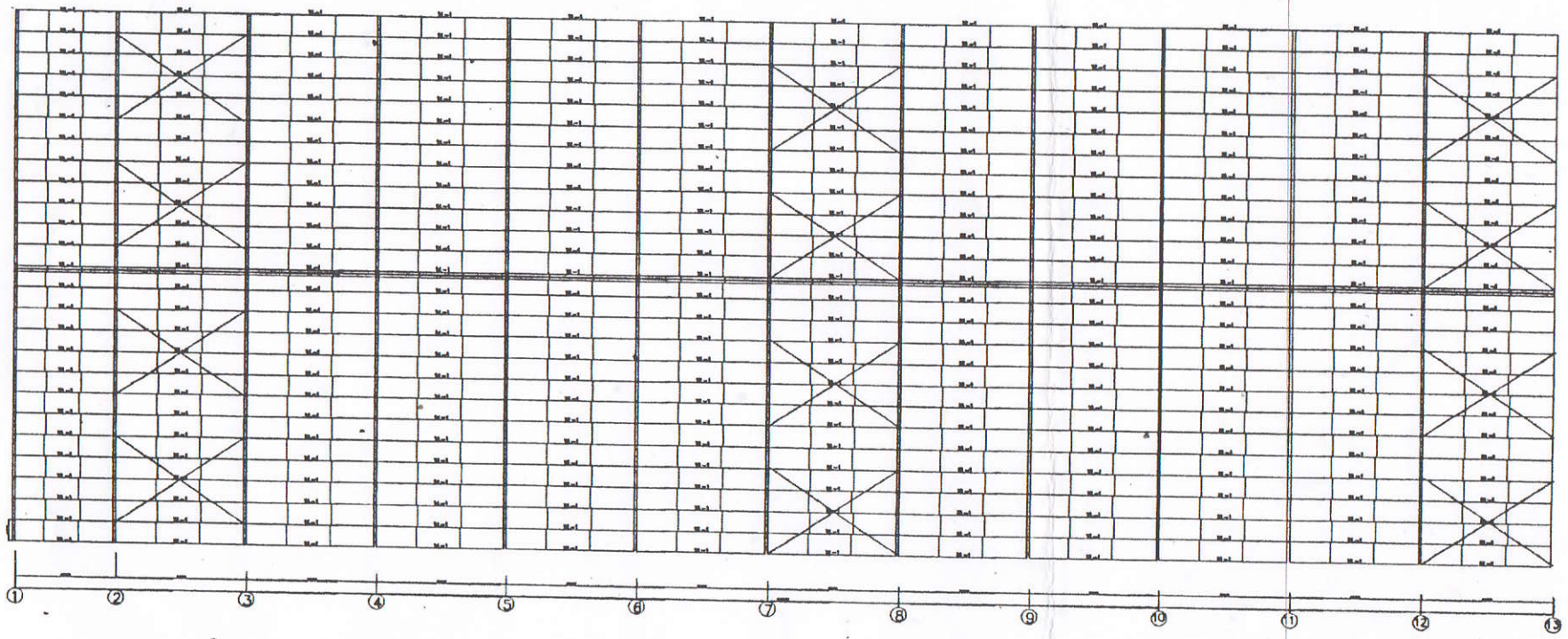
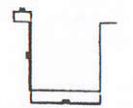
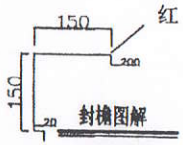


1-13 axle roof C-Shaped Steel truss distribution



天沟图解

脊瓦图解



一、说明：

1、屋面瓦采用0.426mm，红色840型彩钢瓦单瓦，配玻璃棉卷毡25mm厚15kg/m3和2mm镀膜钢丝网

2、屋脊坡度为21%

3、本图尺寸单位为毫米

4、我公司因有实体工厂在仰光，所以可以将单瓦机设备运至工地生产，保证无接点，更利于防水处理和防锈处理

5、天沟采用1.0mm镀锌板压制的折弯件

6、折弯件采用0.426mm彩钢板

投资公司	乔娜实业（缅甸）有限公司	设计公司	中兴钢结构建筑工程有限公司	工程名称	乔娜实业（缅甸）有限公司瓦油脏工厂二车间	图纸说明	屋面平面布置图	设计		图号	乔娜007
				项目名称	二车间			审核		比例	
										日期	

APPENDIX – E

MOUNTAIN TOP GLOBAL LTD.

ENVIRONMENTAL QUALITY MONITROING REPORT

30th September, 2021

Prepared by

HEXAGONAL ANGLE INTERNATIONAL CONSULTANTS CO., LTD.

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Email: info@hexagonalangle.com
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CHAPTER 1

ENVIRONMENTAL QUALITY MONITORING REPORT

1.1. INTRODUCTION

Environmental quality monitoring was conducted by Hexagonal Angle Consulting Team upon request of Mountain Top Global Co., Ltd. at the project area which is located at Shwepyithar Township on 25th September, 2021. The environmental quality monitoring includes outdoor air quality measurement, temperature, humidity, noise measurement and water quality testing. During that day, the average temperature was 30.2°C and humidity was 76.6%.

Outdoor air quality, temperature and humidity are measured by using the OCEANUS-AQM09 device. The detailed information of the measurement devices is mentioned in the **APPENDIX**.

1.1.1. Overview of the Project Area

The Project Site is located in No. (176), Bo Taik Chun Street, Myay Tine (49) Ward, Wartayar Industrial Zone, Shwepyithar Township, Yangon Region. The factory is located in North latitudes 16˚ 59´1.39˝ and East longitudes 96˚ 3´11.23˝. Location map of the project area is as shown in Figure 1-1.

Since the project factory is located at the Wartayar Industrial Zone and, its neighborhood is bordered by other factories and undeveloped areas and factories around the project area.

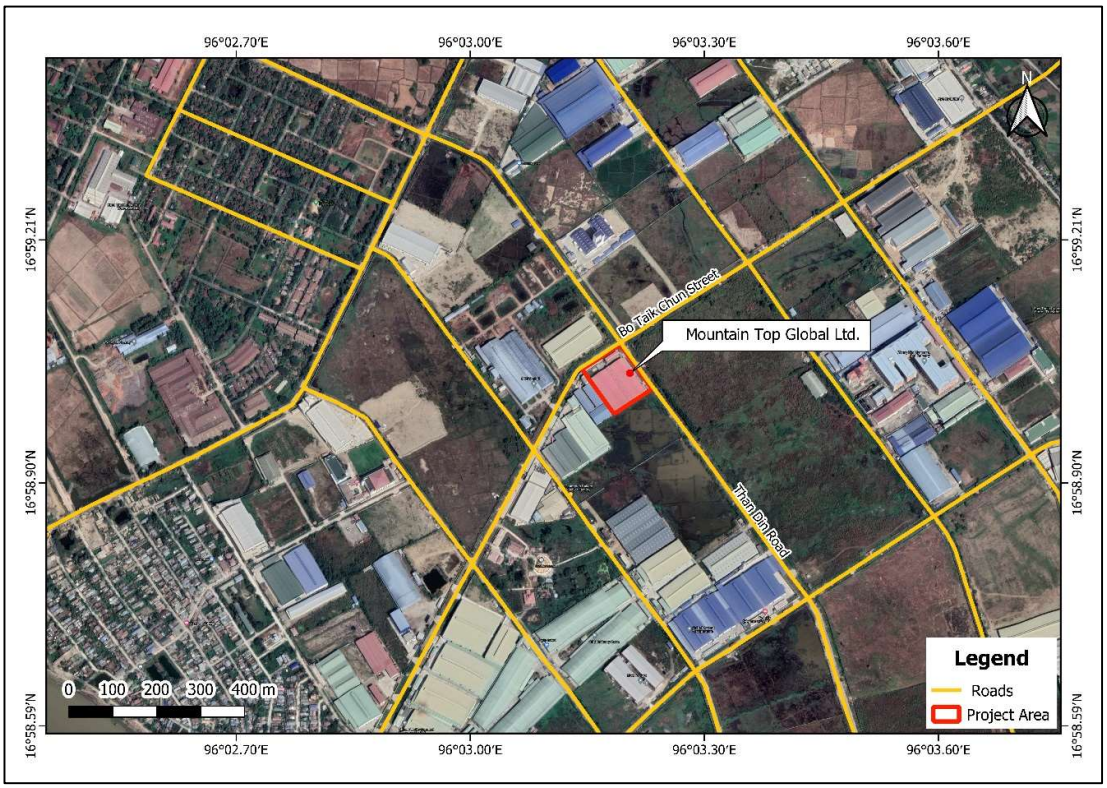

Figure 1-1 Overview Map of the Project Area

1.2. BASELINE ENVIRONMENTAL QUALITY

1.2.1. Outdoor Air Quality

Air quality measurement was conducted at the project area in 25th September 2021. The OCEANUS-AQM09 was used for air monitoring survey.

