



Environmental Monitoring Report

for Redevelopment and
Enhanced Oil Recovery (EOR)
Programme

April 2023 ~ September 2023





Environmental Monitoring Report

**Redevelopment and
Enhanced Oil Recovery (EOR)
Programme**

April 2023 ~ September 2023

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Table 1: LIST OF ACRONYMS

Acronym	Definition
ALARM	Advancing Life and Regenerating Motherland
API	American Petroleum Institute
Bcf	Billion Cubic Feet
BHA	Bottom-Hole Assembly
CSR	Corporate Social Responsibility
DNA	Deoxyribonucleic Acid
DWQS	Drinking Water Quality Standard
ECC	Environmental Compliance Certificate
ECD	Environmental Conservation Department
EIA	Environmental Impact Assessment
EMoR	Environmental Monitoring Report
EMP	Environmental Management Plan
EOR	Enhanced Oil Recovery
ERP	Emergency Response Plan
ETA	Estimated Time Arrival
GOCS	Gas and Oil Collecting Station
HoDs	Head of Departments
HSE	Health, Safety and Environment
ISO	International Standard Organization
KPIs	Key Performance Indicators
LPG	Liquefied Petroleum Gas
MEDEVAC	Medical Evacuation
MFO	Mann Field Office
MMbbls	One Million Barrels of Oil
MOGE	Myanma Oil and Gas Enterprise
MYO	MPRL E&P Yangon Office
NDT	Non-Destructive Testing
NEQEG	National Environmental Quality (Emission) Guidelines
PCC	Performance Compensation Contract
PPE	Planning and Production Engineering
PSD	Process Shut-Down
RO	Reverse Osmosis
SMC	Sludge Management Compound
WMC	Waste Management Compound

1. Executive Summary

In Myanmar's energy industry, MPRL E&P is highly respected for its expertise in onshore and offshore exploration and production since 1996, making it a leading player.

MPRL E&P is devoted to upholding the highest standards of integrity, transparency, and ethics in our business practices, all while maintaining our commitment to social and environmental responsibilities. We strongly believe in empowering our employees to foster the growth of our company. To achieve this, we create a supportive and collaborative workplace that fosters ongoing learning and enhancement.

At MPRL E&P, we focus on honest, transparent, and ethical business practices, and we take our social and environmental responsibilities seriously. We also empower our employees to help our organization grow by creating a supportive and collaborative environment that encourages ongoing learning and improvement.

Our seventh environmental monitoring report summarizes the environmental implementation and monitoring activities and progress achieved from April 2023 to September 2023. This report encompasses data from monitoring activities, advancements in environmental measures outlined in the Environmental Management Plan (EMP), and evaluations of Air, Noise, Soil, Surface Water, and Groundwater quality. These monitoring activities were carried out in collaboration with the regional ECD (Magway) team. Additionally, the report addresses our application for an extension of Mann Field ECC, outlines the progress made based on comments received from the ECD in our periodic environmental monitoring reports, highlights the implementation progress in response to comments made by the regional ECD (Magway) during their inspection tour of Mann Field. It also covers our efforts in disposing of E-waste to Golden DOWA, our participation in a tree planting campaign for environmental conservation, the progress in implementing the Mann Field Enhanced Oil Recovery Project Decommissioning Plan, and the successful execution of EMP along with its eight sub-plans as per the established schedule. Furthermore, the report discusses the challenges and difficulties encountered in our day-to-day operations.

Key Highlights within the monitoring periods (April 2023 to September 2023)

Environmental Performance

As our Mann Field EOR Project's ECC will be valid until 26 March 2024, we submitted an application letter for the extension of ECC altogether with supported evidence documents to the regional ECD (Magway) on 19 September 2023.

We fulfilled our commitment to conduct an Environmental Monitoring Survey in collaboration with the regional ECD (Magway) team, as stipulated in the approved EIA

report and ECC. Due to security concerns and logistical constraints, we conducted the survey at the nearest locations to our operations, consistent with the baseline sampling points (Z3AQN, Z4AQN, Z3S1, Z3S2, Z4S1, Z4S2, Z3GW1, Z3GW2, Z4GW2, Z3GW1, Z3GW2, Z3SW1, and Z3SW2) from July 12, 2023, to July 14, 2023. Notably, Z4GW1, located in Shwewargone ward near Minbu, was excluded from the survey for water sample collection purposes, as it was no longer being used as a tube well and had been repurposed as a waste disposal well.

On June 22, 2023, the regional ECD (Magway) conducted an inspection tour of the Mann Field, which included GOCS-1, Mann Creek Water Supply Station, WMC, Bio-filtration unit and discharged water collecting tank, produced water injection well M-258, and site inspection of Z4AQN location.

On July 12, 2023, the regional ECD (Magway) made an environmental awareness presentation about water conservation and hot spot to MOGE and MPRL E&P personnel at MOGE (Mann) office. MPRL E&P also conducted a discussion and presentation about tentative plan of Environmental Monitoring with ECD for the 7th EMoR in Mann Field between 12-14 July 2023.

Between July 12, 2023, and July 14, 2023, the Regional ECD (Magway) carried out the following monitoring activities:

- Air and Noise Quality monitoring at points Z3AQN and Z4AQN.
- Soil Quality monitoring at points Z3S1, Z3S2, Z4S1, and Z4S2.
- Surface water quality monitoring at Z3SW1, Z3SW2, Z4SW1, and Z4SW2.
- Groundwater quality monitoring at Z3GW1, Z3GW2, and Z4GW2

Because of recent security issues, we've scaled back Mann Field operations to daytime and are operating with a minimal crew. As a result, we've chosen Z3AQN and Z4AQN as monitoring points for air, noise, and soil quality. These locations are the closest to our recent operations, and other points aren't currently suitable for monitoring due to security concerns and logistical constraints. If conditions improve, we intend to resume monitoring for air, noise, soil, surface water, and groundwater quality at the other two points.

While engaged in our self-monitoring endeavors, MPRL E&P carried out examinations of various water sources, including Drinking Water Quality, Discharged Water from the MPRL E&P Base Camp, Domestic Water from the Down-hole and Mechanical Workshop, Hydro-test Water from the Warehouse, and groundwater in close proximity to the injection well M-132, in accordance with our predetermined schedule. You can find more comprehensive information about these monitoring activities in Articles 8.8 and 8.10.

During our self-monitoring activities, MPRL E&P conducted tests on Drinking Water Quality, Discharged Water from the MPRL E&P Base Camp, Domestic Water from the Down-hole and Mechanical Workshop, Hydro-test Water from Warehouse, and

ground water near the injection well M-132 as per the planned schedule. Further details on these monitoring activities are described in Articles 8.8 and 8.10.

As per the comments of ECD which was made on our presented EMoRs by ECD, MPRL E&P compared and presented the monitoring results of air, noise, soil, surface water and ground water quality with the baseline data from 2015, and implementations for those ECD's comments are presented in the Article 7.

All the lab results of air, noise, water and soil quality monitoring and self-environmental monitoring activities are presented as an attachment in the Appendix section and the detail explanation for some parameters over the guidelines in each respective sections as required.

In our commitment to enhancing HSE awareness among our employees, the HSE department organizes monthly training sessions on Health, Safety, and Environmental topics. These sessions alternate between in-house training and external sources, depending on availability, in accordance with our training plan.

As part of our efforts to promote environmental awareness through presentations, we covered various topics including "Solutions to Plastic Pollution," "Earth Day and Earth Hour," and "Environmental Permits." Furthermore, we conducted discussions on the significance of ecosystem and biodiversity conservation, water conservation, energy conservation, waste segregation, and waste management systems with all staff members. These topics were addressed during the induction training for new staff and in every safety meeting.

As per our environmental management plan and waste management procedure, fluorescent lamp and bulbs about 260.0 kg. was disposed at Golden DOWA on 22 July 2023.

All the formation water produced was 100% disposed into shut-in wells. The field operations continue to maintain the achievement of zero discharge of produced water since 24 August 2017.

MPRL E&P have been able to analyze and measure almost all parameters as committed in the EIA report based on the availability of favored conditions and lab facilities in Myanmar.

During the six-month period, none of the oil spill case occurred. Nevertheless, spill drill tabletop exercises were conducted with all stakeholders as per environmental action plan.

As part of our commitment to environmental sustainability and our contribution to climate change mitigation, MPRL E&P carries out annual tree planting activities across various areas of the Mann Field, including the WMC, SMC, GOCS, Warehouse, Workshops, Schools, and Office Compounds. Over the past six months, a collaborative effort involving MOGE, MPRL E&P, and the communities from 14 villages has resulted in the planting of approximately 1,782 Sein Ta Lone mango plants.

Between 2020 and 2023, our statistics indicate that we have successfully planted and nurtured over 300 indigenous plants and 1,922 Sein Ta Lone mango plants.

On 20 September 2023, CSR team conducted a community engagement meeting with communities and HSE team also participated and shared information about health, occupational safety and environmental related activities which were implemented in Mann Field for the sake of sustainable development.

MPRL E&P has disseminated the authorized EIA report and all environmental monitoring reports through various channels, including our website, relevant government departments, public meeting venues, and project offices.

We remain steadfast in our commitment to meeting the obligations and commitments specified in the ECC and EIA. Our vigilance in monitoring and assessing the situation will persist to ensure strict adherence to all applicable regulations and standards.

Social Performance

In the first half of the Fiscal Year 2023-2024, MPRL E&P's CSR Program have implemented strategic community investment initiatives. These initiatives include: Community Infrastructure Development, Community Livelihood Development, Educational Partnership Program, Community Capacity Building, Community Healthcare Program, Community-led Waste Management Program, Operational Grievance Mechanism, Stakeholder Engagement, and Corporate Philanthropy.

Under the area of Community Infrastructure Development, we have made several notable achievements. The initiatives included launching the Solar-powered Water Pumping Project in Mann Kyoe Village, providing a solution to water scarcity with contributions from both the CSR Program and the Mann Kyoe Community and supplying furniture to Nan U Library. Furthermore, the water pumping project in Chin Taung Village was successfully finalized in June, along with the completion of ceiling installation, electrical work, and wall painting in Aye Mya Community Center. At the same period, old water collection tanks in various villages were renovated, and a furniture provision project for schools in multiple villages commenced. As the annual action, water quality at nine schools was monitored through regular sampling and testing, while maintenance of water filtration units and support for school-led gardening activities were monthly provided.

As part of the Community Livelihood Development initiatives, crop harvesting in Mann Field was closely monitored, particularly tomato farming, which resulted in substantial incomes for 27 farmers. A visit to the State Agriculture Institute aimed to explore year-round vegetable cultivation possibilities in the methods of greenhouse. The agricultural support was extended to farmers cultivating tomato, sunflower, and chickpea. Five knowledge sharing sessions on disease and pest control were organized, and seeds and plastic mulches were distributed to farmers. The Education Partnership Programs

were expanded, providing scholarships to (16) youths pursuing in vocational and skills training institutes and University of Medicine. The monitoring of students' academic activities and training progress continued.

Community Capacity Building witnessed the Online English Learning Program and the performance evaluation of Community-based Education Facilitators. The Basic Computer Skills Training for young learners were launched as part of the Online English Learning Program. In this reporting time, Summer Art Class for children and Book Drive for Community Center campaign were organized, promoting art and literacy. Fire and Electrical Safety Awareness Training sessions were conducted, and fire extinguishers were donated to (14) Villages in Mann Field. Safety awareness pamphlets were also distributed.

In the Community Healthcare Program, the Mobile Clinic Program resumed its services after Thingyan holidays, providing healthcare and home visits to the community. The program has served over 10,000 community patients with free healthcare services. In this period, an eye health program targeted the community elders aged sixty and above, with the provision of eye health awareness talk and the support of cataract surgery. Dengue Fever Awareness sessions were also organized in schools and mobile clinics in order to raise awareness about prevention of dengue fever.

Community-led Waste Management efforts continued, with ongoing tracking and support for waste collection services. Trash Hero Minbu cleanups made significant progress, and World Environment Day was celebrated by exchanging plastic waste for eco-friendly fabric bags. World Cleanup Day events effectively cleared garbage dumps.

The Operational Grievance Mechanism successfully addressed six cases in the first half of Fiscal Year 2023-2024, ensuring compliance with key performance indicators.

Stakeholder Engagement involved meetings with stakeholders, progress presentations, newsletter publications, and distribution of reports. Efforts were made to arrange eye health programs, discuss events, address grievances, and recruit new Community Volunteers.

Corporate Philanthropy efforts were also prominent, with contributions to disaster relief funds, donations to healthcare facilities, and support for local administrations through the provision of furniture and plastic armchairs.

In summary, these all-inclusive initiatives reflect a strong commitment to holistic community development, covering infrastructure, livelihoods, education, healthcare, waste management, and philanthropy, contributing to the well-being and progress of Mann Field Communities.



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for Redevelopment and
Enhanced Oil Recovery (EOR)
Programme

April 2023 September 2023



2. Project Description and Production Information

The Mann Field, discovered in 1970 by MOGE, currently includes 674 wells of which 310 were producing as of September 2023 while the remaining wells were shut-in. The total produced oil and associated gas from the Production Enhancement Project is 15.8 MMbbls, including 9.96 MMbbls above the normal decline curve, and 18.2 Bcf gas as of September 2023.

2.1 Mann Field Operation Status

Under the PCC, MPRL E&P is undertaking a re-development operations activity of the Mann Field to improve the environmental performance of the operations.

The operation activity includes:

Infill well drillings – due to the current decline of the field, MOGE and MPRL E&P have been drilling infill wells in main Mann Field areas close to currently producing wells and outside of surrounding communities, however no infill well activity during the last six months.

Deepening Wells – to deepen tens to hundreds of feet from existing wellbore by drilling, no activity of deepening well during six months.

Chemical Treatment –to ensure that oil is maximized from the reservoir by using small amount of chemicals such as paraffin dispersant, paraffin inhibitor, and non-chemical GreenZyme. GreenZyme is a biological liquid enzyme that is not only harmless to any individual's health but also an environmentally friendly product.

Remedial and workover operations – maintain oil production by servicing such as swabbing, scraping and bailing of producing wells.

Improvement of Pumping Unit – pumping units will be / have been repaired to reduce the likelihood of spills in the surrounding areas.

Refurbishments of the Gas and Oil Collecting Stations (GOCS), Flow Pipes and Drain Pits – to ensure the health and safety to surrounding communities and reduce the risk of spills.

Rehabilitation of Shut-in Wells – sealing off shut-in wells to avoid contamination of surrounding and restoring surrounding areas to resemble their original state.

Re-perforations will be undertaken for better control of the well.

Development of Produced Water Management System – produced water will be injected into the shut-in wells.

2.2 Current Operations Summary

2.2.1 Remedial and Work Over Operations within 6 months

The following table shows the monitoring and tracking of the remedial and work-over operations activities within six months.

Table 2: Remedial and Work Over Operation Activities

No.	Service	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Total
		Frequency of Activities						
1	Bailing & Change Tubing	7	5	9	5	5	6	37
2	Bailing Inside Liner		1	1		1		3
3	Check BHA	1		1	1	3	1	7
4	Check BHA and Bailing		1	1	1			3
5	Change Tubing	1	2	1		3		7
6	Change Tubing & S/Rod	2	2	2	2	4	1	13
7	Clean out Bottom	7	2	2	3	1	3	18
8	Fishing and Clean out Bottom				1	1		2
9	Fishing Inside Liner				1	1		2
10	Load Test	1						1
11	Pull out S/Rod String		2	1	2	2	2	9
12	Pump Service	25	29	18	24	26	25	147
13	Raise Up PSD and Pump Service	1	2					3
14	Recover BHA		1	1		1	1	4
15	Release Completion String		1					1
16	Release Swab Cup Assembly	2						2
17	Reopen and Pumping Test	1						1
18	Replace Polished Rod Liner	1					1	2
19	Re-pumping		1					1

No.	Service	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Total
		Frequency of Activities						
20	Reset Packer & Pump Service				2	1		3
21	Run in Open Shoe Assembly		1	1			1	3
22	Run in S/Rod and Insert Pump		2	2	2	1	1	8
23	Scraping & Bailing	1			1		1	3
24	Scraping, Bailing & Change Tubing	3	5	1	1	5	2	17
25	Swabbing, Bailing & Change Tubing	1	4	4	2	1	5	17
26	Zone Isolation	1	3			2		6
	Total Serviced Wells (Monthly)	55	64	45	48	58	50	320

2.2.2 Mobile Power Generator Register Lists in Mann Field

The following Plant/ Equipment are being used in Mann Field.

Table 3: Mobile Power Generator Lists

No	Unit Name	Engine Type	Horse Power	Units
1	P-100	CAT-3408	365HP	1
2	P-82	CAT-3306	270HP	1
3	P-75	Cummins N855-P-236	235HP	1
4	P-70	Cummins N855-P-250	250HP	1
5	P-69	Cummins N855-P-250	250HP	1
6	P-65	Detroit 6V71	260HP	1
7	Tractors	KaSaLa	50HP	3
8	35Tons Tadano Crane	Nissan-RF8	340HP	1

No	Unit Name	Engine Type	Horse Power	Units
9	416 Backhoe	CAT-4.236	85HP	1
10	950 Forklift	CAT-3304	160HP	1
11	966 Wheel Loader	CAT-3306	200HP	1
12	L-39 Forklift	Nissan – PE6	275HP	1
13	Grader	CAT-3306	200HP	1
14	D8K Dozer	CAT-D342	275HP	1
15	GD Mud Pump	CAT-3306	350HP	1
16	OPI Mud Pump	Detroit-6V71	365HP	1
17	JWS Mud Pump	Detroit-8V92	469HP	1
18	15PS King Power Swivel	CAT-3034(C6.6)	173HP	1
19	Power Pack	Deutz-F6L912	63HP	2
20	Welding Machine	Deutz-F3L912	25HP	2
21	Sullair Compressor	CAT-3054	85HP	1
22	55Tons Kato Crane	mitsubishi-8DC9 engine	320HP	1
23	Ford Ranger (2Q/6064)	Ford (TDCi engine)	2.2CC (150 HP)	1
24	Wire Line Unit	YAMAHA	10HP	1
25	Blue Truck	Cummins NTC-350	350HP	1
26	White Truck	Cummins NTC-350	350HP	1
27	Vehicle			25
28	Weed Cutting Machine	Honda	1.3 HP	5
29	Weed Cutting Machine	VHV	7.5 HP	1
30	Diesel Engine Water Pump	KEMAGE	4 HP	2
31	Denyo, Genset: DCA-400SPK-II	Komatsu Eng: SA6D140-A	480 HP	1

3. Environmental Management Organization

MPRL E&P is dedicated to allocating necessary resources for the execution and management of the EMP, which includes skilled human resources. The organizational structure responsible for environmental management and implementation of the EMP can be found in Table 4.

Table 4: Environmental Management Organization Roles and Responsibility

Position	Responsibility
MPRL E&P	
Deputy Chief Executive Officer and Executive Director	Oversee and coordinate all activities on the Project; ultimately responsible for environmental issues. Ensure delivery by the asset of its environmental, and operational targets. Ensure effective communication with all stakeholders.
Field Operations Manager	Technical aspects of the Project include contractor supervision during operations. Responsible for the execution of the Emergency Response Plan including the Oil Spill Contingency Plan. The Field Operations Manager has control over strategic project aspects and interaction with subcontractor staff where project activities take place.
Construction Manager	Technical aspects of the Project including subcontractor supervision during Project implementation.
Assistant HSE Manager / Site HSE Officer	Ensuring in cooperation with Environmental Officer, that the Project and subcontractors operate following applicable regulatory environmental requirements and plans. Monitor implementation of environmental protection measures, (on-behalf of Environmental Officer), and assist with technical input into oil spill requirements. The HSE Officer is monitoring the implementation of Health, Safety, and Environmental protection measures, including tracking, inspection, reporting, and assisting with technical input into emergency response procedures and implementation as per the EMP.
Community Liaison Officer	Liaise with local communities, farmers and government regulators on the Project's behalf. Implement environmental awareness and education programmes with communities.
Contractor	
Project Manager	Responsible for subcontractor technical performance and compliance
HSE Manager	Ensure that environmental regulatory requirements are met and that EMP requirements are properly implemented.

4. Highlights on HSE Key Performance Indicators

The field management team and HSE team have agreed to establish KPIs for the field operation team in order to achieve continual improvement and to integrate HSE as a vital part of the field operation.

Achievement vs. Failure based on Set KPIs

In this context, the field operation team's KPIs are continuously monitored and reviewed throughout the fiscal year to identify both accomplishments and areas in need of improvement by the end of the specified timeframe. Despite facing highly challenging circumstances, the review indicates that the following KPIs were successfully achieved.

For Fiscal Year 2023 – 2024

We are pleased to announce that as of August 18, 2023, the Mann Field Production Enhancement Project has successfully achieved three years without a lost-time accident. This achievement marks another significant milestone reached through the dedicated efforts of our field team and the support of the MOGE team.

In terms of reactive performance, as previously mentioned, there were no lost-time accidents during the fiscal year, and the total number of recordable cases also met the established KPI.

As for proactive performance, the field team received (4,160) CARE Cards within the six-month timeframe, which is remarkable as it is surpassing far beyond the targeted quantity, 3,600 Ea per year. We analyzed the trends in unsafe actions and conditions by utilizing data from the submitted CARE cards and have the opportunity to apply this analysis for further improvements.

Due to the acceleration of operational activities, we are placing greater emphasis on training to enhance HSE knowledge and staff competency. The implementation of mandatory HSE training such as HSE Induction, General Safety Awareness Training, Heat Stress and Heat Stroke, Plastic Pollution Awareness Training, and Healthy Living Lifestyle was achieved 100% in comparison to the planned schedule.

To prevent accidents, protect workers, and ensure that operations are conducted in accordance with industry standards and regulations, as well as to maintain a high level of safety and compliance, Permit to Work audits were performed using a checklist. These audits were carried out 100% in accordance with the plan.

To ensure the safety of staff and assets, several inspections were conducted for Lifting Gear, Eye Wash Station and Wheeled Spill Kits, among others. These inspections achieved 100% of the target.

As part of MPRL E&P's efforts to foster a positive HSE culture within the organization, several award programs have been instituted. Outstanding HSE Best Performance" award program aims to enhance the HSE culture, while the "Contribution Award in HSE Activity" recognizes nominated personnel to encourage participation and effectiveness. The "Best Quality Care Card Award" promotes ownership and reduces property damage and loss.

To enhance safety performance, reduce risks, ensure compliance, and foster a safety culture within the organization, individual field workers have HSE Key Performance Indicators (KPIs) established and regularly reviewed as part of their performance monitoring process.

As part of the environmental action plan's implementation, the field team maintained a 100% reinjecting record of disposal of produced water back into the shut-in well. To achieve such a record, tremendous effort is required. This includes proper monitoring and maintenance of injection facilities, control and monitoring of critical data such as injection pressure, volume, and rates, as well as the proper maintenance and servicing of injection wells.

To mitigate environmental impact, to conserve biodiversity, to have positive impact on community health and wellbeing and for the purpose of social cohesion and engagement, Tree Plantation Campaign is conducted in Mann Field.

To safeguard the environment, adhere to regulations, ensure emergency readiness, and mitigate the impact of spills, a spill drill was conducted in Mann Field. This drill plays a crucial role in upholding a proactive and responsible approach to oil field operations, safety, and environmental stewardship.

A stretcher usage exercise was conducted at Mann Field as an essential component of emergency preparedness and safety planning. This exercise ensures that workers are well-prepared to respond promptly and effectively to medical emergencies and injuries.

To enhance the camp's response capabilities in cyclone or severe weather conditions, we conducted a Cyclone Alert Muster Drill at Mann Field in preparation for Cyclone MOCHA's entry into Myanmar.

In the report, it is important to acknowledge that there are areas that need further refinement is still needed. While progress has been made, there remain opportunities for further enhancements in some aspect. The need for improvement in the mentioned areas is primarily attributed to security concerns and ongoing socio-political instability.

The KPIs we were not able to achieve successfully were summarized below:

1. Some quality monitoring, such as Gas Emission Monitoring, was not fully carried out.
2. The implementation of some programs, such as Safety Talk by HoDs to other departments, was not fully executed.
3. A few HSE meetings such as Weekly Safety Meetings (Engineering, measurement & other camp member) and Round Up Safety Meetings were not carried out in the period.
4. Some corrective action items from incident investigation and audit reports, such as securing open casing wells and installing flare posts at vent gas wells, were not yet fully implemented.

5. Environmental Management Plan

The purpose of the Environmental Management Plan (EMP) is to ensure adherence to the Project's policies, as well as to the mitigation, monitoring, and other commitments outlined in the EIA Report. Although the EMP was considered a broad framework document, it was connected to several comprehensive management plans, as described below, which were established to establish the criteria for meeting specific environmental requirements.

The management plans, which were developed to ensure compliance with specific environmental elements, are described in detail in the EIA report. These plans outline the management and mitigation measures that must be implemented, the responsible parties and timeframe for implementation, and reporting requirements. MPRL E&P is currently implementing and monitoring these plans according to the schedule outlined in the EIA report.

- Waste Management Plan
- Emergency Response Plan (including Fire Risk Management Plan)
- Spill Response Plan
- Health and Hygiene Management Plan
- MEDEVAC Procedures
- Transportation Management Procedures
- Contractor's Environmental Management Plan(s)
- Environmental Monitoring Plan

5.1 Environmental Management System Framework

MPRL E&P's approach to environmental management is based on the ISO 14001 framework and incorporates internal policies, national regulations, and best practices from international sources. The company conducts regular environmental analysis and monitoring to ensure that its business activities have minimal negative impacts on the environment and the communities affected by its operations.



Figure 1: MPRL E&P Environmental Management System Framework

5.2 Waste Management Plan

The Waste Management Plan aims to effectively manage any surplus materials from the construction and operational activities in the Mann field, ensuring proper handling and disposal of waste.

The waste management plan aims to achieve the following objectives:

- Managing waste in a controlled and environmentally sound manner,
- Complying with all statutory and contractual requirements related to waste management,
- Recovering resources whenever possible and safe for re-use and recycling,
- Recording and tracking all generated waste appropriately.

The waste management plan has been implemented during the operation phases, dividing waste streams into four categories:

1. Hazardous recyclable,
2. Hazardous non-recyclable,
3. Non-hazardous recyclable, and
4. Non-hazardous non-recyclable.

The key steps in the waste management process are:

- Segregating waste into hazardous, general and recyclable categories using suitably labeled bins,
- Transporting bins/drums to approved disposal locations with the waste type clearly labeled on each one,
- Including each waste bin/drum sent on the backload manifest,
- Recording waste transportation in the waste database.

Brief Waste Management Process is described as follows:

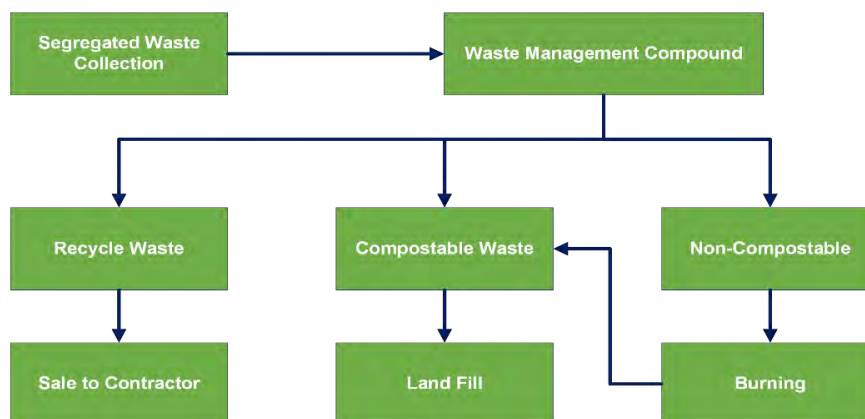


Figure 2: Waste Management Flowchart

5.2.1 Monitoring on Waste Management Status

During the monitoring period of October 2022 to March 2023, the waste management compound facilities remain unchanged from previous monitoring periods.

Existing Solid Waste Management System

The solid waste management framework implemented by MPRL E&P primarily encompasses waste collection, segregation, and recycling, with a limited emphasis on the principles of the 3Rs (Reduce, Reuse, Recycle) that have been introduced.

At Mann field, waste segregation has been implemented, which involves sorting and separating waste based on its characteristics. The waste materials are segregated at the source by providing bins that are marked with universal symbols and labelled in both English and Burmese, and are coloured for storing waste as follows:

- **Green** – General Wastes,
- **Yellow** – Recycle Wastes,
- **Red** – Hazardous Wastes,
- **Black** – Non-Hazardous Wastes,
- **Blue** – Paper

Bins were placed in all locations, including GOCS, offices, warehouses, workshops, construction sites, base camps, and clinics, for waste collection. The waste collection bins will not be allowed to overflow before they are emptied, and damaged waste storage receptacles will be promptly replaced. A sufficient number of bins were placed at each waste collection point for each type of waste, based on the expected variety and quantity of waste from that location.

Waste of any kind will not be stored permanently or for prolonged periods at the Waste Management Compound. The following procedure has been implemented for the temporary storage of all waste:

- The waste is properly stored in the designated area that is separated from storage areas for other materials/substances,
- The facilities are identified for each designated area, such as Recycle Area, Hazardous Area, etc.



Figure 3: 3Rs

5.2.2 Solid Waste Management in MPRL E&P

The management of waste is a crucial aspect of business operations, and all waste produced is recorded. MPRL E&P is monitoring and ensuring compliance with the National Environmental Quality (Emission) Guidelines and adhering to industry best practices.

Composting

Based on our self-monitoring records spanning six months from October 2022 to March 2023, the composting process has yielded approximately 1265 kg of compost. While the process is notably rapid during summer, the composting bacteria do not function optimally under neutral conditions in the rainy season.



Figure 4: Reusing Composts in the Plantation Field at WMC

Recycling

At our facility, we collect and sell recyclable materials such as glass, paper, cardboard, plastic bottles, and materials to third-party vendors. To ensure proper recycling, these materials are separated from general waste during the collection process.

General Waste is collected from all areas within the Mann Field Operations and temporarily stored at the Waste Management Compound. Waste collection is carried out periodically every week using Jumbo big bags to reduce plastic bag usage, which can be reused multiple times. Additionally, the plastic bags used in the waste bins are also reused, except for the organic waste bin.



Figure 5: Reselling of Recycle Waste at WMC

General Waste Storage in WMC



Figure 6: Waste Management Compound (WMC)

After being re-sorted, packed and stored in the recycle waste storage area, the recycle materials are disposed of by an authorized third party.

The details of the type and quantity of recycle wastes have been registered using the 'Waste Register' form.

Recycle waste intended for disposal with an approved third-party vendor must be monitored using the “Waste Disposal Contractor Approval’ form, which has been approved by the Field Operations Manager and/or the Site HSE Officer/ Environmental Officer.



Figure 7: Oil Contaminated Waste Stored at WMC

From April 2023 to September 2023, a total of 7,283 kg of hazardous waste is collected from all work-related areas and is properly stored at the Waste Management Compound. The volume of hazardous waste collected was high in September 2023, with most of it being dry sludge from GOCSs. The dry sludge/ produced sand is temporarily stored at the Waste Management Compound, while the wet sludge is stored at the Sludge Management Compound.

Of the hazardous waste inventory held at WMC, approximately 260.0 kg of fluorescent lamps and bulbs were properly disposed of at DOWA following receipt of the updated quotation for solid waste disposal.



Figure 8: Disposal of E-Waste to DOWA on 22 August 2023

5.2.3 Monitoring Data and Statistics

The Waste Statistics during the monitoring period from October 2022 to March 2023 are as follows:

Table 5: Monthly Waste Monitoring Record

Month	Hazardous Waste (kg.)	Non-hazardous Waste (kg.)	Composting (kg.)
April 2023	0	580	225
May 2023	0	5,036	285
June 2023	0	503	195
July 2023	0	572	190
August 2023	5	806	285
September 2023	7,818	750	195
Total	7,283	8,247	1,375

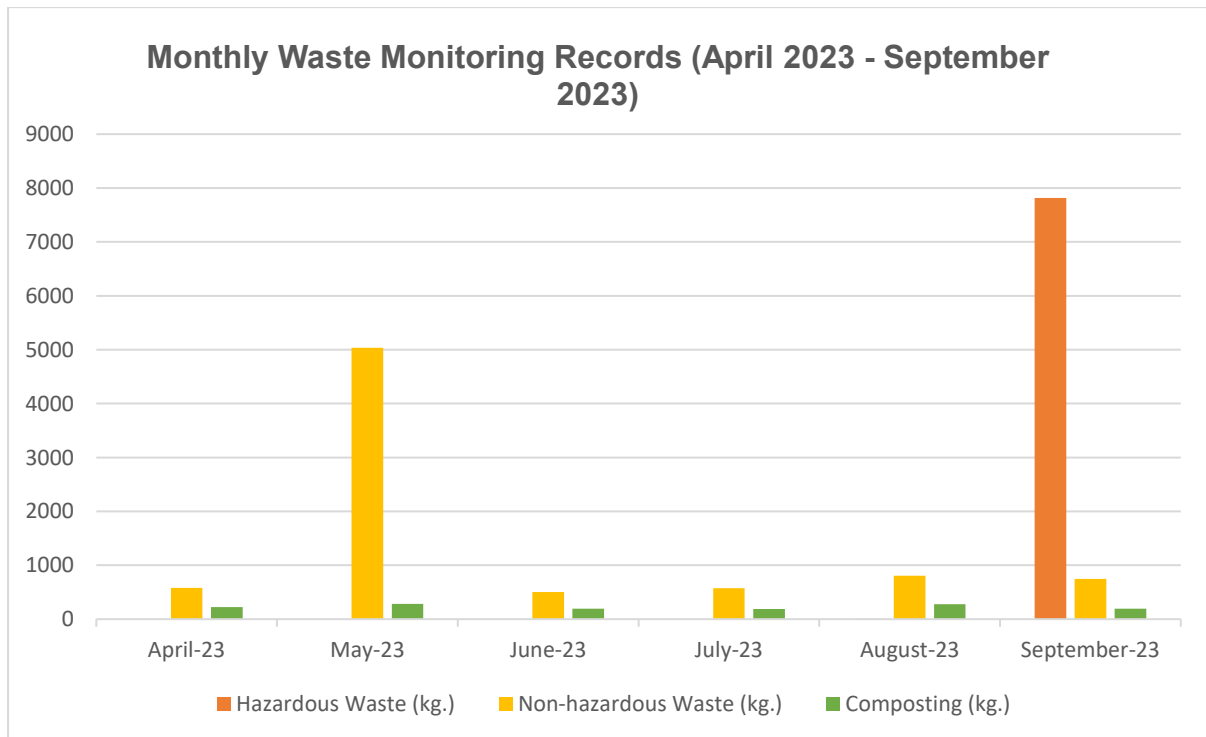


Figure 9: Monthly Waste Monitoring Records from Apr 2023 - Sep 2023

Table 6: Yearly Waste Monitoring Record

Year	Hazardous Waste (kg.)	Non-hazardous Waste (kg.)	Composting (kg.)
2020	1,470	16,267	1,204
2021	96	5,369	1,901
2022	48,113	9,000	2,880
2023 (up-to September)	23,698	11,231	1,895

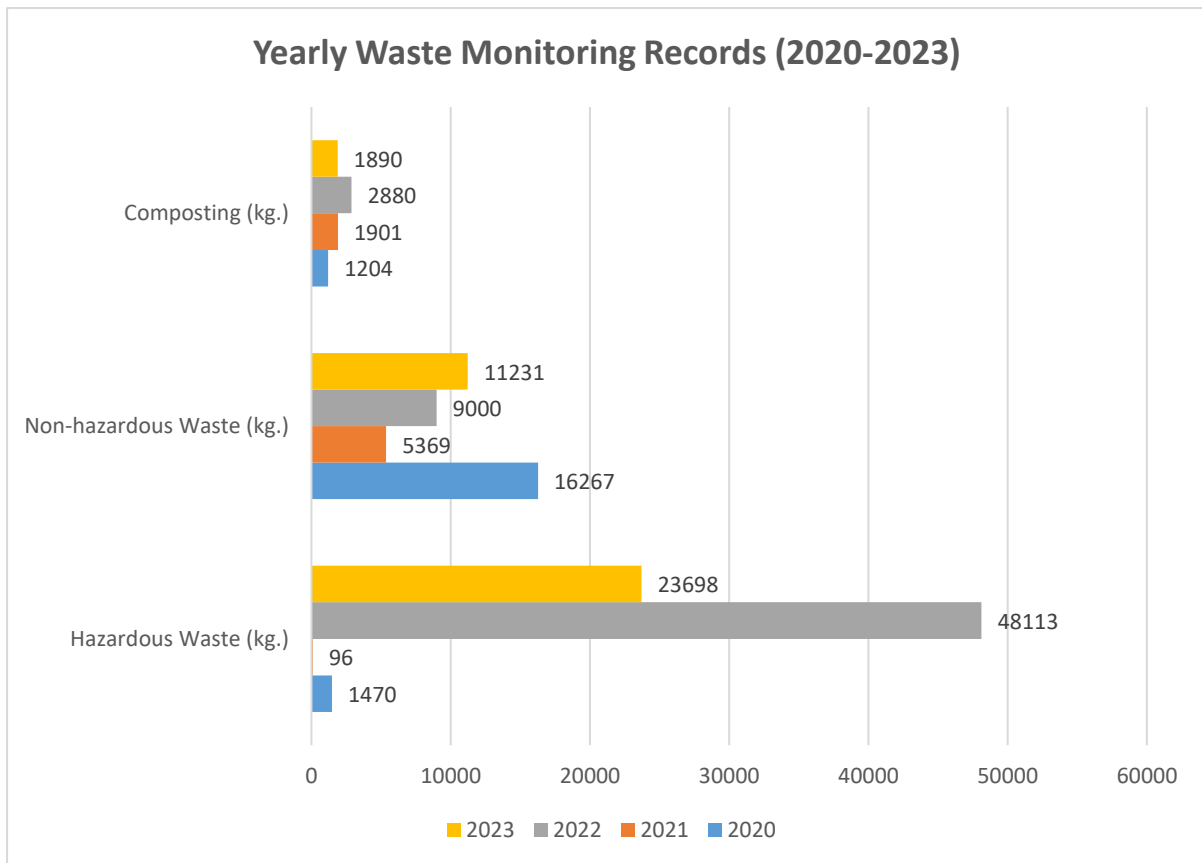


Figure 10: Yearly Waste Monitoring Record (2020 - 2023)

5.3 Emergency Response Plan

MPRL E&P will develop plans and procedures to identify potential environmental accidents, health and safety emergencies, and adverse environmental and social impacts that may arise. These plans will include, but not be limited to, the following measures:

- Notification procedures,
- An emergency response organization with personnel trained to fulfill their roles and responsibilities,
- Adequate and appropriate emergency response equipment readily available to respond to minor incidents,
- Capability to quickly request additional assistance.

MPRL E&P is responsible for managing and responding to emergencies arising from the Project activities in Mann Field. The emergency response plan (ERP) which also covers fire risk management, includes:

- Hierarchy of protection,
- Preparedness and planning for emergencies,
- Employee responsibilities,
- Emergency response procedures,
- Medical emergencies including medevac procedures,
- Natural Disasters (e.g. floods, cyclones, earthquakes) related emergencies,
- Fire and electrical related emergencies, and
- Any other emergency response plan is required by the Republic of the Union of Myanmar Authorities.

5.3.1 Emergency Response Plan Implementation and Progress

MPRL E&P has prepared emergency response plans for potential scenarios that may arise during field operations. These plans effectively communicate with staff at all levels of the operation and allocate responsibilities based on their respective roles. MPRL E&P reviews and revises the emergency response plans within predefined timeframe. In the event of an incident, the related emergency response plan is reviewed and revised as necessary.

The aim to acquaint all employees with fire outbreak scenarios and enhance ties with local authorities was achieved through fire drills conducted at GOCS-2 on 24 February 2023 and GOCS-1 on 04 March 2023. The drills aimed to enable employees to proficiently execute the designated fire emergency response procedure.

For emergency preparedness, safety, and the protection of personnel, facilities, and the environment, cyclone response drills in oil fields are essential. They assist organizations in effectively planning for and responding to cyclonic events, reducing risks, and ensuring the well-being of workers in affected regions. To enhance our camp's response capabilities during cyclones or severe weather conditions, we

conducted a Cyclone Alert Muster Drill at Mann Field in preparation for Cyclone MOCHA's arrival in Myanmar.



Figure 11: Cyclone Alert Muster Drill at Mann Field Base Camp

5.4 Spill Response Plan

MPRL E&P has developed spill response plans and procedures to identify and respond to potential spills and prevent or mitigate any adverse environmental and social impacts that may arise. The plans include but are not limited to:

- Spill control hierarchy,
- Control measures to prevent spills such as proper engineering design, handling, storage and transportation guidelines on hazardous materials,
- Spill response training,
- Spill response organization and procedures as well as spill response PPE and drill requirements.

5.4.1 Spill Response Plan Implementation and Progress

MPRL E&P developed a comprehensive spill response plan that includes risk control measures such as using a consolidated, impermeable base for all facilities, segregating drainage systems, and setting up oil sumps and interceptors. Additionally, a zero-discharge wastewater recycling system is in place to reduce the potential for spills, secondary containments are added to well sites and the sludge compound is equipped to respond to spills.

Spill response drills are planned to help understand spill response procedures and emergency protocols. They also aim to clarify and break down respective team responsibilities and practices, and to increase awareness and efficiency in responding to actual spill incidents.

A spill drill (table-top exercise) was conducted on March 5, 2023, at the MPRL E&P Base Camp. The exercise involved a discussion of the spill response team's roles and

responsibilities, as well as the usage of spill kits and tools, and the need to inform authorized personnel immediately.



Figure 12: Spill Drill (Table-top Exercise) on 22 June 2023

5.5 Health & Hygiene Management Plan

MPRL E&P has established a system to evaluate and manage risks associated with personal health and hygiene, and regularly assesses preventive measures that should be implemented.

MPRL E&P identified hazards as well as developed preventive and mitigation measures related to the health and hygiene of personnel working at Mann Field. The plan includes but is not limited to:

- Responsibility for implementation of the Health and Hygiene Management Plan,
- Identification, prevention, and responses to illnesses such as health-related illnesses and diseases such as those transmitted by insects and parasites,
- Pre-assignment immunization and health screening requirements,
- Preventive measures to avoid snake bites as well as sickness arising from general hygiene issues and travel to and from the Mann Field

5.5.1 Health & Hygiene Management Plan Implementation and Progress

MPRL E&P has established a comprehensive plan to evaluate and manage risks related to personal health and hygiene. The plan includes advice and resources provided by an MPRL E&P onsite Doctor, as well as control measures to mitigate risks associated with diseases that are prevalent in the operational area. The plan is regularly assessed and updated to ensure its effectiveness.



Figure 13: Canteen inspection and discussion with catering team at MPRL E&P Base Camp

To enhance safety, anticipate challenges, and minimize risks, weekly camp inspections are conducted. The findings from these inspections are documented, communicated, and appropriate actions are taken to address any issues.



Figure 14: Physical Exercising at MPRL E&P Base Camp

5.6 MEDEVAC Procedures

To address the challenges posed by the remote location of the Mann field and the time required for medical evacuations, MPRL E&P has developed specific procedures that must be followed in the event of a medical evacuation (MEDEVAC). To ensure the health and safety of all personnel, anyone rotating to work at the Mann field undergoes a thorough medical examination before being engaged, and these examinations are repeated at two-year intervals.

MPRL E&P will continue to provide information about the Mann field's conditions and remoteness to the medical examiner. The medical examiner will assess whether individuals are suitable for working at the Mann Field, taking into account the potential health and safety risks. Any information obtained during the medical examination will be kept confidential between the employee and the medical examiner, unless the employee provides express written permission to share the information with MPRL E&P.

MPRL E&P is committed to providing medical evacuation (MEDEVAC) facilities to all personnel working on the MPRL E&P project in Mann Field, including sub-contracted personnel. This includes a field clinic located at the worker base camp, where emergency medical treatment can be provided by MPRL E&P's medical staff. In the event that additional medical support is required, MEDEVAC services are available to transport patients to appropriate medical facilities for further treatment.

5.6.1 MEDEVAC Procedure Implementation and Progress

To ensure the safety of personnel working in the Mann field project, MPRL E&P has developed procedures for medical evacuation (MEDEVAC) in the event of an injury or illness. The company is committed to providing MEDEVAC facilities to all staff, which include a field clinic with a site doctor at the worker base camp, an ambulance, and medical supplies for emergency treatment. The procedures are designed to minimize the time taken to transport patients to hospitals with appropriate medical standards.

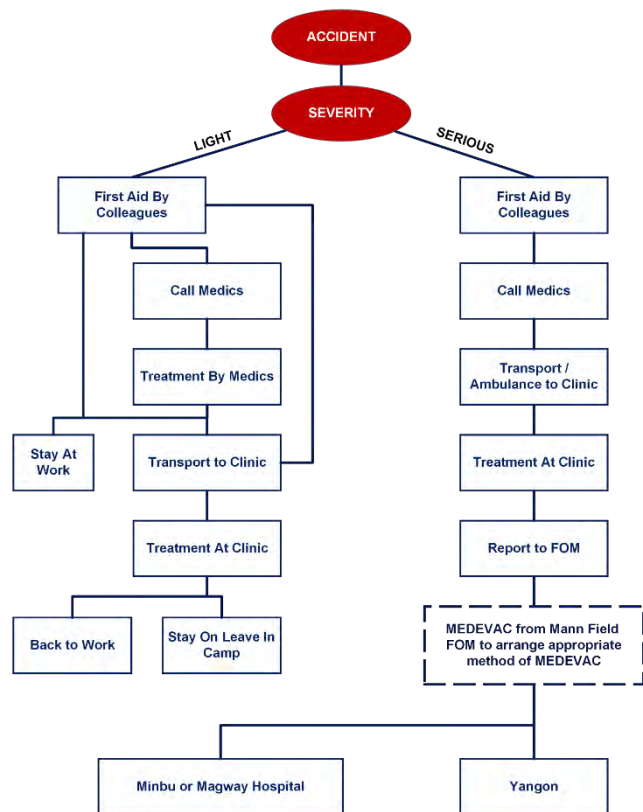


Figure 15: Medical Evacuation Flowchart

Medevac drill exercises are essential for ensuring the safety and well-being of individuals in high-risk environments, especially in the oil and gas industry. They enable organizations to prepare for and respond to medical emergencies efficiently, minimize risks, and continuously improve their capabilities, ultimately contributing to the overall safety and success of their missions or operations.

To get all employees familiar with the medical emergency condition and to be able to handle per the set procedure, MEDEVAC drills are planned and conducted in the fiscal year 2023 – 2024.



