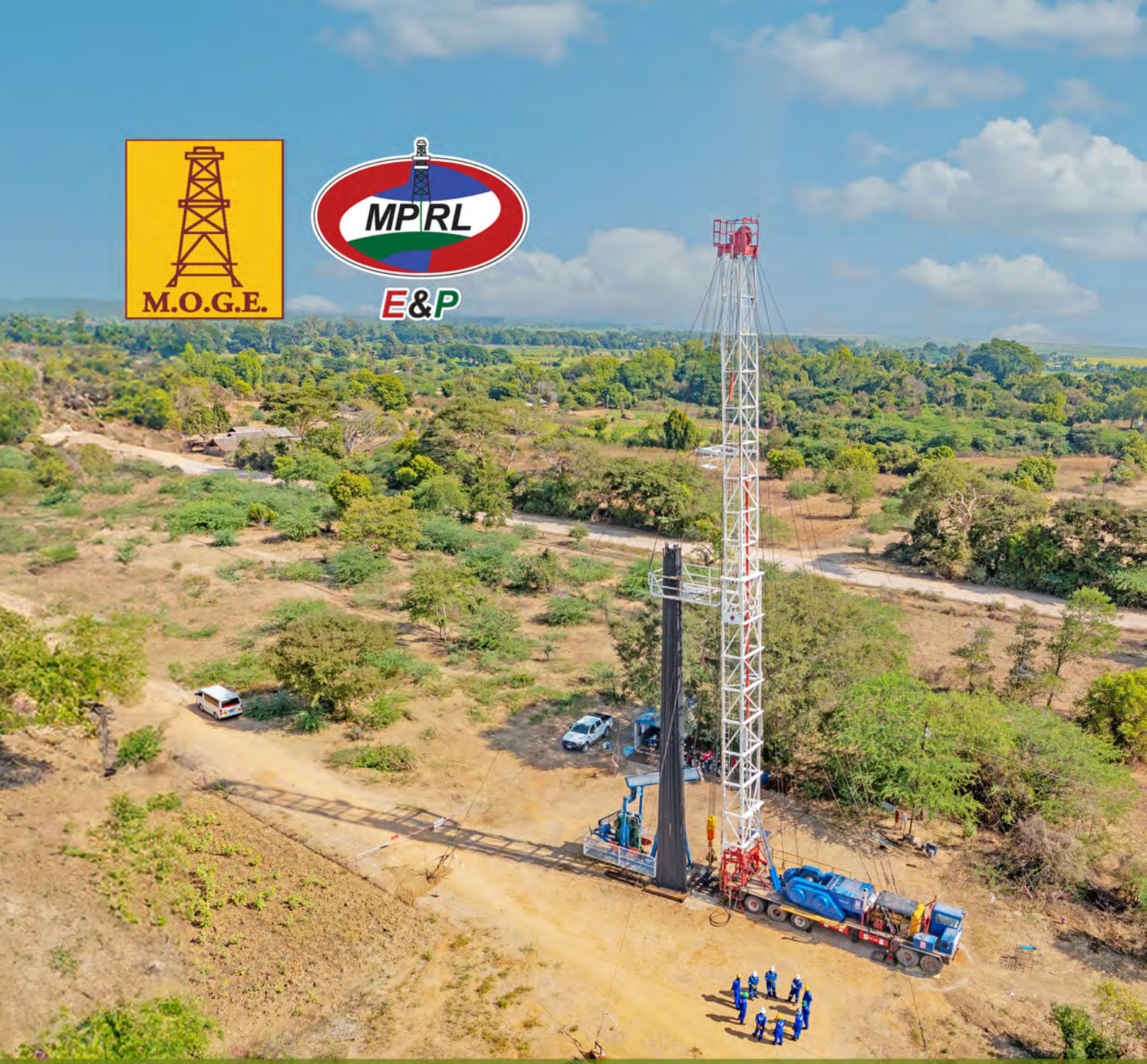

Environmental Monitoring Report

for Redevelopment and Enhanced Oil Recovery (EOR) Programme

October 2023 ~ March 2024

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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
IGC	International General Certificate
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
NEBOSH	National Examination Board in Occupational Safety and Health
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

Since 1996, MPRL E&P has earned significant respect in Myanmar's energy sector for its prowess in both onshore and offshore exploration and production, solidifying its position as a prominent figure in the field.

At MPRL E&P, our commitment revolves around integrity, transparency, and ethical conduct in every aspect of our operations, coupled with a strong dedication to social and environmental responsibilities. We firmly believe in empowering our employees to thrive within a nurturing, collaborative environment that fosters ongoing learning and personal development, thereby driving the growth of our company. Our core focus remains on conducting business with honesty and integrity, while upholding our social and environmental obligations. By fostering a supportive and collaborative culture, we empower our employees to actively contribute to the advancement and success of our organization while promoting continuous learning and development.

Our eighth environmental monitoring report provides a comprehensive overview of our environmental activities and progress made between October 2023 and March 2024. It includes data from monitoring efforts, advancements in environmental measures outlined in our Environmental Management Plan (EMP), and evaluations of Air, Noise, Soil, Surface Water, and Groundwater quality. These activities were conducted in partnership with the regional ECD (Magway) team. Additionally, the report highlights our efforts in monitoring tree survival rates in Mann Field for environmental conservation, as well as the successful implementation of the EMP and its eight sub-plans according to schedule. Moreover, it addresses the challenges and difficulties encountered during our day-to-day operations.

Key Highlights within the monitoring periods (October 2023 to March 2024)

Environmental Performance

Regarding the number of wells can be attributed to the initial count of 672 wells at the time of submitting the Environmental Impact Assessment (EIA) report to the Environmental Conservation Department (ECD) in 2015. Subsequently, two additional wells were drilled by March 2019, just before obtaining the Environmental Compliance Certificate (ECC), bringing the total count to 674 wells. Since acquiring the ECC in March 2019, there hasn't been any further drilling activity. MPRL E&P conducted drilling for two new development wells of M-669 in 2015 and M-670 in 2018. Notably, no infill well drilling occurred during the fiscal years spanning from 2019 to 2024 following the ECC certification achievement.

Our Mann Field EOR Project's Environmental Compliance Certificate (ECC) is set to expire on March 26, 2024. To extend its validity, we submitted an application letter along with supporting documents to the regional Environmental Conservation

Department (ECD) in Magway on September 19, 2023. Following the ECD's guidelines, MOGE provided feedback comments regarding our ECC extension on January 1, 2024.

We upheld our commitment to conduct an Environmental Monitoring Survey in partnership with the regional Environmental Conservation Department (ECD), as required by the approved Environmental Impact Assessment (EIA) report and Environmental Compliance Certificate (ECC). Due to security and logistical constraints, we conducted the survey at the nearest locations to our operations, aligning with the baseline sampling points (Z3AQN, Z4AQN, Z3S1, Z3S2, Z4S1, Z4S2, Z3SW1, Z3SW2, Z4SW1, Z4SW2, Z3GW1, Z3GW2, and Z4GW2) from January 16-18, 2024. Notably, Z4GW1, situated in Shwewargone ward near Minbu, was excluded from the survey for water sample collection due to its repurposing as a waste disposal well, no longer functioning as a tube well.

On November 15, 2023, the regional ECD (Magway) team led by the director conducted an inspection tour of the Mann Field, which included CSR's mobile clinic at Nan Oo village, MPRL E&P (Base Camp), warehouse compound and zero discharge water treatment system, GOCS-2, WMC, concrete pad and additional cellar at M-16, and produced water injection well M-573.

Director General (ECD), accompanied by director (ECD) (Magway) and General Manager (MOGE-Mann), conducted an inspection tour to Mann Field on 3 March 2024. Before the inspection tour, the HSE manager of MPRL E&P Pte Ltd presented about the environmental management activities at MOGE(Mann) office and then proceeded to GOCS-2, wastewater ZERO discharged system at warehouse, WMC, and the concrete pad and additional cellar at M-16.

Between January 16, 2024, to January 18, 2024, 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.

Due to recent security concerns, we've reduced Mann Field operations to daytime and are employing a minimal crew. Consequently, we've opted for Z3AQN and Z4AQN as monitoring points for air, noise, and soil quality, being the closest to our current operations. Other monitoring points are not viable due to security issues and logistical limitations. We plan to resume monitoring at the remaining two points once conditions improve.

During our self-monitoring efforts, MPRL E&P conducted examinations of different water sources, such as 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 near injection well M-132, adhering to our predetermined schedule. It was depicted 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.

The laboratory results for air, noise, water, and soil quality monitoring, along with details of self-environmental monitoring activities, are provided as an attachment in the Annex section. Additionally, detailed explanations for parameters exceeding the guidelines are included in their respective sections, as necessary.

We conducted tests for all available parameters in the lab facilities but unfortunately, DOWA informed us that some water parameters cannot be tested at this time due to their limitations and difficulties.

To heighten awareness of Health, Safety, and Environmental (HSE) practices among our workforce, the HSE department conducts monthly training sessions. These sessions, outlined in our training plan, alternate between internal and external sources based on availability. Additionally, to foster environmental consciousness, presentations cover topics such as "Drinking Water Quality" and "Key Environmental Issues and Terms." We also engage in discussions on ecosystem and biodiversity conservation, water conservation, energy conservation, waste segregation, and waste management during induction training for new hires and in regular safety meetings. These initiatives aim to instill a comprehensive understanding of HSE principles throughout our organization.

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 has successfully analyzed and measured nearly all parameters as pledged in the Environmental Impact Assessment (EIA) report, utilizing favorable conditions and laboratory facilities available in Myanmar.

During the six-month period, none of the oil spill cases occurred. Nevertheless, spill drill exercise was conducted with all stakeholders as per environmental action plan.

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 are resolute in fulfilling the obligations outlined in the ECC and EIA. Our continuous monitoring and assessment efforts will persist to guarantee strict compliance with relevant regulations and standards.

Social Performance

From October 2023 to March 2024, MPRL E&P's CSR Program executed a range of social investment initiatives aimed at fostering shared value, addressing social issues, driving economic growth, and cultivating resilient, inclusive communities to ensure sustainable progress and prosperity. The social investment initiatives covered areas such as 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.

In community infrastructure development, the CSR Program completed several important projects. The projects included drilling a water well and constructing a water collection tank at Makyee Chaung School, constructing road concrete slab and drainage in Ywar Thar Village, providing library furniture at Mann Kyoe Community Center, installing ceilings at Nan U and Mann Kyoe Community Centers, renovating community noticeboards, organizing knowledge-sharing sessions on tomato cultivation at Green Schoolyards, and ensuring the maintenance of water filtration units at schools in Mann Field.

Our focus on community livelihood development initiatives covered launching a sunflower seed production demonstration farm at Mann Kyoe Village, assisting the Seed Bank Committee, sharing agricultural best practices in Mann Field Communities, supporting tomato cultivation for local farmers, organizing training sessions on disease and pest control for chickpea and sunflower farmers, distributing vaccines for chickens, providing straw mushroom production training, and piloting localized greenhouse tomato farming.

The CSR Program's further efforts focused on educational partnership and scholarship initiatives. We provided scholarship support to Mann Field Community Youths – five students at No.5 Industrial Training Center (ITC Magway), two students at Government Technical High School (GTHS Magway), seven students at State Agriculture and Livestock Institute (SALI Pwint Phyu), one student at the University of Medicine (Magway), and one student at Basic Education High School (Mei Bayt Kone). Our specific efforts also included supporting a broiler breeding project with SALI (Pwint Phyu), celebrating training completion of No.5 ITC (Magway), and announcing new scholarship opportunities at No.5 ITC (Magway).

Our community capacity building activities included organizing Outdoor Classroom Day, conducting Online English Learning Program, evaluating program effectiveness through feedback sessions and quarterly exams, providing Basic Life Support and First Aid Training, offering Social and Community Development Training, and organizing Basic Embroidery Training sessions.

Additionally, we provided free healthcare services and home visit treatments to Mann Field Communities through the Mobile Clinic Program, monitored the program closely, and conducted an evaluation survey to gather feedback from the stakeholders.

We also managed community-led waste management initiatives. Our CSR Team monitored waste collection services in Mann Field Communities, held regular discussions with Community Volunteers and the service provider for effective waste management, supported Trash Hero Minbu's cleanups, and introduced the Cleanup Challenge Awards Program in Mann Field Communities.

Operational grievances were efficiently handled through our Operational Grievance Mechanism (OGM). During this reporting period, we received and addressed one OGM case, bringing the total complaints since September 2014 to (174) cases.

Our stakeholder engagement activities involved organizing the First Biannual CSR Progress Review Meeting for the Fiscal Year 2023-2024 with MOGE personnel in Nay Pyi Taw, initiating community needs assessment and budget development for the Fiscal Year 2024-2025 CSR Work Programs, distributing newsletters and reports to local stakeholders, conducting site visits and community outreach, meeting with stakeholders to discuss community investment projects, conducting satisfaction surveys, facilitating government department visits to showcase initiatives, announcing community training programs, and participating in knowledge-sharing sessions with the Ministry of Industry and the Ministry of Energy.

We also engaged in corporate philanthropy initiatives by making charitable contributions for humanitarian assistance and cultural events. Additionally, we successfully organized the Novitiation (Shinpyu) Ceremony in Mann Field Communities, welcoming (71) boys to novicehood with the attendance of over (2,700) guests.

Environmental Monitoring Report

for Redevelopment and Enhanced Oil Recovery (EOR) Programme

October 2023 ~ March 2024

2. Project Description and Production Information

The Mann Field, discovered in 1970 by MOGE, currently includes 674 wells of which 292 were producing as of February 2024 while the remaining wells were shut-in. The total produced oil and associated gas from the Production Enhancement Project is 15.96 MMbbls, including 10.09 MMbbls above the normal decline curve, and 18.3 Bcf gas as of February 2024.

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	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total
		Frequency of Activities						
1	Bailing	2	2		2			6
2	Bailing & Change Tubing	8	5	4	8	6	2	33
3	Bailing Inside Liner				1			1
4	Change BHA				1			1
5	Change Polished Rod Liner				1		1	2
6	Check BHA	2						2
7	Check BHA and Bailing				1			1
8	Check BHA and Change Tubing	2	1	1			2	6
9	Change Tubing Hanger				1			1
10	Change Tubing	2						2
11	Change Tubing & S/Rod		1	1		1		3
12	Check Rod String	1						1
13	Clean out Bottom	3	1	4	3	4	4	19
14	Fishing and Clean out Bottom	1		1				2
15	Install Casing Protector				1			1
16	Pull out S/Rod String	1	2	1	3	2	1	10
17	Pump Service	26	34	35	28	27	32	182
18	Raise Up PSD and Pump Service			1	1			2
19	Recover BHA		1				3	4

No.	Service	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total
		Frequency of Activities						
20	Renew Defected 5-1/2" Casing Thread	1						1
21	Replace Polished Rod Liner	1						1
22	Replace Tubing Hanger Seal					1		1
23	Re-pumping		1					1
24	Reset Packer & Pump Service	1	1					2
25	Retighten 5-1/2" Casing Nipple	1						1
26	Run in Open Shoe Tubing String	1						1
27	Run in S/Rod and Insert Pump	1	1	1	2	4		9
28	Scrapping, Bailing & Change Tubing		4		2	2	1	9
29	Swabbing, Bailing & Change Tubing	1	1	3	3	3	7	18
Total Serviced Wells (Monthly)		**55**	**55**	**52**	**58**	**50**	**53**	**323**

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 List

No	Unit Name	Engine Type	Horse Power	Units
1	P-100	CAT-3408	365HP	1
2	P-82	CAT-3306	270HP	1

No	Unit Name	Engine Type	Horse Power	Units
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
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 Responsibilities

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 the 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 mutually agreed to establish Key Performance Indicators (KPIs) for the field operation team. These KPIs are essential for ensuring safe and environmentally friendly operations. Integrating Health, Safety, and Environment (HSE) practices as a vital part of the field operation is a key aspect of sustaining continual improvement.

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 be able to identify the performance attainment and opportunities for enhancement by the end of the designated time period. Despite encountering highly challenging circumstances, the review highlights that the following KPIs were successfully attained.

For Fiscal Year 2023 – 2024

With immense pride and satisfaction, we are pleased to announce that the Mann Field Production Enhancement Project has reached a milestone of three million man-hours as of 01 November 2023, without a lost-time accident. This achievement marks another significant milestone reached through the resilient 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 (Environmental Incidents) also met the established KPI.

As for proactive performance, the field team received (9,342) CARE Cards within the Fiscal Year 2023~2024 timeframe, which is remarkable a substantial improvement, far surpassing the baseline value, 5,400 Ea. per year. We have opportunities to improve areas for improvement that are unforeseeable during routine operations, thanks to the commitments of CARE Card submitters and the support from all Heads of Departments (HoDs) and the MOGE Team.

As the operation speeds up, more training is being organized and conducted to enhance HSE knowledge and staff competency. The implementation of mandatory HSE training, such as HSE Induction, Basic First Aid Training, Behavioral Safety Training, and Key Environmental Issues and Terms Training, has achieved a 100% completion rate compared to the planned schedule.

To promote workplace safety, regulatory compliance, and operational excellence while preventing accidents, protecting workers, and ensuring adherence to industry standards and regulations, permit to work audits were conducted using a checklist. These audits were completed 100% fully according to the plan.

To safeguard the safety of staff and assets, multiple inspections were carried out for Lifting Gear, Eye Wash Station, and Wheeled Spill Kits. These inspections successfully met 100% of the set target.

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

To enhance safety performance, mitigate risks, ensure compliance, and cultivate 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 HSE KPI audit and inspection, the HSE Annual Audit for the fiscal year 2023-2024 was successfully conducted from 16-18 January 2024. The audit was coordinated with the field management team and involved selected members from Field Operations to enhance overall efficiency.

As part of the environmental action plan's implementation, the Field Team maintained a 100% reinjection record for disposing of produced water back into the shut-in well. Achieving such a record requires tremendous effort, including 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 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 encourage the team's emergency response capabilities and assess their readiness, the Field Management team successfully conducted a "Fire Drill" at the Mann Field warehouse on 16 January 2024.

It is important to acknowledge in this report that while progress has been made, there are areas that still need further refinement. Opportunities for further enhancements remain in certain aspects. The need for improvement in the mentioned areas is primarily attributed to security concerns and ongoing socio-political instability.

Regrettably, we fell short of meeting our set Key Performance Indicator (KPI) for the fiscal year 2023-2024, which aimed for no more than 4 total recordable case injuries. Despite our efforts, we encountered a total of 5 cases during this period, including 2 cases necessitating medical treatment and 3 cases leading to restricted workdays. Additionally, progress was made in the installation of flare posts at vent gas wells, with an actual completion percentage compared to the planned target.

Due to the ongoing political crisis and heightened security concerns, the field team was unable to install flare posts at vent gas wells, despite their commitment to this task as part of the Key Performance Indicator (KPI).

In response to lessons learned from a well kicks accident, the HSE team initiated and conducted a survey to identify temporary shut-in wells prone to potential well kicks, particularly those in close proximity to community areas, for the securing open casing wells. The field operations team collaborated on surveying the well lists and conducting further studies, seeking input from Geoscience consultation to assess the type of formations involved. Concurrently, they assessed material requirements in the inventory, considering cost implications and delivery times for overseas purchases if necessary. Ultimately, during the HSE committee meeting, it was decided to postpone both the installation and procurement processes of materials to prioritize securing the shut-in wells, due to the need for further investigation.

5. Environmental Management Plan

The Environmental Management Plan (EMP) aims to enforce compliance with the project's policies and fulfill the mitigation, monitoring, and other commitments outlined in the EIA Report. While the EMP serves as a broad framework document, it is intricately linked to various comprehensive management plans detailed below, each designed to set 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:

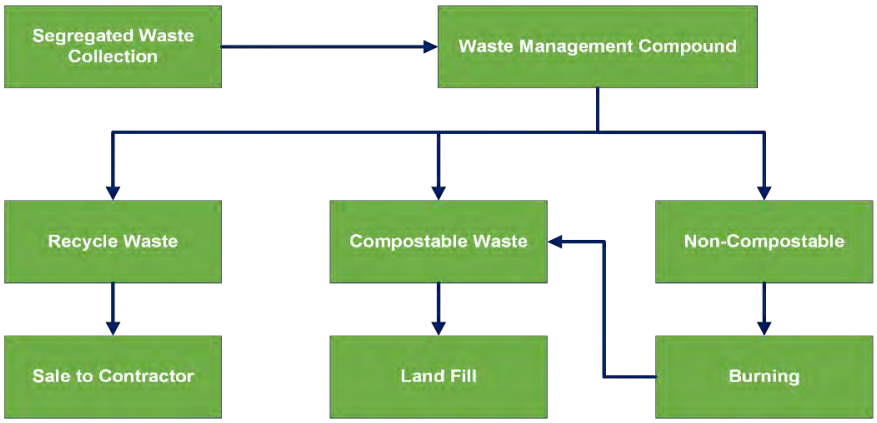

Figure 2: Waste Management Flowchart

5.2.1 Monitoring on Waste Management Status

During the monitoring period of October 2023 to March 2024, 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.

Figure 3: 3Rs

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.

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 2023 to March 2024, the composting process has yielded approximately 1435 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: Composting of food waste and garden waste 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: Weekly Waste Collection and reselling of waste to third-parties

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 HSE Officer/ Environmental Officer.

Figure 7: Oil Contaminated Waste Stored at WMC

From October 2023 to March 2024, a total of 10,520 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 January 2024, 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.

5.2.3 Monitoring Data and Statistics

The Waste Statistics during the monitoring period from October 2023 to March 2024 are as follows:

Table 5: Monthly Waste Monitoring Record

Month	Hazardous Waste (kg.)	Non-hazardous Waste (kg.)	Composting (kg.)
October 2023	20	646	160
November 2023	0	811	290
December 2023	0	636	220
January 2024	10,500	2198	310
February 2024	0	5,938	215
March 2024	0	500	240
Total	**10,520**	**10,729**	**1435**

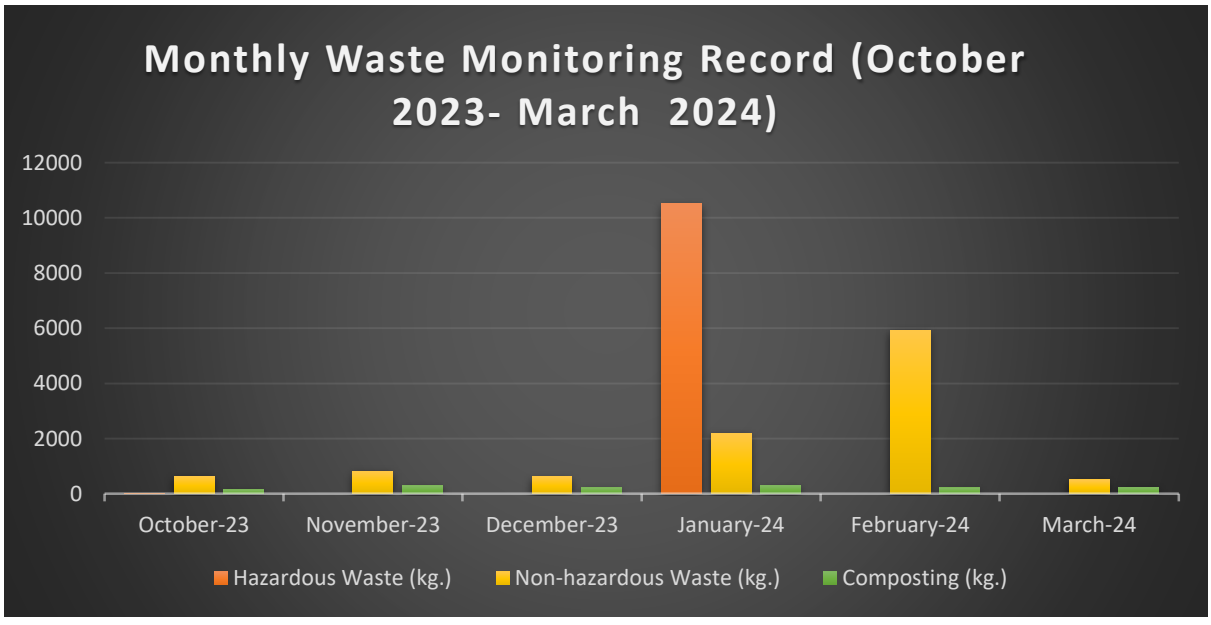

Figure 8: Monthly Waste Monitoring Records from Oct 2023 - Mar 2024

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	23,718	13,324	2,560
2024	10,500	8,636	765

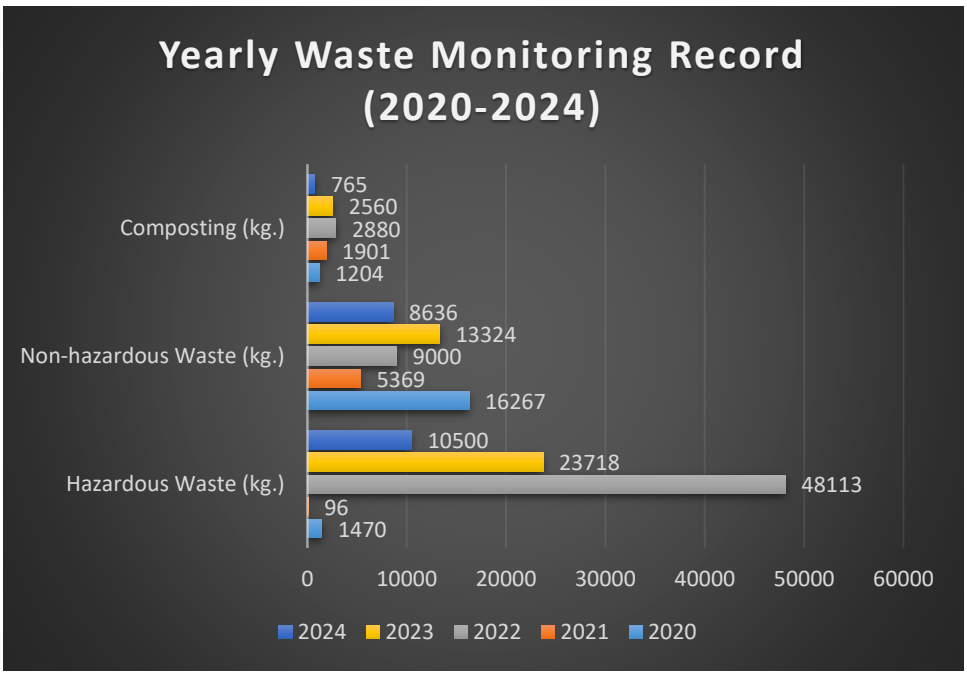

Figure 9: Yearly Waste Monitoring Record (2020 - 2024)

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 warehouse on 16 January 2024 and at GOCS-2 on 09 March 2024. 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.

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 installing 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 exercise was conducted on January 16, 2024, at the Warehouse fuel station compound. 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 10: Spill Drill Exercise on 16 January 2024

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 11: Canteen inspection at MPRL E&P Mann Field 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 12: 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.

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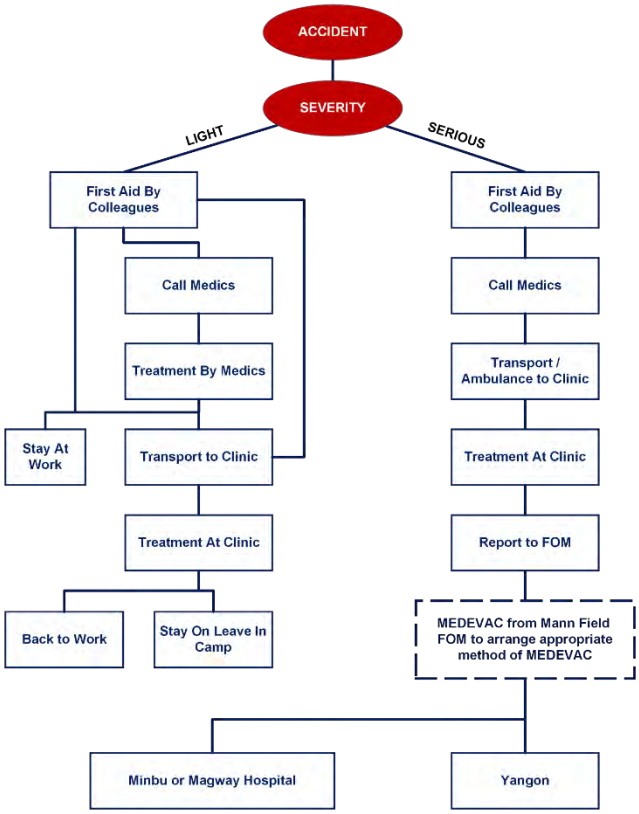

Figure 13: Medical Evacuation Flowchart

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 14: 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.

Figure 15: 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 16: 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

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 eighth 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 and Z4AQN, water samples were collected at seven locations, and soil quality monitoring was carried out at Z3S1, Z3S2, Z4S1 and Z4S2. In addition to this, self-monitoring activities were conducted and tested at ALARM lab, 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
2.	Hydrogen Sulfide (H_2S) Monitoring	To fulfill the obligation from the ECC and ensure the safety of operations & personnel living nearby.	All Operating Wells	H_2S(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

No.	Self-Monitoring Activities	Purpose of Monitoring	Locations	Parameters to be monitored	Frequency
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, Silver, Sulfides, Temperature increase, Total coliforms, Total phosphorous, Total suspended solids, Zinc	Bi-annual
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. Construction and Operation	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 accordingly 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

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, Floride, Selenium, Uranium	Z1GW, Z2GW, Z3GW and Z4GW, locations indicated on Table 5.11and 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, Floride, 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. Laboratory analysis of BOD_5, COD, Total Nitrogen, Total Phosphorus, Oil and grease, TSS, E. coli, Arsenic, Barium, Boron, Total Chromium, Fluoride, Selenium, Uranium	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. Laboratory analysis of pH; Arsenic (As); Lead (Pb); Cadmium (Cd); Copper (Cu); Zinc (Zn); Manganese (Mn); and Iron (Fe).	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	Check compliance with Myanmar National Environmental Quality (Emissions) Guidelines for site runoff and wastewater discharges (for BOD_5, COD, TSS, oil and grease, pH, total coliform bacteria, total nitrogen, total phosphorus) during construction. Check compliance with Myanmar National Environmental Quality (Emissions) Guidelines for Onshore Oil and Gas Development during operation.	Treated wastewater discharge points at discharge points such as worker camps, GOCS, shut in wells.	In-situ measurements for pH, temperature, dissolved oxygen (DO), electrical conductivity (EC), and turbidity. Laboratory analysis of BOD_5, COD, Total Suspended Solids, Total Nitrogen, Total Phosphorous, Oil and Grease	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_2S)	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

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 stipulated by Article 91 of the EIA procedure (2015), MPRL E&P formally applied for an extension of the Mann Field Environmental Compliance Certificate (ECC) to the regional ECD (Magway) on September 19, 2023, as the current ECC is due to expire on March 22, 2024. The application included a detailed report outlining MPRL E&P's ongoing efforts to fulfill ECC commitments as specified in Table 8.1 of the approved Environmental Impact Assessment (EIA) report. Supporting evidence, including documents and photographs, was provided to substantiate the extension request. In compliance with ECD requirements, MOGE provided favorable comments on the Mann Field ECC extension case, submitted on January 1, 2024.

MPRL E&P upholds a solid alliance with both district and regional ECD offices, proactively incorporating and executing their proposed recommendations. Furthermore, we maintain continual communication with pertinent departments and authorities to guarantee timely responses as situations arise.

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

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.

On November 15, 2023, the regional Environmental Conservation Department (Magway) led by a director conducted an extensive inspection of Mann Field operations regarding to our submitted 7th environmental monitoring report. This inspection encompassed various critical areas, including CSR's mobile clinic at Nan Oo village, GOCS-2, zero discharge system at warehouse, WMC, concrete pad and additional cellar at M-16, and produced water injection at M-573.

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

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.

We have future plans to conduct monitoring activities for air, noise, surface water, groundwater, and soil quality. The scheduling and implementation of these initiatives will depend on the current socio-political conditions and security factors.