The measurement station is located at the project area and monitoring point is located in loading/ unloading place between two production factories. The measurement station for air quality is as displayed in Figure 1-2 and the measurement photos are shown in Figure 1-3 respectively.

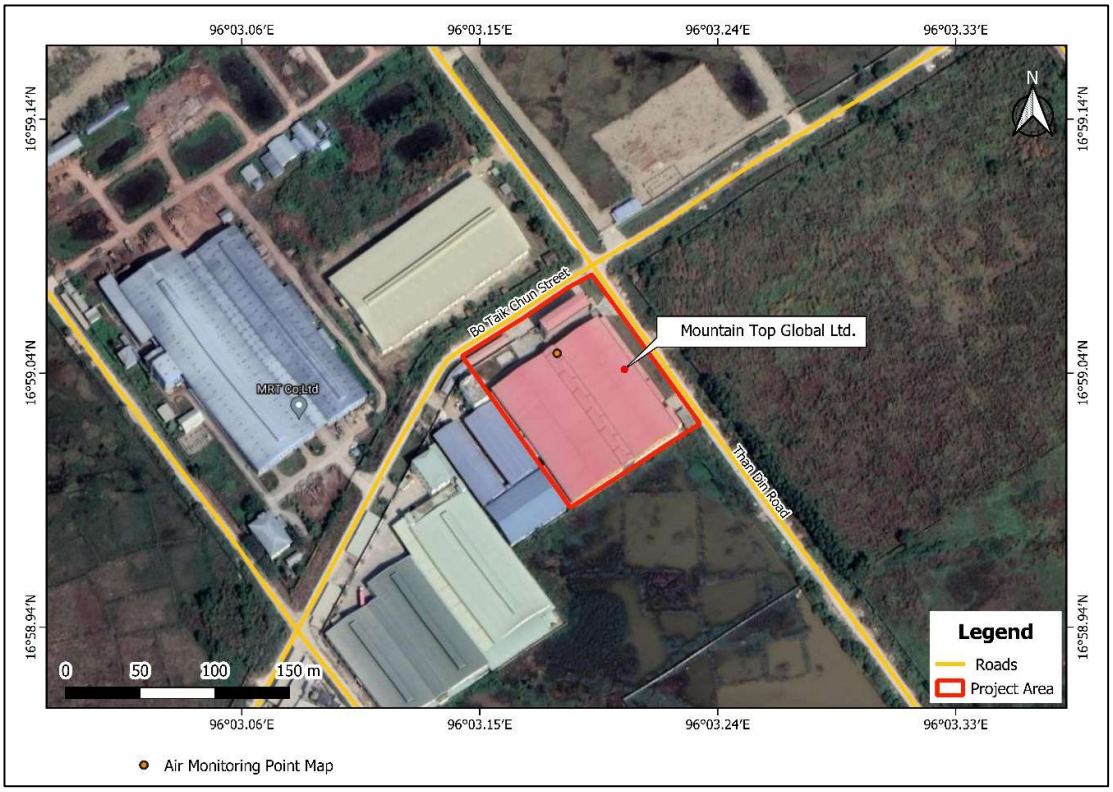

Figure 1-2 Outdoor Air Quality Measurement Location

The OCEANUS-AQM09

Air quality measurement

Figure 1-3 Air Quality Monitoring (25th September 2021)

The emission of harmful gaseous pollutants in the atmosphere is a major health issue. The shoe operations will be generated the different kinds of air pollution, depending upon the kinds of fuels use in generator. In the project factory, there are currently generator using for the production process. Therefore, the 24-hr measurements of air quality are performed by the consultants during the field trip in 25th September 2021 as displayed in Figure 1-3. These measurements were made in accordance with the guidelines of National Environmental Quality (Emission) Guidelines in the project site area. The measured parameters are dust (PM_{10} and $PM_{2.5}$), gas (NO_2, CO, SO_2, O_3), total suspended particulate (TSP), relative humidity, air pressure and temperature etc., for outdoor air quality. Both results of the study and guidelines are as shown in Table 1-1.

According to the result, Particulate Matter (PM_{10} and $PM_{2.5}$) are under standard guidelines, making environment safe for the workers. Moreover, parameters such as Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2) and Carbon Monoxide (CO) are 3.42 µg/m3, 8 µg/m3 and 0.3 ppm respectively and it is under standard guidelines. The rest parameters are also agreed with the standard limitations as shown in Table 1-1.

Table 1-1 Results of the Ambient Air Monitoring Measurement

No.	Parameter	Recorded Period	Result	Unit	Average Period		WHO Guideline Value	NEQG* Guideline Value
1	Particulate Matter PM_{10}	24-hr	16.9	µg/m^3 µg/m^3	1 24	Year Hour	-	*20 µg/m^3 *50 µg/m^3
2	Particulate Matter $PM_{2.5}$	24-hr	11.74	µg/m^3 µg/m^3	1 24	Year Hour	25µg/m^3	*10 µg/m^3 *25 µg/m^3

No.	Parameter	Recorded Period	Result	Unit	Average Period		WHO Guideline Value	NEQG* Guideline Value
3	Total Suspended Particulate (TSP)	24-hr	22.72	µg/m^3	24 Hours		NG	NG
4	Sulphur Dioxide (SO_2)	24-hr	8	µg/m^3 µg/m^3	10 24	Mins Hours	8 ppb	* 500 µg/m^3 * 20 µg/m^3
5	Nitrogen Dioxide (NO_2)	24-hr	3.42	µg/m^3 µg/m^3	1 1	Year Hour	21 ppb	*40 µg/m^3 *200 µg/m^3
6	Carbon Monoxide (CO)	24-hr	0.3	ppm	24 Hours		9 ppm	*150
7	Ozone (O_3)	24-hr	11.5	µg/m^3	8 Hours		NG	100
8	Relative Humidity	24-hr	76.6	%	24 Hours		NG	NG
9	Temperature	24-hr	30.2	°C	24 Hours		NG	NG
10	Air Pressure	24-hr	1006.5	hPa	24 Hours		NG	NG
11	Wind Direction	24-hr	225	degree	24 Hours		NG	NG
12	Wind Speed	24-hr	0.15	m/s	24 Hours		NG	NG

*National Environmental Quality (Emission) Guidelines (2015) NG=No Guideline

1.2.2. **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 to provide the basis for regulations and control of noise level. Noise impacts should not exceed the levels presented in Table 1-2.

Table 1-2 Noise Level Standard

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

[a] Equivalent continuous sound level in decibels

A reconnaissance survey of noise level measurements was made in the shoe factory in order to ensure and protect from the hazardous work environment. The data were collected on 25th September 2021. Noise measurements are needed to make in the factory 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 1-4. The stations which were made noise measurements are shown in Figure 1-5.

GM-1356 Digital Sound Level Meter It is used for measuring noise and other sounds in the project factory.	