Figure 16: MEDEVAC Drill Exercise with Evacuation Team

5.7 Transportation Management Procedures

The Transportation Management Procedures aim to establish strict controls over traffic routes, speed limits, road safety requirements, vehicle loading and maintenance measures, as well as response procedures to traffic-related emergencies. These measures are implemented to ensure the safe and efficient transportation of personnel and equipment.

The following management actions are covered under Transportation Management Procedures:

- Good practices on rest regime, timing routes and speed of driving,
- Safety rules related to MPRL E&P vehicles usage,
- Procedures for road risk assessment, and
- Procedures to rescue the driver and passenger(s) who fail to get to their check calls or destination by the ETA designated on the Journey Management Plan

5.7.1 Transportation Management Procedures Implementation and Progress

MPRL E&P has established a transport management procedure to control traffic routes, speed limits, road safety requirements, vehicle loading, and maintenance measures. The procedure also includes protocols for responding to traffic emergencies. To maintain high safety standards, MPRL E&P has outsourced transportation to its sister company, M&AS. M&AS follows the same safety rules and regulations as MPRL E&P regarding vehicle usage and practices good measures such as road risk assessments, rest regime, timing routes, speed of driving, and alcohol testing.

MPRL E&P performs safe crew change activities to achieve maximum reliability and safety. The vehicles are inspected to ensure they are safe to use, and a test drive is performed if needed. Driver behavior assessments are conducted on vehicle operators, and defensive driving and refresher training are provided twice each year. During the pandemic, MPRL E&P also conducts COVID-19 antigen testing for vehicle operators and passengers to prevent infections. Additionally, seating arrangements have been established in accordance with the guidelines of the Ministry of Health.



Figure 17: Safe Crew Change Activities

5.8 Contractor Environmental Management Plan(s)

The Project will sometimes require engaging contractors to carry out Project activities. The contractors are responsible for performing all work:

- In compliance with relevant national and international HSE legislation and regulations and with other requirements to which the project subscribes,
- In conformance with the Project's EMP, and
- By contractual technical and quality specifications

The Project will also provide a specification for environmental compliance and performance (through approved EIA and EMP and the associated plans) and, as a contractual requirement, the contractor will develop and provide to the Project its specific management plans demonstrating how they intend to comply with the stipulated requirements.

Contractors must also provide documentation detailing their plans for:

- Implementing the measures required in the EIA and this EMP,
- Local content,
- Logistics,
- Community relations

The contractor management plans must conform to the requirements of the Project's overarching plans. Contractor plans will be reviewed and approved by MPRL E&P and incorporated into, and form part of, the Project's overall EMP.

Contractors will be required to self-monitor against their plan and the contractor's compliance with the plan will be routinely monitored by MPRL E&P directly or by third parties. Contractors will be required to submit regular reports of monitoring activities and the Project will review these regularly. An external assurance process will be conducted on an annual basis the results of which will be disclosed after the process.

As a contractual requirement, the subcontractors are required to provide sufficient resources to manage HSE aspects of the work to be performed. This includes providing resources to ensure compliance of next-tier subcontractors and a process for emergency stop-work orders in response to monitoring triggers.

5.8.1 Contractor Environmental Management Plan(s) Implementation

At Mann Field, there may be contractors engaged in activities such as providing MPRL E&P with manpower services, logistic services, catering services, machinery maintenance and repairing of machines and instruments for the field operations. M&AS is one of the companies involved in the MPRL E&P camp rules and fulfilled the environmental-related management plans, including waste management procedures. If there are any contractors or third-party monitoring teams working in the Mann Field, also required to respect and obey MPRL E&P HSE rules and policies.



Figure 18: Toolbox Talk to Contractors Concerning HSE

6. Environmental Monitoring Plan

The project will conduct monitoring activities to assess compliance with regulatory requirements and to evaluate the effectiveness of operational controls and other measures aimed at mitigating potential impacts.

As a minimum, the following monitoring of the physical environment will be undertaken:

Physical Environmental Monitoring:

- Ambient Air Quality,
- Noise,
- Groundwater quality,
- Surface-water quality,
- Soil Quality

Monitoring will be conducted during the following periods of the EOR and re-development program activities:

- At least two weeks before the construction activities for baseline data collection,
- Monthly monitoring for the first three months during both the construction and operation phases. After the three months, a review should be conducted to determine whether the collected data indicates an impact has occurred beyond what has been predicted within the EIA. Should no higher impacts be observed, monitoring can be reduced to a six-monthly or yearly programme. Should higher impacts be observed, monitoring should continue, and appropriate actions are taken to alleviate the impacts to prevent any further impacts from occurring.

In accordance with the EIA commitments, MPRL E&P has been regularly conducting environmental monitoring activities and submitting monitoring reports to the ECD bi-annually. This is the sixth monitoring report, and it follows the committed monitoring plan from the EIA Report, as stated in Table 8 of the Environmental and Social Monitoring Program (as shown in Table 8.3 of the EIA Report).

Ambient Air Quality and Noise Quality monitoring were conducted at Z3AQN, Water samples were collected at seven locations, and Soil Quality Monitoring was carried out at Z3S1 and Z3S2 by the regional ECD (Magway) team. In addition to this, self-monitoring activities were conducted and tested at Golden DOWA and ALARM labs, and their results were covered in this report.

In addition, self-monitoring activities are involved depending on the management plans and operational control. Based on the activities, the following are stated in Table 7 as MPRL E&P’s self-monitoring activities scheduled from Mann Field:

- Vent Gas Monitoring,
- Drinking-Water Monitoring,
- Discharged from Sewage Treatment System,
- Hydro-test Water Quality,
- Monitoring on Wastes

Table 7: MPRL E&P’s Self-Monitoring Plan and Schedule

No.	Self-Monitoring Activities	Purpose of Monitoring	Locations	Parameters to be monitored	Frequency
1.	Vent Gas Monitoring	Regular monitor the amount of vent gas connection line, measuring with Echo meter.	All Vent Gas Wells	Methane, CH ₄	Monthly and Bi-Annual

No.	Self-Monitoring Activities	Purpose of Monitoring	Locations	Parameters to be monitored	Frequency
2.	Hydrogen Sulfide (H ₂ S) Monitoring	To fulfill the obligation from the ECC and ensure the safety of operations & personnel living nearby.	All Operating Wells	H ₂ S(ppm), CO(ppm), O ₂ (%), and LEL%	Monthly and Bi-Annual
3	Drinking-Water Monitoring	Ensuring Safe Drinking Water for the health of personnel	MPRL E&P Base Camp	pH, Turbidity, Apparent Color, Hardness, Arsenic, Chloride, Lead, Total Dissolved Solids, Iron, Electrical Conductivity, Sulphate, Calcium, Magnesium, Nitrate-Nitrogen	Bi-Annual
4.	Discharged of Sewage Treatment System	To mitigate the pollution of soil and ground water, and environment	MPRL E&P Base Camp	pH, Temperature, TSS, BOD ₅ , COD, Total Phosphorous, Oil & Grease, Total Nitrogen, Turbidity, Electrical Conductivity, Total Coliforms	Bi-Annual
5.	Hydro-test Water Quality	to monitor the quality of water	Warehouse	BOD ₅ , COD, Chloride, Heavy Metals (Total), pH, Phenols, Sulfides, Total hydrocarbon content, Total suspended solids	Bi-Annual
6.	Domestic water	to monitor the quality of water	Downhole Workshop & Mechanical Workshop	BOD ₅ , COD, Ammonia, Arsenic, Cadmium, Chlorine (Total residual), Chromium (hexavalent), Chromium (total), Copper, Cyanide (free), Cyanide (total), Fluoride, Heavy Metals (Total), Iron, Lead, Mercury, Nickel, Oil & Grease, pH, Phenols, selenium,	Bi-annual

No.	Self-Monitoring Activities	Purpose of Monitoring	Locations	Parameters to be monitored	Frequency
				Silver, Sulfides, Temperature increase, Total coliforms, Total phosphorous, Total suspended solids, Zinc	
7.	Ground water (Tube-well)	To monitor the quality of groundwater near wells of chemical treatment for EOR	Ko Win Maung & Ma Nyein (near #132)	pH, DO, Turbidity, Apparent Color, Alkalinity, Hardness, BOD ₅ , COD, total Nitrogen, total Phosphorous, Oil & Grease, TSS, E. coli, Total coliforms, Arsenic, Barium, Boron, Total Chromium, Flouride, Selenium, Uranium, Electrical Conductivity	Bi-annual
8.	Produced Water Monitoring	Zero discharge by injecting 100% to shut-in wells	All Operating Wells	produced volume and disposal volume	Daily
9.	Monitoring on Wastes	Implementing as per Waste Management Procedure	Waste Management Compound and Sludge Management Compound	General, Recyclable, Organic, Hazardous	Weekly

Table 8: Environmental and Social Monitoring Programme (Construction and Operation Phase)

Project Stage	Potential Impact	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
At least two weeks before the construction activities for baseline data collection.	Air Quality	NOx, SO ₂ , PM _{2.5} , PM ₁₀ , CO. Check compliance with Myanmar National Environmental Quality (Emission) Guidelines (2015).	Z1AQN, Z2AQN, Z3AQN and Z4AQN, locations indicated on Table 5.1 and Figure 5.10	Sampling and analysis of ambient air pollutants to be conducted according to the guidelines of Myanmar NEQEG. Haz-Scanner EPAS Wireless Environmental Perimeter Air Station to be used for measurement.	Monthly monitoring for the first three months during both the construction and operation phase. After the three month period, a review should be conducted to determine whether the collected data indicates an impact has occurred beyond what has been predicted within the EIA. Should no higher impacts be observed, monitoring can be reduced to a six-monthly or yearly programme. Should higher impacts be observed, monitoring should continue and appropriate actions be taken to alleviate the impacts with an aim to prevent any further impacts from occurring.	MPRL E&P HSE Coordinator
Construction and Operation						

Project Stage	Potential Impact	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
At least two weeks before the construction activities for baseline data collection. Construction and Operation	Noise	Check compliance with Myanmar National Environmental Quality (Emission) Guidelines (2015)	Z1AQN, Z2AQN, Z3AQN and Z4AQN, locations indicated on Table 5.1 and Figure 5.10	24-hour noise monitoring using the portable sound meter (Lutron, SL-0423SD, unit: dB). Noise level (LAeq) measured and recorded at a ten-minute interval and averaged at an hourly and daily (i.e. 24-hour) interval.	As above	MPRL E&P HSE Coordinator
At least two weeks before the construction activities for baseline data collection. Construction and Operation	Groundwater Quality	In-situ measurements for transparency, temperature, pH, DO, turbidity, colour, alkalinity and hardness. Laboratory analysis of BOD ₅ , COD, Total Nitrogen, Total Phosphorus, Oil and grease, TSS, E. coli, Arsenic, Barium, Boron, Total Chromium, Florida, Selenium, Uranium	Z1GW, Z2GW, Z3GW and Z4GW, locations indicated on Table 5.11 and Figure 5.14	In-situ measurements for transparency, temperature, pH, DO, turbidity, colour, alkalinity and hardness. Laboratory analysis of BOD ₅ , COD, Total Nitrogen, Total Phosphorus, Oil and grease, TSS, E. coli, Arsenic, Barium, Boron, Total Chromium, Florida, Selenium, Uranium	As above	MPRL E&P HSE Coordinator

Project Stage	Potential Impact	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
At least two weeks before the construction activities for baseline data collection. Construction and Operation	Surface Water Quality	In-situ measurements for transparency, temperature, pH, DO, turbidity, colour, alkalinity and hardness. Laboratory analysis of BOD ₅ , COD, Total Nitrogen, Total Phosphorus, Oil and grease, TSS, E. coli, Arsenic, Barium, Boron, Total Chromium, Fluoride, Selenium, Uranium	Z1SW, Z2SW, Z3SW and Z4SW, locations indicated on Table 5.7 and Figure 5.12	In-situ measurements for transparency, temperature, pH, DO, turbidity, colour, alkalinity and hardness. <u>Laboratory analysis of BOD₅, COD, Total Nitrogen, Total Phosphorus, Oil and grease, TSS, E. coli, Arsenic, Barium, Boron, Total Chromium, Fluoride, Selenium, Uranium</u>	As above	MPRL E&P HSE Coordinator
At least two weeks before the construction activities for baseline data collection. Construction and Operation	Soil Quality	pH; Arsenic (As); Lead (Pb); Cadmium (Cd); Copper (Cu); Zinc (Zn); Manganese (Mn); and Iron (Fe). Comparison with the Dutch Standard 2000.	Z1S, Z2S, Z3S and Z4S, locations indicated on Table 5.13 and Figure 5.16	Follow sampling procedure, sample preservation and sample analysis recommended in Myanmar NEQEG. <u>Laboratory analysis of pH; Arsenic (As); Lead (Pb); Cadmium (Cd); Copper (Cu); Zinc (Zn); Manganese (Mn); and Iron (Fe).</u>	As above	MPRL E&P HSE Coordinator



Project Stage	Potential Impact	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Construction and Operation	Discharge of treated wastewater and runoff	<p>Check compliance with Myanmar National Environmental Quality (Emissions) Guidelines for site runoff and wastewater discharges (for BOD₅, COD, TSS, oil and grease, pH, total coliform bacteria, total nitrogen, total phosphorus) during construction.</p> <p>Check compliance with Myanmar National Environmental Quality (Emissions) Guidelines for Onshore Oil and Gas Development during operation.</p>	Treated wastewater discharge points at discharge points such as worker camps, GOCS, shut in wells.	<p>In-situ measurements for pH, temperature, dissolved oxygen (DO), electrical conductivity (EC), and turbidity.</p> <p>Laboratory analysis of BOD₅, COD, Total Suspended Solids, Total Nitrogen, Total Phosphorous, Oil and Grease</p>	As above	MPRL E&P HSE Coordinator

Project Stage	Potential Impact	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Operation	Vented gas	Check compliance with Myanmar National Environmental Quality(Emissions) Guidelines for Onshore Oil and Gas Development during operation (H ₂ S)	Three vented gas location (randomly selected)	Real-time measurement	Monthly monitoring for the first three months during operation phase. After the three months period, a review should be conducted to determine whether the collected data indicates an impact has occurred beyond what has been predicted within the EIA. Should no higher impacts be observed, monitoring can be reduced to a six-monthly or yearly programme. Should higher impacts be observed, monitoring should continue and appropriate actions be taken to alleviate the impacts with an aim to prevent any further impacts from occurring	MPRL E&P HSE Coordinator

7. Complying ECC Commitments and Follow-up Actions

MPRL E&P maintains a strong partnership with the Regional ECD Office, actively addressing and implementing their recommended suggestions. Additionally, we are persistently in contact with relevant departments and authorities to ensure prompt action is taken as needed.

In alignment with our dedication to the approved EIA Report and ECC, MPRL E&P remains committed to the ongoing execution of pertinent activities and mitigation measures as specified in Article 5 (Environmental Management Plan) and Article 6 (Environmental Monitoring Plan). We will also continue to provide comprehensive Environmental Monitoring Reports at regular intervals, encompassing self-monitoring activities and implementations even during challenging periods.

As of now, we have consistently submitted a total of six Bi-Annual Environmental Monitoring Reports to the Environmental Conservation Department.

We had the opportunity to conduct a comprehensive assessment of environmental factors, including air quality, noise levels, soil condition, surface water, and groundwater, in collaboration with the Environmental Conservation Department (Magway). This assessment covered multiple locations, namely Z3AQN, Z4AQN, Z3S1, Z3S2, Z4S1, Z4S2, Z3SW1, Z3SW2, Z4SW1, Z4SW2, Z3GW1, Z3GW2, and Z4GW2.

For air and noise quality monitoring, we initially selected Z3AQN and Z4AQN due to their favorable conditions, including security for monitoring devices, a reliable power supply, and proximity to our field operations. As conditions improve, we intend to extend our monitoring activities to the remaining two areas.

In addition to our collaboration with ECD, we also proactively engaged in self-monitoring activities, which included monitoring water quality at seven different locations to the best of our ability. We remain committed to fulfilling our obligations and adhering to the planned monitoring schedule within the specified time frame.

On June 22, 2023, the regional Environmental Conservation Department (Magway) conducted an extensive inspection of Mann Field operations. This inspection encompassed various critical areas, including GOCS-1, the Mann Creek water pumping station, the Waste Management Compound, the Sein Ta Lone plantation field, the Bio-filtration unit, and its treated water collecting tank, as well as the management of produced water on injection well M-258.

To mark World Environment Day (2023), MPRL E&P organized a tree planting campaign at Mann Field. Approximately 140 Sein Ta Lone plants were planted as part of this initiative. Furthermore, MPRL E&P generously provided around 1,782 Sein Ta

Lone plants to communities residing in 14 villages surrounding the Mann Field, promoting environmental awareness and sustainability.

On July 12, 2023, an environmental awareness session was conducted at the MOGE (Mann) office, facilitated by the regional ECD (Magway). The session focused on important topics such as water conservation and identifying fire hot spots. Participants had the opportunity to ask questions and seek clarifications on these subjects. During the event, MPRL E&P also discussed plans for an environmental monitoring survey in collaboration with the regional ECD team, targeting currently favorable areas for assessment and enhancement of environmental conditions.

As per our ECC commitments, the hazardous waste is managed under waste management procedure and E-waste about (260.0) kg. was disposed to licensed third party DOWA on 22 August 2023.

Decommissioning plan for the Mann Field (EOR) Project was developed by referring to the terms and conditions in our PCC. In the PCC, MOGE is the operator of the project and MPRL E&P is the contractor role. At the end of the PCC (including any extensions), MPRL E&P will transfer back the production operational activities to MOGE.

In accordance with Article (91) of the EIA procedure (2015), MPRL E&P formally submitted an application letter to the regional ECD (Magway) on September 19, 2023, seeking an extension for the Mann Field Environmental Compliance Certificate (ECC), which is set to expire on March 22, 2024. Alongside this application, we included a comprehensive report detailing MPRL E&P's diligent follow-up actions in alignment with the ECC commitments, as outlined in Table (8.1) of the approved Environmental Impact Assessment (EIA) report. This submission was supplemented with supporting evidence, including documents and photographs, to substantiate our request for the extension.

In the future, we have outlined plans to conduct air, noise, surface water, groundwater, and soil quality monitoring activities. The scheduling and execution of these monitoring initiatives will be contingent upon the prevailing socio-political conditions and security considerations.

Table 9: Implementation and Follow-up Actions on ECD's comments

ရက်စွဲ	၁၂-၆-၂၀၂၀		
စာအမှတ်	အရည်အသွေး-၂/ဆစရ (၂၂၆/၂၀၂၀)		
ဌာန	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးချုပ်ရုံး၊ နေပြည်တော်		
အကြောင်းအရာ	MPRL E&P Pte. Ltd မှ မကွေးတိုင်းဒေသကြီး၊ မန်းရေနံမြေတွင် အကောင်အထည်ဖော် ဆောင်ရွက်လျက်ရှိသည့် ကုန်းတွင်း ရေနံဖွံ့ဖြိုးတိုးတက်ရေးအစီအစဉ် (Redevelopment and Enhanced Oil Recovery - EOR Programme) ၏ ဒုတိယအကြိမ် ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြည့်စစ်ဆေးမှုအစီရင်ခံစာ တင်ပြလာခြင်းနှင့်ပတ်သက်၍ အကြောင်းကြားခြင်း		
စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှု အခြေအနေ	
(က)	လေထုအရည်အသွေးဆိုင်ရာ Parameter ဖြစ်သည့် SO2 ၏ ရလဒ်အား အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ် လွှတ်မှု) လမ်းညွှန်ချက်များ (NEQEGs) ၏ သတ်မှတ်ချက်အတွင်းရှိရေး စောင့်ကြပ်ကြည့်ရှု သွားရန်၊	<ul style="list-style-type: none"> - သတ်မှတ်ချက် အတွင်းရှိရေး စောင့်ကြပ် ကြည့်ရှုလျက် ရှိပါသည်။ - COVID-19 pandemic & Security Concern ကြောင့် စတုတ္ထနှင့် ပဉ္စမအကြိမ် အစီရင်ခံစာတွင် Third party monitoring survey မပြုလုပ်နိုင်ခဲ့ပါ။ ဆဌမ အကြိမ် နှင့် သတ္တမအကြိမ် အစီရင်ခံစာများတွင် ထည့်သွင်း တိုင်းတာ စောင့်ကြပ်ကြည့်ရှုလျက် ရှိပါသည်။ 	

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှု အခြေအနေ
(ခ)	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် တိုင်းတာမည်ဟု ဖော်ပြပါရှိသော ရေထု အရည်အသွေး (မြေပေါ်ရေ၊ မြေအောက်ရေ) ဆိုင်ရာ Parameter များကို ပြည့်စုံစွာ တိုင်းတာရန်၊	<ul style="list-style-type: none"> - COVID-19 pandemic & Security Concern ကြောင့် စတုတ္ထနှင့် ပဉ္စမအကြိမ် အစီရင်ခံစာတွင် Third party monitoring survey မပြုလုပ် နိုင်ခဲ့ပါ။ တိုင်းတာသည့် အဖွဲ့အစည်း၊ ရရှိနိုင်သည့် စက်ပစ္စည်းအမျိုးအစား နှင့် ဓါတ်ခွဲခန်းအခြေအနေ တို့ပေါ်မူတည်၍ ပြည့်စုံစွာ တိုင်းတာနိုင်ရေး ကြိုးစား ဆောင်ရွက်လျက်ရှိပါသည်။ - နိုင်ငံအတွင်းရှိ ဓါတ်ခွဲခန်း များ၌ စစ်ဆေးနိုင်သည့် Parameter များအား စစ်ဆေး တိုင်းတာလျက် ရှိပါသည်။
(ဂ)	မြေပေါ်ရေအရည်အသွေးကို စောင့်ကြည့် စစ်ဆေးမှု အစီရင်ခံစာတွင် NEQEGs နှင့် နှိုင်းယှဉ်ထားပါသဖြင့် အိမ်နီးချင်းနိုင်ငံများ၏ မြေပေါ်ရေအရည်အသွေး သတ်မှတ်စံချိန် စံညွှန်းများနှင့် နှိုင်းယှဉ်ဖော်ပြရန်၊	<ul style="list-style-type: none"> - ဒုတိယအကြိမ် ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ မှစတင်၍ နှိုင်းယှဉ် ဖော်ပြခဲ့ ပါသည်။ - COVID-19 pandemic & Security Concern ကြောင့် စတုတ္ထနှင့် ပဉ္စမအကြိမ် အစီရင်ခံစာတွင် Third party monitoring survey မပြုလုပ်နိုင်ခဲ့ပါ။ ယခု သတ္တမအကြိမ်တွင် မြေပေါ်ရေ အရည်အသွေး စောင့်ကြည့်တိုင်းတာ စစ်ဆေးမှု ကို အခြေအနေ ပေးသည့်နေရာ (၄) ခု၌ မကွေးတိုင်းဒေသကြီး ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန နှင့် ပြန်လည် ပြုလုပ်နိုင်ခဲ့ပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှု အခြေအနေ
(ဃ)	ဆူညံသံ သက်ရောက်မှုကို အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ် မှု) လမ်းညွှန်ချက်များ၏ သတ်မှတ်ချက် အတွင်းရှိစေရေး ဆောင်ရွက်သွားရန်၊	<ul style="list-style-type: none"> - အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည် အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် များ၏ သတ်မှတ်ချက် အတွင်း ရှိစေရေး ဆောင်ရွက် ထားရှိပါသည်။ - COVID-19 pandemic & Security Concern ကြောင့် စတုတ္ထနှင့် ပဉ္စမအကြိမ် အစီရင်ခံစာတွင် Third party monitoring survey မပြုလုပ်နိုင်ခဲ့ပါ။ ယခု သတ္တမအကြိမ် စောင့်ကြည့်စစ်ဆေးမှု အစီရင်ခံစာ တွင် မကွေးတိုင်းဒေသကြီး ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဦးစီးဌာနနှင့်အတူ နေရာ (၂) ခု၌ စောင့်ကြည့်တိုင်းတာ စစ်ဆေးမှု ပြုလုပ်နိုင် ခဲ့ပါသည်။
(င)	အတည်ပြုပြီး ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း အစီရင်ခံစာတွင် ဖော်ပြပါရှိသည့် ထိခိုက်မှု လျော့ချမည့်နည်းလမ်းများအား လိုက်နာ ဆောင်ရွက်သွားရန်နှင့် စောင့်ကြည့် စစ်ဆေးမှု အစီရင်ခံစာတွင် ထည့်သွင်း ဖော်ပြ သွားရန်။	<ul style="list-style-type: none"> - လိုက်နာဆောင်ရွက်လျက်ရှိပါသည်။ စောင့်ကြည့် စစ်ဆေးမှု အစီရင်ခံစာတွင် ထည့်သွင်း ဖော်ပြ ထားပါသည်။

ရက်စွဲ	၇-၃-၂၀၂၃
စာအမှတ်	၅/ ထိန်းချုပ်/ စကရ (၀၁) (၄၂၂/၂၀၂၃)
ဌာန	ညွှန်ကြားရေးမှူးရုံး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ မကွေးတိုင်းဒေသကြီး၊ မကွေးမြို့၊
အကြောင်းအရာ	မင်းဘူးခရိုင်၊ မင်းဘူးမြို့နယ်၊ မန်းရေနံမြေအတွင်းရှိ Environmental Impact Assessment (EIA) အတည်ပြုပြီး MPRL E&P Pte. Ltd ၏ ရေနံပြန်လည်ဖွံ့ဖြိုးတိုးတက်ရေးအစီအစဉ် (Redevelopment and Enhanced Oil Recovery - EOR Programme) အတွက် (၂၀၂၀ ခုနှစ် ဧပြီလမှ စက်တင်ဘာလအထိ)၊ (၂၀၂၁ အောက်တိုဘာလမှ ၂၀၂၂ မတ်လအထိ) နှင့် (၂၀၂၂ ဧပြီလမှ စက်တင်ဘာလအထိ) စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာ များနှင့် ပတ်သက်၍ အကြောင်းကြားခြင်း

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(က)	ကုမ္ပဏီမှ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာ ဆောင်ရွက်မှု သက်သေခံလက်မှတ်၏ အပိုဒ် (B1) အရ အတည်ပြုအစီရင်ခံစာ ဇယား (၈.၃) တွင် ဖော်ပြထားသော ကတိကဝတ်များအား အကောင်အထည်ဖော် ဆောင်ရွက်သွားရန်၊	- သတ်မှတ်ချက်အတွင်းရှိရေး စောင့်ကြပ် ကြည့်ရှုလျက် ရှိပါသည်။
(ခ)	ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေးများ တိုင်းတာစစ်ဆေးရာတွင် တိုင်းတာစစ်ဆေးမှု ရလဒ်များအပေါ်မူတည်၍ အကျိုးအကြောင်း ခိုင်လုံစွာ ဖော်ပြရန်၊	- (၆)လပတ် ပတ်ဝန်းကျင် စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာများတွင် ထည့်သွင်း တင်ပြလျက်ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(ဂ)	ကုမ္ပဏီမှ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာ ဆောင်ရွက်မှု သက်သေခံလက်မှတ်၏ အပိုဒ် (C3) အရ စီမံကိန်း၏ လုပ်ဆောင်မှုများ၊ Sites (သို့) ဆိုးရွားသော ထိခိုက်မှုများ ပြောင်းလဲမှုရှိပါက ပြန်လည်ပြင်ဆင်ထားသည့် EMP အား စိစစ်နိုင်ရန် နှင့် အတည်ပြုနိုင်ရန် အတွက် ECD သို့တင်ပြသွားရန်၊	<ul style="list-style-type: none"> - စီမံကိန်း၏ လုပ်ဆောင်မှုများ/ ဆိုးရွားသော ထိခိုက်မှုများ ပြောင်းလဲမှု ရှိပါက တင်ပြသွားပါမည်။
(ဃ)	ထပ်မံတင်ပြမည့် စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာတွင် အတည်ပြုပြီး EIA အစီရင်ခံစာပါ အပိုဒ် (၈.၃) ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်တွင် ဖော်ပြထားသည့်အတိုင်း လေထုအရည်အသွေး၊ ဆူညံသံ၊ မြေအောက်ရေအရည်အသွေး၊ မြေပေါ်ရေအရည်အသွေး နှင့် မြေဆီလွှာအရည်အသွေးတို့အား တိုင်းတာစစ်ဆေးသွားရန်၊ တိုင်းတာ စစ်ဆေးမှုရလဒ်များအား Baseline data များနှင့် နှိုင်းယှဉ်ဖော်ပြရန်နှင့် တိုင်းတာစစ်ဆေးမှု ရလဒ်များအား သတ်မှတ်စံချိန်စံညွှန်းအတွင်း ရှိစေရေး စီမံဆောင်ရွက်သွားရန်၊	<ul style="list-style-type: none"> - ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်တွင် ဖော်ပြထားသည့် အတိုင်း တိုင်းတာစစ်ဆေးလျက် ရှိပါသည်။ - တိုင်းတာစစ်ဆေးသည့် အဖွဲ့အစည်း နှင့် တိုင်းတာသည့် စက်ပစ္စည်း၊ ဓါတ်ခွဲခန်းမှ တိုင်းတာနိုင်သည့် အခြေအနေ စသည်တို့ပေါ်မူတည်၍ ကျန်ရှိ parameter များကို တိုင်းတာ စစ်ဆေးနိုင်ရေး ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(င)	<p>လေထု၊ ရေထု၊ မြေထု၊ ဆူညံသံ အရည်အသွေးများအား အတည်ပြုပြီး EIA အစီရင်ခံစာတွင် ပါရှိသည့် သတ်မှတ် Parameter များ၊ သတ်မှတ်နေရာများအတိုင်း တိုင်းတာသွားရန် နှင့် လုပ်ကွက်အတွင်း တိုင်းတာသည့်နေရာ၊ location point များနှင့် နမူနာ ကောက်ယူသည့်နေရာများအား Google Map ဖြင့်လည်းကောင်း၊ Layout plan ဖြင့်လည်းကောင်း ထည့်သွင်းဖော်ပြရန်နှင့် တိုင်းတာသည့် ရလဒ်များကို အချိန် ပါသည့် မှတ်တမ်းဓါတ်ပုံများနှင့်တကွ ဖော်ပြရန်၊</p>	<ul style="list-style-type: none"> - ကိုဗစ်-၁၉ ရောဂါဖြစ်ပွားမှု၊ လုံခြုံရေးအခြေအနေ၊ ခရီးသွားလာ နိုင်မှုအခြေအနေ၊ တိုင်းတာ စစ်ဆေးသည့် အဖွဲ့အစည်း နှင့် တိုင်းတာသည့် စက်ပစ္စည်း၊ ဓါတ်ခွဲခန်းမှ တိုင်းတာနိုင်သည့် အခြေအနေ စသည်တို့ပေါ်မူတည်၍ ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်ကို အကောင်အထည်ဖော်ဆောင်ရွက် လျက်ရှိပါသည်။ - လက်ရှိ ဒေသတွင်းအခြေအနေအရ တိုင်းတာနိုင်သည့် နေရာ အကန့် အသတ်ရှိသောကြောင့် နေရာအချို့တွင် သွားရောက် တိုင်းတာ စစ်ဆေးနိုင်မှု မရှိသေးပါ။
(စ)	<p>လေထုအရည်အသွေးတိုင်းတာသည့် Data Result များအား Data Analysis ပြုလုပ်ရန်အတွက် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များပါ သတ်မှတ်ထားသည့် အချိန်ကာလအတိုင်း တိုင်းတာထားသည့် ရလဒ်များအား Excel Form ဖြင့် ပြည့်စုံစွာ ထည့်သွင်းဖော်ပြရန်၊</p>	<ul style="list-style-type: none"> - (၆)လပတ် ပတ်ဝန်းကျင်စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာများတွင် သတ်မှတ်ထားသည့် အချိန်ကာလ အတိုင်း ထည့်သွင်း တင်ပြလျက်ရှိပါသည်။
(ဆ)	<p>ဂေဟစနစ်ထိန်းသိမ်းရေးအနေဖြင့် ပတ်ဝန်းကျင်ထိန်းလန်း စိုပြေရေး အတွက် ထိန်းသိမ်းကာကွယ်ထားသော သဘာဝ ပေါက်ပင်များအား ကောင်းမွန်စွာ ရှင်သန်နိုင်ရေး၊ ပျက်စီးဆုံးရှုံးမှုများ မဖြစ်ပေါ်စေရေး ဂရုပြုဆောင်ရွက်သွားရန်၊</p>	<ul style="list-style-type: none"> - ကောင်းမွန်စွာ ရှင်သန်နိုင်ရေး နှင့် ပျက်စီးဆုံးရှုံးမှုများ မဖြစ်ပေါ်စေရေး ဂရုပြု လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(ဇ)	လုပ်ငန်းတွင် မီးဘေးအန္တရာယ်ကာကွယ်ရေးအတွက် မီးသတ်ဦးစီးဌာန၏ လမ်းညွှန်ချက်များအတိုင်း အထူးအလေးထားလိုက်နာဆောင်ရွက်ရန်၊	- မီးသတ်ဦးစီးဌာန၏ လမ်းညွှန်ချက်များအတိုင်း အထူးအလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(ဈ)	အတည်ပြုပြီး EIA အစီရင်ခံစာအား အများပြည်သူများ သိရှိနိုင်ရေး ကုမ္ပဏီ Website ကဲ့သို့သော အများပြည်သူများ သိရှိနိုင်မည့် နည်းလမ်းများအသုံးပြု၍ ယွှင့်တင်ထားရှိရန်၊	- လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(ည)	အတည်ပြုပြီး အစီရင်ခံစာပါ ကတိကဝတ်များနှင့် ECC ပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များအား အလေးထား လိုက်နာဆောင်ရွက်သွားရန်၊	- အလေးထား လိုက်နာ ဆောင်ရွက် လျက် ရှိပါသည်။
(ဋ)	ကုမ္ပဏီအနေဖြင့် ဒေသခံပြည်သူတို့၏ ဆန္ဒနှင့် သဘောထားများကို အလေးထား လိုက်နာဆောင်ရွက်ရန်နှင့် စောင့်ကြပ်ကြည့်ရှုမှု လုပ်ငန်းစဉ်များကို ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဥပဒေ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး နည်းဥပဒေများ၊ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း ဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့်အညီ ဆက်လက် အကောင်အထည်ဖော် ဆောင်ရွက်သွားရန်၊	- လိုက်နာ အကောင်အထည်ဖော် ဆောင်ရွက်လျက် ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(၅)	စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာအား ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် (၁၀၉) နှင့်အညီ ရေးဆွဲပြုစု၍ အပိုဒ် (၁၀၈) နှင့်အညီ (၆)လလျှင် (၁)ကြိမ် ပုံမှန်အစီရင်ခံစာတင်ပြရန်။	- (၆) လ လျှင် တစ်ကြိမ် ပုံမှန် အစီရင်ခံစာတင်ပြလျက်ရှိပါသည်။

ရက်စွဲ	၇-၉-၂၀၂၃
စာအမှတ်	၅/ ထိန်းချုပ်/ စကရ (၀၁) (၁၈၆၀/၂၀၂၃)
ဌာန	ညွှန်ကြားရေးမှူးရုံး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ မကွေးတိုင်းဒေသကြီး၊ မကွေးမြို့။
အကြောင်းအရာ	မကွေးတိုင်းဒေသကြီး၊ မင်းဘူးမြို့နယ်၊ မန်းရေနံမြေအတွင်းရှိ Environmental Impact Assessment (EIA) အတည်ပြုပြီး MPRL E&P Pte. Ltd ၏ ရေနံပြန်လည်ဖွံ့ဖြိုးတိုးတက်ရေးအစီအစဉ် (Re-development and Enhanced Oil Recovery - EOR Programme) အတွက် (၂၀၂၂ ခုနှစ်၊ အောက်တိုဘာလ ၉ ၂၀၂၃ ခုနှစ်၊ မတ်လအထိ) တင်ပြလာသော (၆)လပတ် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာနှင့်ပတ်သက်၍ အကြောင်းကြားခြင်း

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(က)	လေထုအရည်အသွေး တိုင်းတာထားသည့်ရလဒ်များအား အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (National Environmental Quality Emission Guideline - NEQEG) ပါ သတ်မှတ် Unit ဖြင့် ဖော်ပြရန်၊	- လေထုအရည်အသွေး တိုင်းတာထားသည့် ရလဒ်များအား NEQEG ပါ သတ်မှတ် Unit ဖြင့် ဖော်ပြလျက် ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(ခ)	လုပ်ကွက်အတွင်းရှိ မြေအောက်ရေနှင့် တိုင်းတာ ဖော်ပြထားသော မြေပေါ်ရေအား ဝန်ထမ်းများ သောက်သုံးရေအဖြစ် အသုံးပြုပါက World Health Organization (WHO) ၏ Drinking Water Quality Guideline (2011) (သို့မဟုတ်) ကျန်းမာရေးဝန်ကြီးဌာနမှ ထုတ်ပြန်ထားသော National Drinking Water Quality Standard ဖြင့် နှိုင်းယှဉ်ဖော်ပြရန်၊	- လိုက်နာဆောင်ရွက်လျက် ရှိပါသည်။
(ဂ)	စွန့်ပစ်ရေ အရည်အသွေးတိုင်းတာမှုတွင် Total Coliform bacterial Biochemical Oxygen Demand (BOD)၊ Total Suspended Solid တန်ဖိုးတို့သည် သတ်မှတ်စံချိန် စံညွှန်းထက် ကျော်လွန်နေသည်ကို တွေ့ရှိရသဖြင့် ကျော်လွန်ရသည့် အကြောင်းရင်းအား ဖော်ပြရန်နှင့် သတ်မှတ်စံချိန်စံညွှန်းအတွင်းရှိစေရေး စီမံဆောင်ရွက် သွားရန်၊	- သတ်မှတ်စံချိန်စံညွှန်းထက် ကျော်လွန်ရသည့် အကြောင်းရင်းအား ပတ်ဝန်းကျင် စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာ ၏ သက်ဆိုင်ရာ ခေါင်းစဉ်အခန်းများတွင် ထည့်သွင်း ရှင်းလင်း တင်ပြ ထားရှိပါသည်။ သတ်မှတ်စံချိန် စံညွှန်းအတွင်း ရှိစေရေး စီမံဆောင်ရွက်လျက် ရှိပါသည်။
(ဃ)	မြေထုအရည်အသွေးတိုင်းတာမှုတွင် အတည်ပြုပြီး EIA အစီရင်ခံစာပါ သတ်မှတ် Parameter များအား ပြည့်စုံစွာ တိုင်းတာဖော်ပြရန်၊ လိုက်နာဆောင်ရွက်မည့် သတ်မှတ် Guideline ဖြင့် နှိုင်းယှဉ်ဖော်ပြရန်နှင့် Guideline အမည်အား ဖော်ပြရန်၊	- လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။ Table-17: Soil Quality Monitoring Results တွင် ထည့်သွင်း ရှင်းလင်း တင်ပြထားရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(င)	ပတ်ဝန်းကျင်အရည်အသွေးများ တိုင်းတာစစ်ဆေးရာတွင် တိုင်းတာစစ်ဆေးမှု ရလဒ်များအပေါ် မူတည်၍ အကျိုး အကြောင်းခိုင်လုံစွာ ဖော်ပြရန်နှင့် ပတ်ဝန်းကျင် အရည်အသွေး တိုင်းတာစစ်ဆေးမှု ရလဒ်များအား ဖော်ပြရာတွင် Unit များ မှန်ကန်စေရေး အလေးထား ဆောင်ရွက်ရန်၊	- အလေးထားလိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(စ)	ဂေဟစနစ်ထိန်းသိမ်းရေးအနေဖြင့် ပတ်ဝန်းကျင်စိမ်းလန်း စိုပြည်ရေးအတွက် ထိန်းသိမ်းကာကွယ်ထားသော သဘာဝ ပေါက်ပင်များအား ကောင်းမွန်စွာ ရှင်သန်နိုင်ရေး၊ ပျက်စီး ဆုံးရှုံးမှုများ မဖြစ်ပေါ်စေရေး ဂရုပြုဆောင်ရွက် သွားရန်၊	- ဂေဟစနစ် ထိန်းသိမ်းရေး အနေဖြင့် သဘာဝ ပေါက်ပင်များအပေါ် ကောင်းမွန်စွာ ရှင်သန်နိုင်ရေး နှင့် ပျက်စီးဆုံးရှုံးမှု မဖြစ်ပေါ်စေရေး ဂရုပြု ဆောင်ရွက်လျက် ရှိပါသည်။
(ဆ)	လုပ်ငန်းတွင် မီးဘေးအန္တရာယ်ကာကွယ်ရေးအတွက် မီးသတ် ဦးစီးဌာန၏ လမ်းညွှန်ချက်များအတိုင်း အထူးအလေးထား လိုက်နာဆောင်ရွက်ရန်၊	- မီးသတ် ဦးစီးဌာန၏ လမ်းညွှန်ချက်များအတိုင်း အထူးအလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(ဇ)	<p>တင်ပြလာသော စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာများနှင့် ပတ်သက်၍ လေထု၊ ရေထု၊ မြေထုအရည်အသွေးအပါအဝင် ပတ်ဝန်းကျင်အရည်အသွေး စောင့်ကြည့်တိုင်းတာမှု ရလဒ်များအရ သတ်မှတ်စံချိန်စံညွှန်းများထက် ကျော်လွန်မှု ရှိနေပါက အတည်ပြုပြီး EIA ပါ Mitigation Measure များ၊ ဆောင်ရွက်မည့် လုပ်ငန်းအစီအစဉ်များနှင့် စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာတွင် ဖော်ပြပါရှိသော တိုင်းတာစောင့်ကြည့်မည့် လုပ်ငန်းစဉ်များ အတိုင်း ဆက်လက် ဆောင်ရွက်သွားရန်နှင့် ထပ်မံတင်ပြမည့် စောင့်ကြပ် ကြည့်ရှုမှုအစီရင်ခံစာများတွင် ဆောင်ရွက်မည့် အစီအစဉ် များကို ထည့်သွင်းဖော်ပြရန်၊</p>	<p>- မှတ်သား လိုက်နာ ဆောင်ရွက် လျက်ရှိပါသည်။</p>
(ဈ)	<p>ကုမ္ပဏီမှ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာ ဆောင်ရွက်မှု သက်သေခံလက်မှတ် Environmental Compliance Certificate (ECC) ၏ အပိုဒ် (B1) အရ အတည်ပြုပြီး EIA အစီရင်ခံစာ၏ ဇယား (၈.၃) တွင် ဖော်ပြထားသော ကတိကဝတ်များအား အကောင် အထည်ဖော် ဆောင်ရွက်သွားရန်၊</p>	<p>- ဖော်ပြထားသော ကတိကဝတ်များအား လိုက်နာ အကောင်အထည်ဖော် ဆောင်ရွက်လျက် ရှိပါသည်။</p>

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(ည)	ကုမ္ပဏီမှ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာ ဆောင်ရွက်မှု သက်သေခံလက်မှတ် Environmental Compliance Certificate (ECC) ၏ အပိုဒ် (C3) အရ စီမံကိန်း၏လုပ်ဆောင်မှုများ၊ Sites (သို့) ဆိုးရွားသော ထိခိုက်မှုများ ပြောင်းလဲမှုရှိပါက ပြန်လည်ပြင်ဆင်ထားသည့် EMP အား စိစစ်နိုင်ရန်နှင့် အတည်ပြုနိုင်ရန်အတွက် ECD သို့ တင်ပြသွားရန်၊	- စီမံကိန်း၏ လုပ်ဆောင်မှုများ၊ ဆိုးရွားသော ထိခိုက်မှုများ ပြောင်းလဲမှုရှိပါက တင်ပြသွားမည် ဖြစ်ပါသည်။
(ဋ)	ကုမ္ပဏီအနေဖြင့် စာချုပ်သက်တမ်းပြီးဆုံးပါက MOGE ထံ ပြန်လည် အပ်နှံသည့်အချိန်တွင် EIA Procedure အပိုဒ် (၁၀၂) နှင့် အပိုဒ် (၁၀၆) တို့အား အလေးထား လိုက်နာ ဆောင်ရွက်သွားရန်၊	- လိုက်နာ ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။
(ဌ)	ရေနံပြန်လည်ဖွံ့ဖြိုးတိုးတက်ရေးအစီအစဉ် (Re-development and Enhanced Oil Recovery - EOR Programme) အတွက် ခွင့်ပြုမိန့်တွင် လိုက်နာရမည့် စည်းကမ်းချက်များအတိုင်း အကောင်အထည်ဖော် ဆောင်ရွက် သွားရန်၊	- ခွင့်ပြုမိန့်ပါ လိုက်နာရမည့် စည်းကမ်းချက်များ အတိုင်း အကောင်အထည်ဖော် လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(၃)	<p>EIA Procedure အပိုဒ်(၁၀၆)အရ စီမံကိန်းအဆင့်အားလုံးတွင် ဆိုးကျိုးသက်ရောက်မှုအားလုံးအတွက် စီမံကိန်းနှင့် ဆက်စပ်ဆောင်ရွက်မှု များအား မိမိကိုယ်မိမိ ဘက်စုံ စောင့်ကြပ် ကြည့်ရှုစစ်ဆေးခြင်းကို စဉ်ဆက်မပြတ် လက်တွေ့ဆောင်ရွက်ရမည့်အပြင် သက်ဆိုင်ရာ ဥပဒေများ၊ နည်းဥပဒေများ၊ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံး လုပ်နည်း နှင့် စံချိန်စံညွှန်းများ၊ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာဆောင်ရွက်မှုသက်သေခံလက်မှတ်ပါ စည်းကမ်းချက်များနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်ပါ အချက်များကို အလေးထား လိုက်နာ ဆောင်ရွက်သွားရန်၊</p>	<p>- အလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။</p>
(၃)	<p>EIA Procedure အပိုဒ် (၁၀၇) အရ လုပ်ငန်းစီမံကိန်း၏ ပျက်ကွက်မှု တစ်ခုခုကြောင့် အန္တရာယ်ဖြစ်စေနိုင်သော ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု ဖြစ်နိုင်သည့်ကိစ္စ (သို့မဟုတ်) သယံဇာတ နှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာနက အမြန်သိရှိရန် လိုအပ်သည့် ကိစ္စကို (၂၄) နာရီအတွင်းလည်းကောင်း၊ အခြားကိစ္စများ အားလုံးတွင် ယင်းဖြစ်စဉ် ဖြစ်ရပ်ကို စတင်သိရှိသည့်အချိန်မှ (၇) ရက်အတွင်းတွင်လည်းကောင်း၊ စီမံကိန်းလုပ်ငန်းပိုင်ရှင်မှ ဝန်ကြီးဌာနသို့ အသိပေးတင်ပြသွားရန်၊</p>	<p>- သိရှိလိုက်နာ ဆောင်ရွက် သွားပါမည်။</p>