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

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အကြောင်းအရာ	**MPRL E&P Pte. Ltd မှ မကွေးတိုင်းဒေသကြီး၊ မန်းရေနံမြေတွင် အကောင်အထည်ဖော် ဆောင်ရွက်လျက်ရှိသည့် ကုန်းတွင်းရေနံဖွံ့ဖြိုးတိုးတက်ရေးအစီအစဉ် (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၊	- သတ်မှတ်ချက် အတွင်းရှိရေး စောင့်ကြပ်ကြည့်ရှုလျက် ရှိပါသည်။ - COVID-19 pandemic & Security Concern ကြောင့် စတုတ္ထနှင့် ပဉ္စမအကြိမ် အစီရင်ခံစာတွင် Third party monitoring survey မပြုလုပ်နိုင်ခဲ့ပါ။ ဆဋ္ဌမ အကြိမ်နှင့် သတ္တမအကြိမ် အစီရင်ခံစာများတွင် ထည့်သွင်းတိုင်းတာ စောင့်ကြပ်ကြည့်ရှုလျက် ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှု အခြေအနေ
(ခ)	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် တိုင်းတာမည်ဟု ဖော်ပြပါရှိသော ရေထု အရည်အသွေး (မြေပေါ်ရေ၊ မြေအောက်ရေ) ဆိုင်ရာ Parameter များကို ပြည့်စုံစွာ တိုင်းတာရန်၊	- COVID-19 pandemic & Security Concern ကြောင့် စတုတ္ထနှင့် ပဉ္စမအကြိမ် အစီရင်ခံစာတွင် Third party monitoring survey မပြုလုပ် နိုင်ခဲ့ပါ။ တိုင်းတာသည့် အဖွဲ့အစည်း၊ ရရှိနိုင်သည့် စက်ပစ္စည်းအမျိုးအစား နှင့် ခါတ်ခွဲခန်းအခြေအနေ တို့ပေါ်မူတည်၍ ပြည့်စုံစွာ တိုင်းတာနိုင်ရေး ကြိုးစား ဆောင်ရွက်လျက်ရှိပါသည်။ - နိုင်ငံအတွင်းရှိ ခါတ်ခွဲခန်း များ၌ စစ်ဆေးနိုင်သည့် Parameter များအား စစ်ဆေး တိုင်းတာလျက် ရှိပါသည်။
(ဂ)	မြေပေါ်ရေအရည်အသွေးကို စောင့်ကြည့် စစ်ဆေးမှု အစီရင်ခံစာတွင် NEQEGs နှင့် နှိုင်းယှဉ်ထားပါသဖြင့် အိမ်နီးချင်းနိုင်ငံများ၏ မြေပေါ်ရေအရည်အသွေး သတ်မှတ်စံချိန် စံညွှန်းများနှင့် နှိုင်းယှဉ်ဖော်ပြရန်၊	- 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၊	- 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 စောင့်ကြည်စစ်ဆေးမှု 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။	- 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 ကြည့်ရှုလျက်ရှိပါသည်။
(ခ)	ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေးများ တိုင်းတာစစ်ဆေးရာတွင် တိုင်းတာစစ်ဆေးမှု ရလဒ်များအပေါ် မူတည်၍ 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၊	- 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၊	- ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်တွင် ဖော်ပြထားသည့် အတိုင်း တိုင်းတာစစ်ဆေးလျက် ရှိပါသည်။ - တိုင်းတာစစ်ဆေးသည့် အဖွဲ့အစည်း နှင့် တိုင်းတာသည့် စက်ပစ္စည်း၊ ခါတ်ခွဲခန်းမှ တိုင်းတာနိုင်သည့် အခြေအနေ စသည်တို့ပေါ်မူတည်၍ ကျန်ရှိ parameter များကို တိုင်းတာ စစ်ဆေးနိုင်ရေး ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(c)	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၊	- 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)	လေထုအရည်အသွေးတိုင်းတာသည့် Data Result များအား Data Analysis ပြုလုပ်ရန်အတွက် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များပါ သတ်မှတ်ထားသည့် အချိန်ကာလအတိုင်း တိုင်းတာထားသည့် ရလဒ်များအား Excel Form ဖြင့် ပြည့်စုံစွာ ထည့်သွင်းဖော်ပြရန်၊	- (၆)လပတ် ပတ်ဝန်းကျင်စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာများတွင် သတ်မှတ်ထားသည့် အချိန်ကာလ အတိုင်း ထည့်သွင်း တင်ပြလျက်ရှိပါသည်။
(ဆ)	ဂေဟစနစ်ထိန်းသိမ်းရေးအနေဖြင့် ပတ်ဝန်းကျင်စိမ်းလန်း စိုပြေရေး အတွက် ထိန်းသိမ်းကာကွယ်ထားသော သဘာဝ ပေါက်ပင်များအား ကောင်းမွန်စွာ ရှင်သန်နိုင်ရေး၊ ပျက်စီးဆုံးရှုံးမှုများ မဖြစ်ပေါ်စေရေး ဂရုပြုဆောင်ရွက်သွားရန်၊	- ကောင်းမွန်စွာ ရှင်သန်နိုင်ရေး နှင့် ပျက်စီးဆုံးရှုံးမှုများ မဖြစ်ပေါ်စေရေး ဂရုပြု လိုက်နာ ဆောင်ရွက်လျက်ရှိပါသည်။

စဉ်	အကြောင်းကြားစာပါ လိုက်နာဆောင်ရွက်ရမည့် အချက်များ	လိုက်နာဆောင်ရွက်ထားရှိမှုအခြေအနေ
(၈)	လုပ်ငန်းတွင် မီးဘေးအန္တရာယ်ကာကွယ်ရေးအတွက် မီးသတ်ဦးစီးဌာန၏ လမ်းညွှန်ချက်များအတိုင်း အထူးအလေးထားလိုက်နာဆောင်ရွက်ရန်၊	- မီးသတ်ဦးစီးဌာန၏ လမ်းညွှန်ချက်များအတိုင်း အထူးအလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(စ)	အတည်ပြုပြီး EIA အစီရင်ခံစာအား အများပြည်သူများ သိရှိနိုင်ရေး ကုမ္ပဏီ Website ကဲ့သို့သော အများပြည်သူများ သိရှိနိုင်မည့် နည်းလမ်းများအသုံးပြု၍ လွှင့်တင်ထားရှိရန်၊	- 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
(၄)	စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာအား ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် (၁၀၉) နှင့်အညီ ရေးဆွဲပြုစု၍ အပိုဒ် (၁၀၈) နှင့်အညီ (ဖ)လလျှင် (၁)ကြိမ် ပုံမှန်အစီရင်ခံတင်ပြရန်။	- (ဖ) လ လျှင် တစ်ကြိမ် ပုံမှန် အစီရင်ခံ တင်ပြလျက်ရှိပါသည်။

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 မှ ၂၀၂၃ ခုနှစ်၊ မတ်လအထိ) တင်ပြလာသော (ဖ)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 bacteria၊ Biochemical Oxygen Demand (BOD)၊ Total Suspended Solid တန်ဖိုးတို့သည် သတ်မှတ်စံချိန် စံညွှန်းထက် ကျော်လွန်နေသည်ကို တွေ့ရှိရသဖြင့် ကျော်လွန်ရသည့် အကြောင်းရင်းအား ဖော်ပြရန်နှင့် သတ်မှတ်စံချိန်စံညွှန်းအတွင်းရှိစေရေး စီမံဆောင်ရွက် သွားရန်၊	- သတ်မှတ်စံချိန်စံညွှန်းထက် ကျော်လွန်ရသည့် အကြောင်းရင်းအား ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုမှု 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
(ငြ)	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 ဂရုပြုဆောင်ရွက်သွားရန်၊	- 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
(၉)	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၊	- မှတ်သား လိုက်နာ ဆောင်ရွက် လျက်ရှိပါသည်။
(၈)	ကုမ္ပဏီမှ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာ ဆောင်ရွက်မှု သက်သေခံလက်မှတ် Environmental Compliance Certificate (ECC) ၏ အပိုဒ် (B1) အရ အတည်ပြုပြီး EIA အစီရင်ခံစာ၏ ဇယား (၈.၃) တွင် ဖော်ပြထားသော ကတိကဝတ်များအား အကောင် အထည်ဖော် ဆောင်ရွက်သွားရန်၊	- ဖော်ပြထားသော ကတိကဝတ်များအား လိုက်နာ အကောင်အထည်ဖော် ဆောင်ရွက်လျက် ရှိပါသည်။

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)	EIA Procedure အပိုဒ်(၁၀၆)အရ စီမံကိန်းအဆင့်အားလုံးတွင် ဆိုးကျိုးသက်ရောက်မှုအားလုံးအတွက် စီမံကိန်းနှင့် ဆက်စပ်ဆောင်ရွက်မှုများအား မိမိကိုယ်မိမိ ဘက်စုံ စောင့်ကြပ် ကြည့်ရှုစစ်ဆေးခြင်းကို စဉ်ဆက်မပြတ် လက်တွေ့ဆောင်ရွက်ရမည့်အပြင် သက်ဆိုင်ရာ ဥပဒေများ၊ နည်းဥပဒေများ၊ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း နှင့် စံချိန်စံညွှန်းများ၊ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာဆောင်ရွက်မှုသက်သေခံလက်မှတ်ပါ စည်းကမ်းချက်များနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်ပါ အချက်များကို အလေးထား လိုက်နာဆောင်ရွက်သွားရန်၊	- အလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(၄)	EIA Procedure အပိုဒ် (၁၀၇) အရ လုပ်ငန်းစီမံကိန်း၏ ပျက်ကွက်မှုတစ်ခုခုကြောင့် အန္တရာယ်ဖြစ်စေနိုင်သော ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုဖြစ်နိုင်သည့်ကိစ္စ (သို့မဟုတ်) သယံဇာတ နှင့် သဘာဝပ တ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာနက အမြန်သိရှိရန် လိုအပ်သည့် ကိစ္စကို (၂၄) နာရီအတွင်းလည်းကောင်း၊ အခြားကိစ္စများ အားလုံးတွင် ယင်းဖြစ်စဉ်ဖြစ်ရပ်ကို စတင်သိရှိသည့်အချိန်မှ (၇) ရက်အတွင်းတွင်လည်းကောင်း၊ စီမံကိန်းလုပ်ငန်းပိုင်ရှင်မှ ဝန်ကြီးဌာနသို့ အသိပေးတင်ပြသွားရန်၊	- သိရှိလိုက်နာ ဆောင်ရွက် သွားပါမည်။

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 လိုက်နာ ဆောင်ရွက်သွားရန်၊	- 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၊	- ဒေသခံပြည်သူတို့၏ ဆန္ဒနှင့် သဘောထားများကို အလေးထား လိုက်နာ ဆောင်ရွက်လျက် ရှိပါသည်။
(န)	စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာအား ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း ဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် (၁၀၉) နှင့်အညီ ရေးဆွဲပြုစု၍ အပိုဒ် (၁၀၈) နှင့်အညီ (၆) လလျှင် (၁) ကြိမ် ပုံမှန် အစီရင်ခံတင်ပြရန်၊	- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန သို့ စောင့်ကြပ် ကြည့်ရှုမှု အစီရင်ခံစာ ကို (၆) လလျှင် တစ်ကြိမ် ပုံမှန် အစီရင်ခံ တင်ပြလျက် ရှိပါသည်။

Figure 17: DG (ECD)'s Inspection Tour to Mann Field

Figure 18: Field Inspection of the regional ECD (Magway) team

Figure 19: Pumping Unit Fencing at M-267 and M-288

Figure 20: Drying Sludge at GOCSs

Figure 21: Fueling Station at Warehouse Compound

Figure 22: Shut-in Wells of M-184 and M-191

Figure 23: The Last Drilled Wells of M-699 and M-670

Figure 24: Progress of Planted Trees at GOCS-3 Compound

Figure 25: HSE Audit

Figure 26: Watering the plants using sand pots at Mann Field

Figure 27: GOCS-1

Figure 28: GOCS-2

Figure 29: HSE Awareness Notice Board

Figure 30: Appreciation Certification from RecyGlo on Global Recycle Day

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:

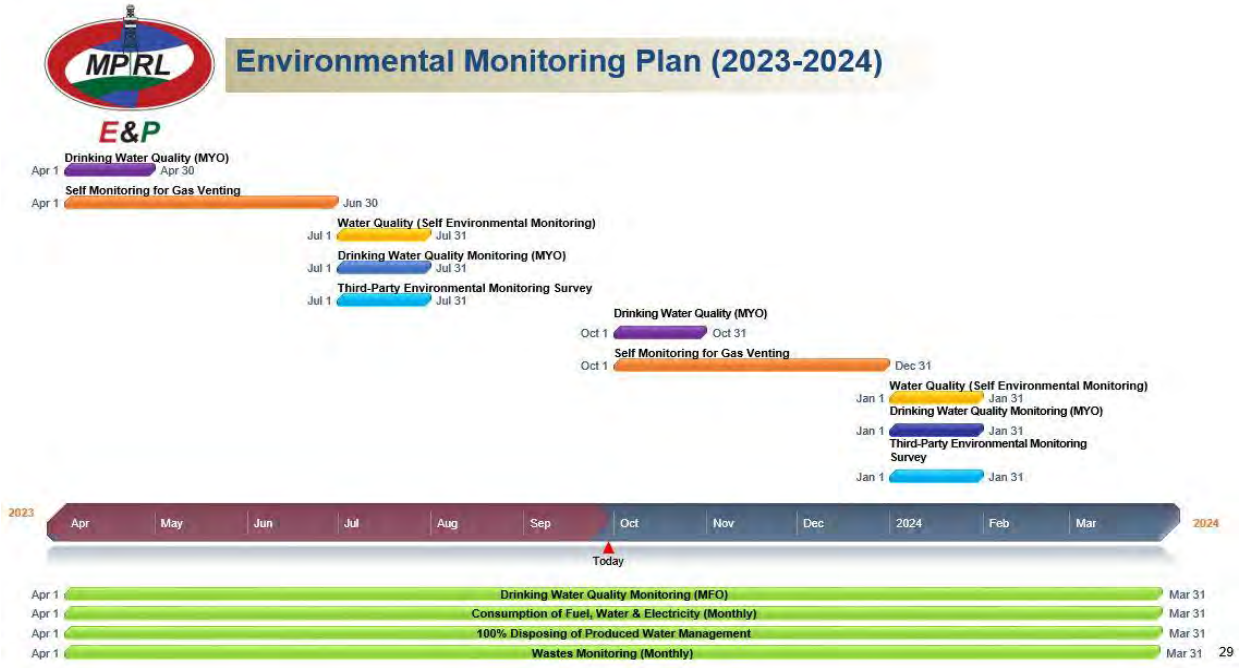

Figure 31: Timeline of Environmental Monitoring Plan (2023-24)

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	16 – 17 January 2024
Z4AQN	20° 11' 41.9" N 94° 52' 32.4" E	6 - 7 May 2015	17-18 January 2024

Table 11: Air Quality Monitoring Parameters

Parameters	Unit	Method and Duration
Air Quality		In situ reading for 24 hour
Sulphur Dioxide (SO_2)	$\mu g/m^3$	
Carbon Monoxide (CO)	ppm	
Nitric Oxide (NO)	$\mu g/m^3$	
Nitrogen dioxides (NO_2)	$\mu g/m^3$	
Particulate Matter <2.5 µm ($PM_{2.5}$)	$\mu g/m^3$	
Particulate Matter <10 µm (PM_{10})	$\mu g/m^3$	
Meteorological Data		
Relative Humidity (R.H)	%	
Temperature	°C	
Wind Speed	kph	
Wind Direction	-	

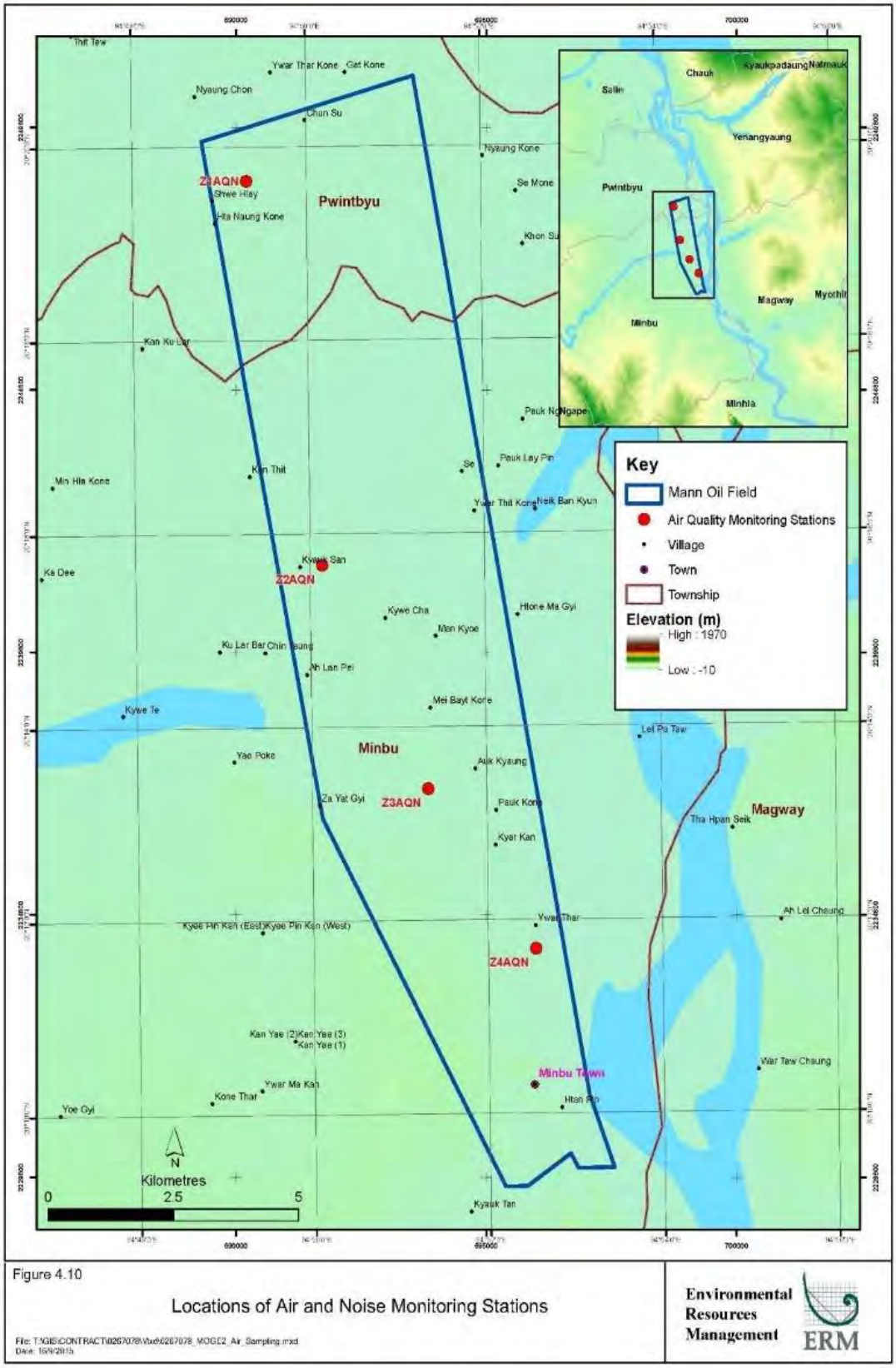

Figure 4.10

Locations of Air and Noise Monitoring Stations

File: T:\GIS\CONTRACT\0267078\Mxd\0267078_MOGE2_Air_Sampling.mxd
Date: 16/9/2015

Environmental Resources Management ERM

Figure 32: Locations of Air and Noise Monitoring Stations

Figure 33: Air and Noise Quality Monitoring at Z3AQN

Figure 34: Air & Noise Quality Monitoring at Z4AQN

Table 12: Summary of Air Quality Monitoring Results

Parameters	Monitoring Stations (Baseline May 2015)				Monitoring Stations (January 2024)			
	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	-	-	3.5 ppm	3.26 ppm
NO_2 (1 - hr)	188.18 µg/m^3	188.18 µg/m^3	56.45 µg/m^3	169.36 µg/m^3	-	-	4.74 µg/m^3	10.22 µg/m^3
NO	380.49 µg/m^3	85.92 µg/m^3	<12.27 µg/m^3	171.84 µg/m^3	-	-	50.0 µg/m^3	46.0 µg/m^3
$PM_{2.5}$ (24 - hr)	40 µg/m^3	30 µg/m^3	20 µg/m^3	30 µg/m^3	-	-	-	-
PM_{10} (24 - hr)	50 µg/m^3	40 µg/m^3	40 µg/m^3	40 µg/m^3	-	-	51.07 µg/m^3	65.72 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	-	-	0.2 µg/m^3	0.0 µg/m^3
Hydrogen Sulfide (H_2S)	-	-	-	-	-	-	0.0 ppb	0.99 ppb
Ozone (O_3)	-	-	-	-	-	-	-	-
Temp (°C)	30.7	29	31.5	27.1	-	-	-	-
Relative Humidity (%)	61	61	56	55	-	-	40.73	39.28
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 Table 12, the Air Quality monitoring results at both the Z3AQN and Z4AQN during January 2024 indicate that all the parameters are within NEQEG standards except for the PM10 value at Z3AQN and Z4AQN. The reasons for higher value of PM10 may be many reasons such as leaves and wood burning practice in surrounding, weather conditions, transportation, vehicle usage. The monitoring results are attached and shown in 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 January 2024 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		January 2024	
	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**	**42.3**	**40.8**

Table 15: Noise Quality Monitoring Results at Z4AQN

Receptor	One-hour LAeq (dBA)[a]			
	2015		January 2024	
	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**	**42.3**	**40.8**

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	17-Jan-24
	2	20° 19' 45.38" N 94° 49' 21.05" E	at Pauk Su village, Pwint Phyu Township	6 - 9 May 2015	17-Jan-24
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	17-Jan-24
	2	20° 15' 40.05" N 94° 50' 10.40" E	at east of Kyauk San village, Minbu Township	6 - 9 May 2015	17-Jan-24
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	17-Jan-24
	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	17-Jan-24
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	17-Jan-24
	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	17-Jan-24

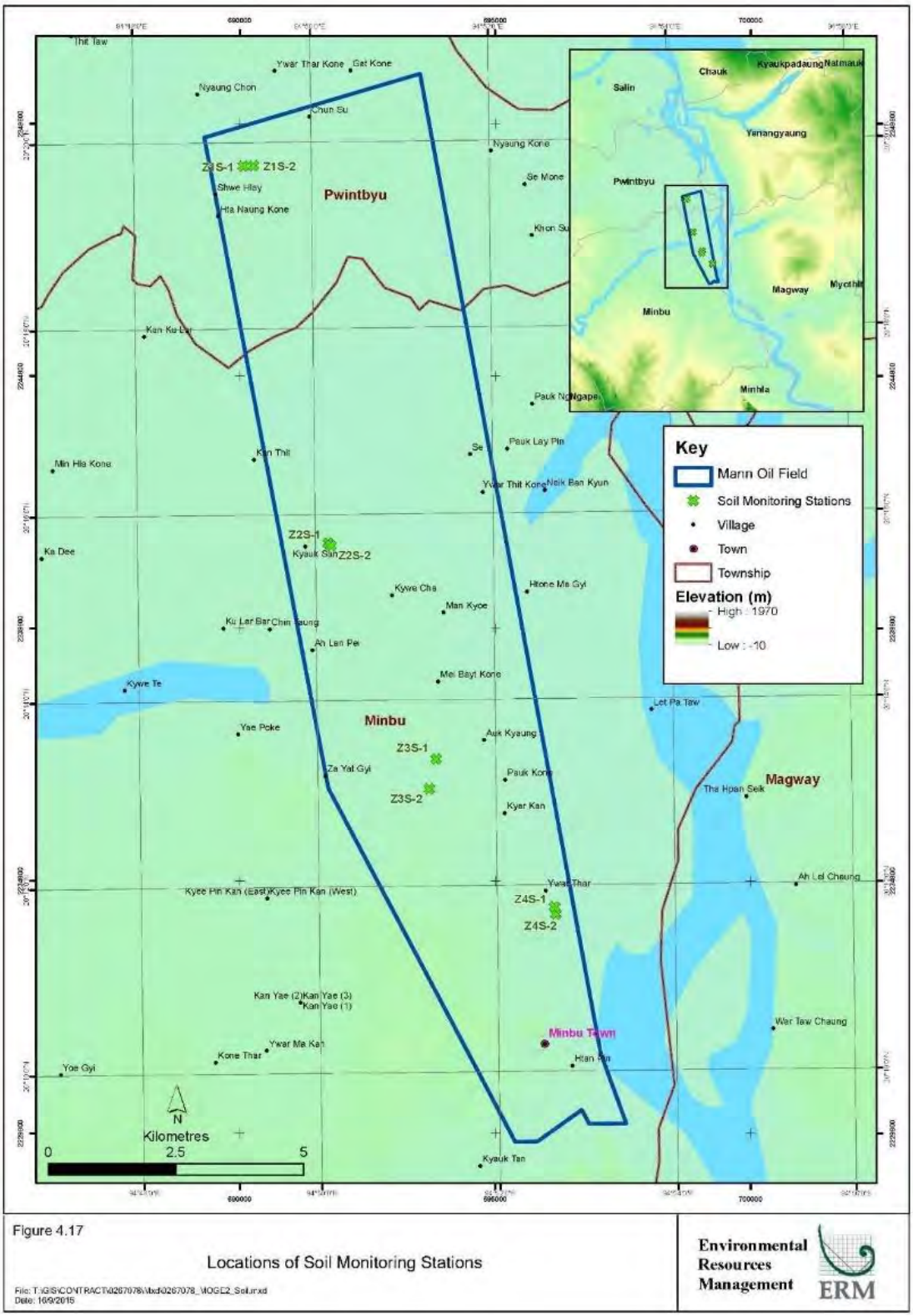

Figure 4.17

Locations of Soil Monitoring Stations

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Date: 10/9/2015

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Figure 35: Location of Soil Monitoring

Figure 36: Soil Quality Monitoring at Z3S1, Z3S2, Z4S1, Z4S2

Table 17: Soil Quality Monitoring Results

Parameter	Unit	Baseline Data Sampling Station (May 2015)								Soil Analysis Result (January 2024)								International Agricultural Soil Standard
		Z1S1	Z1S2	Z2S1	Z2S2	Z3S1	Z3S2	Z4S1	Z4S2	Z1S1	Z1S2	Z2S1	Z2S2	Z3S1	Z3S2	Z4S1	Z4S2	
pH	-	6.8	6.8	6.7	6.7	6.8	6.8	6.9	6.9	-	-	-	-	7.0	6.59	7.28	7.36	6 - 7.5
Arsenic	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	0.008	0.005	0.003	0.005	
Lead	mg/kg	115	120	135	130	120	124	137	135	-	-	-	-	8.22	2.83	5.73	3.98	
Cadmium	mg/kg	0.009	0.008	0.009	0.007	0.007	0.007	0.006	0.007	-	-	-	-	-0.07	0.07	0.08	0.02	
Copper	mg/kg	105	99	110	115	90	95	85	88	-	-	-	-	4.43	4.29	11.8	9.37	100
Zinc	mg/kg	75	80	72	69	65	70	75	78	-	-	-	-	4.54	4.21	12.25	10.82	250
Manganese	mg/kg	30	32	38	35	28	25	31	30	-	-	-	-	117.3	153.3	239	213.5	500
Iron	mg/kg	4850	4790	4900	4930	4870	4950	4700	4690	-	-	-	-	100	127	104	103	-
Soil Texture	-	Silty clay	Silty clay	Silty Sand	Silty Sand	Silty Sand	Silty Sand	Sandy silt with minor clay	Sandy silt with minor clay	-	-	-	-	-	-	-	-	-
Soil Color	-	Grey	Grey	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	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 January 2024. 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	17 January 2024
Z3SW2	20° 14' 45.74" N 94° 51' 1.87" E	Mann Chaung, about 50 m downstream of Z3SW1	17 January 2024
Z4SW1	20° 11' 41.31" N 94° 52' 41.11" E	Near west bank of Ayeyarwady river, Minbu Township	17 January 2024
Z4SW2	20° 11' 38.80" N 94° 52' 42.50" E	Ayeyarwady river, about 90 m downstream of Z4SW1	17 January 2024

Figure 37: Locations of Surface Water Quality Monitoring

Figure 38: Surface Water Quality Monitoring at Z3SW1, Z3SW2, Z4SW1, and Z4SW2

As per the monitoring results of surface water in January 2024 as shown in Table 19, total phosphorous value is higher in lab result and it may be many reasons such as agricultural runoff, wastewater, soil erosion, septic systems, aquatic plant decomposition, industrial discharges, and natural sources, etc.

Table 19: Surface Water Quality Monitoring Results

Item/ Sample Name	2015				2024 (January)				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)	17/1/24 (11:05)	17/1/24 (11:26)	17/1/24 (14:25)	17/1/24 (14:35)		
Weather	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny	-	-
Transparency	High	High	Medium	Medium	-	-	-	-	-	-
Temperature Water (C)	37.66	37.62	31.55	31.18	24.7	24.7	24.7	24.5	-	-
pH	8.1	8.11	7.73	7.65	8.7	8.6	8.6	8.5	5.5-9	6-9
DO (mg/l)	11.33	11.52	7.12	7.15	8.15	8.56	6.99	7.22	≥2	-
EC (µs)	711.8	705.7	153	152.5	0.4	0.4	0.2	0.2	-	-
Turbidity (FNU)	7.1	7	25	43.7	<5	<5	38	19	-	-
Colour	5	10	45	55	0	0	214	242	-	-
Alkalinity	238	237	58	58	12	30	32	25	-	-
Hardness	144	150	58	50	81.27	55.1	44.08	46.83	-	-
BOD5 (mg/l)	10	10	14	16	3.4	4.1	3.8	3.6	<25	30
COD (mg/l)	32	32	32	32	<15	<15	<15	<15	<35	125
Total Nitrogen (mg/l)	3	9	19	18	2.5	4.5	2.8	3.4	15	10
Total Phosphorous (mg/l)	0.047	0.051	0.071	0.031	0.44	0.8	2.5	1.8	-	2.0
Oil and grease (mg/l)	5	7	<1	<1	3	3	5	4	0.3	10
TSS (mg/l)	7	13	124	138	0	0	40	25	80	50

Item/ Sample Name	2015				2024 (January)				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)	17/1/24 (11:05)	17/1/24 (11:26)	17/1/24 (14:25)	17/1/24 (14:35)		
E.Coli (CFU/100ml)	-	-	-	-	0	0	0	0		
Arsenic (mg/l)	-	-	-	-	0.005	0.005	0.01	0.01		
Barium (mg/l)	-	-	-	-	-	-	-	-		
Boron (mg/l)	-	-	-	-	<0.1	0.4	0.4	0.4		
Total Chromium (mg/l)	-	-	-	-	-	-	-	-		
Fluoride (mg/l)	-	-	-	-	0	0	0	0		
Selenium (mg/l)	-	-	-	-	-	-	-	-		
Uranium (mg/l)	-	-	-	-	-	-	-	-		

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 20: 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	17 January 2024
Z3GW2	20° 15' 6.44" N 94° 50' 53.77" E	Tube well in Kywegya village, Minbu Township	17 January 2024
Z4GW1	20° 11' 37.92" N 94° 52' 29.67" E	Well in Shwe War Gone Ward, Minbu Township	-
Z4GW2	20° 11' 29.50" N 94° 52' 27.85" E	Well in Shwe War Gone Ward, Minbu Township	17 January 2024

Figure 4.15

Locations of Groundwater Monitoring Stations

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Date: 10/9/2015

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Figure 39: Groundwater Quality Monitoring Locations

Figure 40: Groundwater Quality Monitoring at Z3GW1, Z3GW2, and Z4GW2

The results of groundwater quality monitoring are summarized in Table 22. As per the results, the BOD_5 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 BOD_5 value was over the standard at time of the baseline water sample monitoring for EIA report in 2015.