Figure 1-4 Equipment Used to Measure Noise Levels

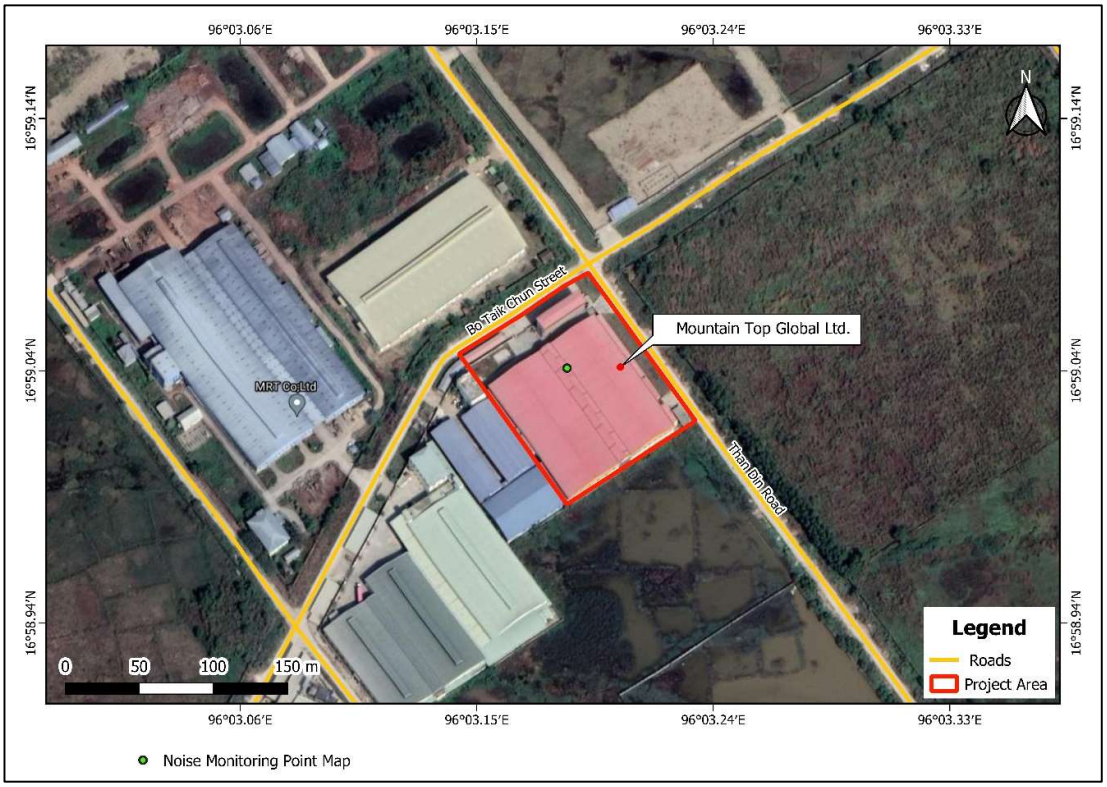

Figure 1-5 Noise quality measurement stations

The measurements of noise quality were made in loading/unloading place between two production halls at the same time with the outdoor air monitoring. The measurement was made in between the two production factories because the operation is starting. However, there were no fully operation in the factory. Therefore, the measurement was made to know the noise pollution in the compound of the factory.

In measuring noise measurement, it is noted that minimum noise level is 44.7 dBA and 85.1 dBA at the maximum. There is no heavy activity in the loading/unloading place, except the generator is operating at the distance at that time for electricity to power outdoor air monitoring device and the average noise level is 64.25 dBA. Thus, the measurement was relevant to the standard noise level. The measurement result and the photo made in the field visit are shown in Figure 1-6, Figure 1-7 and the results are in Table 1-3.

Table 1-3 Monitoring Measurement 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		
1	Loading/Unloading place	Generator is operating at the distance	44.7	85.1	64.25	55	70

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

*Average equivalent for one hour
**Average maximum for one hour

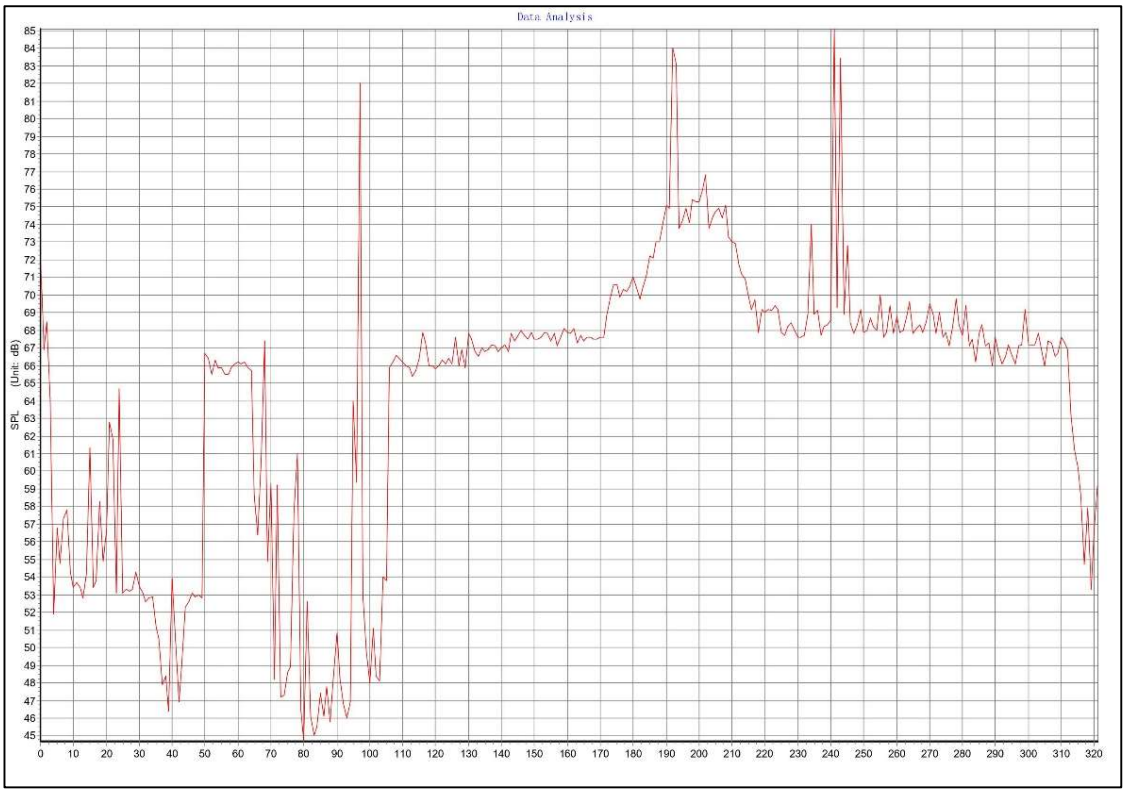

Figure 1-6 Noise Level Graph of the Factory

Table 1-4

Loading/Unloading Place

Figure 1-7 Noise Level Measurement in the Factory

1.2.3. **Water Quality**

The production process does not produce waste-water, therefore water sample was collected from drinking water pipe for workers, shown in Figure 1-8. The process was conducted on 25th September 2021 then sent to the laboratory. As the result, pH level of water is neutral stage and the other parameters such as Chloride, Conductivity, Manganese, Sulphate and other parameters are

under the guideline. Water sample collection map of Mountain Top Global Ltd. is shown in Figure 1-9. The result of water sample is as shown in Table 1-5 and original laboratory test result is attached in **Appendix B**.

Figure 1-8 Water Sample Collected from Drinking Water Pipe

Project Name	Water Quality Measurement GPS Location	Date
Mountain Top Global Company Ltd	16°59'3.98"N 96° 3'11.35"E	25th September 2021