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(ဏ)	အတည်ပြုပြီး EIA အစီရင်ခံစာပါအတိုင်း လိုက်နာ ဆောင်ရွက်မှုနှင့် ပတ်သက်၍ ဆောင်ရွက်တိုးတက်မှု အခြေအနေအား (၆) လလျှင် (၁)ကြိမ် တင်ပြမည့် စောင့်ကြပ် ကြည့်ရှုမှုအစီရင်ခံစာများတွင် ပြည့်စုံစွာ ထည့်သွင်း ဖော်ပြသွားရန်၊	- စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံ စာများတွင် ပြည့်စုံစွာ ထည့်သွင်း တင်ပြလျက် ရှိပါသည်။
(တ)	EIA Procedure အပိုဒ် (၁၁၀) အရ စောင့်ကြပ် ကြည့်ရှုမှုအစီရင်ခံစာအား ဝန်ကြီးဌာနသို့ တင်ပြမည့် နေ့ရက်မှ (၁၀) ရက်အတွင်း အများပြည်သူ သိရှိနိုင်ရန် စီမံကိန်း၏ Website သို့မဟုတ် သင့်တော်သော နည်းလမ်းတစ်ရပ်ရပ်အသုံးပြု၍ အသိပေးထုတ်ပြန် ကြေညာရန် နှင့် ထုတ်ဖော်မည့် Website သို့မဟုတ် နေရာတို့ကို ထပ်မံတင်ပြမည့် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ၌ ထည့်သွင်းဖော်ပြရန်၊	- တင်ပြပြီးစီးခဲ့သော စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာများကို အများပြည်သူ သိရှိနိုင်ရန် ကုမ္ပဏီ Website ၌ အသိပေးထုတ်ပြန် ထားပြီး ဖြစ်ပါသည်။ ထပ်မံတင်ပြမည့် စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံ စာများ၌လည်း ထုတ်ဖော်မည့် Website သို့မဟုတ် နေရာတို့ကို ထည့်သွင်းဖော်ပြ သွားပါမည်။
(ထ)	(၂၀၂၂ ခုနှစ်၊ အောက်တိုဘာလမှ ၂၀၂၃ ခုနှစ်၊ မတ်လအထိ) တင်ပြလာသော စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာအား စိစစ် အကြောင်းကြားမည့် အချက်များ အပြင် (ယခင် စောင့်ကြပ် ကြည့်ရှုမှုအစီရင်ခံစာများအပေါ် စိစစ် ပြန်ကြားချက်များအား ဆက်လက်လိုက်နာ ဆောင်ရွက်သွားရန်နှင့် ထပ်မံတင်ပြမည့် စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာတွင် ဆောင်ရွက် ထားရှိမှုများအား ထည့်သွင်း ဖော်ပြရန်၊	- စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ များတွင် ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဦးစီးဌာန၏ စိစစ် ပြန်ကြားချက်များအား လိုက်နာ ဆောင်ရွက် ထားရှိမှု အခြေအနေများကို ထည့်သွင်း တင်ပြလျက် ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(ဒ)	အတည်ပြုပြီး အစီရင်ခံစာပါ ကတိကဝတ်များနှင့် ECC ပါ လိုက်နာဆောင်ရွက်ရမည့်အချက်များအား အလေးထား လိုက်နာဆောင်ရွက်သွားရန်၊	<ul style="list-style-type: none"> - အတည်ပြုပြီး အစီရင်ခံစာပါ ကတိကဝတ်များနှင့် ECC ပါ လိုက်နာဆောင်ရွက်ရမည့်အချက်များအား အလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(ဓ)	ကုမ္ပဏီအနေဖြင့် ဒေသခံပြည်သူတို့၏ ဆန္ဒနှင့် သဘောထားများကို အလေးထားလိုက်နာ ဆောင်ရွက်သွားရန်နှင့် စောင့်ကြပ်ကြည့်ရှုမှု လုပ်ငန်းစဉ်များကို ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ နှင့်အညီ ဆက်လက် အကောင်အထည်ဖော် ဆောင်ရွက်သွားရန်၊	<ul style="list-style-type: none"> - ဒေသခံပြည်သူတို့၏ ဆန္ဒနှင့် သဘောထားများကို အလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(န)	စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာအား ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် (၁၀၉) နှင့်အညီ ရေးဆွဲပြုစု၍ အပိုဒ် (၁၀၈) နှင့်အညီ (၆) လလျှင် (၁) ကြိမ် ပုံမှန် အစီရင်ခံစာတင်ပြရန်၊	<ul style="list-style-type: none"> - ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန သို့ စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာ ကို (၆) လလျှင် တစ်ကြိမ် ပုံမှန် အစီရင်ခံ တင်ပြလျက် ရှိပါသည်။



Figure 19: The Regional ECD(Magway) Inspection Tour to Mann Oil Field in June 2023



Figure 20: Environmental Awareness Sharing by the regional ECD (Magway) at MOGE



Figure 21: Tree-planting Campaign (2023)



Figure 22: Providing Sein Ta Lone Mango Plants to Communities on 21 September 2023



Figure 23: The Growth of Plantations at Mann Oil Field



Figure 24: Concrete Pad and Additional Cellar at M-290 and M-554



Figure 25: Concrete Pad and Additional Cellar at M-290 and M-554



Figure 26: Fire Extinguishers at GOCS-2 and GOCS-3



Figure 27: Fueling Station at Mann Oil Field



Figure 28: Shut-in Wells of M-58 and M-184



Figure 29: Regular Echo Metering at Selected Wells



Figure 30: Spill Kits at Work Places



Figure 31: Noise Metering at MDE-1 Compound



Figure 32: Presenting about HSE Activities at Community Engagement Meeting on September 2023



Figure 33: HSE Awareness Poster Notice Boards

8. Monitoring Survey & Activities

Throughout the monitoring period spanning from April 2023 to September 2023, each article provides an extensive account of the monitoring surveys and activities carried out. The following is a summary of the conducted monitoring activities:

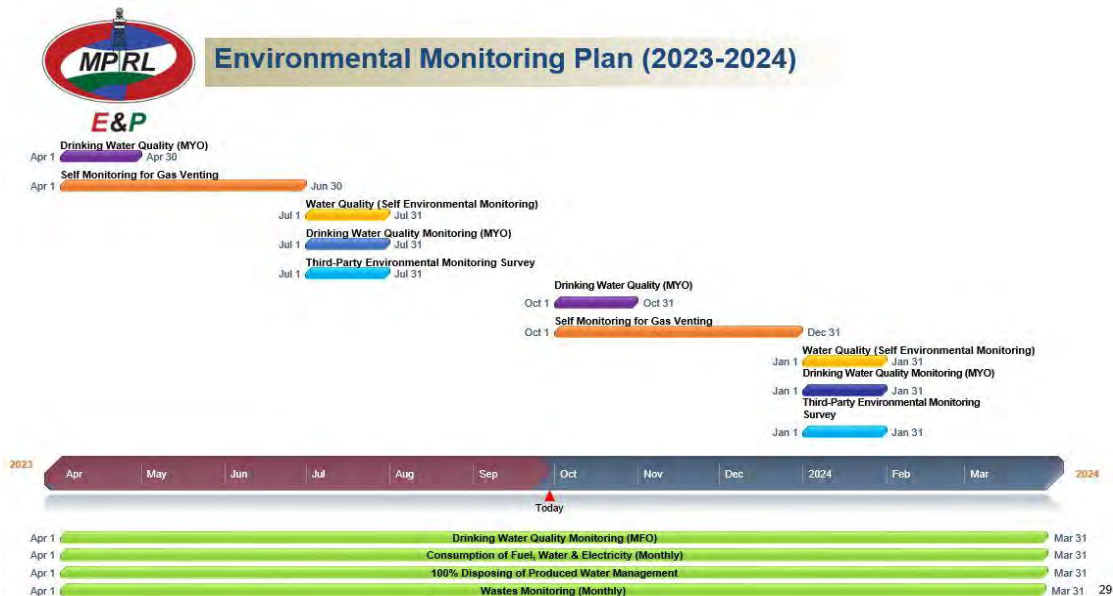


Figure 34: Time-line of Environmental Monitoring Plan (2023-2024)

With the regional ECD (Magway) team, we conducted air and noise quality monitoring at Z3AQN and Z4AQN, soil quality monitoring at Z3S1, Z3S2, Z4S1, and Z4S2, surface water and ground water quality monitoring at Z3SW1, Z3SW2, Z4SW1, Z4SW2, Z3GW1, Z3GW2, and Z4GW2.

Monitoring activities are conducted as much as possible during these situations, and MPRL E&P remains highly committed to monitoring as an obligation and commitment from the ECC and EIA if the situations permit.

8.1 Ambient Air Quality Monitoring

Ambient air pollutants were sampled and analyzed in accordance with NEQEG guidelines, using the Haz-Scanner EPAS Wireless Environmental Perimeter Air Station. This portable meter records real-time data, including ambient air quality measurements and climatological data. Table 10 and table 11 provide the locations and parameters for air and noise quality monitoring.

Table 10: Ambient Air Quality Monitoring Stations

Monitoring Stations	GPS Coordinate	Sampling Date (Baseline)	Sampling Date (Monitoring)
Z1AQN	20° 19' 39.0" N 94° 49' 18.4" E	8 - 9 May 2015	
Z2AQN	20° 15' 40.6" N 94° 50' 08.0" E	7 - 8 May 2015	
Z3AQN	20° 13' 21.5" N 94° 51' 19.6" E	6 - 7 May 2015	12 – 13 July 2023
Z4AQN	20° 11' 41.9" N 94° 52' 32.4" E	6 - 7 May 2015	13-14 July 2023

Table 11: Air Quality Monitoring Parameters

Parameters	Unit	Method and Duration
Air Quality		In situ reading for 24 hour
Sulphur Dioxide (SO ₂)	µg/m ³	
Carbon Monoxide (CO)	µg/m ³	
Nitric Oxide (NO)	µg/m ³	
Nitrogen dioxides (NO ₂)	µg/m ³	
Particulate Matter <2.5 µm (PM _{2.5})	µg/m ³	
Particulate Matter <10 µm (PM ₁₀)	µg/m ³	
Meteorological Data		
Relative Humidity (R.H)	%	
Temperature	°C	
Wind Speed	kph	
Wind Direction	-	

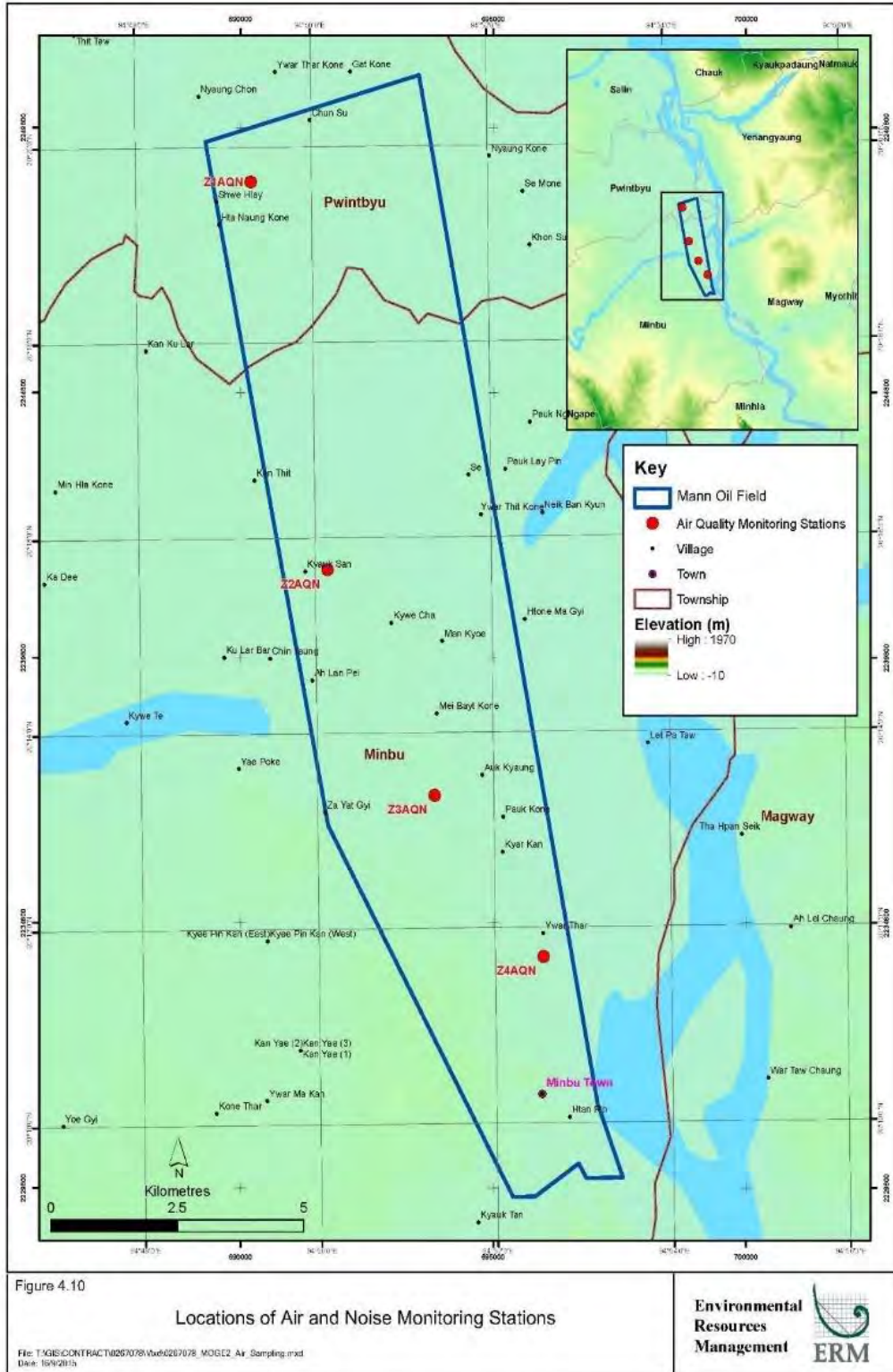


Figure 35: Location of Air and Noise Quality Monitoring Stations (Z3AQN)



Figure 36: Air and Noise Quality Monitoring at Z3AQN



Figure 37: Air & Noise Quality Monitoring at Z4AQN

Table 12: Summary of Air Quality Monitoring Results (July 2023)

Parameters	Monitoring Stations (Baseline May 2015)				Monitoring Stations (July 2023)			
	Z1AQN	Z2AQN	Z3AQN	Z4AQN	Z1AQN	Z2AQN	Z3AQN	Z4AQN
CO (24 - hr)	160.38 µg/m ³	126.02 µg/m ³	57.28 µg/m ³	148.93 µg/m ³	-	-	100 µg/m ³	110 µg/m ³
NO ₂ (1 - hr)	188.18 µg/m ³	188.18 µg/m ³	56.45 µg/m ³	169.36 µg/m ³	-	-	50 µg/m ³	50 µg/m ³
NO	380.49 µg/m ³	85.92 µg/m ³	<12.27 µg/m ³	171.84 µg/m ³	-	-	-	-
PM _{2.5} (24 - hr)	40 µg/m ³	30 µg/m ³	20 µg/m ³	30 µg/m ³	-	-	3.35 µg/m ³	7.07 µg/m ³
PM ₁₀ (24 - hr)	50 µg/m ³	40 µg/m ³	40 µg/m ³	40 µg/m ³	-	-	9.44 µg/m ³	15.04 µg/m ³
SO ₂ (10 min)	52.36 µg/m ³	78.54 µg/m ³	<26.18 µg/m ³	26.18 µg/m ³	-	-	-	-
Hydrogen Sulfide (H ₂ S)	-	-	-	-	-	-	30.16 µg/m ³	45.72 µg/m ³
Ozone (O ₃)	-	-	-	-	-	-	10 µg/m ³	20 µg/m ³
Temp (°C)	30.7	29	31.5	27.1	-	-	27.76	27.39
Relative Humidity (%)	61	61	56	55	-	-	74.12	76.01
Wind Speed (m/s)	0	0.015	0.081	0.85	-	-	-	-
Wind Direction	-	Southwest	Southeast	Southeast	-	-	-	-

Assessment Criteria: National Environmental Emission Guideline Value					
	O ₃	NO ₂	PM _{2.5}	PM ₁₀	SO ₂
24 - hr	-	-	25 µg/m ³	50 µg/m ³	20 µg/m ³
8 - hr	100 µg/m ³	-	-	-	-
1 - hr	-	200 µg/m ³	-	-	-
10 - min	-	-	-	-	500 µg/m ³

Due to security concerns, administrative and operational constraints, Mann Field operations are currently limited to daytime shifts with a limited crew. To optimize the monitoring station’s accessibility and ensure reliable power supply and security, we selected Z3AQN and Z4AQN as the location for 24-hour Air and Noise Quality monitoring in collaboration with ECD (Magway) staff.

By the Table 12, the Air Quality monitoring results at both the Z3AQN and Z4AQN during July 2023 indicate that all the parameters are within NEQEG standards and the monitoring results are attached and shown in the Appendix A.

8.2 Noise Quality Monitoring

Table 13 presents the noise monitoring locations and parameters. According to the Noise Quality Monitoring conducted by the regional ECD (Magway) at Z3AQN and Z4AQN, the LAeq value (dBA)a for both daytime and nighttime periods was found to be below the NEQEG limit. The comparison between the July 2023 Noise Quality Monitoring results and the 2015 baseline results is shown in Table 14 & Table 15.

Table 13: Noise Monitoring Stations

Monitoring Stations	GPS Coordinate	Description	Land-use
Z1AQN	20° 19' 39.0" N 94° 49' 18.4" E	Located at south western part of Pauk Su village, Pwint Phyu Township	Residential
Z2AQN	20° 15' 40.6" N 94° 50' 08.0" E	Located at south eastern part of Kyauk San village, near monestary compound	Residential
Z3AQN	20° 13' 21.5" N 94° 51' 19.6" E	In the MPRL E&P office compound, south of staff housing, Minnbu Township	Commercial
Z4AQN	20° 11' 41.9" N 94° 52' 32.4" E	Located at eastern part of Minnbu Township, close to the west bank of Ayeyarwady River	Bare ground

Table 14: Noise Quality Monitoring Results at Z3AQN

Receptor	One-hour LAeq (dBA) ^a			
	2015		July 2023	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)	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	55	45
Industrial, commercial	70	70	70	70
Average Test Result	55	50	44.9	42.3

Table 15: Noise Quality Monitoring Results at Z4AQN

Receptor	One-hour LAeq (dBA) ^a			
	2015		July 2023	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)	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	55	45
Industrial, commercial	70	70	70	70
Average Test Result	49	56	42.0	44.9

8.3 Soil Quality Monitoring

The baseline soil sampling locations are listed in table 16. The soil quality monitoring results provided by the regional ECD (Magway) indicated that the levels were below the guideline values of the international agricultural soil standards as shown in Table 17.

Table 16: Baseline soil sampling locations

Sampling Station	Replicate	Coordinates	Description	Baseline Sampling Date	Sampling Date
Z1S	1	20° 19' 45.30" N 94° 49' 13.99" E	at west of Pauk Su village, Pwint Phyu Township	6 - 9 May 2015	14-Jul-23
	2	20° 19' 45.38" N 94° 49' 21.05" E	at Pauk Su village, Pwint Phyu Township	6 - 9 May 2015	14-Jul-23
Z2S	1	20° 15' 41.70" N 94° 50' 8.41" E	in the paddy field located at the east of Kyauk San village, Minbu Township	6 - 9 May 2015	14-Jul-23
	2	20° 15' 40.05" N 94° 50' 10.40" E	at east of Kyauk San village, Minbu Township	6 - 9 May 2015	14-Jul-23
Z3S	1	20° 13' 22.04" N 94° 51' 19.59" E	in the compound of MPRL E&P office, Minbu Township	6 - 9 May 2015	14-Jul-23
	2	20° 13' 2.60" N 94° 51' 14.86" E	in the compound of MPRL E&P office, Minbu Township	6 - 9 May 2015	14-Jul-23
Z4S	1	20° 11' 41.31" N 94° 52' 39.20" E	near western bank of Ayeyarwady River, north of Minbu Town	6 - 9 May 2015	14-Jul-23
	2	20° 11' 45.77" N 94° 52' 38.30" E	near western bank of Ayeyarwady River, north of Minbu Town	6 - 9 May 2015	14-Jul-23

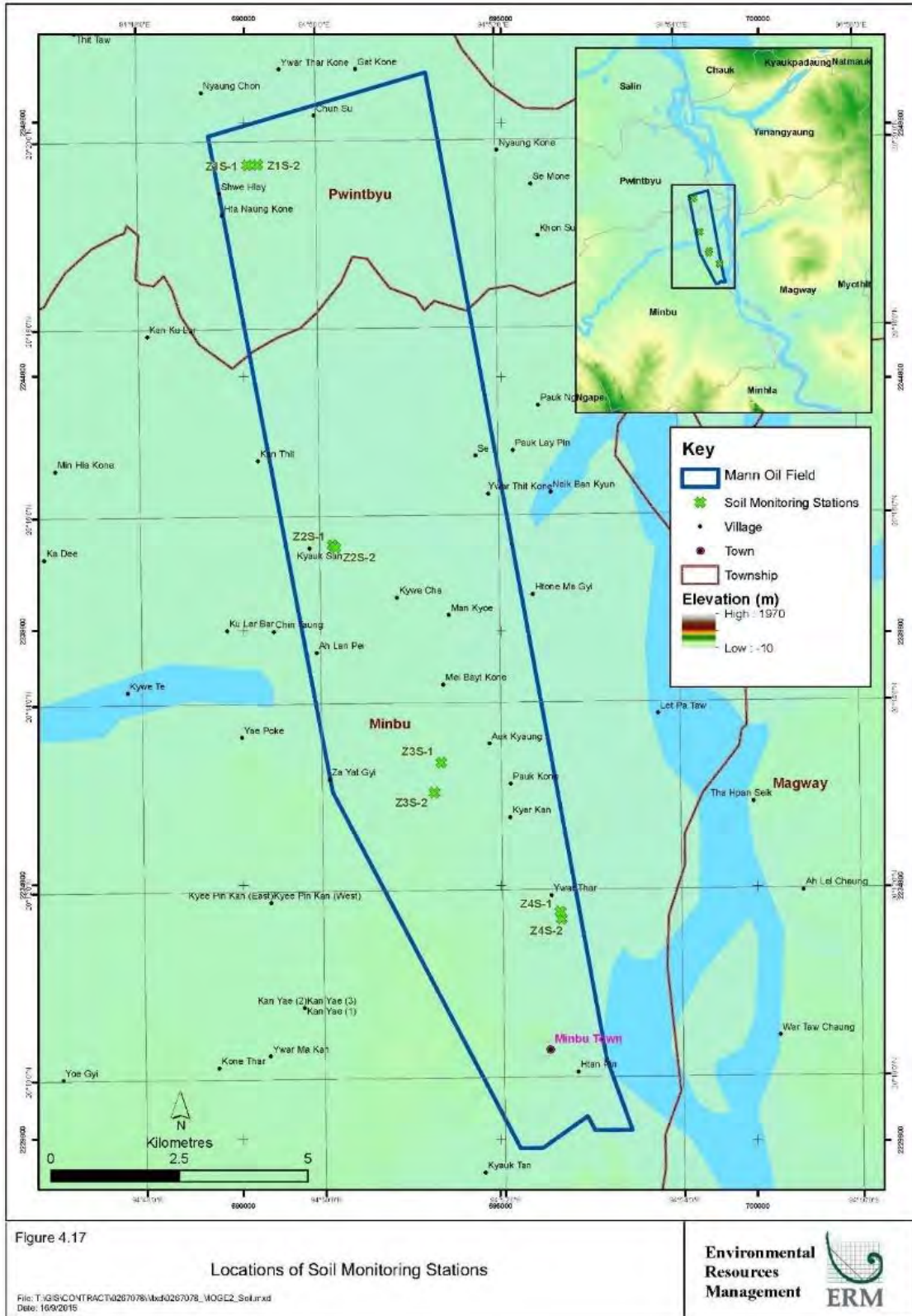


Figure 38: Location of Soil Monitoring Stations



Figure 39: Soil Quality Monitoring at Z3S1, Z3S2, Z4S1, and Z4S2

Table 17: Soil Quality Monitoring Results

Parameter	Unit	Baseline Data Sampling Station (May 2015)										Soil Analysis Result (July 2023)										International Agricultural Soil Standard		
		Z1S1	Z2S1	Z3S1	Z3S2	Z4S1	Z4S2	Z1S2	Z2S2	Z3S2	Z3S1	Z2S1	Z2S2	Z1S1	Z1S2	Z2S1	Z2S2	Z3S1	Z3S2	Z4S1	Z4S2			
pH	-	6.8	6.7	6.8	6.8	6.9	6.9	6.8	6.8	6.8	6.9	6.9	-	-	-	-	7.0	6.97	7.28	7.36	-	-	6 - 7.5	
Arsenic	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-	
Lead	mg/kg	115	135	120	124	137	135	120	124	137	135	135	-	-	-	-	7.5	8.8	20.7	12.4	5	-	-	
Cadmium	mg/kg	0.009	0.008	0.007	0.007	0.006	0.007	0.007	0.007	0.006	0.007	0.007	-	-	-	-	-0.1	-0.1	-0.14	-0.1	-	-	-	
Copper	mg/kg	105	110	90	95	85	90	65	90	85	88	88	-	-	-	-	3.1	4.72	8.53	8.81	-	-	100	
Zinc	mg/kg	75	72	80	70	75	70	65	70	75	78	78	-	-	-	-	15.6	22.6	45.0	49.6	5	-	250	
Manganese	mg/kg	30	38	28	25	31	30	28	25	31	30	30	-	-	-	-	115	140	70	105	-	-	500	
Iron	mg/kg	4850	4900	4870	4950	4700	4690	4870	4950	4700	4690	4690	-	-	-	-	78.5	127	125.	121	-	-	-	
Soil Texture	-	Silty clay	Silty Sand	Silty Sand	Silty Sand	Silty clay	Silty clay	Silty Sand	Silty Sand	Silty clay	Silty clay	Silty clay	-	-	-	-	-	-	-	-	-	-	-	-
Soil Color	-	Grey	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Grey	Yellowish Grey	Yellowish Brown	Yellowish Brown	Yellowish Grey	Yellowish Grey	Yellowish Grey	-	-	-	-	-	-	-	-	-	-	-	-

8.4 Surface Water Quality Monitoring

The surface water quality monitoring within the Project Area was carried out at two locations in July 2023. Details of the sampling locations were presented in Table 18.

Table 18: Surface Water Quality Monitoring Locations

Sampling Locations	Coordinate	Description	Sampling Date (Monitoring)
Z3SW1	20° 14' 46.51" N 94° 51' 0.27" E	Mann Chaung, near Kywegya village	14 July 2023
Z3SW2	20° 14' 45.74" N 94° 51' 1.87" E	Mann Chaung, about 50 m downstream of Z3SW1	14 July 2023
Z4SW1	20° 11' 41.31" N 94° 52' 41.11" E	Near west bank of Ayeyarwady river, Minbu Township	14 July 2023
Z4SW2	20° 11' 38.80" N 94° 52' 42.50" E	Ayeyarwady river, about 90 m downstream of Z4SW1	14 July 2023

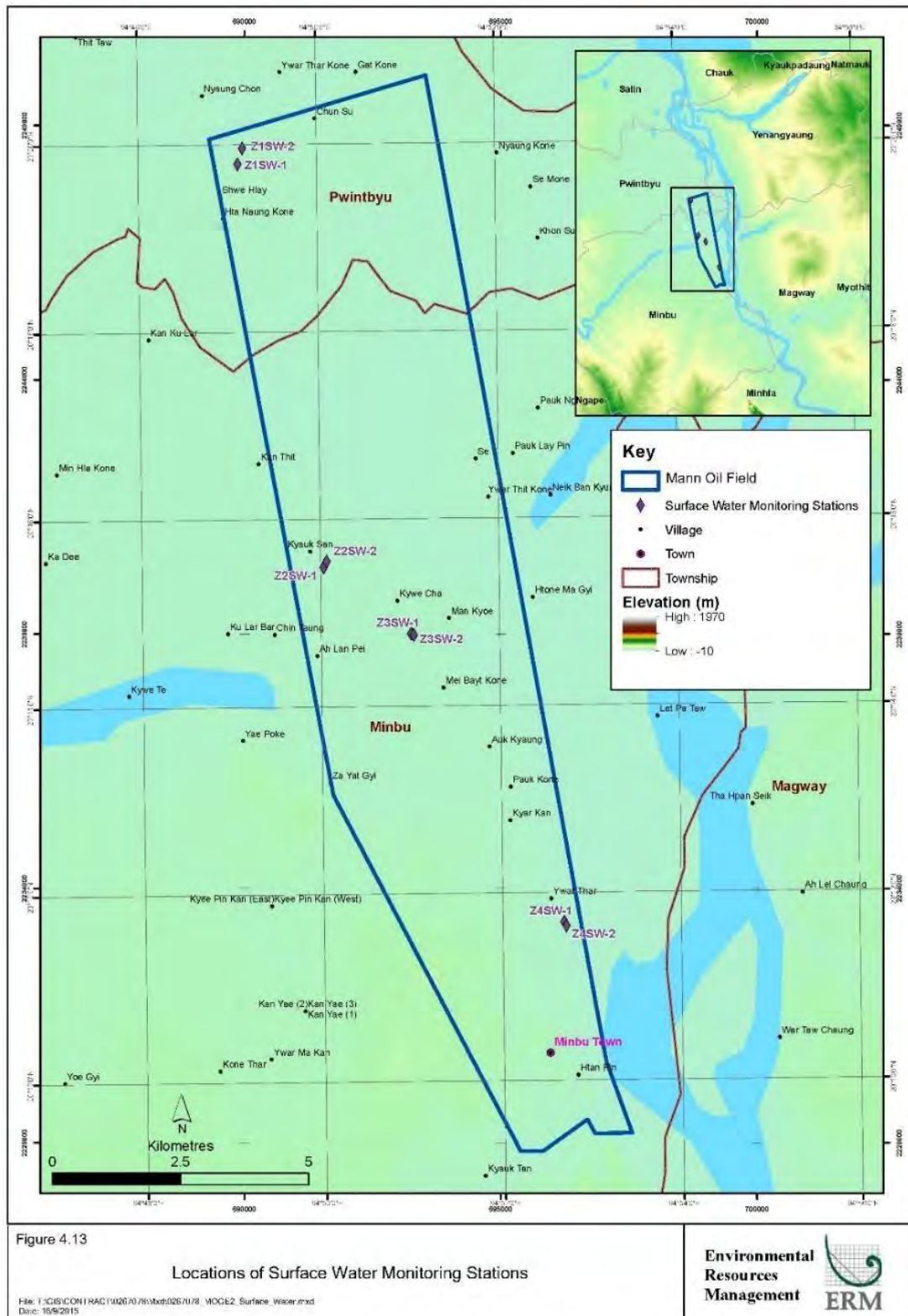


Table 19: Locations of Surface Water Quality Monitoring



Figure 40: Surface Water Quality Monitoring at Z3SW1, Z3SW2, Z4SW1, and Z4SW2

As per the monitoring results of surface water in July 2023 as shown in Table 20, BOD5 value at Z3SW1 is overing the NEQEG. The sample water from that point is collected from Mann Creek and it may be many reasons such as agricultural runoff, natural sources of organic matters due to rainfall, etc. The high TSS is resulted at Z4SW1 and Z4SW2, the sample water of Ayeyarwady river, may be the high natural background turbidity level of river and water level rising and erosion of soil in a rainy season.

Table 20: Surface Water Quality Monitoring Results

Item/ Sample Name	2015				2023 (July)				Vietnam Standard	NEQEG Standard
	Z3SW1	Z3SW2	Z4SW1	Z4SW2	Z3SW1	Z3SW2	Z4SW1	Z4SW2		
Date/ Time	6/5/15 (12:08)	6/5/15 (12:08)	6/5/15 (12:08)	6/5/15 (12:08)	14/7/23 (11:20)	14/7/23 (11:35)	14/7/23 (08:40)	14/7/23 (08:55)		
Weather	Sunny	Sunny	Sunny	Sunny	Cloudy	Cloudy	Cloudy	Cloudy	-	-
Transparency	High	High	Medium	Medium	-	-	-	-	-	-
Temperature Water (C)	37.66	37.62	31.55	31.18	-	-	-	-	-	-
pH	8.1	8.11	7.73	7.65	7.53	7.58	4.82	6.36	5.5-9	6-9
DO (mg/l)	11.33	11.52	7.12	7.15	8.18	7.49	9.2	9.36	≥2	-
EC (µs)	711.8	705.7	153	152.5	0.31	4	0.1	0.04	-	-
Turbidity (FNU)	7.1	7	25	43.7	83.4	102	972	1000	-	-
Colour	5	10	45	55	88	103	458	398	-	-
Alkalinity	238	237	58	58	6	31	<5	<5	-	-
Hardness	144	150	58	50	28	220	24	24	-	-
BOD5 (mg/l)	10	10	14	16	59.3	10.3	9.5	9.8	<25	30
COD (mg/l)	32	32	32	32	0	0	0	0	<35	125
Total Nitrogen (mg/l)	3	9	19	18	1.4	2.4	2.6	1.2	15	10
Total Phosphorous (mg/l)	0.047	0.051	0.071	0.031	<1.5	<1.5	<1.5	<1.5	-	2.0
Oil and grease (mg/l)	5	7	<1	<1	5	6	6	7	0.3	10
TSS (mg/l)	7	13	124	138	7	7	161	186	80	50

8.5 Groundwater Quality Monitoring

The groundwater quality monitoring was conducted at three existing residential wells (dug wells and drilled/ tube wells) in the Project Area. The sampling locations are presented in the Table 21 and its surrounding conditions are expressed in the Figure 42.

Table 21: Groundwater Quality Monitoring Locations

Sampling Locations	Coordinate	Description	Sampling Date (Monitoring)
Z3GW1	20° 15' 5.35" N 94° 50' 54.52" E	Tube well in Kywegya village, Minbu Township	14 July 2023
Z3GW2	20° 15' 6.44" N 94° 50' 53.77" E	Tube well in Kywegya village, Minbu Township	14 July 2023
Z4GW1	20° 11' 37.92" N 94° 52' 29.67" E	Well in Shwe War Gone Ward, Minbu Township	14 July 2023
Z4GW2	20° 11' 29.50" N 94° 52' 27.85" E	Well in Shwe War Gone Ward, Minbu Township	14 July 2023

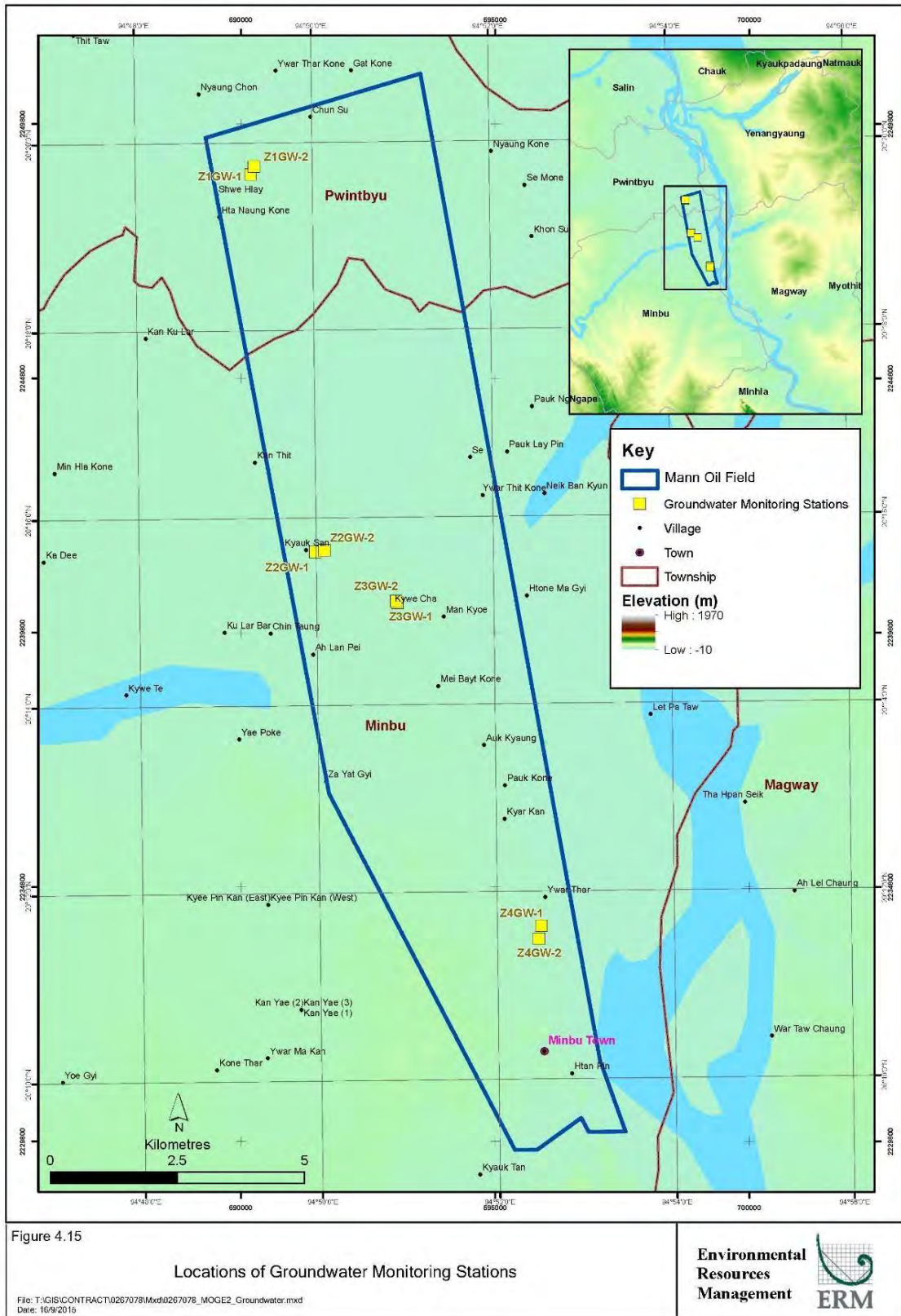


Figure 41: Groundwater Quality Monitoring Locations



Figure 42: Groundwater Quality Monitoring at Z3GW1 and Z4GW2

The results of groundwater quality monitoring are summarized in Table 22. As per the results, the BOD₅ value is higher than the WHO Drinking Water Quality Standard at all locations but other parameters are complied with the standards and we found that BOD₅ value showed overing at time of the baseline water sample monitoring for EIA report in 2015.

Table 22: Result Summary of Groundwater Quality Monitoring

Item/ Sample Name	2015				2023 (July)				WHO Drinking Water Quality Standard (2011)
	Z3GW1	Z3GW2	Z4GW1	Z4GW2	Z3GW1	Z3GW2	Z4GW1	Z4GW2	
Date/ Time	6/5/15 (11:04)	6/5/15 (11:30)	6/5/15 (14:32)	6/5/15 (14:58)	14/7/23 (11:20)	14/7/23 (11:35)	14/7/23 (08:40)	14/7/23 (08:55)	-
Weather	Sunny	Sunny	Sunny	Sunny	Cloudy	Cloudy	Cloudy	Cloudy	-
Transparency	High	High	High	High	-	-	-	-	-
Temperature Water (C)	36.12	37.57	31.77	31.67	-	-	-	-	-
pH	6.68	6.63	6.95	7.22	7.36	6.7	-	8.15	6.5-8.5
DO (mg/l)	2.9	2.29	1.44	3.41	2.3	2.28	-	3.32	-
EC (µs)	1498.3	1198.7	5060.4	7740.8	2.4	0.72	-	11.1	-
Turbidity (FNU)	4.9	4.6	0.5	1	0	14.2	-	5.51	-
Colour	5	10	Nil	Nil	3	164	-	8	-
Alkalinity	354	279	462	624	12	<5	-	<5	-
Hardness	246	222	539	639	25	29	-	4590	-
BOD ₅ (mg/l)	10	14	8	10	7.4	12.1	-	13.4	3
COD (mg/l)	32	32	32	32	0	0	-	28	250
Total Nitrogen (mg/l)	4	73	4	63	2.5	14.5	-	12.3	-
Total Phosphorous (mg/l)	0.239	0.168	0.251	0.042	<1.5	<1.5	-	<1.5	-
Oil and grease (mg/l)	<1	<1	<1	<1	8	5	-	3	10
TSS (mg/l)	<5	<5	5	<5	0	8	-	2	-

8.6 Monitoring on Sludge Management Status

The Mann Field produces around 1800 BBL of produced water per day, which typically contains a mixture of inorganic compounds (such as dissolved salts, trace metals, suspended particles) and organic compounds (such as dispersed and dissolved hydrocarbons and organic acids). As a result of these compounds, produced water generates sludge. Improper discharge of this sludge can have potential impacts on the receiving environment, including soil, surface water, and groundwater, as well as community health, terrestrial, and aquatic ecological resources.

Dried sludge, weighing approximately 112.4 tons (estimated weight), is currently being stored temporarily at the Waste Management Compound and at the Sludge Management Compound (extended dried sludge storage shed).



Figure 43: Sludge Management Compound (SMC)

Currently, all the collected wet sludge is being stored properly in two concrete pits to ensure compliance with the NEQEG guideline levels for Onshore Oil and Gas Development. Any hazardous waste will be disposed of according to the commitments made in the ECC.

8.7 Monitoring on Produced Water Management Status

MPRL E&P to minimize environmental impact to Zero Discharge in produced water management. The team recording milestones on achievements of Zero Discharge on produced water management was implemented on 24 August 2017.

MPRL E&P is undertaking to inject all produced water (100%) into the shut-in wells by using 8 units of injection pumps to meet guideline levels in NEQEG for Onshore Oil and Gas Development.



Figure 44: Produced Water Injection at Shut-in Wells

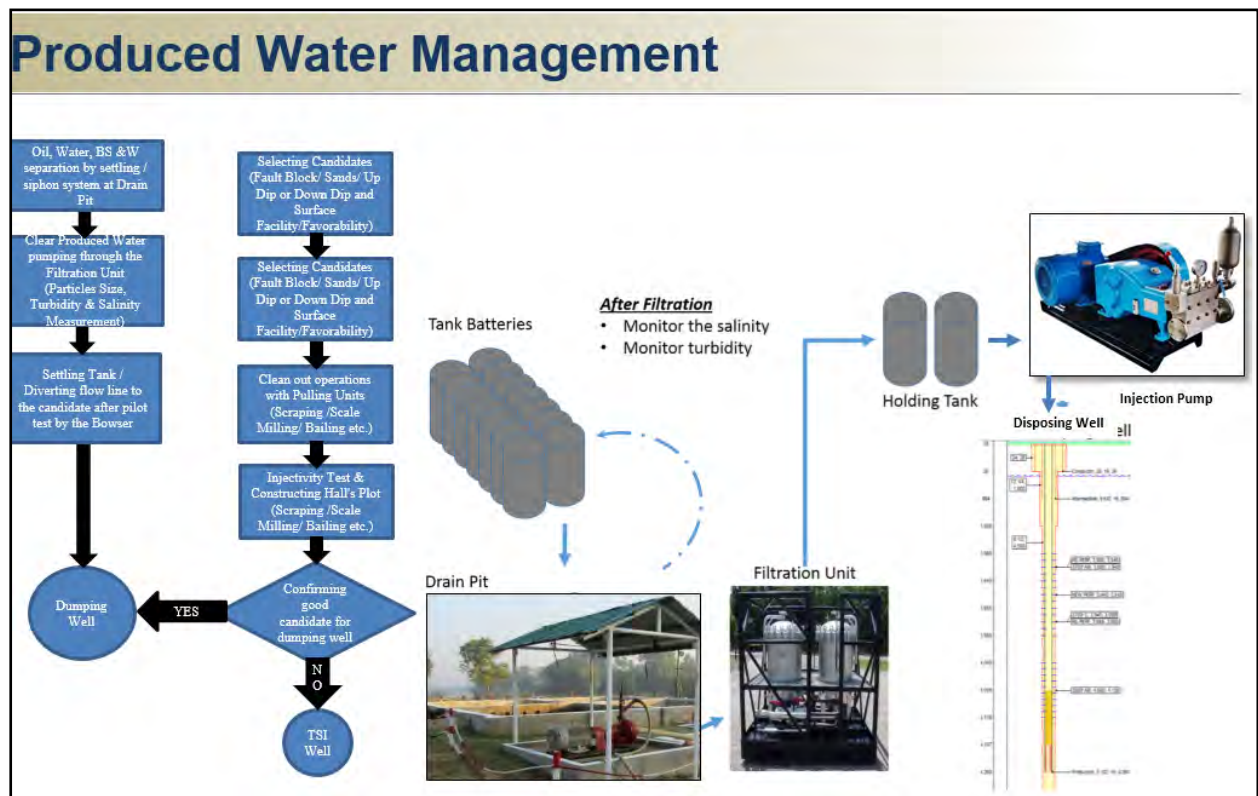


Figure 45: Produced Water Management Process

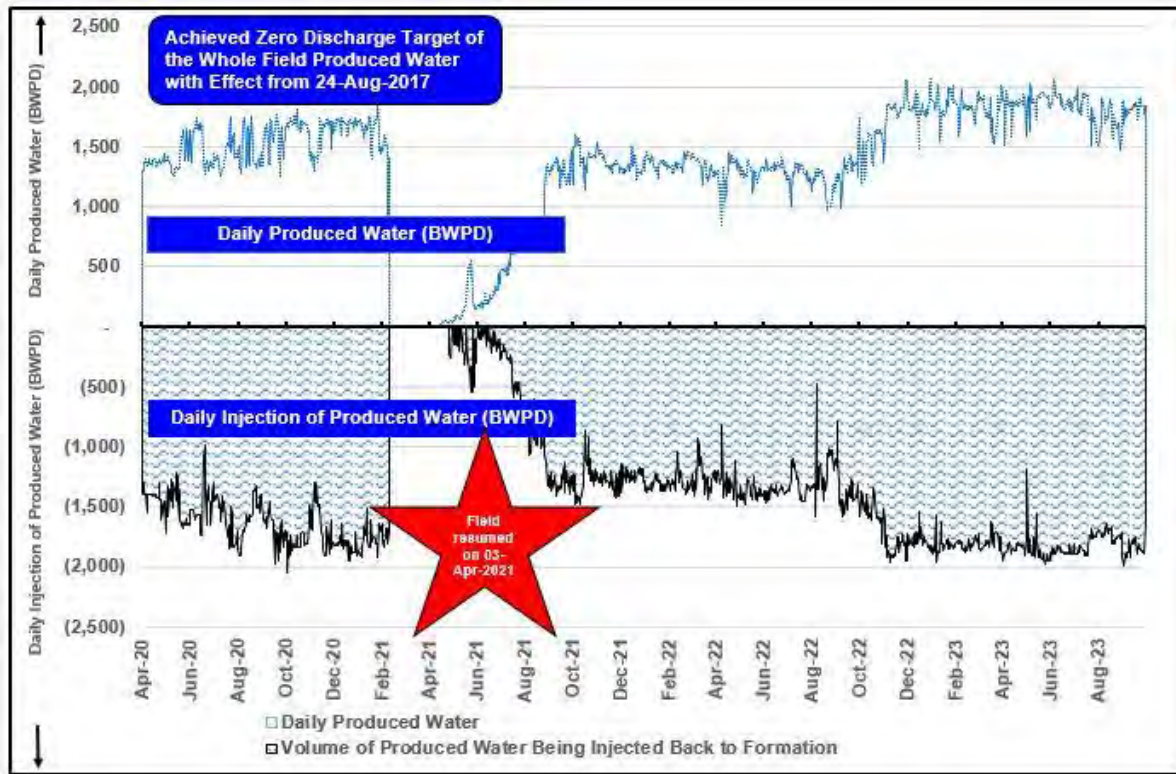


Figure 46: Produced Water Management

According to Table 8 in this report, as per Table 8.3 Environmental and Social Monitoring Program of the approved EIA report, it is committed to testing the wastewaters from the discharged points. However, all the produced water from the GOCS is being disposed of back into the formation and thus there is no discharge to the environment. Again, there is no discharge from the hydro test activities and also from shut-in wells.

