



Environmental Management Plan for Exploration Drilling in Block AD-1

June 2019

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1. Executive Summary

1.1 Introduction

This document is the Environmental Management Plan (EMP) for a proposed drilling program of up to eight wells in Block AD-1 (AD-1) in the Rakhine Basin, the Union of Myanmar (Myanmar) (the Project).

The AD-1 Joint Venture (JV) of Woodside and CNPC International Ltd (CNPCI) plan to commence the project in 2020 covering a four year period and involves the drilling of potentially one or up to eight (8) wells (the Project). The target hydrocarbons are dry gas.

A Project Proposal Report (PPR) for AD-1 was submitted to MONREC via Environmental Conservation Department (ECD) on the 31 October 2018 to assess the requirements and level of assessment for future exploration drilling between 2019 and 2023. MONREC determined that future drilling activities of up to 8 wells in AD-1 will be subject to an Environment Management Plan (EMP), therefore instructing Woodside to submit an EMP for the future proposed drilling activities. This assessment was finalised on the 14 December 2018 (Letter No. EIA-2/MOGE (2139 /2018)).

In 2018, the AD-1 JV successfully drilled one well in AD-1 (Aung Siddhi-1 well), under an Environmental Impact Assessment (EIA) approved by the Ministry of Natural Resources and Environmental Conservation (MONREC) in April 2018 via an approval letter. An Environmental Compliance Certificate (ECC) was issued for the Project in May 2019.

This EMP has been prepared to manage the proposed drilling program commencing in 2020 through to 2023 as per the Myanmar EIA Procedure (2015).

1.2 Project Description

The Project is proposed to commence in 2020 and may include the drilling of up to eight wells over a period of four years between 2020 and 2023.

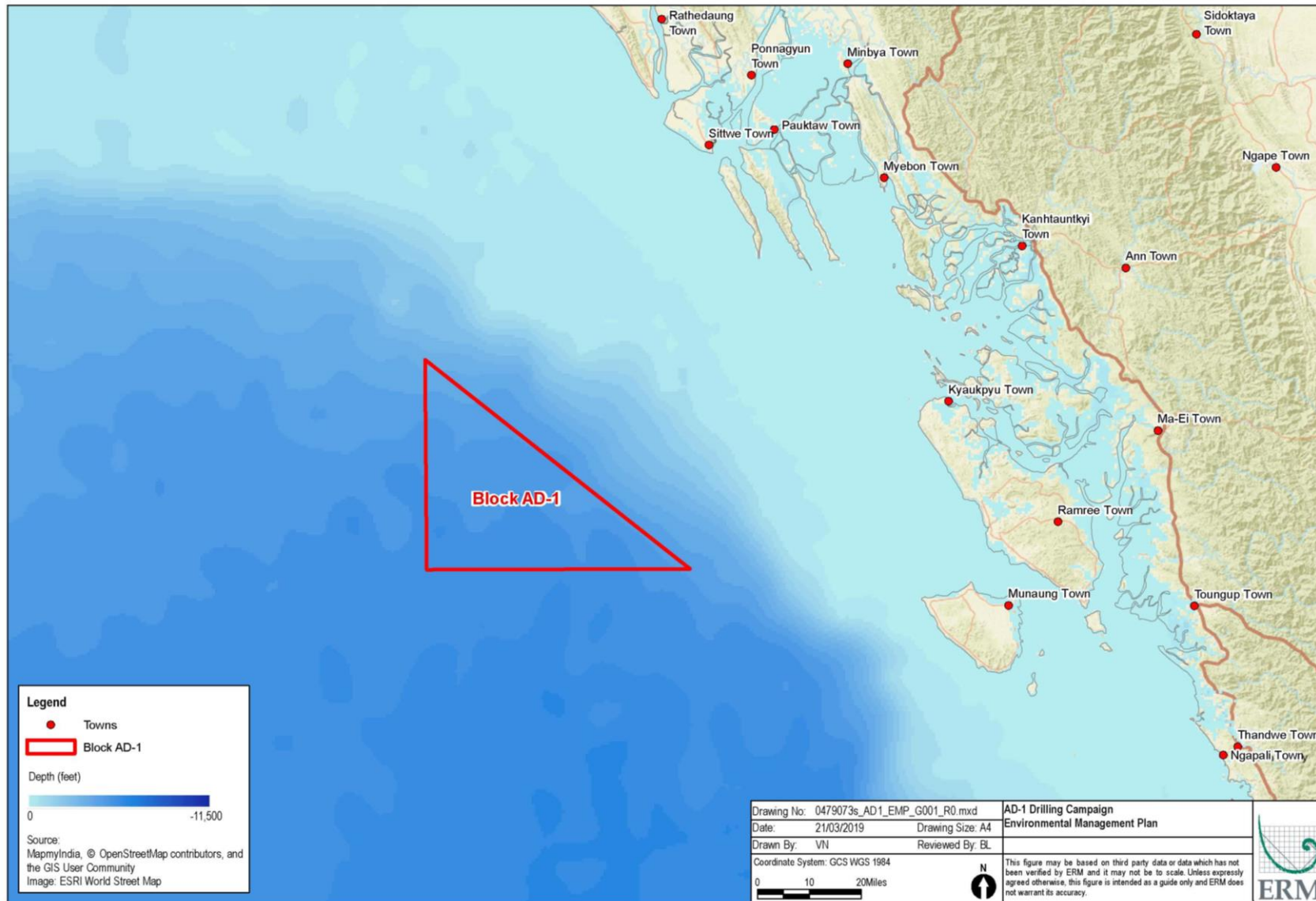
The wells will be drilled in AD-1 which is located in the offshore deep waters away from coastal environmental and social receptors of Rakhine State. At its closest point, the boundary of AD-1 is 40 miles from the nearest land (**Figure 1.1**). The Project Area is defined as the boundary of the AD-1 Block. Water depths in AD-1 range between approximately 3,000 ft. to approximately 6,800 ft. on the abyssal plain of the Rakhine Basin.

A dynamically positioned marine offshore drilling unit (MODU) will be used for the Project. Depending on the selected location of the wells, Woodside may drill in waters between 3,000 ft. and 6,800 ft. A typical well will be drilled to a total depth ranging from 2,625 ft. to 13,500 ft. below the seabed (i.e. mudline). The potential project activities are described in Section 3.1.

Offshore drilling involves the MODU sending a drill bit to the seabed to drill a small diameter hole in the seabed. The total depth of a well is set to target suspected gas accumulations under the seabed. The well will use both water-based drilling fluid (WBDF) and non-aqueous drilling fluid (NADF) for drilling. WBDF and drill cuttings will be discharged at the seabed. Cuttings containing NADF will be returned to the MODU and treated on-board to reduce the oil on cuttings in accordance with management thresholds approved in the AD-1 EIA (Woodside 2018a) before cuttings and retained fluids are discharged overboard.

The wells are anticipated to take up to approximately 40 days each to drill and drilling operations will be conducted for 24 hours a day. Drilling will be undertaken one well at a time in Block AD-1.

Figure 1.1: Location of AD-1 Project Area



1.3 Policy and Regulatory Framework

The Project will be undertaken in line with a number of national and international standards and laws, these include but are not limited to the following:

- Myanmar Environmental Conservation Law (2012);
- Myanmar Environmental Conservation Rules (2014);
- Myanmar National Environmental Quality (Emission) Guidelines (2015) (NEQ Guidelines);
- Myanmar EIA Procedure (2015);
- The International Convention for the Prevention of Pollution from Ships (1973 as modified 1978);
- Convention on Biological Diversity (1992);
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1992);
- Asia Least Cost Greenhouse Gas (GHG) Abatement Strategy 1998;
- The International Convention for the Safety of Life at Sea (SOLAS) 1974;
- IFC Performance Standards (IFC PS) (2012);
- IFC EHS Guidelines for Offshore Oil and Gas Development (2015); and
- World Bank Group (WBG) EHS General Guidelines (2007).

1.4 Summary of Potential Impacts and Mitigation Measures

The approved AD-1 EIA assessed the potential impacts and proposed mitigation and management measures to reduce the level of the impact (Woodside 2018a). The EIA concluded that potential impacts are typically short term, localised and are well understood from previous experience in the industry, with little or no evidence of adverse consequences on the majority of environmental or social receptors.

Previous drilling was conducted in AD-1 between May and June 2018. The mitigation measures in the approved EMP were successfully implemented throughout the duration of the activity. Routine monitoring of environmental performance during the activity was conducted in accordance with the EMP. This information was used to demonstrate compliance with regulatory requirements which also provides verification of the effectiveness of the implemented mitigation measures. The monitoring program confirmed all environmental parameters were within the limits described in the approved EMP and all commitments were met for the AD-1 2018 drilling activity.

The potential impacts and the associated mitigation measures were assessed in the approved EIA and continue to be relevant for the Project. These are summarised in **Table 1.1**.