Item/ Sample Name	2015				2024 (January)				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)	17/1/24 (10:35)	17/1/24 (10:25)	-	17/1/24 (15:15)	-
Weather	Sunny	Sunny	Sunny	Sunny	Sunny	Sunny	-	Sunny	-
Transparency	High	High	High	High	-	-	-	-	
Temperature Water (C)	36.12	37.57	31.77	31.67	24.5	24.3	-	23.9	
pH	6.68	6.63	6.95	7.22	8.1	8.2	-	7.6	6.5-8.5
DO (mg/l)	2.9	2.29	1.44	3.41	4.9	4.33	-	6.03	
EC (µs)	1498.3	1198.7	5060.4	7740.8	2.12	0.6	-	9.42	
Turbidity (FNU)	4.9	4.6	0.5	1	<5	<5	-	<5	
Colour	5	10	Nil	Nil	0	0	-	0	
Alkalinity	354	279	462	624	32	28	-	44	
Hardness	246	222	539	639	39.19	42.7	-	353.99	
BOD_5 (mg/l)	10	14	8	10	3.2	3	-	3.2	3
COD (mg/l)	32	32	32	32	<15	<15	-	<15	250
Total Nitrogen (mg/l)	4	73	4	63	3.1	6.1	-	3.5	
Total Phosphorous (mg/l)	0.239	0.168	0.251	0.042	1.5	2.6	-	1.5	
Oil and grease (mg/l)	<1	<1	<1	<1	3	3	-	3	10

TSS (mg/l)	<5	<5	5	<5	0	0	-	0	
E.Coli (CFU/100 ml)	-	-	-	-	0	0	-	0	0
Arsenic (mg/l)	-	-	-	-	0.01	0.005	-	0.005	0.05
Barium (mg/l)	-	-	-	-	-	-	-	-	0.7
Boron (mg/l)	-	-	-	-	<0.1	<0.1	-	<0.1	2.4
Total Chromium (mg/l)	-	-	-	-	-	-	-	-	0.05
Fluoride (mg/l)	-	-	-	-	0	0	-	0	1.5
Selenium (mg/l)	-	-	-	-	-	-	-	-	0.04
Uranium (mg/l)	-	-	-	-	-	-	-	-	0.03

Table 21: Result Summary of Groundwater Quality Monitoring

8.6 Monitoring on Sludge Management Status

The Mann Field produces around 1500 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 123 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 41: 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 42: Produced Water Injection into Shut-in Wells

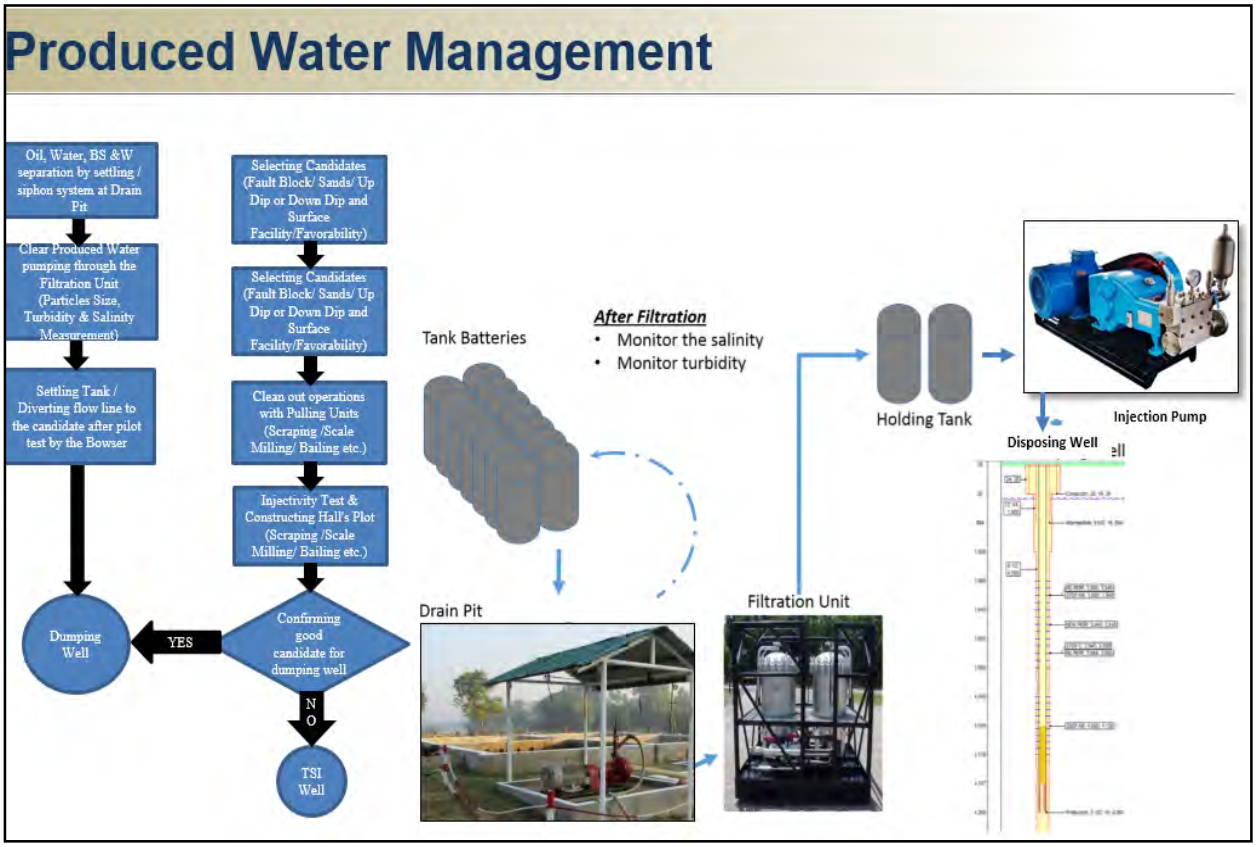

Figure 43: Produced Water Management Process

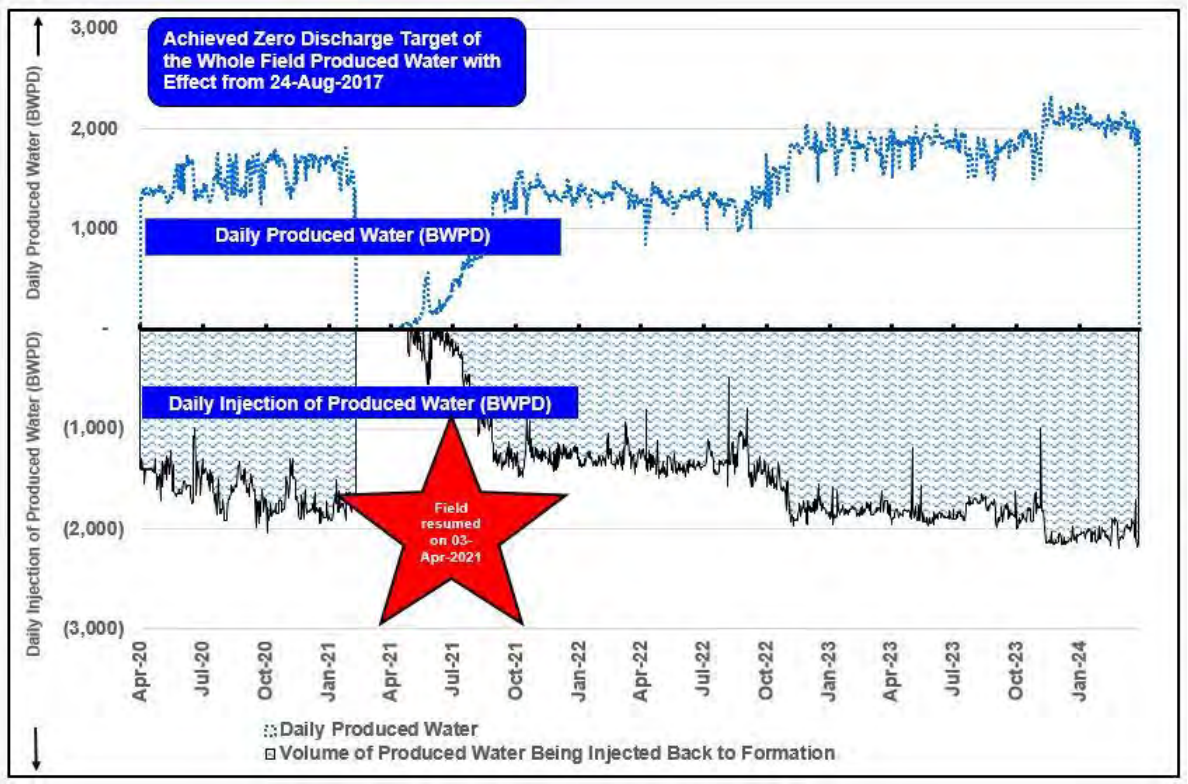

Figure 44: Produced Water Management

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 45: Regular Maintenance of Bio-filter by Third-party

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 January 2024, 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 value is 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 - 22: Bio-filter outlet water quality monitoring (Sewage Treatment System).

Table 22: Bio-filter Outlet Water Quality Monitoring (Sewage Treatment System)

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	NEQEG (2015)
1	BOD_5	mg/l	32	20	62	12	50
2	COD	mg/l	65	31	107	21	250
3	Oil and Grease	mg/l	12	5	7	6	10
4	pH	S.U	7.2	8.08	7.7	7.5	6-9
5	Total Coliform Bacteria	MPN/100ml	>1100	>1100	>1100	>1100	400
6	Total Nitrogen	mg/l	32	18.2	2.4	3.2	-
7	Total Phosphorous	mg/l	3	<1.5	3.2	1.4	2
8	Total Suspended Solids (TSS)	mg/l	5	2	9	8	50
9	Turbidity	FNU	-	-	-	<5	-
10	Electrical Conductivity	µs	-	-	-	0.9	-
11	Dissolved Oxygen	mg/l	-	-	-	4.07	-

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 46: Warehouse Tubular Section

8.8.4 Monitoring of Discharge Water from Warehouse (Tubular Section)

Figure 47: Warehouse Zero Discharge Tank

The hydro-test water monitoring schedule was carried out during the month of January 2024. The monitoring results revealed that all parameters complied with the NEQEG guidelines.

The monitoring results are presented in Table – 23: Monitoring of Discharge Water from Warehouse (Tubular Section).

Table 23: Discharge Water from Warehouse (Tubular Section)

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	NEQEG (2015)
1	BOD_5	mg/l	18	34	64	13	25
2	Arsenic	mg/l	0.005	0	0.005	0.005	-
3	Cadmium	mg/l	0.01	ND	0.01	ND	-
4	COD	mg/l	33	27	110	20	125
5	Chromium (Hexavalent)	mg/l	0.32	0.07	0.109	<0.02	-
6	Copper	mg/l	0.1	0.1	ND	ND	-
7	TSS	mg/l	21	42	33	22	35
8	Chloride	mg/l	68	88	141	15	600
9	Lead	mg/l	ND	-0.031	ND	0.15	-
10	Mercury	mg/l	0.32	0.001	-	0.006	-
11	Nickel	mg/l	<0.2	<0.2	ND	ND	-
12	pH	S.U	7.2	7.93	7.2	7.5	6-9
13	Phenols	mg/l	0.14	<0.1	<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	0.04	1
16	Zinc	mg/l	<0.02	<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 October 2023 to March 2024, water quality monitoring was conducted for the discharge of water from the equipment maintenance workshop (Down-hole Workshop) into the ZERO Discharge Tank. In January 2024, we monitored a total of twenty-nine parameters, and all of them complied with the NEQEG, except for lead 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

Figure 48: Down-hole Workshop

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 rainwater may also carry pollutants into the wastewater storage system.

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.

It may be many reasons for higher value of lead such as handling of lead containing materials such as using lead-based paints, downhole equipment maintenance and repair, metal working process, recycling of lead containing materials, etc.

The monitoring results are described in the following Table – 24: Discharge Water from Equipment Maintenance Workshop (Down-hole Workshop).

Table 24: Discharge Water from Down-hole Workshop

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	NEQEG (2015)
1	BOD_5	mg/l	40	24	112	14	50
2	Ammonia	mg/l	6.3	0.8	36	0.2	10
3	Arsenic	mg/l	≤0.010	0.011	0.005	0.01	0.1
4	Cadmium	mg/l	≤0.005	ND	ND	ND	0.1
5	COD	mg/l	65	68	180	25	250
6	Chlorine (Total Residual)	mg/l	<0.02	<0.02	<0.02	<0.02	0.2
7	Chromium (Hexavalent)	mg/l	0.15	<0.02	0.1	<0.02	0.1
8	Chromium (Total)	mg/l	0.048	≤0.002	≤0.002	-	0.5
9	Copper	mg/l	0.112	0.2	ND	ND	0.5
10	Cyanide (Free)	mg/l	<0.002	<0.002	<0.002	<0.01	0.1
11	Cyanide (Total)	mg/l	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	0.3	3.5	0.46	0.35	3.5
15	Lead	mg/l	≤0.005	0.038	ND	0.2	0.1
16	Mercury	mg/l	≤0.002	0.01	-	0.006	0.01
17	Nickel	mg/l	0.148	<0.2	ND	ND	0.5

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	NEQEG (2015)
18	Oil and Grease	mg/l	**16**	9	21	7	10
19	pH	S.U	7.3	7.9	7.5	7.5	6-9
20	Phenols	mg/l	<0.1	<0.1	<0.1	0.1	0.5
21	Selenium	mg/l	0.1	≤0.010	≤0.010	-	0.1
22	Silver	mg/l	≤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	27	27	26.8	25	<3
25	Total coliform bacteria	MPN/100 ml	>1100	>1100	>1100	>1100	400
26	Total Phosphorous	mg/l	40	<1.5	0.8	1.1	2
27	Total Suspended Solids	mg/l	5	12	26	35	50
28	Zinc	mg/l	<0.02	<0.02	0.03	<0.02	2
29	Vanadium	mg/l		≤0.002	≤0.002	-	-

Mechanical Workshop: pulling units, workover 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.

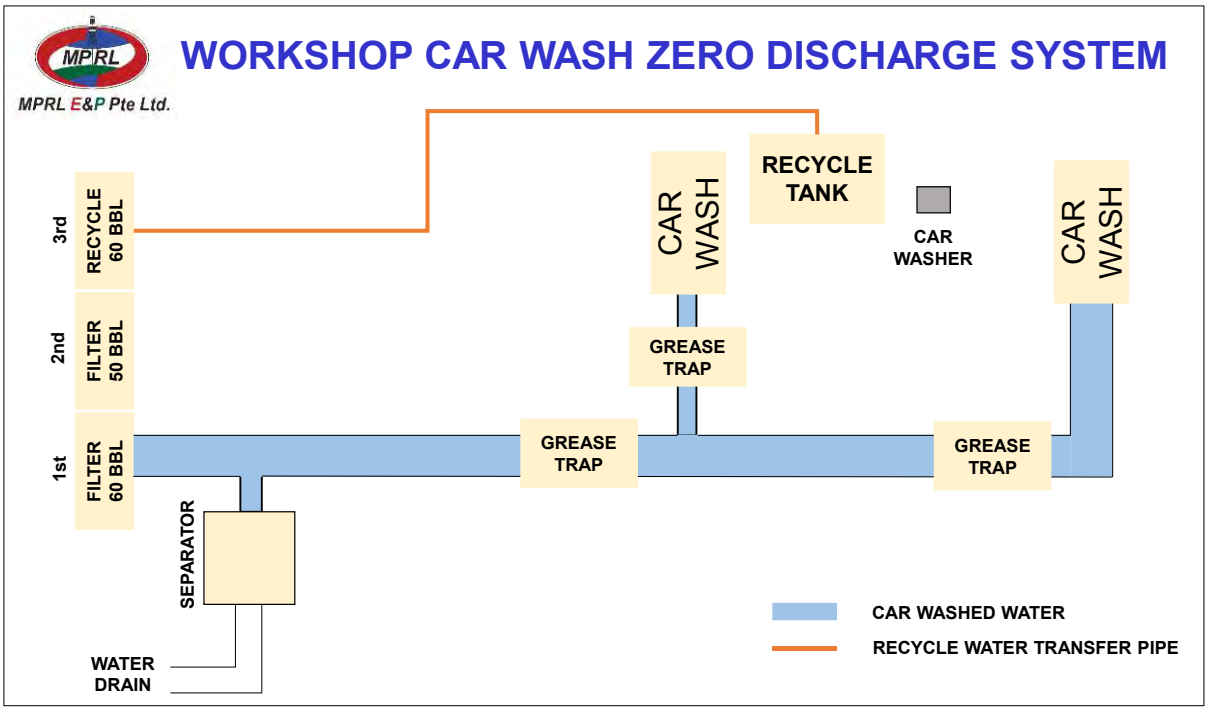

Figure 49: Recycle Water Usage System with Zero Discharge at Mechanical Workshop

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 January 2024. A total of 29 parameters were monitored, and among them, the total coliform and lead parameters 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.

It may be many reasons for higher value of lead such as handling of lead containing materials such as leaded gasoline, lead-based paints, automotive maintenance and repair, metal working process, recycling of lead containing materials, etc.

The tested results of the monitoring are presented in Table – 25: Discharge water from Equipment Maintenance Workshop (Mechanical Workshop).

Table 25: Discharge Water from Mechanical Workshop

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	NEQEG (2015)
1	BOD_5	mg/l	18	18	43	26	50
2	Ammonia	mg/l	2.3	0.5	14	0.2	10
3	Arsenic	mg/l	≤0.010	0	0.005	0.005	0.1
4	Cadmium	mg/l	≤0.005	ND	ND	0.01	0.1
5	COD	mg/l	36	59	96	34	250
6	Chlorine (Total Residual)	mg/l	<0.02	<0.02	<0.02	<0.02	0.2
7	Chromium (Hexavalent)	mg/l	0.34	<0.02	0.08	<0.02	0.1
8	Chromium (Total)	mg/l	0.046	≤0.002	≤0.002	-	0.5
9	Copper	mg/l	≤0.005	0.1	0.03	ND	0.5
10	Cyanide (Free)	mg/l	<0.002	<0.002	<0.002	<0.01	0.1
11	Cyanide (Total)	mg/l	0.004	<0.002	0.008	-	1
12	Fluoride	mg/l	0.02	0	0	0	20
13	Heavy Metals (Total)	mg/l	-	-	-	-	10
14	Iron	mg/l	0.6	1.087	0.31	0.32	3.5
15	Lead	mg/l	≤0.005	0.001	ND	0.12	0.1
16	Mercury	mg/l	≤0.002	0.001	-	0.006	0.01
17	Nickel	mg/l	0.142	<0.2	ND	ND	0.5
18	Oil and Grease	mg/l	21	4	8	6	10
19	pH	S.U	7.4	7.87	7	7.7	6-9
20	Phenols	mg/l	<0.1	<0.1	<0.1	<0.1	0.5
21	Selenium	mg/l	0.104	≤0.010	≤0.010	-	0.1
22	Silver	mg/l	≤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	27	26	26.8	24.9	<3
25	Total coliform bacteria	MPN/100 ml	>1100	>1100	>1100	460	400
26	Total Phosphorous	mg/l	20	<1.5	1.2	1.6	2
27	Total Suspended Solids	mg/l	3	6	3	<0.02	50

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	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.

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 50: Collection of Drinking Water Sample from RO Drinking Water System

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 January 2024, the drinking water quality of Mann Field Base Camp was tested at ALARM and ISO Tech 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 and odor parameters were not available in the lab.

The results of the purified drinking water quality from RO system are described in Table 26: Drinking Water Quality Monitoring from MPRL E&P Base Camp (RO Outlet).

Table 26: Drinking Water Quality Monitoring from MPRL E&P Base Camp (RO Outlet)

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	DWQS (2019)
1	pH	S.U	8.2	7.18	7.3	8.2	6.5-8.5
2	Turbidity	NTU	<5	0	<5	<5	5
3	Colour	TCU	12	1	0	1	15
4	Hardness	mg/l as $CaCO_3$	17	8	6	41.77	500
5	Arsenic	mg/l	0.005	0.003	0.005	0.005	0.05
6	Chloride	mg/l	42	24.2	44	5	250
7	Lead	mg/l	ND	ND	ND	ND	0.01
8	Total Dissolved Solids (TDS)	mg/l	22	0.032	17	10	1000
9	Iron	mg/l	0.2	0.014	0.21	0.05	1
10	Sulphate	mg/l	4.9	7.7	6.5	<2	250
11	Manganese	mg/l	0.2	-0.002	0.1	0.3	0.4
12	Nitrate	mg/l	≤0.067	<0.5	≤0.067	<0.5	50
13	Total Coliform Count	MPN/100ml	0	0	0	0	0
14	Total Fecal Coliform Count	MPN/100ml	0	0	0	0	0
15	Odor	Acceptable	1	1	1	-	-

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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 lab in January 2024. However, taste and odor parameters could not be tested due to the unavailability of labs. The monitoring results are presented in Tables 27 and 28.

Table 27: Groundwater Quality Monitoring near Injection Well 132 (Ko Win Maung)

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	DWQS (2019)
1	pH	S.U	7.1	7.99	7.4	7.3	6.5-8.5
2	Turbidity	FAU/NTU	<5	3.9	<5	<5	5
3	Colour	HU	18	4	42	1	15
4	Hardness	mg/l as CaCO3	60	18	210	42.53	500
5	TDS	mg/l	1102	1	1320	910	≤1000
6	Chloride	mg/l	67	9.2	141	43	250
7	Total Coliforms	MPN/100ml	>1100	0	>1100	9	0
8	Total Faecal Coliforms	MPN/100ml	460	0	93	0	0
9	Arsenic	mg/l	0.005	0.006	0.005	0.005	0.05
10	Iron	mg/l	0.3	0.1	0.36	0.31	1
11	Lead	mg/l	ND	0.004	ND	ND	0.01
12	Manganese	mg/l	0.8	0.02	0.5	1.8	0.4
13	Sulfate	mg/l	<2	706	837	449	250
14	Nitrate	mg/l	31.859	47.2	0.493	2.1	50
15	Odor	Acceptable	1	1	1	-	-

Table 28: Groundwater Quality Monitoring near Injection Well 132 (Ma Nyein)

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	DWQS (2019)
1	pH	S.U	7.5	7.93	7.4	8	6.5-8.5
2	Turbidity	FAU/NTU	<5	0.41	<5	<5	5
3	Colour	HU	4	2	6	2	15
4	Hardness	mg/l as $CaCO_3$	95	39	39	40.72	500
5	TDS	mg/l	410	1.14	1230	560	≤1000
6	Chloride	mg/l	120	61	111	58	250
7	Total Coliforms	MPN/100ml	93	9	0	0	0
8	Total Faecal Coliforms	MPN/100ml	0	0	0	0	0
9	Arsenic	mg/l	0.005	0.007	0.005	0.005	0.05
10	Iron	mg/l	0.3	0.622	0.26	0.21	1
11	Lead	mg/l	ND	ND	ND	0.1	0.01

No	Quality Parameter	Units	Results (Aug 2022)	Results (Jan 2023)	Results (Jul 2023)	Results (Jan 2024)	DWQS (2019)
12	Manganese	mg/l	0.6	0.042	0.3	2.3	0.4
13	Sulfate	mg/l	152	516	348	399	250
14	Nitrate	mg/l	10.2	12.5	0.938	2.4	50
15	Odor	Acceptable	1	1	1	-	-

In January 2024, 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 coliforms, manganese, and sulfate. 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 manganese and lead value may be high due many reasons such as geological sources, industrial pollution, agricultural runoff, corrosion of plumbing, poor structures, environmental factors, 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 51: Tube Well of Ko Win Maung

Figure 52: Tube Well of Ma Nyein

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 53.

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 29: Selected Gas Venting Wells Locations

Well No	Location	Gas Volume	Date
M 189	N 20°14'1.05" E 94°51'20.29"	0 – MMCFD	05 Oct 2023
M 205	N 20°13'9.99" E 94°51'20.15"	0 – MMCFD	10 Nov 2023
M 355	N 20°13'15.09" E 94°51'25.16"	0 – MMCFD	15 Dec 2023
M 605	N 20°12'58.49" E 94°51'19.22"	0 – MMCFD	02 Jan 2024
M 630	N 20°12'40.35" E 94°51'21.19"	0 – MMCFD	07 Feb 2024
M 634	N 20°12'53.42" E 94°51'19.25"	0 – MMCFD	09 Mar 2024

Gas Volume Measurement (Orifice Meter) Well-189

Date: 05 October 2023, Gas Volume – 0 MMCFD

Gas Volume Measurement (Orifice Meter) Well-205

Date: 10 November 2023, Gas Volume – 0 MMCFD

Gas Volume Measurement (Orifice Meter) Well-355

Date: 15 December 2023, Gas Volume – 0 MMCFD

Gas Volume Measurement (Orifice Meter) Well-605

Date: 02 January 2024, Gas Volume – 0 MMCFD

Gas Volume Measurement (Orifice Meter) Well-630

Date: 07 February 2024, Gas Volume – 0 MMCFD

Gas Volume Measurement (Orifice Meter) Well-634

Date: 09 March 2024, Gas Volume – 0 MMCFD

Figure 53: Gas-Vented Wells and Vented Gas Volume Measurement Record

8.12.1 Monitoring of Hydrogen Sulphide (H_2S)

In accordance with our Environmental and Social Monitoring program and self-monitoring schedule, our HSE Officers monitored Hydrogen Sulphide (H_2S) 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 30.

Table 30: Monitoring Results of the Hydrogen Sulphide (H_2S)

Sr. No:	Location	Date	Measured Time Duration	H_2S (PPM)	CO (PPM)	O_2 %	LEL %
1	M-384	14 November 2023	30 sec	0	0	20.9	0
2	M-537	10 December 2023	30 sec	0	0	21.0	0
3	M-607	21 January 2024	30 sec	0	0	20.9	0
4	M-73	12 February 2024	30 sec	0	0	20.9	0
5	M-125	18 March 2024	30 sec	0	0	20.9	0
6	M-166	18 March 2024	30 sec	0	0	20.9	0

H_2S 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 H_2S was detected, and the results for each well are listed in the above Table 30.

M-125 (Beside G-20 Main Road)

M- 384 (Beside Public Main Road and near Mann Kyoe Barrack)

M-537 (Beside Public Road)

Figure 54: H2S Monitoring Activities

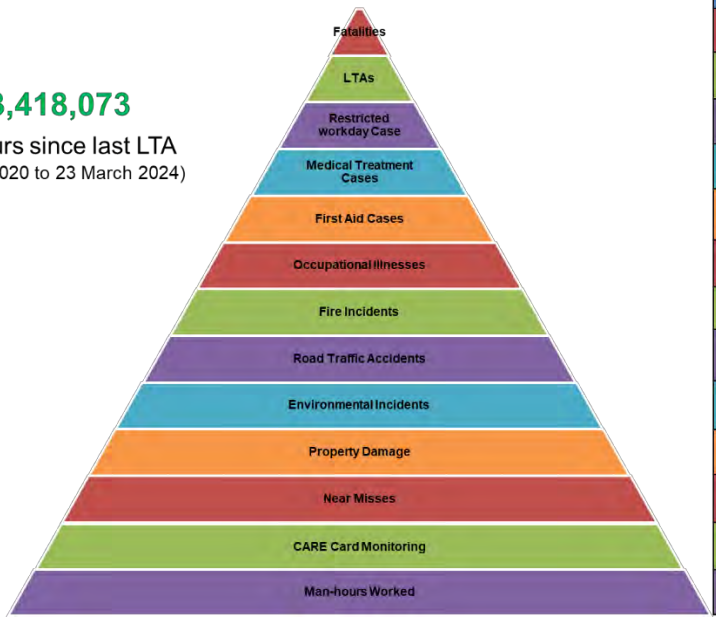
9. Occupational Health and Safety Performance

Occupational Health and Safety System Framework

As a leading oil and gas exploration and production company, MPRL E&P is committed to prioritizing the health and safety of its staff while minimizing its environmental impact. To achieve this, MPRL E&P ensures that health and safety management adheres to international standards and requirements such as Health and Safety Guideline 65 (managing for health and safety) and ISO 45001:2018, alongside compliance with relevant local laws, international standards, and industry best practices such as API requirements. These measures are continually monitored and improved as necessary.

9.1 HSE Statistics Pyramid

3,418,073
Man-hours since last LTA
(18 March 2020 to 23 March 2024)

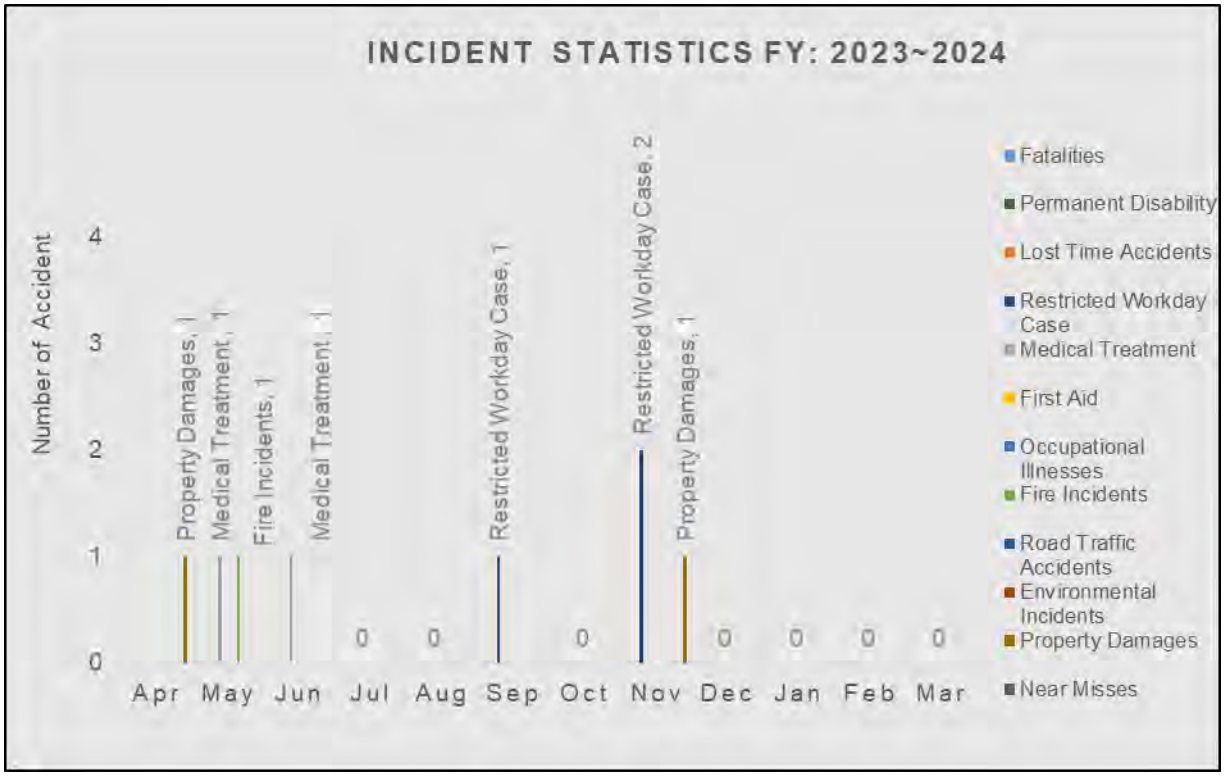


March 2024	Year 2024	Mann Field Project Life
NIL	NIL	NIL
NIL	NIL	29
NIL	NIL	4
NIL	NIL	9 (*)
NIL	NIL	115 (MPRL E&P)
NIL	NIL	NIL
NIL	NIL	33 (*)
NIL	NIL	38
NIL	NIL	42 (*)
NIL	NIL	85
NIL	NIL	53
688	2,289	59,761 (*)
67,526	242,922	32,587,163

Figure 55: HSE Statistics Pyramid up-to 23 March 2024 Status

9.2 Incidents Status

In the fiscal year of 2023-2024, there were a total of 8 incident occurrences in the Mann field operation, 2 medical treatment cases, followed by a fire Incident, 2 property damage cases and 3 restricted workday cases respectively. The number of the total recordable case still meets the KPI Target for 2023-24.



9.3 HSE Audits & Inspection

Following our previous EMoR submissions (7th), the MPRL E&P team participated in a regional ECD (Magway) site inspection tour of Mann Field. As part of our EMP, an 'Ambient Air & Noise Quality Survey' was also conducted during the tour for the upcoming EMoR report.