Therefore, wastewater monitoring will be continued with the parameters committed in Table 8.3 of the approved EIA report on the treated discharged water of the base camp.

8.8 Monitoring on Discharge of Treated Wastewater and Runoff

MPRL E&P conducted self-monitoring activities to access the quality of discharged water from various sources, including domestic wastewater treated from Bio-filter water, hydro test water from warehouse, drinking water quality, domestic wastewater quality from Down-hole and Mechanical Workshop Zero Discharged Tank, and groundwater quality near the injection well. The monitoring was conducted according to the planned schedule.

8.8.1 Base Camp Water Discharge

Domestic-type wastewater and sewage are managed in the existing operational phase. Based on the camp water consumption monitoring results, approximately 8,000 liters of sewage and wastewater are generated per day from the base camp within the Mann Field, which can accommodate 60 – 80 workers.

Water consumption is monitored using water flow meters installed at the base camp, workshop, warehouse, and down-hole workshop. The team is also aware of the water consumption to minimize its volume.

Regular safety meetings and toolbox talks are held to raise awareness about water conservation, energy conservation, and water pollution among all crew members. Additionally, inspections are conducted to ensure that there are no leaks or wastage of water from pipelines and basins during routine camp inspections.



Figure 47: Desludging and Third-party Regular Maintenance of Bio-filter

Sanitary and domestic wastewater are managed in accordance with the mitigation plan. The following measures are in place:

- Sanitary wastewater is collected in septic holding tanks in the main camp, which are periodically serviced by a licensed firm. Currently, the wastewater is collected in a concrete pit, with no discharge outside.
- MPRL E&P has installed the wastewater treatment unit to treat sanitary wastewater in accordance with NEQEG guidelines. The field team monitors the discharge water parameters on a quarterly basis.
- Storm water run-off is directed to a pond to remove silt particles before being discharge via a storm drain.
- Surface runoff from potential sources of contamination is prevented.
- All discharge facilities and sediment control structures are regularly inspected and maintained to ensure proper and efficient operation, particularly during rainstorms. Deposited silt and grit are removed regularly.
- Runoff from areas without potential sources of contamination is minimized by reducing the area of impermeable surfaces and using vegetated swales and retention ponds to reduce the peak discharge rate.
- Oil-water separators and grease traps are constructed and maintained as appropriate at refueling facilities, workshops, parking areas, fuel storage, and containment areas.

- The location of the discharge point for treated sewage effluent into surface water is not confirmed based on the existing project design, but it will be located where there is adequate assimilative capacity of the surface waters.

8.8.2 Monitoring of Sewage Treatment System Water Quality

At Base Camp, we treated sewage discharge water using a bio-filter and collected it in a concrete tank. This water is now repurposed for watering the plants and controlling dust by spraying it on the ground.

During the month of July 2023, we collected water samples from the bio-filter treated system and sent them to ALARM and DOWA lab for testing. We monitored a total of eight parameters and discovered that the total coliform, BOD₅, and total phosphorous values are exceeded the NEQEG guideline. Regular maintenance is crucial to ensuring proper functioning of the bio-filter system. Failure to maintain the system properly can result in clogging or damage, leading to a decrease in treatment efficiency and an increase in total coliform counts. If the bio-filter’s media fails to remove contaminants, including coliform bacteria, the system’s ability to effectively treat sewage is compromised. Consequently, we contracted Wa Min, a third-party company, to provide annual bio-filtration unit service.

The monitoring results are presented in Table - 23: Bio-filter outlet water quality monitoring (Sewage Treatment System).

Table 23: Bio-filter Outlet Water Quality Monitoring (Sewage Treatment System)

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	NEQEG (2015)
1	BOD ₅	mg/l	29	32	20	62	50
2	COD	mg/l	78	65	31	107	250
3	Oil and Grease	mg/l	3	12	5	7	10
4	pH	S.U	7	7.2	8.08	7.7	6-9
5	Total Coliform Bacteria	MPN/100ml	1100	>1100	>1100	>1100	400
6	Total Nitrogen	mg/l	0.7	32	18.2	2.4	-
7	Total Phosphorous	mg/l	1.8	3	<1.5	3.2	2
8	Total Suspended Solids (TSS)	mg/l	5	5	2	9	50

8.8.3 Hydro-test Water and Domestic Water

At the Mann field warehouse, the team previously conducted hydro tests on tubing in a designated pressure test area. However, the field team has since minimized water usage by implementing a recycling system that uses zero discharge recycled water for these tests.



Figure 48: Warehouse Tubular Section

8.8.4 Monitoring of Discharge Water from Warehouse (Tubular Section)



Figure 49: Warehouse Zero Discharge Tank

The hydro-test water monitoring schedule was carried out during the month of July 2023. The monitoring results revealed that all parameters complied with the NEQEG guidelines, except for the BOD₅ value. Hydro-testing involves using water to pressurize and verify the integrity of pipes, tanks, and other equipment. During this process, the water can absorb organic matter, oils, greases, and other contaminants. The high BOD₅ value in the hydro-test water is due to the accumulation of organic matter and chemicals during testing. To prevent contamination of natural water sources, we recycled the water using a zero-discharge tank instead of disposing of it after testing, and used appropriate filtration and settling systems.

The monitoring results are presented in Table – 24: Monitoring of Discharge Water from Warehouse (Tubular Section).

Table 24: Discharge Water from Warehouse (Tubular Section)

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	NEQEG (2015)
1	BOD ₅	mg/l	-	18	34	64	25
2	Arsenic	mg/l	-	0.005	0	0.005	-
3	Cadmium	mg/l	-	0.01	ND	0.01	-
4	COD	mg/l	-	33	27	110	125
5	Chromium (Hexavalent)	mg/l	-	0.32	0.07	0.109	-
6	Copper	mg/l	-	0.1	0.1	ND	-
7	TSS	mg/l	-	21	42	33	35
8	Chloride	mg/l	-	68	88	141	600
9	Lead	mg/l	-	ND	-0.031	ND	-
10	Mercury	mg/l	-	0.32	0.001	-	-
11	Nickel	mg/l	-	<0.2	<0.2	ND	-
12	pH	S.U	-	7.2	7.93	7.2	6-9
13	Phenols	mg/l	-	0.14	<0.1	<0.1	0.5
14	Silver	mg/l	-	≤0.005	≤0.002	≤0.002	-
15	Sulfide	mg/l	-	<0.04	<0.04	<0.04	1
16	Zinc	mg/l	-	<0.02	<0.02	<0.02	-
17	Vanadium	mg/l	-	-	≤0.002	≤0.002	-

Down-hole Workshop: Down-hole tools servicing, cleaning, inspection, pressure testing and the cleaning process with steam are carried out in the Down-hole Workshop. The used water is disposed of at the zero discharge pits to preserve the environment.

8.8.5 Monitoring of Discharge Water from Down-hole Workshop

During the monitoring period from April 2023 to September 2023, water quality monitoring was conducted for the discharge of water from the equipment maintenance workshop (Down-hole Workshop) into the ZERO Discharge Tank. In July 2023, we monitored a total of twenty-nine parameters, and all of them complied with the NEQEG, except for BOD5, ammonia, oil and grease, and total coliform bacteria. The types of activities conducted in the workshop can have a significant impact on water quality. The Down-hole workshop draws its raw water from Mann creek, which may be contaminated. Additionally, dry leaves, bird feces, and ripened fruits in the surrounding environment can introduce total coliform bacteria into the zero-discharge tank. This may cause an accumulation effect due to storage conditions, which could explain why the total coliform count exceeded the limit. The rain water may also carry pollutants into the wastewater storage system.



Figure 50: Down-hole Workshop

The water used in the daily operation of the down-hole workshop was collected in a concrete tank via a drain line and reused for recycling, thus avoiding discharge to the environment.

The monitoring results are described in the following Table – 25: Discharge Water from Equipment Maintenance Workshop (Down-hole Workshop).

Table 25: Discharge Water from Down-hole Workshop

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	NEQEG (2015)
1	BOD ₅	mg/l	34	40	24	112	50
2	Ammonia	mg/l	<0.02	6.3	0.8	36	10
3	Arsenic	mg/l	0.025	≤0.010	0.011	0.005	0.1
4	Cadmium	mg/l	ND	≤0.005	ND	ND	0.1
5	COD	mg/l	76	65	68	180	250
6	Chlorine (Total Residual)	mg/l	0.38	<0.02	<0.02	<0.02	0.2
7	Chromium (Hexavalent)	mg/l	0	0.15	<0.02	0.1	0.1
8	Chromium (Total)	mg/l	<0.02	0.048	≤0.002	≤0.002	0.5
9	Copper	mg/l	ND	0.112	0.2	ND	0.5
10	Cyanide (Free)	mg/l	-	<0.002	<0.002	<0.002	0.1

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	NEQEG (2015)
11	Cyanide (Total)	mg/l	<0.01	0.004	<0.002	0.002	1
12	Fluoride	mg/l	0	0	0	0	20
13	Heavy Metals (Total)	mg/l	-	-	-	-	10
14	Iron	mg/l	0.26	0.3	3.5	0.46	3.5
15	Lead	mg/l	ND	≤0.005	0.038	ND	0.1
16	Mercury	mg/l	0	≤0.002	0.01	-	0.01
17	Nickel	mg/l	<0.2	0.148	<0.2	ND	0.5
18	Oil and Grease	mg/l	4	16	9	21	10
19	pH	S.U	7	7.3	7.9	7.5	6-9
20	Phenols	mg/l	<0.1	<0.1	<0.1	<0.1	0.5
21	Selenium	mg/l	≤0.01	0.1	≤0.010	≤0.010	0.1
22	Silver	mg/l	≤0.002	≤0.005	≤0.002	≤0.002	0.5
23	Sulfide	mg/l	<0.04	<0.04	<0.04	<0.04	1
24	Temperature increase	mg/l	25	27	27	26.8	<3
25	Total coliform bacteria	MPN/100 ml	>1100	>1100	>1100	>1100	400
26	Total Phosphorous	mg/l	<1.5	40	<1.5	0.8	2
27	Total Suspended Solids	mg/l	3	5	12	26	50
28	Zinc	mg/l	0.02	<0.02	<0.02	0.03	2
29	Vanadium	mg/l			≤0.002	≤0.002	-

Mechanical Workshop: pulling units, work-over rigs, trucks, bulldozers, backhoes, tractors and pumps are serviced in the workshop, and large amounts of water are used in car washes and general cleaning. Water reclamation systems are employed in the workshop.

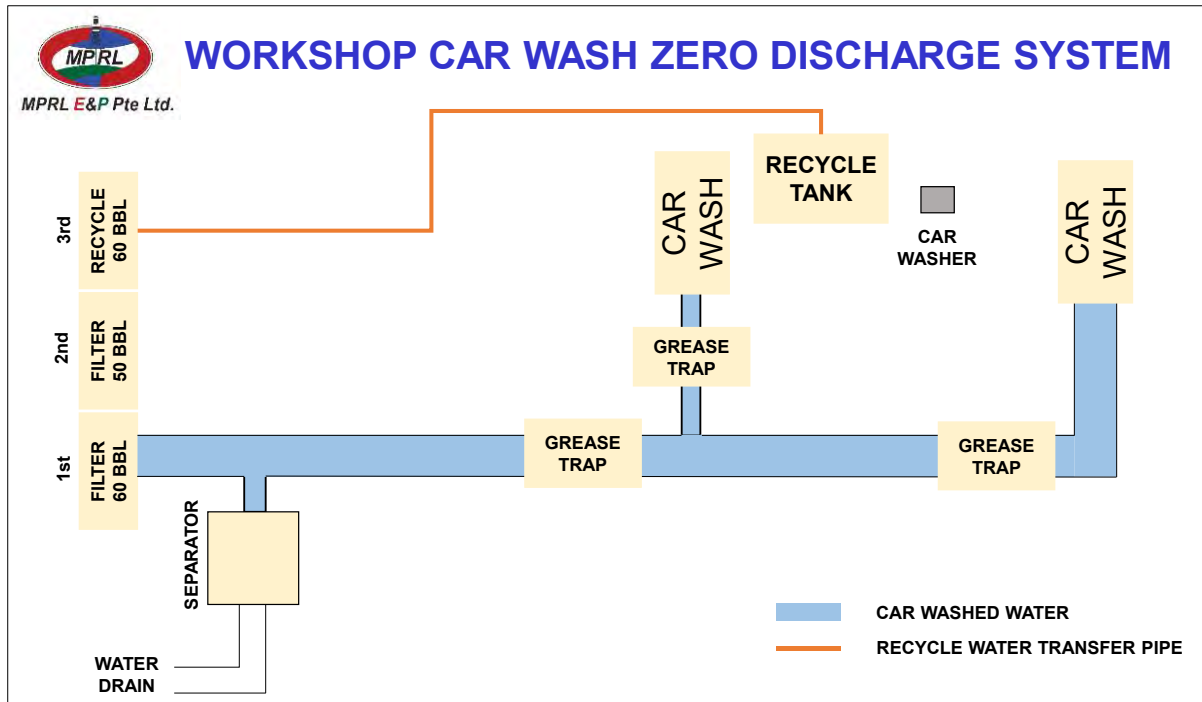


Figure 51: Recycle Water Usage System with Zero Discharge at Mechanical Workshop

8.8.6 Monitoring of Discharge Water from Mechanical Workshop

Vehicles and machine parts undergo maintenance and repair work at the mechanical workshop, and the water used in the workshop’s daily operation is collected in a concrete tank and reused.

Monitoring for the domestic water quality from the equipment maintenance workshop (Mechanical Workshop) of the Zero Discharge Tank was conducted in July 2023. A total of 29 parameters were monitored, and among them, the total coliform and ammonia parameter exceeded the guideline values.

The reason for the high levels of total coliform parameter may not only be due to the fact that the collecting tank’s cover was made with iron rod mesh, allowing bird feces and other contaminants to enter through the drain line, but also the surrounding environment of the Zero Discharged Tank and its cumulative effect on the storage conditions.

The ammonia is a common component in many cleaning agents and detergents, or due to chemical reactions involving nitrogen-containing compounds and other substances, or rain water inputs.

The tested results of the monitoring are presented in Table – 26: Discharge water from Equipment Maintenance Workshop (Mechanical Workshop).

Table 26: Discharge Water from Mechanical Workshop

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	NEQEG (2015)
1	BOD ₅	mg/l	36	18	18	43	50
2	Ammonia	mg/l	<0.02	2.3	0.5	14	10
3	Arsenic	mg/l	0	≤0.010	0	0.005	0.1
4	Cadmium	mg/l	ND	≤0.005	ND	ND	0.1
5	COD	mg/l	81	36	59	96	250
6	Chlorine (Total Residual)	mg/l	0.04	<0.02	<0.02	<0.02	0.2
7	Chromium (Hexavalent)	mg/l	0	0.34	<0.02	0.08	0.1
8	Chromium (Total)	mg/l	<0.02	0.046	≤0.002	≤0.002	0.5
9	Copper	mg/l	ND	≤0.005	0.1	0.03	0.5
10	Cyanide (Free)	mg/l		<0.002	<0.002	<0.002	0.1
11	Cyanide (Total)	mg/l	<0.01	0.004	<0.002	0.008	1
12	Fluoride	mg/l	0	0.02	0	0	20
13	Heavy Metals (Total)	mg/l	-	-	-	-	10
14	Iron	mg/l	0.11	0.6	1.087	0.31	3.5
15	Lead	mg/l	ND	≤0.005	0.001	ND	0.1
16	Mercury	mg/l	0	≤0.002	0.001	-	0.01
17	Nickel	mg/l	<0.2	0.142	<0.2	ND	0.5
18	Oil and Grease	mg/l	6	21	4	8	10
19	pH	S.U	6.9	7.4	7.87	7	6-9
20	Phenols	mg/l	<0.1	<0.1	<0.1	<0.1	0.5
21	Selenium	mg/l	≤0.01	0.104	≤0.010	≤0.010	0.1
22	Silver	mg/l	≤0.002	≤0.005	≤0.002	≤0.002	0.5
23	Sulfide	mg/l	<0.04	<0.04	<0.04	<0.04	1
24	Temperature increase	mg/l	25	27	26	26.8	<3
25	Total coliform bacteria	MPN/100 ml	460	>1100	>1100	>1100	400
26	Total Phosphorous	mg/l	<1.5	20	<1.5	1.2	2
27	Total Suspended Solids	mg/l	0	3	6	3	50

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	NEQEG (2015)
28	Zinc	mg/l	0.02	<0.02	<0.02	0.02	2
29	Vanadium	mg/l			≤0.002	≤0.002	-

8.9 Use of Chemicals for EOR

During the EOR operation, chemicals were injected into the wells to alter the properties of oil for enhanced recovery. The chemicals that may be used for the project include alkaline and polymers. However, it is important to note that the injection of these chemicals into the well could potentially lead to groundwater contamination, which may have indirect impacts on the health of the community.

MPRL E&P has applied the GreenZyme® technology to treat the oil reservoir in a way that does not expose or discharge the chemicals into the environment. The company has followed standard operating procedures to prevent spills from occurring, ensuring that there are no environmental issues. As per the work program, MPRL E&P did not conduct any GreenZyme® treatment operations during fiscal year 2022-23, and is evaluating the outcomes of previous years' treatments.

GreenZyme® is not a chemical but a biological liquid enzyme which is a kind of environmentally friendly fluid. It is a protein-based non-living catalyst, which facilitates the completion of biological reactions, to enhance crude oil recovery from most oil wells, both onshore and offshore EOR. GreenZyme® is produced by a proprietary process, which involves impregnating a high protein nutrient soup, with the DNA of selectively cultured microbes. The final product contains enzymes associated with the oil-eating microbe's DNA. Nearly all-living microbes are made inert at the end of the manufacturing process.

8.10 Monitoring of Camp Water Quality (Drinking Water Quality)



Figure 52: Water Sample Collection at RO Drinking Water System at Mann Field Base Camp

Access to safe drinking water is crucial for everyone's wellbeing, which is why a Reverse Osmosis (RO) drinking water system has been installed in the base camp. This system ensures that there is sufficient purified water available for staff members to use for drinking water and food preparation. To maintain the quality of water, the team conducts quarterly water quality monitoring, and the site doctor and HSE team perform hygiene inspections and audits according to the planned schedule. Regular service and maintenance are also scheduled and implemented to ensure that the RO system continues to function properly.

Monitoring Results of Drinking Water Quality

In July 2023, the drinking water quality of Mann Field Base Camp was tested at ALARM and DOWA labs. The results indicate that all parameters were below the Drinking Water Quality Standard (DWQS) 2019 and confirm that the water is safe to drink. However, taste testing was not available in the lab.

The results of the purified drinking water quality from RO system are described in Table 27: Drinking Water Quality Monitoring from MPRL E&P Base Camp (RO Outlet).

Table 27: Drinking Water Quality Monitoring from MPRL E&P Base Camp (RO Outlet)

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	DWQS (2019)
1	pH	S.U	7.1	8.2	7.18	7.3	6.5-8.5
2	Turbidity	NTU	<5	<5	0	<5	5
3	Colour	TCU	0	12	1	0	15
4	Hardness	mg/l as CaCO ₃	6	17	8	6	500
5	Arsenic	mg/l	0	0.005	0.003	0.005	0.05
6	Chloride	mg/l	<0.5	42	24.2	44	250
7	Lead	mg/l	ND	ND	ND	ND	0.01
8	Total Dissolved Solids (TDS)	mg/l	101	22	0.032	17	1000
9	Iron	mg/l	<0.1	0.2	0.014	0.21	1
10	Sulphate	mg/l	10.6	4.9	7.7	6.5	250
11	Manganese	mg/l	<0.2	0.2	-0.002	0.1	0.4
12	Nitrate	mg/l	1.4	≤0.067	<0.5	≤0.067	50
13	Total Coliform Count	MPN/100ml	>1100	0	0	0	0
14	Total Fecal Coliform Count	MPN/100ml	>1100	0	0	0	0
15	Odor	Acceptable	-	1	1	1	-

8.11 Monitoring of Ground Water Quality Near the Injection Well

MPRL E&P did not perform the chemical flooding or injection processes on the wells, but instead initiated the enhanced oil recovery project by injecting produced water into the shut-in wells using injection pumps to maintain reservoir pressure.

As part of the Environmental monitoring plan, groundwater near the injection well was monitored bi-annually to assess any contamination or impact on the groundwater. There were two tube wells near shut-in well 132, named Ko Win Maung and Ma Nyein wells. The monitoring was conducted according to our self-monitoring plan, and the samples were tested at ALARM and DOWA labs in July 2023. However, taste parameters could not be tested due to the unavailability of labs. The monitoring results are presented in Tables 28 and 29.

Table 28: Groundwater Quality Monitoring near Injection Well 132 (Ko Win Maung)

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	DWQS (2019)
1	pH	S.U	7.3	7.1	7.99	7.4	6.5-8.5
2	Turbidity	FAU/NTU	<5	<5	3.9	<5	5
3	Colour	HU	14	18	4	42	15
4	Hardness	mg/l as CaCO ₃	23	60	18	210	500
5	TDS	mg/l	-	1102	1	1320	≤1000
6	Chloride	mg/l	-	67	9.2	141	250
7	Total Coliforms	MPN/100ml	460	>1100	0	>1100	0
8	Total Faecal Coliforms	MPN/100ml	-	460	0	93	0
9	Arsenic	mg/l	0	0.005	0.006	0.005	0.05
10	Iron	mg/l	-	0.3	0.1	0.36	1
11	Lead	mg/l	-	ND	0.004	ND	0.01
12	Manganese	mg/l	-	0.8	0.02	0.5	0.4
13	Sulfate	mg/l	-	<2	706	837	250
14	Nitrate	mg/l	-	31.859	47.2	0.493	50
15	Odour	Acceptable	-	1	1	1	-

Table 29: Groundwater Quality Monitoring near Injection Well 132 (Ma Nyein)

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	DWQS (2019)
1	pH	S.U	7.5	7.5	7.93	7.4	6.5-8.5
2	Turbidity	FAU/NTU	<5	<5	0.41	<5	5
3	Colour	HU	10	4	2	6	15
4	Hardness	mg/l as CaCO ₃	47	95	39	39	500
5	TDS	mg/l	-	410	1.14	1230	≤1000
6	Chloride	mg/l	-	120	61	111	250
7	Total Coliforms	MPN/100ml	23	93	9	0	0
8	Total Faecal Coliforms	MPN/100ml	-	0	0	0	0
9	Arsenic	mg/l	0	0.005	0.007	0.005	0.05
10	Iron	mg/l	-	0.3	0.622	0.26	1
11	Lead	mg/l	-	ND	ND	ND	0.01

No	Quality Parameter	Units	Results (Dec 2021)	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	DWQS (2019)
12	Manganese	mg/l	-	0.6	0.042	0.3	0.4
13	Sulfate	mg/l	-	152	516	348	250
14	Nitrate	mg/l	-	10.2	12.5	0.938	50
15	Odour	Acceptable	-	1	1	1	-

In July 2023, MPRL E&P conducted groundwater quality monitoring near well 132 (Ko Win Maung) and found that all parameters were within the Drinking Water Quality Standard (2019), except total dissolved solids, total coliforms, total fecal coliforms, manganese, and sulfate. The reasons of the TDS value higher may be the geological factors, waste disposal issues, etc. The presence of bacteria in tube well indicates microbial pollution mainly due to septic systems, farming of cows near the source of water. The high sulfate levels may be due to geological factors, human activities, and microbial activity. The owner of the tube-well did not use the water for drinking purposes, but instead used it for bathing, watering plants and washing.

At the Ma Nyein Well, all the results were shown to be under the Drinking Water Quality Standard (2019), except for total dissolved solids and sulfate. The reasons of the TDS value higher may be the geological factors, waste disposal issues, etc. The high sulfate levels may be due to geological factors, human activities, and microbial activity. The tube well is approximately 20 feet deep and is mainly used for watering plants, washing, and bathing purposes.



Figure 53: Ko Win Maung Tube Well



Figure 54: Ma Nyein Tube Well

8.12 Monitoring on Gas Venting

In accordance with the gas venting monitoring program, MPRL E&P's technical team utilizes an Echo Meter to monitor and measure gas volume. If the recorded gas volume substantially exceeds the previous measurement, an orifice meter is employed to validate the volume within a 24-hour timeframe. Once the gas volume is confirmed to be sufficient, the team connects to the gas line and channels the collected gas to the existing facility supplying gas lines to the LPG plant. Continuous monitoring indicates a reduction in well counts and vent gas volume. The team has effectively minimized the venting gas volume, achieving successful mitigation. See Figure 56.

As per the planned monitoring program, the team randomly selected the six wells and measured by using an orifice meter on the wells as follows;

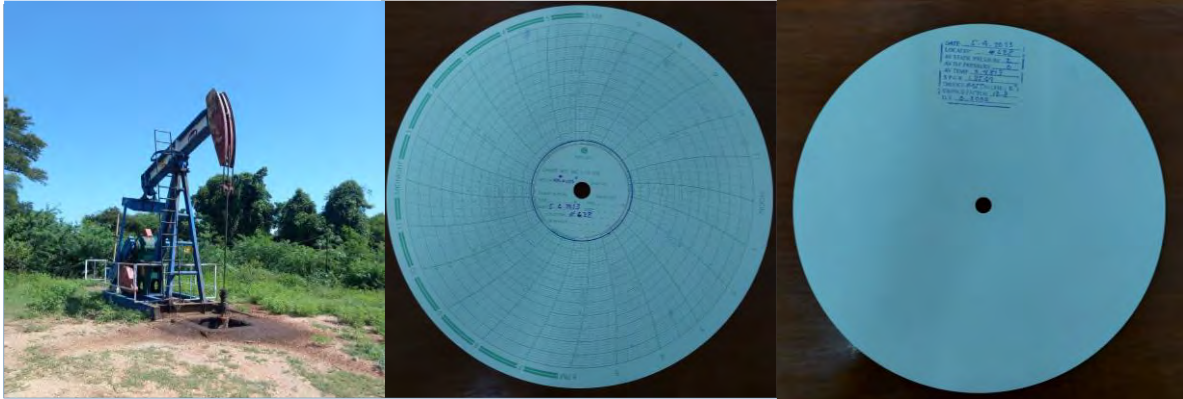
Location of the Gas Venting Wells

As per the planned monitoring program, the team randomly selected the six wells and measured by using an orifice meter on the wells as follows;

Table 30: Selected Gas Venting Wells Locations

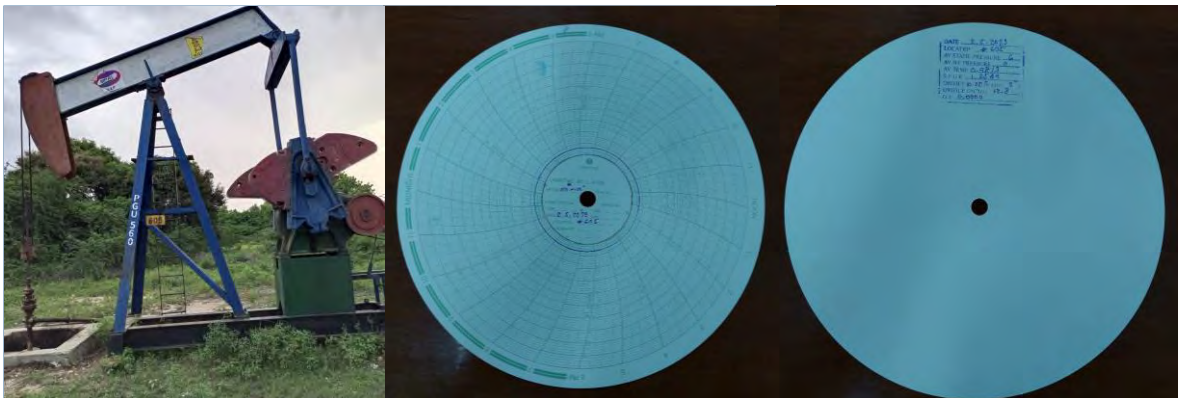
Well No	Location	Gas Volume	Date
M 628	N 20°12'44.52" E 94°51'20.29"	0 – MMCFD	05 April 2023
M 605	N 20°12'58.49" E 94°51'19.22"	0 – MMCFD	02 May 2023
M 355	N 20°13'15.09" E 94°51'25.16"	0 – MMCFD	06 June 2023
M 298	N 20°13'26.49" E 94°51'17.58"	0 – MMCFD	25 July 2023
M 16	N 20°13'24.62" E 94°51'14.43"	0 – MMCFD	03 August 2023
M 513	N 20°13'24.62" E 94°51'14.43"	0 – MMCFD	10 September 2023

Gas Volume measurement (Orifice Meter) Well-628



Date : 05 April 2023, Gas Volume – 0 CFD

Gas Volume measurement (Orifice Meter) Well-605



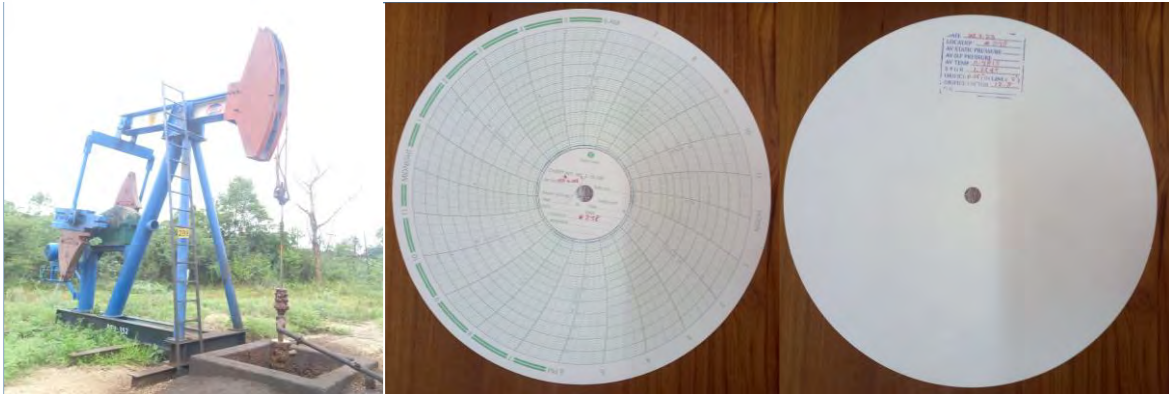
Date : 02 May 2023, Gas Volume – 0 CFD

Gas Volume measurement (Orifice Meter) Well-355



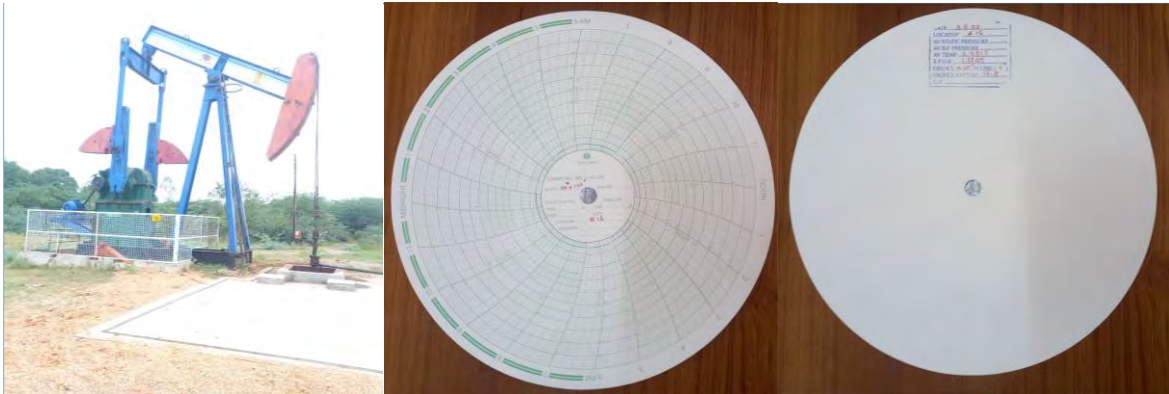
Date : 06 July 2023, Gas Volume – 0 CFD

Gas Volume measurement (Orifice Meter) Well-298



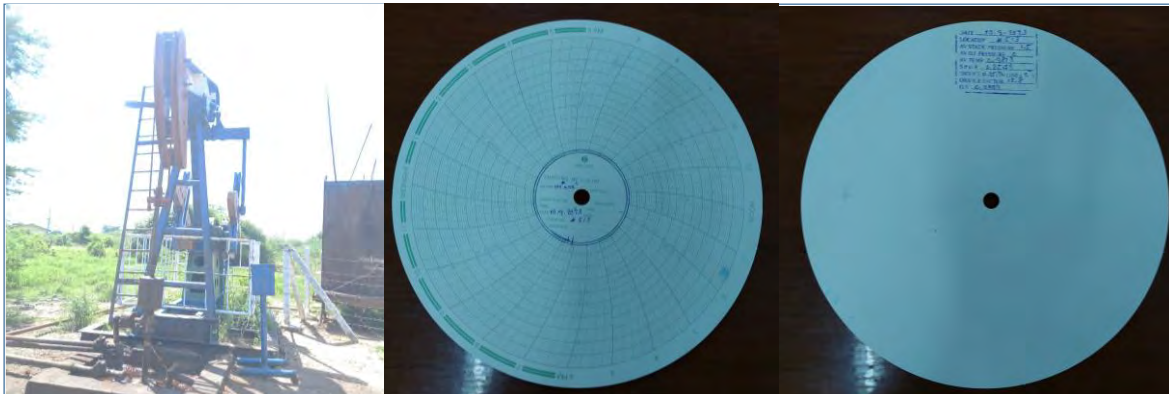
Date : 25 July 2023, Gas Volume – 0 CFD

Gas Volume measurement (Orifice Meter) Well-16



Date : 03 August 2023, Gas Volume – 0 CFD

Gas Volume measurement (Orifice Meter) Well-513



Date : 10 September 2023, Gas Volume – 0 CFD

Figure 55: Gas-vented Wells and Vented Gas Volume Measurement Record

8.12.1 Monitoring of Hydrogen Sulphide (H₂S)

In accordance with our Environmental and Social Monitoring program and self-monitoring schedule, our Site HSE Officers monitored Hydrogen Sulphide (H₂S) levels on a monthly basis at randomly selected potential gas venting wells. From among these wells, we have provided detailed results for six (6) wells in Table 31.

Table 31: Monitoring Results of the Hydrogen Sulphide (H₂S)

Sr. No:	Location	Date	Measured time	H ₂ S (PPM)	CO (PPM)	O ₂ %	LEL %
1	M-535	14 July 2023	08:00 AM	0	0	20.9	0
2	M-16	10 August 2023	13:20 PM	0	0	20.9	0
3	M-280	19 August 2023	10:00 AM	0	0	20.9	0
4	M-605	12 September 2023	14:00 PM	0	0	20.7	0
5	M-318	20 September 2023	09:00 AM	0	0	21.1	0
6	M-166	26 September 2023	10:00 AM	0	0	20.9	0

H₂S levels are monitored using an in-house portable gas detector (VENTIS MX4 Gas Detector), which has been calibrated as shown in Annex – 3 Equipment Calibration Certificate. This equipment can monitor four (4) parameters. As a result of monitoring, no H₂S was detected, and the results for each well are listed in the above Table 31.

M-280 (Beside Public Road)



M-16 (Beside Public Road)



M- 535(Beside Public Road and near Auk Kyaung Village)



Figure 56: H2S Monitoring Activities

9. Occupational Health and Safety Performance

Occupational Health and Safety System Framework

As a leading oil and gas exploration and production company, MPRL E&P is dedicated to prioritizing the health and safety of its staff while minimizing its impact on the environment. To achieve this, MPRL E&P ensures that health and safety management adheres to international standards and requirements such as HSG 65 and ISO 45001:2018, in addition to complying with relevant local laws, international standards, and industry best practices such as API requirements. These measures are continually monitored and improved as needed.

9.1 HSE Statistics Pyramid

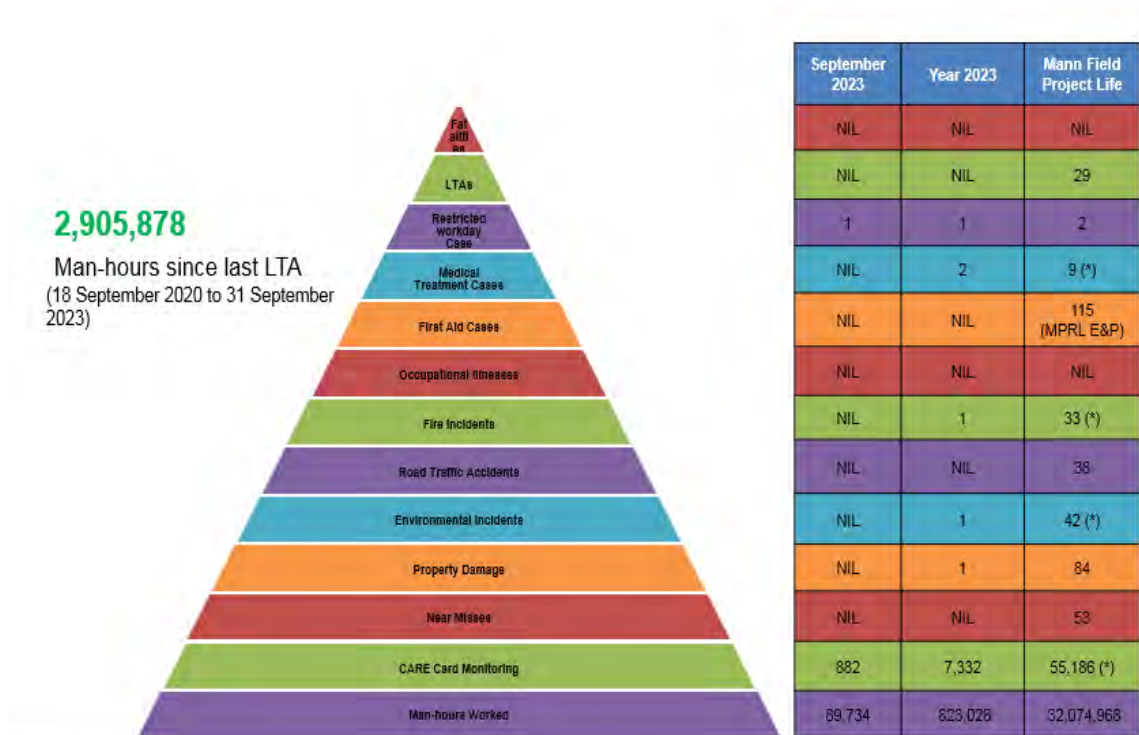
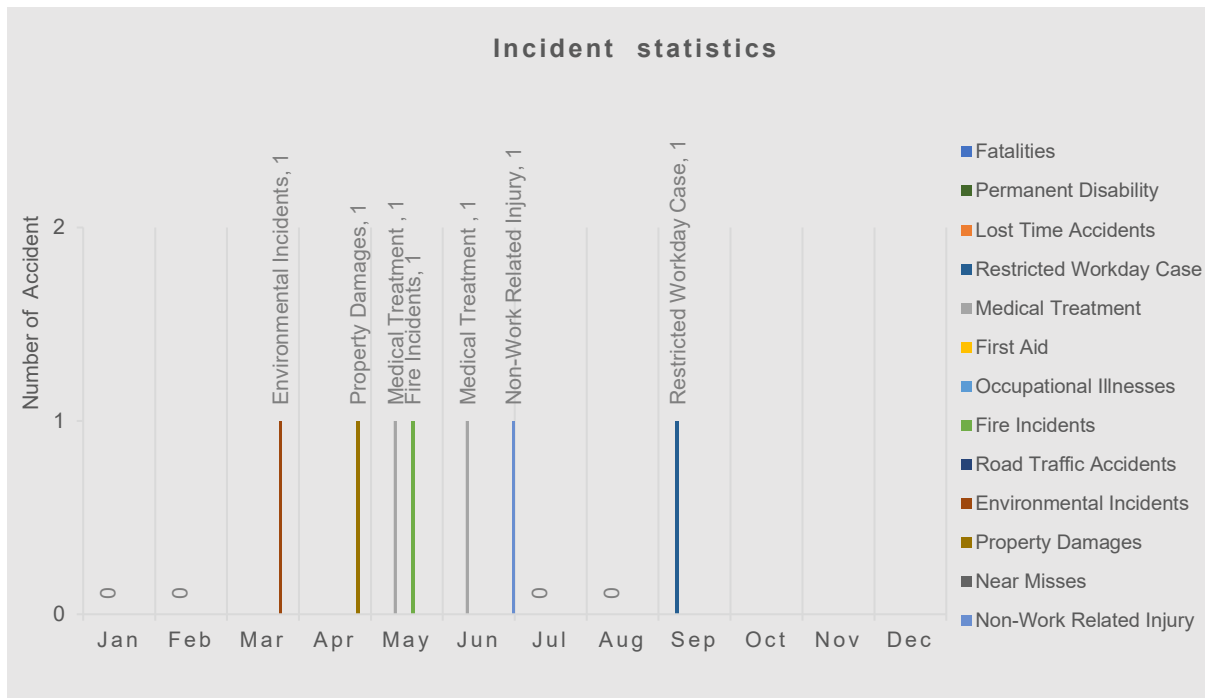


Figure 57: HSE Statistics Pyramid up to 31 August 2023 Status

9.2 Incidents Status

In the fiscal year of 2023-2024, there were a total of 6 incident occurrences in the Mann field operation, 2 medical treatment cases, followed by a fire Incident, a property damage case, a non-work-related injury case and a restricted workday case respectively. The number of the total recordable case still meets the KPI Target for 2023-24.



9.3 HSE Audits & Inspection

A follow-up to the previous “HSE bi-annual Remote Audit” has been conducted, and the recommendations have been implemented accordingly throughout the period.

Regular surprise alcohol tests are carried out in Mann Field to reinforce the notion of a dry field and to ensure that workers are not under the influence of alcohol while on duty. The objective of these surprise tests is to safeguard the well-being of workers, protect the environment, and maintain safe and efficient oil field operations.

As part of our dedication to maintaining a safe and compliant work environment, we regularly conduct Permit to Work (PTW) audits using a comprehensive checklist. Our goal is to reaffirm our commitment to safety and ensure that our PTW processes remain strong and effective.

Weekly Cross-Inspections, which encompass Pulling Unit operations, GOCS stations, workshops, and warehouse areas are conducted routinely. These inspections use checklists and are part of our proactive approach to ensure adherence to HSE standards and practices across these critical operational domains. This reinforces our commitment to maintaining a safe and environmentally responsible work environment.

The Field Management and HSE team is currently engaged in hazard hunts to identify physical hazards, especially those associated with potential slip, trip, and fall risks, within various facility areas such as the workshop, downhole, GOCS-2, and the warehouse. We are actively reporting and addressing these hazards, some of which may not be immediately apparent during daily operations. This involves specifying necessary actions, assigning responsibilities, and setting completion dates.

To ensure a safe and reliable operational environment, as well as compliance with regulations and the prevention of accidents, visual inspections of earthing and bonding

connections are carried out according to a schedule. MOGE electricians, in collaboration with the HSE team, conducted a visual inspection at the Base Camp as per the inspection schedule, followed by necessary corrective actions.

Furthermore, in partnership with the Electrical Team (MOGE), the Field Team performed 'Preventive Maintenance Tasks' for all electrical equipment within the starter boxes, including light fittings, covers, sockets, plugs, breakers, cables, and magnetic contactors, covering all GOCS compounds and well site areas.

To enhance safety, prolong equipment lifespan, reduce the risk of accidents and injuries, and align with our HSE manual standards, we have implemented a scheduled Lifting Equipment Color Coding and Inspection program. The Field Team, in collaboration with a third-party inspector from Asia Drilling, conducted the scheduled inspection and Non-Destructive Testing (NDT).

To guarantee the safe storage of refrigerated and frozen foods, maintain the personal hygiene of food handlers, ensure equipment cleanliness, and implement general food poisoning prevention measures, we conduct joint inspections of kitchens and food storage areas with the Field Team. During these inspections, certain equipment cleanliness and pest control issues have been identified as areas requiring improvement. Collaboratively, our contractor and field operation team rectified these issues and monitor the progress and completion accordingly.