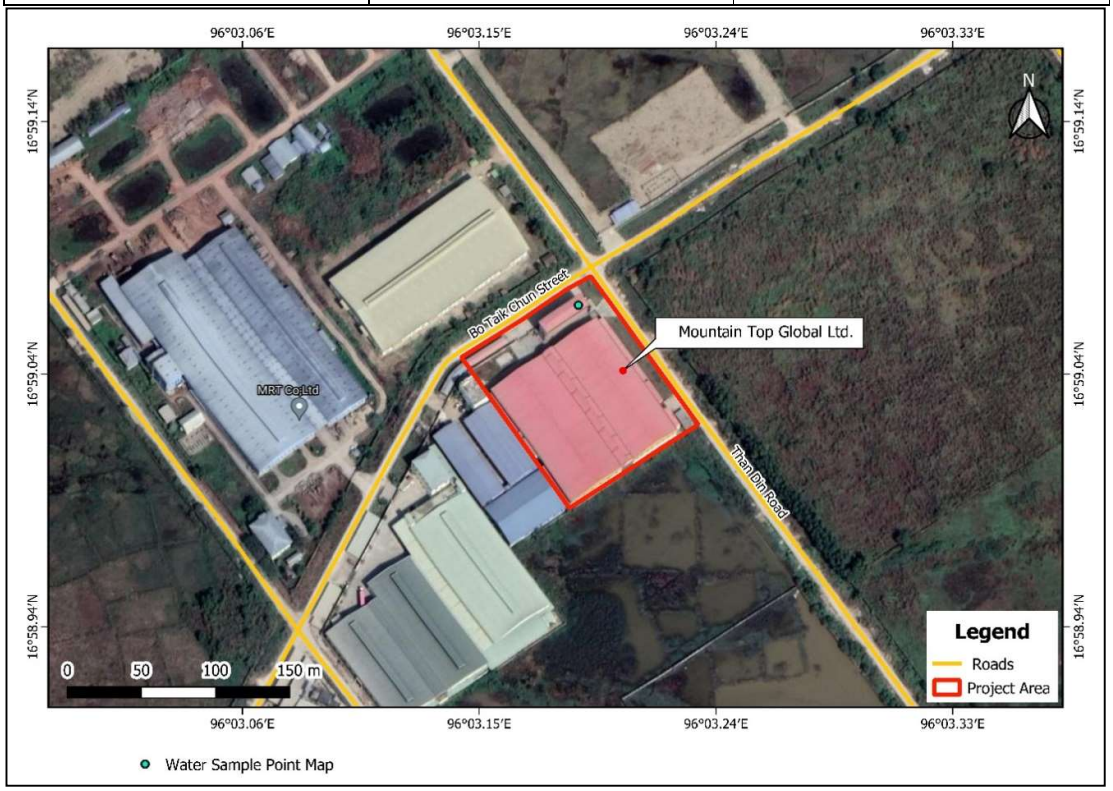

Figure 1-9 Location of Water Sample

Table 1-5 Domestic Water Quality Result

No.	Parameter	Result	Unit	Method	WHO Guideline Value	Remark
1	Acidity	11	mg/L	Titration Method	NA	-
2	Alkalinity	17	mg/L	Hanna (HI97104)-Alkalinity Photometer	NA	-
3	Bicarbonate	14.21	mg/L	Titration Method	NA	-
4	Calcium Hardness	1.96	mg/L	EDTA Titrimetric Method	NA	-

No.	Parameter	Result	Unit	Method	WHO Guideline Value	Remark
5	Carbonate	Nil	mg/L	Titration Method	NA	-
6	Chloride	14.49	mg/L	Argentometric Method	250 mg/L	Under the guideline
7	Color (True)	1	TCU	Hanna (HI 97727) -Color of water Portable Photometer	15 TCU	Under the guideline
8	Conductivity	104	µS/cm	Hanna (HI 991300) – pH, EC, TDS and Temperature Meter	2500 µS/cm	Under the guideline
9	Iron	Nil	mg/L	Phenanthroline Method	0.3 mg/L	-
10	Magnesium Hardness	1.96	mg/L	EDTA Titrimetric Method	NA	-
11	Manganese	0.007	mg/L	1 –(2-pyridylazo) 2-Naphthol (PAN) Method	0.4 mg/L	Under the guideline
12	P-Alkalinity	Nil	mg/L	Hanna (HI97104) – Alkalinity Photometer	Na	-
13	PH	6.65	-	Hanna (HI 2211)- pH and Temperature Meter	6.5-8.5	Agree with the guideline
14	Phosphate	Nil	mg/L	Ascorbic Acid Method	500 mg/L	-
15	Salinity	26.18	mg/L	Argentometric Method	NA	-

No.	Parameter	Result	Unit	Method	WHO Guideline Value	Remark
16	Sodium Chloride	23.89	mg/L	Argentometric Method	NA	-
17	Sulphate	<2	mg/L	USEPA SulfaVer 4 Method	250 mg/L	Under the guideline
18	Total Dissolved Solids	69	ppm	Hanna (HI 991300) – pH, EC, TDS and Temperature Meter	1000 mg/L	Under the guideline
19	Total Hardness	3.92	mg/L	EDTA Titrimetric Method	500 mg/L	Under the guideline
20	Total Solids	79	mg/L	Calculation Method	NA	-
21	Total Suspended Solids	10	mg/L	Dried at 103 – 105° C	NA	-
22	Turbidity	Nil	NTU	Milwaukee (MI 415) – Turbidity Meter	5 NTU	-

*WHO Guideline Value NA=Not Available

Appendix A
Air Quality Results

HEXAGONAL ANGLE
INTERNATIONAL CONSULTANTS CO.,LTD.

Office: No. 233/2, First Floor, Daung Min Street, 14/3 Quarter, South Okkalapa Township, Yangon, Myanmar.
Tel: +959 898333722
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Website: www.hexagonalangle.com

Air Quality Sampling Result (လေအရည်အသွေးတိုင်းတာမှုရလဒ်)

No. (စဉ်)	Parameter (အရည်အသွေး)	Recorded Period	Result (ရလဒ်)	Unit (ယူနစ်)	Average Period (ပျမ်းမျှကာလ)		*Guideline Value (ထုတ်လွှတ်မှုစံနှုန်း)
1	Particulate Matter PM_{10}	24-hr	16.9	$\mu g/m^3$ $\mu g/m^3$	1 24	Year Hour	*20 $\mu g/m^3$ *50 $\mu g/m^3$
2	Particulate Matter $PM_{2.5}$	24-hr	11.74	$\mu g/m^3$ $\mu g/m^3$	1 24	Year Hour	*10 $\mu g/m^3$ *25 $\mu g/m^3$
3	Total Suspended Particulate (TSP)	24-hr	22.72	$\mu g/m^3$	24 Hours		NG
4	Sulphur Dioxide (SO_2) ဆာလဖာဒိုင်အောက်ဆိုဒ်	24-hr	8	$\mu g/m^3$ $\mu g/m^3$	10 24	Mins Hours	* 500 $\mu g/m^3$ * 20 $\mu g/m^3$
5	Nitrogen Dioxide (NO_2) နိုက်ထရိုဂျင်ဒိုင်အောက်ဆိုဒ်	24-hr	3.42	$\mu g/m^3$ $\mu g/m^3$	1 1	Year Hour	*40 $\mu g/m^3$ *200 $\mu g/m^3$
6	Carbon Monoxide (CO) ကာဗွန်မိုနောက်ဆိုဒ်	24-hr	0.3	ppm	24 Hours		NG
7	Ozone (O_3)	24-hr	11.5	$\mu g/m^3$	8 Hours		100
8	Relative Humidity စိုထိုင်းစ	24-hr	76.6	%	24 Hours		NG
9	Temperature အပူချိန်	24-hr	30.2	Degree Celsius	24 Hours		NG
10	Air Pressure	24-hr	1006.5	hPa	24 Hours		NG
11	Wind Direction	24-hr	225	degree	24 Hours		NG
12	Wind Speed	24-hr	0.15	m/s	24 Hours		NG

*National Environmental Quality (Emission) Guideline 2015 NG=No Guideline

Analyzed by

Win Thein
Environmental & Transport Engineer
Hexagonal Angle International Consultants Co., Ltd.

Checked by

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

Appendix B
Water Quality Sampling Results

PRO LAB
ANALYTICAL LABORATORY

Myanmar Innovation Group of Co.,Ltd.
Address : No.(9), Sabae Housing,Pyi Htaung Su Road,
(26)Ward, South Dagon Tsp,Yangon,Myanmar.
Tel : 09-893 767 424
E-Mail : info@prolabmyanmar.com

LABORATORY ANALYSIS REPORT

1 Client Name : Mountain Top Global Co.,Ltd
2 Location : No.176, Myay Tine Ward (49) Ward, Wartayar Industrial Zone, Shwepyithar Township, Yangon Region
သံဒင်းစွေးလမ်းနှင့် ဗိုလ်တိုက်ချုန်းလမ်းထောင့်
3 Type of Sample : Drinking Water
4 Sample No. : 00299/2021
5 Contact Person : Ko Win Naing Oo
6 Phone No. : 09-898333722
7 Date Received : 25.09.2021
8 Date of Test Performed : 27.09.2021
9 Date of Issued : 29.09.2021
10 Result :

No.	Parameter	Result	Unit	WHO STD 2018	Method
1	Acidity	11.00	mg/L	NA	Titration Method
2	Alkalinity	17	mg/L	NA	Hanna (HI97104) - Alkalinity Photometer
3	Bicarbonate	14.21	mg/L	NA	Titration Method
4	Calcium Hardness	1.96	mg/L	NA	EDTA Titrimetric Method
5	Carbonate	Nil	mg/L	NA	Titration Method
6	Chloride	14.49	mg/L	250 mg/L	Argentometric Method
7	Color (True)	1	TCU	15 TCU	Hanna (HI 97727) - Color of water Portable Photometer
8	Conductivity	104	µS/cm	2500 µS/cm	Hanna (HI 991300)-pH,EC,TDS and Temperature Meter
9	Iron	Nil	mg/L	0.3 mg/L	Phenanthroline Method
10	Magnesium Hardness	1.96	mg/L	NA	EDTA Titrimetric Method
11	Manganese	0.007	mg/L	0.4 mg/L	1-(2-pyridylazo)2-Naphthol (PAN) Method
12	P-Alkalinity	Nil	mg/L	NA	Hanna (HI97104) - Alkalinity Photometer
13	pH	6.65	-	6.5-8.5	Hanna (HI 2211)-pH and Temperature Meter