The areas included during their visitation are as follows:

1. GOCS-2
2. WMC
3. Well site M-16 (Construction of concrete pad and additional cellar)
4. Produce Water Injection Well SI-573, Z3AQN
5. Noise & Air Quality Monitoring @ Z3AQN by ECD (Magway)

The HSE Annual Audit for the fiscal year 2023-24 took place from 16-18 January 2024. This audit was organized in collaboration with the field management team and

selected team members from Field Operations to enhance efficiency. To conduct the HSE audit more effectively, the HSE team prepared a checklist by referencing MPRL E&P's HSE Management System, approved procedures and policies, industrial best practices, and applicable local legal requirements. This audit differs significantly from previous ones as it places greater emphasis on executing previous audit follow-up actions, ensuring recommendations are implemented throughout the fiscal year, and improving the system, procedures, policies, and practices rather than focusing solely on day-to-day unsafe conditions and actions, which are easier to identify on-site.

Regular surprise alcohol tests are conducted 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 robust and effective.

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

As per the Field HSE plan, the HSE team conducted a Tri-annual Inspection for all portable ladders, emergency ladders at GOCSs, platform ladders at the pulling units, well site tanks ladders, and moveable ladders at the mechanical workshop & down-hole workshop.

Figure 56: Ladders Inspection

Figure 57: Annual HSE Audit 2023-2024

9.4 HSE Training

As operational activities have accelerated, there is a growing demand for enhanced competency and safety within the operation team. In response, the intensity of HSE training has also increased proportionally to the heightened operational activity.

In the fiscal year 2023-2024, a total of 3,857 HSE training hours were achieved. The topics covered varied, with most sessions conducted internally by the HSE department. However, some health awareness training sessions were conducted by trainers from Pan Hlaing Hospital, ISOS International, Alpine, and the Myanmar Red Cross Society.

To enhance hazard awareness, procedural knowledge, safe work practices, and personal protection, Behavioral Safety training will be conducted during the specified period.

To ensure the safe behavior of drivers and achieve safe transportation, we conduct "Defensive Driving Technique Training" and "Driver Behavior Change Program" trainings.

To promote a positive environmental stewardship culture, we conduct "Drinking Water" awareness training and "Some Key Environmental Issues and Terms" trainings according to schedule. Additionally, our site doctor conducts "Practical Basic Life Support for Stretcher Teams" training and "Living with Hypertension" awareness sessions to provide health information and promote personal health.

As a component of the CSR program, a "Basic Life Saving" training session was facilitated for the Mann Field community by our on-site doctor from 16-17 December 2023.

Numerous internal HSE knowledge sharing training sessions are conducted to promote a culture of safety, enhance efficiency, and ensure that the HSE team is well-equipped to address the challenges of a dynamic and safety-critical environment.

Year 2023 – 2024 (October 23 ~ March 24) HSE training as per follow

- New Staff HSE Induction Trainings
- Basic First Aid Training (Trainer from Myanmar Red Cross)
- Mental Wellbeing (Trainer from International SOS)
- Drinking Water Awareness Training (Trainer from Alpine)
- Practical Basic Life Support to Stretcher Team

- Basic Life Support First Aid Training
- Defensive Driving Technique Training
- Living with Hypertension
- Behavioral Safety
- Evacuation Procedure of Emergency Wardens Training
- Some Key Environmental Issues and Terms
- Calculating the estimate monetary loss of an Incident
- Active Listening
- NEBOSH Electrical Safety Training
- High Rise Building Fire Protection System Training

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

- Managing Diabetes: Nourishing Your Body and Mind
- Exploring Healing through Art: An introduction to Art Therapy
- Understanding Gut Health
- Living with COVID in 2024
- Sleep Smarter, Work Sharper: Optimize Your Rest for Maximum Productivity

Myth Busters: Separating Fact from Fiction about Vitamins and Supplements.

Figure 58: First-aid Training (10-14 October 2023)

Figure 59: First Aid Training at Mann Field (23 October 2023)

Figure 60: Active Listening (20 October 2023)

Figure 61: "Mental Wellbeing" ISOS (09 October 2023)

Figure 62: "Gut-Health" by Pun Hlaing Hospital (20 October 2023)

Figure 63: Defensive Driving Refresher Training (21-24 November 2023)

Figure 64: "Managing Diabetes: Nourishing Your Body and Mind" Health Awareness Training (15 November 2023)

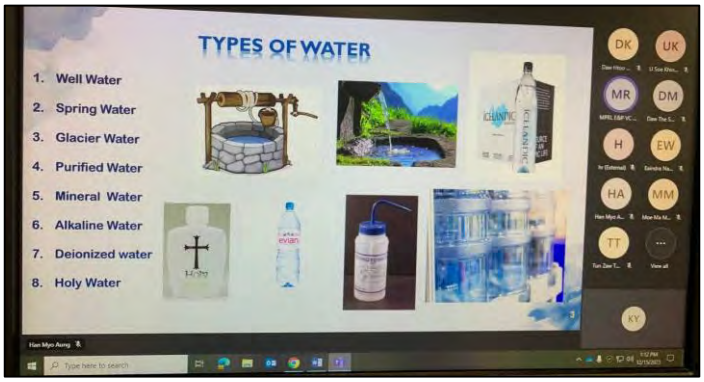


Figure 65: Drinking Water Awareness (15 December 2023)

Figure 66: "Exploring Healing through Art: An Introduction to Art Therapy" (20 December 2023)

Figure 67: "Basic Life Saving" training for Mann Field community (16-17 December 2023)

Figure 68: "Living with COVID in 2024: What You Need to Know" (02 January 2024)

Figure 69: "Living with Hypertension" (26 January 2024)

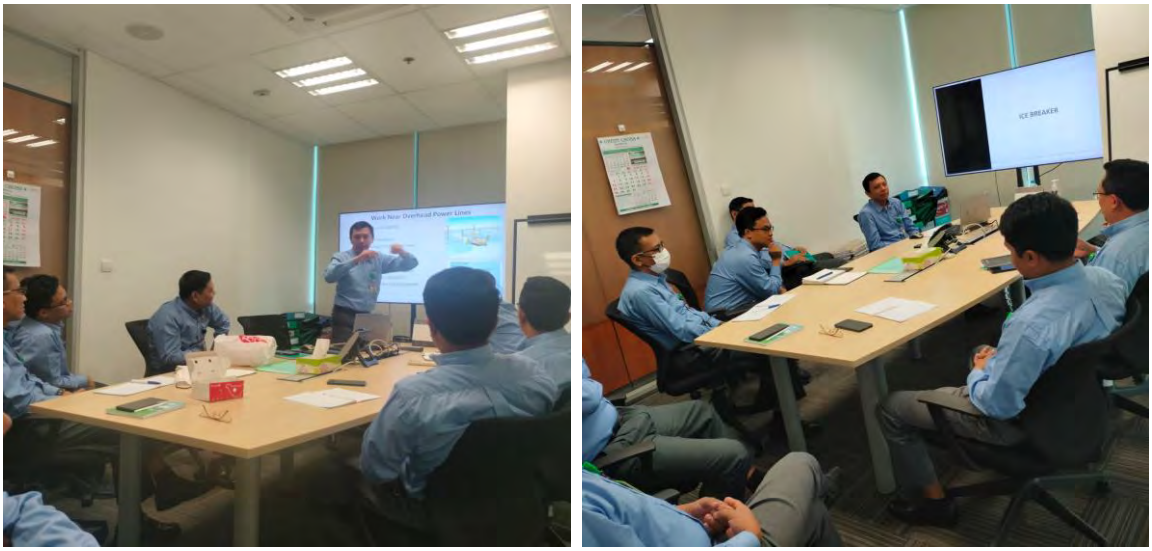


Figure 70: NEBOSH Electrical Safety Training (06 February 2024)

Figure 71: "Sleep Smarter, Work Sharper: Optimize Your Rest for Maximum Productivity (15 February 2024)

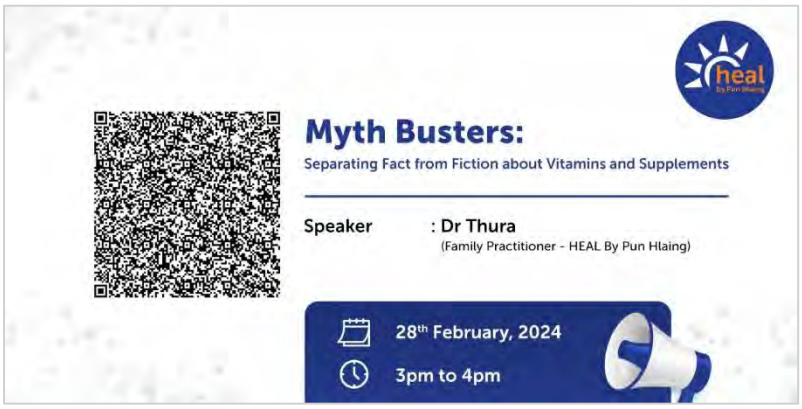


Figure 72: Myth Busters: Separating Fact from Fiction about Vitamins and Supplements (28 February 2024)

Figure 73: Behavioral Safety (18 February 2024)

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 74: Outstanding Best HSE Performance Awards (03 October 2023)

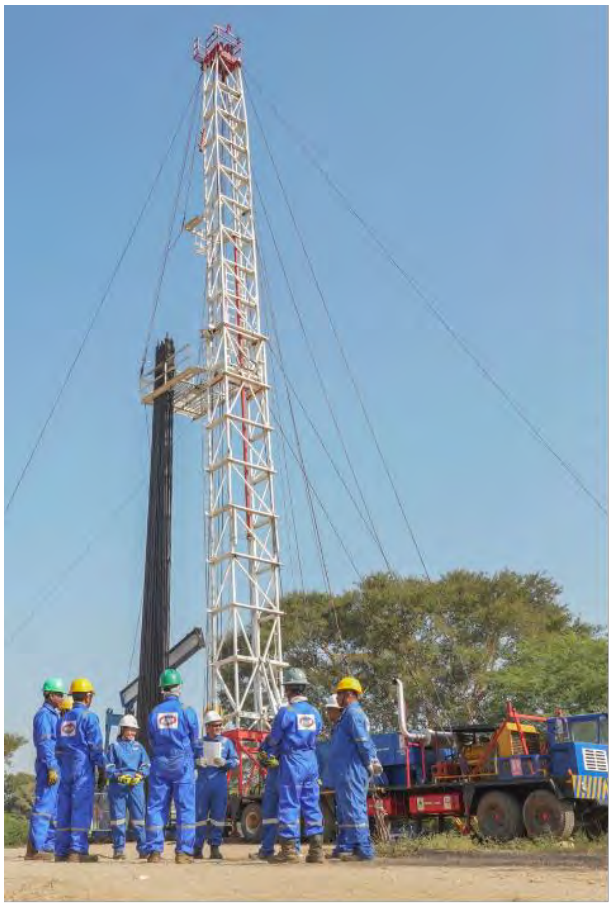
Figure 75: Best Quality CARE Card Awards (03 October 2023)

Figure 76: Healthy Living Campaign (13 Dec'23 - 23 Jan'24)


M.O.G.E.
MPRL
E&P
Social
Performance
Report
October 2023 - March 2024

10. Corporate Social Responsibility

10.1 Executive Summary



At MPRL E&P, we are committed to being transparent in our business operations and sustainability efforts. We understand the importance of having public support to operate and aim to contribute to creating a fair and sustainable world. To achieve these goals, our CSR Department is actively working on a detailed strategy in Mann Field Communities.

From October 2023 to March 2024, we successfully implemented a range of social investment initiatives. Over this six-month period, our efforts focused on fostering shared value, addressing social issues, driving economic growth, and cultivating resilient, inclusive communities to ensure sustainable progress and prosperity.

In community infrastructure development, the CSR Program completed several essential projects. This included completion of water well project at Makyee Chaung School, execution of road construction in Ywar Thar Village, provision of library furniture to enhance the Mann Kyoe Community Center, installation of ceilings at Nan U and Mann Kyoe Community Centers, renovation of community noticeboards, and ensuring the maintenance of water filtration units in schools.

Similarly, our focus on community livelihood development led to the initiation of a sunflower seed production demonstration farm, facilitation of seed distribution, support for agricultural practices, educational sessions on agriculture, assistance with poultry vaccinations, empowerment through training programs, and piloting of greenhouse tomato farming initiatives.

Further efforts were directed towards educational partnerships, scholarships, and academic achievements celebration. We provided scholarships to deserving in Mann Field Communities, funded practical research on broiler breeding, and recognized their academic achievements.

Additionally, our community capacity building activities included organizing Outdoor Classroom Day, conducting Online English Learning Program, providing first aid training, empowering community members through development sessions, and offering embroidery training.

Healthcare program ensured free healthcare services and home treatments under Mobile Clinic Program. Waste management initiatives were tracked through monitoring waste collection, supporting cleanup activities, and introducing a rewarding cleanup challenge. Operational grievances were efficiently handled through our Operational Grievance Mechanism (OGM).

Stakeholder engagement activities involved organizing the First Biannual CSR Progress Review Meeting for the Fiscal Year 2023-2024 with MOGE in Nay Pyi Taw, initiating community needs assessment and budget development for the Fiscal Year 2024-2025 CSR Work Programs, distributing newsletters and reports to local stakeholders, conducting site visits and community outreach, meeting with stakeholders to discuss community investment projects, conducting satisfaction surveys, facilitating government department visits to showcase initiatives, announcing community programs, and participating in knowledge-sharing sessions with the Ministry of Industry and the Ministry of Energy.

Lastly, our corporate philanthropy efforts extended to charitable donations and the ceremonial organization of the Novitiation (Shinpyu) Ceremony, reflecting our commitment to supporting cultural practices within our communities.

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 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

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 February 2024 is USD 278,690.94.

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.

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 Infographic for Fiscal Year 2023-2024

10.5 Key Performance Highlights

The below are the key performance highlights for the second half of the Fiscal Year 2023-2024, covering the period from October 2023 to March 2024:

Key Highlights for the Month of October 2023

- Organized gardening activities at Green Schoolyards in Mei Bayt Kone and Let Pan Ta Pin Schools.
- Provided agricultural fund to sunflower seed production demonstration farm.
- Conducted two knowledge sharing sessions on “Disease and Pest Control in Chickpea and Sunflower Cultivation”.
- Prepared for Outdoor Classroom Day at Mann Kyoe School.
- Organized Online English Learning Program at Aye Mya Community Center and Nan U Community Center.
- Received one OGM case submitted by Makyee Chaung Villager.
- Conducted First Biannual CSR Progress Review Meeting for FY 2023-2024 with MOGE (Nay Pyi Taw).
- Kicked off community needs assessment for FY 2024-2025 in Mann Field.
- Offered free healthcare services to (11,493) patients under (360) clinic sessions.
- Submitted periodic CSR reports for FY 2023-2024 to MOGE and the regional government.
- Distributed Insight! Newsletter (Issue-36) and Doh Mann Myay Newsletter (Issue-10) to the stakeholders.
- Monitored and updated MPRL E&P’s Website as the key communication channel.

Key Highlights for the Month of November 2023

- Implemented water well drilling and water collection tank construction at Makyee Chaung School.
- Organized “Outdoor Classroom Day” for Mann Kyoe schoolchildren.
- Conducted Online English Learning Program at Aye Mya and Nan U Community Centers.
- Organized knowledge-sharing session on “Disease and Pest Control in Chickpea and Sunflower Cultivation” at Kyar Kan Village.
- Monitored the progress of the sunflower seed production demonstration farm in Mann Kyoe Village.
- Explored the proposed project areas in Community Needs Assessment Survey.
- Offered free healthcare services to (11,995) patients in (381) clinic sessions under Mobile Clinic Program.
- Published the Launch of “A Decade of Action: CSR Then and Now” Report.
- Organized “Bear with Me” Campaign with total number of 186 staff participation.
- Distributed 98 bears donated by staff members to students at Kindergarten and Grade-1 in Mann Field.
- Tracked waste collecting service and Trash Hero Minbu’s cleanups.
- Made charitable contributions to humanitarian assistance, Kahtain and Novitiation Ceremony.
- Monitored and updated MPRL E&P’s Website as the key communication channel.

Key Highlights for the Month of December 2023

- Completed water well drilling and water collection tank construction at Makyee Chaung School.
- Provided furniture to Mann Kyoe Community Center.
- Monitored the maintenance of water filtration units at schools in Mann Field.
- Established an educational partnership with State Agriculture & Livestock Institute (Pwint Phyu) for broiler breeding project.
- Continued the Online English Learning sessions at Aye Mya and Nan U Community Centers.
- Organized Basic Life Support and First Aid Training for Mann Field Communities.
- Supported Trash Hero Minbu's Cleanup Challenge Awards Program.
- Conducted (12) cleanups of Trash Hero Minbu and cleaned up a total of (255) kg of trash.
- Completed the photo shooting sessions in Mann Field Communities for Sustainability Report 2023.
- Offered free healthcare services to (12,492) patients in (401) clinic sessions under Mobile Clinic Program.
- Announced an invitation to all staff members of MPRL E&P Group of Companies for donations towards the novitiation (Shinpyu) ceremony.
- Published Insight! Newsletter (Issue-37), Doh Mann Myay Newsletter (Issue-11), and the Operational Grievance Mechanism (OGM) Report for the third quarter of FY 2023-2024.
- Conducted farmers' satisfaction survey and Seed Bank Committee's feedback survey.
- Submitted the third quarter M&E report of FY 2023-2024.
- Monitored and updated MPRL E&P's Website as the key communication channel.

Key Highlights for the Month of January 2024

- Completed road concrete slab and drainage construction at Ywar Thar Village.
- Completed furniture provision to Mann Kyoe Community Center.
- Supported sunflower seed production demonstration farm in Mann Kyoe Village.
- Organized hands-on training on straw mushroom production at Chin Taung Village.
- Facilitated Environmental Conservation Department (Magway) Team's visit to CSR project areas.
- Funded to broiler breeding project at State Agriculture and Livestock Institute (Pwint Phyu).
- Received cash contributions for Novitiation (Shinpyu) Ceremony.
- Offered free healthcare services to (13,039) patients in (424) clinic sessions under Mobile Clinic Program.
- Continued the Online English Learning sessions at Aye Mya and Nan U Community Centers.
- Conducted feedback sessions with students, parents and Village Administrators about Online English Learning Program.
- Delivered the basic online computer training for Community Education Facilitators.
- Organized (08) cleanups of Trash Hero Minbu and cleaned up a total of (215) kg of trash.
- Announced Summer Dhamma School, Summer Art Classes and Basic Embroidery Training in Mann Field Communities.
- Monitored and updated MPRL E&P's Website as the key communication channel.

Key Highlights for the Month of February 2024

- Installed ceiling at Nan U Community Center.
- Renovated community noticeboards, OGM boxes and Doh Mann Myay Newsletter boxes.
- Launched pilot project for localized greenhouse tomato farming.
- Monitored harvesting progress of sunflower seed production demonstration farm.
- Completed broiler breeding project at the State Agriculture and Livestock Institute (Pwint Phyu).
- Announced scholarship program for Batch-12 of No. 5 Industrial Training Center (Magway).
- Conducted three-day capacity-building workshop “Social and Community Development Training”.
- Supported Online English Learning Program at Aye Mya and Nan U Community Centers.
- Organized (12) cleanups of Trash Hero Minbu and cleaned up a total of (235) kg of trash.
- Offered free healthcare services to (13,521) patients in (443) clinic sessions under Mobile Clinic Program.
- Held evaluation survey for the Mobile Clinic service in Mann Field Communities.
- Conducted a knowledge-sharing session on Corporate Social Responsibility (CSR) for personnel at the Ministry of Energy (MoE) in Nay Pyi Taw.
- Delivered invitation letters of Novitiation (Shinpyu) Ceremony to the stakeholders.
- Monitored and updated MPRL E&P’s Website as the key communication channel.

Key Highlights for the Month of March 2024

- Completed ceiling installation at Nan U and Mann Kyoe Community Centers.
- Paid monitoring visit to localized greenhouse tomato farming pilot project.
- Attended the project completion presentation on broiler breeding at the State Agriculture and Livestock Institute (Pwint Phyu).
- Recognized the completion of the one-year training course for Batch-11 of No.5 ITC (Magway).
- Conducted the knowledge-sharing session for Batch-12 applicants of No.5 ITC (Magway) in preparation for the entrance exam.
- Delivered sunflower seed treatment and packaging knowledge sharing in Mann Kyoe Village.
- Monitored the harvesting progress of tomato, sunflower and chickpea.
- Organized Basic Embroidery Training for women in Mann Field Communities.
- Conducted progress test on students of Nan U and year-end test on students of Aye Mya Online English Learning Programs.
- Organized (9) cleanups of Trash Hero Minbu and cleaned up a total of (360) kg of trash.
- Offered free healthcare services to (13,997) patients in (462) clinic sessions under Mobile Clinic Program.
- Monitored and updated MPRL E&P's Website as the key communication channel.
- Submitted the fourth quarter M&E report of FY 2023-2024.
- Published Insight! Newsletter (Issue-38), Doh Mann Myay Newsletter (Issue-12), and the Operational Grievance Mechanism (OGM) Report for the fourth quarter of FY 2023-2024.
- Organized Novitiation (Shinpyu) Ceremony with total number of over 2,700 people.

10.6 Performance Progress (October 2023 – March 2024)

10.6.1 Community Infrastructure Development

MPRL E&P is committed to providing community infrastructure in Mann Field Communities at suitable locations, addressing current needs, and adapting to the evolving community requirements. The company's approach to community infrastructure development emphasizes enhancing local capacity through community involvement. This includes improving the efficiency of infrastructure planning, design, implementation, and maintenance, while also utilizing locally available resources whenever possible.

Activity Progress Summary

- Initiated a project aimed at drilling a water well and building a water collection tank at Makyee Chaung School in November 2023 and completed the project in December 2023. The initiative also included the installation of a water pump and its associated accessories. The CSR Program contributed MMK 6,000,000 and the Makyee Chaung Communities donated MMK 705,000 towards the project respectively.
- Implemented the road concrete slab and drainage construction project at Ywar Thar Village in December 2023 and completed in January 2024. In this project, MPRL E&P contributed a total amount of MMK 4,637,400 and the Ywar Thar Community donated cash amount of MMK 616,450.
- Provided library furniture, including a cabinet (5' x 5.5' x 1.5'), a bookshelf (3' x 1' x 5'), a whiteboard (8' x 4'), six tables and 12 plastic chairs, to the Mann Kyoe Community Center in December 2023. The CSR Program contributed MMK 1,470,300 to the project, which was completed in January 2024. The project aimed to enhance the learning environment for community children, promote better educational experiences and facilitate reading.
- Kicked off the ceiling installation projects at Nan U Community Center and Mann Kyoe Community Center in February 2024 and completed the projects in March 2024. The CSR Program contributed MMK 4,045,100 to the Nan U project and MMK 4,141,400 to the Mann Kyoe project. The projects aimed to reduce heat gain during summer, ensuring a more comfortable learning environment for children at the Community Centers.
- Delivered knowledge-sharing sessions on growing tomatoes for middle school students in the Green Schoolyards of Mei Bayt Kone and Let Pan Ta Pin Schools in October and November 2023.
- Renovated the community noticeboards and Doh Mann Myay Newsletter boxes in February 2024.
- Monitored the maintenance of water filtration units at schools in Mann Field on a regular basis.

Figure 77: Drilling Water Well Drilling and Constructing Water Collection Tank at Makyee Chaung School

Figure 78: Constructing Road Concrete Slab and Drainage at Ywar Thar Village

Figure 79: Installing Ceiling at Nan U Community Centre

Figure 80: Installing Ceiling at Mann Kyoe Community Center

Figure 81: Providing Furniture to Mann Kyoe Community Center

Figure 82: Monitoring Green Schoolyards at Mei Bayt Kone and Let Pan Ta Pin Schools

Figure 83: Demonstrating Tomato Cultivation Methods in Green Schoolyards at Mei Bayt Kone and Let Pan Ta Pin Schools

Figure 84: Monitoring Maintenance of Water Filtration Units at Schools in Mann Field

Figure 85: Renovating Community Noticeboards and Doh Mann Myay Newsletter Boxes

10.6.2 Community Livelihood Development

MPRL E&P is committed to providing community infrastructure in Mann Field communities at suitable locations, addressing current needs, and adapting to the evolving community requirements. The company's approach to community infrastructure development emphasizes enhancing local capacity through community involvement. This includes improving the efficiency of infrastructure planning, design, implementation, and maintenance, while also utilizing locally available resources whenever possible.

Activity Progress Summary

- Launched the sunflower seed production demonstration farm project at Mann Kyoe Village in October 2023. With the collaborative support of the CSR Program and the Department of Agriculture (DoA Minbu), two farmers from Mann Kyoe Village produced sunflower seed on ten acres of their farmland. The CSR Program allocated an agricultural fund of MMK 1,500,000 for the project through the Mann Kyoe Seed Bank Committee. The CSR Team also held a meeting with the Head of the Department of Agriculture (DoA Minbu) in December 2023, including discussions about the project and sunflower seed license issues. The CSR Team regularly monitored the project progress and the DoA Staff provided the agricultural advices to farmers. Through close coordination, the project achieved success in harvesting and processing (600) units of (3) kg sunflower seed bags in February 2024. The CSR Team conducted a "Sunflower Seed Treatment and Packaging Knowledge Sharing Session" at Mann Kyoe Village in March 2023.
- Facilitated the Seed Bank Committee of Pauk Kone Village to purchase and distribute chickpea and sunflower seed in October 2023.
- Monitored the cultivation and harvesting progress of sunflower, chickpea, tomato and mushroom farms, and shared the best agricultural practices to farmers in Mann Field.
- Supported tomato cultivation process in Mann Field Communities. In FY 2023-2024, (49) farmers cultivated tomatoes across (12.9) acres of land with the CSR Program's assistance. The CSR Team monitored farmers' tomato farming progress, including tracking income and profit and provided necessary support to farmers.
- Collaborated with Yetagon Farm Advisory Service (Pwint Phyu), and organized two knowledge-sharing sessions on "Disease and Pest Control in Chickpea and Sunflower Cultivation" for (60) farmers in Mei Bayt Kone and Auk Kyaung Villages in October 2023. Then, in November 2023, the CSR Program conducted another session on the same topic at Kyar Kan Village, which was attended by (28) farmers.
- Assisted the Livestock Breeding and Veterinary Department (LBVD-Minbu) with the distribution of I-2 eye drop vaccines for chickens to animal breeders in Mei Bayt Kone, Mann Kyoe and Lay Eain Tan Villages. A total of (295) poultry were vaccinated in October 2023.
- Empowered Mann Field Communities through a straw mushroom production training on January 17, 19, and 20, 2024, at Chin Taung Village. The training received nine participants and was led by U Nay Zaw, a former volunteer who is actively involved in mushroom seed bag production with support from MPRL E&P's CSR Program.
- Launched a pilot project of localized greenhouse tomato farming in partnership with a local farmer at Mann Kyoe Village in February 2024. The CSR Team built a sun shade for the farm and closely monitored the progress of tomato plants. The project aimed to assist tomato farmers in cultivating during the summer season and to offer learning opportunities for communities.

Figure 86: Monitoring and Supporting Sunflower Seed Production Demonstration Farm in Mann Kyoe Village

Figure 87: Organizing Sunflower Seed Treatment and Packaging Knowledge Sharing Session in Mann Kyoe Village

Figure 88: Organizing Hands-on Training on Straw Mushroom Production at Chin Taung Village

Figure 89: Launching Pilot Project of Localized Greenhouse Tomato Farming

Figure 90: Organizing Agricultural Knowledge Sharing Sessions on Chickpea and Sunflower Cultivation in Collaboration of Yetagon Farm Advisory Service

Figure 91: Distributing Chickpea and Sunflower Seeds to Farmers in Mann Field

Figure 92: Distributing I-2 Eye Drop Vaccines for Chickens in Mann Field

Figure 93: Monitoring and Supporting Cultivation and Harvesting Progress of Tomato, Sunflower, Chickpea and Mushroom Farms in Mann Field

10.6.3 Educational Partnership Program

MPRL E&P's CSR Program partners with governmental entities and training institutions to enhance technical and vocational skills in Mann Field Communities. MPRL E&P provides financial aid and support to disadvantaged students pursuing higher education, and as well as technical and vocational education and training (TVET). This support aims to improve employment prospects and empower youth to enter the job market or start businesses. The program includes formal agreements with TVET institutions for proper supervision and skill development, and emphasizes the importance of education and job training for community thriving.

Activity Progress Summary

- Offered scholarship support to Mann Field Community Youths – five students at No.5 Industrial Training Center (ITC Magway), two students at Government Technical High School (GTHS Magway), seven students at State Agriculture and Livestock Institute (SALI Pwint Phyu), one student at the University of Medicine (Magway), and one student at Basic Education High School (Mei Bayt Kone).
- Monitored the students' academic activities, training progress and attendance regularly. The scholarship recipients showed the promising progress.
- Established an educational partnership with the SALI (Pwint Phyu) to enhance educational resources for final-year students through practical study and research on broiler breeding project in December 2023. The CSR Team visited the SALI (Pwint Phyu) to oversee the progress of the broiler breeding project.
- Provided a total amount of MMK 4,641,500 to the SALI (Pwint Phyu) as the project fund of broiler breeding. The project started on 02 January 2024, and concluded on 15 February 2024, with poultry sold at a price of MMK 6,900 per viss. It generated a profit of MMK one million, which will be reinvested as revolving funds for upcoming research projects.
- Attended the project completion presentation for broiler breeding at SALI (Pwint Phyu) in 08 March 2024.
- Announced the scholarship program for Batch-12 of No.5 ITC (Magway) on the community noticeboards in January 2024. A total of (10) community youths applied for the training.
- Recognized the completion of the one-year training course for Batch-11 of No.5 ITC (Magway) in March 2024, with the support of MPRL E&P's scholarship program.
- Conducted the knowledge-sharing session for Batch-12 applicants of No.5 ITC (Magway) in preparation for the entrance exam.

Figure 94: Providing Scholarship Support to Youths in Mann Field Communities

Figure 95: Announcing Scholarship Program for Batch-12 of No.5 ITC (Magway)

Figure 96: Recognizing Training Completion for Batch-11 of No.5 ITC (Magway) Scholarship Trainees

Figure 97: Conducting Knowledge Sharing for Batch-12 Applicants of No.5 ITC (Magway)

Figure 98: Establishing Educational Partnership with State Agriculture and Livestock Institute (SALI - Pwint Phyu) for Broiler Breeding Project

Figure 99: Attending Project Completion Presentation for Broiler Breeding at SALI (Pwint Phyu)

Case Study

MPRL E&P Empowers Education and Research in Broiler Breeding

MPRL E&P has collaborated with State Agriculture and Livestock Institute (Pwint Phyu) to enhance educational resources for final-year students pursuing Agriculture and Livestock Science. Support has been provided to create opportunities for practical study and research on broiler breeding.

In this research initiative, final-year students will observe the growth of 500 broiler chickens that are fed different diets and select the most appropriate methods, analyzing factors for cost-effectiveness. The research plan outlines a 45-day period, from 02 January 2024 to mid-February 2024, for rearing the broiler chickens. The impactful initiative undertaken by MPRL E&P's CSR program involved allocating MMK 4,641,500 to fully fund a project, covering all associated expenses.

Following the project's completion, students diligently compiled a comprehensive report on their research findings with guidance from their supervisors and submitted it to both their institute and MPRL E&P. This endeavor yielded impressive results, with (867.82) visses produced, generating returns totaling MMK 5,987,958. After deducting expenses amounting to MMK 4,968,900, the net profit stands at MMK 1,019,058.

In addition, for the Academic Year 2023-2024, MPRL E&P extended scholarship opportunities to 16 scholars from Mann Field Communities. These scholars are currently enrolled in various universities, institutes, and training centers, diligently pursuing their academic and professional endeavors in line with their commitments.

10.6.4 Community Capacity Building







Capacity building and knowledge sharing sessions are essential components of MPRL E&P's CSR Program, aimed at fostering community mobilization of local resources and ensuring the successful and sustainable implementation of development projects. The key beneficiaries of these capacity building activities include Community Volunteers, Village Administrators, Village Development Committees, households, and schools. The focus of Community Capacity Building is to empower all community members to develop skills and competencies, enabling them to take greater control of their lives and contribute to inclusive local development. This approach not only promotes cohesion within communities but also enhances their resilience and ability to address economic and social challenges effectively.