Figure 58: Kitchen & Storage Weekly Regular Inspection and Pest Control



Figure 59: Vehicle and Workshop Safety Inspection in Mann Field

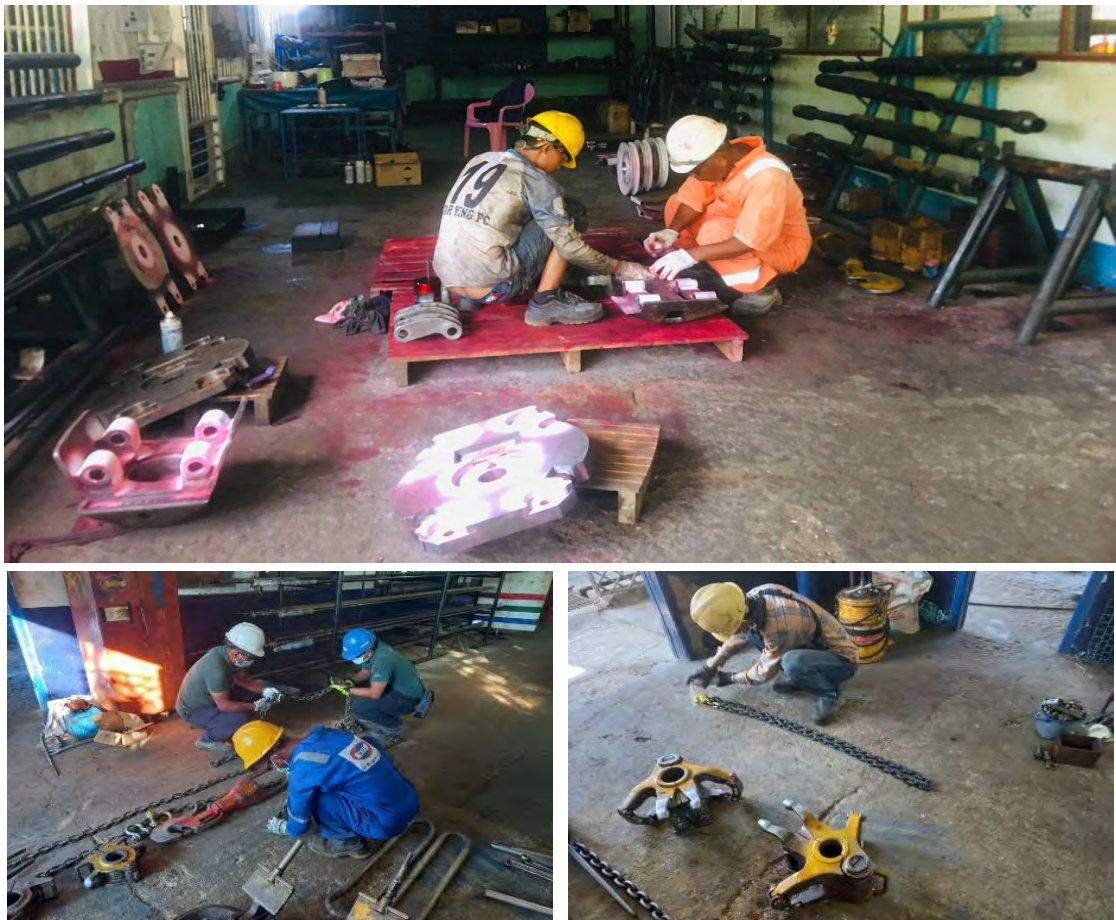


Figure 60: Lifting Gear Inspection



Figure 61: Ladder Inspection



**Fabricated step ladder for fuel storage tank.
(STF-hazards findings)**



**Concrete work for drain ditch covers.
(STF-hazards findings)**



Figure 62: Hazard Hunts

9.4 HSE Training

As operations have accelerated, there is a growing demand for enhanced competency and safety within the operation team. In response, HSE training has also intensified in proportion to the increased operational activity.

In the fiscal year 2023-2024, there was a total of (1,960) HSE training hours achieved. Below are the topics covered, most of which were conducted internally by the HSE department. However, some health awareness training was conducted by trainers from Pan Hlaing Hospital.

Recognizing the hot climate and physically demanding nature of operations in Mann Field, the HSE team proactively organized and conducted “Heat Stress and Heat Stroke Training” during the hot season to educate the operation workers.

In our commitment to maintaining the highest HSE culture standards and adhering to policies and procedures, we conduct training sessions for “HSE Policy and Manual” and “HSE Management System”.

To enhance hazard awareness, procedural knowledge, safe work practices, and personal protection, we conduct the following training programs: “P-100 Operator Awareness Training”, “Working at Height Training”, “Permit to Work (PTW) Refresher Training”, “Electrical Safety Awareness Training”, and “Forklift Safety Training” during the specified period.

To prevent fires by following safety procedures and to respond effectively in case of a fire is crucial for minimizing damage and preventing injuries. HSE team conducted “Fire Safety Awareness & Fire Extinguisher Practical Training” and participated in Practical Firefighting with portable fire extinguisher training from Minbu Fire Service Department.

To maintain and monitor the safe behavior of drivers and to achieve safe transportation, “Defensive Driving Technique Training” and “Driver Behavior Change Program” training is performed.

Numerous HSE internal knowledge sharing training are also conducted for promoting a culture of safety, improving efficiency, and ensuring that the HSE team is well-equipped to address the challenges of a dynamic and safety-critical environment.

To promote a positive environment stewardship culture, “Solution to Plastic Pollution” and “Environmental Permit” awareness trainings are conducted according to schedule.

To give health information and promote personal health, site doctor conducted “Dengue Fever” and “Healthy Living Lifestyle” awareness trainings.

Year 2023 – 2024 (April ~ September) HSE training as per follow

- Heat Stress and Heat Stroke Training
- P-100 Operator Awareness Training
- Safety Culture and Leadership Training
- General Workplace Issues & Welfare Requirements & Lone Working
- Minbu Fire Service Department conducted the Practical Firefighting with portable fire extinguisher and awareness training for community awareness to monitor the monitor the driver behavior
- Fire Extinguisher Refresher & Basic Concept of Fire & Explosion Training
- Working at Height Training
- Solution to Plastic Pollution Awareness Training
- Dengue Fever Awareness Training
- Evacuation Procedure of Emergency Warden Refresher Training
- “Working at Confined Space & Slip and Falls” Internal Knowledge Sharing Training
- HSE Policy and Manual Training
- HSE Management System Training
- Behavioral System Approach Vs Human Performance Improvement Training
- Healthy Living Lifestyle Training
- Permit to Work (PTW) Refresher Training and Awareness Session
- Forklift Safety Training
- Electrical Safety Awareness Training
- Driver Behavior Change Program
- Fire Safety Awareness & Fire Extinguisher Practical Training
- “Fire Safety” Internal Knowledge Sharing Training
- Defensive Driving Technique Training
- “Environmental Permit” Awareness Training

Titles of Health Awareness Free Webinars hosted by Pun Hlaing Hospital for employees are as follow:

- Are You Ready for Flu Season Stay safe, Informed & Healthy!
- Hepatitis Can't Wait
- Don't Let Drugs Take Control of Your Life
- The Power of Breastfeeding: Nurturing Health and Bonding
- Shield Yourself: Cancer Prevention and Early Detection for a Healthier You
- Understanding Cholesterol: Your Path to Healthy Life



Figure 63: Heat Stroke and Heat Stress Awareness Training Campaign



Figure 64: Practical Firefighting Awareness



Figure 65: Organization Culture and Leadership



Figure 66: Fire Extinguisher Refresher & Basic Concept of Fire & Explosion



Figure 67: "General Workplace Issues & Welfare Requirements" & "Lone Working"



Figure 68: Procedure of Emergency Warden Refresher Training Session and Role Play Activities



Figure 69: Permit to Work Training



Figure 70: HSE Management System



Figure 71: Behavioral System Approach Vs. Human Performance Improvement



Figure 72: Forklift Safety



Figure 73: Electrical Safety



Figure 74: Fire Safety Awareness & Fire Extinguisher Practical Training



Figure 75: Drivers' Behavior Change Program Awareness Training



Figure 76: Healthy Living Style



Figure 77: Are You Ready for Flu Season Stay Safe, Informed & Healthy! (27 April 2023)

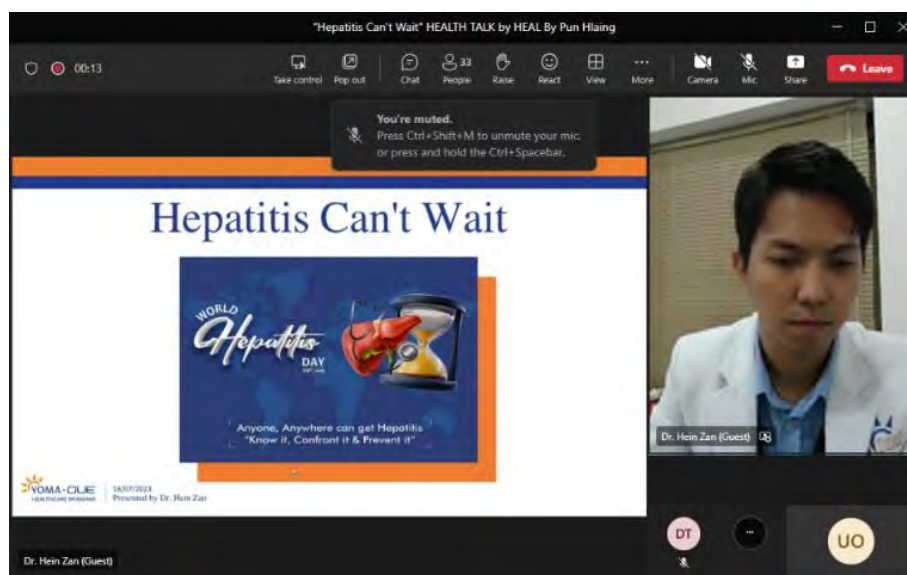


Figure 78: "Hepatitis Can't Wait" Health Awareness Training (18 July 2023)



Don't Let Drugs Take Control of Your Life

Speaker – Dr. Tun Tun (Family Practitioner)
HEAL by Pun Hlaing Family Clinics

Date	Time
31 July 2023 (Monday)	15:00 hrs. – 16:00hrs.

Figure 79: “Don't Let Drugs Take Control of Your Life” Health Awareness Training



TOPIC FOR THIS MONTH :

**THE POWER OF BREASTFEEDING:
NURTURING HEALTH AND BONDING**

Speaker : Dr Phyo Thiri Kyaw
HEAL by Pun Hlaing Family Clinics

Date	Time
21 August 2023 (Monday)	3pm to 4pm

Figure 80: The Power of Breastfeeding: Nurturing Health and Bonding (21 August 2023)



TOPIC FOR THIS MONTH :

**SHIELD YOURSELF:
CANCER PREVENTION AND EARLY
DETECTION FOR A HEALTHIER YOU**

Speaker : Dr Thura Thant Sin
HEAL by Pun Hlaing Family Clinics

Date	Time
29 August 2023 (Tuesday)	3pm to 4pm

Figure 81: Shield Yourself: Cancer Prevention and Early Detection for a Healthier You



Figure 82: Health Education Program Organized by the CSR Team at Mann Kyo and Chin Taung School on 14 August 2023



Figure 83: Defensive Driving Refresher Training & Fatigue Management



Figure 84: Fire Safety Awareness

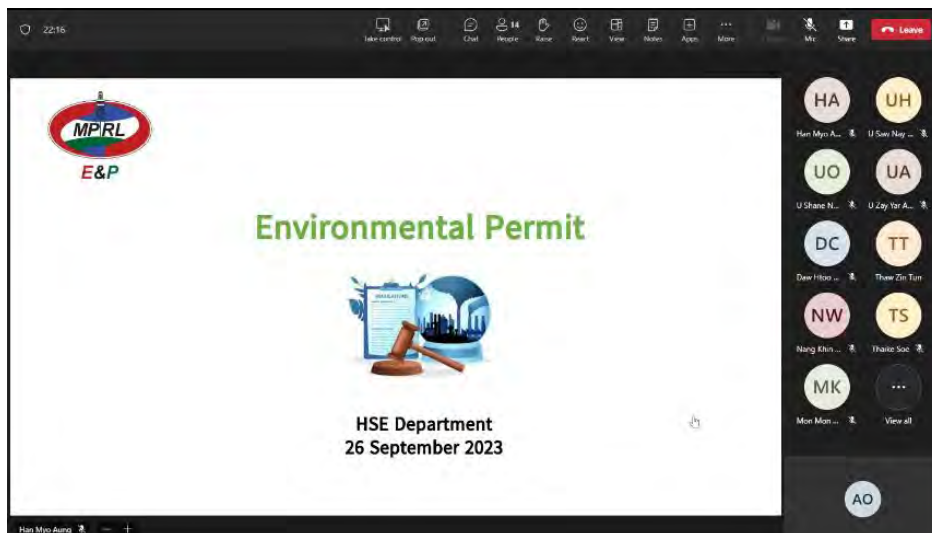


Figure 85: Environmental Permit



Figure 86: "Understanding Cholesterol" Health Awareness Training

9.5 Effective Worker’s Participation Towards HSE

MPRL E&P has fostered a positive safety culture and, in recognition of their commitment to active participation and improved safety reporting, awarded the 'Best Quality CARE Card Award' to both MPRL E&P and MOGE staff.

To recognize safety-conscious employees for their commitment to HSE, we awarded “Contribution Awards in HSE Activity” to these employees.



Figure 87: Best Quality CARE Card Award



Figure 88: Best Quality CARE Card Award



Figure 89: Outstanding Best HSE Performance Awards (For the month of April, May and June 2023)



SOCIAL PERFORMANCE REPORT

April- September 2023



Shared Value: Contributing to Inclusive Growth while Strengthening Competitive Advantage

10. Corporate Social Responsibility



10.1 Executive Summary

At MPRL E&P, we remain committed to transparency in our business operations and sustainability efforts, recognizing the importance of maintaining a social license to operate and contributing to the creation of a just and sustainable world. To achieve this, the CSR Department is actively engaged in a comprehensive strategy.

MPRL E&P is continuing to focus on transitioning by redefining our social responsibility to foster both business and societal success. This follows the completion of a comprehensive impact assessment study with the communities in Mann Field, where

we have been implementing a Corporate Social Responsibility (CSR) Program for the past ten years. Through our experiences, we have reached the conclusion that our CSR strategy has firmly advanced along a continuum, progressing from philanthropic donations and short-term transactions in the early years, to long-term sustainable strategic community investment programs that influence our core business model and company mission.

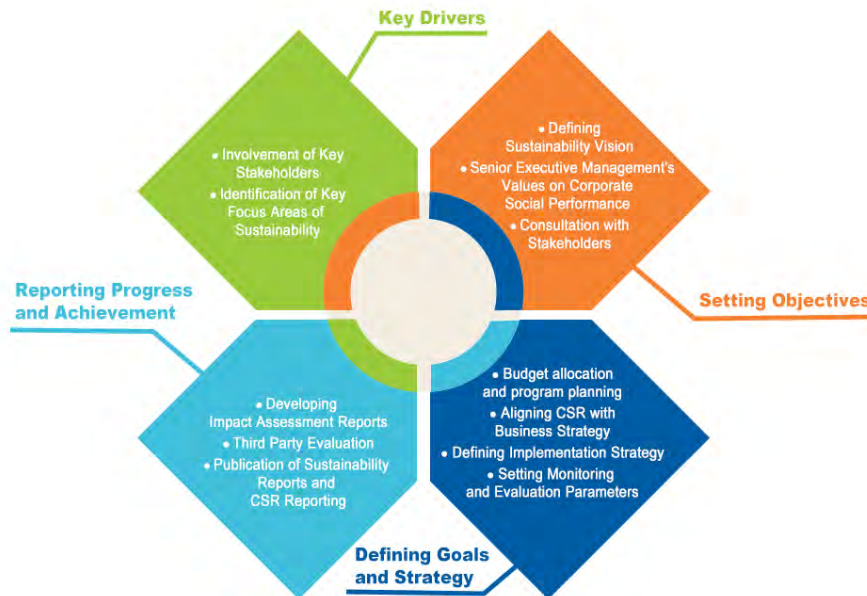
We focus on the highest-priority sustainability issues facing our company, stakeholders and communities, with the goal of maximizing collective impact. These issues, which we review on a regular basis in collaboration with our partners, are integrated into both our business strategy and system-wide operations to simultaneously build resilience and drive growth. They also inform our ambitious sustainability goals and how we report on progress against these interconnected goals.

We continue to provide co-leadership and support for our local communities, leveraging our community partnership model identify and mobilize resources, enhance skillsets, train local talent, revise program strategies, and maintain regular communications and updates at the project level. Looking forward, we plan to co-develop a strategy to improve access to financial services for the farming communities in Mann Field and also further approaches to enhance the growth of the small-scale livestock sector.

We understand the priorities and address the concerns or grievances people may have. It is important to us that people in communities are able to contact MPRL E&P, give feedback and receive a response or action from us. The Operational Grievance Mechanism at Mann Field has enabled the communities to register concerns, either real or perceived, with the aim of resolving the issues before they impact field operations.

10.2 Our Approach & Objectives

We recognize our business interacts with a range of material sustainability issue areas and governance of our approach to managing our potential and actual impacts is key to operating more sustainably. Building on strong foundations, we aspire to create social value for society that is purposeful, proactive, mutually beneficial and respectful. We commit to a number of sustainability frameworks, standards and initiatives and we disclose data both as required by law and according to the requirements of those frameworks, standards and initiatives.



Our social investment strategy prioritizes the areas where we believe our investments will have the biggest potential to multiply our impact and achieve sustainable results for the 14 communities living near our operations in Mann Field. Our social investment themes have been:

- Community infrastructure
- Education, sanitation and basic health
- Livelihood development and economic empowerment
- Capacity building and partnerships
- Critical human needs and disaster response



In this regard, we continue to apply the community-led approach to our community initiatives in Mann Field in order to promote inclusive and participatory decision-making, transparent and accountable village development, and strengthen grassroots level governance capacity.

At the department level, we are working to achieve the following goals which are ultimately tied to a set of Corporate Goals with regard to our Mann Field asset:

- Maintain a social license to operate from all key project stakeholders including community and regional government.
- Meet all legal requirements in compliance with the Myanmar EIA Procedures in Mann Field.
- Proactively build on our brand as a leading Myanmar national led upstream energy company to ensure both the government and general public are informed about the value we create as a business.

Our sustainability strategy is aligned with the UN Sustainable Development Goals, and we have an important role to play in supporting these ambitions. We can make the greatest contribution to six goals: Decent work and economic growth (Goal 8), Responsible Consumption and Production (Goal 12), Climate action (Goal 13), Life below water (Goal 14), Peace, justice and strong institutions (Goal 16) and Partnerships for the goals (Goal 17).



10.3 CSR Implementation Mechanism

The CSR & Communications Department implements its interventions in a combined method of direct implementation and through the involvement of communities as well as local and regional organizations, either private or public. The CSR and Communications Department carries out multi-stakeholder needs assessment activities in Mann Field on a yearly basis to develop a CSR work program.

For the Fiscal Year 2023-2024, we have allocated USD 166,800.00 to fund CSR initiatives at Mann Field. However, we contributed a total amount of USD 115,427.80 for the disaster relief for the victims affected by Cyclone Mocha in May 2023, which was the unplanned cost due to the emergency and disaster management. Therefore, the expenditure of MPRL E&P's CSR Program as of month-end closing data until August 2023 is USD 179,578.18.

The whole CSR work program outlines goals, rationales, timelines, and measurable parameters. Each CSR intervention has a set of key performance indicators. Pilots are designed and implemented in order to ensure community involvement, capacity development and sustainability of a project. Technical knowledge transfer is encouraged whenever possible in addition to input support to facilitate transformation of subsistence agriculture and livestock into a modern, productive one.

10.4 Community Investment Initiatives

MPRL E&P believes Corporate Social Responsibility (CSR) is our responsible and ethical commitment to contribute to the sustainable development of economic, environmental and social imperatives, while running business operations. We make great efforts to improving the lives of the communities around Mann Field where the business operates, and also helping these communities achieve their self-reliance. Since 2012, MPRL E&P's CSR approach has transitioned from a philanthropic mindset to a strategic community investment. We strive to increase opportunities for the sustainable development of the communities through strategic investments.

During this Fiscal Year 2023-2024, the majority of our budget allocation was directed towards strategic community investment initiatives, which covered a range of vital programs and projects. These initiatives include: Community Infrastructure Development, Community Livelihood Development, Educational Partnership Program, Community Healthcare Program, Community-led Waste Management Program, Operational Grievance Mechanism, Stakeholder Engagement, and Corporate Philanthropy.

Under the area of Community Infrastructure Development, we have made several notable achievements. The initiatives included launching the Solar-powered Water Pumping Project in Mann Kyoe Village, providing a solution to water scarcity with contributions from both the CSR Program and the Mann Kyoe Community and supplying furniture to Nan U Library. Furthermore, the water pumping project in Chin Taung Village was successfully finalized in June, along with the completion of ceiling installation, electrical work, and wall painting in Aye Mya Community Center. At the same period, old water collection tanks in various villages were renovated, and a furniture provision project for schools in multiple villages commenced. As the annual action, water quality at nine schools was monitored through regular sampling and testing, while maintenance of water filtration units and support for school-led gardening activities were monthly provided.

As part of the Community Livelihood Development initiatives, crop harvesting in Mann Field was closely monitored, particularly tomato farming, which resulted in substantial incomes for 27 farmers. A visit to the State Agriculture Institute aimed to explore year-round vegetable cultivation possibilities in the methods of greenhouse. The agricultural support was extended to farmers cultivating tomato, sunflower, and chickpea. Five knowledge sharing sessions on disease and pest control were organized, and seeds and plastic mulches were distributed to farmers. The Education Partnership Programs were expanded, providing scholarships to (16) youths pursuing in vocational and skills training institutes and University of Medicine. The monitoring of students' academic activities and training progress continued.

Community Capacity Building witnessed the Online English Learning Program and the performance evaluation of Community-based Education Facilitators. The Basic Computer Skills Training for young learners were launched as part of the Online

English Learning Program. In this reporting time, Summer Art Class for children and Book Drive for Community Center campaign were organized, promoting art and literacy. Fire and Electrical Safety Awareness Training sessions were conducted, and fire extinguishers were donated to (14) Villages in Mann Field. Safety awareness pamphlets were also distributed.

In the Community Healthcare Program, the Mobile Clinic Program resumed its services after Thingyan holidays, providing healthcare and home visits to the community. The program has served over 10,000 community patients with free healthcare services. In this period, an eye health program targeted the community elders aged sixty and above, with the provision of eye health awareness talk and the support of cataract surgery. Dengue Fever Awareness sessions were also organized in schools and mobile clinics in order to raise awareness about prevention of dengue fever.

Community-led Waste Management efforts continued, with ongoing tracking and support for waste collection services. Trash Hero Minbu cleanups made significant progress, and World Environment Day was celebrated by exchanging plastic waste for eco-friendly fabric bags. World Cleanup Day events effectively cleared garbage dumps.

The Operational Grievance Mechanism successfully addressed six cases in the first half of FY 2023-2024, ensuring compliance with key performance indicators.

Stakeholder Engagement involved meetings with stakeholders, progress presentations, newsletter publications, and distribution of reports. Efforts were made to arrange eye health programs, discuss events, address grievances, and recruit new Community Volunteers.

Corporate Philanthropy efforts were also prominent, with contributions to disaster relief funds, donations to healthcare facilities, and support for local administrations through the provision of furniture and plastic armchairs.

In summary, these all-inclusive initiatives reflect a strong commitment to holistic community development, covering infrastructure, livelihoods, education, healthcare, waste management, and philanthropy, contributing to the well-being and progress of Mann Field Communities.

Community Investment Initiatives in Fiscal Year 2023-2024



10.5 Key Performance Highlights

The following are the key performance highlights for the first half of the Fiscal Year 2023-2024, spanning from April 2023 to September 2023:

Highlights for the Month of April

- Provided Solar-powered Water Pumping Project in Mann Kyoe Village.
- Prepared Water Well Projects in Chin Taung Village and Makyee Chaung School.
- Continued monitoring crop harvesting progress in Mann Field Communities.
- Awarded five community youths with scholarship support for Batch-11 of No. 5 ITC (Magway).
- Organized Summer Art Class for 6~12 Years old children in Mann Field.
- Resumed Mobile Clinics Program and Online English Learning Program.
- Offered free healthcare services to a total of (8,001) community members in (245) clinic sessions.
- Met with respective stakeholders for Community Investment Initiatives.
- Supported the waste collecting service in Mann Field and Trash Hero Minbu's cleanup activities.
- Monitored and updated MPRL E&P's Website as the key communication channel.

Highlights for the Month of May

- Completed Solar-powered Water Pumping Project in Mann Kyoe Village.
- Explored the site visit to Water Well Drilling Project in Chin Taung Village.
- Visited the S.A.I (Pwint Phyu) for observation of Greenhouse Farm Project.
- Provided scholarship support to Mann Field Community Youths for No. 5 ITC (Magway), GTHS (Magway), S.A.I (Pwint Phyu) and University of Medicine (Magway).
- Organized closing ceremony of Summer Art Class and awarded the outstanding trainees.
- Conducted Fire and Electrical Safety Awareness Training and donated fire extinguishers.
- Operated Mobile Clinic Program and Online English Learning Program.
- Presented the second Biannual CSR Performance Progress of FY 2022-2023 in MOGE (Nay Pyi Taw).
- Organized the second CSR Progress Update and Review Workshop of FY 2022-2023 with the Communities.
- Supported the waste collecting service in Mann Field and Trash Hero Minbu's cleanup activities.
- Contributed MMK 1,000,000 to the Cyclone Mocha Disaster Relief Fund of Minbu District General Administration Department through MOGE (Mann Field).
- Monitored and updated MPRL E&P's Website as the key communication channel.

Highlights for the Month of June

- Completed water pumping project in Chin Taung Village.
- Wrapped up ceiling installation project in Aye Mya Community Center.
- Renovated old water collection tanks in Kyar Kan, Mei Bayt Kone, and Auk Kyaung Villages.
- Organized eye health program for the elders aged (60) and above in Mann Field.
- Operated Mobile Clinic Program and Online English Learning Program.
- Offered free healthcare services to (9,094) community patients in (283) clinic sessions.
- Distributed fire and electrical safety awareness pamphlets in Mann Field Communities.
- Supported the waste collecting service in Mann Field and Trash Hero Minbu's cleanup activities.
- Conducted gift exchange event for eco-friendly fabric bags in World Environment Day 2023.
- Organized the "Beat Plastic Pollution" debate event in Kyar Kan School.
- Received one OGM case from Lay Eain Tan Village.
- Monitored and updated MPRL E&P's Website as the key communication channel.
- Published Insight! Newsletter (Issue-35) and Doh Mann Myay Newsletter (Issue-9).

Highlights for the Month of July

- Handed over the ceiling installation project to Aye Mya Community Center.
- Completed renovating old water collection tanks at Kyar Kan, Mei Bayt Kone, and Auk Kyaung Villages.
- Conducted annual water quality test in Mann Field Schools.
- Initiated furniture provision project for schools in Mann Field Communities.
- Organized agricultural knowledge sharing sessions and provided tomato seeds and plastic mulches to farmers.
- Collected feedback survey from students and parents about Online English Learning Program.
- Announced "Book Drive for Community Center" campaign and invited MPRL E&P GoC Staff's book donation.
- Initiated comprehensive eye test for community elders at Minbu Hospital and arranged for eye surgery process.
- Offered free healthcare services to (9,805) patients in (304) Mobile Clinic sessions.
- Received four OGM cases from Kyar Kan Village.
- Supported regular waste collecting services and Trash Hero Minbu's cleanups.
- Submitted M&E Report for the first quarter of FY 2023-2024.
- Distributed Insight! Newsletter, Doh Mann Myay Newsletter, and Quarterly CSR Progress Report to the regional stakeholders.
- Monitored and updated MPRL E&P's Website as the key communication channel.

Highlights for the Month of August

- Provided furniture to Mann Kyoe Rural Health Center and schools in Mann Field Communities.
- Donated plastic armchairs to Minbu District Administration Department.
- Informed water quality test results to schools.
- Conducted agriculture knowledge sharing sessions in Let Pa Taw and Kyar Kan Villages.
- Launched Basic Computer Skills Training at Nan U Community Center.
- Organized Book Donation event at Mann Kyoe Library.
- Provided necessary support to Online English Learning Program, and Trash Hero Minbu's cleanups.
- Completed comprehensive eye test for elders. (54) elders underwent cataract surgery at Minbu Hospital.
- Empowered (2,334) Mann Field communities with Dengue Fever Awareness.
- Offered free healthcare services to (10,291) patients in (320) Mobile Clinic sessions.
- Conducted a series of meetings with local stakeholders for social investment initiatives.

Highlights for the Month of September

- Completed the furniture production for schools in Makyee Chaung, Kyar Kan, Pauk Kone, Ayuk Kyaung, Let Pan Ta Pin and Let Pa Taw Villages.
- Ensured the maintenance of water filtration units at the (11) Schools in Mann Field Communities.
- Recruited a new Community Volunteer in Chin Taung Village.
- Organized the first Biannual CSR Progress Review Meeting of FY 2023-2024 with the Community in Mann Field.
- Accomplished cataract surgeries, post-operative care and follow-up appointments of all community elders - a total number of (100) eye patients.
- Offered free healthcare services to a total of (10,875) patients in (338) clinic sessions under Mobile Clinic Program.
- Celebrated "World Cleanup Day 2023" in Trash Hero by organizing collective cleanups and constructing "No Littering" signboards in the designated areas.
- Continued Basic Computer Skills Training at Nan U Community Center and Online English Learning Program at Aye Mya Community Center.
- Provided monthly stipends to scholarship trainees and followed up the training progress.
- Prepared the periodic reports for CSR Progress Updates in FY 2023–2024.
- Published Insight! Newsletter (Issue-36) and Doh Mann Myay Newsletter (Issue-10).

10.6 Progress in Performance (April 2023 – September 2023)

10.6.1 Community Infrastructure Development



MPRL E&P is committed to ensuring that community infrastructure in Mann Field Communities is strategically located, responsive to current requirements, and adaptable to the evolving needs of the community. The company’s community infrastructure development focuses around strengthening local capacity to address the need for infrastructure by involving local communities, by increasing the efficiency in terms of how infrastructure is planned, designed, implemented and maintained, and relying to the extent possible on locally available resources. The provision for community infrastructure development has been prioritized based on the results after community needs assessment.

Progress Updates

- Initiated the Solar-powered Water Pumping Project in Mann Kyoe Village in April to address water scarcity, involving well drilling, installation of solar-powered water pump, PVC water pipelines, and related equipment.
- Completed the Solar-powered Water Pumping Project in Mann Kyoe Village in May 2023, with a total cost of MMK 5,164,100, including MMK 4,660,500 from the CSR Program and MMK 503,600 from the Mann Kyoe Community.
- Wrapped up furniture provision to Nan U Library and monitored its operation in April.
- Prepared for Water Well Projects in Chin Taung Village and Makyee Chaung School, including site visits and discussions about installing a ceiling at the Aye Mya Community Center in April.
- Completed the water pumping project in Chin Taung Village in June, providing a water pump, water well drilling, and accessories, with MMK 2,700,000 from the company and MMK 283,000 from the Chin Taung Community.
- Accomplished the ceiling installation, electrical installation, and wall painting project in Aye Mya Community Center in June, with a contribution of MMK 3,929,700 from the company and MMK 640,100 from the Aye Mya Community.
- Started the renovation of old water collection tanks in Kyar Kan, Mei Bayt Kone, and Auk Kyaung Villages in June and completed in July with a total contribution of MMK 2,396,050.
- Donated furniture with the total worth of MMK 1,133,300 to Rural Health Center in Mann Kyoe Village in August.
- Completed a furniture provision project for schools Kyar Kan, Auk Kyaung, Let Pan Ta Pin, Pauk Kone, Ma Kyee Chaung and Let Pa Taw Villages.
- Collected drinking water samples from water filtration units in 9 schools in July and delivered them for annual water quality testing.
- Informed water quality test results to Headmistresses and School Development Committees in August.
- Conducted monthly maintenance of water filtration units and handwashing stations in schools, ensuring water treatment maintenance in collaboration with the School Development Committees.
- Provided continuous monitoring and support for school-led gardening activities under the Green Schoolyards Program, particularly in Mei Bayt Kone and Let Pan Ta Pin Schools.



Figure 90: Initiating Solar-powered Water Pumping Project in Mann Kyoie Village



**ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ
မန်းကျီးကျေးရွာ
ဂုဏ်ပြုမှတ်တမ်းလွှာ**

မကျေးတိုင်းဒေသကြီး၊ မင်းဘူး(ဝကျ)မြို့နယ် ၊ မန်းကျီးကျေးရွာတွင် ဆိုလာစနစ်သုံး ရေတင်စနစ် လုပ်ငန်းစဉ်တို့အတွက် ကုန်ကျစရိတ် စုစုပေါင်း ကျပ် ၄,၆၆၀,၅၀၀/- (ကျပ်လေးဆယ့်ခြောက်သိန်းခြောက်သောင်းငါးရာကျပ် တိတိ) ကို MPRL E&P (CSR အစီအစဉ်) ဖြင့် ပံ့ပိုးပေးသောကြောင့် ဤဂုဏ်ပြုမှတ်တမ်းလွှာဖြင့် မှတ်တမ်းတင် ဂုဏ်ပြုအပ်ပါသည်။

လက်မှတ်			
အမည်	ဦးကျော်အောင်	အောင်အောင်	ဦးကျော်အောင်
	ကျေးရွာအုပ်စုပံ့ပိုးမှုမှူး မန်းကျီးကျေးရွာ	ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ မန်းကျီးကျေးရွာ	ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ မန်းကျီးကျေးရွာ

ရက်စွဲ: ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၂၀) ရက်



Figure 91: Completing Solar-powered Water Pumping Project in Mann Kyoee Village



နန်းဦးကျေးရွာ စာကြည့်တိုက်ကော်မတီ

ဂုဏ်ပြုမှတ်တမ်းလွှာ

မကွေးတိုင်းဒေသကြီး၊ မင်းဘူး(စက္က)မြို့နယ်၊ နန်းဦးကျေးရွာရှိ ကျေးရွာ စာကြည့်တိုက်အတွက် လိုအပ်သည့် စာကြည့်တိုက်ပရိဘောဂများ ပံ့ပိုးခြင်းအတွက် ကုန်ကျစရိတ်စုစုပေါင်း ကျပ် ၂,၃၁၉,၀၀၀/ (ကျပ်နှစ်ဆယ့် သုံးသိန်းတစ်သောင်းကိုးထောင်တိတိ) ကို MPRL E&P (CSR အစီအစဉ်) ဖြင့် ပံ့ပိုး ပါသောကြောင့် ဤဂုဏ်ပြုမှတ်တမ်းလွှာဖြင့် မှတ်တမ်းတင် ဂုဏ်ပြုအပ်ပါသည်။

<p>လက်မှတ် အမည်</p>  <p>ဦးကျိအိ</p> <p>ကျေးရွာအုပ်ချုပ်ရေးမှူး နန်းဦးကျေးရွာ</p>	<p></p> <p>ဦးအိမ်ဖြူ</p> <p>ကျေးရွာပွဲဦးလှကော်မတီ နန်းဦးကျေးရွာ</p>	<p></p> <p>ဦးအောင်မောင်</p> <p>စာကြည့်တိုက်မှူး နန်းဦးကျေးရွာ</p>
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ရက်စွဲ ။ ၂၀၂၃ ခုနှစ်၊ မတ်လ (၂၂) ရက်



Figure 92: Providing Furniture Support to Nan U Village Library



Figure 93: Completing Water Pumping Project in Chin Taung Village



Figure 94: Completing Ceiling Installation, Electrical Installation and Wall Painting in Aye Mya Community Center



Figure 95: Renovating Old Water Collection Tanks at Kyar Kan, Mei Bayt Kone, and Auk Kyaung Villages



<p style="text-align: center;">ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ ကြာကန်ကျေးရွာ ဂုဏ်ပြုမှတ်တမ်းလွှာ</p> <p>မေတ္တာတို့ပါဝင်သည့် မင်းဘူး(ကျေး)မြို့နယ် ကြာကန်ကျေးရွာတွင် အုတ်ရောင်(၂)တန်း အဖွဲ့ ဖြစ်လုပ်ခြင်း ဖြစ်နိုင်ခြင်းနှင့် ဆေးသုတ်ခြင်းလုပ်ငန်းဆောင်ရွက်ရာတွင် ကျေးရွာစိုက်ပျိုးရေး ဝန်ထမ်းများ (ကျွမ်းကျင်မှုပံ့ပိုးရေးနှင့် ဆေးသုတ်ခြင်းလုပ်ငန်းဆောင်ရွက်ရေးအဖွဲ့) ကို MPRL E&P (CSR အစီအစဉ်) မှ ဝန်ထမ်းများဖြင့် ပံ့ပိုးပေးသည့် ဤဂုဏ်ပြုမှတ်တမ်းလွှာဖြင့် မှတ်တမ်းတင်ဂုဏ်ပြုအပ်ပါသည်။</p> <p>လက်မှတ် အမည်</p> <p>အောင်အောင် ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၁ ကြာကန်ကျေးရွာ</p> <p>တင်စို ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၁ ကြာကန်ကျေးရွာ</p> <p>အောင်အောင် ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၂ ကြာကန်ကျေးရွာ</p> <p>ရက်စွဲ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၃) ရက်</p>	<p style="text-align: center;">ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ မယ်ဘောကုန်းကျေးရွာ ဂုဏ်ပြုမှတ်တမ်းလွှာ</p> <p>မေတ္တာတို့ပါဝင်သည့် မင်းဘူး(ကျေး)မြို့နယ် မယ်ဘောကုန်းကျေးရွာတွင် အုတ်ရောင်(၁)တန်း ဖြစ်လုပ်ခြင်း ဖြစ်နိုင်ခြင်းနှင့် ဆေးသုတ်ခြင်းလုပ်ငန်းဆောင်ရွက်ရာတွင် ကျေးရွာစိုက်ပျိုးရေး ဝန်ထမ်းများ (ကျွမ်းကျင်မှုပံ့ပိုးရေးနှင့် ဆေးသုတ်ခြင်းလုပ်ငန်းဆောင်ရွက်ရေးအဖွဲ့) ကို MPRL E&P (CSR အစီအစဉ်) မှ ဝန်ထမ်းများဖြင့် ပံ့ပိုးပေးသည့် ဤဂုဏ်ပြုမှတ်တမ်းလွှာဖြင့် မှတ်တမ်းတင်ဂုဏ်ပြုအပ်ပါသည်။</p> <p>လက်မှတ် အမည်</p> <p>အောင်အောင် ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၁ မယ်ဘောကုန်းကျေးရွာ</p> <p>တင်စို ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၁ မယ်ဘောကုန်းကျေးရွာ</p> <p>အောင်အောင် ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၂ မယ်ဘောကုန်းကျေးရွာ</p> <p>ရက်စွဲ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၃) ရက်</p>	<p style="text-align: center;">ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ အောက်ကျောင်းကျေးရွာ ဂုဏ်ပြုမှတ်တမ်းလွှာ</p> <p>မေတ္တာတို့ပါဝင်သည့် မင်းဘူး(ကျေး)မြို့နယ် အောက်ကျောင်းကျေးရွာ စာသင်ကျောင်းတွင် အုတ်ရောင်(၁)တန်း ဖြစ်လုပ်ခြင်း ဖြစ်နိုင်ခြင်းနှင့် ဆေးသုတ်ခြင်းလုပ်ငန်းဆောင်ရွက်ရာတွင် ကျေးရွာစိုက်ပျိုးရေး ဝန်ထမ်းများ (ကျွမ်းကျင်မှုပံ့ပိုးရေးနှင့် ဆေးသုတ်ခြင်းလုပ်ငန်းဆောင်ရွက်ရေးအဖွဲ့) ကို MPRL E&P (CSR အစီအစဉ်) မှ ဝန်ထမ်းများဖြင့် ပံ့ပိုးပေးသည့် ဤဂုဏ်ပြုမှတ်တမ်းလွှာဖြင့် မှတ်တမ်းတင်ဂုဏ်ပြုအပ်ပါသည်။</p> <p>လက်မှတ် အမည်</p> <p>ကျော်စိုး ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၁ အောက်ကျောင်းကျေးရွာ</p> <p>အောင်အောင် ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၁ အောက်ကျောင်းကျေးရွာ</p> <p>အောင်အောင် ကျေးရွာဖွံ့ဖြိုးရေးကော်မတီ-၂ အောက်ကျောင်းကျေးရွာ</p> <p>ရက်စွဲ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၃) ရက်</p>
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Figure 96: Completing Renovation of Old Water Collection Tanks at Kyar Kan, Mei Bayt Kone, and Auk Kyaung Villages



Figure 97: Informing Water Quality Test Results of Schools to Headmistresses and Village Administrators



Figure 98: Donating Furniture to Rural Health Center in Mann Kyo Village



Figure 99: Providing Furniture to Schools in Kyar Kan, Auk Kyaung, Let Pan Ta Pin, Pauk Kone, Ma Kyee Chaung and Let Pa Taw Villages



Figure 100: Monitoring Maintenance of Water Filtration Units and Handwashing Stations at Schools

Case Study

Initiating Solar-powered Water Pumping Project in Mann Kyoe Village

MPRL E&P ensures that Community Investment initiatives in the Mann Field Communities are provided in appropriate locations, respond to current needs, and remain adaptable to the evolving community. As part of the Community Infrastructure Development Program for the Fiscal Year 2023-2024, MPRL E&P plans to support the development of water resources through its CSR Program in the seven villages surrounding Mann Field.

MPRL E&P has initiated a new Solar-powered Water Pumping Project in Mann Kyoe Village, one of the surrounding villages in Mann Field. The project aims to improve access to quality water and promote a hygienic lifestyle for the communities in line with the reinforcement of MOGE to carry out solar power, which involves the use of Photovoltaic (PV) cells in solar panels to generate electricity for local communities.

“The three water wells, including the one previously supported by MPRL E&P, are working well to access water in Mann Kyoe Village. However, the water level of these wells has become low and dried up due to the high summer temperatures this year,” said U Win Ko, a member of the Mann Kyoe Community.

In response to these challenges, MPRL E&P (CSR Program) has worked with the Village Administrator, Village Development Committee members, and Community Volunteers from Mann Kyoe Village to test small-scale solar water pump systems through several discussions to make this initiative happen.

The solar water pump uses sunlight to generate electricity and power a motor that draws water from underground or from ponds, lakes, creeks, or rivers for household use and irrigation. In this project, well drilling, installation of solar-powered water pumps and PVC water pipelines, and the setup of other related equipment were carried out. The project was worth a total of MMK 5,164,100 with contributions of MMK 4,660,500 from MPRL E&P (CSR Program) and MMK 503,600 from the Mann Kyoe Community.

“Now, the new well is set up with a solar-powered water pump, which is very convenient for us during days of power instability,” added U Win Ko.

“The 32-foot dug well has been connected to two water storage tanks through 1,380-foot long pipelines with the aim to alleviate the water scarcity situation duration. Almost every house in Mann Kyoe now has access to quality water through unique pipelines and common water taps within the community. The main advantage of the solar water pump is that it uses sunlight at no cost. One installed, there is no recurrence cost of electricity or fuel. In addition, this solar water pump project is comparatively low

maintenance, highly reliable and environmentally friendly,” explained the Senior CSR Officer from MPRL E&P.

The 1.5kW solar-powered water pump has been generating 18,000 gallons of reliable water while operating for 10 hours per day, benefiting 1,565 community members in 402 households across Mann Kyoe Village.

“It runs quietly from morning until sunset and quickly fills the storage tanks with water. As a result, even my house located in the highland now has plenty of water from this new well powered by solar energy,” noted U Win Ko.

Mann Field is in Minbu, Magway Region, which is in the tropical dry zone of central Myanmar, an area that receives enough solar energy but needs to develop more water resources. The Solar-powered Water Pumping Project drives economies of scale that significantly reduce operation costs and offer productive uses of solar energy besides pumping. The project was first introduced by MPRL E&P (CSR Program) as a cost-effective solution for Community Infrastructure Development in Mann Field and results in both socio-economic benefits and environment-related benefits.

10.6.2 Community Livelihood Development



MPRL E&P is committed towards improving the life of the Mann Field community and helping them achieve self-reliance. In addition, we conduct regular follow-up and support activities to ensure the goal is achieved. MPRL E&P's CSR program undertakes focused interventions in agriculture, horticulture and livestock management. Such interventions have been designed to support the rural communities' livelihoods through increased agricultural and livestock production, improving household food security, alleviating poverty through better market participation as well as to improving farmers' access to resources, technologies, information and markets by characterizing and strengthening crop and livestock value chains.

Progress Updates

- Monitored the crop harvesting progress in Mann Field and provided technical support as required. A total of (27) farmers grew (7.3) acres of tomato at their farmland and made over MMK (82) million incomes from the harvested tomato volume of (51,875) visses as of April 2023. All tomato farmers finished their harvesting in April.
- Visited the State Agriculture Institute (S.A.I - Pwint Phyu) to learn about establishing a localized greenhouse for year-round vegetable cultivation, especially during the summer season.
- Helped the Seed Bank Management Committee collect seed loans, purchase seeds and support plastic mulches for tomato farming.
- Met with trainees who make tomato-based products, and discussed their product sales, production rate, challenges and future plans.
- Facilitated the Seeds Bank Management Committees in collecting farmer list in order to provide agriculture inputs for upcoming cultivation of tomato, sunflower and chickpea in Mann Field.
- Collaborated with Yetagon Farm Advisory Service for the knowledge sharing sessions on “Disease and Pest Control in Tomato Farming” which were organized at Mei Bayt Kone Damayone, attended by (36) famers from Auk Kyaung and Mei Bayt Kone Villages in July.
- Distributed (33) packs of tomato seeds and (32) rolls of plastic mulches to farmers from Chin Taung, Kywe Cha, Mann Kyoe, Pauk Kone, Let Pa Taw, and Mei Bayt Kone Villages.
- Organized agriculture knowledge sharing sessions on “Disease and Pest Control in Tomato Farming” in Collaboration with Yetagon Farm Advisory Service (Pwint Phyu) in August and received (89) farmers from Let Pa Taw and Kyar Kan Villages.
- Monitored farmers’ tomato cultivation and mushroom seed production and provided necessary support to their farming.



Figure 101: Monitoring the Harvesting Progress of Chickpea and Sunflower



Figure 102: Visit to State Agriculture Institute (S.A.I - Pwint Phyu) to Study a Localized Greenhouse



Figure 103: Meeting with Tomato-based Products Making Trainees



Figure 104: Facilitating Seeds Bank Management Committees for Agricultural Inputs



Figure 105: Providing Packs of Tomato Seeds and Rolls of Plastic Mulches to Farmers in Mann Field Communities



Figure 106: Supporting Tomato Farmers in Cultivation Journey with Necessary Assistance



Figure 107: Organizing Agricultural Knowledge Sharing Sessions for Farmers in Auk Kyaung, Mei Bayt Kone, Let Pa Taw and Kyar Kan Villages

Case Study

Advanced Training on Livelihood Skills: Equipping Potential Entrepreneurs

“Tomatoes have economic and nutritional importance. They are a profitable horticultural crop that provides income to farmers in Mann Field and individuals involved in cultivation and production,” said Daw San May, a horticulture farmer from Kyar Kan Village who attended a two-day horticulture training supported by MPRL E&P in July 2019. “Even a small crop field can generate significant earnings and help improve our livelihoods,” she added.

The communities surrounding Mann Field benefit from MPRL E&P’s CSR Program, which includes various vocational trainings. These initiatives involve the distribution of plastic mulches and quality tomato seeds through the Horticulture Farmers Committee. Additionally, regular monitoring and technical assistance are provided to farmers through the Community Liaison and skilled experts from the Department of Agriculture (Minbu) to ensure optimal output. In the Fiscal Year 2022-2023, 27 tomato growers from Mann Kyoe, Chin Taung, Let Pa Taw, and Kywe Cha villages cultivated a total of 7.3 acres of tomatoes. They harvested 51,875 visses, resulting in a tenfold increase in profits for some farmers compared to the previous year.