PRO LAB ANALYTICAL LABORATORY

Myanmar Innovation Group of Co.,Ltd.
Address : No.(9), Sabae Housing,Pyi Htaung Su Road,
(26)Ward, South Dagon Tsp,Yangon,Myanmar.
Tel : 09-893 767 424
E-Mail : info@prolabmyanmar.com

LABORATORY ANALYSIS REPORT

1 Client Name : Mountain Top Global Co.,Ltd
2 Location : No.176, Myay Tine Ward (49) Ward, Wartayar Industrial Zone, Shwepyithar Township, Yangon Region
သံဒင်းဈေးလမ်းနှင့် ဗိုလ်တိုက်ချုန်းလမ်းထောင့်
3 Type of Sample : Drinking Water
4 Sample No. : 00299/2021
5 Contact Person : Ko Win Naing Oo
6 Phone No. : 09-898333722
7 Date Received : 25.09.2021
8 Date of Test Performed : 27.09.2021
9 Date of Issued : 29.09.2021
10 Result :

No.	Parameter	Result	Unit	WHO STD 2018	Method
14	Phosphate	Nil	mg/L	500 mg/L	Ascorbic Acid Method
15	Salinity	26.18	mg/L	NA	Argentometric Method
16	Sodium Chloride	23.89	mg/L	NA	Argentometric Method
17	Sulphate	< 2	mg/L	250 mg/L	USEPA SulfaVer 4 Method
18	Total Dissolved Solids	69	ppm	1000 mg/L	Hanna (HI 991300)-pH,EC,TDS and Temperature Meter
19	Total Hardness	3.92	mg/L	500 mg/L	EDTA Titrimetric Method
20	Total Solids	79	mg/L	NA	Calculation Method
21	Total Suspended Solids	10	mg/L	NA	Dried at 103 - 105°C
22	Turbidity	Nil	NTU	5 NTU	Milwaukee (MI 415) - Turbidity Meter

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

Tested By
Name : HTET HTET KYAW
Position : Laboratory Technician
Signature :.....

Approved By
Name : MAY THU ZAW MYINT
Position : Chief Technical Officer
Signature :.....

Myanmar Innovation Group of Co., Ltd. PRO LAB ANALYTICAL LABORATORY

APPENDIX – F

1 OVERVIEW OF THE POLICY, LEGAL AND ISTITUTIONAL FRAMEWORK

The following section provide an extracted section concerning regulatory requirements that will be applicable to the Project and national guidelines that are of relevance to the proposed Project.

1.1 CORPORATE ENVIRONMENTAL AND SOCIAL POLICIES

The Project Proponent will develop an Environmental Policy which includes the company's commitments to health, safety and environment. This Policy is now preparing.

1.1.1 Policies

Myanmar has developed a Goals and Policies to uplift the country's economy in all aspects. The relevant are described in Table 1.1 and the Project Proponent commits to support to meet these goals.

Table 1.1 Myanmar Relevant Policies

Policies	Descriptions
The National Environment Policy, 2019	As per Clause 7 in this Policy, there builds on Myanmar's 1994 National Environmental Policy and reaffirms its core values: • The wealth of the nation is its people, its cultural heritage, its environment and its natural resources. • It is the responsibility of the State and every citizen to preserve our natural resources in the interests of present and future generations. • Environmental protection should always be the primary objective in seeking development. In order to meet the visions, the Government of the Republic of the Union of Myanmar adopts the following 23 National Environmental Policy principles as the guiding framework for achieving: a clean environment and healthy, functioning ecosystems; sustainable economic and social development; and the mainstreaming of environmental protection and management: *The project proponent wishing to implement the project to align with this policy and comply the rules and regulations in order to support this.*
Myanmar Climate Change Policy, 2019	This is established with the vision to be a climate-resilient, low carbon society that is sustainable, prosperous and inclusive, for the wellbeing of present and future generations. In Clause 12, there clearly set-up a guiding principles for • Sustainable development • Precaution • Prevention • Environmental integrity • Shared responsibility and cooperation • Inclusiveness • Good governance • Climate justice and equity • Gender equality and women's empowerment *The project proponent commits to support the Government in order to meet the above-mentioned principles*
The Constitution of the Republic of the Union of Myanmar, 2008	The Constitution of the Union of Myanmar is the supreme law of the country and has provisions regarding the protection of the environment in Myanmar. *The Project Proponent commits to comply as these three Articles in the Constitution provide a basis for legalising and institutionalising environmental health impact assessment and social impact assessment.*

	There stipulates that: • The Union is the ultimate owner of all lands and all natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union; The Union shall enact necessary law to supervise extraction and utilization of State owned natural resources by economics forces (Article 37 (a,b)); • The Union shall protect and conserve natural environment (Article 45). • Every citizen has the duty to assist the Union in carrying out the following matters: ▪ preservation and safeguarding of cultural heritage; ▪ environmental conservation; ▪ striving for development of human resources; ▪ protection and preservation of public property (Article 390).

1.2 MYANMAR LEGAL FRAMEWORK

Environmental legislation and arrangements for environmental conservation in Myanmar are developing rapidly. The laws governing for environmental conservation, impact assessment, procedures and relevant section have been explored in section 1.2.1 and section 1.2.2. The Project Proponent will comply all the rules and regulations that have been prescribed in Myanmar with good practices.

1.2.1 Myanmar Legislation Relevant to the Project

Laws related to environmental and social issues and hence relevant to the EIA Study for the proposed Project are included in *Table 1.2*.

Table 1.2 Myanmar Legislation and Relevance to Project

Laws and Regulations	Description
The Environmental Conservation Law, 2012	
▪ Section 7(O) states that the Ministry to manage a proponent to provide compensation for environmental impact and contribute funds. ▪ Section 14 states for the requirement of emissions to the environment to meet stipulated environmental quality standards. ▪ Section 15 states for the requirement of proponent to provide onsite controlling equipment to monitor, control, manage, reduce or eliminate pollutants, or if impracticable, arrange environmentally-sound disposal. ▪ Section 23&24 mentions the need for prior permission from the Ministry for the business that have been categorized for causing impact on the environmental quality and right to issuing permit with terms and conditions relating to environmental conservation after scrutinizing. ▪ Section 29 provides that the proponent shall not violate any prohibition contained in the rules, notifications, orders, directives and procedures under the Environmental Conservation Law.	
The Environmental Conservation Rules, 2014	
The Ministry of Natural Resources and Environmental Conservation, in exercise of power conferred under sub-section (a) of section 42 of the Environmental Conservation Law, issues this rules by No. 50 of 2014 on the date of 5 June, 2014.	
Section 56	The person who carries out any project, business or activity shall arrange and carry out for conducting the environmental impact assessment for any project, business or activity by a qualified third person or organization accepted by the Ministry.
Section 69	Any person shall not emit, cause to emit, dispose, cause to dispose, pile and cause to pile, by any means, the pollutants and the hazardous waste or hazardous material stipulated by notification under the Law and any of these rules at any place which may affect the public directly or indirectly.

Laws and Regulations	Description
	Any person shall not carry out to damage the ecosystem and the natural environment which is changing due to such system, except for carrying out with the permission of the Ministry for the interest of the people.

EIA Procedure(2015)

The EIA Procedure sets out the procedures for completing an IEE, EIA and/or EMP in Myanmar. This includes information on project categorisation, responsibilities of project developers and ministries, EIA review, monitoring and auditing, among other issues.

Section 102 to 105, there prescribed responsibility for adverse impacts,

- *The proponent has to bear full legal and financial responsibility for actions and omissions and those of other related to the project proponents.*
- *That proponent has responsible to support programs for livelihood restoration and resettlement in consultation with all stakeholders.*
- *And the proponent has full responsibility to implement the EMP, the requirements set forth in ECC, Project commitments and conditions when providing services to the Project and inform the Ministry with detailed information as to the propose project's potential adverse impacts.*

Section 106 to 110, regarding for the monitoring, *the project proponent has responsible to undertake comprehensive self-monitoring*

- to notify and identify in writing to the Ministry for any breaches of its obligations or other performance failures or violations of the ECC and EMP
- to submit monitoring reports to the Ministry
- to submit the monitoring report within ten (10) days of completing a monitoring report and the information to be included.

Section 113,115, 117, there stipulated, for the purposes of monitoring and inspection, the event of emergency, the proponent has the responsibilities to

- grant the ministry and/or its representatives;
- grant the Ministry access to any places relating to project activities;

National Environmental Quality (Emissions) Guidelines (2015)

The NEQ guidelines set out emission standards for air, noise and effluent discharges for oil and gas terminal operations. The project shall consider emissions standards in its environment impact assessment and environmental management plan.