Activity Progress Summary

- Organized Outdoor Classroom Day at Mann Kyoe School in November 2023, with the aim to raise awareness and train teachers, parents, and communities to support outdoor play and learning. The event drew participation of (256) individuals including students, teachers, parents, volunteers, and guests. The activities included competitions in drawing, painting, and flower art, as well as physical games fostering teamwork and creativity. The CSR Program provided nutritious breakfast featuring Htamin Let Thote (rice salad) and meatballs to participants.
- Conducted Online English Learning Program at Aye Mya Community Center and Nan U Community Center in Mann Field. A total of (25) students learned Online English courses through the mangoSTEEMS Universe platform. (14) students studied Online English at Nan U Community Center and (11) students at Aye Mya Community Center. In March 2024, The CSR Team conducted the progress test on students of Nan U and year-end test on students of Aye Mya Online English Learning Programs.
- Delivered the basic online computer training for Community Education Facilitators (CEFs) in January 2024. The CSR Team hosted the weekly teachers' meetings with CEFs to discuss and prepare training lessons for the Online English Learning Program.
- Conducted the feedback sessions with students, parents and Village Administrators about Online English Learning Program in January 2024.
- Held quarterly exams for students participating in the Online English Learning Program at Aye Mya and Nan U Community Centers. The CSR Program concluded the teaching activities at Aye Mya Community Center after a period of over one year, and also wrapped up the Nan U session to observe the summer holiday.
- Organized "Basic Life Support and First Aid Training" at Auk Kyaung Monastery on 16 and 17 December 2023. A total of (18) community members attended the two-day session delivered by MPRL E&P's Site Doctor. The participants included healthcare assistants, schoolteachers, and community volunteers. The training aimed to equip attendees with immediate medical assistance skills and establish a safer environment within communities.
- Discussed with "The Art of Facilitation (Development Consultancy)" Team for a three-day capacity building training called "Social and Community Development Training" in January 2024.
- Empowered a total of (25) participants with "Social and Community Development Training" from 02 to 04 February 2024 at Min Min Hotel in Minbu. The participants included Village Administrators, Community Volunteers, Community Education Facilitators, Healthcare Assistants, and CSR Field Team Members. The training focused on equipping leaders with essential skills for leading sustainable development in their communities.
- Organized Basic Embroidery Training at Auk Kyaung Village in March 2024, with a total of (21) participants in attendance.


OUTDOOR CLASSROOM DAY
MPRL E&P
LET'S PLAY& LEARN
၂၀၂၃ ခုနှစ်၊ နိုဝင်ဘာလ (၈) ရက်
အခြေခံပညာအလယ်တန်းကျောင်း၊ မန်းကျိုး


Color Mixing Cha









ပြင်ပစာသင်ခန်းနေ့
(OUTDOOR
CLASSROOM
DAY)

ပြင်ပစာသင်ခန်းနေ့
(OUTDOOR
CLASSROOM

Figure 100: Organizing Outdoor Classroom Day for Students in Mann Kyoe School

Figure 101: Organizing Basic Life Support and First Aid Training for Mann Field Communities

Figure 102: Organizing Social and Community Development Training for Village Administrators, Community Volunteers, Community Education Facilitators, Healthcare Assistants, and CSR Field Team Members

Figure 103: Organizing Basic Embroidery Training at Auk Kyaung Village

Figure 104: Organizing Online English Learning Sessions at Aye Mya Community Center and Nan U Community Center

Figure 105: Conducting Quarterly Exams for Students at Online English Learning Program

Figure 106: Preparing Quarterly Progress Reports for Online English Learning Program

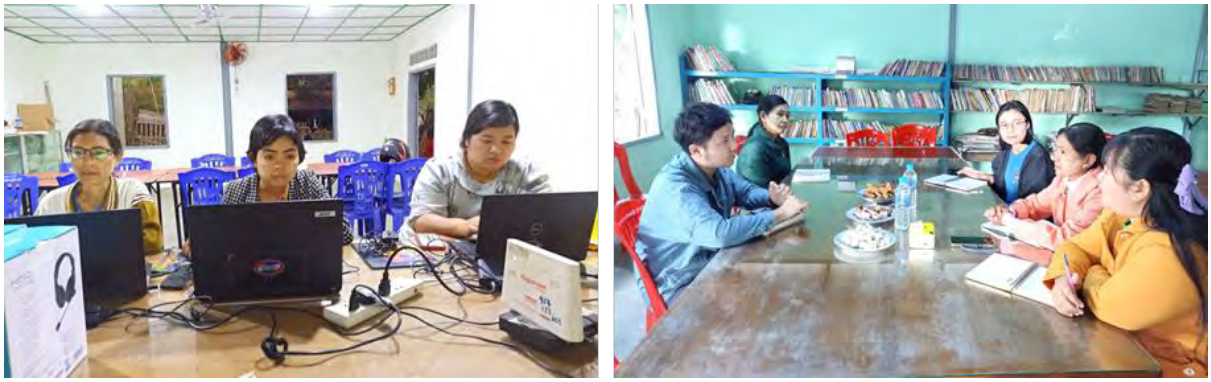


Figure 107: Delivering Basic Online Computer Training and Coaching Session for Community Education Facilitators

Figure 108: Meeting with Parents for Online English Learning Program Progress

Figure 109: Conducting Feedback Survey with Students, Parents and Village Administrators about Online English Learning Program

Case Study

Transformative Impact: Online English Learning Program in Mann Field Communities

MPRL E&P's CSR Program introduced the Online English Learning Program (OELP) in Mann Field Communities to empower underprivileged youth through English and computer skills. Utilizing the mangoSTEEMS Universe (MSU) platform with support from iGroup Myanmar, the program began at Aye Mya Community Centre in the Fiscal Year 2022-2023, expanded to Nan U Community Centre in the Fiscal Year 2023-2024, and is slated to extend to Mann Kyoe Village in the Fiscal Year 2024-2025. Currently, Aye Mya has 11 students, Nan U has 14, and three Community Education Facilitators (CEFs), each with teaching backgrounds, have been appointed.

The OELP provides laptops, accessories, internet services, teaching materials, and conducts quarterly exams for students, teaching assessments, computer training, and weekly meetings. Aye Mya Community Center has already completed quarterly exams, showcasing English proficiency and computer skills. It is our pleasure to know that the OELP has received widespread praise and positive feedback from students, parents, and CEFs, with interviews capturing valuable insights into the transformative impact based on first-hand experiences.

Nan Mhue Khin (Grade-5)

"I've been attending the OELP at Aye Mya Community Center over a year now. The course covers many topics, not just English words and grammar but also computer skills, typing, poems, and nursery rhymes.

My favorite parts are grammar lessons and singing. I pay close attention in class and apply what I learn at home, and I got first prize in quarterly exams twice. This course improved my English skills, it helps me better understand my schoolteacher. In this class, I get to use the computer a lot. Now, I can even type in both English and Myanmar.

The OELP is so much fun because we get to learn through pictures, videos, songs, and games. I enjoy learning all of this with my friends. We always have fun in class together. I want to take more classes because I want to learn more."

Kaung Khant Kyaw (Grade-3)

"At OELP, I always come to class early to practice typing in English and Myanmar. I study English vocabulary and if I don't know, I ask my teacher or search online. In class, I write using the computer and save my lessons in a folder. I use the computer to take photos and videos too.

We have our own account online at mangoSTEEMS Universe (MSU) platform, and we use our own names and own passwords to log in. I also do exercises there. I am on level-6 and my four friends are too. I won second prize three times in the OELP test.

I listen carefully in the class. I love using the computer for learning. At home, I sing English songs to my mother, and I talk to her in English. I am happy to be in this class. I learn a lot of new words and songs. Learning English with computers is so much fun. I want to do more of this!"

U Aung Toe (Parent)

"About 11 children from our Aye Mya Village, including my son and daughter, actively participate in the OELP. Every day after school, my children look forward to this class.

After a year of learning, we've noticed significant improvements in the English proficiency of most children, including my daughter, Nan Mhue Khin, winning first prize twice in the class exams. Their fondness for both English and computers have grown so much, they are now more interested in technology.

I have been thinking about buying a small laptop for my children. They will love it! When I return home from work, I see all the children engaging in their English class and seeing this makes me happy.

Our entire community is excited and grateful to see our children embracing modern technology for learning. These opportunities are rare, and thanks to the support from MPRL E&P, our children can conveniently access modern education. We hope the company continues to provide more assistance to our Mann Field Communities soon."

Daw Hnin Wit Yee Myint (Parent)

"I am Kaung Khant Kyaw's mother, and he has been attending the Online English course for over a year. Initially, his English skills were limited, but since starting the course, he has begun using English words in our conversations.

Despite not having a computer at home, he diligently learns and revisits lessons, managing his own account for accessing the platform. He finds joy in this! His dedication is evident through consistent attendance and punctual preparation after school. It brings me joy to see not only my son but also other children actively participating, overcoming challenges like power outages with solar lights.

I'm thankful for MPRL E&P's CSR Program, which enables our children to access these courses without financial burden. We sincerely appreciate their support and hope for continued assistance in the future."

Daw Soe Soe Nwe (Community Education Facilitator)

"Digital learning is scarce in our region due to transportation challenges, making it difficult for parents to support their children's education.

Thanks to MPRL E&P's CSR Program, local children are now learning Online English at Aye Mya and Nan U Community Centers, a support not easily achievable in our community. As a Community Education Facilitator, I teach at Aye Mya Community Centre on weekdays and Nan U Community Centre on weekends.

The CSR Program provides basic computer training for us, fostering community development and capacity building. I enjoy preparing for each class, and I make sure students understand my teaching. I would use real-life examples encourage students to practice in both Myanmar and English, so they understand the language better. After a year of training, Aye Mya students have shown notable progress in computer skills and English speaking. Meanwhile, students in Nan U Village have just begun their journey, and I'm hopeful they'll progress over time. I wish that MPRL E&P's CSR Program will continue to support eager us in the future."

Daw Su Daewi Tun (Community Education Facilitator)

"I currently serve as a Community Education Facilitator at OELP of MPRL E&P. On Wednesdays and Thursdays, I assist Daw Lai Lai Khaing at Aye Mya Community Center, learning her teaching methods.

On weekends, I teach at Nan U Community Center alongside Daw Soe Soe New. In my five months here, I've observed the children at Aye Mya have improved their English skills, showing a strong desire for learning. They ask questions and practice speaking English with their classmates. In contrast, children at Nan U are new to the program and still developing their English skills but they will catch up soon.

To prepare for teaching, I focus on grammar, vocabulary, and computer usage, learning from Daw Lai Lai Khaing's guidance. The mangoSTEEMS Universe (MSU) platform is a valuable tool for both teachers and students, offering teaching lessons and resources that enhance the learning experience. This learning opportunity is crucial, especially in rural areas like Mann Field. The MPRL E&P CSR Program's support extends beyond English classes, providing job opportunities and additional training. I am grateful for the opportunities afforded to us and the benefits it brings to our community."

Daw Lai Lai Khaing (CSR Field Coordinator)

"Since November 2022, I've volunteered as a Community Education Facilitator for the OELP. I teach at Aye Mya Community Center during the week and offer support at Nan U Community Center on weekends.

My role includes monitoring progress, mentoring fellow facilitators, and suggesting effective teaching methods. The students at Aye Mya Community Center have shown remarkable improvement, mastering typing in both English and Myanmar fonts. I encourage computer skills and online learning through MSU platform. To ensure effective teaching, I invest time in self-study, preparing lesson plans, and enhancing my English language proficiency through resources like the Teacher Portal on MSU platform.

As a facilitator, I'm delighted to witness students' progress, and there's growing demand from other villages, indicating the program's success. I advise villages to preserve and transform libraries into Community Centers to align with MPRL E&P's CSR objectives. Villages interested in hosting such programs should ensure the regular operation of their libraries, and once established, these centers can host courses like OELP, furthering community development efforts."

MPRL E&P Implements Community Capacity Building Initiative with Basic Life Support and First Aid Training

As part of Community Capacity Building Program, MPRL E&P's CSR Program launched Basic Life Support and First Aid Training for teachers from Mann Field Schools and healthcare assistants from MPRL E&P's Mobile Clinic Program in November 2023. This training aims to empower participants with immediate emergency aid skills, focusing on basic life support, first aid procedures, proficiency in effective emergency actions, and facilitating recovery with minimal side effects.

"At first, our goal is to empower healthcare assistants from our Mobile Clinic Program with basic emergency life support and first aid skills. Recognizing the need within the school community, we extend this training to teachers for immediate emergency aid. Dr. Kyaw Ye Htut, HSE Officer at MPRL E&P, shared his first aid and medical knowledge in the training with the support of the CSR Team," as emphasized by Senior CSR Officer U Saw Eh Hsar Blute Htoo.

The training course covered a diverse range of essential topics, delving into the intricacies of the human body's structure and mechanisms. Participants are guided through ten crucial emergency life support procedures for sudden cardiac arrest, including Cardiopulmonary Resuscitation (CPR).

"I designed the course to provide comprehensive training on handling bleeding wounds, snake bites, insect bites, fractures, dislocations, sprains, burns, scalds, head and spinal injuries, open chest wounds, and preventive measures for choking,

heatstroke, shock, epileptic attacks, and seizures. It also includes instructions on stretcher usage and patient transportation," explained Dr. Kyaw Ye Htut.

The two-day training took place at the Auk Kyaung Pagoda premises in Auk Kyaung Village on 16 and 17 December 2023. The sessions included practical demonstrations and hands-on experiences corresponding to each topic. A total of 18 participants, including Heads of Schools, teachers from Mann Field, Healthcare Assistants, community healthcare personnel, and interested Community Volunteers, actively engaged in the training sessions.

One attendee, Daw Khin San Aye, the Head of School from Mann Kyoe Village, emphasized the significance of the training, stating, "This training is crucial for the school community, as the acquired skills and techniques can be directly applied in real-life situations. The use of projectors and teaching aids in training has also enhanced the visibility of first aid techniques and procedures, which are not readily accessible in our daily lives. I also aspire to provide our school children with the opportunity to access such training in the near future, and I'd like to express gratitude to MPRL E&P's CSR Program for affording us the chance to participate in its Community Capacity Building Program."

Similarly, in March 2020, MPRL E&P initiated the very First Aid training program for local youth in Mann Field Communities. Beyond training, MPRL E&P's CSR Team has actively engaged former trainees in local social events and fostered connections with the Township-level Red Cross Society, paving the way for future collaborative efforts. This initiative not only imparts life-saving skills but also instills a sense of community responsibility and collaboration, demonstrating MPRL E&P's unwavering commitment to social well-being and capacity building for Mann Field Communities through its CSR Program.

Creating Safe Space for Children's Outdoor Play – The Why and How

It is the high time we raise mentally well-balanced, creative, and resilient next generations, who are ready for an ever-changing world. If playing and learning outdoors is a key element in our collective endeavors, schools in the community and throughout Myanmar will play a key role to make children's outdoor learning and play an essential part of their daily life.

MPRL E&P's CSR Program has launched two play sessions, organizing outdoor learning activities for dozens of children attending the community schools in Mann Field.

Our first Outdoor Classroom Day Movement took place on 29 November 2022 at Let Pan Ta Pin School Playground, featuring the provision of knowledge-sharing sessions on planting and gardening, organizing exciting games, and competitions for making vegetable tempura and tomato salad among five teams consisting of schoolchildren, teachers, and parents.

The second Outdoor Classroom Day Movement occurred on 8 November 2023 at Mann Kyoe School, one of the most collaborative communities within Mann Field. Five groups of schoolchildren from Kindergarten to Grade 9, took part in drawing and painting competitions, and the day successfully ended with all participants joining in physically-active fun games and grabbing snacks.

As a local movement aligned with the global Outdoor Classroom Day Movement, our Outdoor Classroom Day aims to engage and empower community schoolchildren. It provides them an opportunity to make friends, learn new skills such as coordination and self-confidence, connect with the natural environment, and inspire positive change for themselves and their communities in an atmosphere of mutual respect and trust.

The movement also aims to raise awareness of the benefits of recess and outdoor play among community school teachers and parents as well as promote greater interactions between children and their parents through play. To support community children's outdoor learning, MPRL E&P has built green schoolyards in two local schools within Mann Field, which could easily be turned into playgrounds.

Being a part of the global movement, our outdoor classroom day movements remain politically neutral and inclusive. We are working to organize these outdoor learning and playful learning sessions one school at a time on a yearly basis in Mann Field.

Play prepares children for adulthood by allowing them to develop a range of social skills. Research says children learn how to communicate effectively and interact with one another through play, including reading emotions and handling difficult situations. It is through play that children learn to understand boundaries, telling apart between acceptable and unacceptable behavior.

However, this is increasingly challenged by multiple factors including child poverty, neighborhood safety concerns, resource limitations in schools, and more recently pandemics. In addition, many children today are being raised in an increasingly hurried and pressured lifestyle of parents and technological revolutions like the Internet and mobile phones limit the benefits children would gain from moving around with friends and playing in the natural environment.

While we as parents, teachers, or community as a whole strive to create the optimal developmental environment for children, it is very important to include play in academic and social-enrichment activities along with creation of safe environments for all children. Through our Outdoor Classroom Day Movement at community level in Mann Field, we will continue:

- To provide a platform for young students to play, share, learn together, and inspire each other while developing their skills, confidence, sense of self-worth, and positive social interactions.
- To raise awareness and train teachers, parents, and communities to support ongoing outdoor play and learning activities.
- To work with the community schools in Mann Field to develop a locally-led Outdoor Classroom Day Movement network.

Our slogan is ‘Let’s Play & Learn’. All that is required is for all of us to come together and to make it happen!

10.6.5 Community Healthcare Program





MPRL E&P's CSR Program launched the Mobile Clinic Program in September 2018 to offer primary healthcare to children, senior residents and disadvantaged individuals in Mann Field. MPRL E&P's two Camp Doctors volunteered their time to manage the clinic alongside a healthcare assistant and community volunteers. Despite a temporary closure in April 2020 due to the COVID-19 outbreak, the program resumed in February 2022 after a community survey, and expanded to five weekly clinic sessions across six central villages in July 2022. The program aims to enhance access to essential healthcare services and provide health education to underserved individuals in the Mann Field Communities.

Activity Progress Summary

- Provided free healthcare and home visit treatments for Mann Field Communities through the Mobile Clinic Program, operating five days a week.
- Contributed vital support to the Mobile Clinic Program and monitored the program's daily progress.
- Offered free healthcare services to a total of (13,997) community patients across (462) clinic sessions and home visits since recommencing in February 2022.
- Conducted the evaluation survey for the Mobile Clinic service in February 2024, gathering feedback from Village Administrators, Healthcare Assistants, Camp Doctors and the community members as part of the Mobile Clinic Assessment Survey for the Fiscal Year 2023-2024.

Figure 110: Mobile Clinic Program in Mann Field Communities

Number of Patients (21 February 2022 – 22 March 2024)

Village	Session	Male	Female	Total
Kyar Kan	96	583	2,414	2,997
Kywe Cha	95	759	2,102	2,861
Lay Eain Tan	96	701	2,391	3,092
Let Pan Ta Pin	98	617	2,224	2,841
Aye Mya	39	338	916	1,254
Nan U/ Auk Kyaung	38	232	720	952
Total	**462**	**3,230**	**10,767**	**13,997**

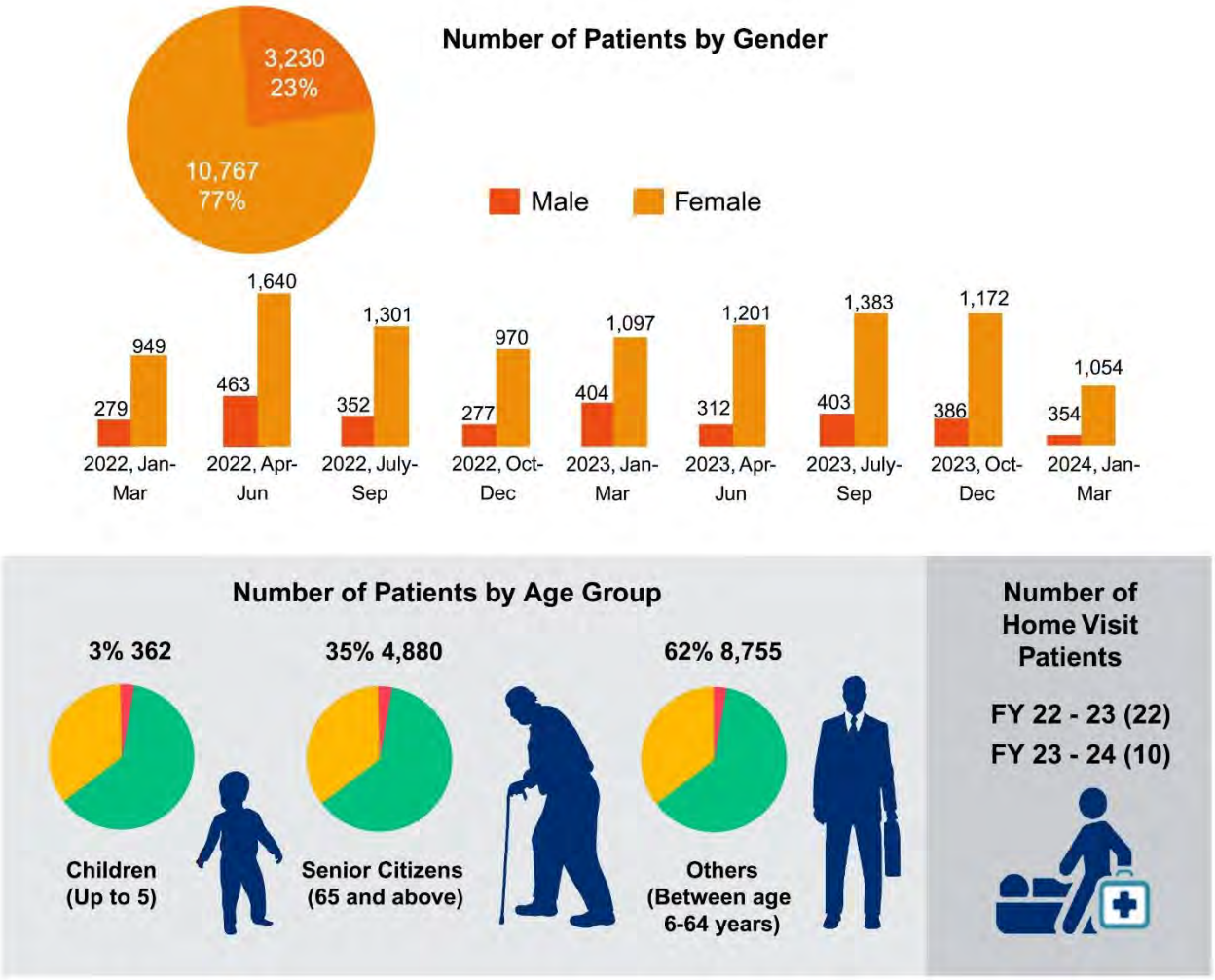


Figure 111: Statistics of Patients' Visit to Mobile Clinics around Mann Field

Figure 112: Conducting Evaluation Survey for Mobile Clinic Program in Mann Field Communities

10.6.6 Community-led Waste Management Program






MPRL E&P supported the implementation of a community-led waste management initiative using a three-wheeled cargo bike in the Fiscal Year 2019-2020 in Mann Field Communities. The program involved community volunteers and village leaders to address the lack of access to municipal waste services in Mann Field. In the Fiscal Year 2020-2021, MPRL E&P's CSR Program upgraded the cargo bike to a larger waste collection vehicle to accommodate more villages and increased waste volumes. The present waste management program emphasizes regular operations and community participation for sustainability and aims to raise awareness and motivate collective actions for proper waste management and sustainable development.

Activity Progress Summary

- Monitored the community-led waste collecting service in Mann Field Communities.
- Conducted monthly discussions with Community Volunteers and the Service Provider.
- Provided support to Trash Hero Minbu's cleanups, which have conducted a total of (323) cleanup sessions involving (6,483) heroes, collecting (11,710) kg of trash since their launch in September 2017.
- Introduced the Trash Hero Minbu's Cleanup Challenge Awards Program in July 2023, where individuals completed (10) instances of participation in cleanup activities and earned T-shirt awards. A total of (54) winners have been recognized for their involvement in (10) Trash Hero Minbu's cleanups as of March 2024. The program objective was to inspire and motivate participants, especially children, to actively participate in cleanup activities.

Figure 113: Monitoring Community-led Waste Collecting Service in Mann Field

Figure 114: Comparison of Quarterly Waste Disposal in Mann Field Communities

Figure 115: Organizing Trash Hero Minbu's Cleanup Activities in Mann Field

Figure 116: Organizing Trash Hero Minbu's Cleanup Challenge Awards Program

10.6.7 Operational Grievance Mechanism (OGM)




MPRL E&P prioritizes host communities by fostering transparent information sharing and two-way communication channels to build trust and maintain a social license to operate. We have adopted a multi-stakeholder approach to create the Operational Grievance Mechanism (OGM) in Mann Field. This initiative, led by MPRL E&P, the host communities, and Myanma 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.

Activity Progress Summary

- Received one OGM case in the second biannual reporting of the Fiscal Year 2023-2024. bringing the total number of complaints since September 2014 to (174) cases. 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 Case

- On 27 September 2023, Daw Khin Hnin from Makyee Chaung Village reported an OGM case concerning a new oil pipeline near her land, connecting Well #63 and GOCS-4. She expressed concerns about potential interference with future construction on her land and requested an inspection and removal of the pipeline. The community volunteer relayed the case to the CSR Field Coordinator, who promptly informed MPRL E&P's Field Operations Team. The Field Operations Team met with Daw Khin Hnin and clarified that the pipelines were situated away from any existing buildings or farmland. They assured her that if she constructs any buildings in the future, the pipelines will be removed accordingly. Daw Khin Hnin was satisfied with this explanation and the resolution process. The case was formally closed on 28 September 2023, with the complainant expressing satisfaction with the process and outcome.

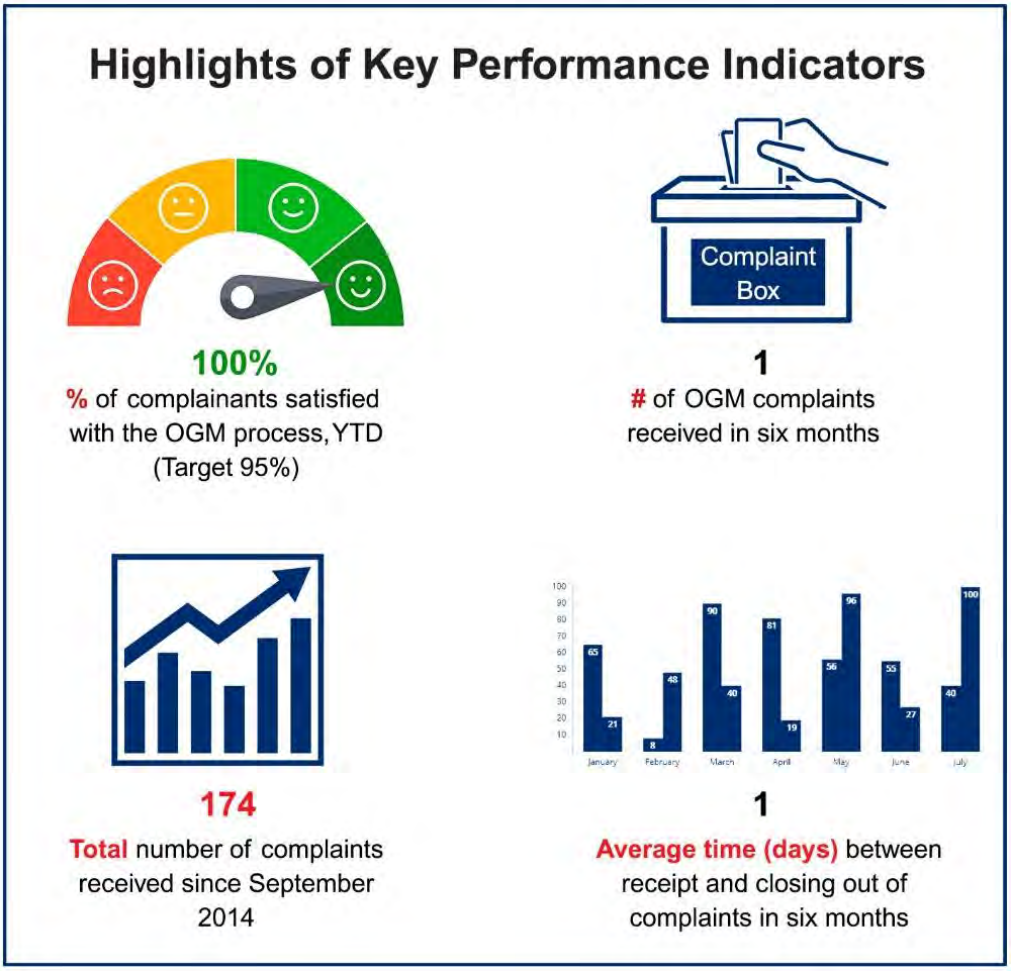


Figure 117: Key Performance Indicators of OGM

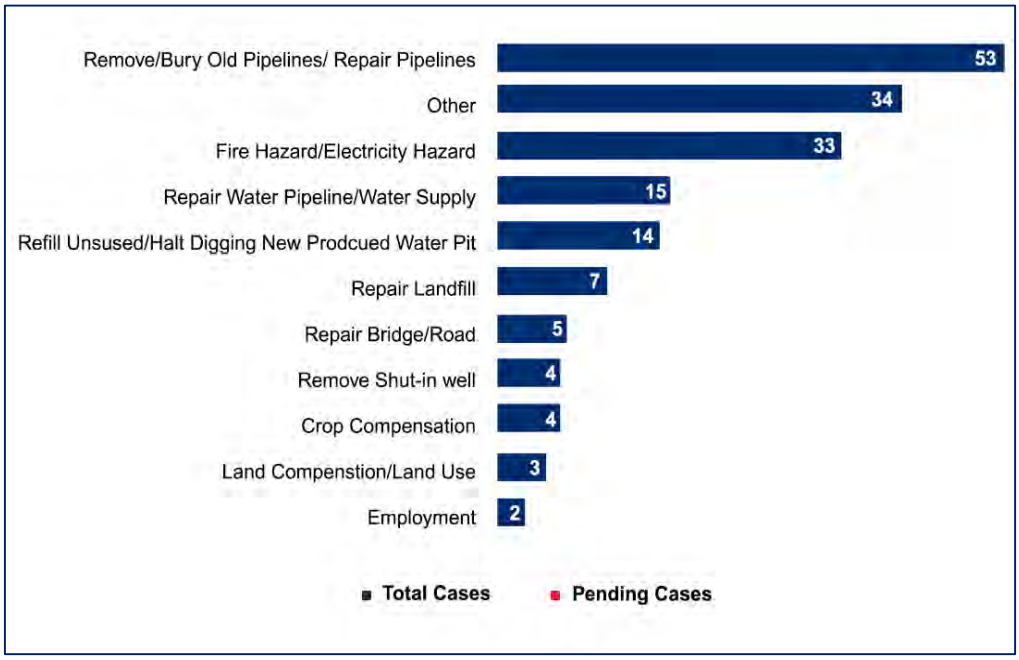


Figure 118: Received and Closed Cases, by Quarter, 2014-to-date

10.6.8 Stakeholder Engagement and Information Disclosure






At MPRL E&P, engaging stakeholders and disclosing information are vital components of our commitment to upholding human rights and providing access to remedies. Timely and consistent engagement with our key stakeholders forms the foundation of our CSR initiatives in Mann Field. We actively involve stakeholders at various levels, including field, community, local, and regional levels, to establish a robust two-way communication channel.