Table 1.1: Key Potential Impacts and Risks and Proposed Mitigation Measures

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to ambient air quality from the MODU, support vessels, helicopters, machinery and flaring</p>	<ul style="list-style-type: none"> • Low sulphur fuel (0.05% sulphur by mass) will be used where available. • The well test duration will be reduced to the extent practicable. • Engine maintenance to minimise unburned hydrocarbons. • Vessels will be in compliance with applicable MARPOL 73/78 Regulations for the prevention of air pollution from ships (Annex I) (as applicable or required by vessel class). • Vessels will have a SEEMP providing for fuel efficient vessel operations, in accordance with the requirements of Annex VI MARPOL 73/78 (as applicable or required by vessel class); • The MODU will have International Air Pollution Prevention (IAPP) certificates, in accordance with the requirements of Annex VI MARPOL 73/78 (as applicable or required by vessel class). Certification under MARPOL will confirm that engines and other combustion emission sources on the vessel (excluding emission sources directly associated with the extraction of hydrocarbons, such as flaring) meet IMO standards. 	<p>Residual Impact – F</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to water quality, sediment quality, plankton, fish, and offshore benthic habitats and communities) from drill cuttings and drilling mud discharge</p>	<ul style="list-style-type: none"> • WBDF to be used as far as practicable during the drilling program - NADF shall only be used where WBDF cannot provide the required technical specifications. • Average oil on cuttings for the well will be limited to 6.9% or less by weight. • All residual NADF will be returned to shore for reconditioning, re-use or disposal. No bulk discharge of NADF drilling fluids will be permitted offshore. • Where cuttings with retained NADF are discharged overboard, they will be discharged below the water line. • NADF will be selected by Woodside with consideration of the OSPAR rating of chemicals with lower toxicity. Group III chemicals will be used (refer to Section 3.3.1.1 for more information). • Chemicals for discharge or release to sea to be selected and approved as per the Woodside Chemical Assessment Process and included on the Chemical Selection List. • No biocides containing organohalogens will be used. • Only Group (III) Synthetic Organic Base Fluids will be used. • Contractor to conduct bulk operational discharges under the MODU Permit to Work (PTW) system and in accordance with relevant regulations. • The average oil content for discharge of mud pit wash residue will be limited to less than 1% by volume. This typically occurs at the end the drilling programme. • Drill cuttings will comply with IFC Environmental, Health and Safety Guidelines for Offshore Oil and Gas Development (2015). 	<p>Residual Impact for Sediment Quality, Water Quality Plankton, and Fish – E</p> <p>Residual Impact for Offshore Benthic Habitats and Communities – F</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to marine mammals, marine turtles, plankton, and fish from increases in ambient underwater sound and generation of sound pressure levels from Vertical Seismic Profiling (VSP) and Seismic While Drilling (SWD)</p>	<ul style="list-style-type: none"> • A trained crew member will be utilised during VSP or SWD operations to monitor and record marine mammal, marine turtle and whale shark observations. • A visual check for marine mammals, marine turtles and whale sharks within 0.6 miles (observation zone) of the MODU or vessel for 20 minutes prior to commencing VSP or SWD operations. • Visual observations of the observation zone (0.6 miles) must be maintained continuously to identify if there are any marine fauna present. • During periods of low visibility (where the observation zone cannot be clearly viewed out to 0.6 miles), including night-time, the sound source may be used as described in operating procedures, provided that: <ul style="list-style-type: none"> • There have not been three or more marine mammal, marine turtle or whale shark shut down situations during the preceding 24 hour period; or • If operations were not previously underway during the preceding 24 hours, a period of continual observation was undertaken in good visibility for at least two hours (to the extent of the observation zone) within the preceding 24 hour period and no marine mammal, marine turtle or whale sharks were sighted. • Pre start meeting with crew to include marine fauna observation and reporting. During the pre-start meeting, alert all crews to immediately report to the trained observer when they observe any marine mammals, marine turtles or whale sharks during and prior to the activity. The pre-start meeting will cover the likelihood of marine mammal, marine turtle or whale shark observations and required actions if they are sighted. 	<p>Residual Impact for Marine Mammals and Marine Turtles– E</p>
		<p>Residual Impact for Plankton and Fish Communities - F</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to fishing activities and shipping within AD-1 due to the presence of the MODU and support vessels during the proposed drilling activities</p>	<ul style="list-style-type: none"> • A 1,640 ft. radius safety zone will be maintained around the MODU as required. • Myanmar speaking crew members available on board the MODU. There will be MOGE representatives on-board. • Implementation of the Stakeholder Engagement Plan (SEP) to provide timely information to stakeholders prior to the commencement of the proposed drilling program. • Issuance of Notice to Mariners to alert any fishers and other marine users present in AD-1 of the location and timing of the MODU and associated activities. Disclosure and implementation of the Grievance Mechanism for the Project to provide an avenue for stakeholders, including those in fishing communities, to raise concerns, and implement timely investigation. 	<p>Residual Impact - F</p>
<p>Potential impacts to marine mammals from unplanned collisions</p>	<ul style="list-style-type: none"> • MODU and support vessels (as applicable or required by vessel class) will comply with international regulations for collision avoidance (COLREGs 1972), navigation and watch-keeping, including: <ul style="list-style-type: none"> • Maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar). • Navigation light display requirements, including visibility, light position/shape and noise signals appropriate to activity. • Maintenance of minimum safe manning levels. • Maintenance of navigation equipment in efficient working order (compass / radar / communications). • Navigational systems and equipment as specified in Regulation 19 of Chapter V of SOLAS. • Automatic Identification System installed as applicable or required by vessel class, in accordance with Regulation 19 of Chapter V of SOLAS. • Support vessels will not travel greater than 6 knots within 300m of a whale, if sighted, (caution zone) and approach no closer than 100m from a whale, if sighted, (note this standard does not apply to support vessels engaged in limited/constrained manoeuvrability activities near the MODU) 	<p>Risk Rating for Marine Mammals - Moderate</p>
<p>Potential impacts to fishing vessels and shipping from unplanned collisions</p>	<ul style="list-style-type: none"> • Vessel bridge crew to maintain continuous visual watch of any hazards (including marine mammals and marine turtles). 	<p>Risk Rating for Fishing vessels and Shipping - Moderate</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to marine water quality and secondary impacts to biodiversity, and fishing activity and socio-economic factors from accidental spills or leaks</p>	<ul style="list-style-type: none"> • Survey vessels will adopt industry standard good practices with regards to housekeeping and refuelling/containment procedures to reduce the likelihood of spills occurring. In accordance with relevant international standards, survey vessels will also have a Shipboard Oil Pollution Emergency Plan (SOPEP) and appropriate spill response equipment to respond to deck spills and leaks. • Vessels will hold a valid International Oil Pollution Prevention Certificate (IOPP) certificate. • Implementation of the following controls as a minimum during fuel bunkering: <ul style="list-style-type: none"> • Bunkering to commence during daylight hours; • Visual monitoring of gauges, hoses, fittings and the sea surface before and during bunkering; • Dry break couplings fitted to transfer hose. • Spill response kits located in proximity to chemical and hydrocarbon storage/bunkering areas and appropriately stocked/replenished as required. • Crew trained in spill prevention and use of spill response equipment. • Implementation of the Woodside Oil Spill Response Plan (detailed in <i>Section 7.4</i>). • A 1,640 ft. radius safety zone will be maintained around the MODU as required. The Vessel Master will manage vessel access and activities within this zone. • MODU and support vessels (as applicable or required by vessel class) will comply with international regulations for collision avoidance (COLREGs 1972), navigation and watch-keeping, including: <ul style="list-style-type: none"> • Maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar). • Navigation light display requirements, including visibility, light position/shape and noise signals appropriate to activity. • Maintenance of minimum safe manning levels. • Maintenance of navigation equipment in efficient working order (compass/radar / communications). • Navigational systems and equipment as specified in Regulation 19 of Chapter V of SOLAS. • Automatic Identification System installed (as applicable or required by vessel class) in accordance with Regulation 19 of Chapter V of SOLAS. • All chemical and/or hydrocarbon wastes will be segregated into clearly marked containers prior to onshore disposal by a licensed waste management contractor, as per the relevant SDSs. • Issuance of Notice to Mariners to alert any fishers and other marine users present in AD-1 of the location and timing of the MODU and associated activities. Disclosure and implementation of the Grievance Mechanism for the Project to provide an avenue for stakeholders, including those in fishing communities, to raise concerns, and implement timely investigation. 	<p>Risk Rating for marine water quality and secondary impacts to biodiversity - Moderate</p> <p>Risk Rating for fishing activity and socio-economic factors - Moderate</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts on ambient air quality and workers on the MODU from unplanned loss of well control resulting in gas release</p>	<ul style="list-style-type: none"> • Discrete hydrocarbon zones within the well shall be isolated from each other (to prevent cross flow) by a minimum of one barrier, which can be either mechanical (e.g. cement or well casing), or hydrostatic (e.g. drilling fluid). • All permeable zones penetrated by the well bore, containing hydrocarbons or over-pressured water, shall be isolated from the surface environment by a minimum of two barriers (i.e. primary and secondary); unless a shallow hazard study confirms that a single fluid barrier is appropriate during the initial stages of well construction. • All normally pressured permeable water-bearing formations shall be isolated from the surface by a minimum of one barrier. • Barriers shall be effective over the lifetime of well construction or production. • Effectiveness of primary and secondary barriers shall be verified (physical evidence of the correct placement and performance). • Any fluid barrier must comprise drilling fluid of a suitable weight, composition and volume to account for pore pressure and over-pressure zones during drilling. • Subsea Blowout Preventer (BOP) specification and function/pressure testing will be undertaken in accordance with API Standard 53 4th Edition (API 53), requiring the following: <ul style="list-style-type: none"> • One annular preventer. • Two pipe rams (excluding the test rams). • A MODU is required to have a minimum of two sets of shear rams, one of which must be capable of sealing. • On activation of the shear ram a seal is provided which creates a barrier to the reservoir to reduce/prevent further hydrocarbon discharges. • If the BOP's operation cannot be achieved from the MODU, the rams within the BOP can be operated by ROV. 	<p>Risk Rating for ambient air quality - Low</p> <p>Risk Rating for workers - Low</p>

Legend for Significance of Residual Impact (Planned Activities)

A	Applicable limits or standards are substantially exceeded and/ or catastrophic or major magnitude impacts are expected to receptors of medium/ high or high sensitivity respectively. For impacts assessed as being of Significance Level A, further mitigation is required to reduce the potential magnitude of the impact in order for the activity to proceed.
B	Applicable limits or standards are exceeded and/ or moderate, major or catastrophic magnitude impacts are expected to occur to receptors of high, medium or low sensitivity respectively. Impacts assessed as Significance Level B should be avoided as far as practicable and further control/ mitigation measures considered. If impacts of Significance Level B remain after ALARP is reached, Vice President (VP) approval is required to proceed.
C	Impacts are close to applicable limits or standards, or within standards but with potential for occasional exceedance. Minor, moderate or major magnitude impacts are predicted to occur to receptors of high, medium or low sensitivity respectively. Further control/mitigation measures should be considered. If impacts of Significance Level C remain once ALARP is reached, General Manager Environment or Country Manager approval is required to proceed.
D	Impact magnitude is within applicable standards but is considered to have significance. Slight, minor or moderate impacts are predicted to occur to receptors of high, medium or low sensitivity respectively. It should be shown that an impact of Significance Level D has been reduced to ALARP levels and is being managed and monitored effectively.
E	The receptor will experience a noticeable effect, but the impact magnitude is sufficiently small and well within applicable standards, and/or the receptor is of low value. An activity can proceed with impacts deemed to be of Significance Level E, although impacts should still be managed and monitored.
F	For an impact of Significance Level F the receptor will essentially not be affected by a particular activity, or the predicted effect is deemed to be indistinguishable from natural background variations.

Risk Ranking (Unplanned Activities) - This presents the level of sign-off or authority that is required for the business to accept this risk

Severe	Risk at this level requires immediate (no more than 12 hours) communication to the Woodside CEO and divisional EVP/SVP via VP Risk and Compliance
Very High	Risk at this level requires immediate (no more than 12 hours) communication to the divisional EVP/SVP with concurrent communication to VP Risk and Compliance
High	Risk at this level requires timely communication to SVP/VP of business unit or function
Moderate	Risk at this level requires timely communication to line manager (i.e. relevant Asset or Project Manager)
Low	Risk at this level requires timely communication to line manager

1.5 Overall Budget of the EMP

It is estimated that the overall annual budget for implementing the EMP for the drilling program is between \$500k and \$1M AUD. Many of the management and mitigation measures are embedded controls as part of the standard operational costs of the MODU and vessels.

1.6 Woodside Management System and Management & Monitoring Sub-Plans

The Woodside Management System (WMS) provides a structured framework of documentation to set common expectations governing how all employees and contractors at Woodside will work. The WMS is comprised of four elements: Compass & Policies; Expectations; Processes & Procedures; and Guidelines outlined below;

- **Compass & Policies.** Set the enterprise-wide direction for Woodside by governing our behaviours, actions and business decisions and ensuring we meet our legal and other external obligations;
- **Expectations.** Set essential activities or deliverables required to achieve the objectives of the Key Business Activities and provide the basis for development of processes and procedures;
- **Processes and Procedures.** Processes identify the set of interrelated or interacting activities, which transforms inputs into outputs, to systematically achieve a purpose or specific objective. Procedures specify what steps, by whom and when are required to carry out an activity or a process; and
- **Guidelines.** Provide recommended practice and advice on how to perform the steps defined in Procedures, together with supporting information and associated tools Guidelines provide advice on: how activities or tasks may be performed; information that may be taken into consideration; or, how to use tools and systems.

The following sub-plans have been prepared as they are the most applicable to the activity:

- Emergency Response Plan (ERP).
- Marine Biodiversity Management Plan.
- Waste Management Plan (WMP).
- Oil Spill Response Plan (OSRP).
- Drill Cutting and Fluid Management Plan.
- Ballast Water Management Plan.

Monitoring will be implemented to demonstrate compliance with regulatory requirements and, will also provide verification of the effectiveness of the implemented control measures. A program of periodic monitoring of the Project starts at mobilisation and continues through the duration to completion. This information is collected using the tools and systems such as daily drilling reports, quarterly reviews, and internal auditing (as shown in the EMP Commitment **Table 1.2**).

The environmental management commitments for the 2018 AD-1 drilling campaign was successfully implemented throughout the duration of the activity. Routine monitoring of environmental performance during the activity was conducted in accordance with the approved EMP. The monitoring program has confirmed all environmental parameters were within the limits described in the EMP of the approved EIA. Woodside has provided justification in Section 7.2.6 for not undertaking further water and sediment quality sampling for the Project.

Compliance will be monitored to ensure that subcontractors meet contractual obligations with respect to work practices and design specifications (e.g. Project emission standards). The

monitoring strategies consider consistency with internationally and locally acceptable practices, logistics and cost effectiveness.

Woodside will submit an Environmental Monitoring Report to ECD three (3) months after drilling completion and will be made public. The monitoring reports will include:

- Any spills to the marine environment greater than 80 litres;
- Marine mammal observations during VSP and SWD; and
- Relevant monitoring reporting commitments are presented in **Table 1.2**.
- Other reporting requirements as per the approval of the Project from MONREC.

As per Article 107 of the EIA Procedure, Woodside shall notify and identify in writing to MONREC any breaches of its obligations or other performance failures or violations of the ECC, or equivalent, and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of MONREC is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of Woodside becoming aware of such incident.

Table 1.2: AD-1 Project Monitoring and Reporting Commitments

Monitoring	Receptor	Residual Impact	Report	Approximate Submission Timing
ROV images of seabed	Offshore benthic habitats and communities	F – No lasting effect	Monitoring Report to include ROV images	3 months after completion of drilling
Marine Fauna during VSP and SWD	Marine Mammals and turtles	E – No lasting effect	Monitoring Report to include any marine fauna sightings during VSP or SWD	3 months after completion of drilling
Waste Disposal	Onshore public health and safety	F- No lasting effect	Monitoring Report to include volumes of waste disposed	3 months after completion of drilling
Drill Cuttings	Offshore benthic habitats and communities	E – No lasting effect	Monitoring report to confirm average oil on cuttings for the well have been 6.9% in accordance with IFC (2015)	3 months after completion of drilling
Chemicals	Marine environment	F- No lasting effect	Monitoring Report to include a list of any new chemicals types (Function) used during drilling program in addition to those listed in Table 3.5 .	3 months after completion of drilling

1.7 Stakeholder Engagement

Project stakeholder consultation was undertaken in Yangon and Kyaukphyu in April 2019. Engagement with the Rakhine Chief Minister was conducted in December 2018.

Attendees included government officials, Sittwe University, local fishers, local Civil Society Organisations (CSOs), and other interested parties. Consultation undertaken by Woodside, ERM, and REM for offshore activities in AD-1, conducted at the national, regional and township level (which included inviting village level representatives), has also informed project planning and understanding of the environmental and social context.

The purpose of the consultation completed to date was to present information on the Project, gather information on project affected peoples (PAPs), and identify potential data gaps and how these can be closed for the EIA Report. Consultation involved face-to-face meetings with a range of stakeholders.

The meetings are structured as follows:

- Presentation of Project and Project Proponent;
- Question and Answer Session; and
- Focus Group Discussions (FGDs), if necessary.