Myanmar Investment Law, 2016, The Pyidaungsu Hluttaw Law No. 40/2016

- Section (50)(d), it is stipulated that the investor have to register the land lease contract at the office of Registry of Deeds in accordance with the Registration Act.
- Section (51), it is mentioned for appointment, replacement, providing for the employment of staff and workers, ensuring to comply the entitlements and rights in the labor laws and rules, settling dispute regarding HR issues.
- Section (65), regarding for responsibilities of investors, it is prescribed as that the investor have to
  - respect and comply with the customs, traditions and traditional culture of the ethnic groups in the Union (a);
  - inform to the Commission if it is found that natural mineral resources or antique objects and treasure trove are not related to the investment permitted(e);
  - not make any significant alteration of topography or elevation of the land on which is entitled to lease or to use, without the approval of the Commission(f).
  - abide by applicable laws, rules, procedures and best standards practiced internationally for investment(g);
  - list and keep proper records of books of account and financial statement(h);
  - pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directive and so forth during the period of suspension of investment for a credible reason(j);
  - shall pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease and death due to the work(k);
  - supervise foreign experts, supervisors and their families, who employ in their investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar(l);

Laws and Regulations	Description
	▪ respect and comply with the labor laws(m); ▪ have the right to sue and to be sued in accordance with the laws(n); ▪ allow the Commission to inspect in any places, when the Commission informs the prior notice to inspect the investment(p); ▪ take in advance permit or endorsement of the Commission for the investments which need to obtain prior approval under the Environmental Conservation Law and the procedures of environmental impact assessment, before undertaking the assessment, and shall submit the situation of environmental and social impact assessment to the Commission along the period of activities of the investments which obtained permit or endorsement of the Commission (q).
Myanmar Investment Rules, Notification no. 35/2017	
	▪ Section 202, stated that the investor shall comply with all terms and conditions in the permit and other applicable laws when the investment is carried out. ▪ Section 206, stated that if the investor desires to appoint expert foreigner as senior manager, technical and operational expert or advisor according to subsection (a) of the section 51 of the Law, he shall submit the application attached with passport, expertise evidence or degree certificate and summary of biography of such foreigner to the Commission and obtain the approval.
The Import and Export Law, 2012	
	▪ Section 7, states that a person who obtained any license shall not violate the conditions contained in the license.
The Forest Law (2018)	
	The Forest Law is enacted by Pyihtaungsu Hluttaw in September, 2018. It empowers, to declare for the reserved forest for the maintaining a sustained yield of the forest produce, to manage the forest land. ▪ Section 12(a), mentioned that it needs prior approval from the Ministry if desirous to implement the development work or economic project within a forest land and forest covered land. ▪ (c) Whoever desirous to undertake as in sub-section (a), has to comply the Environmental Conservation Law and the stipulations from respective Laws.
Conservation of Water Resources and Rivers Law (2006)	
	In Section (11)(a), (19), it outlines prohibitions for the following activities: ▪ No person shall dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk. ▪ No one shall dispose of any substance into the river creek that may cause damage to waterway or change of watercourse from the bank or vessel." The empowerment of this Law is provided to the Ministry of Transport for controlling navigation of vessels in the rivers and creeks as well as communicating with local and foreign government and organizations for conservation of water resources, rivers and creeks. Also, to carry out conservation works for water resources, rivers and creeks, in accordance with the relevant international conventions, regional agreements and bilateral agreements for environmental conservation.
The Protection and Preservation of Antique Objects Law (2015)	
	▪ Section 12 states that the person who finds any object which has no owner or custodian, needs to inform the relevant Ward or village-tract administrator if he knows or it seems reasonable to assume that the said object is an antique object. ▪ Section 13 states a procedure to inform and the responsibility to inspect whether it is a real ancient monument or not and keep or cause to protect as may be necessary in accordance with the stipulation
The Protection and Preservation of Ancient Monuments Law (2015)	
	▪ Section 12 states that a person who finds an ancient monument over one hundred years old under the water or above ground shall promptly inform the relevant Ward or Village-Tract Administrative Office. ▪ Section 13 states a procedure to inform and the responsibility to inspect whether it is a real ancient monument or not and keep or cause to protect as may be necessary in accordance with the stipulation. ▪ Section 20 states no one shall damage ancient monuments including using machinery which causes vibration and discharging chemical substance.
Myanmar Fire Force Law, 2015	

Laws and Regulations	Description

The relevant government department or organization shall obtain the opinion of the Fire Services Department for the purpose of fire precaution and prevention, when laying down plans for construction for town, village and downtown or village development plans.

According to Section 25: The factory, workshop, highway bus, airport, jetty, hotel, motel, guest house, collective-owned building, market, work-site or business exposed to fire hazard of the owner or manager shall;

(a) Not fail to form the reserve fire brigade

(a) Not fail to provide materials and apparatuses for fire safety; in conformity with the directive of the Fire Services Department

Prevention from Danger of Hazardous Chemical and Associated Material Law (Pyidaungsu Hluttaw Law No 28/2013)

- Chapter 7 – "Any person, who wants to do the business of chemical and associated materials, shall apply to the central body for the acquisition of the license, attached with the management plan for the environmental conservation in accord with the stipulations".
- Chapter 8 – "20. License holder shall apply to the central supervising body in accord with the stipulation for the relevant chemicals and associated materials using for his chemicals and associated materials business" for a certificate.
- "22. The registered certificate holder shall abide by the regulations contained in the registered certificate and shall follow the order and directives issued from time to time by the central supervising body".
- Section 15 states that a) before works, license holder shall be inspected by the relevant supervising and inspection team for safety and machinery/equipment check and b) The persons who are discharging the duty shall be asked to attend foreign training or preventative trainings conducted by government departments and organisations.
- Section 16 provides that licence holders shall a) follow the licence regulations, b) follow directives on safe handling and shall ask workers to strictly follow c) shall provide necessary safety equipment and issue free personal protective equipment to workers, d) provide training in occupational saftey e) determine the hazard to the environment, people and animals f) provide fit for work medical check-up and keep records g) send permission letter to Department of Township Administration if the chemicals and associated material are permitted to store h) acquire in advance guidance and agreement from fire service department if using inflammable materials or explosives i) transport only the permitted amount of chemicals in accordance with prescriptive stipulations j) obtain approval of central supervising body if transporting chemical and associated material from the permitted region to any other region h) abide and operate in accordance with related environmental laws to avoid impacts and damage to the environment.
- Section 17 states the licence holder must have insurance in accordance with stipulations in case of compensation is required for losses related to people, animals and environment.
- Section 23 states the registered certificate holder shall apply again for using chemical which are not in the registered list.
- Section 27 states the license holder shall a) classify the hazard level of chemicals and related substances in advance b) show Material Safety Data Sheet and warning signage c) provide safety equipment, personal protective equipment and training on their use d) possess, transport, store, use and discharge chemicals and related materials in accordance with stipulations, e) not import or export chemicals and related materials banned by the central supervising board.

Myanmar Insurance Law (1993)

The Myanmar Insurance is established under this Law as a legal entity having perpetual succession, capable of suing and being sued in its own name. The rules for establishing insurances in the country are established.

- Section15 states it is compulsory for owners of motor vehicles to have Third Party Liability Insurance with Myanmar Insurance
- Section 16 states it is compulsory for organisations operating as an enterprise which may cause damage to life and property of the public or may pollute the environment to have General Liability Insurance with the Myanmar Insurance.