Activity Progress Summary

- Organized the First Biannual CSR Progress Review Meeting for FY 2023-2024 with MOGE representatives in Nay Pyi Taw, with a total of (17) attendees on 12 October 2023.
- Organized the periodic engagement meetings with the stakeholders for the implementation of community investment initiatives in Mann Field Communities.
- Engaged in the knowledge sharing session with the Ministry of Industry in Nay Pyi Taw on 13 December 2023, and shared knowledge on Corporate Social Responsibility and Project Management to the Ministry of Industry personnel.
- Participated in the knowledge exchange workshop at the Ministry of Energy in Nay Pyi Taw on 01 February 2024, and shared knowledge on Corporate Social Responsibility (CSR) for the Ministry of Energy personnel.
- Conducted the community needs assessment and budget development meetings for FY 2024-2025 CSR Work Programs in October 2023.
- Continued community needs assessment in Mann Field Communities in November 2023 to identify specific needs before developing CSR Work Programs and Budget for FY 2024-2025.
- Conducted site visits to the proposed project locations identified in the Community Needs Assessment Survey in November 2023.
- Published the “A Decade of Action: CSR Then and Now” report on MPRL E&P’s website in November 2023.
- Organized the “Bear with Me” Campaign with (186) staff participants to promote staff engagement in November 2023, distributing (98) bears donated by staff to school children in Kindergarten and Grade-1 at Mann Field as the New Year presents.
- Engaged in community outreach by distributing 2024 greeting cards and calendars to local stakeholders in December 2023.
- Presented to the photo models who participated in the community photoshoot at Mann Field in December 2023.
- Conducted satisfaction surveys with (60) farmers and feedback surveys with (12) Seed Bank Committee members in December 2023 to assess satisfaction with chickpea, sunflower, and tomato cultivation supported by the CSR Program.
- Facilitated the visit of the Environmental Conservation Department (ECD Magway) Team to the CSR project areas in Mann Field Communities in January 2024, explaining CSR Work Programs and community investment initiatives.
- Announced Summer Dhamma School, Summer Art Classes, and Basic Embroidery Training in Mann Field Communities in January 2024.
- Published Insight! Newsletter (Issue-37), Doh Mann Myay Newsletter (Issue-11), and the Operational Grievance Mechanism (OGM) Report for the third quarter of FY 2023-2024 in December 2023.

- Distributed the local stakeholders Insight! Newsletter (Issue-36) and Doh Mann Myay Newsletter (Issue-10) in October 2023 and Insight! Newsletter (Issue-37) and Doh Mann Myay Newsletter (Issue-11) in January 2024.
- Published Insight! Newsletter (Issue-38), Doh Mann Myay Newsletter (Issue-12), and the Operational Grievance Mechanism (OGM) Report for the fourth quarter of FY 2023-2024 in March 2024.
- Submitted the Monitoring and Evaluation (M&E) Reports for the third and fourth quarters of FY 2023-2024 to Senior Executive Management in December 2023 and March 2024 respectively. These reports integrate the F System into action plans aimed at enhancing the efficient implementation of CSR Work Programs in Mann Field.
- Submitted the periodic CSR Progress Reports for FY 2023-2024 (monthly, quarterly and biannually) to MOGE and the regional government in this reporting period.

Figure 119: Organizing First Biannual CSR Progress Review Meeting for FY 2023-2024 with MOGE Representatives in Nay Pyi Taw

Figure 120: Conducting Stakeholder Engagement Meetings in Mann Field

Figure 121: Organizing Knowledge Sharing Session on HR and CSR at the Ministry of Industry in Nay Pyi Taw

Figure 122: Organizing Knowledge Sharing Session on HR and CSR at the Ministry of Energy in Nay Pyi Taw

Figure 123: Facilitating Environmental Conservation Department (ECD Magway) Team's Visit to CSR Project Areas

Figure 124: Conducting Community Needs Assessment and Budget Development Meetings for FY 2024-2025 CSR Work Programs

Figure 125: Identifying Local Community Needs Prior to Developing CSR Work Programs and Budget for FY 2024-2025

Figure 126: Conducting Survey on Farmers' Satisfaction and Seed Bank Committee Members' Feedback

Figure 127: Organizing "Bear with Me" Campaign for Staff Engagement at MPRL E&P

Figure 128: Distributing Bears Donated by MPRL E&P's Staff to Students at Kindergarten and Grade-1 at Mann Field Schools

Figure 129: Distributing Insight! Newsletter and Doh Mann Myay Newsletter to Local Stakeholders

Figure 130: Distributing Canvas to Models in Previous Community Photo Shooting Sessions at Mann Field Communities

Figure 131: Launch of "A Decade of Action: CSR Then and Now" Report

Figure 132: Publishing and Distributing Insight! Newsletters (Issue-37) and (Issue-38)

Figure 133: Publishing and Distributing Doh Mann Myay Newsletters (Issue-11) and (Issue-12)

Figure 134: Publishing Quarterly Operational Grievance Mechanism (OGM) Reports

Figure 135: Submitting Quarterly CSR Progress Reports to Respective Stakeholders

Case Study

MPRL E&P Reveals Key Insights into HR, CSR and Project Management for the Ministry of Industry

On 13 December 2023, MPRL E&P Group of Companies conducted a collaborative knowledge-sharing session, delivering invaluable insights into Human Resources (HR), Corporate Social Responsibility (CSR), and Project Management for the Ministry of Industry, with the objective of fostering mutual learning practices in both the public and private sectors. As per the agenda, the Deputy Minister U Yin Maung Nyunt initiated the session by delivering an opening speech, followed by presentations from HR and CSR professionals representing the MPRL E&P Group of Companies.

In the initial segment of the knowledge-sharing session, Daw Aye Aye Kyi, the Senior HR Manager at Myint & Associates Co., Ltd., introduced the MPRL E&P Group of Companies (GoC) and delivering an overview of HR. Following this, she delved into the diverse functions of HR, addressing crucial topics such as Manpower Planning, Recruitment and Selection, Compensation and Benefits, and Performance Management Processes.

Following the coffee break, Daw Khin Soe, the Senior HR Manager at MPRL E&P, addressed key topics, including Organizational Development, Training and Development, Employee Engagement, and HR Digitalization. Furthermore, she facilitated hands-on exercises involving the 9-box grid and critical role identification, adopting a practical "learning by doing" approach. All participants actively engaged in and contributed to these exercise sessions.

In the afternoon of the training day, Daw Wit Hmone Tin Latt, Head of Corporate Sustainability at MPRL E&P, shared insights on Corporate Social Responsibility (CSR) and Project Management with the participants. The session explored specific topics,

including MPRL E&P's CSR Program and Corporate Sustainability Journey. Additionally, the presentation featured a video clip showcasing the successful implementation of the Operational Grievance Mechanism in collaboration with key stakeholders at Mann Field. Another segment of the presentation covered the details of Project Management, presented in two comprehensive parts.

Union Minister, Deputy Minister, Heads of Departments, and a total of 156 officials from the Ministry of Industry, including a delegation of 73 officials who actively participated in on-site sessions, were joined by an additional 83 officials from Regional Departments, Machineries, and Industrial Training Centers who participated virtually. Following the sessions, discussions covered a range of HR topics, including HR Procedures, Contrasts with Administration, 360-degree Assessment, Performance Management, Interim Promotion, and Training.

In CSR discussions, the exploration encompassed stakeholders, the three main approaches to Stakeholder Engagement at MPRL E&P, Community Needs Assessment, CSR Implementation, Monitoring and Evaluation, Communicating CSR, Community Investment Strategy, and the Operational Grievance Mechanism. Furthermore, the principal of the Industrial Training Centre (ITC) (Magway) provided an insightful review of MPRL E&P's Scholarship Program, forming part of an Educational Partnership for Mann Field Youth. Additionally, in-depth discussions on Project Management covered scope, time, cost, the five implementation stages, project characteristics, the Ministry's supportive role, and the advantages of using project management software.

Concluding the event, Dr. Charlie Than, the Union Minister from the Ministry of Industry, expressed gratitude to the MPRL E&P Group of Companies for sharing valuable insights into the company's HR and CSR initiatives, with anticipation that these insights will be effectively utilized in the Ministry's future endeavors, while also appreciating all attendees for their interest and diverse discussions throughout the sessions. This initiative significantly contributes to organizational growth across various sectors, highlighting MPRL E&P's unwavering commitment to advancing professional development in vital business domains. The collaboration and engagement showcased during the session underscore collective efforts toward fostering progress and development within the Ministry of Industry and beyond.

MPRL E&P Hosts Successful Workshop on HR and CSR at Ministry of Energy

MPRL E&P conducted a knowledge-sharing workshop on Human Resources (HR) and Corporate Social Responsibility (CSR) at the Yadanar Hall within the Ministry of Energy on 01 February 2024. The event attracted distinguished attendees, including Union Minister U Ko Ko Lwin, Deputy Minister U Thant Sin, Director Generals, Managing Directors, and Heads of Departments from the Ministry of Energy, as well as representatives from domestic and international oil and natural gas companies.

A significant turnout of 190 attendees, comprising officials from the Ministry of Energy and other invited guests marked their attendance at the workshop. The Union Minister initiated proceedings with an inaugural address, setting the stage for insightful discussions on two pivotal topics: Prioritizing Human Capital in Your Organization and Who CSR is Most Important to. The discussions were enriched with practical insights aimed at fostering active engagement and participation among attendees.

In the initial segment of the workshop, Daw Aye Aye Kyi, Senior HR Manager at Myint & Associates Co., Ltd., provided an overview of the MPRL E&P Group of Companies (GoC) and insights into Human Resources (HR). She delved into diverse HR functions, addressing crucial topics such as Manpower Planning, Recruitment and Selection, Compensation and Benefits, and Performance Management Processes. Additionally, Daw Khin Soe, Senior HR Manager at MPRL E&P Pte Ltd., addressed key topics including Organizational Development, Training and Development, Employee Engagement, and HR Digitalization, while facilitating hands-on exercises involving the 9-box grid and critical role identification.

In the afternoon session, U Thein Soe Htike, Consultant for Myint & Associates Telecommunications Ltd., presented on Digitalization, covering topics such as Digital Transformation and Digitalization and Document Management System (DMS). Further, Daw Wit Hmone Tin Latt, Head of Corporate Sustainability at MPRL E&P Pte

Ltd., offered valuable insights into Corporate Social Responsibility (CSR) during the presentation. She discussed best practices for formulating a comprehensive CSR strategy, outlined effective stakeholder engagement processes, highlighted key aspects of CSR reporting, and delved into global standards and frameworks relevant to sustainability and CSR reporting. MPRL E&P's Sustainability Journey was showcased as a case study, offering participants valuable insights into the integration of CSR with company values. Through this case study, participants gained understanding of engaging with diverse stakeholders, evaluating community needs, fostering internal support, forging external partnerships, and implementing iterative learning processes for continuous improvement.

During the workshop discussion, Director (Offshore) U Win Maw facilitated as a moderator, inviting personnel from oil and gas projects such as Yadana, Yetagon, Shwe, and Zawtika, as well as representatives from local and international oil and gas companies such as PTTEP International Limited (Myanmar Assets), Gulf Petroleum Myanmar (GPM), Goldpetrol (Goldpetrol JOC Inc.), POSCO International Corporation (Myanmar E&P), and SEAOP-SEAGP (Southeast Asia Crude Oil Pipeline - Southeast Asia Crude Gas Pipeline). Deputy Minister for the Ministry of Energy, U Thant Sin, delivered closing remarks, expressing gratitude to MPRL E&P Group of Companies and all participants for their participation and fruitful discussions.

In conclusion, the workshop garnered notable participation from the Union Minister himself, underscoring the significance of the topics discussed for organizations like MPRL E&P, other oil and gas companies, and the Ministry of Energy. MPRL E&P appreciates the invitation to contribute to the discussion, exemplifying effective public-private sector collaboration.

With 28 years of experience in the energy sector, MPRL E&P values the opportunity for constructive dialogue and commends the Union Minister's efforts in fostering knowledge exchange among energy industry professionals, both domestic and international. MPRL E&P is proud to have shared insights on HR Development, CSR best practices, and Sustainability initiatives and is inspired by the Minister's dedication to improving social well-being alongside energy sector development.

10.6.9 Corporate Philanthropy





MPRL E&P recognizes the importance of corporate responsibility and actively engages in philanthropic endeavors to benefit our communities. Our philanthropic efforts are targeted to create a significant and positive impact in the areas we operate. These include charitable donations, community contributions, employee volunteering initiatives, disaster relief programs, and other strategic partnerships focused on supporting social causes.

Activity Progress Summary

- Made charitable contributions, including MMK (10,000,000) to MOGE (Nay Pyi Taw) for humanitarian assistance, MMK (1,000,000) to MOGE (Mann Field) for the 54th Kahtain and Novitiation Ceremony, and MMK (180,000) to the General Administration Department of Minbu District for the 6th Kahtain Ceremony in November 2023.
- Conducted the detailed planning phase for the Novitiation (Shinpyu) Ceremony, which included expense calculation, duty delegation, and preparation of Information, Education, and Communication (IEC) materials along with other necessary resources. The CSR Team has worked closely with the elders from Mann Field Communities and the working committees since July 2023.
- Invited all staff members of MPRLE&P Group of Companies for donations towards the Novitiation (Shinpyu) Ceremony in Mann Field.
- Displayed the Novitiation (Shinpyu) Ceremony signboards in Mann Field Communities and distributed invitation letters to the stakeholders in February 2024.
- Offered invitation letters and robes for the ceremony to (27) monks from the monasteries in Mann Field.
- Organized the Novitiation (Shinpyu) Ceremony at Auk Kyaung Pagoda in Auk Kyaung Village on 07 March 2024. with the participation of over 2,700 guests, including representatives from MOGE Nay Pyi Taw, MOGE (Mann), Magway ECD Director and the Principal and teachers from No.5 Industrial Training Centre (Magway). A total of (71) boys from Mann Field Communities joined the novicehood. The CSR Program, along with contributions from staff family members, provided support for the novices' food expenses for the entire seven-day period. The total cost of the ceremony amounted to MMK (30,669,150), which included MMK (13,000,000) contributed by staff family members of MPRL E&P Pte Ltd. and Myint & Associates Co., Ltd. (Mann Field Project).

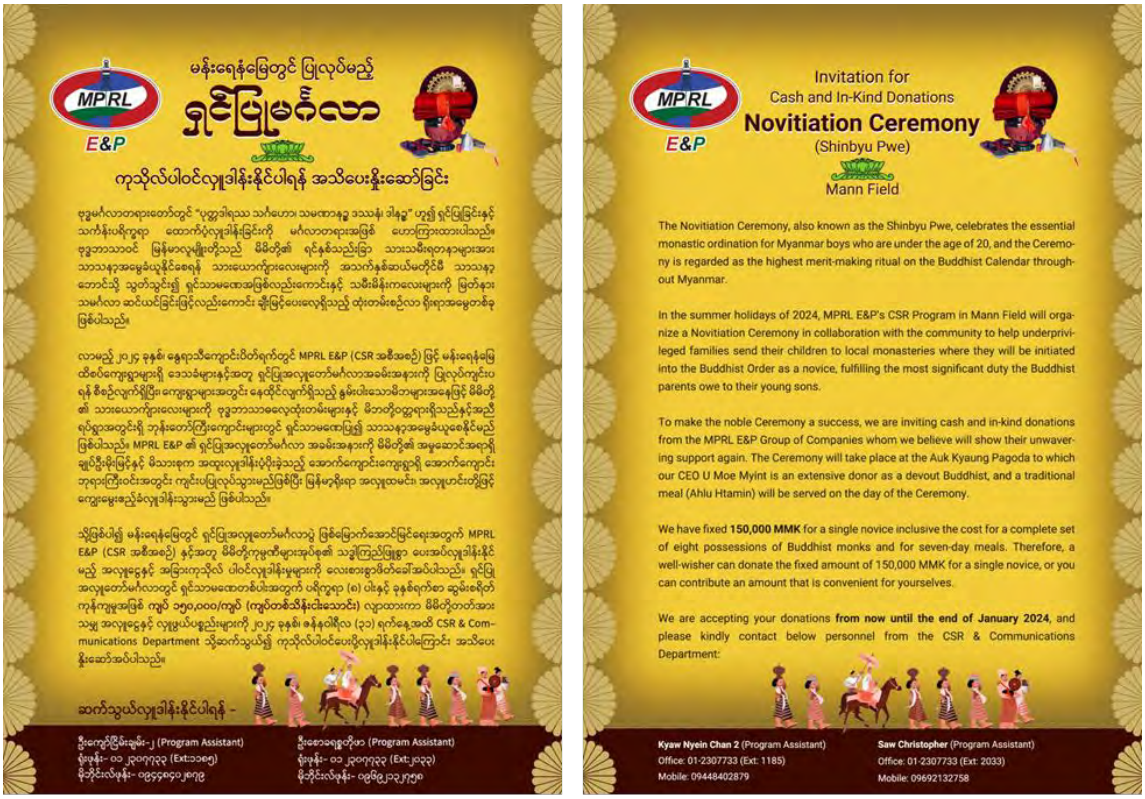


Figure 136: Announcing Invitation for Cash and In-kind Donations to Novitiation (Shinpyu) Ceremony in Mann Field

Figure 137: Conducting Coordination Meetings with the Community Members for Novitiation (Shinpyu) Ceremony in Mann Field

Figure 138: Inviting Internal and External Stakeholders to Novitiation (Shinpyu) Ceremony

Figure 139: Offering Robes and Inviting Monks to Novitiation (Shinpyu) Ceremony

Figure 140: Preparing for Novitiation (Shinpyu) Ceremony in Mann Field Communities

Figure 141: Organizing Novitiation (Shinpyu) Ceremony in Mann Field Communities

Case Study

Tradition Brings Harmony: MPRL E&P's Novitiation (Shinpyu) Ceremony Enriching Mann Field Communities

MPRL E&P, the sole independent upstream energy company led by Myanmar nationals operating both onshore and offshore in Myanmar, has been an unwavering presence in Mann Field for 28 years. The company steadfastly regards the Mann Field Communities as primary stakeholders, consistently fostering development and socio-economic progress.

As a leading oil and gas company in Myanmar, MPRL E&P plays a key role in preserving Myanmar's cultural traditions, particularly in Mann Field, home to the majority of Buddhist Myanmar people who diligently uphold traditional practices. The company and its staff actively support social and cultural events, emphasizing their commitment to Mann Field's holistic development and well-being.

During the 2024 school summer holidays, MPRL E&P's CSR Program organized a Novitiation (Shinpyu) Ceremony for families in need among the 10,000-plus residents of Mann Field. This provided them with an opportunity to pass on religious traditions to their cherished sons. The Shinpyu is a cornerstone of Burmese Theravada Buddhism tradition, signifying a boy's novice monastic ordination before he turns 20. This rite of passage, one among the twelve auspicious rites in Burmese culture, reflects a key parental duty - introducing their sons to the spiritual legacy of Gautama Buddha by joining the Sangha. Although the duration may vary, the initiation provides the novices a deep dive into Buddha's teachings, the Dhamma, either as a fleeting encounter or as a lifelong journey.

Daw Wit Hmone Tin Latt, Head of Corporate Sustainability at MPRL E&P, spearheading and overseeing CSR activities, explained the purpose of the ceremony. “With the goal of perpetuating a cherished Myanmar tradition and recognizing the challenges faced by the less fortunate families in Mann Field in fulfilling this solemn obligation, MPRL E&P’s CSR Program took the initiative to organize and host the Novitiation Ceremony in March 2024 in collaboration with Village Administrations and Village Development Committees. The planning commenced in July 2023, involving monthly preliminary consultations to ensure a well-coordinated and meaningful event. The ceremony was demonstrated through a community-wide celebration, epitomizing communal unity and shared spiritual values, cementing the tradition’s significance in Burmese culture.”

On 07 March 2024, MPRL E&P hosted a Novitiation Ceremony for the Mann Field Communities at the Auk Kyaung Pagoda in Auk Kyaung Village, Mann Field. Notably, this Pagoda has received significant support and donations from the Chairman & CEO of MPRL E&P Group of Companies and his family, as well as from Field Operations Team members.

Saw Eh Hsar Blute Htoo, a Senior CSR Officer from the CSR & Communications Department and the organizer of the ceremony, emphasized the active involvement of all staff members in the essential preparations. “As members of the CSR & Communications Team, we actively promoted the involvement of all staff members in the essential preparations for the ordination ceremony. We encouraged contributions such as donating robes and arranging meals for the novices throughout the week. Thanks to the collective efforts, we successfully dispatched the donated items on time,” he said, expressing his joy. “This made the ceremony more complete, and it was a blessing that embraced both the company and its dedicated staff members.”

The event unfolded with the support of the CSR Program and the generous contributions from the staff members of the MPRL E&P and Myint & Associates (Mann Field Project) donating offertories to the Principal Sayardaw of Auk Kyaung Monastery. Twenty-seven esteemed members of the Sangha from the 14 monasteries in the neighboring villages of Mann Field received a sum of MMK 2,700,000 and offertories including robes and meals (Soon). Subsequently, the Principal Sayardaw of Auk Kyaung Monastery, Bhaddanta Sandavara, conferred novicehood upon the young boys.

The ceremony witnessed the nomination of a total of 71 young boys from 14 surrounding villages in Mann Field to become novice monks. These novices will spend seven days a week and an extended duration as they wish in the monasteries of their respective villages, as per the planned arrangement. The CSR Program, along with contributions from staff family members, provided support for the novices' food expenses for the entire seven-day period. The ceremony incurred a total cost of MMK 30,669,150, which included MMK 13,000,000 contributed by the staff family members of MPRL E&P and Myint & Associates (Mann Field Project).

The Village Administrator of U Kyaw Soe, who took the lead in the preparation and catering of the donated meals, expressed his gratitude, stating, "We are truly grateful to MPRL E&P (CSR Program) for organizing and leading this initiative to hold such a solemn ceremony in our community. It is also heartening to see everyone organizing and participating systematically. We are particularly delighted for our Maung-Shin-Laung (young boys) who have not yet been ordained. Also, we are pleased to have organized 31 members for the culinary and reception team. As a village resident, I am proud and elated that this event took place at the Auk Kyaung Pagoda, and that we were able to arrange food and reception in an orderly manner, resulting in a great success."

During the MPRL E&P's Novitiation Ceremony, a total of over 2,700 attendees honored the community tradition of 'Pwal Yoe,' which showcased a diverse array of traditional dishes, including fried pounded dried fish, pickled bean sprout salad, fried red chillis and chickpea soup.

"My twin sons have recently turned 13 years old, marking a significant milestone in their lives. As we fulfill our parental duties and guide them along the path to becoming novices, we are profoundly grateful for the support extended by the company during this auspicious moment. For individuals like us facing economic challenges, the emotions that arise from witnessing my sons as two Maung-Shin-Laung are truly beyond words. May MPRL E&P Company continue to thrive and achieve even greater success," expressed Daw Ei Ei Hlaing, a mother of twin brothers from Lay Eain Tan Village, who is proud of her sons' novitiation.

MPRL E&P consistently demonstrates a sense of familial connection with the Mann Field Communities, actively contributing to the socio-economic development alongside its corporate growth. The Novitiation Ceremony, wherein the cherished gems of the Mann Field Communities are acknowledged as novices, represents a collaborative endeavor aimed at preserving a revered tradition among the Buddhist Myanmar people, reflecting MPRL E&P's benevolence towards the local community. The successful execution of the Novitiation Ceremony stands as evidence of the fruitful collaboration between the company and the communities, symbolizing the establishment of a robust community that MPRL E&P is fostering in Mann Field.

11. Conclusion

The eighth Environmental Monitoring Report for the Mann Field EOR Project has been successfully finalized, covering field activities and self-environmental monitoring over the six-month period from October 2023 to March 2024. This milestone follows the issuance of the Environmental Compliance Certificate (ECC) in 2019. Throughout this period, rigorous self-environmental monitoring was conducted, encompassing 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 designated assessment areas. 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.

The request for an extension of the Mann Field Environmental Compliance Certificate (ECC) was initiated six months prior to its anticipated expiration in March 2024 through the regional Environmental Conservation Department (Magway), and the Union Minister granted approval for the extension for the next five years on March 25, 2024.

In the course of our operations at Mann Field, we encountered a spectrum of opportunities and challenges. While heightened security measures necessitated daytime operations only, they also introduced operational risks. Addressing concerns such as oil reserve depletion, disruptions due to pilfering, and logistical hurdles remained paramount, all while upholding our steadfast environmental commitment. We maintained a vigilant watch over environmental impacts, actively participated in Corporate Social Responsibility (CSR) and Health, Safety, and Environment (HSE) initiatives, and fostered a culture in harmony with our organizational ethos. Our unwavering dedication to fulfilling Environmental Compliance Certificate (ECC) obligations underscores our adherence to regulatory standards, achievement of objectives, and continual enhancement.

12. Annex

Annex – 1 Laboratory Results

Annex – 2 Waste Disposal Certificate

Annex – 3 Equipment Calibration Certificate

Annex – 1 Laboratory Results

Analysis Report

Ministry of Natural Resources and Environmental Conservation
Environmental Conservation Department
Magway Region

Customer Name : MPRL E & P Pte.,Ltd
Sample Name : Z3AQN(Air Quality Analysis)
Analytical Date : 16-1-2024 to 17-1-2024
Reporting Date : 21-2-2024
Equipment Name : Hazscanner (920246)

No.	Parameter	Unit	Result	National Environmental Quality (Emission) Guidelines အဝိုဒ်(၁.၁)	Remark
1	Carbon Monoxide (CO)	ppm	3.50	-	
2	Carbon Dioxide (CO_2)	ppm	550.34	-	
3	Hydrogen Sulfide (H_2S)	ppb	0	-	
4	Nitrous Oxide(NO)	$\mu g/m^3$	50	200	
5	Nitrogen Dioxide (NO_2)	ppb	2.52	-	
6	Particulate Matter (PM_{10})	$\mu g/m^3$	51.07	50	
7	Relative Humidity (RH%)	-	40.73	-	
8	Sulfur Dioxide(SO_2)	$\mu g/m^3$	0.2	20	

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း ထောက်ခံချက်မဟုတ်ပါ။

Analysis By
Signature: ----------(စင်ကင်္ဘာဦးအောင်)
Name: ဦးစီးအရာရှိ
Designation: ----------ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Reviewed By
Signature: ----------(သီသိဝိုးမင်း)
Name: ဒုတိယညွှန်ကြားရေးမှူး
Designation: ----------ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Approved By
Signature: ----------
Name: ----------(စော်ဝိုး)
Designation: ----------ညွှန်ကြားရေးမှူး
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Analysis Report

Ministry of Natural Resources and Environmental Conservation

Environmental Conservation Department

Magway Region

Customer Name : MPRL E & P Pte.,Ltd

Sample Name : Z3AQN (20°13'21.73"N 94°51'19.72"E)(Noise)

Analytical Date : 16-2-2024

Reporting Date : 21-1-2024

Equipment Name : Sound Meter(EXTECH-SDL600)

Receptor	One Hour LAeq(dBA)[a]	
	Day time 07:00- 22:00 (10:00- 22:00 for Public holidays)	Night time 22:00- 07:00 (22:00- 10:00 for Public holidays)
Residential	55	45
Industrial	70	70
Average Test Result	40.1	42.3

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း ထောက်ခံချက်မဟုတ်ပါ။

Analysis By

Signature: (ခင်တင့်တင့်အောင်)
ဦးစီးအရာရှိ
Name: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Designation:

Reviewed By

Signature: (သီသီစိုးမင်း)
Name: ဒုတိယညွှန်ကြားရေးမှူး
Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Approved By

(ဇော်မိုး)
Signature: ညွှန်ကြားရေးမှူး
Name: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Designation:

Environmental Report

Locations

920246 Z-3 AON	EPAS

Record Count: 289 Report Average: 12 Minutes

Start Date: 2024/01/16 at 12:55:00 End Date: 2024/01/17 at 12:55:00

	CO ppm	CO2 ppm	H2S ppb	NO ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.60072	550.342	0	47.7543	2.51557	51.0726	40.7335	.155709	20.0622	109	13.3557	0	
Max	13.79	2534	0	104	20	225	86	9	30	1201	13.4	0	
Min	0	412	0	4	2	5	15	0	12	0	13.1	0	
EPAS	3.60072	550.342	0	47.7543	2.51557	51.0726	40.7335	.155709	20.0622	109	13.3557	0	
920246	13.79	2534	0	104	20	225	86	9	30	1201	13.4	0	
	0	412	0	4	2	5	15	0	12	0	13.1	0	
Daily	3.60466	665.676	0	45.3383	2	40.6917	30.9398	0	23.8345	58.2330	13.3390	0	
Tue, Jan 16, 2024	13.79	2534	0	87	2	174	51	0	30	906	13.4	0	
	0	412	0	4	2	8	15	0	16	0	13.1	0	
Ave Period 12	.0975	1646.08	0	62.5833	2	21.75	27.75	0	28.0833	2.75	13.3	0	
12:55:00 24/1/16	.46	2534	0	68	2	54	30	0	29	33	13.3	0	
	0	1388	0	36	2	9	26	0	28	0	13.3	0	
Ave Period 12	0	1094.66	0	67.9166	2	24.8166	24.25	0	28.9166	0	13.3	0	
13:55:00 24/1/16	0	1303	0	76	2	47	29	0	30	0	13.4	0	
	0	883	0	53	2	8	20	0	28	0	13.1	0	
Ave Period 12	0	747.5	0	72.1666	2	27.1666	19.0833	0	29.8333	0	13.325	0	
14:55:01 24/1/16	3	855	0	79	2	35	20	0	30	0	13.4	0	
	0	645	0	61	2	22	18	0	29	0	13.1	0	
Ave Period 12	0	676.25	0	50	2	64.75	17	0	29.4166	0	13.2833	0	
15:55:00 24/1/16	0	830	0	57	2	174	18	0	30	0	13.4	0	
	0	527	0	16	2	37	15	0	29	0	13.1	0	
Ave Period 12	0	471.5	0	35.8333	2	35.9166	17.25	0	27.25	0	13.3333	0	
16:55:00 24/1/16	0	514	0	71	2	51	20	0	28	0	13.4	0	
	0	439	0	4	2	27	15	0	26	0	13.1	0	
Ave Period 12	.08	422.666	0	27.9166	2	58.9666	23.6666	0	24.5833	26.0833	13.325	0	
17:55:00 24/1/16	.19	434	0	49	2	94	27	0	26	200	13.4	0	
	0	412	0	10	2	47	29	0	23	0	13.1	0	

Environmental Report

Locations

920246 Z-3 AON	EPAS

Record Count: 289 Report Average: 12 Minutes

Start Date: 2024/01/16 at 12:55:00 End Date: 2024/01/17 at 12:55:00

	CO ppm	CO2 ppm	H2S ppb	NC ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.50072	550.342	0	47.7543	2.51567	51.0726	40.7335	.155739	20.0622	109	13.3557	0	
Max	13.79	2534	0	104	20	225	66	9	30	1201	13.4	0	
Min	0	412	0	4	2	5	15	0	12	0	13.1	0	
Ave Period 12 18:55:00 24/1/16	6.21416	428.666	0	38.3333	2	56.6	34.25	0	21.25	274.666	13.3666	0	
	13.53	444	0	53	2	89	40	0	23	806	13.4	0	
	.15	420	0	18	2	37	29	0	20	0	13.1	0	
Ave Period 12 19:55:00 24/1/16	12.565	436.833	0	40.1666	2	40.0833	39.4166	0	19.8333	134.666	13.3666	0	
	13.79	448	0	48	2	44	45	0	21	375	13.4	0	
	10.9	424	0	36	2	34	35	0	18	0	13.1	0	
Ave Period 12 20:55:00 24/1/16	9.53666	444.75	0	38	2	43.3333	46	0	18.3333	227.333	13.375	0	
	12.48	452	0	44	2	48	50	0	19	722	13.4	0	
	7.43	434	0	36	2	38	43	0	17	0	13.1	0	
Ave Period 12 21:55:00 24/1/16	6.88166	447.416	0	33.5833	2	42	49.0833	0	17	88.4166	13.375	0	
	9.55	456	0	38	2	46	51	0	18	330	13.4	0	
	4.13	431	0	29	2	35	44	0	16	0	13.1	0	
Ave Period 12 22:55:00 24/1/16	6.29416	425.166	0	32.9166	2	32.5333	41.0833	0	16.25	2.33333	13.375	0	
	7.71	451	0	37	2	40	48	0	19	28	13.4	0	
	4.19	416	0	30	2	25	37	0	17	0	13.1	0	
Ave Period 12 23:55:00 24/1/16	6.71	449	0	37	2	37	49	0	17	0	13.4	0	
	6.71	449	0	37	2	37	49	0	17	0	13.4	0	
	6.71	449	0	37	2	37	49	0	17	0	13.4	0	
Daily Wed, Jan 17, 2024	3.24160	452.012	0	49.8141	2.95512	59.9230	49.0833	.288461	16.8461	143.756	13.3698	0	
	13.43	474	0	104	20	225	66	9	27	1201	13.4	0	
	0	428	0	30	2	5	22	0	12	0	13.1	0	
Ave Period 12 00:00:00 24/1/17	5.03727	446.848	0	35.1818	2	65.1818	53.7272	0	15.4545	312	13.3727	0	
	6.01	458	0	37	2	118	57	0	16	655	13.4	0	
	2.83	437	0	32	2	36	51	0	15	0	13.1	0	