The following tools and techniques were used to engage stakeholders:

- Interviews: Interviews were conducted with Government officials (e.g. DoF, GAD officials) and key informants (e.g. offshore fishers). These were guided by a list of questions, both open-ended and closed.
- FGDs: Refers to a discussion carried out amongst a group of people (6-8) from a similar background/profile on a specific topic. The primary purpose of such discussions is to gather community information on a particular issue. FGDs were undertaken with fishers in Rakhine to inform the baseline understanding of the Project.
- Semi- Structured/ Structured Interviews and Checklists: As well as discussions, the process of semi-structured/structured interviews and checklists is used as a method of inquiry in which a pre-determined set of open or closed questions or check points are used to gather further information pertaining to specific themes or issues. For the purpose of the Project, detailed topic specific checklists (such as fishing type, fishing gear, depths, type of fish catch etc.) were administered in Rakhine to allow for a detailed understanding of the impacts of the Project to be established. Special attention was given to collecting in-depth interview data from fisheries organisations and departments with fishing data for the AD-1 Project Area.

The date, time, location, stakeholder and purpose of each meeting conducted for the Project to date is provided in **Table 1.3**.

Table 1.3: Consultation Activities Undertaken for the Project

Date, location	Stakeholders	Purpose
4 th December 2018	Chief Minister	<ul style="list-style-type: none"> • Present information on Project. • Seek permissions and approvals required to conduct engagement in Rakhine State
1st April 2019, Kyo Kone Jetty, Yangon	Myanmar Marine Fisheries Association (MMFA)	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1.
3rd April 2019, Hotel Kyaukphyu, Kyaukphyu	Local fishers, ECD, DOF, GAD, CSOs, local community	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1.

The meetings were undertaken to disclose information on the Project at the regional and national level and to confirm the baseline understanding of AD-1. A summary of the outcomes of the meetings is presented below:

- Fishers from Sittwe fish a maximum of 30 miles from the coast and in Kyaukphyu, fishing is undertaken in nearshore coastal waters (<10 miles). No local fishers fish within the AD-1 Project Area. It was noted that large commercial trawlers from outside Rakhine State (i.e. either from other areas of Myanmar or international trawlers) may operate within the deep offshore waters of Rakhine.
- Offshore fishers from Yangon that fish in offshore waters of Rakhine State also confirmed they do not fish in AD-1.
- Fishing methods used include purse/beach seine, trawling, hook and line and gill-netting. These are common fishing gear used in Rakhine and the same as previous data collected for Woodside for activities in AD-1 and AD-7 in 2016 and 2018.
- Fishing is seasonal and mostly not conducted in offshore waters (i.e., the Project Area) during the months of June to August.
- Environmental queries related to impact on fish populations, air quality, water quality, unplanned events (such as hydrocarbon spills) and coastal habitats.
- A common topic raised was social benefits and corporate social responsibility (CSR).

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၁ အကျဉ်းချုပ်အစီရင်ခံစာ

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ယခုစာတမ်းသည် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံ (မြန်မာနိုင်ငံ) ၏ ရခိုင်ကမ်းလွန်ရှိ လုပ်ကွက် အေဒီ-၁ (အေဒီ-၁) ၌အဆိုပြုထားရှိသည့် တူးဖော်ရေးလုပ်ငန်း (စီမံကိန်း) အတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် (Environmental Management Plan – EMP) တင်ပြချက် ဖြစ်ပါသည်။

အေဒီ-၁ အကျိုးတူလုပ်ငန်း ပူးပေါင်းဆောင်ရွက်သူများ (JV) ဖြစ်သော Woodside နှင့် CNPC International Ltd (CNPCI) တို့သည် ၂၀၂၀အတွင်း လေးနှစ်တာ စီမံကိန်းဖြင့် ဖြစ်နိုင်ခြေရှိသောတွင်း (တစ်တွင်းမှ ရှစ်တွင်းအထိ) ကို တူးဖော်ခြင်းပါဝင်ပါသည်။ ထွက်ရန်မှန်းထားသော ဟိုက်ဒရိုကာဗွန် (Hydrocarbon) မှာ ခြောက်သွေ့သော သဘာဝဓာတ်ငွေ့များဖြစ်ပါသည်။

အေဒီ-၁ အတွက် စီမံကိန်းအဆိုပြုမှုအစီအရင်ခံစာ (PPR)ကို သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန(MONREC) သို့ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD)မှတစ်ဆင့် လိုအပ်ချက်များနှင့် ၂၀၁၉-၂၀၂၃ကာလများတွင် ရှာဖွေတူးဖော်ရေးလုပ်ငန်းများအတွက် အကဲဖြတ်မှုအဆင့်များကို အကဲဖြတ်ပေးပါရန် ၂၀၁၈ခုနှစ် အောက်တိုဘာလ ၃၁ရက်တွင် တင်ပြခဲ့ပါသည်။ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC)မှ အေဒီ-၁လုပ်ကွက်အတွင်း အနာဂတ်တွင် တွင်းရှစ်တွင်းအထိ တူးဖော် လုပ်ဆောင်မှုများအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် လုပ်ဆောင်ရန် လိုအပ်သည်ဟု ဆုံးဖြတ်ချက်ချပြီး Woodsideအား ရှေ့ဆက်တူးဖော်မည့် လုပ်ဆောင်မှုများအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား တင်ပြရန် လမ်းညွှန်ခဲ့ပါသည်။ ထိုဆန်းစစ်မှုကို ၂၀၁၈ ဒီဇင်ဘာ ၁၄ရက်နေ့တွင် အဆုံးသတ်ခဲ့ပါသည် (စာအမှတ် EIA-2/MOGE (2139 /2018))။

၂၀၁၈တွင် အေဒီ-၁ အကျိုးတူလုပ်ငန်း ပူးပေါင်းဆောင်ရွက်သူများသည် တွင်းတစ်တွင်း (Aung Siddhi-1 well) အား အေဒီ-၁လုပ်ကွက်တွင် သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးမှ အတည်ပြုထားသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment – EIA) ဖြင့် အောင်မြင်စွာ တူးဖော်ခဲ့ပါသည်။ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာဆောင်ရွက်မှုသက်သေခံလက်မှတ် (ECC)ကိုလည်း ၂၀၁၉ မေလတွင် ရခဲ့ပြီး ဖြစ်ပါသည်။

မြန်မာ့ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅)အရ ၂၀၂၀မှ ၂၀၂၃ အတွင်းဆောင်ရွက်မည့် အဆိုပြုထားသော တူးဖော်မှုလုပ်ငန်းများအတွက်ယခု ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်ကို ပြင်ဆင်ထားခြင်းဖြစ်ပါသည်။

၁.၂ စီမံကိန်းဆိုင်ရာ အချက်အလက်များ

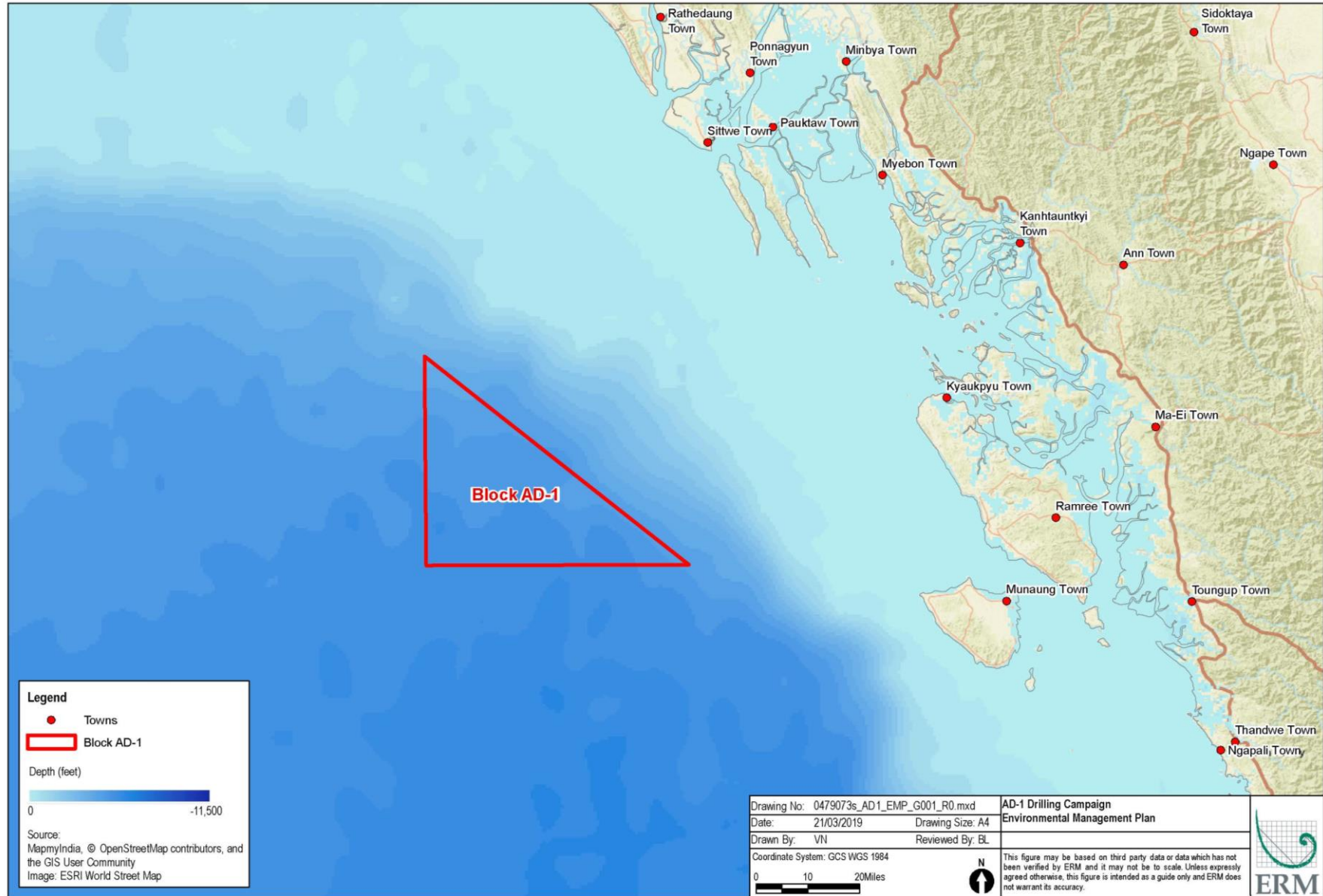
စီမံကိန်းအား ၂၀၂၀တွင်စတင်ဆောင်ရွက်ရန် အဆိုပြုထားပြီး ၂၀၂၀နှင့် ၂၀၂၃ လေးနှစ်ကာလအတွင်းတွင် စတင် အားတူးဖော်ရန်ပါဝင်ပါသည်။ ရခိုင်ပြည်နယ်၏ ပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင် တည်ရှိရာနေရာ ကမ်းလွန် ရေနက်ပိုင်း ဖြစ်သော အေဒီ-၁လုပ်ကွက်အတွင်း တွင်းများကို တူးဖော်မည်ဖြစ်ပါသည်။ အဆိုပြုတွင်းနေရာသည် မြန်မာပင်မနယ်မြေကမ်းရိုးတန်း နှင့် ၎င်း၏အနီးဆုံးနေရာမှ ၄၀ မိုင်ခန့် ကွာဝေးပါသည်(ပုံ ၁.၁)။ စီမံကိန်း ဧရိယာကိုလုပ်ကွက်အမှတ် အေဒီ-၁ ၏ နယ်နိမိတ်ဟု သတ်မှတ်ပါသည်။ အေဒီ-၁၏ ရေအနက်သည် ခန့်မှန်းချေ ၃,၀၀၀ ပေ မှ ၆,၈၀၀ ပေ အထိရှိပြီး ရခိုင်ဘူမိမျိုင့်ဝှမ်း၏ Abyssal Plain ပေါ်တွင် ရှိပါသည်။

ရွှေလျားတွင်းတူးစင် (MODU)အား စီမံကိန်းအတွက် အသုံးပြုမည် ဖြစ်ပါသည်။ ရွေးချယ်ထားသော တွင်းများတည်ရှိရာနေရာများအရ Woodsideသည် ရေအနက် ၂,၆၂၅ပေမှ ၁၃,၅၀၀ပေနှင့် ၆,၈၀၀ပေရှိသော ရေပြင်တွင် တူးဖော်မည်ဖြစ်သည်။ ယေဘုယျအားဖြင့် တွင်းတစ်တွင်း၏အနက်သည် ပင်လယ်ကြမ်းပြင်အောက် (ရှို့ပြင်) ၂,၆၂၅ပေမှ ၁၃,၅၀၀ပေအထိရှိပါသည်။ ဖြစ်နိုင်ချေရှိသော စီမံကိန်းလုပ်ဆောင်ချက်များကို အခန်း၃.၁တွင် ဖော်ပြထားပါသည်။