The Law On Standardization (2014)

This is for the reducing the technological barriers for the trade and supportive for the development

Laws and Regulations	Description
international free trade zone and for the development of Myanmar economy and social, the standardization will utilize for the smoothness of technology transfer and invention. There it empowers to organize the council for setting up the policy, guideline and to implement to practice the national standard in respective production and service.	
Motor Vehicle Law (2015)	
This is for reducing environmental pollution caused by motor vehicles and the Department has the right to issue directives, the standards, guidelines for the purposes of improting, manufacturing, assembling, maintaining to be safe in accident and environment conservation.	
Public Health Law, 1972	
The project owner will cooperate with the authorized person or organization in line with the section 3 and 5 of said law. • Section 3: The project owner will abide by any instruction or stipulation for public health. • Section 5: The project owner will accept any inspection, anytime, anywhere if it is needed.	
The Protection and Prevention of Communicable Disease Law, 1995	
• Section 3 of Chapter 2 states that the Department of Health will carry out immunisations and health education activities related to communicable diseases • Section 4 of Chapter 2 states that the Department of Health will carry out immunisation or other measures in the event of a Principal Epidemic Disease or a Notifiable Disease occurs and the public will abide by the measures. • Section 9 of Chapter 5 of this law states that all persons are responsible for reporting an outbreak of a communicable disease to the nearest Health Officer. • Section 11 of Chapter 6 states that Health Officer may undertake investigations and medical examinations to prevent the control the spread of Principal Epidemic Disease.	
The Control of Smoking and Consumption of Tobacco Product Law, 2006	
Chapter (6), Section (9), states that the person-charge has to keep the caption and mark referring that it is a non-smoking area, arrange the specific place where smoking is allowed and keep the caption and mark also referring that it is a specific place where smoking is allowed, supervise and carry out measures so that no one shall smoke at the non-smoking area and accept the inspection when the supervisory body comes to the place for which he is responsible.	
Employment and Skill Development Law, 2013	
5. (a) (1) If the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days. But it shall not be related with government department and organization for a permanent employment. 15. The Project Proponent (a) shall carry out the training for each work or compounding the work individually or group-wise by opening on-job training, training systematically at worksite, sending outside training and training by using information technology system, for arranging the training program to enhance the employment skill of the workers; (b) appointing the youths of 16 years as apprentice, shall arrange the training for technology relating to the employment systematically in accord with the regulations prescribed by the skill development team.	
The Settlement of Labour Dispute Law, 2012	
The Pyidaungsu Hluttaw hereby had enacted this Law for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. • Section 38 provides that no employer will fail to negotiate and coordinate in respect of a complaint within the prescribed period without sufficient cause • Section 39 provides that no employer shall alter the conditions of service of workers involved in disputes prior to investigation by tribunals • Section 40 provides that no party shall strike or lock-out without negotiation, conciliation and arbitration by Arbitration Body. • Section 51 provides that employer if commits acts without sufficient cause, may be liable to pay full compensation to workers as determined by Arbitration Body or Tribunal.	
The Workmen Compensation Act, 1923 (amended 2005)	

Laws and Regulations	Description
The Workmen's compensation act had been promulgated in 1923, amended in 2005, to provide for the payment by certain classes of employers to their workmen of compensation for injury by accident. There it clearly described for the liability for compensation of employer's, amount of compensation, compensation to be paid when due and penalty for default, method of calculating wages, review, commutation of half-monthly payments, payment of a lump sum amount, distribution of compensation, compensation not to be assigned, attached or charged, notice and claim, power to require from employers statements regarding fatal accidents, reports of fatal accidents and serious bodily injuries, medical examination, contracting, remedies of employer against stranger, compensation to be first charge on assets transferred by employer, special provisions relating to masters and seamen. The amendment law is for revising the monetary amount to update.	
Labour Organization Law, 2011	
This Law was enacted, to protect the rights of the workers, to have good relations among the workers or between the employer and the worker, and to enable to form and carry out the labour organizations systematically and independently. • Section 17 provides that Labour Organisations are free to organise and negotiate workers rights if not meeting labour laws. • Section 18 provides that Labour Organisations may demand re-appointment of worker if cause of dismissal is related to labour organisation membership or activities or not conform with labour laws. • Section 19 provides that Labour Organisations have the right to send representatives to conciliation tribunals. • Section 20 provides that Labour Organisations have the right to participate and discuss workers rights and interests with government and employers • Section 21 provides that Labour Organisation have the right to participate in collective bargaining in accordance with labour laws. • Section 22 provides that Labour Organisation may take collective actions in accordance with the relevant procedures, regulations and law.	
Minimum Wages Law, 2013	
This Law was enacted to meet with the essential needs of the workers, and their families, who are working at the commercial, production and service, agricultural and livestock breeding businesses and with the purpose of increasing the capacity of the workers and for the development of competitiveness. • Section(12), (a-e), it is stipulated that the employer shall not pay wage less than the minimum wage stipulated, not have the right to deduct any other wage; • Section(13) (a-g), it is stipulated that the employer shall inform rates of minimum wage relating to the business, allow the entry and inspection of the inspection officer, give the sick worker holiday for medical treatment in accord with stipulation and give holiday for the matter of funeral of the family of worker without deducting from the minimum wage.	
Payment of Wages Law, 2016	
Salaries are to be paid at the end of the month or, depending on the size of the employing enterprise, between 5-10 days before the end of the month. The employer is permitted and required to withhold income tax and social security payments. Other deductions, e.g. for absence, may only be withheld in accordance with the law. • Section 3: The employer (a) will pay for salary either Myanmar Kyats or Foreign Cash permitted by National Bank of Myanmar. When delivery the salary (b) If the employer needs to pay the other opportunities or advantages, he can pay cash together with other materials according employee's attitude. • Section 4: When the contract finish, employer need to pay the salary (not more than one month) to employees. For the permanent worker, need to pay per monthly. If more than 100 employees, need to pay within the 5 days from the end of month. If fire the employees, need to pay salary within two days after fire. When employee dies due to the accident, need to pay money as an insurance to employee's family within two days. • Section 5: If the employer has difficulties to pay wages on time because of significant events (eg natural disaster), the employer must report to the Department with evidence of payment at later date agreed with the employee. • Section 9: When cut the salary due to the employees' absence, total cut salary not more than 50 % of his salary.	

Laws and Regulations	Description

- Section 10: Employer need to approval form the department as a penalty and cannot more than actual ravage rate when cut salary. No cut salary from the employees under 16 age.
- Section 14: If an Employee carries out overtime work, he/she must be allowed the presiding overtime rate as set by the Law.

Social Security Law, 2012

The Establishments Applied this regulations as guiding body for better social providing for mine workers. The prescriptions most relevant to the project are:

- Section 18 (b), it is stipulated that the employer can deduct contributions to be paid by worker from his wages together with contribution to be paid by him and pay to the social security fund and in such case he can incur the expense.
- Section 51: The employer (a) shall pay contribution monthly to Employment Injury Benefit Fund at the rates stipulated under section 50. Moreover he shall also bear the expenses for paying as such; (b) shall pay defaulting fee stipulated under section 88, in addition to the contribution if fails to contribute after effecting insurance for employment injury benefit.
- Section 53 (a) The employers and workers shall co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment;
- Section 54 - The employer shall report to the relevant township social security office immediately if a serious employment accident occurs to his insured worker. There shall not be any delay without sufficient cause to report as such. A team of officers and other staff who inspect the establishments, if it is found out the employment injury, death, and contracting disease, shall report to the relevant township social security office in accord with the stipulations.
- Section 75, there it is clearly prescribed for keeping records of work and lists.

Law protecting Ethnic Right, 2015

This is for the Equal right between the Ethnics living in Myanmar. It enacted that if an ethnic loose the right, he can complain to the Regional or State Government to get the equal chance and find the equal right.

- Section 5 of Chapter IV provides that project matters shall be informed, coordinated and undertaken in consultation with ethnic groups if projects are in areas with ethnic groups.

The Succeeding laws to protect the right of Myanmar national similar in nature to this are

1. Monogamy Law (2015): Concerning all those who are living in Myanmar, Myanmar Citizens who live outside of Myanmar, and foreigners who marry Myanmar citizens while living in Myanmar for preventing misconducting marriages.

2. Buddhist Women Special Marriage Law (2015): Concerning the marriage between Buddhist Woman and other religious man. There prescribed the legal procedure, the conditions to be complied by non-Buddhist husband, the customs for dividing property when divorcing.

3. Religious Conversion Law (2015): This is enacted for the freedom to convert from one religion to another, or a person without a religion has the freedom to convert to a religion. There prohibited to apply for a religious conversion with an intent to insult, disrespect, destroy, or abuse a religion.

4. Population Control Healthcare Law (2015); This is for alleviate poverty, provide adequate quality healthcare, and ensure that family planning improves maternal and child health in the country. This Empowers region or state government that concerned with the special zone for healthcare to form region or state population control healthcare group to implementing the task as per the directives of the Ministry and region or state government and the Union Territory Governing body.

Leaves and Holidays Act, 1951

Under the Leave and Holidays Act (1951), every employee shall be granted paid public holidays as announced by the Government in the Myanmar Gazette. On average, Myanmar has 26 public holidays per year, depending on the date of the variable holidays. Myanmar law recognizes various types of leave. Leave is governed by the Leave and Holidays Act (1951), but additional rules may apply in accordance with other

Laws and Regulations	Description
laws, such as the Social Security Law (2012) for employees contributing to the Social Security Fund.	