Environmental Report

Locations

920246	Z-3 AON	EPAS

Record Count: 289 Report Average: 12 Minutes

Start Date: 2024/01/16 at 12:55:00 End Date: 2024/01/17 at 12:55:00

	CO ppm	CO2 ppm	H2S ppb	NC ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.80072	550.342	0	47.7543	2.51557	51.0726	40.7335	.155709	20.0622	109	13.3657	0	
Max	13.75	2534	0	104	20	225	66	9	30	1201	13.4	0	
Min	0	412	0	4	2	5	15	0	12	0	13.1	0	
Ave Period 12	4.05083	447.25	0	33.8333	2	61.0833	57.8333	0	14.4166	53.5	13.4	0	
00:55:00 24/1/17	5.42	457	0	37	2	74	60	0	15	642	13.4	0	
	3.14	440	0	30	2	50	55	0	14	0	13.4	0	
Ave Period 12	3.20833	446.75	0	34.9166	2	57.4166	58.5833	0	13.9166	226.083	13.375	0	
01:55:00 24/1/17	4.86	458	0	37	2	79	61	0	14	587	13.4	0	
	1.39	442	0	30	2	49	57	0	13	0	13.1	0	
Ave Period 12	2.62083	454.083	0	35.0833	2.16666	57.9166	62.0833	0	13	323.5	13.375	0	
02:55:00 24/1/17	3.67	458	0	37	4	62	63	0	13	1000	13.4	0	
	1.38	449	0	34	2	52	62	0	13	0	13.1	0	
Ave Period 12	2.53666	457.916	0	34.6666	2.16666	61.4166	63.25	0	12.5	19.5	13.375	0	
03:55:00 24/1/17	3.23	465	0	37	4	65	65	0	13	134	13.4	0	
	2	452	0	33	2	57	62	0	12	0	13.1	0	
Ave Period 12	2.11333	458.833	0	36.5	2.41666	65.75	63.5833	0	12.25	311.5	13.375	0	
04:55:00 24/1/17	3.28	466	0	39	5	93	64	0	13	1201	13.4	0	
	.86	451	0	35	2	57	63	0	12	0	13.1	0	
Ave Period 12	2.17916	460.75	0	37.5833	3.66666	71.8333	63.5	0	12	33.3333	13.375	0	
05:55:00 24/1/17	2.74	467	0	46	12	87	64	0	12	183	13.4	0	
	1.45	457	0	37	2	64	63	0	12	0	13.1	0	
Ave Period 12	2.2	467.416	0	41.8333	5.83333	117.416	63.5	0	12.4166	614.666	13.3666	0	
06:55:00 24/1/17	2.89	474	0	48	20	186	66	0	14	870	13.4	0	
	1.49	462	0	38	4	70	58	0	12	183	13.1	0	
Ave Period 12	1.87083	441.25	0	45.6666	5.16666	107.5	46.6666	0	17.3333	0	13.36	0	
07:55:01 24/1/17	3.56	461	0	51	20	225	56	0	19	0	13.4	0	
	1.27	428	0	42	2	60	37	0	15	0	13.1	0	

Environmental Report

Locations

920246 Z-3 AON	EPAS

Record Count: 289 Report Average: 12 Minutes

Start Date: 2024/01/16 at 12:55:00 End Date: 2024/01/17 at 12:55:00

	CO ppm	CO2 ppm	H2S ppb	NC ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.50072	560.342	0	47.7543	2.51557	51.0726	40.7335	.155709	20.0622	109	13.3557	0	
Max	13.79	2534	0	104	20	225	66	9	30	1201	13.4	0	
Min	0	412	0	4	2	5	15	0	12	0	13.1	0	
Ave Period 12	3.53416	434.666	0	58.6666	2	44.3333	33.5	0	20.3333	0	13.35	0	
08:55:00 24/1/17	9.35	450	0	70	2	59	36	0	22	0	13.4	0	
	.89	426	0	44	2	24	31	0	19	0	13.1	0	
Ave Period 12	7.21333	456.416	0	78.75	2	16.0833	26.8333	0	22.9166	0	13.35	0	
09:55:00 24/1/17	12.96	461	0	98	2	32	31	0	24	0	13.4	0	
	.83	451	0	58	2	5	24	0	22	0	13.1	0	
Ave Period 12	5.99833	463.166	0	92	2	25.6666	23.4166	0	25.3333	0	13.3666	0	
10:55:01 24/1/17	13.43	470	0	104	2	45	25	0	26	0	13.4	0	
	0	453	0	69	2	8	22	0	24	0	13.1	0	
Ave Period 12	.0375	440.25	0	79.75	2	30.8333	24.0833	3.75	26.25	.75	13.376	0	
11:55:00 24/1/17	.22	450	0	95	2	48	25	9	27	9	13.4	0	
	0	432	0	64	2	16	22	0	26	0	13.1	0	
Ave Period 12	0	433	0	73	2	24	24	0	26	0	13.4	0	
12:55:00 24/1/17	0	433	0	73	2	24	24	0	26	0	13.4	0	
	0	433	0	73	2	24	24	0	26	0	13.4	0	

Analysis Report

Ministry of Natural Resources and Environmental Conservation

Environmental Conservation Department

Magway Region

Customer Name : MPRL E & P Pte.,Ltd

Sample Name : Z4AQN(Air Quality Analysis)

Analytical Date : 17-1-2024 to 18-1-2024

Reporting Date : 21-2-2024

Equipment Name : Hazscanner (920246)

No.	Parameter	Unit	Result	National Environmental Quality (Emission) Guidelines အပိုဒ်(၁.၁)	Remark
1	Carbon Monoxide (CO)	ppm	3.26	-	
2	Carbon Dioxide (CO_2)	ppm	414.32	-	
3	Hydrogen Sulfide (H_2S)	ppb	0.99	-	
4	Nitrous Oxide(NO)	$\mu g/m^3$	46	200	
5	Nitrogen Dioxide (NO_2)	ppb	5.43	-	
6	Particulate Matter (PM_{10})	$\mu g/m^3$	65.72	50	
7	Relative Humidity (RH%)	-	39.28	-	
8	Sulfur Dioxide(SO_2)	$\mu g/m^3$	0	20	

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း ထောက်ခံချက်မဟုတ်ပါ။

Analysis By

Signature: (ခင်တင့်တင့်အောင်)
Name: ဦးစီးအရာရှိ
Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Reviewed By

(သီသီစိုးမင်း)
Signature: ဒုတိယညွှန်ကြားရေးမှူး
Name: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Designation:

Approved By

Signature:
Name: (ဇော်မိုး)
Designation: ညွှန်ကြားရေးမှူး
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Analysis Report

Ministry of Natural Resources and Environmental Conservation

Environmental Conservation Department

Magway Region

Customer Name	:	MPRL E & P Pte.,Ltd
Sample Name	:	Z4AQN (20°11'41.75"N, 94°52'32.29"E)(Noise)
Analytical Date	:	16-2-2024
Reporting Date	:	21-1-2024
Equipment Name	:	Sound Meter(EXTECH-SDL600)

Receptor	One Hour LAeq(dBA)[a]	
	Day time 07:00- 22:00 (10:00- 22:00 for Public holidays)	Night time 22:00- 07:00 (22:00- 10:00 for Public holidays)
Residential	55	45
Industrial	70	70
Average Test Result	29.6	40.8

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း ထောက်ခံချက်မဟုတ်ပါ။

Analysis By

Signature: (စင်တင့်တင့်အောင်)

Name: ဦးစီးအရာရှိ

Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Reviewed By

Signature: (သီသီဝိုးဇင်း)

Name: ဒေါ်မေညွှန့်ကြူးရေးမှူး

Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Approved By

Signature: (ဇော်မိုး)

Name: ညွှန့်ကြူးရေးမှူး

Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Environmental Report

Locations

920246 Z-4 AON	EPAS

Record Count: 269 Report Average: 12Minutes

Start Date: 2024/01/17 at 17:05:00 End Date: 2024/01/18 at 17:05:00

	CO ppm	CO2 ppm	H2S ppb	NC ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.25878	414.321	.986159	46.7923	5.43252	65.7162	39.2802	0	20.7058	6.66166	13.0830	0	
Max	13.97	481	31	88	39	463	67	0	29	89	13.4	0	
Min	0	380	0	1	2	2	17	0	12	0	11.2	0	
EPAS 920246	3.25878	414.321	.986159	46.7923	5.43252	65.7162	39.2802	0	20.7058	6.66166	13.0830	0	
	13.97	481	31	88	39	463	67	0	29	89	13.4	0	
	0	380	0	1	2	2	17	0	12	0	11.2	0	
Daily Wed, Jan 17, 2024	6.00349	397.891	0	35.3975	2	53.9636	28.2891	0	22.6915	0	13.3698	0	
	13.97	413	0	52	2	152	43	0	29	0	13.4	0	
	0	383	0	1	2	25	17	0	18	0	13.1	0	
Ave Period 12Min 17:05:00 24/1/17	0	386	0	24.3333	2	65.3333	19.0833	0	27.8333	0	13.35	0	
	0	391	0	50	2	85	21	0	29	0	13.4	0	
	0	383	0	1	2	39	17	0	26	0	13.1	0	
Ave Period 12Min 18:05:00 24/1/17	.293666	393.916	0	32.25	2	104	24.3333	0	24.9166	0	13.3416	0	
	58	404	0	52	2	152	27	0	26	0	13.4	0	
	0	385	0	12	2	54	21	0	24	0	13.1	0	
Ave Period 12Min 19:05:00 24/1/17	9.005	395	0	23.8333	2	37.8333	26.6666	0	24	0	13.375	0	
	13.97	400	0	43	2	52	27	0	24	0	13.4	0	
	.23	392	0	16	2	32	25	0	24	0	13.1	0	
Ave Period 12Min 20:05:00 24/1/17	9.65333	395.583	0	45.5	2	32.5	25.5833	0	23.3333	0	13.375	0	
	11.1	400	0	47	2	34	27	0	24	0	13.4	0	
	7.97	392	0	44	2	31	25	0	23	0	13.1	0	
Ave Period 12Min 21:05:01 24/1/17	9.4925	400.25	0	43.1666	2	47.6666	28.8333	0	21.6666	0	13.4	0	
	11.44	403	0	46	2	61	30	0	23	0	13.4	0	
	7.69	399	0	39	2	25	27	0	21	0	13.4	0	
Ave Period 12Min 22:05:00 24/1/17	6.35083	406.416	0	40.1666	2	48.25	34.25	0	19.75	0	13.375	0	
	8.58	410	0	44	2	58	38	0	21	0	13.4	0	
	3.19	400	0	37	2	40	30	0	19	0	13.1	0	

Environmental Report

Locations

920246 Z-4 AON	EPAS

Record Count: 289 Report Average: 12Minutes

Start Date: 2024/01/17 at 17:05:00 End Date: 2024/01/18 at 17:05:00

	CO ppm	CO2 ppm	H2S ppb	NO ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.25678	414.321	.986159	45.7923	5.43252	65.7162	39.2802	0	20.7058	6.68166	13.0830	0	
Max	13.07	461	31	88	39	463	67	0	29	89	13.4	0	
Min	0	380	0	1	2	2	17	0	12	0	11.2	0	
Ave Period 12Min	7.33727	403	0	38.8181	2	41.0909	40.2727	0	18.3636	0	13.3727	0	
23:05:00 24/1/17	8.65	413	0	42	2	50	43	0	19	0	13.4	0	
	4.27	407	0	35	2	33	38	0	18	0	13.1	0	
Daily	2.15291	420.941	1.38349	49.9805	6.81553	70.4514	43.7087	0	19.8252	9.37378	12.9674	0	
Thu, Jan 18, 2024	8.67	461	31	88	39	463	67	0	29	89	13.4	0	
	0	380	0	10	2	2	17	0	12	0	11.2	0	
Ave Period 12Min	6.34	418	0	40	2	48	43	0	18	0	13.4	0	
00:00:00 24/1/18	6.34	418	0	40	2	48	43	0	18	0	13.4	0	
	6.34	418	0	40	2	48	43	0	18	0	13.4	0	
Ave Period 12Min	6.91333	412.583	0	39.6666	2	40.5833	44.3333	0	17.6666	3.58333	13.375	0	
00:05:00 24/1/18	8.67	417	0	44	2	48	46	0	18	14	13.4	0	
	5.28	408	0	36	2	32	42	0	17	0	13.1	0	
Ave Period 12Min	5.64166	418.916	0	40.25	2	50.25	49.25	0	16.3333	17.9166	13.3666	0	
01:05:00 24/1/18	6.34	428	0	46	2	75	52	0	17	81	13.4	0	
	5.1	412	0	37	2	40	47	0	15	0	13.1	0	
Ave Period 12Min	4.89666	432.666	0	44.8333	2.91666	64.1666	54.3333	0	14.9166	26	13.375	0	
02:05:00 24/1/18	5.74	441	0	51	7	102	59	0	16	59	13.4	0	
	3.48	423	0	39	2	48	51	0	14	8	13.1	0	
Ave Period 12Min	4.54	446.5	0	44.5833	3.83333	66.75	60.5833	0	13.75	16.8333	13.375	0	
03:05:00 24/1/18	4.85	449	0	50	14	84	61	0	14	36	13.4	0	
	4.18	441	0	40	2	57	60	0	13	3	13.1	0	
Ave Period 12Min	3.87083	447.75	2.41666	43.1666	13.0833	117.916	63.4166	0	13	13.5	13.375	0	
04:05:00 24/1/18	4.3	452	9	46	66	194	65	0	13	51	13.4	0	
	3.43	443	0	41	11	65	61	0	13	0	13.1	0	

Environmental Report

Locations

920246 Z-4 AON	EPAS

Record Count: 289 Report Average: 12Minutes

Start Date: 2024/01/17 at 17:05:00 End Date: 2024/01/18 at 17:05:00

	CO ppm	CO2 ppm	H2S ppb	NC ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.25878	414.321	.986159	45.7923	5.43252	65.7162	39.2802	0	20.7058	6.66166	13.0830	0	
Max	13.07	481	31	88	39	463	67	0	29	69	13.4	0	
Min	0	380	0	1	2	2	17	0	12	0	11.2	0	
Ave Period 12Min	3.58333	454.75	1.66666	48.6666	19.3333	143	64.8333	0	13	6.66666	13.4	0	
05:05:01 24/1/18	4.26	486	11	59	24	183	66	0	13	21	13.4	0	
	3	448	0	44	15	112	64	0	13	0	13.4	0	
Ave Period 12Min	3.5225	467.833	11.5833	59.5833	24	236.75	66.1666	0	12.1666	20.5	13.3666	0	
06:05:00 24/1/18	3.73	478	23	70	31	334	67	0	13	29	13.4	0	
	3.2	457	0	46	21	185	65	0	12	0	13.1	0	
Ave Period 12Min	1.74083	460.583	8.08333	56.4166	27.5833	261.166	62.9166	0	13.3333	50.9166	11.575	0	
07:05:00 24/1/18	3.46	481	31	64	39	463	66	0	15	69	11.6	0	
	.4	433	0	43	19	128	55	0	12	24	11.3	0	
Ave Period 12Min	.235833	421.5	0	42.5833	5.91666	46.9166	45.0833	0	17.3333	4.91666	11.5333	0	
08:05:01 24/1/18	.49	433	0	48	17	107	54	0	19	48	11.6	0	
	0	417	0	39	2	34	41	0	15	0	11.2	0	
Ave Period 12Min	.4075	418.333	0	48.9166	2	35.25	40.4166	0	19.75	.083333	11.65	0	
09:05:01 24/1/18	.59	421	0	58	2	40	44	0	21	1	13.1	0	
	.17	414	0	39	2	31	38	0	19	0	11.2	0	
Ave Period 12Min	.51	421.166	0	62.6666	2	28.25	39.0833	0	22	0	12.4	0	
10:05:00 24/1/18	1.15	428	0	88	2	34	40	0	23	0	13.3	0	
	.1	417	0	40	2	14	38	0	21	0	11.3	0	
Ave Period 12Min	.4375	412.5	0	41	2	27.9166	36.9166	0	23.8333	0	13.2083	0	
11:05:01 24/1/18	2.32	426	0	80	2	48	39	0	25	0	13.3	0	
	0	397	0	10	2	13	34	0	23	0	13	0	
Ave Period 12Min	0	397.416	0	27.1666	2	8.16666	31.3333	0	26.25	0	13.3083	0	
12:05:00 24/1/18	0	400	0	45	2	26	33	0	27	0	13.4	0	
	0	393	0	23	2	2	28	0	25	0	13.1	0	

Environmental Report

Locations

920246	Z-4 AON	EPAS

Record Count: 269 **Report Average: 12Minutes**

Start Date: 2024/01/17 at 17:05:00 **End Date: 2024/01/18 at 17:05:00**

	CO ppm	CO2 ppm	H2S ppb	NO ppb	NO2 ppb	PM10 ug/m3	RH %	SO2 ppb	TmpC Deg. C	VOCS ppb	Pwr V		Comments
Ave	3.25876	414.321	.988159	45.7923	5.43252	65.7162	39.2802	0	20.7058	6.66166	13.0830	0	
Max	13.07	481	31	86	39	483	67	0	29	89	13.4	0	
Min	0	380	0	1	2	2	17	0	12	0	11.2	0	
Ave Period 12Min	0	392.833	0	68.8333	2	5.41666	26.5833	0	27.4166	0	12.9833	0	
13:05:00 24/1/18	0	396	0	80	2	12	28	0	28	0	13.4	0	
	0	391	0	49	2	2	25	0	27	0	11.9	0	
Ave Period 12Min	0	387.75	0	58.25	2	20.3333	22.6666	0	28.0833	0	13.3916	0	
14:05:00 24/1/18	0	392	0	80	2	28	25	0	29	0	13.4	0	
	0	382	0	54	2	14	20	0	28	0	13.3	0	
Ave Period 12Min	0	385.083	0	57.25	2	25.6666	18.5	0	28.9166	0	13.35	0	
15:05:00 24/1/18	0	391	0	61	2	35	20	0	29	0	13.4	0	
	0	383	0	51	2	16	17	0	28	0	13.1	0	
Ave Period 12Min	0	382.5	0	67.1666	2	24.8333	16.75	0	28.75	0	13.3416	0	
16:05:00 24/1/18	0	386	0	76	2	40	19	0	29	0	13.4	0	
	0	380	0	49	2	12	18	0	28	0	13.1	0	
Ave Period 12Min	0	382	0	68	2	25	19	0	28	0	13.4	0	
17:05:00 24/1/18	0	382	0	68	2	25	19	0	28	0	13.4	0	
	0	382	0	68	2	25	19	0	28	0	13.4	0	

Analysis Report

Ministry of Natural Resources and Environmental Conservation
Environmental Conservation Department
Magway Region

Customer Name : MPRL E & P Pte.,Ltd
Sample Name : Z3S1(Soil Sample)
Sampling Date : 18-1-2024
Receiving Date : 18-1-2024
Analytical Date : 13-2-2024 to 19-2-2024
Reporting Date : 21-1-2024
Equipment Name : Palintest (SKW500)၊ Atmosic Absorption Spectrophotometer (Parkin Elmer AA500)

No.	Parameter	Unit	Result	Remark
1	pH	-	7	
2	Arsenic	mg/l	0.008	
3	Lead (pb)	mg/l	8.22	
4	Cadmium (Cd)	mg/l	-0.07	
5	Copper (Cu)	mg/l	4.43	
6	Zinc (Zn)	mg/l	4.54	
7	Manganese (Mn)	mg/l	177.3	
8	Iron (Fe)	mg/l	100	

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း သောက်ခံချက်မဟုတ်ပါ။

Analysis By
Signature: (ဝင်တင့်တင့်အောင်)
Name: ဦးစီးအရာရှိ
Designation: ဓာတုဗေဒကျောင်းထိန်းသိမ်းရေးဦးစီးဌာန

Reviewed By
Signature: (သီသီစိုးမင်း)
Name: ဒုတိယညွှန်ကြားရေးမှူး
Designation: မတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Approved By
Signature: (ကော်မိုး)
Name: ညွှန်ကြားရေးမှူး
Designation: မတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Analysis Report

Ministry of Natural Resources and Environmental Conservation

Environmental Conservation Department

Magway Region

Customer Name : MPRL E & P Pte.,Ltd

Sample Name : Z3S1(Soil Sample)

Sampling Date : 18-1-2024

Receiving Date : 18-1-2024

Analytical Date : 13-2-2024 to 19-2-2024

Reporting Date : 21-1-2024

Equipment Name : Palintest (SKW500)၊ Atmosic Absorption Spectrophotometer (Parkin Elmer AA500)

No.	Parameter	Unit	Result	Remark
1	pH	-	7	
2	Arsenic	mg/l	0.008	
3	Lead (pb)	mg/l	8.22	
4	Cadmium (Cd)	mg/l	-0.07	
5	Copper (Cu)	mg/l	4.43	
6	Zinc (Zn)	mg/l	4.54	
7	Manganese (Mn)	mg/l	177.3	
8	Iron (Fe)	mg/l	100	

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း ထောက်ခံချက်မဟုတ်ပါ။

Analysis By

Signature: (ဧင်တင့်တင့်အောင်)

Name: ဦးစီးအရာရှိ

Designation: ဗဟိုဓာတ်ခွဲခန်းသိမ်းရေဦးစီးဌာန

Reviewed By

Signature: (သီသီစိုးမင်း)

Name: ဒုတိယညွှန်ကြားရေးမှူး

Designation: ဗဟိုဓာတ်ခွဲခန်းသိမ်းရေဦးစီးဌာန

Approved By

Signature: (ဇော်မိုး)

Name: ညွှန်ကြားရေးမှူး

Designation: ပဟိုဝဓာတ်ခွဲခန်းသိမ်းရေဦးစီးဌာန

Analysis Report

Ministry of Natural Resources and Environmental Conservation

Environmental Conservation Department

Magway Region

Customer Name	:	MPRL E & P Pte.,Ltd
Sample Name	:	Z4S1(Soil Sample)
Sampling Date	:	18-1-2024
Receiving Date	:	18-1-2024
Analytical Date	:	13-2-2024 to 19-2-2024
Reporting Date	:	21-1-2024
Equipment Name	:	Palintest (SKW500)ı Atmosic Absorption Spectrophotometer (Parkin Elmer AA500)

No.	Parameter	Unit	Result	Remark
1	pH	-	7.28	
2	Arsenic	mg/l	0.003	
3	Lead (pb)	mg/l	5.73	
4	Cadmium (Cd)	mg/l	0.08	
5	Copper (Cu)	mg/l	11.80	
6	Zinc (Zn)	mg/l	12.25	
7	Manganese (Mn)	mg/l	239.0	
8	Iron (Fe)	mg/l	104	

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း ထောက်ခံချက်မဟုတ်ပါ။

Analysis By

Signature: (ခင်တင့်တင့်အောင်)
Name: ဦးစီးအရာရှိ
Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Reviewed By

Signature: (သီသီစိုးမင်း)
Name: ဒုတိယညွှန်ကြားရေးမှူး
Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Approved By

Signature: (ဇော်မိုး)
Name: ညွှန်ကြားရေးမှူး
Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Analysis Report

Ministry of Natural Resources and Environmental Conservation
Environmental Conservation Department
Magway Region

Customer Name : MPRL E & P Pte.,Ltd
Sample Name : Z4S2(Soil Sample)
Sampling Date : 18-1-2024
Receiving Date : 18-1-2024
Analytical Date : 13-2-2024 to 19-2-2024
Reporting Date : 21-1-2024
Equipment Name : Palintest (SKW500), Atmosic Absorption Spectrophotometer (Parkin Elmer AA500)

No.	Parameter	Unit	Result	Remark
1	pH	-	7.36	
2	Arsenic	mg/l	0.005	
3	Lead (pb)	mg/l	3.98	
4	Cadmium (Cd)	mg/l	0.02	
5	Copper (Cu)	mg/l	9.37	
6	Zinc (Zn)	mg/l	10.82	
7	Manganese (Mn)	mg/l	213.50	
8	Iron (Fe)	mg/l	103	

This report is only valid for the sample received.

Not a certificate of conformance
စံချိန်စံညွှန်းကိုက်ညီကြောင်း ထောက်ခံချက်မဟုတ်ပါ။

Analysis By

Signature: (ခင်တင့်တင့်အောင်)
ဦးစီးအရာရှိ
Name: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
Designation:

Reviewed By

Signature: (သီသီစိုးမင်း)
Name: ဒုတိယညွှန်ကြားရေးမှူး
Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

Approved By

Signature: (ဇော်မိုး)
Name: ညွှန်ကြားရေးမှူး
Designation: ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01083 Date: February 8, 2024

Client Information

Client Name	:	MPRL E & P Pte Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	18.1.2024 ; 11:00 AM
Contact	:	09-5177819
Testing Purpose	:	For Monitoring
Email	:	han.m.aung@mprlexp.com

Sample Information

Sample ID	:	10721
Sample Name	:	Z3SW1
Sample Type / Source	:	Surface
Sampling Date & Time	:	17.1.2024; 11:05 AM
Sample Location	:	Minbu 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 except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	8.7	S.U	6.5 – 8.5[c]	Nearly Base Range
2	Temperature[3]	24.7	°C	-	-
3	Colour[3]	0	HU	≤15[c]	Normal
4	Turbidity[3]	< 5	FAU	≤5[c]	Clear
5	TSS[3]	0	mg/L	-	-
6	Conductivity[5]	0.4	mS/cm	≤2.5[b]	Normal
7	Hardness[3]	81.27	mg/L	≤500[c]	Normal
8	Dissolved Oxygen[2]	8.15	mg/L	-	-
9	BOD_5[4]	3.4	mg/L	-	-
10	COD[3]	< 15	mg/L	-	-
11	Total Phosphorous[4]	0.44	mg/L	-	-
12	Arsenic[6]	0.005	mg/L	≤0.05[a]	Normal
13	Alkalinity[3]	12	mg/L	-	-
14	Boron[3]	< 0.1	mg/L	≤2.4[c]	Normal
15	Fluoride[3]	0	mg/L	≤1.5[c]	Normal
16	Oil & Grease [3]	3	mg/L	-	-
17	Total Nitrogen[3]	2.5	mg/L	-	-

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

Tested by	Checked by	Approved by
Ecological Laboratory	Ecological Laboratory (ALARM)	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: aelab.2022@gmail.com

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအမိမြေပြန့်ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1311

နေ့စွဲ/Date: 29th January, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Z3SW1	နမူနာအမှတ် / Sample ID	1311	
နေရာ (မြို့နယ်) Location (Township)	Minbu Township	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Magwe	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Ko Han Myo Aung	နမူနာကောက်ယူချိန် (နေ့ နာရီ) Sampling Time (Date, Time)	17.1.2024	11:05 AM
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte. Ltd			
ဆက်သွယ်ရန် /Contact	09-5177819	နမူနာရောက်ရှိချိန် (နေ့ နာရီ) Arriving Time (Date, Time)	18.1.2024	11:00 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အခြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အခြေ 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)		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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml) ✓	1300	Plate count method	0	
7	Total *E.coli* count (CFU/ml) ✓	0	Plate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	အတည်ပြု Approved by
Aye Nyein Thu	May Zaw	Ni Tar Nwe
Research Assistant	Research Assistant	Research Scientist
ALARM	ALARM	ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01084 Date: February 8, 2024

Client Information

Client Name	:	MPRL E & P Pte Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	18.1.2024 ; 11:00 AM
Contact	:	09-5177819
Testing Purpose	:	For Monitoring
Email	:	han.m.aung@mprlexp.com

Sample Information

Sample ID	:	10722
Sample Name	:	Z3SW2
Sample Type / Source	:	Surface
Sampling Date & Time	:	17.1.2024; 11:26 AM
Sample Location	:	Minbu 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 except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	8.6	S.U	6.5 - 8.5[c]	Nearly Base Range
2	Temperature[2]	24.7	°C	-	-
3	Colour[3]	0	HU	≤15[c]	Normal
4	Turbidity[3]	< 5	FAU	≤5[c]	Clear
5	TSS[3]	0	mg/L	-	-
6	Conductivity[3]	0.4	mS/cm	≤2.5[b]	Normal
7	Hardness[3]	55.10	mg/L	≤500[c]	Normal
8	Dissolved Oxygen[3]	8.56	mg/L	-	-
9	BOD_5[3]	4.1	mg/L	-	-
10	COD[3]	< 15	mg/L	-	-
11	Total Phosphorous[3]	0.8	mg/L	-	-
12	Arsenic[3]	0.005	mg/L	≤0.05[a]	Normal
13	Alkalinity[3]	30	mg/L	-	-
14	Boron[3]	0.4	mg/L	≤2.4[c]	Normal
15	Fluoride[3]	0	mg/L	≤1.5[c]	Normal
16	Oil & Grease[3]	3	mg/L	-	-
17	Total Nitrogen[3]	4.5	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 II Ecological Laboratory	Daw Lin Myat Nyein Aung Lab. Technician I Ecological Laboratory	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: aelab.2022@gmail.com

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအမိမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1312

နေ့စွဲ/Date: 29th January, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Z3SW2	နမူနာအမှတ် / Sample ID	1312	
နေရာ (မြို့နယ်) Location (Township)	Minbu Township	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Magwe	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Ko Han Myo Aung	နမူနာကောက်ယူချိန် (နေ့ နာရီ) Sampling Time (Date, Time)	17.1.2024	11:26 AM
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte. Ltd			
ဆက်သွယ်ရန် /Contact	09-5177819	နမူနာရောက်ရှိချိန် (နေ့ နာရီ) Arriving Time (Date, Time)	18.1.2024	11:00 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ်အဖြေ 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)		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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)	19200	Plate count method	0	
7	Total *E.coli* count (CFU/ml)	0	Plate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
Aye Nyein Thu	May Zaw	Ni Tar Nwe
Research Assistant	Research Assistant	Research Scientist
ALARM	ALARM	ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01085 Date: February 8, 2024

Client Information

Client Name	:	MPRL E & P Pte Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	18.1.2024 ; 11:00 AM
Contact	:	09-5177819
Testing Purpose	:	For Monitoring
Email	:	han.m.aung@mprlexp.com

Sample Information

Sample ID	:	10723
Sample Name	:	Z4SW1
Sample Type / Source	:	Surface
Sampling Date & Time	:	17.1.2024; 14:25 PM
Sample Location	:	Minbu 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 except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	8.6	S.U	6.5 - 8.5[c]	Nearly Base Range
2	Temperature[2]	24.7	°C	-	-
3	Colour[3]	214	HU	≤15[c]	Above the limit
4	Turbidity[3]	38	FAU	≤5[c]	Turbid
5	TSS[3]	40	mg/L	-	-
6	Conductivity[2]	0.2	mS/cm	≤2.5[b]	Normal
7	Hardness[3]	44.08	mg/L	≤500[c]	Normal
8	Dissolved Oxygen[2]	6.99	mg/L	-	-
9	BOD_5[4]	3.8	mg/L	-	-
10	COD[3]	< 15	mg/L	-	-
11	Total Phosphorous[3]	2.5	mg/L	-	-
12	Arsenic[4]	0.01	mg/L	≤0.05[b]	Normal
13	Alkalinity[3]	32	mg/L	-	-
14	Boron[3]	0.4	mg/L	≤2.4[c]	Normal
15	Fluoride[3]	0	mg/L	≤1.5[c]	Normal
16	Oil & Grease[3]	5	mg/L	-	-
17	Total Nitrogen[3]	2.8	mg/L	-	-

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

Tested by	Checked by	Approved by
Scientific Officer Ecological Laboratory ALARM	Daw Lin Myint Aung Lab. Technician I Ecological Laboratory ALARM	Dr. Aye Aye Myint 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: aelab.2022@gmail.com

ပတ်ဝန်းကျင်ဂေဒေရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအဓိပ္ပြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1313

နေ့စွဲ/Date: 29th January, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Z4SW1	နမူနာအမှတ် / Sample ID	1313	
ဒေသရာ (မြို့နယ်) Location (Township)	Minbu Township	လတ္တီတွဒ် Latitude		
ဒေသရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Magwe	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Ko Han Myo Aung	နမူနာကောက်ယူချိန် (နေ့, နာရီ) Sampling Time (Date, Time)	17.1.2024	14:25 PM
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte. Ltd			
ဆက်သွယ်ရန် /Contact	09-5177819	နမူနာရောက်ရှိချိန် (နေ့, နာရီ) Arriving Time (Date, Time)	18.1.2024	11:00 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ Results	နည်းစဉ် Method	သောက်မှတ်ချက် Drinking Standard	မှတ်ချက် Remarks
1	Total plate count (CFU/ml)		Total plate count method	0	
2	Total coliform count (MPN/100 ml) (Presumption test)		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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)	16100	Plate count method	0	
7	Total *E.coli* count (CFU/ml)	0	Plate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
Aye Nyein Thu Research Assistant ALARM	May Zaw Research Assistant ALARM	Ni Tar Nwe Research Scientist ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01086 | Date: February 8, 2024

Client Information

Client Name	:	MPRL E & P Pte Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	18.1.2024 ; 11:00 AM
Contact	:	09-5177819
Testing Purpose	:	For Monitoring
Email	:	thadoe.wai@wwf.org.com

Sample Information

Sample ID	:	10724
Sample Name	:	Z4SW2
Sample Type / Source	:	Surface
Sampling Date & Time	:	17.1.2024; 14:35 PM
Sample Location	:	Minbu 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.