ကမ်းလွန်တူးဖော်ရေး၌ ရေအောက်ကြမ်းပြင်တွင် အပေါက်ငယ် တူးယူရန် တူးဖော်ရေးစင်မှ တူးဖော်မည့် လွန်သွားကို ရေအောက်ကြမ်းပြင်သို့ ပို့လွှတ်မည် ဖြစ်ပါသည်။ တွင်းတစ်တွင်း၏ အနက်သည် ရေအောက် ကြမ်းပြင်ရှိ အလားအလာရှိသည့် ရေနံ သို့မဟုတ် သဘာဝ ဓါတ်ငွေ့ကို ပစ်မှတ်ထားရန် ဖြစ်သည်။ တွင်းတူးဖော်ရာတွင် ရေအခြေခံသည့်တွင်းတူးရည် (WBDF)နှင့် ရေကိုအခြေမခံသည့်တွင်းတူးရည် (NADF) တို့အား အသုံးပြုသွားမည်ဖြစ်ပါသည်။ WBDF နှင့် ရွှံ့ကျစ်စာ (Drill Cutting) များကို ပင်လယ်ကြမ်းပြင် ပေါ်တွင် စွန့်ထုတ်သွားမည် ဖြစ်ပါသည်။ NADF ပါဝင်သော ရွှံ့ကျစ်စာများကိုမူ တွင်းတူးစင်ပေါ်သို့ သယ်ယူပြီး ပြင်ပသို့ မစွန့်ထုတ်မီ ဆီပါဝင်မှုလျော့ကျစေရန် အေဒီ-၁၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းတွင် ခွင့်ပြုထားသော စီမံခန့်ခွဲမှုနည်းစနစ်များဖြင့် စီရင်ဆောင်ရွက်စေမည် ဖြစ်ပါသည်။

တွင်းများကို တူးဖော်ရာတွင် တစ်နေ့တွင် ၂၄နာရီပတ်လည်ဖြင့် ခန့်မှန်းခြေရက်ပေါင်း ၄၀ ကြာရှိမည်ဖြစ်ပါသည်။ အေဒီ-၁လုပ်ကွက်တွင် တစ်ကြိမ်တွင်းတူးလျှင် တစ်တွင်းနှုန်းဖြင့်တူးဖော်မည်ဖြစ်သည်။

ပုံ ၁.၁ စီမံကိန်းတည်နေရာ



၁.၃ မူဝါဒ နှင့် ကြီးကြပ်ကွပ်ကဲထိန်းသိမ်းရေးမူဘောင်

စီမံကိန်းကို အောက်ပါ နိုင်ငံတော်အဆင့် နှင့် နိုင်ငံတကာ စံနှုန်းများ၊ ဥပဒေများနှင့် အညီ ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။

- မြန်မာ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂)၊
- မြန်မာ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ (၂၀၁၄)၊
- မြန်မာ အမျိုးသားပတ်ဝန်းကျင်အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅) (NEQ လမ်းညွှန်ချက်များ)၊
- မြန်မာ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း(၂၀၁၅)၊
- ရေယာဉ်များမှ အညစ်အကြေးများကာကွယ်ရန် အပြည်ပြည်ဆိုင်ရာ သဘောတူညီချက် (၁၉၇၃ ကို ၁၉၇၈ တွင်ပြင်ဆင်)၊
- ဇီဝမျိုးစုံမျိုးကွဲဆိုင်ရာ သဘောတူညီချက် (၁၉၉၂)
- နိုင်ငံများအကြား အန္တရာယ်ရှိသည့် စွန့်ပစ်ပစ္စည်းများနှင့် ၎င်းတို့၏ စွန့်ပစ်မှုဆိုင်ရာ ထိန်းချုပ်ရေး ဘာဇယ်သဘောတူညီချက် (၁၉၉၂)
- အာရှ အနိမ့်ဆုံးကုန်ကျမှုဆိုင်ရာဖန်လုံအိမ်ဓာတ်ငွေ (GHG) လျော့ပါးရေး မဟာဗျူဟာ (၁၉၉၈)၊
- အက္ကဝါသတ္တဝါများ ဘေးအန္တရာယ်ကင်းရေး အတွက် အပြည်ပြည်ဆိုင်ရာ သဘောတူညီချက် (SOLAS) (1974)
- အပြည်ပြည်ဆိုင်ရာ ဘဏ္ဍာရေး ကော်ပိုရေးရှင်း၏ လုပ်ဆောင်မှုစံသတ်မှတ်ချက်များ (IFC PS) (2012)၊
- ကမ်းလွန်ရေနှင့်သဘာဝဓာတ်ငွေ့ဖွံ့ဖြိုးမှုလုပ်ငန်းအတွက် IFC EHS လမ်းညွှန်ချက်များ (၂၀၁၅) နှင့်
- ကမ္ဘာ့ဘဏ်အုပ်စု (WGB) EHS လမ်းညွှန်ချက်များ (၂၀၀၇)။

၁.၄ ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု ဆန်းစစ်ခြင်း နှင့် အဆိုပြု လျော့ချရေးအစီအမံများ အကျဉ်းချုပ် အတည်ပြုထားသော အေဒီ-၁၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA)တွင် ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှုများနှင့် အဆိုပြုလျော့ချရေး အစီအမံများကို အကဲဖြတ်ထားခဲ့ပါသည် (Woodside 2018a)။ ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှုများ နှင့် အန္တရာယ်များသည် ပုံမှန်အားဖြင့် ယာယီဖြစ်ပြီး၊ ၎င်းတို့ကို ကောင်းစွာသဘောပေါက်ကာ ယခင် ဆောင်ရွက်ခဲ့သည့်လုပ်ငန်းအတွေ့အကြုံများမှ အဓိက သဘာဝပတ်ဝန်းကျင် သို့မဟုတ် လူမှုပတ်ဝန်းကျင်အပေါ် ဆိုးကျိုး ဖြစ်ပေါ်သည့်အထောက်အထားများ မဆိုစလောက်သာရှိ သို့မဟုတ် မရှိ ကြောင်း ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းကို နိဂုံးချုပ်ထားပါသည်။

အေဒီ-၁အတွင်း ယခင်တွင်းတူးရာ ၂၀၁၈ခုနှစ် မေလမှစွန့်လအတွင်း လုပ်ဆောင်ခဲ့ပါသည်။ အတည်ပြုထားသော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် (Environmental Management Plan – EMP) တွင်ပါဝင်သော သက်ရောက်မှုများလျော့ချရေး အစီအမံများကို တူးဖော်ရေးကာလတစ်လျှောက် အောင်မြင်စွာ လုပ်ဆောင် နိုင်ခဲ့ပါသည်။ တူးဖော်ရေးလုပ်ဆောင်စဉ် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အရ ပတ်ဝန်းကျင်ဆိုင်ရာ စွမ်းဆောင်ရည်များအား လုပ်ရိုးလုပ်စဉ်အတိုင်း လုပ်ဆောင်ခဲ့ပါသည်။ ယခုအချက်အလက်များသည် လိုအပ်သော လေးစားလိုက်နာရမည့် စည်းမျဉ်းလိုအပ်ချက်များကို လုပ်ဆောင်ရာတွင် သက်ရောက်မှုများ လျော့ချရေးအတွက် ထိရောက်သော အစီအမံများကို စီစစ်အတည်ပြုရာတွင် အထောက်အကူပြုပါသည်။ ပတ်ဝန်းကျင်ဆိုင်ရာ တိုင်းတာချက်များသည် အတည်ပြုထားသော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင်ပါဝင်သော သတ်မှတ်ထားသည့် ကန့်သတ်ချက်များနှင့် ကိုက်ညီသည်ဟု လေ့လာစောင့်ကြည့်ရေး အစီအစဉ်မှ အတည်ပြုခဲ့ပြီး အေဒီ-၁ တွင်းတူးဖော်ရေး လုပ်ဆောင်ချက်များသည် ကတိကဝတ်အားလုံးနှင့်

ကိုက်ညီမှုရှိခဲ့ပါသည်။

ဖြစ်နိုင်ချေရှိသော သက်ရောက်မှုများနှင့် သက်ဆိုင်သော လျော့ချရေးအစီအမံများအား အတည်ပြုထားသော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီရင်ခံစာတွင် အကဲဖြတ်ပြီးဖြစ်ပြီး စီမံကိန်းနှင့်လည်း ဆက်လက် ကိုက်ညီမှုရှိပါသည်။ ၎င်းအကြောင်းအရာများကို ဇယား ၁.၁တွင် အကျဉ်းချုံး ဖော်ပြထားပါသည်။

ဇယား ၁.၁: အဓိကဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှုများ နှင့် အဆိုပြု လျှော့ချရေးအစီအမံများ

ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု	ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ	ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)
<p>ရွေ့လျားတွင်းတူးစင်၊ ထေ ဘက်ပုံ ရေးယာဉ်၊ ရဟတ်ယာဉ်၊ စက်ကိရိယာများနှင့် ဂတ်စ်များကို မီးရှို့ကာ ရုတ်တရက်ထုတ်လွှတ်ခြင်းကြောင့် ပတ်ဝန်းကျင်လေထု အရည်အသွေးအပေါ် ဖြစ်နိုင်သည့် သက်ရောက်မှု</p>	<ul style="list-style-type: none"> ဆာလဖာပါဝင်မှုနည်းသော လောင်စာ (၀.၀၅ ဆာလဖာ ဘိုင်မက်စ်) ကို ရရှိနိုင်သောအခြေအနေရှိလျှင် အသုံးပြုသွားမည် ဖြစ်ပါသည်။ အစမ်းတွင်းကာလကို လက်တွေ့တတ်နိုင်သမျှလျှော့ချသွားမည် ဖြစ်ပါသည်။ မလောင်ကျွမ်းသေးသည့် ဟိုက်ဒရိုကာဗွန်များကို လျှော့ချရန် စက်များကို ထိန်းသိမ်းဆောင်ရွက်ခြင်း။ သင်္ဘောများမှ လေထုညစ်ညမ်းမှုကို ကာကွယ်ရန်အတွက် ရေယာဉ်များသည် သက်ဆိုင်ရာ MARPOL ၇၃/၇၈ စည်းမျဉ်းများကိုနှင့် အညီ ဆောင်ရွက်သွားမည် ဖြစ်ပါသည် (နောက်ဆက်တွဲ- I) (ရေယာဉ်အမျိုးအစားများအလိုက် လိုအပ်သလိုဆောင်ရွက်ရန်)။ ရေယာဉ်များတွင် နောက်ဆက်တွဲ VI MARPOL ၇၃/၇၈ (ရေယာဉ်အမျိုးအစား သတ်မှတ်ချက်အလိုက်) နှင့် အညီ၊ ရေယာဉ်လောင်စာစွမ်းဆောင်ရည် ပြည့်ဝလည်ပတ်ရေး အတွက် ပြဋ္ဌာန်းထားသည့် သင်္ဘောစွမ်းအင်ပြည့်ဝရေးစီမံခန့်ခွဲရေးအစီအစဉ် (SEEMP) ပါရှိမည် ဖြစ်ပါသည်။ တူးဖော်ရေးစင်သည် နောက်ဆက်တွဲ VI MARPOL ၇၃/၇၈ အရ၊ အပြည်ပြည်ဆိုင်ရာ လေထုညစ်ညမ်းမှုကာကွယ်ခြင်း (IAPP) သက်သေခံလက်မှတ်များ ရှိမည် ဖြစ်ပါသည် (ရေယာဉ်အမျိုးအစားများ အလိုက် လိုအပ်သလိုဆောင်ရွက်ရန်)။ MARPOLအရ လက်သေခံ လက်မှတ်ရရှိထားခြင်းမှာ ရေယာဉ်ပေါ်စက်များနှင့် အခြားလောင်ကျွမ်းရေး အရင်းအမြစ်များ (မီးတောက်များကဲ့သို့သော ဟိုက်ဒရို ကာဗွန်ထွက်ရှိမှုနှင့် တိုက်ရိုက်ဆက်စပ်နေသည့် ထုတ်လွှတ်မှုအရင်းအမြစ်များမပါဝင်) သည် IMO စံနှုန်းနှင့် ကိုက်ညီမှုရှိခြင်း ဖြစ်ပါသည်။ 	<p>ကြွင်းကျန်သက်ရောက်မှု - ၀</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
<p>တွင်းတူးဖြတ်စများနှင့် တွင်းတူးရည် များ ပင်လယ် ကြမ်း ပြင်သို့ စွန့်ပစ် ခြင်းကြောင့် ရေအရည်အသွေး၊ နှိုင်းအရည်အသွေး၊ ပင်လယ်ရေအောက်နေသတ္တဝါငယ်လေးများ၊ ငါးများ နှင့် ကမ်းဝေး ပင်လယ်အောက် ခြေနေသတ္တဝါများ၏ တည်နေရာ နှင့် အုပ်စုများ</p>	<ul style="list-style-type: none"> • WBDF ကို တူးဖော်ရေးလုပ်ငန်းကာလအတွင်း တတ်နိုင်သမျှ အသုံးပြုခြင်း - WBDF မှလိုအပ်သည့် နည်းပညာပိုင်းကို မထောက်ပံ့နိုင်မှသာလျှင် NADF ကို အသုံးပြုမည် ဖြစ်ပါသည်။ • တွင်းကျစ်စာများ၏ ပုံမှန်ဆီပါဝင်မှုသည် အလေးချိန်အားဖြင့် ၆.၉ % သို့မဟုတ် ၎င်းထက်နည်းမည် ဖြစ်ပါသည်။ • ကပ်ညီနေသော NADF များအား ကုန်းတွင်းသို့ ပိုပြီးပြန်လည်အသုံးချရန် သန့်စင်ခြင်း သို့မဟုတ် စွန့်ပစ်ခြင်း လုပ်ဆောင်ပါမည် ။ ကြီးမားသည့် NADF တူးဖော်ရေးအရည်စွန့်ထုတ်မှုကို ကမ်းလွန်နေရာတွင် ခွင့်ပြုမည်မဟုတ်ပါ။ • NADF ကျစ်စာများကို သင်္ဘောပေါ်စွန့်ထုတ်ရပါက၊ ၎င်းတို့ကို ရေအောက်လှိုင်းသို့ စွန့်ထုတ်သွားမည် ဖြစ်ပါသည်။ • အဆိပ်အတောက်နည်းသည် OSPAR ဓာတုပစ္စည်းများကို ထည့်သွင်းစဉ်းစားလျက် Woodside မှ NADF ကို ရွေးချယ်သွားမည် ဖြစ်ပါသည်။ အုပ်စု III ဓာတုပစ္စည်းများကို အသုံးပြုသွားမည် ဖြစ်ပါသည်။ (နောက်ထပ်အချက်အလက်များကို အပိုင်း ၄.၃.၃ တွင်ကြည့်ပါ)။ • ပင်လယ်ထဲသို့ စွန့်ထုတ်မည့် သို့မဟုတ် ထုတ်လွှတ်မည့် ဓာတုပစ္စည်းများကို Woodside ၏ ဓာတုပစ္စည်းဆန်းစစ်ခြင်းလုပ်ငန်းစဉ်အရ ရွေးချယ်အတည်ပြုမည်ဖြစ်ပြီး၊ ဓာတုပစ္စည်းရွေးချယ်ရေးစာရင်းတွင်ပါဝင်ပါသည်။ • အော်ဂင်နိုဟယ်လိုဂျင် (organhalogen) များပါဝင်သည့် မည်သည့် ဓာတုပစ္စည်းများကိုမှ 	<p>အနည်အနှစ်အရည်အသွေး၊ ရေအရည်အသွေး နှင့် ရေပေါ်လွှာနေ သတ္တဝါများ အတွက် ကြွင်းကျန်သက်ရောက်မှု - c</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
	<p>အသုံးပြုမည် မဟုတ်ပါ။</p> <ul style="list-style-type: none"> • အုပ်စု (III) ပါ အော်ဂဲနစ် ခြေပြုအရည်များကိုသာ အသုံးပြုသွားမည် ဖြစ်ပါသည်။ • သက်ဆိုင်ရာ စည်းမျဉ်းစည်းကမ်းများနှင့်အညီ တူးဖော်ရေးစင် PTW စနစ်အရ၊ ကြီးမားသော လည်ပတ်ရေးဆိုင်ရာ စွန့်ထုတ်မှုများကို ဆောင်ရွက်ရန် ကန်ထရိုက်တာများဖြင့် ဆောင်ရွက်ခြင်း။ • ရွှံ့တွင်းဆေးကြောရေးကြွင်းကျန်စွန့်ထုတ်မှုအတွက် ပုံမှန် ဆီပါဝင်မှုမှာ ပမာဏအားဖြင့် ၁% အောက်သာ အကန့်အသတ်ဖြစ်ပါသည်။ ဤသည်မှာပုံမှန်အားဖြင့် တူးဖော်ရေး အစီအစဉ်ပြီးမြောက်ပြီးနောက် ဖြစ်ပေါ်ပါသည်။ • တူးဖော်မှုကျစ်စာများကိုလည်း ကမ်းလွန် နှင့် သဘာဝဓာတ်ငွေ့ လုပ်ငန်းအတွက် IFC ပတ်ဝန်းကျင်၊ ကျန်းမာရေး နှင့် ဘေးကင်းလုံခြုံရေးဆိုင်ရာ လမ်းညွှန်ချက်များ (၂၀၁၅) နှင့်အညီဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။ 	<p>ရေအောက်နေ သတ္တဝါများအတွက် ကြွင်းကျန်သက်ရောက်မှု-၀</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
<p>ဆိုက်စမစ် စူးစမ်း လေ့လာမှု Vertical Seismic Profiling (VSP) သို့မဟုတ် တွင်းတူးဖော်စဉ် ဆိုက်စမစ် တိုင်းတာခြင်း Seismic While Drilling (SWD) တို့မှ ထွက်ပေါ်လာသော ဆူညံသံများနှင့် ရေအောက် ကြမ်းပြင်တွင် အသံလိုင်း မြင့်တက်မှုများခြင်းကြောင့် နို့တိုက် သတ္တဝါများ၊ ပင်လယ်လိပ်များ၊ ရေအောက် နေသတ္တဝါငယ်လေးများ၊ ငါး များကို ထိခိုက် နိုင်ခြေ ရှိခြင်း။</p>	<ul style="list-style-type: none"> • VSP သို့မဟုတ် SWD လည်ပတ်ရေးကာလအတွင်း အဏ္ဏဝါနို့တိုက်သတ္တဝါများ၊ ပင်လယ်လိပ်များ နှင့် ဝေလငါးမန်းများကို စောင့်ကြည့်လေ့လာရန် လေ့ကျင့်သင်ကြားထားသည့် သင်တန်းပေးပို့မှု ကိုအသုံးပြုသွားမည် ဖြစ်ပါသည်။ • အဏ္ဏဝါနို့တိုက်သတ္တဝါများ၊ ပင်လယ်လိပ်များ နှင့် ဝေလငါးမန်းများအတွက် တူးဖော်ရေးစင် သို့မဟုတ် ရေယာဉ်၏ ၀.၆ မိုင် (၁ ကီလိုမီတာ) (စောင့်ကြည့်ရေးဇုန်) အတွင်း VSP နှင့် SWDလည်ပတ်မှုစတင်မီ ၂၀မိနစ် ကြိုတင်၍ တွေ့မြင်ရခြင်းရှိမရှိစစ်ဆေးဆောင်ရွက်ခြင်း။ • အဏ္ဏဝါသတ္တဝါများရှိ မရှိကို သတ်မှတ်နိုင်ရန် လေ့လာစောင့်ကြည့်ရေးဇုန် (၀.၆ မိုင်) ကို ဆက်တိုက်ဆက်လက် ဆောင်ရွက်လေ့လာမှုထားရှိခြင်း။ • မြင်ကွင်းမထင်ရှားသောကာလများ (လေ့လာမှုဇုန်သည် ၀.၆မိုင်ထိ ရှင်းလင်းစွာ မမြင်ရခြင်း) ညဘက်အပါအဝင် အတွင်း၊ VSP အရင်းအမြစ်ကို အောက်ပါ အချက်များအရ လည်ပတ်ဆောင်ရွက်ရေး လုပ်ထုံးလုပ်နည်းများပါ အတိုင်းအသုံးပြုခြင်း <ul style="list-style-type: none"> • ၂၄ နာရီ ဆောင်ရွက်မှုကာလအတွင်း အဏ္ဏဝါနို့တိုက်သတ္တဝါ၊ ပင်လယ်လိပ် သို့မဟုတ် ဝေလငါးမန်း သုံးကောင် သို့မဟုတ် ၎င်းနှင့်အထက် ရှိမနေခြင်း၊ သို့မဟုတ် • ၂၄ နာရီဆောင်ရွက်မှုကာလအတွင်း လုပ်ငန်း ဆောင်ရွက်မှုသည် ယခင်က စတင်မှုမရှိခဲ့လျှင်၊ ၂၄ နာရီကာလအတွင်း ရှင်းလင်းသည့်မြင်ကွင်း၌ အနည်းဆုံးနှစ်နာရီကြာ (စောင့်ကြည့်လေ့လာမှုဇုန်အကွာအဝေးထိ) ဆက်တိုက်လေ့လာစောင့်ကြည့်မှုကို ဆောင်ရွက်ခဲ့ပြီး အဏ္ဏဝါနို့တိုက်သတ္တဝါ၊ ပင်လယ်လိပ် သို့မဟုတ် ဝေလငါးမန်းများကို မတွေ့ ရခြင်းဖြစ်ပါသည်။ 	<p>အဏ္ဏဝါနို့တိုက်သတ္တဝါများ၊ ပင်လယ်လိပ်များ နှင့် ငါးများအပေါ် ကြွင်းကျန်သက်ရောက်မှု - C</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
	<ul style="list-style-type: none"> • ပင်လယ်သတ္တဝါများ လေ့လာမှု နှင့် အစီရင်ခံမှုကို ဆောင်ရွက်ရန် သဘောတူအဖွဲ့ နှင့် အကြံအစည်းအဖွဲ့ ဆောင်ရွက်ခြင်း။ အကြံအစည်းအဖွဲ့တွင် သဘောတူအဖွဲ့များအားလုံးသည် လုပ်ငန်းမစတင်မီနှင့် လုပ်ငန်းလည်ပတ်နေသည့် ကာလအတွင်း အဏ္ဏဝါနို့တိုက်သတ္တဝါများ၊ ပင်လယ်လိပ်များ သို့မဟုတ် ဝေလငါးမန်းများကို မြင်တွေ့ရလျှင်၊ လေ့ကျင့်သင်ကြားထားသော လေ့လာသူများထံ ချက်ချင်းသတင်းပို့ရန် နှိုးဆော်ခြင်း ဖြစ်ပါသည်။ အကြံအစည်းအဖွဲ့တွင် အဏ္ဏဝါနို့တိုက်သတ္တဝါများ၊ ပင်လယ်လိပ်များ သို့မဟုတ် ဝေလငါးမန်းများ လေ့လာမှုဖြစ်နိုင်ခြေနှင့် ၎င်းတို့ကိုမြင်တွေ့ရလျှင်လိုအပ်သော အရေးယူဆောင်ရွက်မှုတို့ ပါဝင်မည် ဖြစ်ပါသည်။ 	<p>ရေပေါ်လွှာနေ သတ္တဝါများ အတွက် ကြွင်းကျန်သက်ရောက်မှု - စ</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
<p>တူးဖော်ရေး လုပ်ငန်းဆောင်ရွက်နေမှု ကာလအတွင်း တူးဖော်ရေးစင် နှင့် ထောက်ပံ့ရေးရေယာဉ်များ ရှိနေခြင်း ကြောင့် ငါးဖမ်းရေယာဉ်များ နှင့်အခြား ပင်လယ်တွင်း သွားလာလှုပ်ရှားသူများ ကြောင့်ဖြစ်ပေါ်လာ နိုင်သည့် သက်ရောက်မှုများ</p>	<ul style="list-style-type: none"> • တူးဖော်ရေးစင် အနီးတစ်ဝိုက် အချင်းဝက် ၁,၆၄၀ ပေ (၅၀၀ မီတာ) ရှိ ဘေးကင်းရေးဇုန်ကို လိုအပ်သလို ထိန်းသိမ်းထားရှိမည် ဖြစ်ပါသည်။ • တူးဖော်ရေးစင် ပေါ်တွင် မြန်မာဘာသာစကား ပြောကြားသောလုပ်ဖော်ကိုင်ဖက်များ ပါရှိမည် ဖြစ်ပါသည်။ MOGE ကိုယ်စားပြုသူများလည်း ရေယာဉ်ပေါ်တွင် ပါရှိမည် ဖြစ်ပါသည်။ • အဆိုပြုတူးဖော်ရေး လုပ်ငန်းကို မစတင်မီ သက်ဆိုင်သူများထံ သတင်းအချက်အလက်များကို အချိန်မီတင်ပြပေးရန်အတွက် သက်ဆိုင်သူများနှင့် ဆွေးနွေးတိုင်ပင်ဆောင်ရွက်ခြင်းအစီအစဉ် Stakeholder Engagement Plan (SEP) ကိုအကောင်အထည်ဖော်ခြင်း။ အေဒီ-၁ တည်နေရာ၊ တူးဖော်ရေးစင် နှင့် ဆက်နွယ်သောလုပ်ငန်းများ၏ အချိန်ကိုက်အတွင်း ရှိနေနိုင်သည့် ရေလုပ်သားများ နှင့်အခြားပင်လယ်ရေပြင်အသုံးပြုသူများ ကိုသတိပေးနီးဆော်ရေးအတွက် ရေကြောင်းသတိပေးချက်ကို ထုတ်ပြန်ပေးခြင်း။ • စီမံကိန်းအတွက် ရေလုပ်ငန်းလုပ်ကိုင်သည့် ရပ်ရွာများအပါအဝင် သက်ဆိုင်သူများအတွက် နေရာတစ်ခုကို ရှိလာစေရန် စိုးရိမ်မှုများကိုတင်ပြနိုင်ရန်နှင့် အချိန်မီအကောင်အထည် ဖော်စုံစမ်းစစ်ဆေးနိုင်ရန် ထိခိုက်နစ်နာမှုတိုင်ကြားခြင်းဆိုင်ရာယန္တရားကို ထုတ်ပြန်ခြင်း နှင့် အကောင်အထည်ဖော်ဆောင်ရွက်ခြင်း။ 	<p>ကြွင်းကျန်သက်ရောက်မှု - ဝ</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
<p>မတော်တဆ ရေယာဉ် တိုက်မိမှု ကြောင့် ပင်လယ် နို့တိုက်သတ္တဝါများ ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှုများ</p>	<ul style="list-style-type: none"> • တူးဖော်ရေးစင်နှင့် ထောက်ပံ့ရေးရေယာဉ်များသည် (ရေယာဉ်အမျိုးအစားအလိုက်) တိုက်မိမှုကို ရှောင်နိုင်ရန် (COLREGs ၁၉၇၂)၊ သင်္ဘောမောင်းနှင်မှု နှင့် ဆက်တိုက်စောင့်ကြည့်နေမှုတို့ ပါဝင်သည့် နိုင်ငံတကာ စည်းမျဉ်းစည်းကမ်းများနှင့် အညီ ဆောင်ရွက်သွားမည် ဖြစ်ပါသည် - <ul style="list-style-type: none"> • ဘေးကင်းသောမြန်နှုန်း၊ တိုက်မိနိုင်မှုကို ဆန်းစစ်ခြင်း နှင့် (စောင့်ကြည့်ရေးရေဒါဖြင့်) တိုက်မိနိုင်မှုကို ရှောင်ရန် ဆောင်ရွက်ခြင်းတို့ ဖြစ်သည့် ထိန်းသိမ်းစောင့်ရှောက်သတိထားစောင့်ကြည့်မှု (ဥပမာ - မြင်ကွင်း၊ အသံ၊ ရေဒါ စသည်ဖြင့်) ပြုလုပ်ခြင်း။ • သင်္ဘောမောင်းနှင်သွားလာသောမီးသည် လုပ်ငန်းနှင့် သင့်တော်သည် မြင်ရနိုင်ခြေ၊ မီးတည်နေရာ/ပုံသဏ္ဍာန် နှင့် အသံအချက်ပြခြင်း တို့ ပါဝင်သည့် သတ်မှတ်ချက်များကို ဆောင်ရွက်ခြင်း။ • အနည်းဆုံး သင်္ဘောဝန်ထမ်းဦးရေ သတ်မှတ်ထားချက် ရှိခြင်း။ • စွမ်းဆောင်ရည် ပြည့်ဝစွာ (သံလိုက်အိမ်မြှောင်/ရေဒါ/ ဆက်သွယ်ရေးများ ဖြင့်) သင်္ဘောမောင်းနှင်သွားလာမှုကရိယာကို ထိန်းသိမ်းခြင်း။ • SOLAS အခန်း ၅ ၏ စည်းမျဉ်း ၁၉ ပါဖော်ပြချက်အတိုင်း မောင်းနှင်ရေးဆိုင်ရာ စနစ်များ နှင့် ကိရိယာများကို ဆောင်ရွက်ခြင်း။ 	<p>အန္တရာယ်အဆင့် - အတော်အသင့်</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
<p>မတော်တဆ ရေယာဉ် တိုက်မိမှု ကြောင့် ငါးဖမ်းလှေများနှင့် သင်္ဘောတို့အတွက် ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှုများ</p>	<ul style="list-style-type: none"> SOLAS အခန်း ၅ ၏ စည်းမျဉ်း ၁၉ နှင့်အညီ (ရေယာဉ်အမျိုးအစားအလိုက်) တပ်ဆင်ထားသည့် အလိုအလျောက်သတ်မှတ်ဖော်ထုတ်ရေးစနစ် ပါရှိခြင်း။ ဝေလငါးကို မြင်တွေ့ ရလျှင်၊ ဝေလငါး၏ ၃၀၀ မီတာအတွင်း ရေမိုင် ၆ မိုင်ထက်ပို၍ ထောက်ပံ့ရေးရေယာဉ်များကို မောင်းနှင်မည် မဟုတ်ပါ။ ဝေလငါးကို မြင်တွေ့ရလျှင်၊ ဝေလငါးမှ ၁၀၀ မီတာထက်ပိုနီးအောင် (သတိထားရေးဖန်) ချဉ်းကပ်မည် မဟုတ်ပါ (ဤသည်မှာ ထောက်ပံ့ရေးယာဉ်များသည် တူးဖော်ရေးစင်အနီးတစ်ဝိုက် အကန့်အသတ်ဖြစ်နေသည့် လုပ်ရှားဆောင်ရွက်ခြင်းလုပ်ငန်းများနှင့် ချိတ်ဆက်ဆောင်ရွက်ရာတွင် အကျိုးမဝင်ကြောင်း သတိပြုရမည် ဖြစ်ပါသည်။) ရေယာဉ်ဝန်ထမ်းများသည် (အဏ္ဏဝါနို့တိုက်သတ္တဝါများသို့မဟုတ် ပင်လယ်လိပ်များ) အပါအဝင် မည်သည့်ဘေးအန္တရာယ်များကိုမဆို အဆက်မပြတ်စောင့်ကြည့်ခြင်း။ 	<p>ငါးဖမ်းလှေများနှင့် သင်္ဘောတို့အတွက် အန္တရာယ်အဆင့် - အတော်အသင့်</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
<p>မတော်တဆ ယိုဖိတ်မှုများ သို့မဟုတ် ယိုစိမ့်မှုများကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ပင်လယ်ရေထုအရည်အသွေးအပေါ် သက်ရောက်မှု နှင့် ဇီဝမျိုးစုံမျိုးကွဲ၊ ငါးလုပ်ငန်းများနှင့် လူမှု-စီးပွားအကြောင်းရင်းများကို တစ်ဆင့်ခံ သက်ရောက်မှုရှိခြင်း</p>	<ul style="list-style-type: none"> • တိုင်းတာရေးယာဉ်များသည် ယိုဖိတ်မှုများကိုလျှော့ချရန် လောင်စာဆီဖြည့်သွင်းခြင်းနှင့် ထိန်းသိမ်းစောင့်ရှောက်ရေးလုပ်ထုံးလုပ်နည်းများ (housekeeping and refueling/containment procedures) နှင့် စပ်လျဉ်းသော စက်မှုလုပ်ငန်းဆိုင်ရာ အလေ့အကျင့်ကောင်းများကို လိုက်နာပါမည်။ သက်ဆိုင်ရာ နိုင်ငံတကာစံနှုန်းများနှင့် အညီ၊ တိုင်းတာရေးယာဉ်များတွင် သင်္ဘောပေါ် ဆီညစ်ညမ်းမှု အရေးအပေါ်အစီအစဉ် (SOPEP) နှင့် ကုန်းပတ်ပေါ်ယိုဖိတ်မှုများ နှင့် ယိုစိမ့်မှုများကိုတုန့်ပြန်ရှင်းလင်းရန် သင့်လျော်သည့် ယိုဖိတ်မှုတုန့်ပြန်ရေးကိရိယာများ ပါရှိမည် ဖြစ်ပါသည်။ • ယာဉ်များသည် အသိအမှတ်ပြုထားသော အပြည်ပြည်ဆိုင်ရာ ဆီညစ်ညမ်းမှုကာကွယ်ရေး လက်မှတ် (IOPP)လက်ဝယ်ရှိရမည်ဖြစ်သည်။ • လောင်စာဖြည့်ကာလအတွင်း အနည်းဆုံး အောက်ပါထိန်းချုပ်မှုများကို အကောင်အထည်ဖော် ဆောင်ရွက်ခြင်း <ul style="list-style-type: none"> • နေ့ဘက်အချိန်များအတွင်း လောင်စာဆီဖြည့်မှုကို စတင်ဆောင်ရွက်ခြင်း၊ • လောင်စာဆီမဖြည့်မီ နှင့် လောင်စာဆီဖြည့်နေစဉ်အတွင်း တိုင်းတာရေးကိရိယာများ၊ မီးသတ်ပိုက်များ၊ တွဲဖက်ပစ္စည်းများ နှင့် ပင်လယ်ရေမျက်နှာပြင်များကို စောင့်ကြည့် လေ့လာခြင်း၊ • မီးသတ်ပိုက်များကို ပြောင်းရွှေ့ တပ်ဆင်ရန် တွဲဖက်တပ်ဆင်ပစ္စည်းများအသုံးပြုခြင်း။ 	<p>ရေအရည်အသွေးနှင့် ဇီဝမျိုးကွဲများအပေါ် တစ်ဆင့်ခံ သက်ရောက်မှု-အတော်အသင့်</p> <p>ငါးလုပ်ငန်းများနှင့် လူမှုစီးပွားရေးအကြောင်းအရင်းများအတွက် အန္တရာယ် သက်ရောက်မှုရှိခြင်း - အတော်အသင့်</p>

ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု	ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ	ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)
	<ul style="list-style-type: none">• ယိုဖိတ်မှုတုံ့ပြန်ရေးဆောင်ရွက်ရေးကိရိယာများကို စာတုပစ္စည်းများ နှင့် ဟိုက်ဒရိုကာဗွန် သိုလှောင်ရုံ/လောင်စာဖြည့်နေရာများ နှင့် အနီးအနားတွင် လိုအပ်သလို ဖြည့်တင်းထားမည် ဖြစ်ပါသည်။• ယိုဖိတ်မှုဆိုင်ရာလေ့ကျင့်သင်ကြားထားသော သင်္ဘောပါအဖွဲ့ များသည် ယိုဖိတ်မှုတုံ့ပြန်ရေး ကိရိယာများကို အသုံးပြုမည် ဖြစ်ပါသည်။• Woodside ၏ ရေနံယိုဖိတ်မှုတုံ့ပြန်ရေးအစီအစဉ် (အသေးစိတ်ကို အပိုင်း ၇.၄ တွင်ကြည့်ပါ) ကို အကောင်အထည်ဖော် ဆောင်ရွက်ခြင်း။• တူးဖော်ရေးစင် အနီးတစ်ဝိုက် အချင်းဝက် ၁,၆၄၀ ပေ (၅၀၀ မီတာ) ရှိ ဘေးကင်းရေးဇုန်ကို လိုအပ်သလို ထိန်းသိမ်းထားရှိမည် ဖြစ်ပါသည်။ ရေယာဉ်မောင်းသူသည် ၎င်းဇုန်အတွင်း ရေယာဉ်ခေါ်ယူဆောင်ရွက်မှု နှင့် လုပ်ငန်းများကို စီမံခန့်ခွဲသွားမည် ဖြစ်ပါသည်။	

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
	<ul style="list-style-type: none"> • တူးဖော်ရေးစင် နှင့် ထောက်ပံ့ရေးရေယာဉ်များသည် (ရေယာဉ်အမျိုးအစားအလိုက်) တိုက်မိမှုကို ရှောင်နိုင်ရန် (COLREGs ၁၉၇၂)၊ သင်္ဘောမောင်းနှင်မှု နှင့် ဆက်တိုက်စောင့်ကြည့်နေမှုတို့ ပါဝင်သည့် နိုင်ငံတကာ စည်းမျဉ်းစည်းကမ်းများနှင့် အညီ ဆောင်ရွက်သွားမည် ဖြစ်ပါသည် - <ul style="list-style-type: none"> • ဘေးကင်းမြန်နှုန်း၊ တိုက်မိနိုင်မှုကို ဆန်းစစ်ခြင်း နှင့် (စောင့်ကြည့်ရေးရေဒါဖြင့်) တိုက်မိနိုင်မှုကို ရှောင်ရန် ဆောင်ရွက်ခြင်းတို့ ဖြစ်သည့် ထိန်းသိမ်းစောင့်ရှောက်သတိထားစောင့်ကြည့်မှု (ဥပမာ -မြင်ကွင်း၊ အသံ၊ ရေဒါ စသည်ဖြင့်) ပြုလုပ်ခြင်း။ • သင်္ဘောမောင်းနှင်သွားလာသောမီးသည် လုပ်ငန်းနှင့် သင့်တော်သည် မြင်ရနိုင်ခြေ၊ မီးတည်နေရာ/ပုံသဏ္ဍာန် နှင့် အသံအချက်ပြခြင်း တို့ ပါဝင်သည့် သတ်မှတ်ချက်များကို ဆောင်ရွက်ခြင်း။ • အနည်းဆုံး သင်္ဘော ဝန်ထမ်းဦးရေ သတ်မှတ်ထားချက်ရှိခြင်း။ • စွမ်းဆောင်ရည် ပြည့်ဝစွာ (သံလိုက်အိမ်မြှောင်/ရေဒါ/ ဆက်သွယ်ရေးများ ဖြင့်) သင်္ဘောမောင်းနှင်သွားလာမှုကို ကာရီယာကို ထိန်းသိမ်းခြင်း။ • SOLAS အခန်း ၅ ၏ စည်းမျဉ်း ၁၉ ပါဖော်ပြချက်အတိုင်း မောင်းနှင်ရေးဆိုင်ရာ စနစ်များ နှင့် ကာရီယာများကို ဆောင်ရွက်ခြင်း။ • SOLAS အခန်း ၅ ၏ စည်းမျဉ်း ၁၉ နှင့်အညီ (ရေယာဉ်အမျိုးအစားအလိုက်) တပ်ဆင်ထားသည့် အလိုအလျောက်သတ်မှတ်ဖော်ထုတ်ရေးစနစ် ပါရှိခြင်း။ 	

ဖြစ်ပေါ်လာနိုင်သည့်
သက်ရောက်မှု/ထိခိုက်မှု

ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ

ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု
(စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ်
အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)