Occupational Safety and Health, 2019 (Pyidaungsu Hluttaw Law No.8.2019)
The Project Proponent commits to comply for: • Responsibilities of the employers and the employee • Responsibilities of the manufacturer, traders, installation or deployment, and construction and demolishment • Information/Notice, investigation and reporting

1.2.2 International Agreements and Treaty

Relevant international conventions to which Myanmar is a signatory include those related to waste management, biodiversity conservation and labor conventions. The key international conventions of relevance to the Project are included in *Table 1.3*.

Table 1.3 International Conventions of Relevance to the Project

Legislation	Relevance	Ratification Status (in Myanmar)	Project Compliance
Environmental			
Vienna Convention for the Protection of the Ozone Layer 1988 and Montreal Protocol on Substances that Deplete the Ozone Layer 1989	Not relevant to the Project as the Project will not use any ozone depleting substances.	Accession 16th Sep 1998 (Vienna) & Accession 24th Nov 1993 (Montreal)	The Project commits not to utilize ozone depleting substances.
Convention on Biological Diversity 1992	The Project will not be undertaken in habitats for biodiversity.	Ratified 25th Nov 1994	The Project commits to comply as per Myanmar's
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	The Project may generate hazardous wastes.	Entered into force 6th April 2015	The Project commits to comply as per Myanmar's
United Nations Framework Convention on Climate Change 1992 (UNFCCC) and Kyoto Protocol 1997	The Project will form part of Myanmar's total emissions output.	Entered in force 23rd Feb 1995 (UNFCCC) and 16th Feb 2005 (Kyoto Protocol)	The Project commits to comply as per Myanmar's
Asia Least Cost Greenhouse Gas (GHG) Abatement Strategy (ALGAS) 1998	The Project will produce air emissions from the vessels.	1998	The Project commits to comply as per Myanmar's

1.3 PROPONENT'S CONTRACTUAL AND OTHER COMMITMENTS

The Project Proponent will comply with the Myanmar Environmental Conservation Law, Environmental Conservation Rules, Environmental Quality (Emission) Standards and all necessary international standards.

The Project commits to comply, undertake the following:

- The Project Proponent will comply with commitments, mitigation measures and management plans stated in this EMP report.
- The Project Proponent is responsible for its actions and omissions and those of its contractors, Sub-contractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the company acting for or on behalf of the Project.
- Support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts.
- Fully implement the EMP, all Project commitments, and conditions, and is liable to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project.
- Be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.
- Timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.

- Respect and comply with the customs, traditions and traditional culture of the ethnic groups in the Union;

- Abide by the terms and conditions, stipulations of special licenses, permits, and business operation certificates issued to them, including the rules, notifications, orders, and directives and procedures issued by the MIC and the applicable laws, terms and conditions of contract and tax obligations;

- Carry out in accordance with the stipulations of the relevant department if it is, by the nature of business or by other need, required to obtain any license or permit from the relevant Union Ministries government departments and governmental organizations, or to carry out registration;

- Immediately inform the Commission if it is found that natural mineral resources or antique objects and treasure trove not related to the investment permitted above and under the land on which the investor is entitled to lease or use and not included in the original contracts.

- To inform the village administrative office and the Department of Historical Research if any historical thing is found during the project operations.

- Abide by the applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage;

- Close and discontinue the investment only after payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce;

- Pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directives and so forth during the period of suspension of investment for a credible reason;

- Pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease and death due to the work;

- Supervise foreign experts, supervisors and their families, who employ in its investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar;

- Respect and comply with the labor laws;

- Have the right to sue and to be sued in accordance with the laws;

- Pay effective compensation for loss incurred to the victim, if there is damage to the natural environment and socioeconomic losses caused by logging or extraction of natural resources which are not related to the scope of the permissible investment, except from carrying out the activities required to conduct investment in a Permit or an Endorsement.

- Ensure equal rights for local workers and avoid salary bias, i.e. ensure that local and foreign workers have the same salary at the same level.

- Ensure that all foreign employees apply for the proper work permit and visa through the Myanmar Investment Commission (MIC).

- Provide rights and benefits including but not limited to, leave, holidays, overtime pay, compensation and social security. Most of the relevant particulars are in the Myanmar Companies Act.

- Settle disputes, within the law, between workers, employers, consulting experts or any other personnel involved in the business operation.

1.4 INSTITUTIONAL FRAMEWORK

In Myanmar, matters pertaining to Health, Safety and Environment (HSE) requirements are generally under the jurisdiction of the ministries and state-owned enterprises. Key ministries and agencies that have jurisdiction over HSE matters in mining operations are included in *Table 1.4*.

Table 1.4 Key Ministries and Agencies Involved in HSE

Ministry/Agency	Responsibility
Ministry of Natural Resources and Environmental Conservation (MONREC)	The Environmental Conservation Department (ECD) of MONREC has ultimate responsibility in the review and approval, or otherwise, of submissions under the IEE/EIA process.
Myanmar Investment Commission (MIC)	MIC is a government agency responsible for coordinating with ministries (such as the MOEE) and other state entities to facilitate foreign investment in Myanmar. The MIC is also responsible for granting MIC permits which enable foreign investors to carry out business activities under the Myanmar Investment Law (2016).

1.5 PROJECT'S ENVIRONMENTAL AND SOCIAL STANDARDS

MONREC has established environmental quality standards, the National Environmental Quality Emission Guidelines (2015)(NEQEG). The NEQEG provide the basis for regulation and control of noise and air emissions and effluent discharges from projects in order to prevent pollution and protect the environment and public health.

The Project Proponent will implement the project by complying as per NEQEG for all phases (construction, operation, disclosure and post-disclosure) where applicable.

In NEQEG guideline, there prescribe the limit for Tanning and Leather Finishing (2.3.2.2) in Garments, Textile and Leather Products (2.3.2). This guideline applies to textile manufacturing using natural fibers (made entirely from chemicals), and regenerated fibers (made from natural materials by processing these materials to form a fiber structure). It does not include polymer synthesis and natural raw material production.

1.5.1 Effluent Levels

Effluent and storm water flows should be managed so as to achieve the following effluent levels as per prescribed in section (2.3.2) Garments, Textile and Leather Products; (2.3.2.2) Tanning and Leather Finishing.

Table 1.5 NEQEG on Effluent Discharge Levels

Parameter	Unit	Guideline Value
5-day Biological oxygen demand	mg/l	30
Adsorbable organic halogens	mg/l	1
Ammonia	mg/l	10
Cadmium	mg/l	0.02
Chemical oxygen demand	mg/l	160
Chromium (hexavalent)	mg/l	0.1

Chromium (total)	mg/l	0.5
Cobalt	mg/l	0.5
Color	m^{-1}	7 (436 nm[a], yellow) 5 (525 nm, red) 3 (620 nm, blue)
Copper	mg/l	0.5
Nickel	mg/l	0.5
Oil and grease	mg/l	10
Pesticides	mg/l	0.05-0.10[b]
pH	S.U.[c]	6-9
Phenol	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	^0C	<3[d]
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

[a]Nanometers

[b]0.05 mg/l for total pesticides (organophosphorus pesticides excluded), 0.10 mg/l for organophosphorus pesticides

[c]Standard unit

[d]At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity, when the zone is not defined, use 100 meters from the point of discharge.

1.5.2 Air and Noise Emission

The principle sources of air emission are fugitive dust from earth works and materials handling and transport facilities. Prevention and control of air emissions should be sufficient to achieve the general air emission guideline for ambient air quality. The air emission parameters are taken from *Section 2.3.2.2.Tanning and Leather Finishing* and noise from *Section 1.3* of the NEQEG and shown in Table 1.6 and

Table 1.7 respectively.

Table 1.6 Air Emissions Levels (for leather finishing)

Parameter	**Unit**	**Guideline Value µg/m^3**
Upholstery leather	kg of hazardous air pollutant loss per 100 m^2 of leather processed	3.3
Water resistant/specially leather		2.7
Non-water resistant leather		1.8

Table 1.7 NEQEG Noise Level Parameters

Receptor	**One hour LAeq (dBA)[a]**	
	Daytime 07:00 – 22:00 (10:00 - 22:00 for Public holidays)	**Night Time 22:00 – 07:00 (22:00 - 10:00 for Public holidays)**
Residential, institutional, educational	55	45
Industrial, commercial	70	70

[a] Equivalent continuous sound level in decibels