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Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH	8.5	S.U	6.5 - 8.5	Normal
2	Temperature	24.5	˚C	-	-
3	Colour	242	HU	≤15	Above the limit
4	Turbidity	19	FAU	≤5	Turbid
5	TSS	25	mg/L	-	-
6	Conductivity	0.2	mS/cm	≤2.5	Normal
7	Hardness	46.83	mg/L	≤500	Normal
8	Dissolved Oxygen	7.22	mg/L	-	-
9	BOD_5	3.6	mg/L	-	-
10	COD	< 15	mg/L	-	-
11	Total Phosphorous	1.8	mg/L	-	-
12	Arsenic	0.01	mg/L	≤0.05	Normal
13	Alkalinity	25	mg/L	-	-
14	Boron	0.4	mg/L	≤2.4	Normal
15	Fluoride	0	mg/L	≤1.5	Normal
16	Oil & Grease	4	mg/L	-	-
17	Total Nitrogen	3.4	mg/L	-	-

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

Tested by	Checked by	Approved by
	Daw Lin Myat ... Lab ... Ecological Laboratory	

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း

Ecological Laboratory

စိမ်းလန်းအမိမြေနှင့်ပြန်လည်ဖော်ထုတ်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1314

နေ့စွဲ/Date: 29th January, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Z4SW2	နမူနာအမှတ် / Sample ID	1314	
နေရာ (မြို့နယ်) Location (Township)	Minbu Township	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Magwe	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Ko Han Myo Aung	နမူနာကောက်ယူချိန် (နေ့ နာရီ) Sampling Time (Date, Time)	17.1.2024	14:35 PM
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte. Ltd			
ဆက်သွယ်ရန် /Contact	09-5177819	နမူနာရောက်ရှိချိန် (နေ့ နာရီ) Arriving Time (Date, Time)	18.1.2024	11:00 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)		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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)	15000	Plate count method	0	
7	Total *E.coli* count (CFU/ml)	0	Plate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
Aye Nyein Thu Research Assistant ALARM	May Zaw Research Assistant ALARM	Ni Tar Nwe Research Scientist ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01087 Date: February 8, 2024

Client Information		Sample Information	
Client Name :	MPRL E & P Pte Ltd	Sample ID :	10725
Organization :	-	Sample Name :	Z3GW1
Client ID :	-	Sample Type / Source :	Surface
Registration Date & Time :	18.1.2024 ; 11:00 AM	Sampling Date & Time :	17.1.2024; 10:35 AM
Contact :	09-5177819	Sample Location :	Minbu Township
Testing Purpose :	For Monitoring	Latitude :	-
Email :	han.m.aung@mprlexp.com	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	Drinking Standards	Remarks
1	pH[1]	8.1	S.U	6.5 – 8.5[c]	Normal
2	Temperature[2]	24.5	°C	-	-
3	Colour[3]	0	HU	≤15[c]	Normal
4	Turbidity[3]	< 5	FAU	≤5[c]	Clear
5	TSS[3]	0	mg/L	-	-
6	Conductivity[5]	2.12	mS/cm	≤2.5[b]	Normal
7	Hardness[3]	39.19	mg/L	≤500[c]	Normal
8	Dissolved Oxygen[2]	4.90	mg/L	-	-
9	BOD_5[6]	3.2	mg/L	-	-
10	COD[3]	< 15	mg/L	-	-
11	Total Phosphorous[3]	1.5	mg/L	-	-
12	Arsenic[3]	0.01	mg/L	≤0.05[a]	Normal
13	Alkalinity[3]	32	mg/L	-	-
14	Boron[3]	< 0.1	mg/L	≤2.4[c]	Normal
15	Fluoride[3]	0	mg/L	≤1.5[c]	Normal
16	Oil & Grease[3]	3	mg/L	-	-
17	Total Nitrogen[3]	3.1	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 II	Daw Lin Myat Myat Aung Lab. Technician I Ecological Laboratory ALARM	Dr. Aye Laboratory Ecological Laboratory (ALARM)

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအမိမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1315

နေ့စွဲ/Date: 29th January, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Z3GW1	နမူနာအမှတ် / Sample ID	1315	
နေရာ (မြို့နယ်) Location (Township)	Minbu Township	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Magwe	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Ko Han Myo Aung	နမူနာကောက်ယူချိန် (နေ့ နာရီ) Sampling Time (Date, Time)	17.1.2024	10:35 AM
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte. Ltd			
ဆက်သွယ်ရန် /Contact	09-5177819	နမူနာရောက်ရှိချိန် (နေ့ နာရီ) Arriving Time (Date, Time)	18.1.2024	11:00 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)		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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)	22750	Plate count method	0	
7	Total *E.coli* count (CFU/ml)	0	Plate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
Aye Nyein Thu Research Assistant ALARM	May Zaw Research Assistant ALARM	Ni Tar Nwe Research Scientist ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01088 | Date: February 8, 2024

Client Information

Client Name	:	MPRL E & P Pte Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	18.1.2024 ; 11:00 AM
Contact	:	09-5177819
Testing Purpose	:	For Monitoring
Email	:	han.m.aung@mprlexp.com

Sample Information

Sample ID	:	10726
Sample Name	:	Z3GW2
Sample Type / Source	:	Surface
Sampling Date & Time	:	17.1.2024; 10:25 AM
Sample Location	:	Minbu 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 except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	8.2	S.U	6.5 – 8.5[c]	Normal
2	Temperature[2]	24.3	°C	-	-
3	Colour[3]	0	HU	≤15[c]	Normal
4	Turbidity[3]	< 5	FAU	≤5[c]	Clear
5	TSS[3]	0	mg/L	-	-
6	Conductivity[3]	0.6	mS/cm	≤2.5[b]	Normal
7	Hardness[3]	42.70	mg/L	≤500[c]	Normal
8	Dissolved Oxygen[2]	4.33	mg/L	-	-
9	BOD_5[6]	3	mg/L	-	-
10	COD[3]	< 15	mg/L	-	-
11	Total Phosphorous[3]	2.6	mg/L	-	-
12	Arsenic[8]	0.005	mg/L	≤0.05[a]	Normal
13	Alkalinity[3]	28	mg/L	-	-
14	Boron[3]	< 0.1	mg/L	≤2.4[c]	Normal
15	Fluoride[3]	0	mg/L	≤1.5[c]	Normal
16	Oil & Grease[9]	3	mg/L	-	-
17	Total Nitrogen[3]	6.1	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 II	Daw Lin Myat Aung Lab. Technician I Ecological Laboratory ALARM	

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း

Ecological Laboratory

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No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon Tel - 09-407496078

 စာအမှတ်/Reference Number: EL (M)-R / 1316

နေ့စွဲ/Date: 29th January, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Z3GW2	နမူနာအမှတ် / Sample ID	1316	
နေရာ (မြို့နယ်) Location (Township)	Minbu Township	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Magwe	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Ko Han Myo Aung	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	17.1.2024	10:25 AM
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte. Ltd			
ဆက်သွယ်ရန် /Contact	09-5177819	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	18.1.2024	11:00 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ **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)		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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)	**10**	Plate count method	0	
7	Total *E.coli* count (CFU/ml)	**0**	Plate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
Aye Nyein Thu Research Assistant ALARM	May Zaw Research Assistant ALARM	Ni Tar Nwe Research Scientist ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01089 Date: February 8, 2024

Client Information		Sample Information	
Client Name :	MPRL E & P Pte Ltd	Sample ID :	10727
Organization :	-	Sample Name :	Z4GW2
Client ID :	-	Sample Type / Source :	Surface
Registration Date & Time :	18.1.2024 ; 11:00 AM	Sampling Date & Time :	17.1.2024; 15:15 PM
Contact :	09-5177819	Sample Location :	Minbu Township
Testing Purpose :	For Monitoring	Latitude :	-
Email :	han.m.aung@mprlexp.com	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	Drinking Standards	Remarks
1	pH[1]	7.6	S.U	6.5 – 8.5[c]	Normal
2	Temperature[2]	23.9	°C	-	-
3	Colour[3]	0	HU	≤15[c]	Normal
4	Turbidity[3]	< 5	FAU	≤5[c]	Clear
5	TSS[3]	0	mg/L	-	-
6	Conductivity[5]	9.42	mS/cm	≤2.5[b]	Above the limit
7	Hardness[3]	353.99	mg/L	≤500[c]	Normal
8	Dissolved Oxygen[2]	6.03	mg/L	-	-
9	BOD_5[6]	3.2	mg/L	-	-
10	COD[3]	< 15	mg/L	-	-
11	Total Phosphorous[3]	1.5	mg/L	-	-
12	Arsenic[8]	0.005	mg/L	≤0.05[a]	Normal
13	Alkalinity[3]	44	mg/L	-	-
14	Boron[3]	< 0.1	mg/L	≤2.4[c]	Normal
15	Fluoride[3]	0	mg/L	≤1.5[c]	Normal
16	Oil & Grease[9]	3	mg/L	-	-
17	Total Nitrogen[3]	3.5	mg/L	-	-

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

Tested by	Checked by	Approved by
Daw May Myat Thine Lab. Technician II Ecological Laboratory	Daw Lin Myat Myat Aung Lab. Technician I Ecological Laboratory	Dr. [illegible] Laboratory In-Charge Ecological Laboratory

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

ဝိမ်းလန်းအဝိမြေ့ဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1317

နေ့စွဲ/Date: 29th January, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Z4GW2	နမူနာအမှတ် / Sample ID	1317	
နေရာ (မြို့နယ်) Location (Township)	Minbu Township	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Magwe	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Ko Han Myo Aung	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	17.1.2024	15:15 PM
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte. Ltd			
ဆက်သွယ်ရန် /Contact	09-5177819	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	18.1.2024	11:00 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှဖော်ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)		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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)	19850	Plate count method	0	
7	Total *E.coli* count (CFU/ml)	0	Plate count method	0	

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

စမ်းသပ်ပြီး	စစ်ဆေးပြီး	တာဝန်ခံ
Tested by	Checked by	Approved by
Aye Nyein Thu	May Zaw	Ni Tar Nwe
Research Assistant	Research Assistant	Research Scientist
ALARM	ALARM	ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01096 | Date: February 8, 2024

Client Information			Sample Information		
Client Name	:	MPRL E&P Ptd Ltd	Sample ID	:	10771
Organization	:	-	Sample Name	:	Bio-filter Outlet
Client ID	:	-	Sample Type / Source	:	-
Registration Date & Time	:	26.1.2024; 10:35 AM	Sampling Date & Time	:	25.1.2024; 2:28 PM
Contact	:	-	Sample Location	:	Minbu Tsp
Testing Purpose	:	-	Latitude	:	-
Email	:	han.m.aung@mprlexp.com	Longitude	:	-

Testing Results

This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.

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Sr.	Quality Parameters	Results	Units	Emission Standards	Remarks
1	pH[1]	7.5	S.U	6.0 - 9.0[d]	Normal
2	Turbidity[3]	< 5	FAU	-	-
3	TSS[3]	8	mg/L	≤50[d]	Normal
4	Conductivity[3]	0.9	mS/cm	-	-
5	Dissolved Oxygen[2]	4.07	mg/L	-	-
6	BOD_5[6]	12	mg/L	≤ 50[d]	Normal
7	COD[3]	21	mg/L	≤ 250[d]	Normal
8	Total Phosphorous[3]	1.4	mg/L	≤2[d]	Normal
9	Oil & Grease[9]	6	mg/L	≤ 10[d]	Normal
10	Total Nitrogen[3]	3.2	mg/L	-	-

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

Tested by	Checked by	Approved by

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအဓိပ္ပြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon Tel. - 09-407496078

စာအမှတ်/Reference Number: EL (M)-R / 1332

နေ့စွဲ/Date: 9th February, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Bio Filter Outlet	နမူနာအမှတ် / Sample ID	1332	
နေရာ (မြို့နယ်) Location (Township)		လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)		လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Khin Thiri Yadanar	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)		
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte Ltd			
ဆက်သွယ်ရန် /Contact		နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	26.1.2024	10:35 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		3M Pate count method	0	
7	Total *E.coli* count (CFU/ml)		3M Pate count method	0	

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

စမ်းသပ်ပြီး	စစ်ဆေးပြီး	တာဝန်ခံ
Tested by	Checked by	Approved by
May Zaw	May Myat Nyein	Ni Tar Nwe
Research Assistant	Research Assistant	Research Scientist
ALARM	ALARM	ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01103 | Date: February 8, 2024

Client Information		Sample Information	
Client Name :	MPRL E&P Ptd Ltd	Sample ID :	10778
Organization :	-	Sample Name :	Hydro Test Water (At WH Tubo Section)
Client ID :	-	Sample Type / Source :	-
Registration Date & Time :	26.1.2024; 10:35 AM	Sampling Date & Time :	25.1.2024; 2:13 PM
Contact :	-	Sample Location :	Minbu Tsp
Testing Purpose :	-	Latitude :	-
Email :	han.m.aung@mprlexp.com	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]	7.5	S.U	6.0 – 9.0[d]	Normal
2	TSS[3]	22	mg/L	≤50[d]	Normal
3	Chloride[3]	15	mg/L	-	-
4	BOD_5[6]	13	mg/L	≤ 50[d]	Normal
5	COD[3]	20	mg/L	≤ 250[d]	Normal
6	Arsenic[8]	0.005	mg/L	≤ 0.1[d]	Normal
7	Cadmium[7]	ND	mg/L	≤ 0.1[d]	LOD = 0.01 mg/L
8	Copper[7]	ND	mg/L	≤ 0.5[d]	LOD = 0.02 mg/L
9	Lead[7]	0.15	mg/L	≤ 0.1[d]	Above the limit
10	Zinc[3]	< 0.02	mg/L	≤ 2[d]	Normal
11	Nickel[3]	ND	mg/L	≤ 0.5[d]	LOD = 0.2 mg/L
12	Sulfide[3]	0.04	mg/L	≤ 1[d]	Normal
13	Phenol[3]	< 0.1	mg/L	≤ 0.5[d]	Normal
14	Chromium (Hexavalent)[3]	< 0.02	mg/L	≤ 0.1	Normal
15	Mercury	0.006	mg/L	≤ 0.01[d]	Normal

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

Tested by	Checked by	Approved by
Daw Thuy Myat Thinn, Lab. Technician II	Daw Lin Myat Mon Aung, Lab. Technician I	Dr. Aung [illegible]

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

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01098	Date: February 8, 2024

Client Information		Sample Information	
Client Name	: MPRL E&P Ptd Ltd	Sample ID	: 10773
Organization	: -	Sample Name	: Down-hole Workshop
Client ID	: -	Sample Type / Source	: -
Registration Date & Time	: 26.1.2024; 10:35 AM	Sampling Date & Time	: 25.1.2024; 2:21 PM
Contact	: -	Sample Location	: Minbu Tsp
Testing Purpose	: -	Latitude	: -
Email	: han.m.aung@mprlexp.com	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]	7.5	S.U	6.0 – 9.0[d]	Normal
2	Temperature[2]	25	°C	±3°[d]	-
3	TSS[3]	35	mg/L	≤50[d]	Normal
4	Ammonia[3]	0.2	mg/L	≤ 10[d]	Normal
5	BOD_5[6]	14	mg/L	≤ 50[d]	Normal
6	COD[3]	25	mg/L	≤ 250[d]	Normal
7	Total Chlorine[3]	< 0.02	mg/L	-	-
8	Free Cyanide[3]	< 0.01	mg/L	≤ 0.1[d]	Normal
9	Total Phosphorous[3]	1.1	mg/L	≤2[d]	Normal
10	Arsenic[8]	0.01	mg/L	≤ 0.1[d]	Normal
11	Cadmium[7]	ND	mg/L	≤ 0.1[d]	LOD = 0.01 mg/L
12	Copper[7]	ND	mg/L	≤ 0.5[d]	LOD = 0.02 mg/L
13	Iron[7]	0.35	mg/L	≤ 3.5[d]	Normal
14	Lead[7]	0.2	mg/L	≤ 0.1[d]	Above the limit
15	Zinc[3]	< 0.02	mg/L	≤ 2[d]	Normal
16	Nickel[3]	ND	mg/L	≤ 0.5[d]	LOD = 0.2 mg/L
17	Sulfide[3]	< 0.04	mg/L	≤ 1[d]	Normal
18	Phenol[3]	0.1	mg/L	≤ 0.5[d]	Normal
19	Fluoride[3]	0	mg/L	≤ 20[d]	Normal
20	Oil & Grease[9]	7	mg/L	≤ 10[d]	Normal
21	Chromium (Hexavalent)[3]	< 0.02	mg/L	≤ 0.1	Normal
22	Mercury	0.006	mg/L	≤ 0.01[d]	Normal

"ND" = Not Detected "LOD" = Lower limit of detection " – " = No Reference Standard

Tested by	Checked by	Approved by

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအမိမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1334

နေ့စွဲ/Date: 9th February, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Down-hole Workshop	နမူနာအမှတ် / Sample ID	1334	
နေရာ (မြို့နယ်) Location (Township)		လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)		လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Khin Thiri Yadanar	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)		
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte Ltd			
ဆက်သွယ်ရန် /Contact		နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	26.1.2024	10:35 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		3M Pate count method	0	
7	Total *E.coli* count (CFU/ml)		3M Pate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
May Zaw Research Assistant ALARM	May Myat Nyein Research Assistant ALARM	Ni Tar Nwe Research Scientist ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01097 | Date: February 8, 2024

Client Information

Client Name	:	MPRL E&P Ptd Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	26.1.2024; 10:35 AM
Contact	:	-
Testing Purpose	:	-
Email	:	han.m.aung@mprlexp.com

Sample Information

Sample ID	:	10772
Sample Name	:	Mechanical Workshop
Sample Type / Source	:	-
Sampling Date & Time	:	25.1.2024; 1:46 PM
Sample Location	:	Minbu Tsp
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 except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Emission Standards	Remarks
1	pH[1]	7.7	S.U	6.0 – 9.0[d]	Normal
2	Temperature[2]	24.9	°C	±3°[d]	-
3	TSS[3]	6	mg/L	≤50[d]	Normal
4	Ammonia[3]	0.2	mg/L	≤ 10[d]	Normal
5	BOD_5[6]	26	mg/L	≤ 50[d]	Normal
6	COD[3]	34	mg/L	≤ 250[d]	Normal
7	Total Chlorine[3]	< 0.02	mg/L	-	-
8	Free Cyanide[3]	< 0.01	mg/L	≤ 0.1[d]	Normal
9	Total Phosphorous[3]	1.6	mg/L	≤2[d]	Normal
10	Arsenic[8]	0.005	mg/L	≤ 0.1[d]	Normal
11	Cadmium[7]	0.01	mg/L	≤ 0.1[d]	Normal
12	Copper[7]	ND	mg/L	≤ 0.5[d]	LOD = 0.02 mg/L
13	Iron[7]	0.32	mg/L	≤ 3.5[d]	Normal
14	Lead[7]	0.12	mg/L	≤ 0.1[d]	Above the limit
15	Zinc[3]	< 0.02	mg/L	≤ 2[d]	Normal
16	Nickel[3]	ND	mg/L	≤ 0.5[d]	LOD = 0.2 mg/L
17	Sulfide[3]	< 0.04	mg/L	≤ 1[d]	Normal
18	Phenol[3]	< 0.1	mg/L	≤ 0.5[d]	Normal
19	Fluoride[3]	0	mg/L	≤ 20[d]	Normal
20	Oil & Grease [9]	6	mg/L	≤ 10[d]	Normal
21	Chromium (Hexavalent)[3]	< 0.02	mg/L	≤ 0.1	Normal
22	Mercury	0.006	mg/L	≤ 0.01[d]	Normal

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

Tested by	Checked by	Approved by
Ecological Laboratory ALARM	Lab Technician Ecological Laboratory	

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအဓိမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1333

နေ့စွဲ/Date: 9th February, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Mechanical Workshop	နမူနာအမှတ် / Sample ID	1333	
နေရာ (မြို့နယ်) Location (Township)		လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)		လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Khin Thiri Yadanar	နမူနာကောက်ယူချိန် (နေ့, နာရီ) Sampling Time (Date, Time)		
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte Ltd			
ဆက်သွယ်ရန် /Contact		နမူနာရောက်ရှိချိန် (နေ့, နာရီ) Arriving Time (Date, Time)	26.1.2024	10:35 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှဝိုဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)	460	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)		Eosin Methyl blue agar plate test	0	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		3M Pate count method	0	
7	Total *E.coli* count (CFU/ml)		3M Pate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
May Zaw	May Myat Nyein	Ni Tar Nwe
Research Assistant	Research Assistant	Research Scientist
ALARM	ALARM	ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01101 Date: February 8, 2024

Client Information

Client Name	:	MPRL E&P Ptd Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	26.1.2024; 10:35 AM
Contact	:	-
Testing Purpose	:	-
Email	:	-

Sample Information

Sample ID	:	10776
Sample Name	:	R.O Drinking Water
Sample Type / Source	:	-
Sampling Date & Time	:	25.1.2024; 2:38 PM
Sample Location	:	Minbu Tsp
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 except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	8.2	S.U	6.0 - 9.0[d]	Normal
2	Colour[3]	1	HU	-	-
3	Turbidity[3]	< 5	FAU	-	-
4	TDS[4]	10	mg/L	≤2000[d]	Normal
5	Hardness[3]	41.77	mg/L	-	-
6	Chloride[3]	5	mg/L	-	-
7	Nitrate[3]	< 0.5	mg/L	≤ 25[d]	Normal
8	Arsenic[8]	0.005	mg/L	≤ 0.1[d]	Normal
9	Iron[7]	0.05	mg/L	≤ 3.5[d]	Normal
10	Lead[7]	ND	mg/L	≤ 0.1[d]	LOD = 0.1 mg/L
11	Manganese[3]	0.3	mg/L	≤ 2[d]	Normal
12	Sulfate[3]	< 2	mg/L	-	-

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

Tested by	Checked by	Approved by
Daw May Nu Khine Lab. Technician II Ecological Laboratory	Daw Lin Myat Aung Lab. Technician I Ecological Laboratory	Dr. A. A. Sapkota Laboratory Director Ecological Laboratory (ALARM)

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

ISO TECH LABORATORY

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

M0224 026

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client	MPRL E & P Co.,Ltd.
Nature of Water	Drinking Water
Location	Minbu Township
Date and Time of collection	22.2.2024 (15:45 PM)
Date and Time of arrival at Laboratory	23.2.2024
Date and Time of commencing examination	23.2.2024
Date and Time of completing	24.2.2024

Results of Water Analysis

			WHO Drinking Water Guideline (Geneva - 1993)
Total Coliform Count	Not detected (<1)	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	Not detected (<1)	CFU/100ml	Not detected
pH	6.8		6.5 - 8.5
Turbidity	Nil	NTU	5 NTU
Colour (True)	Nil	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

*Date & Time 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: Zaw Hein Oo
~~B.Sc (Chemistry)~~
Sr.Chemist
ISO Tech Laboratory

Approved by

Signature:

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

(a division of WEG Co., Ltd.)
No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.
Ph: 01-640955, 09-880100172, 09-880100173, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01099	Date: February 8, 2024

Client Information			Sample Information		
Client Name	:	MPRL E&P Ptd Ltd	Sample ID	:	10774
Organization	:	-	Sample Name	:	Ko Win Mg
Client ID	:	-	Sample Type / Source	:	-
Registration Date & Time	:	26.1.2024; 10:35 AM	Sampling Date & Time	:	25.1.2024; 2:06 PM
Contact	:	-	Sample Location	:	Minbu Tsp
Testing Purpose	:	-	Latitude	:	-
Email	:	han.m.aung@mprlexp.com	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	Drinking Standards	Remarks
1	pH[1]	7.3	S.U	6.0 – 9.0[d]	Normal
2	Colour[3]	1	HU	-	-
3	Turbidity[3]	< 5	FAU	-	-
4	TDS[4]	910	ppm	≤2000[d]	Normal
5	Hardness[3]	42.53	mg/L	-	-
6	Chloride[3]	43	mg/L	-	-
7	Nitrate[3]	2.1	mg/L	≤ 25[d]	Normal
8	Arsenic[8]	0.005	mg/L	≤ 0.1[d]	Normal
9	Iron[7]	0.31	mg/L	≤ 3.5[d]	Normal
10	Lead[7]	ND	mg/L	≤ 0.1[d]	LOD = 0.1 mg/L
11	Manganese[3]	1.8	mg/L	≤ 2[d]	Normal
12	Sulfate[3]	449	mg/L	-	-

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

Tested by	Checked by	Approved by

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

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအမိမြေပြန့်ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1335

နေ့စွဲ/Date: 9th February, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Ko Win Mg	နမူနာအမှတ် / Sample ID	1335	
နေရာ (မြို့နယ်) Location (Township)		လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)		လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Khin Thiri Yadanar	နမူနာကောက်ယူချိန် (နေ့ နာရီ) Sampling Time (Date, Time)		
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte Ltd			
ဆက်သွယ်ရန် /Contact		နမူနာရောက်ရှိချိန် (နေ့ နာရီ) Arriving Time (Date, Time)	26.1.2024	10:35 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)	9	Most Probable Number method	0	
3	Total faecal coliform count (MPN/100ml) (Presumption test)	0	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)		3M Pate count method	0	
7	Total *E.coli* count (CFU/ml)		3M Pate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
May Zaw Research Assistant ALARM	May Myat Nyein Research Assistant ALARM	Ni Tar Nwe Research Scientist ALARM

ALARM Ecological Laboratory

Water Testing Result Report

Report Number: EL-WR-24-01100 | Date: February 7, 2024

Client Information

Client Name	:	MPRL E&P Ptd Ltd
Organization	:	-
Client ID	:	-
Registration Date & Time	:	26.1.2024; 10:35 AM
Contact	:	-
Testing Purpose	:	-
Email	:	han.m.aung@mprlexp.com

Sample Information

Sample ID	:	10775
Sample Name	:	Ma Nyein
Sample Type / Source	:	-
Sampling Date & Time	:	25.1.2024; 2:04 PM
Sample Location	:	Minbu Tsp
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 except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	8	S.U	6.0 – 9.0[a]	Normal
2	Colour[2]	2	HU	-	-
3	Turbidity[3]	< 5	FAU	-	-
4	TDS[4]	560	ppm	≤2000[a]	Normal
5	Hardness[3]	40.72	mg/L	-	-
6	Chloride[3]	58	mg/L	-	-
7	Nitrate[3]	2.4	mg/L	≤ 25[c]	Normal
8	Arsenic[3]	0.005	mg/L	≤ 0.1[c]	Normal
9	Iron[7]	0.21	mg/L	≤ 3.5[d]	Normal
10	Lead[7]	0.1	mg/L	≤ 0.1[d]	Normal
11	Manganese[3]	2.3	mg/L	≤ 2[e]	Above the limit
12	Sulfate[3]	399	mg/L	-	-

"ND" = Not Detected | "LOD" = Lower limit of detection | " – " = No Reference Standard

Tested by	Checked by	Approved by
Daw Lin Myat Aung, Lab. Technician I, Ecological Laboratory	Daw Lin Myat Aung, Lab. Technician I, Ecological Laboratory	Laboratory Manager, Ecological Laboratory (ALARM)

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Ecological Laboratory

စိမ်းလန်းအမိမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

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

စာအမှတ်/Reference Number: EL (M)-R / 1336

နေ့စွဲ/Date: 9th February, 2024

ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	Ma Nyein	နမူနာအမှတ် / Sample ID	1336	
နေရာ (မြို့နယ်) Location (Township)		လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)		လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	Khin Thiri Yadanar	နမူနာကောက်ယူချိန် (နေ့ နာရီ) Sampling Time (Date, Time)		
အဖွဲ့အစည်း /Organisation	MPRL E & P Pte Ltd			
ဆက်သွယ်ရန် /Contact		နမူနာရောက်ရှိချိန် (နေ့ နာရီ) Arriving Time (Date, Time)	26.1.2024	10:35 AM

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

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ 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)	0	Most Probable Number method	0	
3	Total faecal coliform count (MPN/100ml) (Presumption test)	0	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)		3M Pate count method	0	
7	Total *E.coli* count (CFU/ml)		3M Pate count method	0	

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

စမ်းသပ်ပြီး Tested by	စစ်ဆေးပြီး Checked by	တာဝန်ခံ Approved by
May Zaw Research Assistant ALARM	May Myat Nyein Research Assistant ALARM	Ni Tar Nwe Research Scientist ALARM

Annex – 2 Waste Disposal Certificate


CERTIFICATE
OF APPRECIATION
Proudly presented to
RECYGLO
MPRL E&P PTE LTD.
In acknowledgment of your remarkable dedication and significant efforts in promoting sustainability and reducing environmental impact, we express our heartfelt gratitude and proudly recognize you as one of Recyglo's recycling heroes.
Shwe Yamin Oo
Chief Executive officer
RecyGlo Myanmar
"Making The World A Greener Place"

Annex – 3 Equipment Calibration Certificate

Calibration Certificate

Instrument SN: 17091JZ-001
Calibration Date: 2/14/2024
Part Number: VTS-K1232110111
Job Number: 17091J
Setup Date: 9/19/2017
Setup Technician: MB
Created By: iNet
Battery: Dual-cell lithium-ion battery pack
Assigned User: MPRL E&P PTE LTD.

Sensor SN	Sensor Type	Gas Type	Span Gas	Span Reserve	Passed/Failed	Gas Alert	Alarm Low	Alarm High	Alarm TWA	Alarm STEL
17090Q1049	CO	Carbon Monoxide	100.00	167.00%	Passed	0.00	35.00	70.00	35.00	200.00
20030CT081	H2S	Hydrogen Sulfide	25.00	90.80%	Passed	0.00	10.00	20.00	10.00	15.00
20030JL068	LEL	Pentane	25.00	124.00%	Passed	0.00	10.00	20.00	N/A	N/A
21120NF306	O2	Oxygen	20.90	151.67%	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
17090Q1049	CO	2/14/2024 2:39:38 PM (GMT+06:30)	288141BC536283	11/28/2025	Fresh Air	N/A
20030CT081	H2S	2/14/2024 2:39:09 PM (GMT+06:30)	288141BC536283	11/28/2025	Fresh Air	N/A
20030JL068	LEL	2/14/2024 2:40:08 PM (GMT+06:30)	288141BC536283	11/28/2025	Fresh Air	N/A
21120NF306	O2	2/14/2024 2:37:40 PM (GMT+06:30)	Fresh Air	N/A	Fresh Air	N/A

: Calibration Passed .Calibrated By: Pangolin Protective Equipment Co.,Ltd. Next Calibration Due Date is AUGUST 2024.Remark: O2 Sensor Life is nearly 2 Years.H2S Sensor span reserve is Low.

17091JZ-001

MPRL E&P Pte Ltd.

Vantage Tower, 623 Pyay Road
Kamayut Township 11041, Yangon, Myanmar
Tel : +95 1 230 7733 Fax : +95 1 230 7744
Email : mprlstaff@mprlexp.com

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