To enhance farm income stability and empower potential entrepreneurs, MPRL E&P’s CSR Program collaborated with the Magway Regional Small Scale Industries Department (SSID) on value addition for tomatoes. With SSID’s support, the CSR Team organized a 7-day training session on making value-added tomato products at Aye Mya Village in September 2022. A total of 20 women from seven villages in Mann Field participated in the session. Among them, 11 former trainees now run their own small businesses and have successfully marketed their new products to local consumers, both within and outside their villages, as well as in grocery stores in Minbu.

In March 2023, the CSR Team facilitated the participation of selected former trainees, who currently operate micro-enterprises under various brand names like “May,” “May July,” “Pyae Sone,” etc., in the Advanced Training on Making Tomato-based Value-added Products. The training was organized by SSID (Magway) at its Incubation Centre from 20 to 22 March 2023. Skilled experts from SSID provided hands-on training to the participants, focusing on processing and making marketable tomato-based value-added products. The training aimed to enable the trainees to practice what they had learned within their own homes. It covered crucial aspects of the tomato value chain, including nursery practices, production practices, value addition, market access, packaging, and the economics of production.

“The training focused on women and local youths from Mann Field, empowering them to generate income from the comfort of their homes,” said the Junior CSR Officer from

MPRL E&P. She emphasized that the training was a form of economic empowerment, enabling the trainees to expand their production independently.

In collaboration with resource organizations, MPRL E&P's CSR Team closely monitors and supports the trainees, providing them with opportunities to enhance employable skills, earn a living, and sustain their small businesses.

10.6.3 Educational Partnership Program



MPRL E&P's CSR Program has established educational partnerships with governmental entities and training institutions. These collaborations aim to bolster technical and vocational skills, ultimately enhancing employment prospects within the Mann Field Communities. The company extends financial aid and crucial support to disadvantaged students pursuing higher education, as well as technical and vocational education and training (TVET). This support equips them with the skills needed to enter the job market or set up small businesses of their own.

Progress Updates

- Offered the full scholarship award to five community youths for their studying at Batch-11 of No.5 Industrial Training Center (ITC - Magway) in April 2023. The scholarship covered the students' one-time enrollment fees, monthly stipends, and general expenses for the 11-month courses in Automobile Maintenance.
- Empowered Mann Field Community Youths with scholarship support for their education – five students at No.5 ITC (Magway), two students at Government Technical High School (GTHS – Magway), seven students at State Agriculture Institute (S.A.I – Pwint Phyu), one student at University of Medicine (Magway) and one high school student at Basic Education High School of Mei Bayt Kone Village.
- Monitored the students' academic activities, training progress and attendance regularly.



Figure 108: Providing Scholarship Support to Community Youths for Studying at No. 5 ITC (Magway), GTHS (Magway), S.A.I (Pwint Phyu) and University of Medicine (Magway)

Case Study

MPRL E&P Extends Scholarship Support for Mann Field's Youth

With the aim of empowering Mann Field's youth with livelihood skills, MPRL E&P initiated the Educational Partnership Program in the Fiscal Year 2019-2020. It provides financial support and essential assistance to needy students pursuing higher education institution and, technical and vocational education and training (TVET), with the intention of enabling their entry into the job market or entrepreneurship. MPRL E&P's CSR Program has formal agreements with TVET institutions to ensure proper skill development among Mann Field's youth. The company collaborates with both private and public sector organizations to create feasible skill development models aligned with the nation's economic requirements.

In this Fiscal Year 2023-2024, the program has extended scholarship support to various institutions, benefitting seven students from the State Agricultural Institute (SAI - Pwint Phyu), two students from Government Technical High School (GTHS - Magway), five students from No.5 Industrial Training Center (ITC - Magway), and one student from the University of Medicine (Magway). All of them were awarded full scholarships, covering enrollment fees, monthly stipends, and general expenses during their school years.

Scholarship support has become a ray of hope for young minds in Mann Field Communities. The scholarship recipients have shared inspiring stories of personal transformation, highlighting the significant impact of the scholarship program on their lives.



Pyae Phyo Zaw

Ywar Thar Village
University of Medicine
(Magway)



“I am Pyae Phyo Zaw from Ywar Thar Village, and I am a beneficiary of MPRL E&P’s scholarship program. With the endorsement of U Thein Htay, our Village Administrator, I was fortunate to secure this scholarship. MPRL E&P is committed to supporting scholarship recipients until their graduation. However, failure in exams could lead to the discontinuation of aid. Without this support, pursuing my education at the University of Medicine would be challenging. The thought of not receiving MPRL E&P’s scholarship was a source of great worry.

Before, financial struggles cast a shadow over my daily life. Now, these issues are resolved, and I can focus on my studies. University life comes with its own set of challenges. Initially, I faced difficulties in making friends, but over time, I have improved socially and formed lasting friendships.

My future plans include obtaining an M.B.B.S degree, followed by M.Sc. and Ph.D. degrees. In the interim, I am determined to contribute extensively to my village. I express my deep gratitude to MPRL E&P’s CSR Program. This scholarship is remarkable, providing comprehensive assistance. I sincerely hope that MPRL E&P continues to support needy youth like me.”

Su Nandar

Mei Bayt Kone Village
No. 5 ITC (Magway)



“I am one of the fortunate recipients of the third batch of MPRL E&P’s scholarship to No. 5 ITC (Magway). Despite being a girl, I am pursuing the Automobile Maintenance course, driven by my passion for the subject. MPRL E&P’s scholarship aims to provide young enthusiasts in Mann Field with valuable education and career prospects. Applying for this scholarship meant avoiding financial strain on my family.

My journey, both before and after receiving the scholarship, has been transformative. With the support of MPRL E&P, I have acquired a wealth of knowledge and set ambitious goals for my life. Zay Lin Aung and Hein Pyae Sone Aung from our Mei Bayt Kone Village are also studying at SAI (Pwint Phyu) with the assistance of MPRL E&P’s scholarships. MPRL E&P empowers the youth of Mann Field, offering affordable education that shapes lives. Their approach ensures that young people and their families benefit.

I am committed to adhering to the institute and scholarship guidelines during my training. After graduation, I aspire to establish a business that contributes to the growth of our community.”

Paing Thaw Ko

Aye Mya Village
No. 5 ITC (Magway)



“I’m a resident of Aye Mya Village, and initially, I pursued a History major in University of Magway. However, due to my father’s income being primarily allocated to support my elder brother’s education, I faced financial challenges in my academic journey. Fortunately, I learned about MPRL E&P’s CSR Program, which provides financial assistance to financially constrained Mann Field youth pursuing education. I seized this opportunity through their scholarship program.

The selection is based on interviews, with only the top five candidates being chosen, and the interviews made me worried. Now, with the scholarship support of MPRL E&P, I am enrolled in the Automobile Maintenance course at No. 5 ITC (Magway). This training center offers a comprehensive curriculum covering both practical and theoretical aspects, including welding, car maintenance, and driving.

MPRL E&P has been a pillar of support, enhancing the lives of young people like me. I am thankful for their assistance and intend to express my appreciation through community assistance.”

Thu Htoo San

Mann Kyoe Village
No. 5 ITC (Magway)



"I am currently enrolled in the 11-month Automobile Maintenance course at No. 5 ITC (Magway) with the support of MPRL E&P's CSR Program. I applied for the scholarship due to financial difficulties my family faced in running our business.

Before receiving the scholarship, I was worried about being able to afford the school I desired to attend. The moment I received the scholarship brought immense joy, not only to me but also to my parents and neighbors. The training at No. 5 ITC (Magway) not only imparts industry-related knowledge but also instills proper discipline.

I am truly grateful to MPRL E&P's CSR Program, which provides access to education and job opportunities for financially constrained youth in our community. My goal is to become a skilled worker who contributes to the growth of our community."

Htet Myat Shain

Auk Kyaung Village
No. 5 ITC (Magway)



"I applied for MPRL E&P's scholarship support after learning about it from our Community Volunteer. The scholarship provides monthly financial support for an 11-month course duration. Following my parents' passing, our family faced financial difficulties in supporting my education. After hearing about MPRL E&P's scholarship announcement through our Community Volunteer, I applied for the scholarship. Out of eight applicants, only five were fortunate enough to attend No. 5 ITC (Magway), and I was one of them.

It is crucial to successfully complete the school, as any failure or expulsion would mean covering expenses on our own. I am happy to find that the lessons align with my interests, and the scholarship support eases our financial burdens. Thanks to MPRL E&P's scholarship support, my neighbor Zaw Myo Aung, who is now in his second year at GTHS (Magway), and I are able to pursue our education. We are sincerely thankful for MPRL E&P's scholarship support, which assures our livelihoods."

Yan Naing Soe

Ywar Thar Village
No. 5 ITC (Magway)



“Learning about MPRL E&P’s scholarship for Mann Field youth through our Community Volunteer, I applied due to financial constraints hindering my education. MPRL E&P supports individuals like me who lack the means to attend school. Receiving the scholarship to attend No. 5 ITC (Magway) brought me immense joy. This program paves employment paths for unemployed youth.

My neighbors, Zeya Phyo and Kyaw Soe Lwin, also attended SAI (Pwint Phyu) with MPRL E&P’s scholarship support. I hope MPRL E&P’s CSR Program continues to assist needy students like us and extends scholarships to underserved learners. My aspiration is to build a promising career, and I aim to contribute to needy areas with my future earnings.”

10.6.4 Community Capacity Building



In MPRL E&P, capacity building and knowledge sharing are key components of the CSR initiatives in Mann Field, promoting community resource mobilization, development project sustainability, and successful implementation. Beneficiaries include Community Volunteers, Village Administrators, Village Development Committees (VDCs), households, and schools. The Community Capacity Building (CCB) empowers all community members, enhancing their skills for greater self-determination and fostering inclusive local development. This not only strengthens community cohesion but also strengthens resilience in facing economic and social challenges.

Progress Updates

- Resumed Online English Learning Program with the collaboration of mangoSTEEMS Myanmar after Thingyan holidays and provided with necessary support.
- Opened “Summer Art Class” for the children ranging from age (06) to (12) in Mann Field, and selected a total of (60) children among (152) applicants to attend the art classes in Mann Kyo Monastery, Aye Mya Community Center and Nan U Library in April.
- Organized the graduation ceremony for the Summer Art Class took place at the Aye Mya Village Damayone on 12 May 2023. The event attracted a total of 223 attendees, including trainers, trainees, parents, and members of the community.
- Conducted Fire and Electrical Safety Awareness Training in collaboration with the Myanmar Fire Services Department (Minbu) on 20 and 21 May 2023. Four sessions were organized in Chin Taung, Auk Kyaung, Mei Bayt Kone, and Ywar Thar Villages. A total of (107) participants attended the training sessions at four locations. As part of the program, five units of fire extinguishers were donated to each of (14) Villages in Mann Field, and the posters promoting Fire and Electrical Hazard Awareness were displayed on the community noticeboards.
- Distributed the fire and electrical safety awareness pamphlets to all households in Mann Field Communities in order to help them better understand of hazards and dangers associated with fire and electricity, to reduce and prevent such incidents, and to alert them to be more careful in using electronic devices during rainy seasons.
- Performed a formal evaluation of the current two Community-based Education Facilitators and also interviewed three candidates for Community-based Education Facilitator for Online English Learning Program to be expanded to Nan U Village Community Center.
- Carried out feedback survey from students and parents about the performance of the Community-based Education Facilitators in July.
- Launched the "Book Drive for Community Center" campaign, inviting MPRL E&P Group of Companies' Staff to donate books to the Mann Kyo Library during 14 July 2023 to 14 August 2023, with the goal of enhancing reading resources in Mann Field Communities.
- Hosted a Book Donation Event at Mann Kyo Library, with a total of 215 students and 53 villagers in attendance in August. We contributed a donation of 1,255 books and 125,900 MMK in cash to support the library's operating fund.
- Provided (25) young learners (Grade 2 – 3) from Nan U and Auk Kyaung Villages with Basic Computer Skills Training at the Nan U Community Center. The training program ran from 19 August 2023 to 1 October 2023.



Figure 109: Organizing Online English Learning Program in Mann Field



Figure 110: Evaluating Current Community-based Education Facilitators



Figure 111: Interviewing Candidates for Community-based Education Facilitator



Figure 112: Conducting Feedback Survey from Students and Parents about Online English Learning Program



Figure 113: Organizing Summer Art Class for Children in Mann Field



Figure 114: Organizing Closing Ceremony of Summer Art Class and Awarding Outstanding Trainees



Figure 115: Organizing Fire and Electrical Safety Awareness Training in Mann Field



Figure 118: Distributing Fire and Electrical Safety Awareness Pamphlets to All Households in Mann Field Communities

Book Drive for Community Center!

14 July to 14 August 2023

Can we count on you in our effort to support community members in Mann Field through the donation of books, new or gently used?

Suggested book types:

- Picture Books
- Easy Reader Books
- Poetry and Children's Classics Books
- Interactive Books
- Young-Adult Novels
- Periodicals
- Non-fiction books

MPRL E&P's CSR Program is currently looking for the donation of new or gently used books for schoolchildren in Mann Field to help nurture their love for reading and support their learning journey through quality reading materials.

This is part of our community initiative involving the upgrade of a village library into a community center, complete with new learning facilities and fitness areas for children, youths and the rest of the communities in Mann Field.

We are happy to receive books written in Myanmar or English and are open to a range of book options.

Drop off:

New May Pale Htoo @Pale
CSR & Communications Department
8th Floor, 11th Tower
For further inquiries, please call the extension 1106

စာအုပ်စာပေများ လှူဒါန်းနိုင်ကြောင်း မိတ်ခေါ်ခြင်း

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လိုအပ်သော စာအုပ်စာပေအမျိုးအစားအားဖြင့် -

- ပုံနှိပ်စာအုပ်များ
- အသစ်အသစ်လှူဒါန်းမှုများ
- အသုံးပြုပြီးသား စာအုပ်စာပေများ
- အသုံးပြုပြီးသား စာအုပ်စာပေများ
- ယူငယ်လှူဒါန်းမှုများ
- အသုံးပြုပြီးသား စာအုပ်စာပေများ
- အသုံးပြုပြီးသား စာအုပ်စာပေများ
- အသုံးပြုပြီးသား စာအုပ်စာပေများ

MPRL E&P မှ CSR အစီအစဉ်အဖြစ် မိမိတို့၏ စီမံကိန်းများအတွက် အထောက်အကူပြုရန်အတွက် အသစ်လှူဒါန်းမှုများ မဟုတ်ဘဲ အသုံးပြုပြီးသား စာအုပ်စာပေများကို လှူဒါန်းပေးနိုင်ပါသည်။

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- ပုံနှိပ်စာအုပ်များ
- အသစ်အသစ်လှူဒါန်းမှုများ
- အသုံးပြုပြီးသား စာအုပ်စာပေများ
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ဆက်သွယ်ရန်အတွက်

New May Pale Htoo (၈) လှူဒါန်းမှု
CSR & Communications Department
8th Floor, 11th Tower

ထပ်မံမေးမြန်းရန်အတွက်
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Figure 119: Announcing Book Drive for Community Center Campaign



Figure 120: Organizing Book Donation Event at Mann Kyo Library



Figure 121: Organizing Basic Computer Skills Training at Nan U Community Center for Grade-2 and Grade-3 Students from Nan U and Auk Kyaung Villages

Case Study

Conducting Fire and Electrical Safety Awareness Training with the Donation of Fire Extinguishers to Mann Field Communities

Acknowledging that fire and electrical hazards are real and serious threats to households and workplaces, MPRL E&P's CSR Program has collaborated with the Minbu Township Fire Services Department to host a Fire and Electrical Safety Awareness Training. The training was designed with two days and four sessions at four locations surrounding Mann Field on 20 and 21 May 2023. Its aim is to raise awareness of fire and electricity hazards that may occur during the summer and rainy seasons due to floods from Mann creek, strong winds, and broken branches during the rainy season.

Through this training, officials from the Township Fire Services Department shared knowledge on the causes of electrical fires and how to deal with fire outbreaks. They emphasized the importance of regularly checking the quality and durability of old electrical devices, cords, and plugs. Additionally, they demonstrated how to properly use fire extinguishers to put out fires in case of emergencies. The training sessions took place in Chin Taung, Mei Bayt Kone, Ywar Thar, and Let Pa Taw villages.

The training program was attended by 82 residents from the respective villages, General Manager (Mann Field) U Khun Myo Thant, officials from the Government Entity, Field Operations Team members, personnel from Myint & Associates Co., Ltd., and members of the Minbu Township Fire Services Department including the CSR Team and Emergency Response Committee members. A total of 102 people attended four training sessions.

As part of the program, five fire extinguishers were handed over to each village, resulting in a total of 70 fire extinguishers distributed to the 14 villages in Mann Field. CSR Team members and Community Volunteers hung fire and electrical danger warning posters and the participants in the training distributed educational leaflets to further raise awareness, following COVID-19 guidelines. The fire and electrical safety awareness training was carried out by MPRL E&P's CSR Program at a cost of MMK 5,349,700.

Summer Art Class: Fostering Creativity and Imagination of Young Children

In an endeavor to nurture the creative spirits of young minds, MPRL E&P's CSR Program recently launched a Summer Art Class within the Mann Field Communities. The program, spanning four weeks from 18 April 2023 to 12 May 2023, successfully engaged children aged 6 to 12 years in the world of drawing and painting. A total of 152 children applied for the Summer Art Class, and 60 were selected based on two criteria: the purpose of attending the class and the applicants' picture drawing skills. The selection process aimed to ensure that the course would be beneficial for the chosen trainees.

With the support of two talented local artists, U Myint Hlaing Min from Minbu (Saku) and U Aung MOUNG from Aye Mya Village, three class sessions were held each day at three distinct locations - Mann Kyoe Monastery, Aye Mya Community Center, and Nan U Library. The program ensured accessibility for all interested children in Mann Field Communities.

According to Saw Eh Hsar Blute Htoo, Senior CSR Officer, the Summer Art Class was part of the Community Center Project, which was strategically planned as a component of the Community Capacity Building Program for the Fiscal Year 2023-2024 within the CSR Work Program. The initiative has been dedicated to empowering communities and instilling lasting positive change.

The Summer Art Class aimed to stimulate imagination, enhance critical thinking, and foster artistic expression. Through various art-making activities, children were encouraged to make decisions, explore their inventiveness, and develop essential fine motor skills. The transformative power of art became evident as the young artists gained confidence and embarked on a journey of non-verbal communication, discovering new means of self-expression.

Thu Hnin Sett, a girl from Mann Kyoe Village, shared her experience in the Summer Art Class. She said, "In the Summer Art Class, I carefully followed the teachers' instructions. I also completed drawing and painting assignments. My drawing skills seemed to improve after attending the art class. I gained a better understanding of color matching techniques, the distinction between light and dark tones, and the ability to perceive depth and distance in my artwork. On the day of the training graduation, I won the first prize in nature landscape painting, which made me extremely happy. I truly appreciate the drawing materials supported by MPRL E&P's CSR Program, including books, pencils, rulers, and other stationery items. I want to express my gratitude to the company for opening the Summer Art Class. I would love it if the company could offer more courses like this during the summer school holidays."

U Myint Hlaing Min, the focal trainer of the Summer Art Class, said, "The children showed an in-depth understanding of our teachings during the Summer Class. Among

the three groups, the Mei Bayt Kone class demonstrated the most notable progress, while the others also performed well. All the children paid great attention during the lessons. Notably, 20 trainees experienced significant improvements in their drawing skills after attending the art class. Considering their interest, we can provide continued support to nurture their artistic talents and guide them towards becoming accomplished artists. The progress of the trainees indicates their readiness to undertake advanced-level courses. Therefore, if possible, I wish the CSR Program to consider offering such courses. I would also like to express my gratitude for the support of the CSR Program and acknowledge the cooperation of the CSR Staff, Community Volunteers, and the Mann Field Communities.”

On 12 May 2023, the graduation ceremony for the Summer Art Class took place at the Aye Mya Village Damayone. This event marked the culmination of four weeks filled with exploration, learning, and personal growth. It attracted a total of 223 attendees, including trainers, trainees, parents, and members of the community. The closing ceremony celebrated the achievements of these talented young artists, whose artwork adorned the walls, transforming the venue into an art gallery. Additionally, the trainers and the CSR Program recognized the top three winners of the best artwork, along with the recipient of the People's Choice Award.

Through the Summer Art Class, MPRL E&P's CSR Program has not only encouraged artistic exploration but also nurtured the seeds of creativity and imagination in the young souls of Mann Field. It can be said that the Summer Art Class was a great success, captivating the hearts and minds of budding artists in Mann Field.

MPRL E&P's Book Drive Nurtures a Love for Reading and Learning in Mann Field Communities

MPRL E&P recently carried out an inspiring initiative—a book drive aimed to enhance learning opportunities and create positive change within the communities they operate in. The heart of this campaign beats for nurturing a love for reading and learning among the Mann Field Communities. Recognizing the transformative power of knowledge and access to quality reading materials MPRL E&P endeavors to be a catalyst for growth in underserved regions. Yet, this initiative aims to empower these communities with the tools they need for growth.

MPRL E&P's CSR Program kicked off this impactful campaign under the banner of the “Book Drive for Community Center.” However, the scope of this campaign extended beyond the company's staff. The MPRL E&P Group of Companies' employees were also invited to be a part of this transformative initiative. All staff members were encouraged to donate new or gently used books, embracing the idea of giving back to the Mann Field Communities. The campaign unfolded from 14 July 2023 to 14 August

2023, and successfully ran for a month, collecting both new and gently used books in both Myanmar and English languages.

The collective impact of these contributions was profound. The CSR Team expressed their gratitude for the staff's generous donations, resulting in a collection of 923 books, as well as a monetary contribution amounting to MMK 1,695,000. This combined effort paved the way for the provision of 1,255 books and the establishment of learning facilities within the communities. The remaining funds of MMK 125,900 were allocated for the maintenance of the community center, ensuring the sustainability of this initiative.

On 23 August 2023, the result of this campaign came to fruition at the Mann Kyoe Village Library. The CSR Team organized a special event where they handed over the collected books and funds to the Mann Kyoe Village Library. Attended by 215 students, 53 villagers, the Village Administrator, and the Village Development Committees, this event echoed the success of similar initiatives in the past, such as the book donation events held at Aye Mya and Nan U Villages the previous year.

Above all, it is evident that the importance of this book drive extends beyond just donating books. It marks a significant step towards nurturing a culture of learning and advancement within underserved communities. This campaign is about providing resources that can ignite the flames of curiosity and a thirst to explore the world through words. It stands as a seed of growth planted in the hearts of young learners, a testament to MPRL E&P's dedication to community sustainable development and livelihood.

10.6.5 Community Healthcare Program



MPRL E&P's CSR Program initiated the Mobile Clinic Program in September 2018 to provide primary healthcare services to Mann Field Communities, particularly targeting children, senior citizens, and disadvantaged individuals who may not access regular medical care. After closing temporarily in April 2020 due to the COVID-19 pandemic, the program resumed safely in February 2022 following a community survey. Two additional clinic sessions were added in July 2022 in response to community requests, resulting in the current operation of five weekly clinic sessions across six central villages in Mann Field: Kywe Cha, Kyar Kan, Lay Eain Tan, Let Pan Ta Pin, Nan U, and Aye Mya Villages. In 2023, we expanded our healthcare efforts by collaborating with the Public Health Department (Minbu) to launch an eye health program, aiming to improve vision for community members.

Progress Updates

- Resumed Mobile Clinic Program after Thingyan holidays, and provided with necessary support.
- Provided free healthcare and home visit services to Mann Field Communities under Mobile Clinic Program for five days per week.
- Contributed necessary support to Mobile Clinic Program and monitored the program progress daily.
- Offered free healthcare services to (10,875) community patients during (338) clinic sessions and home visits since its first reopening on 21 February 2022.
- Arranged the boy from Mei Bayt Kone Village who had squint surgery at Myittar Oo Eye Care Centre to receive postoperative care in Yangon.
- Met with Dr. Daw Ei Ei Aung, an ophthalmologist at Minbu Hospital, to discuss extending the Community Eye Health Program.
- Organized eye health program for the elders aged sixty and above in Mann Field in collaboration with the Public Health Department (Minbu). A total of (210) community elders received “Cataracts Awareness Talk and Preliminary Eye Screenings” provided by (11) Healthcare Assistants of Public Health Department (Minbu) on 19 June 2023 at Mann Kyoe Village.
- Conducted comprehensive eye examinations for 134 elderly individuals at Minbu Hospital. By September 18, 2023, 100 of them had undergone cataract surgeries at the hospital, (20) received eyeglasses, and (10) were provided with eye drops and supplements.
- Held meeting with the community elders and their family members for consent before the cataract surgery.
- Organized (17) sessions on Dengue Fever Awareness at mobile clinics and schools in August. The initiative reached out to a total of (2,334) individuals within the Mann Field Communities and raised awareness about Dengue Fever and its prevention.



Figure 122: Mobile Clinic Program in Mann Field Communities

Number of Patients (21 February 2022 - 22 September 2023)

Village	Session	Male	Female	Total
Kyar Kan	71	447	1,932	2, 379
Kywe Cha	71	562	1,673	2,235
Lay Eain Tan	72	521	1,959	2,480
Let Pan Ta Pin	72	498	1,780	2,278
Aye Mya	26	256	598	854
Nan U/ Auk Kyaung	26	168	481	649
Total	338	2,452	8,423	10,875

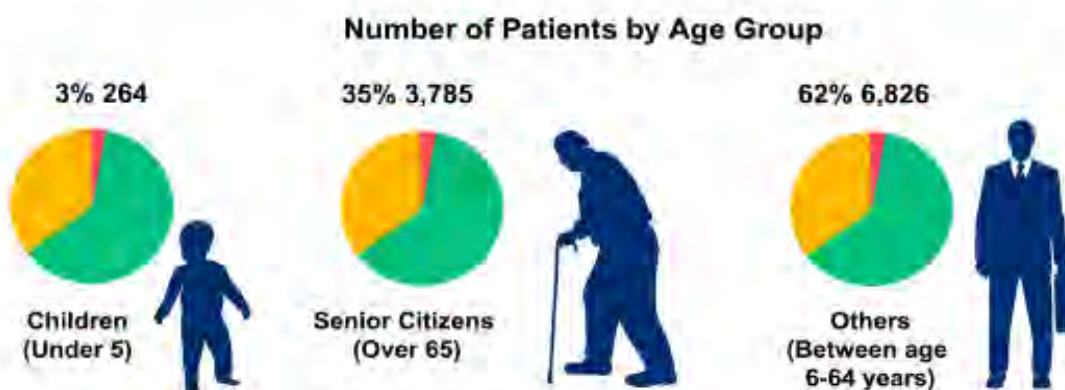
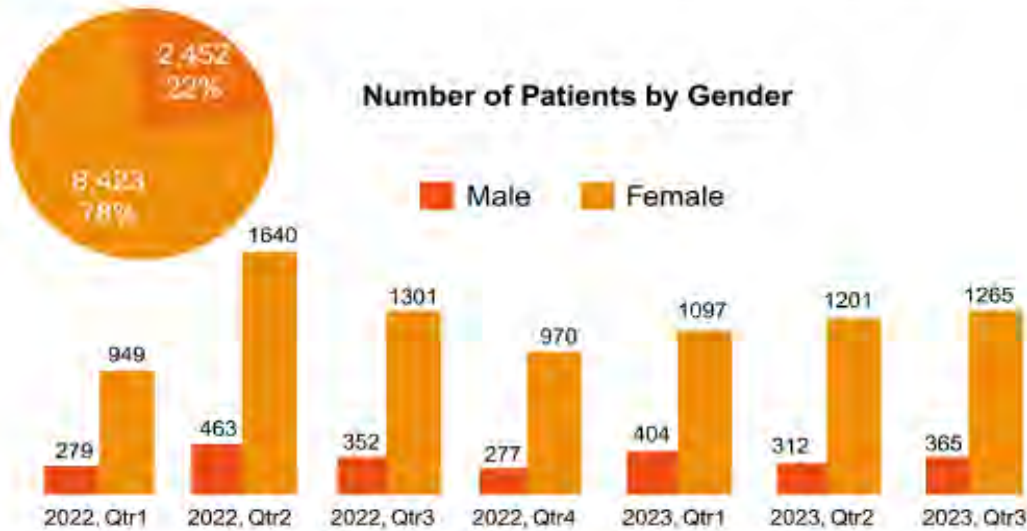


Figure 123: Statistics of Patients' Visit to Mobile Clinics around Mann Field



Figure 124: Providing Postoperative Care at Myittar Oo Eye Care Centre (Yangon) after Squint Surgery



လူနေမှုပုံစံပြောင်းလဲခြင်းနှင့် အိမ်သုံးကုထုံးတွေ အသုံးပြုခြင်းက အတွင်းတိမ်ကုသရာမှာ ဘယ်လို အထောက်အကူပြုနိုင်မလဲ။

- သင့်အမြင်အာရုံက နေ့စဉ်ပုံမှန်လုပ်ငန်းများလုပ်ဆောင်ရာမှာ အခွင့်အယှက် ဖြစ်လာလျှင် ဆရာဝန်ဆီ ချက်ချင်းသွားပါ။
- မျက်စိဆရာဝန်နှင့် မျက်စိပုံမှန်စစ်ဆေးပါ။
- ထိခိုက်အထိရာနှင့် နေရောင်ကြော့ရှည်မခံရအောင် မျက်စိကို ကာကွယ်ပါ။ အထူး သဖြင့် ပူပြင်းသော နေရာသို့မျိုးတွင် ခရမ်းလွန်ရောင်ဖြည့် UVA ရော UVB ပါ ၁၀၀% ကာကွယ်ပေးနိုင်သော နေကာမျက်မှန်ကို တပ်ဆင်ပါ။
- ဆီချိုရောဂါရှိလျှင် သွေးတွင်းသကြားဓါတ်ကို ပုံမှန်ထိန်းနိုင်အောင် ကြိုစောင့်ပါ။ သွေးတွင်းသကြားဓါတ် ပြင်တာနဲ့အမျှ အတွင်းတိမ်ရောဂါ ပိုဆိုးလာနိုင်သော ကြော့ ဖြစ်ပါတယ်။

သင့်မျက်စိအတွက် အကြံပြုချက် (၈) ချက်

- မျက်စိကိုဆရာဝန်ဖြင့် ပုံမှန်စစ်ဆေးပါ။
- မျက်စိအတွက် မျက်စိထောက်ခံပေးပါ။
- မျက်စိအတွက် မျက်စိထောက်ခံပေးပါ။
- မျက်စိအတွက် မျက်စိထောက်ခံပေးပါ။
- မျက်စိအတွက် မျက်စိထောက်ခံပေးပါ။
- မျက်စိအတွက် မျက်စိထောက်ခံပေးပါ။
- မျက်စိအတွက် မျက်စိထောက်ခံပေးပါ။
- မျက်စိအတွက် မျက်စိထောက်ခံပေးပါ။

ပုံမှန်

ကျန်းမာသောမျက်စိမှန်ဘီလူးသည် ပြင်ပမှလာသောအလင်းအားလုံးကို ကောင်းစွာစုစည်းပေးနိုင်သည်။

အတွင်းတိမ်

အတွင်းတိမ်ဖြစ်သောအခါ တိမ်ကဲ့သို့ မရှင်းမလင်း အမြင်မှန် ဝါးခြင်းဖြစ်လာသည်။

Figure 125: Organizing Cataract Awareness Talk of Eye Health Program for the Elders in Mann Field Communities



ကျန်းမာရေးဝန်ကြီးဌာန၊ မကွေးတိုင်းဒေသကြီး၊
ပြည်သူ့ကျန်းမာရေးနှင့် ကုသရေးဦးစီးဌာနလက်အောက်ရှိ
မင်းဘူးခရိုင်၊ ပြည်သူ့ကျန်းမာရေးဦးစီးဌာနနှင့် MPRL E&P Pte Ltd. (CSR အစီအစဉ်) တို့
ပူးပေါင်းဆောင်ရွက်သော မျက်မမြင်ကာကွယ်ရေးစီမံကိန်း



“အမြင်ကြည်လင် ပြုံးပျော်ရွှင်”



မန်းရေနံမြေ၊ မင်းဘူးမြို့

အထွေထွေမျက်စိ စစ်ဆေးစမ်းသပ်ခြင်းအစီအစဉ်



Figure 126: Conducting Preliminary Eye Screenings for Community Elders



Figure 127: Organizing Dengue Fever Awareness Sessions at Mobile Clinics



Figure 128: Organizing Dengue Fever Awareness Sessions at Schools





Figure 129: Conducting Comprehensive Eye Screenings, and Providing Eyeglasses, Eye Supplements and Cataract Surgery for Community Elders



Figure 130: Meeting with Elders and Family Members for Consent before Cataract Surgery

Case Study

Empowering Mann Field: Health Talks Promote Seasonal Disease Awareness and Proactive Prevention Measures

The period from June to October marks the monsoon season in Myanmar, during which monsoon rains are most persistent in the southern and western regions of the country. Notably, studies have highlighted a significant association between Dengue disease, the rainy season, tropical conditions, and age. Recognizing these factors, MPRL E&P's CSR Program proactively arranged knowledge-sharing sessions on preventive and control measures against the Dengue virus in Mann Field. This locale has experienced flooding from nearby Mann Creek due to heavy monsoon rains.

Under the guidance of the dedicated CSR Team, Dr. Kyaw Ye Htut, who has been serving as a Camp Doctor and healthcare provider for MPRL E&P's Mobile Clinic Program in Mann Field, conducted health talk sessions. He emphasized that the objective of these sessions is to enhance vigilance against Dengue fever within the Mann Field Communities and to educate the communities about measures to prevent Dengue virus infection. Dr. Kyaw also extended his expertise on seasonal diseases and other health-related matters to all staff members across the group of companies. The CSR Team thoughtfully designed these health talk sessions, providing essential resources and leaflets to community members who attended clinic sessions. The aim was to raise awareness about Dengue fever and encourage preventive measures during the monsoon season.

Recognizing the potential of the Mobile Clinic as an effective platform for disease prevention and health promotion, particularly in reducing risk-taking behaviors and fostering protective practices among Mann Field Communities, MPRL E&P's CSR Program initiated 17 knowledge-sharing sessions on Dengue virus at clinic-operated locations and schools in Mann Field in August 2023. These awareness sessions included informative Q&A sessions with students about Dengue fever, and students who answered correctly were rewarded with school stationery. The awareness sessions were well-attended, with a total of 2,334 participants, including schoolchildren, teachers, and local residents.

Dengue, characterized by acute fever and caused by a virus, manifests in two forms—Dengue Fever and Dengue Hemorrhagic Fever. In addition to fever, the disease can lead to bleeding and, in severe cases, shock and death. Its impact is particularly grave in children, and during epidemics, it can rapidly affect a large number of people, resulting in significant loss of life.

A Mother's Joy: A Journey of Squint Eye Surgery with the Support of MPRL E&P



In the belief of MPRL E&P's corporate social responsibility (CSR), the impact goes beyond financial contributions and extends to touching the lives of individuals in need. This feature article highlights the heartwarming story of Daw Yoon Mon Oo, a mother whose joy knows no bounds as she witnesses her son's successful squint eye surgery. With the support of MPRL E&P's CSR Program, Daw Yoon Mon Oo's son, Wai Hlyan Moe Oo, not only received the medical care he needed but also experienced a transformation that brought newfound happiness and confidence.

Squint Eye Challenge

Wai Hlyan Moe Oo was diagnosed with squint, a condition where the eyes do not align properly, at the age of 45 days after being seriously ill. His parents diligently brought him to eye clinics every year in hopes of finding a cure for his condition. Each time, the doctors advised them to consider squint surgery when Wai Hlyan Moe reached the age of five. Despite their best efforts, Wai Hlyan Moe's parents, being a low-income family, struggled to save enough money for the surgery. The financial burden posed a significant obstacle to accessing the necessary treatment for their son's squinting eyes.

Wai Hlyan Moe's mother shared her observations, saying, "My son always closes his eye on the squinting side when exposed to bright sunlight, and he stays inside and alone, and looks uneasy about his appearance. We deeply regret seeing him struggle with his eye issues." Her words highlight the noticeable discomfort and emotional distress faced by Wai Hlyan Moe, underscoring the significance of finding a solution to alleviate his eye problems.

Eye Healthcare Program

Fortunately, Wai Hlyan Moe, an eight-year-old boy from Mei Bayt Kone Village, was covered by the eye healthcare pilot program known as “Clear Eyesight for Happy Life!” launched by MPRL E&P in January 2023. The program focused on eye health for students at 11 schools in Mann Field. The CSR Program provided access to basic eye healthcare services, including school eye screening, eye health talks, treatment, and referral activities for local schoolchildren in partnership with the Trachoma Control and Prevention of Blindness Program, under the Department of Public Health (Minbu).

After a school eye health examination, Wai Hlyan Moe visited the Ophthalmology Department at Minbu Hospital, where Dr. Ei Ei Aung conducted a thorough examination. The ophthalmologist concluded that he required eye surgery to prevent further squinting of both eyes. Dr. Ei Ei Aung recommended continuing the treatment with Dr. Than Tun Aung, a specialist at Myittar Oo Eye Hospital in Yangon.

The Journey to Success

MPRL E&P’s CSR Program, fulfilling its social responsibility, took charge of Wai Hlyan Moe’s eye surgery with the provision of financial and logistical assistance. Understanding the importance of access to quality healthcare, the CSR Program covered the costs associated with Wai Hlyan Moe Oo’s squint eye surgery, including logistics, consultations, surgical procedures, and post-operative care.

On 19 March 2023, Wai Hlyan Moe Oo underwent squint eye surgery at Myittar Oo Eye Hospital. Daw Yoon Mon Oo vividly recalled the moments leading up to the procedure, filled with anticipation and hope. The medical team’s expertise and care eased Daw Yoon Mon Oo’s worries, allowing her to focus on Wai Hlyan Moe Oo’s well-being.

The Impact of Success

The success of Wai Hlyan Moe Oo’s squint eye surgery went far beyond correcting his physical condition. Daw Yoon Mon Oo was overjoyed to witness her son’s transformation as his self-confidence soared. Wai Hlyan Moe Oo’s improved vision and enhanced appearance meant he no longer faced the taunts and insecurities that had plagued him before.

One month after the operation, Wai Hlyan Moe’s mother shared, “My son has made remarkable progress. Previously, he refrained from participating in games and had a diminished appetite. But, after the eye surgery, he now eagerly joins in when he sees others playing, prompting us to manage his excitement. My son expressed a new desire to play more than ever before. He also said that his eyes have improved, and he is delighted to be considered beautiful. My child’s happiness moved me to tears of joy!”

Daw Yoon Mon Oo, a mother of two sons, appreciated that the company’s CSR Program played a significant role in ensuring that her son’s success was not just limited to the surgical outcome. It facilitated access to post-operative care, including follow-up appointments, therapy, and any additional support he needed during his recovery.

Empathy and Support

Daw Yoon Mon Oo was overwhelmed by the empathy and support she received from the company's CSR Team. She said, "When the company offered to provide my son with the eye surgery, I expected them to fulfill their obligation, but I was pleasantly surprised by the warm care they showed us. It exceeded my expectations. I am extremely happy and grateful. Given my financial situation, it would have been impossible for me to afford such expensive treatment on my own. The people in our village are also delighted and amazed to witness the care and treatment given to my child." The CSR Team guided her through the entire process, addressing her concerns and ensuring Wai Hlyan Moe Oo's well-being every step of the way. The program not only covered the medical expenses but also provided emotional support.

During their stay in Yangon for the surgery, they had the opportunity to meet the company's Chief Executive Officer, U Moe Myint, who provided them with valuable advice. Wai Hlyan Moe Oo said, "Ba Ba CEO asked me to keep two promises as a gesture of gratitude. They are to study diligently and excel in sports. I will try my best to keep those promises."

A Grateful Mother

Daw Yoon Mon Oo's journey as a mother, witnessing her son's squint eye surgery success with the support of MPRL E&P's CSR Program, exemplifies the profound impact of corporate social responsibility. She expresses her deepest gratitude to MPRL E&P and the dedicated CSR Team who made her son's surgery possible. Their support not only provided the necessary medical intervention but also restored Wai Hlyan Moe Oo's faith in himself and his abilities. Daw Yoon Mon Oo firmly believes that every child deserves the opportunity to thrive, regardless of their financial circumstances, and she credits the company's CSR Program for making that a reality.

Bringing the Gift of Sight to Mann Field Communities



Visual impairment and blindness have been significant health concerns in Myanmar, particularly in rural areas like Mann Field. The most common cause of blindness is cataracts, affecting the elderly population as well. Amidst these challenges, MPRL E&P's CSR Program has collaborated with the Public Health Department (Minbu) of the Ministry of Health to launch the initiative "Clear Eyesight for Happy Life!" program. This initiative aims to bring the gift of sight to hundreds of Mann Field Communities.

Gathering at Mann Kyo Monastery

The initial phase of the eye health program for the community elders took place at Mann Kyo Monastery on 19 June 2023. The event brought together 210 senior citizens aged sixty and above from Mann Field Communities for educational talks on cataracts and preliminary eye screenings. The eye health program aimed to restore not only vision but also hope in Mann Field Communities.

Empowering through Education

Dr. Ei Ei Aung, an ophthalmologist from the Trachoma Control and Prevention of Blindness Program under the Public Health Department (Minbu), delivered a comprehensive lecture on cataracts. The event aimed to educate elderly community members about the importance of eye health care, the causes and risk factors of cataracts, and methods of treatment.

Preliminary Eye Tests

Under the supervision of Dr. Ei Ei Aung, the Health Assistant Team from the Trachoma Control and Prevention of Blindness Program conducted preliminary eye health examinations, identifying potential eye health issues among the elderly individuals who

required further assessment and support. MPRL E&P's Community Volunteers also assisted in screening hundreds of community elders.

Comprehensive Eye Tests

Building upon the initial screening results and with the support of the CSR Program, 134 elders underwent comprehensive eye tests at Minbu Hospital. Dr. Ei Ei Aung conducted thorough eye examinations on the elderly participants, identifying 20 individuals in need of eyeglasses, 10 requiring eye drops, and 104 who required cataract surgery.

Coordinating before Surgery

The CSR Team ensures inclusive support and prepares for cataract surgeries. They conduct periodic meetings with community elders and their families to ensure consent for the surgery and provide information about the upcoming procedures. The CSR Team also coordinates surgical arrangements and offers support to the elders before their cataract surgeries.

The Gift of Sight

In September 2023, a total number of 100 eye patients successfully underwent cataract surgery at Minbu Hospital. This surgery has given them a new lease on life, restoring their clear vision. The elders have embraced the gift of sight and expressed their gratitude to MPRL E&P's CSR Program and Minbu Hospital for the life-changing impact of the eye health campaign.

Since early 2023, MPRL E&P has initiated the "Clear Eyesight for Happy Life!" eye health program in 14 Mann Field Communities with the monetary support of an expatriate from the company and the budget of the CSR Program. The eye health program demonstrates the effectiveness of proactive eye health interventions in promoting healthy aging and preventing vision-related disabilities. Through eye health education, screenings, supplements, and surgical interventions, MPRL E&P's CSR Program has positively impacted the lives of hundreds of individuals in need, bringing the gift of clear vision and improved eye care to the Mann Field Communities, from young to old.

The following are the joyous voices of the stakeholders regarding the achievement of MPRL E&P's eye health program.

Dr. Ei Ei Aung

Ophthalmologist
Minbu Hospital



“This year, our Trachoma Control and Prevention of Blindness Program at Minbu Hospital collaborated with MPRL E&P’s CSR Program to conduct eye health initiatives for schoolchildren and elders aged sixty and above in Mann Field Communities. These initiatives included preliminary and comprehensive eye examinations, squint and cataract surgeries, the distribution of glasses and supplements, and the treatment of various eye diseases.

Through the eye tests for the community elders, we identified a range of their eye conditions, including cataracts, glaucoma, blurred vision, near-sightedness, far-sightedness, macular degeneration, and diabetic retinopathy. Based on the preliminary eye screenings, we performed comprehensive eye exams, measured intraocular pressure (IOP), conducted cataract surgeries, pupil dilation tests, and screened for diabetes and high blood pressure.

During the community school screenings in February, we found that the majority of schoolchildren had good vision, although a few exhibited eye birth defects, near-sightedness, or squinting eye issues. It became evident that local communities had limited awareness about eye health, and the elderly often suffered from poor eyesight, with many people fearing eye surgeries.

MPRL E&P’s “Clear Eyesight for Happy Life!” eye health program has been instrumental in benefiting Mann Field Communities. This program not only improves the eyesight of young individuals but also offers essential support to community elders with cataracts, allowing them to regain their vision. I do believe that conducting these programs annually will greatly benefit the community members in Mann Field and further enhance the success of MPRL E&P’s CSR Program.”

U Aung Aung

Village Administrator
Kyar Kan Village



“As a Village Administrator, I played a role in facilitating MPRL E&P’s eye health program to the best of my abilities. My support included announcing the eye health program through loudspeakers, compiling lists of villagers for eye examinations, sharing information about the time and location of the eye tests, and notifying patients about follow-up examinations after sharing the list of patient names.

Kyar Kan Communities also joined MPRL E&P’s eye health program for their eye treatment. MPRL E&P’s CSR Program covered all essential expenses, including eyeglasses, supplements, and eye surgeries.

The eye health program, “Clear Eyesight for Happy Life,” has been beneficial for eye patients in the village and has improved individuals’ vision. Many villagers lack access to healthcare due to financial constraints, making this program invaluable.

I express my hope that MPRL E&P continues to expand its eye health care program to include people of all ages, not only students, teachers, and those aged sixty and above. Eye diseases can affect individuals of all age groups, so testing should cover a wider demographic. Nonetheless, MPRL E&P’s eye health program is praiseworthy, and, on behalf of our people, I extend my heartfelt thanks to MPRL E&P for their invaluable efforts.”

Daw Kyi Than

Tailor

Aye Mya Village



"I am a widow, relying on my late husband's pension for my livelihood. Being a tailor, having clear eyesight is crucial for me, as it enables me to work. However, my poor eyesight prevented me from sewing. In 2018, I used my husband's gratuity to undergo cataract surgery on my right eye, which cost over MMK 300,000. Both of my eyes required surgery, but I couldn't afford to have them both done at once, as my monthly pension is only MMK 80,000, barely covering my meal expenses.

Living alone, I realized the importance of good eyesight, as having only one functional eye was inconvenient. My children offered to pay for my eye surgery, but they had their own financial struggles.

Then, this June, MPRL E&P brought the gift of clear vision to me at no cost; they fully covered the cost of my left eye surgery. I was thrilled to learn about their CSR Program offering free eye surgeries for elderly people with cataracts in Mann Field.