- သက်ဆိုင်ရာ SDSs အရ၊ လိုင်စင်ရ စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲရေးကန်ထရိုက်တာမှ ကုန်းပေါ်သို့ စွန့်ပစ်မှု ပြုလုပ်မီ ဓာတုပစ္စည်းများ နှင့်/ သို့မဟုတ် ဟိုက်ဒရိုကာဗွန်စွန့်ပစ်ပစ္စည်းများအားလုံးကို အမှတ်အသားရှင်းလင်းစွာပါသည့် ကုန်သေတ္တာဖြင့် သီးသန့်ခွဲထားခြင်း။
- စီမံကိန်းအတွက် ရေလုပ်ငန်းလုပ်ကိုင်သည့် ရပ်ရွာများအပါအဝင် သက်ဆိုင်သူများအတွက် နေရာတစ်ခုကို ရှိလာစေရန် စိုးရိမ်မှုများကိုတင်ပြနိုင်ရန်နှင့် အချိန်မီအကောင်အထည် ဖော်စုံစမ်းစစ်ဆေးနိုင်ရန် ထိခိုက်နစ်နာမှုတိုင်ကြားခြင်းဆိုင်ရာယန္တရားကို ထုတ်ပြန်ခြင်း နှင့် အကောင်အထည်ဖော်ဆောင်ရွက်ခြင်း။

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျှော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
<p>ကြိုတင်စီစဉ်ခြင်းမရှိသော တွင်းမထိန်းချုပ်နိုင်မှု ကြောင့် သဘာဝ ဓာတ်ငွေ့များထွက်ရှိ လာကာ ဝန်းကျင်လေထုအရည် အသွေးနှင့် တူးဖော်ရေးစင်ပေါ်ရှိ အလုပ်သမားများအပေါ် ဖြစ်ပေါ်လာနိုင်သော သက်ရောက်မှုများ</p>	<ul style="list-style-type: none"> • တွင်းအတွင်း ထင်ရှားကွဲပြားသော ဟိုက်ဒရိုကာဗွန်ဇုန်များကို (ဖြတ်စီးဆင်းမှုကို တားဆီးရန် အနည်းဆုံး အတားအဆီးတစ်ခုဖြင့် စက်ပိုင်းဆိုင်ရာအသုံးပြု၍ (ဥပမာ - ဘိလပ်မြေဖြင့်တွင်းဖုံးအုပ်ခြင်း) သော်လည်းကောင်း သို့မဟုတ် ရေဖိအားအသုံးပြု၍ (ဥပမာ - တူးဖော်ရေးအရည်) သော်လည်းကောင်း တစ်ခုနှင့်တစ်ခုကို ခြားထားမည် ဖြစ်ပါသည်။ • တွင်းတည်ဆောက်ရေး ကနဦးအဆင့်များကာလအတွင်း အတားအဆီးတစ်ခုနှင့် သင့်လျော်မှုရှိသည်ဟု အန္တရာယ် လေ့လာမှုမှ အတည်မပြုနိုင်လျှင်၊ ဟိုက်ဒရိုကာဗွန်ဇုန်များ သို့မဟုတ် ဖိအားလွန်ရေများပါဝင်သည့် တွင်းနက်မှ ထိုးဖောက်သည့် စိမ့်ဝင်နိုင်သည့်ဇုန်များအားလုံးကို အနည်းဆုံး အတားအဆီးနှစ်ခု (ဥပမာ - မူလအဆင့် နှင့် တစ်ဆင့်ခံအဆင့်) ဖြင့်မျက်နှာပြင်ပတ်ဝန်းကျင်မှ ခြားထားမည်ဖြစ်ပါသည်။ • ပုံမှန်ဖိအားဖြင့် စိမ့်ဝင်နိုင်သော ရေအလေးချိန်ကို ခံနိုင်သည်ဖွဲ့ စည်းမှုများအားလုံးကို အနည်းဆုံး အတားအဆီးတစ်ခုဖြင့် မျက်နှာပြင်မှ ခွဲထားမည် ဖြစ်ပါသည်။ • အတားအဆီးများသည် တွင်းတည်ဆောက်ခြင်း သို့မဟုတ် ထုတ်လုပ်ခြင်း သက်တမ်းတစ်လျှောက် ထိရောက်မှုရှိသွားမည် ဖြစ်ပါသည်။ • မူလ နှင့် တစ်ဆင့်ခံ အဆီးအတားများကို ထိရောက်မှုကို ခိုင်မာအောင်ဆောင်ရွက်သွားမည် ဖြစ်ပါသည် (မှန်ကန်စွာထားရှိမှုနှင့် လုပ်ဆောင်နိုင်မှုကို ပြုလုပ်ခြင်း)။ • အရည်အတားအဆီးသည် တူးဖော်ရေးကာလအတွင်း စိမ့်ပေါက်ဖိအား နှင့် ဖိအားလွန်ဇုန်များကို ထည့်တွက်ဖြေရှင်းရန် သင့်လျော်သော အလေးချိန်၊ အနေအထား နှင့် ပမာဏ၏ တူးဖော်ရေးအရည်ကိုပေါင်းစပ်ရမည် ဖြစ်ပါသည်။ 	<p>လေထုအရည်အသွေး အန္တရာယ်အဆင့် - နည်း</p>

<p>ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှု/ထိခိုက်မှု</p>	<p>ထိန်းချုပ်ရေး / လျော့ချရေး အစီအမံများ</p>	<p>ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှု (စီစဉ်ထားသည့် ဖြစ်ရပ်များ) သို့မဟုတ် အန္တရာယ်အဆင့် (စီစဉ်မထားသည့် ဖြစ်ရပ်များ)</p>
	<ul style="list-style-type: none"> • ရေအောက်ပွင့်ထွက်ခြင်းထိန်းချုပ်ရေး (BOP) ကိရိယာ နှင့် ဆောင်ရွက်မှု/ဖိအားစမ်းသပ်မှုကို API စံနှုန်း ၅၃ 4th Edition (API ၅၃) နှင့် အညီ ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။အောက်ပါတို့ကိုလိုအပ်မည် ဖြစ်ပါသည် • အဲနူလာ (annular) ကာကွယ်ထိန်းချုပ်ရေးကိရိယာတစ်ခုအသုံးပြုခြင်း။ • ပိုက်ရမ် (pipe ram) နှစ်လုံး (အစမ်းရမ် (ram) မပါဝင်) အသုံးပြုခြင်း။ • တူးဖော်ရေးစင်တစ်ခုသည် အနည်းဆုံး ရှီးယာရမ် (shear ram) နှစ်ခုရှိရန် လိုအပ်ပြီး၊ တစ်ခုမှာ ချိတ်ပိတ်နိုင်စွမ်းရှိရမည်။ • ရှီးယာရမ်တစ်ခုချိတ်ပိတ်မှုသည် သိုလှောင်ကန်မှ နောက်ထပ်ပိုက်ဒရိုကာဗွန် စွန့်ထုတ်မှုကို လျော့ကျ/တားဆီးနိုင်ပါသည်။ • တူးဖော်ရေးစင်မှ BOP လည်ပတ်မှု မအောင်မြင်လျှင်၊ BOP အတွင်း ram များကို ROV ဖြင့် လည်ပတ်ဆောင်ရွက် နိုင်ပါသည်။ 	<p>အလုပ်သမားများအပေါ် ကျရောက်နိုင်သည့် အန္တရာယ်အဆင့် - နည်း</p>

* ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှုသည် သက်ရောက်မှုကိုယ်တိုင်ဖြစ်သော်လည်း၊ အဆိုပြု ထိန်းချုပ်ရေးများမှာ နေရာတကျရှိနေသောကြောင့် ကျိုးကြောင်းခိုင်လုံလက်တွေ့ ကျပြီးအနည်းဆုံးဖြစ်သည့်အဆင့် (ALARP) အထိ လျော့ချနိုင်ကြောင်း မှတ်ယူရပါမည်။ ထို့ကြောင့်၊ အတော်အသင့်သက်ရောက်မှုများကို စွမ်းဆောင်ရည်ပြည့်ဝစွာ နှင့်ထိရောက်စွာ စီမံခန့်ခွဲနိုင်ကြောင်း တွက်ချက်ပါသည်။

ကြွင်းကျန်သက်ရောက်မှု၏ အရေးပါမှုအတွက် အညွှန်း (စီစဉ်ထားသည့် လုပ်ငန်းများ)

က	ဆောင်ရွက်နိုင်သော အကန့်အသတ်များ သို့မဟုတ် စံနှုန်းများကို လွန်စွာကျော်သွားခြင်း နှင့်/သို့မဟုတ် ကြီးမားသော သို့မဟုတ် အရေးပါသောပမာဏ သက်ရောက်မှုများသည် ပတ်ဝန်းကျင် အပေါ် အလယ်အလတ်/မြင့်မားစွာ သို့မဟုတ် မြင့်မားစွာ ထိခိုက်လွယ်မှုကို အသီးသီးမျှော်လင့်တွက်ချက်ထားမှုဖြစ်ပါသည်။ အရေးပါမှု အဆင့် (က) အဖြစ် ထိခိုက်မှုဆန်းစစ်ထားမှုအတွက်၊ လုပ်ငန်းကို ဆက်လက်ဆောင်ရွက်ရန် သက်ရောက်မှု၏ ဖြစ်ပေါ်လာနိုင်သည့် ပမာဏကို လျော့ချနိုင်ရန် နောက်ထပ်လျော့ချရေးအစီအမံများကို လိုအပ်ပါသည်။
ခ	ဆောင်ရွက်နိုင်သော အကန့်အသတ်များ သို့မဟုတ် စံနှုန်းများကို ကျော်သွားခြင်း နှင့်/သို့မဟုတ် အတော်အသင့်၊ အရေးပါ သို့မဟုတ် ကြီးမားသောပမာဏ သက်ရောက်မှုများသည် ပတ်ဝန်းကျင် အပေါ် မြင့်မားစွာ၊ အလယ်အလတ်အလတ် သို့မဟုတ် နည်းပါးစွာ ထိခိုက်လွယ်မှုကို အသီးသီးမျှော်လင့်တွက်ချက်ထားမှုဖြစ်ပါသည်။ အရေးပါမှု အဆင့် (ခ) အဖြစ် ထိခိုက်မှု ဆန်းစစ်ထားမှုသည် လက်တွေ့ အသုံးဝင်ပြီး နောက်ထပ် ထိမ်းချုပ်ရေး/လျော့ချရေး အစီအမံများကို ထည့်သွင်းစဉ်းစားခြင်း ဖြစ်ပါသည်။ အရေးပါမှုအဆင့် (ခ) ၏ သက်ရောက်မှုများသည် ALARPကိုရောက်ရှိပြီးနောက် ဆက်လက်ရှိနေလျှင်၊ ဆက်လက်ဆောင်ရွက်နိုင်ဖို့ ဒုတိယ ဥက္ကဋ္ဌ (VP) ထံမှ ခွင့်ပြုချက်ရယူရမည် ဖြစ်ပါသည်။
ဂ	သက်ရောက်မှုများသည် သက်ဆိုင်ရာ အကန့်အသတ်အတွင်း သို့မဟုတ် စံနှုန်းအတွင်းဖြစ်ရန် နီးကပ်နေသော်လည်း၊ အကြောင်းဆိုက်၍ စံနှုန်းများကို ကျော်လွန်သွားနိုင်သည့် အလားအလာရှိနေသည့် အခြေအနေဖြစ်ပါသည်။ အရေးမပါသော၊ အသင့်အတင့်ဖြစ်သော သို့မဟုတ် အရေးပါသော သက်ရောက်မှုပမာဏသည် ပတ်ဝန်းကျင်သို့ မြင့်မားသော၊ အလယ်အလတ် ဖြစ်သော သို့မဟုတ် နည်းပါးသော ထိခိုက်လွယ်မှုအသီးသီးဖြစ်ပေါ် ရန်ခန့်မှန်းနိုင်ခြင်း ဖြစ်ပါသည်။ နောက်ထပ် ထိမ်းချုပ်ရေး/လျော့ချရေးအစီအမံများကိုထည့်သွင်းစဉ်း စားသင့်ပါသည်။ သက်ရောက်ခြင်း အရေးပါမှုအဆင့် (ဂ) သည် ALARP ကို ရောက်ရှိသည်နှင့်၊ ဆက်လက်ဆောင်ရွက်နိုင်ဖို့ ပတ်ဝန်းကျင်ဆိုင်ရာ အထွေထွေမန်နေဂျာ သို့မဟုတ် နိုင်ငံမန်နေဂျာ ခွင့်ပြုချက် ရယူရမည် ဖြစ်ပါသည်။
ဃ	သက်ရောက်မှုပမာဏသည် သက်ဆိုင်ရာစံနှုန်းအတွင်း ရှိနေသော်လည်း၊ အရေးပါမှုကြောင်း ထည့်သွင်းစဉ်းစားရသည့် အခြေအနေဖြစ်ပါသည်။ အနည်းငယ်၊ အရေးမပါသော သို့မဟုတ် အသင့်အတင့်ဖြစ်သော သက်ရောက်မှုပမာဏသည် ပတ်ဝန်းကျင်သို့ မြင့်မားသော၊ အလယ်အလတ်ဖြစ်သော သို့မဟုတ် နည်းပါးသော ထိခိုက်လွယ်မှု အသီးသီးဖြစ်ပေါ် ရန် ခန့်မှန်းနိုင်ခြင်း ဖြစ်ပါသည်။ သက်ရောက်ခြင်း အရေးပါမှုအဆင့် (ဃ) သည် ALARP အဆင့်များသို့ လျော့ချနိုင်ပြီး၊ ထိရောက်စွာ စီမံခန့်ခွဲနိုင်ပြီး၊ လေ့လာစောင့်ကြည့်နိုင်ကြောင်း ပြသနိုင်ပါသည်။
င	ပတ်ဝန်းကျင်သည် သိသာသောသက်ရောက်မှုကို တွေ့ကြုံနိုင်ပါသည်။ သို့ရာတွင် သက်ရောက်မှုပမာဏသည် သေးငယ်ပြီး သက်ဆိုင်ရာ စံနှုန်းများအတွင်းတွင် ကျရောက်သည် သို့မဟုတ် ပတ်ဝန်းကျင်သည် (ဂေဟ) တန်ဖိုးနည်းသည်။ သက်ရောက်မှုများကို စီမံခန့်ခွဲနိုင်ပြီးစောင့်ကြည့်လေ့လာနိုင်သော်လည်း၊ အရေးပါမှုအဆင့် (င) အဖြစ် သတ်မှတ်ပြီး၊ လုပ်ငန်းများကို ဆက်လက် ဆောင်ရွက်နိုင်ပါသည်။
စ	သက်ရောက်ခြင်း အရေးပါမှု အဆင့် (စ)သည် လုပ်ငန်းများကြောင့် သက်ရောက်မှုမရှိပါ သို့မဟုတ် ခန့်မှန်းထားသည့်သက်ရောက်မှုသည် သဘာဝနောက်ခံအကြောင်းအရာကွဲပြားမှုများမှ မခွဲခြားနိုင်ဖြစ်ကြောင်း မှတ်ယူရမည် ဖြစ်ပါသည်။