Before the surgery, their mobile clinic provided me with necessary supply of blood pressure medication for free, as I have high blood pressure. This ensured a smooth surgical experience.

The cataract surgery itself took only 15 minutes, and I could see immediately afterward. My vision has greatly improved, and I believe I'll be able to resume sewing in the next two or three months.

MPRL E&P has greatly benefited our local community, making everything more convenient. I am deeply thankful to MPRL E&P for the gift of eye surgery."

U Aung Maung

Painter

Aye Mya Village



"I had previously visited eye clinics, but they found no signs of glaucoma or cataracts. However, after retiring from my government job, my left eye began to blur, and I couldn't afford the necessary care on my pension. When I heard about MPRL E&P's CSR Program offering eye healthcare for individuals aged sixty and above in the Mann Field Communities, I saw it as a golden opportunity and immediately reached out to them.

During the preliminary eye screening, the doctor diagnosed me with cataracts and recommended surgery, particularly for my left eye, where the blurriness was severe. My right eye had some blurriness as well, but it wasn't as severe.

From the start of the eye test to the completion of the surgery, MPRL E&P provided unwavering support. When I attended the eye health talk and eye test in Mann Kyoe Village, they arranged transportation for us and ensured the event was comfortable. They even provided snacks to satisfy our hunger.

The planning and execution of the CSR Program demonstrated a strong connection between them and the local community, working together to promote social well-being. This strong bond facilitated a smooth eye checkup experience for us.

The comprehensive eye health talk by the ophthalmologist eased my fears about surgery. I recently underwent cataract surgery on my left eye, and my vision is gradually improving. My overall eye health is good, thanks to MPRL E&P's CSR Program, local volunteers, and healthcare workers. My deepest thanks to everyone involved."

U Myint Swe

Farmer

Kywe Cha Village



"I remember eight years ago, when I was around 60 years old, I developed a cataract in my right eye. It was a difficult time for me, but thankfully, the Sitagu Foundation supported me through the surgery. When I turned 68, the cataract in my left eye became problematic. This time, it was MPRL E&P's CSR Program that came to my aid.

These cataracts had clouded my vision for about a decade. I couldn't see clearly at all; everything was so unclear. I had to rely on my right eye, which had been operated on, to see anything.

As a farmer living in the countryside, I was quite isolated from what was happening in the community. It was only through our Community Volunteer that I learned about MPRL E&P's eye health program. Thankfully, I was considered a suitable candidate for eye surgery due to my good overall health; I didn't have diabetes or high blood pressure. The cataract surgery took just 15 minutes.

Having had eye surgery before, I knew what to expect and followed all the instructions. Now, my eyesight is crystal clear, just like when I was young. I can read letters that were once unreadable with ease. Beyond the surgery and transportation assistance, the support from the CSR Program was incredibly convenient. I want to express my sincere appreciation to MPRL E&P for their kind support throughout my treatment journey."

10.6.6 Community-led Waste Management Program



MPRL E&P helped upgrade the cargo bike with a bigger waste collection vehicle to accommodate the growing number of participating villages in the program and corresponding high volumes of waste as the sustainability of the community-led waste management program rests with regular operations and community participation. Our aims are to raise awareness on the importance of proper waste management for a better environment and sustainable development, and to motivate all concerned to take collective actions on proper waste management.

Progress Updates

- Kept tracking community-led waste collecting service in Mann Field Communities and conducted discussion with Community Volunteers and service provider.
- Supported Trash Hero Minbu cleanups which conducted a total of (258) cleanup sessions with a total number of (4,817) Heroes and collected (10,220) kg of trash since its first launch in September 2017.
- Celebrated World Environment Day 2023 by organizing a gift exchange event, where participants exchanged plastic waste for eco-friendly fabric bags. The event collected a total of (313) bags filled with plastic trash, and celebrated the global campaign "Beat Plastic Pollution" on 05 June 2023.
- Conducted a debate at the Basic Education Middle School of Kyar Kan Village in the name of "Beat Plastic Pollution" to celebrate World Environment Day 2023.
- Organized World Cleanup Day 2023 in Mann Field, and organized the cleanup events. In the celebration of World Cleanup Day 2023, three garbage dumps were cleared out together with the CSR Program, Mann Field Communities and Trash Hero Minbu and (48) metric tons of waste were successfully disposed to Minbu Township's municipal landfill site in 16 September 2023.



Figure 131: Organizing Trash Hero Minbu's Cleanup Activities in Mann Field Communities



Figure 132: Organizing Gift Exchange Event for Eco-friendly Fabric Bags



Figure 133: Organizing "Beat Plastic Pollution" Debate in Kyar Kan School



Figure 134: Comparison of Waste Disposal (Quarterly)



Figure 135: Monitoring Waste Collecting Service in Mann Field Communities



Figure 136: Meeting with Trash Hero Minbu Chapter's Team Leaders



Figure 137: Cleaning up Three Garbage Dumps in Celebration of World Cleanup Day 2023



Figure 138: Organizing Trash Hero Minbu's Cleanup Activities in World Cleanup Day 2023

Case Study

Fostering Youth Empowerment through Village-Level Environmental Debate

In a lively celebration of World Environment Day 2023, a special event took place at Basic Education Middle School of Kyar Kan Village on 12 June 2023. Organized by MPRL E&P's CSR Program, this event revolved around a debate, posing the important question: "Can we stop using plastic in our village?"

Prior to the commencement of the day's activities, Daw Lai Lai Khaing, CSR Field Coordinator of MPRL E&P, spoke about the purpose behind the event. The debate was designed to raise awareness and stimulate action towards safeguarding the environment. This was not merely an intellectual contest; it was a clear call to action. The event not only fostered dialogue but also empowered the younger generation to become catalysts for change within their communities.

The Principal of Kyar Kan School thanked MPRL E&P's CSR Program for arranging this special day. Acknowledging the students' limited prior debate experience, she encouraged understanding for any mistakes, emphasizing that what mattered most was the students' grasp of the issues surrounding plastic usage and how it could be managed more responsibly. The students also learned about the perils of plastic and the consequences of neglecting our environment.

The students were divided into two groups, each with six middle school students. The topic was whether we could stop plastic use in the village and if it was attainable. One team shared the feasibility, while the other countered it. Five judges watched the debate, evaluating and adjudicating the teams' performances. The two groups were designated as Group One and Group Two. They passionately presented their arguments and reasoned their beliefs.

The 22 students were well-prepared for the debate. They researched to find good reasons supporting their respective arguments. They also found real-world examples to support their points. Moreover, they anticipated counterarguments and prepared themselves to respond effectively. Each team worked together to structure their statements and determine the sequence. The participating students showcased their dedication and shared their perspectives on environmental conservation.

A total of 173 participants, including students, teachers and villagers, attended the event. Group One won the debate securing a score of 1,496 marks. It was a friendly and informative competition. The event not only sparked discussions on sustainable practice; it also empowered the youth to serve as agents of change in their respective communities.

After the debate, some students shared their reflections. One such student was I Cherry Khine, a 13-year-old Grade-8 student from Kyar Kan School. She talked about her experience as a member of Group One, driven by the intention to raise awareness about the negative consequences of plastic usage.

In preparation for the debate, she studied about plastic-related matters and engaged in discussions with her friends. Her teachers and parents also provided invaluable support. The debate marked her first such experience, fueling her enthusiasm and fostering a sense of friendship among participants. The event not only enhanced her understanding of the implications of plastic usage but also motivated her involvement in local initiatives like Trash Hero Minbu cleanup activities. Grateful to her school and MPRL E&P's CSR Program for the opportunity, she hopes to participate in more such competitions in the future.

Another student, Jue Jue Han, from Grade 8 and a member of Group Two, also shared her perspectives. Despite standing among Group Two members who opposed the point "We can stop using plastic in our village", she believed that the cessation of plastic use was indeed possible. To get ready for the debate, Jue Jue Han read books and did research online to learn more about plastic. She also talked with her teachers and friends to get ideas about the topic. She remembered being very excited during the debate, even though she forgot certain points she wanted to share. She felt happy and proud to be part of the event.

Jue Jue Han further emphasized that the event enriched her understanding of the pros and cons of plastic and deepened her appreciation for scheduled waste collection efforts. She made a commitment to advocate for reduced plastic usage and pledged active participation in the Trash Hero Minbu cleanup activities. Like her counterpart, she extended gratitude to the school and MPRL E&P's CSR Program for organizing the event and expressed her eagerness to partake in future competitions.

To sum up, the Kyar Kan School's World Environment Day Debate was an achievement of knowledge and passion. The students acquired knowledge, shared their ideas, and worked together to talk about a significant issue. The event underscored that even young voices could make a big difference in protecting the environment. It also demonstrated that even at the village level, change can be catalyzed through informed discussions and collective efforts.

10.6.7 Operational Grievance Mechanism (OGM)



MPRL E&P places a great emphasis on host communities, valuing transparent information sharing and two-way communications to promote trust and maintain a social license to operate. We have adopted a multi-stakeholder approach to create the Operation Grievance Mechanism (OGM) in Mann Field. This initiative, led by MPRL E&P, the host communities, and Myanmar Oil and Gas Enterprise (MOGE), represents the first of its kind in Myanmar. The OGM is a vital component that complements the Mann Field Social Management Plan.

Progress Updates

- Received six OGM cases in the first half of FY 2023-2024. bringing the total number of complaints since September 2014 to 173. All reported cases underwent thorough inspection and resolution, with the collaborative efforts of MPRL E&P's Field Operations Team and MOGE's Construction Department and Electrical Department. The CSR Team successfully closed these cases, ensuring that all key performance indicators (KPIs) were met.

Addressed Grievance Cases

- 1) On 29 May 2023, U Kyaw San from Lay Eain Tan Village reported that MOGE's personnel had dumped the shrubs surrounding the pipeline near his farmland, making it challenging to cultivate. He requested an inspection to remove those shrubs from his farmland. The community volunteer reported the case to the CSR Field Coordinator. The CSR Field Coordinator informed MPRL E&P's Field Operations Team and MOGE. MOGE's Construction Department inspected the case on 29 May 2023 and removed those shrubs on 05 June 2023 and closed the case in the same day. The complainant was satisfied with the process and the outcome.
- 2) On 07 July 2023, U Nyan Maung from Kyar Kan Village reported an OGM case related to the unused pipelines in his farmland at Field Number-1319, U Paing Number 120/1. He requested to inspect and remove it. The CSR Field Coordinator reported the case to MPRL E&P's Field Operations Team. After inspecting the case, MPRL E&P's Field Operations Team fixed the case by removing the unused old pipeline. The complainant was satisfied with the process and outcome.
- 3) On 07 July 2023, Daw Than Win from Kyar Kan Village reported an OGM case related to unused pipelines in her farmland at Field Number-1319, U Paing Number 120/1. She requested to inspect and remove it. The CSR Field Coordinator reported the case to MPRL E&P's Field Operations Team. After inspecting the case, MPRL E&P's Field Operations Team fixed the case by removing the unused old pipeline. The complainant was satisfied with the process and outcome.
- 4) On 11 July 2023, U Myint Aung from Kyar Kan Village reported an OGM case related to one electronic iron pole and one electronic wooden pole in his farmland leaning which can cause electronic hazards. The CSR Field Coordinator reported the case to MPRL E&P's Field Operations Team and MOGE. After inspecting the case, MOGE's Electrical Department fixed the case by repairing the iron pole and replacing the wooden pole with a new iron pole. The complainant was satisfied with the process and outcome.
- 5) On 11 July 2023, U Win Hlaing from Kyar Kan Village reported an OGM case related to the unused pipes in his farmland causing difficulties to cultivate. The

CSR Field Coordinator reported the case to MPRL E&P's Field Operations Team. After inspecting the case, the MPRL E&P's Field Operations Team fixed the case by removing the unused old pipeline. The complainant was satisfied with the process and outcome.

- 6) On 13 September 2023, U Han Thaung from Kyar Kan Village reported an OGM case related to an electronic pole in his farmland falling down which can cause electronic hazards. He informed the case to MPRL E&P's CSR Team and requested to inspect and repair it as necessary. After inspecting the case, the MOGE Electrical Department fixed the case by repairing the electronic pole. The case was closed on 14 September 2023 and the complainant was satisfied with the process and the outcome.



Figure 139: Addressing OGM Cases Submitted by Kyar Kan Villagers

Highlights of Key Performance Indicators



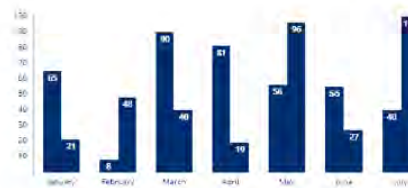
100%
% of complainants satisfied with the OGM process, YTD (Target 95%)



6
of OGM complaints received in six months



173
Total number of complaints received since September 2014



2.5
Average time (days) between receipt and closing out of complaints in six months

Figure 140: Key Performance Indicators of OGM

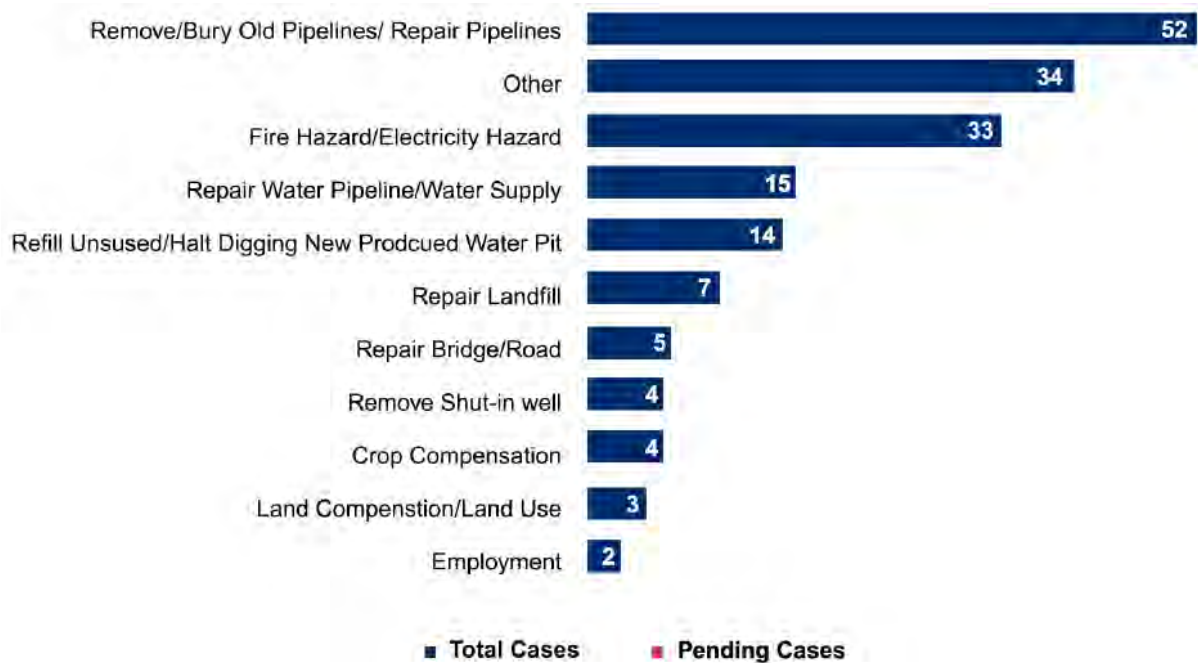


Figure 141: Received and Closed Cases, by quarter, 2014-to-date

Case Study

Operational Grievance Mechanism: A Unique Platform to Promote Two-way Communication

The Operational Grievance Mechanism (OGM) at MPRL E&P is an important avenue for capturing the concerns of affected communities and creating opportunities to find solutions together. It is the first grievance mechanism implemented by a company in Myanmar based on the UN Guiding Principles on Business and Human Rights. The main objective of the OGM is to facilitate direct and open dialogue between stakeholders and MPRL E&P, enabling local communities to have a voice and ensuring that the impacts associated with operations affecting the environment and surrounding communities are solicited, monitored, and effectively addressed.

MPRL E&P has worked closely with the operator of Mann Field and applied a multi-stakeholder approach to design and manage the OGM. It is the very first mechanism facilitated and managed by the host community, the state-owned entity, and MPRL E&P. The OGM was initially piloted in three out of the 14 communities in Mann Field in April 2014, and it was fully rolled out to the remaining communities in August 2014. This allows community stakeholders to voice their concerns directly to the company, avoiding the need for third-party involvement, and enables the company to respond to concerns before they escalate.

To encourage stakeholder accessibility and provide information to potential users of the OGM, effective communication with the entire community is essential. Therefore, MPRL E&P has conducted five Awareness Raising Campaigns on the OGM, each with a unique design, over several consecutive years since 2016. Recently, for the fiscal year 2022-2023, MPRL E&P launched its fifth OGM Awareness Raising Campaign in Mann Field. This year's campaign featured a two-day, four-session event with six hands-on exhibits showcasing CSR initiatives and a cartoon gallery. Crowd control measures were in place during the third week of March 2023.

U Tun Hla Aung, a Village Administrator from Mann Kyoe Village, expressed his satisfaction with the mechanism, stating, "I provide farmers in Mann Kyoe with OGM information and sound advice to effectively utilize this mechanism, which is designed to enhance mutual benefits and respect for each party. The sustainability of the OGM and the increased awareness among Mann Field Communities members, including children who participated in this year's campaign, make me very pleased."

The campaign aimed to strengthen awareness about the OGM and build trust in the mechanism's ability to resolve issues. It played a crucial role in fostering a better relationship between Myanma Oil and Gas Enterprise, MPRL E&P, and Mann Field Communities. The two-day campaign took place in Nann U, Kyar Kan, Mann Kyoe, and Mei Bayt Kone on 14 and 16 March 2023. It promoted awareness and practice of

the OGM among community members, with the support and efforts of the CSR Team members and Community Volunteers.

Daw Aye Aye Myint @ Ma Phyu, a Community Volunteer from Mann Field, shared her perspective on the campaign, saying, “I participated in this year’s campaign, and I found the involvement of community members highly notable. Both school children and adults happily engaged in the fantastic activities and showed their eagerness, especially in the cartoon gallery.”

The campaign featured exhibit booths showcasing the OGM Flow Chart, MPRL E&P’s Agricultural and Environmental initiatives, Trash Hero Minbu, Mobile Clinic, Educational Partnership, Community Infrastructure Development, as well as a Cartoon Gallery and Jigsaw Game Stations. A total of 788 community participants actively and happily joined the campaign.

MPRL E&P has implemented the OGM in Mann Field since September 2014, committing to engage with communities and promote two-way communication to build mutual trust and maintain the social license from local communities. “As of May 2023, there have been a total of 167 logged OGM cases. An Impact Assessment Report conducted at the end of the fiscal year 2011-2022 revealed that 97 percent of the respondents were aware of the mechanism and its procedures,” stated by the Monitoring, Evaluation and Learning Coordinator from MPRL E&P’s CSR & Communications Department.

Over time, by working together to minimize adverse impacts and address relevant needs, a successful partnership has been established between project-affected stakeholders and MPRL E&P. One key indicator of the mechanism’s performance is that 95 percent of complainants are satisfied with the process. During the fiscal year 2022-2023, 14 cases were effectively filed through the OGM, with a 98% satisfaction rate regarding how all 14 cases were addressed and closed out. This demonstrates the success of the annual awareness raising activities and the robust relationships facilitated by the CSR Team, Community Volunteers, and Mann Field Communities, leading to positive outcomes and achieving targets.

10.6.8 Stakeholder Engagement and Information Disclosure



In MPRL E&P, stakeholder engagement is a fundamental component of our strategy for human rights management and facilitating access to remedies. Timely and regular engagement with our key stakeholders is a cornerstone in our CSR Program in Mann Field. We actively engage with stakeholders at various levels, including field, community, local, and regional, to establish a robust two-way communication channel.

Progress Updates

- Conducted a series of meetings with the respective stakeholders for the Community Investment Initiatives in Mann Field.
- Presented the second Biannual CSR Performance Progress of FY 2022-2023 to MOGE in Nay Pyi Taw in May.
- Organized the second Biannual CSR Progress Update and Review Workshop with Village Administrators, Village Development Committees and Community Volunteers, with a total number of 49 attendees in Mann Field in May.
- Published Insight! Newsletter (Issue-35) and Doh Mann Myay Newsletter (Issue-9) on 26 June 2023.
- Distributed Insight! Newsletter (Issue-35), Doh Mann Myay Newsletter (Issue-9) and the First Quarter CSR Progress Report of FY 2023-2024 to the regional stakeholders in July.
- Held several meetings with stakeholders for arranging eye health program, discussing novitation (Shinpyu) ceremony, addressing OGM cases and recruiting a new Community Volunteer in Mann Kyoe Village in July.
- Initiated feedback survey to boost the readership of MPRL E&P's Newsletters in August.
- Organized the first Biannual CSR Progress Update and Mid-year Reflection Workshop with Village Administrators, Village Development Committees and Community Volunteers and received a total number of (67) attendees in September.
- Published Insight! Newsletter (Issue-36), Doh Mann Myay Newsletter (Issue-10) and submitted the periodic reports to the respective stakeholders in September.



Figure 142: Meeting with Respective Stakeholders for Discussion of Community Investment Initiatives in Mann Field



Figure 143: Presenting Second Biannual CSR Performance Progress of FY 2022-2023 in MOGE (Nay Pyi Taw)



Figure 144: Organizing Second Biannual CSR Progress Update and Review Workshop of FY 2022-2023 in Mann Field



Figure 145: Publishing Insight! Newsletter (Issue-35) and Doh Mann Myay Newsletter (Issue-9)



Figure 146: Publishing Insight! Newsletter (Issue-36) and Doh Mann Myay Newsletter (Issue-10)



Figure 147: Conducting Feedback Survey to Boost the Readership of MPRL E&P's Newsletters



Figure 148: Submitting Quarterly CSR Progress Reports to Respective Stakeholders



Figure 149: Meeting with Village Administrators and Village Development Committees for Novitation (Shinpyu) Ceremony



Figure 150: Recruiting a New Community Volunteer in Mann Kyoee Village



Figure 151: Distributing Insight! Newsletter, Doh Mann Myay Newsletter and Quarterly CSR Progress Report to Regional Stakeholders



Figure 152: Organizing First Biannual CSR Progress Update and Review Workshop of FY 2023-2024 in Mann Field

10.6.9 Corporate Philanthropy



At MPRL E&P, we believe that part of our corporate responsibility is to give back to our communities, and our philanthropic focus is designed to make a meaningful impact in the communities we serve. Our corporate philanthropic activities include donations and contributions to community works, employee volunteering, disaster relief program and any other business arrangements which aim to support a social cause.

Progress Updates

- Contributed MMK 100,000,000 to the Cyclone Mocha Disaster Relief Fund for Rakhine State through Ministry of Energy (Nay Pyi Taw) in May.
- Contributed MMK 100,000,000 to the Cyclone Mocha Disaster Relief Fund for Rakhine through Yangon Regional Military Command in May.
- Contributed MMK 1,000,000 to the Cyclone Mocha Disaster Relief Fund of Minbu District General Administration Department through MOGE (Mann Field) in May.
- Contributed THB 500,000 to the Disaster Relief for the victims affected by Cyclone Mocha in Myanmar through Embassy of the Republic of the Union of Myanmar (Bangkok) in June.
- Contributed MMK 5,000,000 to the Cyclone Mocha Disaster Relief Fund for Rakhine through MOGE (Nay Pyi Taw).
- Contributed MMK 6,300,000 to the Cyclone Mocha Disaster Relief Fund for Rakhine through Ministry of Natural Resources and Environmental Conservation.
- Donated CHIGO (1.5 HP) air conditioner with the total cost of MMK 997,500 for the eye operating room in Minbu Hospital in July.
- Donated plastic armchairs with the total cost of MMK 2,000,000 to Minbu District Administration Department for use in Minbu U Awbatha Hall.



မျက်ခမ်းစပ်နှင့် မျက်မမြင်ကာကွယ်ရေး စီမံကိန်းဌာန
(မင်းဘူးဆေးရုံ)



လက်ခံရရှိကြောင်းနှင့် ဂုဏ်ပြုမှတ်တမ်း

ကျန်းမာရေးဝန်ကြီးဌာန၊ ပြည်သူ့ကျန်းမာရေးဦးစီးဌာန၊ မျက်ခမ်းစပ်နှင့် မျက်မမြင်
ကာကွယ်ရေး စီမံကိန်းဌာန (မင်းဘူးဆေးရုံ) မျက်စိခွဲစိတ်ခန်းအတွက် လေ အေးပေးစက်
(Chigo 1.5 HP) ဆက်စပ်ပစ္စည်းများနှင့် တပ်ဆင်ခတ်အတွက် ကုန်ကျစရိတ်စုစုပေါင်း
ကျပ် ၉၉၇,၅၀၀/- (ကျပ်ကိုးသိန်းကိုးသောင်းခုနစ်ထောင်ငါးရာကျပ်တိတိ) ကို MPRL
E&P (CSR အစီအစဉ်) ဖြင့်ပံ့ပိုးပါသောကြောင့် ဤဂုဏ်ပြုမှတ်တမ်းလွှာ ဖြင့်
မှတ်တမ်းတင် ဂုဏ်ပြုအပ်ပါသည်။

၆
ဒေါက်တာဒေါ်အိအိအောင်
(မင်းဘူးဆေးရုံ)
မျက်စိအထူးကုဆရာဝန်
မျက်ခမ်းစပ်နှင့် မျက်မမြင်ကာကွယ်ရေးစီမံကိန်း
ဆေးဌာန (၅)၊ မင်းဘူးဆေးရုံ
မင်းဘူးမြို့။

ရက်စွဲ။ ။ ၂၀၂၃ ခုနှစ်၊ ဇူလိုင်လ (၅) ရက်

Figure 153: Donating CHIGO Aircon for Eye Operation Room at Minbu Hospital



မင်းဘူးခရိုင်စီမံအုပ်ချုပ်ရေးအဖွဲ့



ဂုဏ်ကြိုမြုတ်တမ်းစာတမ်း

အလှူရှင်အမည် -- MPRL E&P Pte Ltd.
ခန့်ရပ်လိပ်စာ -- မင်းဘူးမြို့၊
အလှူတော်ငွေ -- ကျပ် (၂၀)သိန်း
(ကျပ်သိန်းနှစ်ဆယ်တိတိ)

မင်းဘူးခရိုင်၊ မင်းဘူးမြို့၊ မင်းပူဦးညွှန်အစိုးရအဖွဲ့ ကျင်းပပြုလုပ်သည့်
နိုင်ငံတော်အဆင့်၊ တိုင်း/ခရိုင်/မြို့နယ်အဆင့် ဌာနဆိုင်ရာများ ၊
မြို့/မြို့ပေတွဲဆိုင်ရာများ၊ ဆောင်ရွက်ရာတွင် အသုံးပြုနိုင်ရေးအတွက်
လက်တင်ပါအစရောင်ထူ ပလတ်စတစ်ဆိုင်ခုံ (၁၀၀) ခုအား
ပေးအပ်လှူဒါန်းမှုအတွက် အလှူရှင်အား ဤဂုဏ်ကြိုမြုတ်တမ်းစာတမ်းဖြင့်
မှတ်တမ်းတင် ဂုဏ်ပြုအပ်ပါသည်။


ဥက္ကဋ္ဌ
ခရိုင်စီမံအုပ်ချုပ်ရေးအဖွဲ့
မင်းဘူးမြို့

ရက်စွဲ ၊ ၁၉၉၉ခုနှစ်၊ ခါးခေါင်လဆန်း (၆) ရက်
၂၀၂၀-၂၀၂၃ (အစီစဉ်)

Figure 154: Donating Plastic Armchairs to Minbu District Administration Department

11. Conclusion

The seventh submission of the Environmental Monitoring Report for the Mann Field EOR Project has been successfully completed, encompassing field activities and self-environmental monitoring spanning the six-month period from April 2023 to September 2023. This effort comes after the receipt of the Environmental Compliance Certificate (ECC) in 2019. During this time frame, we actively conducted self-environmental monitoring, including Air & Noise Quality Monitoring at Z3AQN & Z4AQN, Soil Quality Monitoring at Z3S1, Z3S2, Z4S1, and Z4S2, as well as water quality monitoring at Z3SW1, Z3SW2, Z3GW1, Z3GW2, Z4SW1, Z4SW2, and Z4GW2, in areas conducive to such assessments.

For the locations initially established for baseline monitoring, we plan to conduct Air, Noise, Soil, surface water, and groundwater quality monitoring once conditions become more favorable.

As part of our continuous commitment to environmental stewardship, we initiated the process of requesting an extension for the Mann Field Environmental Compliance Certificate (ECC). This application was submitted through the regional Environmental Conservation Department (Magway), approximately six months ahead of its scheduled expiration in March 2024.

Furthermore, as part of our ongoing efforts to enhance waste management practices, we responsibly disposed of approximately 260.0 kg of waste on electrical and electronic equipment at DOWA in August 2023.

In our Mann Oil Field operations, we faced both opportunities and challenges. Increased security measures led to daytime-only operations but also posed operational threats. We tackled issues like oil reserve depletion, pilfering disruptions, and logistics problems while maintaining our environmental commitment. We closely monitored environmental impacts, engaged in CSR and HSE initiatives, and promoted a culture aligned with our policies. Our dedication to ECC commitments ensures regulatory compliance, goal achievement, and ongoing improvement.

12. Annex

Annex – 1 Laboratory Results

Annex – 2 Equipment Calibration Certificate

Annex – 3 Waste Disposal Certificate

Annex – 1 Laboratory Results



မကွေးတိုင်းဒေသကြီး
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးရုံး
လေအရည်အသွေးတိုင်းတာမှုရလဒ်



Air Quality Result Form

Name : MPRL E&P Pte. Ltd
Location : မင်းဘူးမြို့နယ်၊ မန်းရေခံမြေ
 (Z3AQN - 20°13'21.45"N 94°51'19.89"E)
Analytical Date : 12-7-2023 to 13-7-2023
Reporting Date : 7-8-2023

No.	Parameter	Unit	Result	National Environmental Quality (Emission) Guidelines	Remark
1	PM ₁₀	μg/m ³	9.44	50	
2	PM _{2.5}	μg/m ³	3.35	25	
3	Ammonia (NH ₃)	ppm	17905.8	-	
4	Carbon Monoxide(CO)	ppm	0.1	-	
5	Hydrogen Sulfide(H ₂ S)	ppb	21.62	-	
6	Methane (CH ₄)	ppm	795.44	-	
7	Nitrogen Dioxide(NO ₂)	ppm	0.05	200	
8	Ozone (O ₃)	ppm	0.01	100	
9	Relative Humidity	-	74.12	-	
10	Temperature	°F	27.76	-	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



မကွေးတိုင်းဒေသကြီး
ဝတ်စုံကိုင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးရုံး
ဆူညံသံတိုင်းတာမှုရလဒ်



Noise Analysis Result Form

Name : MPRL E&P Pte. Ltd
Location : မင်းဘူးမြို့နယ်၊ မန်းရေနံမြေ
 (Z3AQN - 20°13'21.45"N၊ 94°51'19.89"E)
Analytical Date : 12-7-2023
Reporting Date : 7-8-2023

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	55	45
Industrial	70	70
Average Test Result	44.9	42.3

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



မကွေးတိုင်းဒေသကြီး
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ဣန္ဒာဝန်ကြားရေးမှူးရုံး
လေအရည်အသွေးတိုင်းတာမှုရလဒ်



Air Quality Result Form

Name : MPRL E&P Pte. Ltd
Location : ခင်းဘူးမြို့နယ်၊ မန်းရေခုံမြေ
 (Z4AQN - 20°11'41.75"N 94°52'32.29"E)
Analytical Date : 13-7-2023 to 14-7-2023
Reporting Date : 7-8-2023

No.	Parameter	Unit	Result	National Environmental Quality (Emission) Guidelines	Remark
1	PM ₁₀	µg/m ³	15.04	50	
2	PM _{2.5}	µg/m ³	7.07	25	
3	Ammonia (NH ₃)	ppm	6.73	-	
4	Carbon Monoxide(CO)	ppm	0.11	-	
5	Hydrogen Sulfide(H ₂ S)	ppb	32.7	-	
6	Methane (CH ₄)	ppm	862.2	-	
7	Nitrogen Dioxide(NO ₂)	ppm	0.05	200	
8	Ozone (O ₃)	ppm	0.02	100	
9	Relative Humidity	-	76.01	-	
10	Temperature	°F	27.39	-	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



မကွေးတိုင်းဒေသကြီး
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ဩန်ကြားရေးမှူးရုံး
အုညသံတိုင်းတာမွရလမ်း



Noise Analysis Result Form

Name : MPRL E&P Pte. Ltd
 Location : မင်းဘူးမြို့နယ်၊ မန်းရေခုံမြေ
 (Z4AQN - 20°11'41.75"N 94°52'32.29"E)
 Analytical Date : 13-7-2023
 Reporting Date : 7-8-2023

Receptor	One Hour LAeq(dBA) ^a	
	Daytime	Nighttime
	07:00 – 22:00 (10:00 – 22:00 for Public holidays)	22:00- 07:00 (22:00- 10:00 for Public holidays)
Residential	55	45
Industrial	70	70
Average Test Result	42.0	44.9

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



မကွေးတိုင်းဒေသကြီး
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မြေအရည်အသွေးတိုင်းတာမှုရလဒ်



Soil Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd Sample Name: Soil
Sample Location: Z3S2 Sampling Date: 14-7-2023
Receiving Date: 14-7-2023 Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	International Agricultural Soil Standard	Remark
1	19-7-2023	pH	-	6.59	6-7.5	
2	20-7-2023	Lead (Pb)	mg/kg	8.8	500	
3	20-7-2023	Cadmium (Cd)	mg/kg	-0.1	1	
4	20-7-2023	Copper (Cu)	mg/kg	4.72	100	
5	20-7-2023	Zinc (Zn)	mg/kg	22.66	250	
6	19-7-2023	Manganese (Mn)	mg/kg	140	500	
7	19-7-2023	Iron (Fe)	mg/kg	127	NGVS	

*NGVS= No guideline value set

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



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Soil Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd **Sample Name:** Soil
Sample Location: Z4S1 **Sampling Date:** 14-7-2023
Receiving Date: 14-7-2023 **Reporting Date:** 7-8-2023

No.	Analytical date	Parameter	Unit	Result	International Agricultural Soil Standard	Remark
1	19-7-2023	pH	-	7.28	6-7.5	
2	20-7-2023	Lead (Pb)	mg/kg	20.76	500	
3	20-7-2023	Cadmium (Cd)	mg/kg	-0.14	1	
4	20-7-2023	Copper (Cu)	mg/kg	8.53	100	
5	20-7-2023	Zinc (Zn)	mg/kg	45.04	250	
6	19-7-2023	Manganese (Mn)	mg/kg	70	500	
7	19-7-2023	Iron (Fe)	mg/kg	125.5	NGVS	

*NGVS= No guideline value set

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



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Soil Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd Sample Name: Soil
Sample Location: Z4S2 Sampling Date: 14-7-2023
Receiving Date: 14-7-2023 Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	International Agricultural Soil Standard	Remark
1	19-7-2023	pH	-	7.36	6-7.5	
2	20-7-2023	Lead (Pb)	mg/kg	12.45	500	
3	20-7-2023	Cadmium (Cd)	mg/kg	-0.1	1	
4	20-7-2023	Copper (Cu)	mg/kg	8.81	100	
5	20-7-2023	Zinc (Zn)	mg/kg	49.65	250	
6	19-7-2023	Manganese (Mn)	mg/kg	105	500	
7	19-7-2023	Iron (Fe)	mg/kg	121	NGVS	

*NGVS= No guideline value set

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



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ရေအရည်အသွေးတိုင်းတာမှုရလဒ်



Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd Sample Name: Surface Water
 Sample Location: Z35W1 Sampling Date: 14-7-2023
 Receiving Date: 14-7-2023 Sampling Time: 11:25 AM
 Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	18-7-2023	Chemical Oxygen Demand (COD)	mg/l	0	18-49	
2	18-7-2023 to 23-7-2023	Biochemical Oxygen Demand (BOD)	mg/l	59.3	30	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



မေတ္တဝါတိုင်းဒေသကြီး
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ရေအရည်အသွေးတိုင်းတာမှုရလဒ်



Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd **Sample Name:** Surface Water
Sample Location: Z35W1 **Sampling Date:** 14-7-2023
Receiving Date: 14-7-2023 **Sampling Time:** 11:25 AM
Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	14-7-2023	pH	-	7.53	6.5-8.5	
2	14-7-2023	Turbidity	NTU	83.4	5	
3	14 7 2023	Total Dissolved Solids (TDS)	g/l	0.20	1	
4	14-7-2023	Salinity	ppt	0.15	0.6	
5	14-7-2023	Conductivity	mS/cm	0.31	4	
6	14-7-2023	Dissolved Oxygen (DO)	mg/l	8.18	5-9.5	
7	14-7-2023	Oxidation Reduction Potential (ORP)	mV	78	-	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01789 Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPRL E&P PTE LTD	Sample ID :	9005
Organization :	-	Sample Name :	Z3SW1
Client ID :	-	Sample Type / Source :	Surface Water
Registration Date & Time :	20.7.2023 ; 12:00 PM	Sampling Date & Time :	19.7.23 ; 11:00 AM
Contact :	-	Sample Location :	Minbu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Colour ¹	88	HU	≤ 15 ¹	Above the limit
2	TSS ²	7	mg/L	-	-
3	Hardness ³	28	mg/L	≤ 500 ³	Normal
4	Total Phosphorous ⁴	< 1.5	mg/L	-	-
5	Alkalinity ⁵	6	mg/L	-	-
6	Oil & Grease ⁶	5	mg/L	-	-
7	Total Nitrogen ⁷	1.4	mg/L	-	-

¹ND⁸ = Not Detected

²LOD⁹ = Lower limit of detection

³-⁷ = No Reference Standard

Tested by	Checked by	Approved by
 Daw Mya Aye Khine Lab. Technician II Ecological Laboratory ALARM	 Thaw Len Tun Lab. Technician I Ecological Laboratory ALARM	 Dr. Aye Aye Wip Laboratory In-Charge Ecological Laboratory (ALARM)

No.237, Corner of Shu Khin Thar Street & 7 Street, (4) Block, South Okkalapa Township, Yangon.
Tel: 09-407496078, Email: aelab.2022@gmail.com



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Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd **Sample Name:** Surface Water
Sample Location: Z3SW2 **Sampling Date:** 14-7-2023
Receiving Date: 14-7-2023 **Sampling Time:** 11:38AM
Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	14-7-2023	pH	-	7.58	6.5-8.5	
2	14-7-2023	Turbidity	NTU	102	5	
3	14-7-2023	Total Dissolved Solids (TDS)	g/l	0.27	1	
4	14-7-2023	Salinity	ppt	0.2	0.6	
5	14-7-2023	Conductivity	mS/cm	0.42	4	
6	14-7-2023	Dissolved Oxygen (DO)	mg/l	7.49	5-9.5	
7	14-7-2023	Oxidation Reduction Potential (ORP)	mV	115	-	

Analysis by, Khin Tint Tint Aung

Approved by, Ohnmar Myint

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01790

Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPRL B&P PTE LTD	Sample ID :	9906
Organization :	-	Sample Name :	Z35W2
Client ID :	-	Sample Type / Source :	Surface Water
Registration Date & Time :	20.7.2023 ; 12:00 PM	Sampling Date & Time :	18.7.23 ; 11:20 AM
Contact :	-	Sample Location :	Miabou Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Colour ¹	103	HU	≤10 ²	Above the limit
2	TSS ²	7	mg/L	-	-
3	Hardness ³	239	mg/L	≤500 ⁴	Normal
4	Total Phosphorus ⁵	< 1.5	mg/L	-	-
5	Alkalinity ⁶	31	mg/L	-	-
6	Oil & Grease ⁷	6	mg/L	-	-
7	Total Nitrogen ⁸	2.4	mg/L	-	-

¹ND⁹ = Not Detected

²LOD⁹ = Lower limit of detection

³- = No Reference Standard

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

No.237, Corner of Sha Khan Thar Street & 7 Street, (3) Block, South Dakhkhalapa Township, Yangon
Tel: 09-407196878, Email: aelab.2022@gmail.com



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Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd Sample Name: Surface Water
Sample Location: Z4SW1 Sampling Date: 14-7-2023
Receiving Date: 14-7-2023 Sampling Time: 10:00AM
Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	18-7-2023	Chemical Oxygen Demand (COD)	mg/l	0	18-49	
2	18-7-2023 to 23-7-2023	Biochemical Oxygen Demand (BOD)	mg/l	9.5	30	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint



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ရေအရည်အသွေးတိုင်းတာမှုရလဒ်



Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd

Sample Name: Surface Water

Sample Location: Z4SW1

Sampling Date: 14-7-2023

Receiving Date: 14-7-2023

Sampling Time: 10:00AM

Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	14-7-2023	pH	-	4.82	6.5-8.5	
2	14-7-2023	Turbidity	NTU	972	5	
3	14-7-2023	Total Dissolved Solids (TDS)	g/l	0.1	1	
4	14-7-2023	Salinity	Ppt	0.04	0.6	
5	14-7-2023	Conductivity	mS/cm	0.1	4	
6	14-7-2023	Dissolved Oxygen (DO)	mg/l	9.2	5-9.5	
7	14-7-2023	Oxidation Reduction Potential (ORP)	mV	302	-	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL WR 23-01791 Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPRL E&P PTE LTD	Sample ID :	9907
Organization :	-	Sample Name :	Z45W1
Client ID :	-	Sample Type / Source :	Surface Water
Registration Date & Time :	20.7.2023 ; 12:00 PM	Sampling Date & Time :	19.7.23 ; 11:50 AM
Contact :	-	Sample Location :	Minbu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Colour ¹	458	HU	515 ²	Above the limit
2	TSS ²	181	mg/L	-	-
3	Hardness ²	24	mg/L	500 ²	Normal
4	Total Phosphorous ²	<1.5	mg/L	-	-
5	Alkalinity ²	<5	mg/L	-	-
6	Oil & Grease ²	6	mg/L	-	-
7	Total Nitrogen ²	2.6	mg/L	-	-

¹ND = Not Detected

²LOD = Lower limit of detection

³- = No Reference Standard

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

No.237, Corner of Shu Khin Thar Street & 7 Street, 15 Block, South Okkalapa Township, Yangon.
Tel: 09-107196078, E-mail: anlab.2022@gmail.com



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Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd Sample Name: Surface Water
Sample Location: Z4SW2 Sampling Date: 14-7-2023
Receiving Date: 14-7-2023 Sampling Time: 10:10AM
Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	18-7-2023	Chemical Oxygen Demand (COD)	mg/l	0	18-49	
2	18-7-2023 to 23-7-2023	Biochemical Oxygen Demand (BOD)	mg/l	9.8	30	

Analysis By, Khin Tint Tint Aung

Approved By, Dhnmar Myint



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ရေအရည်အသွေးတိုင်းတာမှုရလဒ်



Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd **Sample Name:** Surface Water
Sample Location: Z4SW2 **Sampling Date:** 14-7-2023
Receiving Date: 14-7-2023 **Sampling Time:** 10:10AM
Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	14-7-2023	pH	-	6.36	6.5-8.5	
2	14-7-2023	Turbidity	NTU	1000	5	
3	14-7-2023	Total Dissolved Solids (TDS)	g/l	0.02	1	
4	14-7-2023	Salinity	ppt	0.02	0.6	
5	14-7-2023	Conductivity	mS/cm	0.04	4	
6	14-7-2023	Dissolved Oxygen (DO)	mg/l	9.36	5-9.5	
7	14-7-2023	Oxidation Reduction Potential (ORP)	mV	193	-	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01792

Date : August 4, 2023

Client Information

Client Name : WPRL S&P PTE LTD
 Organisation :
 Client ID : -
 Registration Date & Time : 20.7.2023 ;
 12:00 PM
 Contact : -
 Email : -
 Testing Purpose : For Monitoring

Sample Information

Sample ID : 9809
 Sample Name : ZASW2
 Sample Type / Source : Surface Water
 Sampling Date & Time : 19.7.23 ;
 12:10 PM
 Sample Location : Minbu Township
 Latitude : -
 Longitude : -

Testing Results

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

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Colour ^o	390	HU	5LU ^o	Above the limit
2	TSS ^o	185	mg/L	-	-
3	Hardness ^o	24	mg/L	<500 ^o	Normal
4	Total Phosphorus ^o	<2.5	mg/L	-	-
5	Alkalinity ^o	<5	mg/L	-	-
6	Oil & Grease ^o	Y	mg/L	-	-
7	Total Nitrogen ^o	1.2	mg/L	-	-

ND = Not Detected

LOD = Lower limit of detection

*- * = No Reference Standard

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

No.237, Corner of Shw. Khin Thar Street & 7 Street, (3) Block, South Okkalapa Township, Yangon.
 Tel: 09-407496078, Email: aelab.2023@gmail.com



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Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd Sample Name: Ground Water (Tube Well)
 Sample Location: Z3GW1 Sampling Date: 14-7-2023
 Receiving Date: 14-7-2023 Sampling Time: 11:15 AM
 Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	
					Organization	Remark
1	18-7-2023	Chemical Oxygen Demand (COD)	mg/l	0	18-49	
2	18-7-2023 to 23-7-2023	Biochemical Oxygen Demand (BOD)	mg/l	7.4	30	
3	14-7-2023	pH	-	7.36	6.5-8.5	
4	14-7-2023	Turbidity	NTU	0.00	5	
5	14-7-2023	Total Dissolved Solids (TDS)	g/l	1.54	1	
6	14-7-2023	Salinity	ppt	1.22	0.6	
7	14-7-2023	Conductivity	mS/cm	2.4	4	
8	14-7-2023	Dissolved Oxygen (DO)	mg/l	2.3	5-9.5	
9	14-7-2023	Oxidation Reduction Potential (ORP)	mV	-83	-	

Analysis by, Khin Tint Tint Aung

Approved by, Ohnmar Myint

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01793

Date : August 4, 2023

Client Information

Client Name : MPRL E&P PTE LTD
 Organization : -
 Client ID : -
 Registration Date & Time : 20.1.2023 ;
 12:00 PM
 Contact : -
 Email : -
 Testing Purpose : For Monitoring

Sample Information

Sample ID : 9909
 Sample Name : Z36W1
 Sample Type / Source : Ground
 Sampling Date & Time : 19.7.23 ;
 11:30 AM
 Sample Location : Minbu Township
 Latitude : -
 Longitude : -

Testing Results

This laboratory's analysis report is based solely on the sample submitted by the client unless stated to the contrary. This report shall not be reproduced except in full, without written approval of the laboratory.

Sl.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Colour ²	3	HU	≤15 ⁴	Normal
2	TSS ²	0	mg/L	-	-
3	Hardness ³	25	mg/L	≤500 ⁴	Normal
4	Total Phosphorous ²	< 1.5	mg/L	-	-
5	Alkalinity ⁴	12	mg/L	-	-
6	Oil & Grease ²	0	mg/L	-	-
7	Total Nitrogen ⁴	2.5	mg/L	-	-

"ND" = Not Detected

"LOD" = Lower limit of detection

"- " = No Reference Standard

Tested by

Checked by

Approved by

Daw May Myat Khine
 Lab. Technician I
 Ecological Laboratory
 ALARM

Daw Lin Myat Aung
 Lab. Technician I
 Ecological Laboratory
 ALARM

Dr. Aye Aye Win
 Laboratory In-Charge
 Ecological Laboratory
 (ALARM)

No. 237, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Okkalapa Township, Yangon.
 Tel: 09-407496078, Email: aelab_2022@gmail.com



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ရေအရည်အသွေးတိုင်းတာမှုရလဒ်



Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd Sample Name: Ground Water (Tube Well)
Sample Location: Z3GW2 Sampling Date: 14-7-2023
Receiving Date: 14-7-2023 Sampling Time: 11:05 AM
Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	18-7-2023	Chemical Oxygen Demand (COD)	mg/l	0	18-49	
2	18-7-2023 to 23-7-2023	Biochemical Oxygen Demand (BOD)	mg/l	12.1	30	
3	14-7-2023	pH	-	6.7	6.5-8.5	
4	14-7-2023	Turbidity	NTU	14.2	5	
5	14-7-2023	Total Dissolved Solids (TDS)	g/l	0.46	1	
6	14-7-2023	Salinity	ppt	0.35	0.6	
7	14-7-2023	Conductivity	mS/cm	0.72	4	
8	14-7-2023	Dissolved Oxygen (DO)	mg/l	2.28	5-9.5	
9	14-7-2023	Oxidation Reduction Potential (ORP)	mV	-38	-	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01794

Date : August 4, 2023

Client Information

Client Name : MPRL EMP PTE LTD
 Organization : -
 Client ID : -
 Registration Date & Time : 20.7.2023 ; 12:07 PM
 Contact : -
 Email : -
 Testing Purpose : For Monitoring

Sample Information

Sample ID : 9910
 Sample Name : Z36W2
 Sample Type / Source : Ground
 Sampling Date & Time : 19.7.23 ; 11:35 AM
 Sample Location : Minbe Township
 Latitude : -
 Longitude : -

Testing Results

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

Sl.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Colour ^o	164	HU	≤15 ^o	Above the limit
2	TSS ^o	8	mg/L	-	-
3	Hardness ^o	29	mg/L	≤500 ^o	Normal
4	Total Phosphorus ^o	< 1.5	mg/L	-	-
5	Alkalinity ^o	< 5	mg/L	-	-
6	Oil & Grease ^o	8	mg/L	-	-
7	Total Nitrogen ^o	14.5	mg/L	-	-

ND = Not Detected

LOD = Lower limit of detection

"-" = No Reference Standard

Tested by	Checked by	Approved by
 Daw Aye Aye Win Lab. Technician II Ecological Laboratory (ALARM)	 Daw Tun Myint Aung Lab. Technician I Ecological Laboratory (ALARM)	 Dr. Aye Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

No.237, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oatkalapa Township, Yangon.
 Tel: 09-107496078, Email: alab.2022@gmail.com



မကွေးတိုင်းဒေသကြီး
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးရုံး
ရေအရည်အသွေးတိုင်းတာမှုရလဒ်



Water Analysis Result Form

Customer Name: MPRL E&P Pte. Ltd **Sample Name:** Ground Water (Tube Well)
Sample Location: Z4GW2 **Sampling Date:** 14-7-2023
Receiving Date: 14-7-2023 **Sampling Time:** 10:25 AM
Reporting Date: 7-8-2023

No.	Analytical date	Parameter	Unit	Result	World Health Organization (WHO)	Remark
1	18-7-2023	Chemical Oxygen Demand (COD)	mg/l	28	18-49	
2	18-7-2023 to 23-7-2023	Biochemical Oxygen Demand (BOD)	mg/l	13.4	30	
3	14-7-2023	pH	-	8.15	6.5-8.5	
4	14-7-2023	Turbidity	NTU	5.51	5	
5	14-7-2023	Total Dissolved Solids (TDS)	g/l	6.86	1	
6	14-7-2023	Salinity	ppt	6.26	0.6	
7	14-7-2023	Conductivity	mS/cm	11.1	4	
8	14-7-2023	Dissolved Oxygen (DO)	mg/l	3.32	5-9.5	
9	14-7-2023	Oxidation Reduction Potential (ORP)	mV	91	-	

Analysis By, Khin Tint Tint Aung

Approved By, Ohnmar Myint

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01795 Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPRL E&P PTE LTD	Sample ID :	9911
Organization :	-	Sample Name :	746W2
Client ID :	-	Sample Type / Source :	Ground
Registration Date & Time :	28.7.2023 ; 12:50 PM	Sampling Date & Time :	19.7.23 ; 12:25 PM
Contact :	-	Sample Location :	Minbu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results


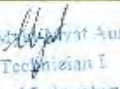

*The laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.
This report shall not be reproduced, except in full, without written approval of the laboratory.*

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	Colour ^o	8	HU	15 ^o	Normal
2	TSS ^o	2	mg/L	-	-
3	Hardness ^o	4390	mg/L	500 ^o	Above the limit
4	Total Phosphorus ^o	< 1.5	mg/L	-	-
5	Alkalinity ^o	< 5	mg/L	-	-
6	Oil & Grease ^o	3	mg/L	-	-
7	Total Nitrogen ^o	12.3	mg/L	-	-

"ND" = Not Detected

"LOD" = Lower limit of detection

"- " = No Reference Standard

Tested by	Checked by	Approved by
 Daw Mye Mye Lab. Technician I Ecological Laboratory ALARM	 Daw Lin Mye Lab. Technician I Ecological Laboratory ALARM	 Dr. Aye Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

No. 237, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon.
Tel: 09-407496078, Email: elabs.2022@gmail.com



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory



ပိုမိုတိုးတက်စေရန်နှင့် မြန်မာ့မိခင်မြေကို ပြန်လည်မွေးဖွားစေရန် (Advancing Life and Regenerating Motherland, ALARM)

No. 11, Consonat Sika Kham Thar Street & 7 Street, (5) Block, South Dakaikapa Township, Yangon, Tel: 09-40748673

စာအမှတ်/Reference Number: EL (M)-R / 1124

နေ့ရက်/Date: 27th, July, 2023

ဓာတ်ခွဲခန်းစစ်ဆေးမှုအစီအစဉ်/ Laboratory Analysis Report

နမူနာအမည် / Sample Profile

နမူနာအမည် / Sample Name	Bio-Fiber Outlet	နမူနာအမှတ် / Sample ID	1124	
နေရာ (မြို့နယ်) / Location (Township)	Mingbu Township	လတ္တီတွဒ် / Latitude		
နယ်နိမိတ် (ပြည်နယ်/တိုင်း) / Location (Region/State)	Magway Region	လောင်ဂျီတွဒ် / Longitude		
ပေးပို့သူအမည် / Sender Name	U Han Myo Aung	နမူနာယူချိန် (နေ့ နာရီ) / Sampling Time (Date, Time)	19.7.2023	3:35 PM
ပေးပို့သူအဖွဲ့ / Organization	MPRL C & P PTE LTD	နမူနာစောင့်ဆိုင်းချိန် (နေ့ နာရီ) / Archiving Time (Date, Time)	20.7.2023	12:00 PM
ဆက်သွယ်ရန် / Contact	09 - 51778119			

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲခန်းစစ်ဆေးမှုအစီအစဉ်သည် ပေးပို့သူမှပေးပို့ခဲ့သည့် နမူနာပေါ်အခြေတင်ထားပါသည်။)

Analysis Results/စစ်ဆေးရလဒ်အကျဉ်းချုပ်

စဉ် / Sr.	အစစ်ဆေးရမည့် အရည်အသွေးညွှန်းကိန်း / Quality Parameter	ရလဒ် / Results	နည်းလမ်း / Method	စီမံကိန်းစံနှုန်း / Drinking Standard	မှတ်ချက် / Remarks
1	Total plate count (CFU/ml)		Total plate count method	0	
2	Total coliform count (MPN/100 ml) (Presumption test)	>1100	Most Probable Number method	0	
3	Total faecal coliform count (MPN/100ml) (Presumption test)		Most Probable Number method	0	
4	Total coliform count (CFU/ml) (Confirm test)		Fosin Methyl Blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		Plate count method	0	
7	Total faecal count (CFU/ml)		Plate count method	0	

Note: The target sample needs to test some additional tests to confirm total coliform and total faecal coliform.

စစ်ဆေးခဲ့သူ
Tasted by

May

May Myat Nyain
Research Assistant
ALARM

စစ်ဆေးကြိုက်သူ
Checked by

[Signature]

Aye Nyain Thu
Research Assistant
ALARM

တာဝန်ခံ
Approved by

[Signature]

Ni Tar Nwe
Research Scientist
ALARM

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01798

Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPRL ESP PTE LTD	Sample ID :	9914
Organisation :	-	Sample Name :	Bio-filter Outlet
Client ID :	-	Sample Type / Source :	Treated
Registration Date & Time :	20.7.2023 ; 12:00 PM	Sampling Date & Time :	19.7.23 ; 3:25 PM
Contact :	-	Sample Location :	Minbu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

This laboratory analysis report is based solely on the sample submitted by the client unless stated otherwise. This report shall not be reproduced without the written approval of the laboratory.

Sr.	Quality Parameters	Results	Units	Emission Standards	Remarks
1	pH ¹	7.7	S.U	6.0 - 9.0 ²	Normal
2	TSS ³	9	mg/L	≤50 ⁴	Normal
3	BOD ₅ ⁵	62	mg/L	≤ 50 ⁶	Above the limit
4	COD ⁷	107	mg/L	≤ 250 ⁸	Normal
5	Total Phosphorus ⁹	3.2	mg/L	≤ 2 ¹⁰	Above the limit
6	Oil & Grease ¹¹	7	mg/L	≤ 10 ¹²	Normal
7	Total Nitrogen ¹³	2.4	mg/L	-	-

"ND" = Not Detected

"LOD" = Lower limit of detection

" - " = No Reference Standard

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

No.237, Corner of Star Khin Thar Street & 7 Street, (G) Block, South Okkalapa Township, Yangon.
 Tel: 09-407496079, Email: aelab.2022@gmail.com

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01803 Date: August 4, 2023

Client Information		Sample Information	
Client Name	MPRL EMP PTE LTD	Sample ID	9919
Organization	-	Sample Name	Warehouse
Client ID	-	Sample Type / Source	-
Registration Date & Time	20.7.2023 ; 12:00 PM	Sampling Date & Time	19.7.23 ; 2:04 PM
Contact	-	Sample Location	Minbu Township
Email	-	Latitude	-
Testing Purpose	For Monitoring	Longitude	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Emission Standards	Remarks
1	pH ¹	7.2	S.U	6.0 - 9.0 ²	Normal
2	TSS ³	33	mg/L	≤50 ²	Normal
3	Chloride ⁴	141	mg/L	-	-
4	BOD ₅ ⁵	64	mg/L	≤ 30 ⁶	Above the limit
5	COD ⁷	110	mg/L	≤ 250 ⁶	Normal
6	Arsenic ⁸	0.005	mg/L	≤ 0.1 ⁹	Normal
7	Cadmium ⁸	0.01	mg/L	≤ 0.01 ¹⁰	Normal
8	Copper ¹	ND	mg/L	≤ 0.5 ³	LOD = 0.02 mg/L
9	Lead ¹	ND	mg/L	≤ 0.1 ⁴	LOD = 0.1 mg/L
10	Zinc ²	< 0.02	mg/L	≤ 2 ³	Normal
11	Nickel ⁶	ND	mg/L	≤ 0.5 ⁹	LOD = 0.1 mg/L
12	Sulfide ³	< 0.04	mg/L	≤ 1 ¹	Normal
13	Phenol ¹	< 0.1	mg/L	≤ 0.5 ⁹	Normal
14	Chromium (Hexavalent) ²	0.109	mg/L	≤ 0.1	Above the limit

¹ND¹ - Not Detected

²LOD² - Lower limit of detection

³- - No Reference Standard

Tested by	Checked by	Approved by
 Daw Mya Mya Khino Lab. Technician II Ecological Laboratory (ALARM)	 Daw Lin Win Lab. Technician I Ecological Laboratory (ALARM)	 Dr. Aye Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

No.237, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Okkalapa Township, Yangon.
Tel: 09-407496078, Email: aelab_2022@gmail.com

Report No. : GEM-LAB-202308007
 Revision No. : 1
 Report Date : 3 August, 2023
 Application No. : 0064 C001

Analysis Report

Client Name : MPRL E & P Pte Ltd.
 Address : 623, Pyay Road , Vantage Tower, Kamayut.
 Project Name :
 Sample Description
 Sample Name : Hyacinth Water
 Sample No. : W-2307081
 Waste Profile No. :
 Sampling Date : 20 July, 2023
 Sampling By : Customer
 Sample Received Date : 20 July, 2023
 Analytical Date : 20/07 3/08/2023

No.	Parameter	Method	Unit	Result	LOQ
1.	Vanadium	APHA 3120 B (Inductively Coupled Plasma) (ICP) Method	mg/l	<0.002	0.002
2.	Silver	APHA 3120 B (Inductively Coupled Plasma) (ICP) Method	mg/l	<0.002	0.002

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

Analysed By :

Ni Ni Aye Lwin
 Manager



Approved By :

Haddock Yoma Aung
 Managing Director

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



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory



စိမ်းလန်းအောင်မြင်မှု ဖြန့်တက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

No. 11, (Corner) 5th Km Thabe Street & 73 Street, 13/ Block, South Daka Suba Township, Yangon. T: +95-917691078

စာအမှတ်/Reference Number: EL (M)-R / 1123

ရက်စွဲ/Date: 27th, July, 2023

ဓာတ်ခွဲခန်းစစ်ဆေးမှုအရပ်ခံစာ/Laboratory Analysis Report

နမူနာအရပ်ခံ / Sample Profile

နမူနာအမည် / Sample Name	Downhole Workshop	နမူနာအမှတ် / Sample ID	1123	
နေရာ (မြို့နယ်) / Location (Township)	Maha Township	လတ္တီတွဒ် / Latitude		
နေရာ (တိုင်း/ပြည်နယ်) / Location (Region/State)	Magway Region	လောင်ဂျီတွဒ် / Longitude		
ပေးပို့သူအမည် / Sender Name	U Han Myo Aung	နမူနာကောက်ယူရက်စွဲ (ဖူး နာရီ) / Sampling Time (Date, Time)	19.7.2023	3:35 PM
ဆွေးနွေးသူ / Organisation	MPRL E & P PTE LTD	နမူနာပေးပို့ရက်စွဲ (ဖူး နာရီ) / Arriving Time (Date, Time)	20.7.2023	12:00 PM
ဆက်သွယ်ရန် / Contact	09 - 5177819			

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲခန်းစစ်ဆေးမှုအရပ်ခံစာသည် ခမူနာပေးပို့သူကောက်ယူမှုနှင့်ပေးပို့မှုအခြေအနေအထားပေါ်တွင်သာ မူတည်ပါသည်။)

Analysis Results/စစ်ဆေးမှုအရပ်ခံ

စဉ် / Sr.	စစ်ဆေးရန်အရပ်ခံ / Quality Parameter	ရလဒ် / Results	နည်းစဉ် / Method	စံသတ်မှတ်ချက် / Drinking Standard	မှတ်ချက် / Remarks
1	Total plate count (CFU/ml)		Total plate count method	0	
2	Total coliform count (MPN/100 ml) (Presumption test)	>1100	Most Probable Number method	0	
3	Total faecal coliform count (MPN/100ml) (Presumption test)		Most Probable Number method	0	
4	Total coliform count (CFU/ml) (Confirm test)		Esam Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Grain staining test	-	
6	Total coliform count (CFU/ml)		Plate count method	0	
7	Total E.coli count (CFU/ml)		Plate count method	0	

Note: The target sample needs to test some additional tests to confirm total coliform and total faecal coliform.

စစ်ဆေးသူ /

Tested by

May

May Myat Nyein
Research Assistant
ALARM

စစ်ဆေးသူ /

Checked by

Aye Nyein Thu

Aye Nyein Thu
Research Assistant
ALARM

အတည်ပြုသူ /

Approved by

Ni Tar Nwo

Ni Tar Nwo
Research Scientist
ALARM

ALARM Ecological Laboratory
Water Testing Result Report



Report Number: EL-WR-23-01797 Date : August 4, 2023

Client Information	Sample Information
Client Name : MPRL EMP PTE LTD	Sample ID : 9913
Organization : -	Sample Name : Downhole Workshop
Client ID : -	Sample Type / Source : Waste
Registration Date & Time : 20.7.2023 ; 12:00 PM	Sampling Date & Time : 19.7.23 ; 3:35 PM
Contact : -	Sample Location : Minbu Township
Email : -	Latitude : -
Testing Purpose : For Monitoring	Longitude : -

Testing Results

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

Sr.	Quality Parameters	Results	Units	Emission Standards	Remarks
1	pH ¹	7.5	SU	6.0 - 9.0 ¹	Normal
2	Temperature ²	26.8	°C	23 ^{1,4}	-
3	TSS ³	26	mg/L	≤50 ⁴	Normal
4	Ammonia ⁴	36	mg/L	≤ 10 ⁴	Above the limit
5	BOD ₅ ⁵	112	mg/L	≤ 50 ⁴	Above the limit
6	COD ⁶	180	mg/L	≤ 250 ⁴	Normal
7	Total Chlorine ⁷	< 0.02	mg/L	-	-
8	Total Phosphorus ²	0.8	mg/L	≤ 2 ¹¹	Normal
9	Arsenic ⁸	0.005	mg/L	≤ 0.1 ⁴	Normal
10	Cadmium ⁷	ND	mg/L	≤ 0.01 ⁴	LOD = 0.01 mg/L
11	Copper ⁸	ND	mg/L	≤ 0.5 ¹¹	LOD = 0.02 mg/L
12	Iron ⁷	0.46	mg/L	≤ 3.0 ¹¹	Normal
13	Lead ⁷	ND	mg/L	≤ 0.1 ²	LOD = 0.1 mg/L
14	Zinc ⁷	0.03	mg/L	≤ 2 ¹¹	Normal
15	Nickel ⁴	ND	mg/L	≤ 0.5 ⁹	LOD = 0.2 mg/L
16	Sulfide ⁸	< 0.04	mg/L	≤ 1 ¹¹	Normal
17	Phenol ⁴	< 0.1	mg/L	≤ 0.5 ⁴	Normal
18	Fluoride ²	0	mg/L	≤ 20 ¹¹	Normal
19	Oil & Grease ⁸	21	mg/L	≤ 10 ⁴	Above the limit
20	Chromium (hexavalent) ¹	0.10	mg/L	≤ 0.1	Normal

"ND" = Not Detected "LOD" = lower limit of detection "-" = No Reference Standard

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

No. 237, Corner of Sine Khim Thar Street & 7 Street, (3) Block, South Oaikkalata Township, Yangon.
Tel: 09-407496078, Email: aelab.2022@gmail.com

Report No. : GEM-LAB-202308005
 Revisor No. : 1
 Report Date : 3 August, 2023
 Application No. : 0064-CD01

Analysis Report

Client Name : MPRIL & P Pte Ltd.
 Address : 623, Pyay Road, Vantage Tower, Kamayut.
 Project Name :
 Sample Description :
 Sample Name : Downhole Workshop Sampling Date : 20 July, 2023
 Sample No. : W-2307080 Sampling By : Customer
 Waste Profile No. : - Sample Received Date : 20 July, 2023
 Analytical Date : 20/07-3/08/2023

No.	Parameter	Method	Unit	Result	LOQ
1	Cyanide	HACH 8027 (Pyridine - Pyrazolone Method)	mg/l	<0.002	0.002
2	Total Cyanide	Distillation Process APHA 4500 CN C Total Cyanide after Distillation, Determine Cyanide Concentration Process HACH 8027 (Pyridine - Pyrazolone Method)	mg/l	0.002	0.002
3	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
4	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.010	0.010
5	Vanadium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
6	Silver	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	<0.002	0.002

Remark : LOQ - Limit of Quantitation
 APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd ed Edn

Analysed By :

Ni Ni Aye Lwin
 Manager



Approved By :

Hideki Yomo Aug 3, 2023
 Managing Director

REPORT RESULT IS ONLY OF THE SAMPLE SUBMITTED FOR ANALYSIS.
 THIS ANALYSIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY -
 GOLDER DOWA ECO SYSTEM MYANMAR CO., LTD.



ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory



စိမ်းလန်းအစိစိုပြေ ဖြူညှိစောင့်ရှောက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

No.121, Corner of Sini Khin Thaw Street & Street, (3) Block, South Okkalapa Township, Yangon Tel - 09-907496078

စာအမှတ်/Reference Number: EL (M)-R / 1122

နေ့ရက်/Date: 27th , July, 2023

ဓာတ်ခွဲခွဲစစ်ဆေးမှုအစီအစဉ်စာ/Laboratory Analysis Report

နမူနာအမည် /Sample Profile

နမူနာအမည် /Sample Name	Mechanical Workshop	နမူနာအမှတ် / Sample ID	1.122	
နေရာ (မြို့နယ်) /Location (Township)	Mimba Township	လတ္တီတွဒ် /Latitude		
နေရာ (တိုင်း/ပြည်နယ်) /Location (Region/State)	Magway Region	လောင်ဂျီတွဒ် /Longitude		
ပေးပို့သူအမည် /Sender Name	U Hsu Mya Aung	နမူနာယူယူချိန် (နေ့ နာရီ) /Sampling Time (Date, Time)	19.7.2023	3:30 PM
အဖွဲ့အစည်း /Organization	MPRL E B P PFE LTD	နမူနာယူယူချိန် (နေ့ နာရီ) /Arriving Time (Date, Time)	20.7.2023	12:00 PM
ဆက်သွယ်ရန် /Contact	09 - 5177819			

(This laboratory analysis report is based solely on the sample submitted by the customer)
(ဤဓာတ်ခွဲခွဲစစ်ဆေးမှုအစီအစဉ်စာသည် ဝယ်ယူသူမှပေးပို့သော နမူနာပေါ်တွင်သာ အခြေတည်ထားပါသည်။)

Analysis Results/စစ်ဆေးရလဒ်များ

စဉ် /Sr.	စစ်ဆေးရမည့် အရည်အသွေးညွှန်းကိန်း /Quality Parameter	ရလဒ် /Results	နည်းစဉ် /Method	စံသတ်မှတ်ချက် /Drinking Standard	မှတ်ချက် /Remarks
1	Total plate count (CFU/ml)		Total plate count method	0	
2	Total coliform count (MPN/100 ml) (Presumptive test)	>1100	Most Probable Number method	0	
3	Total faecal coliform count (MPN/100ml) (Presumptive test)		Most Probable Number method	0	
4	Total coliform count (CFU/ml) (Confirm test)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		Plate count method	0	
7	Total E.coli count (CFU/ml)		Plate count method	0	

Note: The target sample needs to test some additional tests to confirm total coliform and total faecal coliform.

စစ်ဆေးပို့ပြီး
Tested by

May

May Myal Nyein
Research Assistant
ALARM

စစ်ဆေးပြီး
Checked by

Aye Nyein Thu

Aye Nyein Thu
Research Assistant
ALARM

တာဝန်ခံ
Approved by

Ni Tar Nwe

Ni Tar Nwe
Research Scientist
ALARM

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR 23-01796 Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPRL B&P PTE LTD	Sample ID :	9912
Organization :	-	Sample Name :	Mechanical Workshop
Client ID :	-	Sample Type / Source :	Waste
Registration Date & Time :	29.7.2023 ; 12:00 PM	Sampling Date & Time :	19.7.23 ; 3:30 PM
Contact :	-	Sample Location :	Mebu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Emission Standards	Remarks
1	pH ¹	7	S.U	5.0 - 9.0 ²	Normal
2	Temperature ³	28.8	°C	13 ⁴	-
3	TSS ⁵	3	mg/L	≤50 ⁶	Normal
4	Ammonia ⁷	14	mg/L	≤ 10 ⁸	Above the limit
5	BOD ₅ ⁹	43	mg/L	≤ 50 ¹⁰	Normal
6	COD ¹¹	96	mg/L	≤ 250 ¹²	Normal
7	Total Chlorine ¹³	<0.02	mg/L	-	-
8	Total Phosphorus ¹⁴	1.2	mg/L	≤2 ¹⁵	Normal
9	Arsenic ¹⁶	0.006	mg/L	≤ 0.1 ¹⁷	Normal
10	Cadmium ¹⁸	ND	mg/L	≤ 0.01 ¹⁹	LGD = 0.01 mg/L
11	Copper ²⁰	0.03	mg/L	≤ 0.5 ²¹	Normal
12	Iron ²²	0.33	mg/L	≤ 3.5 ²³	Normal
13	Lead ²⁴	ND	mg/L	≤ 0.1 ²⁵	LGD = 0.1 mg/L
14	Zinc ²⁶	0.02	mg/L	≤ 2 ²⁷	Normal
15	Nickel ²⁸	ND	mg/L	≤ 0.5 ²⁹	LGD = 0.1 mg/L
16	Sulfide ³⁰	< 0.04	mg/L	≤ 1 ³¹	Normal
17	Phenol ³²	< 0.1	mg/L	≤ 0.5 ³³	Normal
18	Fluoride ³⁴	0	mg/L	≤ 20 ³⁵	Normal
19	Oil & Grease ³⁶	3	mg/L	≤ 10 ³⁷	Normal
20	Chromium (Hexavalent) ³⁸	0.88	mg/L	≤ 0.1	Normal

¹ND³⁹ = Not Detected

²LGD⁴⁰ = Lower limit of detection

³- = No Reference Standard

Tested by	Checked by	Approved by
 Test Analyst Ecological Laboratory ALARM	 Lab. Technician Ecological Laboratory ALARM	 Dr. Aye Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

No.237, Corner of Shu Khin Thor Street & 7 Street, (3) Block, South Okkalapa Township, Yangon.
Tel: 09-07196078, Email: aelab.2022@gmail.com

Report No. : GEM-LAB-202308005
 Revision No. : 1
 Report Date : 3 August, 2023
 Application No. : 0064-C001

Analysis Report

Client Name : MPRL E & P Pte Ltd.
 Address : 623, Pray Road, Vantage Tower, Kamayut.
 Project Name :
 Sample Description :
 Sample Name : Mechanical Workshop
 Sample No. : W-2307079
 Waste Profile No. :
 Sampling Date : 20 July, 2023
 Sampling By : Customer
 Sample Received Date : 20 July, 2023
 Analytical Date : 20/07-3/08/2023

No.	Parameter	Method	Unit	Result	LOQ
1	Cyanide	HACH 8027 (Pyridine -Pyrazolone Method)	mc/l	<0.002	0.002
2	Total Cyanide	Digestion Process:APHA 4500 CN C, Total Cyanide after Distillation, Determine Cyanide Concentration Process: HACH 8027 (Pyridine -Pyrazolone Method)	mc/l	0.006	0.002
3	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mc/l	<0.002	0.002
4	Selenium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mc/l	<0.010	0.010
5	Vanadium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	±0.002	0.002
6	Silver	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	±0.002	0.002


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

Analysed By :


 Ni N. Aye Lwin
 Manager



Approved By :


 Hideo Yama Aug 5, 2023
 Managing Director

REPORT RESULT IS ONLY OF THE SAMPLE SUBMITTED FOR ANALYSIS.
 THIS ANALYSIS REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY.
 GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

M0723 019

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client MPRL
 Nature of Water Drinking Water
 Location Minbu Township
 Date and Time of collection 19.7.2023 (4:37 PM)
 Date and Time of arrival at Laboratory 20.7.2023 (10:36 AM)
 Date and Time of commencing examination 20.7.2023
 Date and Time of completing 21.7.2023

Results of Water Analysis

**WHO Drinking Water Guideline
(Geneva - 1993)**

Total Coliform Count	Not detected (<1) CFU/100ml	Not detected
Thermotolerant (Fera) Coliform Count	Not detected (<1) CFU/100ml	Not detected
pH	7.0	6.5 - 8.5
Turbidity	Nil NTU	5 NTL
Colour (True)	Nil TCU	15 TCU
Free Chlorine	Nil mg/l	
Total Chlorine	Nil mg/l	

*Sample collection error.

Remark : Satisfactory for drinking purpose.

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

: < - Less than

Tested by

Signature:

Name:

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

Approved by

Signature:

Name:

Soe Thit
Soe Thit
B.E (Civil) 1980
Technical Officer
ISO TECH Laboratory

(a division of WEG Co., Ltd.)

No.18, Lenthil Road, Nantgaingone Quarter, Insein Township, Yangon, Myanmar
 Ph: 01-540895, 09-880100172, 08-880100173, 01-544886, E-mail: leotechlaboratory@gmail.com, Website: weg-myanmar.com

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01801 Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPRL E&P PTE LTD	Sample ID :	9917
Organization :	-	Sample Name :	UV DW
Client ID :	-	Sample Type / Source :	Ground
Registration Date & Time :	20.7.2023 ; 12:00 PM	Sampling Date & Time :	19.7.23 ; 4:00 PM
Contact :	-	Sample Location :	Nirbu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH ¹	7.3	S.U	6.5 - 8.5 ²	Normal
2	Colour ³	0	HU	≤15	Normal
3	Turbidity ³	<5	FAU	≤5 ²	Clear
4	TDS ⁴	17	ppm	≤1000 ²	Normal
5	Hardness ⁵	6	mg/L	≤500 ²	Normal
6	Chloride ⁴	44	mg/L	≤250 ²	Normal
7	Arsenic ⁶	0.008	mg/L	≤0.05 ⁷	Normal
8	Iron ⁷	0.21	mg/L	≤1 ⁸	Normal
9	Lead ⁷	ND	mg/L	≤0.01 ⁸	LOD = 0.1 mg/L
10	Manganese ⁷	0.1	mg/L	≤0.4 ⁸	Normal
11	Sulfate ⁸	6.5	mg/L	≤250 ²	Normal

ND = Not Detected

LOD = Lower limit of detection

* - * = No Reference Standard

Tested by	Checked by	Approved by
 Test Analyst Lab. Technician II Ecological Laboratory ALARM	 Lab. Technician I Ecological Laboratory ALARM	 Laboratory In-Charge Ecological Laboratory (ALARM)

No.217, Corner of Shu Khin Thar Street & 7 Street, (C) Block, South Okkalapa Township, Yangon.
Tel: 09-407496078, Email: aelah.2022@gmail.com

Report No. : GEM-LAB-202308001
 Revision No. : 1
 Report Date : 3 August, 2023
 Application No. : 0064-C001

Analysis Report

Client Name : MPRI E & F Pte Ltd.
 Address : 623, Pyay Road , Vantage Tower, Kamayut.
 Project Name :
 Sample Description
 Sample Name : UV Outlet (MFO) Sampling Date : 20 July, 2023
 Sample No. : WI-2307075 Sampling By : Customer
 Waste Profile No. : Sample Received Date : 20 July, 2023
 Analytical Date : 20/07-3/08/2023

No.	Parameter	Method	Unit	Result	LOQ
1	Nitrate	APHA 4110 B (Ion Chromatography with Chemical Suppression of Fluoride Conductivity Method)	mg/l	<0.067	0.067
2	Odor	APHA 2150 B (Threshold Odor Test)	mg/l	1	


Remark : LOQ - Limit of Quantitation
 APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd ed) Ltd

Analysed By :


 Ni Ni Aye Lwin
 Manager



Approved By :


 Hideo Yomo
 Managing Director

REPORT RESULT IS ONLY DEPEND ON THE SAMPLE SUBMITTED FOR ANALYSIS.
 THIS ANALYSIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY OF GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.



ပတ်ဝန်းကျင်ရေးရာတတ်ခွဲခန်း
Ecological Laboratory



စိမ်းလန်းစေမိမြေနှင့် ခြွင်းထုတ်ပေးရမည့် (Advancing Life and Regenerating Motherland, ALARM)

No. 111, Corner of Aung Mye Thar Street & 7 Street, 11 Binnaka, Sauri, Dalaikhalga Township, Yangon, Tel: 09-907496078

စာအမှတ်/Reference Number: EL (M)-R / 1125

နေ့ရက်/Date: 27th, July, 2023

တတ်ခွဲခန်းစမ်းသပ်စာအစုံစာ/Laboratory Analysis Report

နမူနာအမည် / Sample Profile

နမူနာအမည် / Sample Name	Ko Win Mg	နမူနာအမှတ် / Sample ID	1125	
နေရာ (မြို့နယ်) / Location (Township)	Minkun Township	လတ္တီကျုဒ် / Latitude		
ဒေသ (တိုင်းပြည်နယ်) / Location (Region/State)	Magway Region	စာတန်းရှည် / Longitude		
ပေးပို့သူအမည် / Sender Name	U Han Mya Aung	နမူနာတင်သွင်းချိန် (အချိန်) / Sampling Time (Date, Time)	19.7.2023	3:40PM
ဆွေးနွေးရင်း / Organization	MPRL E & P PTE LTD.	နမူနာရောက်ရှိချိန် (အချိန်) / Arriving Time (Date, Time)	20.7.2023	1:20:00 PM
ဆက်သွယ်ရန် / Contact	09 - 5127819			

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤတတ်ခွဲခန်းစမ်းသပ်စာအစုံစာသည် စမ်းသပ်သူမှ တောင်းဆိုချက်အတိုင်းပေးပို့သောနမူနာပေါ်တွင်သာ အခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ရလဒ်အကျဉ်းချုပ်

စဉ် / Sr.	စမ်းသပ်ရလဒ်အကျဉ်းချုပ် / Quality Parameter	ရလဒ် / Results	နည်းလမ်း / Method	ပုံစံစံနှုန်း / Drinking Standard	မှတ်ချက် / Remarks
1	Total plate count (CFU/ml)		Total plate count method	0	
2	Total coliform count (MPN/100 ml) (Presumption test)	>1100	Most Probable Number method	0	
3	Total faecal coliform count (MPN/100ml) (Presumption test)	83	Most Probable Number method	0	
4	Total coliform count (CFU/ml) (Confirm test)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		Plate count method	0	
7	Total E.coli count (CFU/ml)		Plate count method	0	

Note: The target sample needs to test some additional tests to confirm total coliform and total faecal coliform.

စမ်းသပ်သူ /

Tested by

Myat

May Myat Nyein
Research Assistant
ALARM

စစ်ဆေးသူ /

Checked by

Aye Nyein Thu

Aye Nyein Thu
Research Assistant
ALARM

တာဝန်ခံ /

Approved by

Ni Tar Nwe

Ni Tar Nwe
Research Scientist
ALARM

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01799 Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPEL E&P PTE LTD	Sample ID :	8915
Organization :	-	Sample Name :	Ka Win Ng
Client ID :	-	Sample Type / Source :	Treated
Registration Date & Time :	26.7.2023 ; 12:00 PM	Sampling Date & Time :	19.7.23 ; 3:40 PM
Contact :	-	Sample Location :	Mimbu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1.	pH ¹	7.4	S.U	6.5 - 8.5 ²	Normal
2.	Colour ³	42	HU	≤ 15 ²	Above the limit
3.	Turbidity ³	< 5	FNU	< 5 ²	Clear
4.	TDS ³	1320	ppm	≤ 1000 ²	Above the limit
5.	Hardness ³	210	mg/L	≤ 500 ²	Normal
6.	Chloride ³	141	mg/L	≤ 250 ²	Normal
7.	Arsenic ⁴	0.005	mg/L	≤ 0.05 ²	Normal
8.	Iron ⁴	0.36	mg/L	< 1 ²	Normal
9.	Lead ⁴	ND	mg/L	≤ 0.01 ²	LOD = 0.1 mg/L
10.	Manganese ⁴	0.5	mg/L	≤ 0.1 ²	Above the limit
11.	Sulfate ⁴	037	mg/L	≤ 250 ²	Above the limit

ND = Not Detected

LOD = Lower limit of detection

¹ - ² = No Reference Standard

Tested by	Checked by	Approved by
Ecological Laboratory ALARM	Lab. Technician I Ecological Laboratory ALARM	Laboratory In-Charge Ecological Laboratory (ALARM)

No.237, Corner of Shu Kluin That Street & 7 Street, 15/ Block, South Okkalapa Township, Yangon.
Tel: 09-407496078, Email: ecolab.2022@gmail.com

Report No.: GEM-LAB-202308003
 Revision No.: 1
 Report Date: 3 August, 2023
 Application No.: 0064-C001

Analysis Report

Client Name : M-PRL E & P Pte Ltd.
 Address : 623, Pyay Road, Vantage Tower, Kamayut.
 Project Name :
 Sample Description
 Sample Name : Ko Win Maung
 Sample No. : W-2307077
 Waste Profile No. :

Sampling Date : 20 July, 2023
 Sampling By : Customer
 Sample Received Date : 20 July, 2023
 Analytical Date : 20/07-3/08/2023

No.	Parameter	Method	Unit	Result	LOQ
1	Nitrate	APHA 4110 B (Ion Chromatography with Chemical Suppression of Eluent Conductivity Method)	mg/l	0.493	0.067
2	Odor	APHA 2150 B (Threshold Odor Test)	mg/l	1	

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

Analysed By :

Approved By :


 Ni Ni Aye Lwin
 Manager




 Hideo Yama Aug 2, 2023
 Managing Director

REPORT RESULT IS ONLY OF THE SAMPLE SUBMITTED FOR ANALYSIS.
 THIS ANALYSIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY OF
 GOLDEN DOWA E-CC SYSTEM MYANMAR CO., LTD.



ပတ်ဝန်းကျင်ရေးရာတတ်ခွဲခန်း
Ecological Laboratory



စိမ်းလန်းစိုပြည်မှုနှင့် နေထိုင်ရာအသက်မွေးဝမ်းကျောင်း (Advancing Life and Regenerating Motherland, ALARM)

No. 17, Corner of Sittouk Khin Thar Street & T Street, Lo Bhele, Sittouk Khadupya Township, Yangon 01 - 09 0099 0000

စာအမှတ်/Reference Number: EL (M)-R / 1126

နေ့စွဲ/Data: 27th, July, 2023

တတ်ခွဲခန်းစစ်ဆေးမှုအစီအစဉ်စာ/Laboratory Analysis Report

နမူနာအမည် / Sample Profile

နမူနာအမည် / Sample Name	Mo Nyeth	နမူနာအမှတ် / Sample ID	1126	
နေရာ (မြို့နယ်) / Location (Township)	Minbu Township	လတ္တီတွဒ် / Latitude		
နေရာ (တိုင်း/ပြည်နယ်) / Location (Region/State)	Mingway Region	စတင်ချိန် / Longitude		
ပေးပို့သူအမည် / Sender Name	U Han Mya Aung	နမူနာယူချိန် (နေ့၊ နာရီ) / Sampling Time (Date, Time)	19.7.2023	3:50 PM
အဖွဲ့အစည်း / Organisation	MPRL E & P PTE LTD	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) / Arriving Time (Date, Time)	20.7.2023	12:00 PM
ဆက်သွယ်ရန် / Contact	09 - 5272819			

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤတတ်ခွဲခန်းစစ်ဆေးမှုအစီအစဉ်စာသည် ပေးပို့သူမှပေးပို့သော နမူနာကိုသာ အခြေခံထားပါသည်။)

Analysis Results/စစ်ဆေးမှုရလဒ်

စဉ် / Sr.	အမှတ်အသား/အညွှန်းကိန်း / Quality Parameter	ရလဒ် / Results	နည်းလမ်း / Method	စံသတ်မှတ်ချက် / Drinking Standard	မှတ်ချက် / Remarks
1	Total plate count (CFU/ml)	0	Total plate count method	0	
2	Total coliform count (MPN/100 ml) (Presumption test)	0	Most Probable Number method	0	
3	Total fecal coliform count (MPN/100ml) (Presumption test)	0	Most Probable Number method	0	
4	Total coliform count (CFU/ml) (Confirm test)		Osini Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		Plate count method	0	
7	Total fecal count (CFU/ml)		Plate count method	0	

Note: The target sample needs to test some additional tests to confirm total coliform and total fecal coliform.

စစ်ဆေးသူ /
Tested by

May

May Myat Nyeth
Research Assistant
ALARM

စစ်ဆေးသူ /
Checked by

[Signature]

Aye Nyeth Thu
Research Assistant
ALARM

တာဝန်ခံ /
Approved by

Ni Tar Nwe
Research Scientist
ALARM

ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01500 Date : August 4, 2023

Client Information		Sample Information	
Client Name :	MPSRL EMP PTE LTD	Sample ID :	9916
Organization :	-	Sample Name :	Ma Nyein
Client ID :	-	Sample Type / Source :	Ground
Registration Date & Time :	20.7.2023 ; 12:00 PM	Sampling Date & Time :	19.7.23 ; 3:50 PM
Contact :	-	Sample Location :	Ninbu Township
Email :	-	Latitude :	-
Testing Purpose :	For Monitoring	Longitude :	-

Testing Results

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

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH ¹	7.4	S.U	6.5 - 8.5 ¹	Normal
2	Colour ²	6	HU	≤15 ¹	Normal
3	Turbidity ³	<5	FAU	≤5 ¹	Clear
4	TDS ⁴	1230	ppm	≤1000 ¹	Above the limit
5	Hardness ⁵	39	mg/L	≤500 ¹	Normal
6	Chloride ⁶	111	mg/L	≤250 ¹	Normal
7	Arsenic ⁷	0.005	mg/L	≤0.05 ¹	Normal
8	Iron ⁸	0.26	mg/L	≤1 ¹	Normal
9	Lead ⁹	ND	mg/L	≤0.01 ¹	LOD = 0.1 mg/L
10	Manganese ¹⁰	0.3	mg/L	≤0.4 ¹	Normal
11	Sulfate ¹¹	348	mg/L	≤250 ¹	Above the limit

¹ND¹ = Not detected

¹LOD¹ = Lower Limit of detection

¹- = No Reference Standard

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

No.237, Corner of Shin Kham Thar Street & 7 Street, (31 Block, South Okkalapa Township, Yangon)
Tel: 09-407496078, Email: aelab.2022@gmail.com

Report No. : GFM-LAB-202308004
 Revision No. : 1
 Report Date : 3 August, 2023
 Application No. : 0064-C001

Analysis Report

Client Name : MPRL E & P Pte Ltd.
 Address : 623, Pyay Road, Vantage Tower, Kamayut.
 Project Name :
 Sample Description:
 Sample Name : Ma Nyin
 Sample No. : W 230/0/8
 Waste Profile No. :

Sampling Date : 20 July, 2023
 Sampling By : Customer
 Sample Received Date : 20 July, 2023
 Analytical Date : 26/07/30/08/2023

No.	Parameter	Method	Unit	Result	LOQ
1	Nitrate	APHA 4110 B (Ion Chromatography with Chemical Suppression of Eluent Conductivity Method)	mg/l	0.938	0.067
2	Copper	APHA 2150 B (Threshold Order Test)	mg/l	1	-

Remark : LOQ - Limit of Quantitation
 APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd Edition

Analysed By :



Ni Ni Aye Lwin
 Manager



Approved By :



Hideki Yomo Aug 3, 2023
 Managing Director

REPORT RESULT IS ONLY OF THE SAMPLE SUBMITTED FOR ANALYSIS.
 THIS ANALYSIS REPORTS WILL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY OF
 GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.

Annex – 2 Waste Disposal Certificate



GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD
 Lot E1, Thilawa SEZ Zone A, Yangon Region, Myanmar
 Email: No. & Fax: No.01-2309051



Records and Other Supporting Documents	DOC NO:	GEM-EG-R004E/00
Subject: Disposal Certificate	Issued/Revised Date:	1 Oct 2018 Page 1 of 1

Date: 30th August, 2023
 File No. GEM-REP-2023-0139

To, MPRI E&P Pte., Ltd
 No.623, Vantage Tower, Piyay Road,
 Kamayut Township (11041), Yangon, Myanmar

DISPOSAL CERTIFICATE

This is to certify that we, the undersigned, disposed of the below mentioned Quantity as follows.

Quantity: Light Bulb and Fluorescent Tube-280 Kg

Date of disposal: 22 August, 2023

Place of disposal: GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD,
 Lot No. E1, Thilawa SEZ Zone A, Yangon Region, the Union of Myanmar

Disposal method: Landfilling Process, Water Treatment Plant and Recycling process

Disposal Company Name: GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.
 Address: Lot No. E1, Thilawa SEZ Zone A, Yangon Region, the Union of Myanmar
 Telephone: 01-2309051
 Fax: 01-2309051
 Person in charge: May Thw. Htaik-Director
 (Full Name):
 Signature:

Disposal Company chop:
Any fraudulent statement may result in prosecution.

Annex – 3 Equipment Calibration Certificate

Calibration Certificate

Instrument SN: 1806037-002
 Calibration Date: 9/8/2023
 Part Number: VTS-K123211C111
 Job Number: 180603
 Setup Date: 6/6/2018
 Setup Technician: KC
 Checked By: Inel
 Battery: Dual-cell Lithium-ion battery pack
 Assigned User: ASIA DRILLING PTE LTD

Sensor SN	Sensor Type	Gas Type	Span	Gas Span Reserve	Passed/Failed	Gas Alert	Alarm Low	Alarm High	TMA Alarm	STEL Alarm
1805315114	CO	Carbon Monoxide	200.00	182.00%	Passed	0.00	35.00	76.00	35.00	700.00
1805358654	H2S	Hydrogen Sulfide	25.00	138.40%	Passed	0.00	10.00	20.00	10.00	15.00
1805272213	L-L	Pentane	25.00	112.00%	Passed	0.00	10.00	20.00	N/A	N/A
2108700217	O2	oxygen	20.90	132.06%	Passed	0.00	19.50	23.50	N/A	N/A

Sensor SN	Sensor Type	Cal Date/Time	Cylinder ID	Cylinder Exp	Zero Cylinder Id	Zero Cylinder Exp
1805315114	CO	9/8/2023 11:40:24 AM (GMT+06:30)	2752106C509893	12/29/2024	Fresh Air	N/A
1805358654	H2S	9/8/2023 11:39:45 AM (GMT+06:30)	2752106C509893	12/29/2024	Fresh Air	N/A
1805272213	LEL	9/8/2023 11:40:54 AM (GMT+06:30)	2752106C509893	12/29/2024	Fresh Air	N/A
2108700217	O2	9/8/2023 11:38:04 AM (GMT+06:30)	Fresh Air	N/A	Fresh Air	N/A

Remark: All Sensors are Good. Next Calibration Due date is March 2024. Calibrated By: Pangolin Protective Equipment Co., Ltd. 02 SENSOX LIFE IS YOURS.





MPRL

Build through Excellence
Lead with Integrity

E&P

MPRL E&P Pte Ltd.

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Kamayut Township 11041, Yangon, Myanmar
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