အန္တရာယ်အဆင့်သတ်မှတ်ခြင်း (မမျှော်လင့်ထားသည့် လုပ်ငန်းများ) - ဤသည်မှာ အန္တရာယ်ကို လက်ခံဆောင်ရွက်နိုင်ရန် လုပ်ငန်းအတွက် လိုအပ်သော လုပ်ပိုင်ခွင့်အဆင့်ကို တင်ပြခြင်းဖြစ်ပါသည်

အထူးမြင့်	ဤ အန္တရာယ်အဆင့်ကို အန္တရာယ် နှင့် လေးစားလိုက်နာမှုဌာန၏ ဒုတိယဥက္ကဋ္ဌ (VP) မှတစ်ဆင့် Woodside CEO နှင့် တိုင်းအဆင့် အုပ်ချုပ်ရေး ဒုတိယဥက္ကဋ္ဌ (EVP)/ အကြီးတန်း ဒုတိယ ဥက္ကဋ္ဌ (SVP) သို့ ချက်ချင်း(၁၂ နာရီထက်နောက်မကျဘဲ)ဆက်သွယ်ရန်လိုအပ်ပါသည်။
အလွန်မြင့်	ဤ အန္တရာယ်အဆင့်ကို အန္တရာယ် နှင့် လေးစားလိုက်နာမှုဌာန ၏ ဒုတိယ ဥက္ကဋ္ဌ (VP) ထံသို့တစ်ပြိုင်တည်းဆက်သွယ်လျက် တိုင်းအဆင့် EVP/SVP သို့ ချက်ချင်း (၁၂) နာရီထက်နောက်မကျဘဲ ဆက်သွယ်ရန်လိုအပ်ပါသည်။
မြင့်	ဤ အန္တရာယ်အဆင့်ကို လုပ်ငန်းအဖွဲ့ သို့မဟုတ် ဌာန ၏ SVP/VP သို့ ဆက်သွယ်ရန် လိုအပ်ပါသည်။
အတော်အသင့်	ဤ အန္တရာယ်အဆင့်ကို လိုင်းမန်နေဂျာသို့ အချိန်မီဆက်သွယ်ရန် လိုအပ်ပါသည် (ဥပမာ - သက်ဆိုင်ရာပုဂ္ဂိုလ် သို့မဟုတ် စီမံကိန်း မန်နေဂျာ)။
နည်း	ဤ အန္တရာယ်အဆင့်ကို လိုင်းမန်နေဂျာသို့ အချိန်မီဆက်သွယ်ရန် လိုအပ်ပါသည်။

၁.၅ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်၏ အထွေထွေ အသုံးစားရိတ်

တူးဖော်ရေးလုပ်ငန်းအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အား အကောင်အထည်ဖော်ရာတွင် အသုံးပြုမည့် တစ်နှစ်တာ အသုံးစားရိတ်မှာ Australian ဒေါ်လာ ၅၀၀,၀၀၀နှင့် ၁မီလီယံကြားရှိပါသည်။ များစွာသော စီမံခန့်ခွဲမှုနှင့် သက်ရောက်မှု လျော့ချရေးလုပ်ငန်းများသည် ရွှေ့လျားတူးဖော်စင်နှင့် ရေယာဉ်များ၏ သတ်မှတ်ထားသော တူးဖော်ရေးလုပ်ငန်းစဉ် အသုံးစားရိတ်များတွင် အကျုံးဝင်ပြီးဖြစ်ပါသည်။

၁.၆ Woodside၏ စီမံခန့်ခွဲမှုစနစ်နှင့် စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုရေး စီမံကိန်းအခွဲများ

Woodside ၏ စီမံခန့်ခွဲမှုစနစ်သည် အစိုးရမှပေးအပ်ထားသော Woodside ၏ အလုပ်သမား နှင့် contractorsများမည့်ကဲ့သို့ အလုပ်လုပ်ဆောင်မည်ကို သတ်မှတ်ထားသည့် စနစ်တကျဖြစ်သော မှတ်တမ်း တင်ထားသည့် မူဘောင်တစ်ခုဖြစ်ပါသည်။

Woodside ၏ စီမံခန့်ခွဲမှုစနစ်တွင် အချက်အလက်လေးခုပါဝင်သည် - အဝန်းအဝိုင်းနယ်ပယ်နှင့် မူဝါဒများ၊ မျှော်မှန်းချက်များ၊ လုပ်ငန်းစဉ်များနှင့် လုပ်ထုံးလုပ်နည်းများ၊ နှင့် အောက်ဖော်ပြပါ ညွှန်ကြားချက်များ-

- **အဝန်းအဝိုင်းနယ်ပယ်နှင့် မူဝါဒများ** - မိမိတို့၏ ပြုမူမှုများ၊ လုပ်ဆောင်ချက်များ၊ စီးပွားရေး ဆုံးဖြတ်ချက်များကို ကြီးကြပ်ခြင်းဖြင့် Woodside၏ စီးပွားရေးလုပ်ငန်းနယ်ပယ်၏ ဦးတည်ချက်ကို သတ်မှတ်နိုင်စေခြင်းနှင့် မိမိတို့၏ဥပဒေရေးရာများနှင့် ပြင်ပတာဝန်ဝတ္တရားများ လိုက်နာခြင်းအားသေချာစေခြင်း
- **မျှော်မှန်းချက်များ** - အဓိကကျသော စီးပွားရေး လုပ်ဆောင်ချက်များ၏ ရည်ရွယ်ချက်များအောင်မြင်စေရန် အရေးပါသော လုပ်ဆောင်ချက်များနှင့် ပိုမိုချမှတ်အား သတ်မှတ်ခြင်းနှင့် လုပ်ငန်းစဉ်များနှင့် လုပ်ထုံးလုပ်နည်းများ၏ ဖွံ့ဖြိုးတိုးတက်စေရေးအတွက် အခြေခံများကို အထောက်အကူပြုစေခြင်း
 - **လုပ်ငန်းစဉ်များနှင့် လုပ်ထုံးလုပ်နည်းများ** - တိကျသောရည်ရွယ်ချက်များအား စနစ်တကျအောင်မြင်မှုရှိစေရန် အပြန်အလှန်ဆက်စပ်သော လုပ်ဆောင်မှုများချမှတ်ခြင်း သွင်းအားစုအား အကျိုးရလဒ်အဖြစ် ပြောင်းလဲသတ်မှတ်ပေးခြင်းဖြင့်လုပ်ငန်းစဉ်များအားချမှတ်ပါမည်။ လုပ်ထုံးလုပ်နည်းများအားလုပ်ဆောင်ရန် မည်သူမှ မည်ကဲ့သို့မည်သည့်နည်းဖြင့် မည်သည့်အချိန်တွင် လုပ်ဆောင်နိုင်ရန် လုပ်ထုံးလုပ်နည်းများချမှတ်ခြင်း
- **ညွှန်ကြားချက်များ** - လုပ်ထုံးလုပ်နည်းများတွင် ပါဝင်သော အဆင့်များကို ဆောင်ရွက်နိုင်ရန် ကောင်းမွန်သောလမ်းညွှန်မှုနှင့် အလေ့ကျင့်မှုများကို ညွှန်ကြား၍ အထောက်အကူပြု သတင်းအချက်အလက်များနှင့် အတူ ဆက်စပ်သော အချက်အလက်များဖြင့် လုပ်ဆောင်မှုများ (သို့မဟုတ်) တာဝန်များကို မည်ကဲ့သို့ ဆောင်ရွက်မည်၊ ထည့်သွင်းစဉ်းစားရမည့် သတင်းအချက်အလက်များ (သို့မဟုတ်) အချက်အလက်နှင့် စနစ်အား မည်ကဲ့သို့ အသုံးပြုမည်ကို ညွှန်ကြားလုပ်ကိုင်ဆောင်ရွက်စေခြင်း

အောက်ဖော်ပြပါ စီမံကိန်း အခွဲများအား လုပ်ငန်းလုပ်ဆောင်ချက်များပေါ်မူတည်ပြီး ပြင်ဆင်ထားပါသည်။

- အရေးပေါ်တုံ့ပြန်ရေး အစီအစဉ် (ERP).
- ဇီဝမျိုးကွဲများ စီမံခန့်ခွဲမှု စီမံကိန်း Marine Biodiversity Management Plan
- စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲရေး အစီအစဉ် (WMP).
- ဆီယိုဖိတ်မှု တုံ့ပြန်ရေး အစီအစဉ် (OSRP).
- တူးဖော်မှုကျစ်စာများနှင့် တူးဖော်မှုအရည်များ စီမံခန့်ခွဲမှု အစီအစဉ် Drill Cutting and Fluid Management Plan
- သင်္ဘောဝမ်းဗိုက် အောက်ခံရေ စီမံခန့်ခွဲမှု အစီအစဉ် (BWMP).

စောင့်ကြပ်ကြည့်ရှုရေးအား စည်းမျဉ်းလိုအပ်ချက်များနှင့် လိုက်နာဆောင်ရွက်ပါမည်။ အကောင်အထည်ဖော် ဆောင်ရွက်မည့် ထိန်းချုပ်မှုအစီအစဉ်များ၏ ထိရောက်မှုများအား စိစစ်အတည်ပြုရာတွင် အထောက်အကူပြုပါလိမ့်မည်။ စီမံကိန်းအား

ပုံမှန်စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်အား တူးဖော်မှုစတင်လုပ်ဆောင်ရာမှစကာ ပြီးဆုံးသည်အထိ တောက်လျှောက် လုပ်ဆောင်မည်ဖြစ်သည်။ နေ့စဉ်တူးဖော်ရေးအစီရင်ခံစာများ၊ သုံးလတစ်ကြိမ် သုံးသပ်ချက်များနှင့် internal auditingများ ဖြစ်သော အချက်အလက်များနှင့် စနစ်များအား အသုံးပြုပြီး ယခုသတင်းအချက်အလက်အား ကောက်ခံထားပါသည် (EMP Commitment ဇယား ၁.၂တွင်လဲ ပြထားပါသည်)။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု ကတိကဝတ်များကို ၂၀၁၈ခုနှစ်တွင် အေဒီ-၁ တွင်းတူးဖော်ရေး ကာလတစ်လျှောက်တွင် အောင်မြင်စွာ အကောင်အထည်ဖော်နိုင်ခဲ့ပါသည်။ ပတ်ဝန်းကျင်ဆိုင်ရာ စွမ်းဆောင်ရည်များကို အချိန်မှန် စောင့်ကြပ်ကြည့်ရှုရေးအား အတည်ပြုထားသော ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု စီမံကိန်းအရဆောင်ရွက်ခဲ့သည်။ စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်သည် ပတ်ဝန်းကျင်ဆိုင်ရာ အတိုင်းအတာများသည် အတည်ပြုထားသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာမှ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု စီမံကိန်း၏ သတ်မှတ်ထားသော သတ်မှတ်ချက်များအတွင်းဝင်ပါသည်။ Woodsideမှလည်း အနာဂတ်တွင် စီမံကိန်းအတွက် ရေနှင့် နန်းအနည်အနှစ်များ အရည်အသွေးအား နမူနာကောက်ယူမည် မဟုတ်သည့် အကြောင်းရင်းကို အခန်း ၇.၂.၆တွင်ဖော်ပြထားပါသည်။

ကန်ထရိုက်တာများအား အလေ့အကျင့်များနှင့် ဒီဇိုင်းသတ်မှတ်ချက်များ (ဥပမာ - စီမံကိန်းမှ ထွက်မည့် ညစ်ညမ်းမှု စံချိန်စံနှုန်းများ)ကိုသေချာစွာ တာဝန်ရှိရှိ လုပ်ဆောင်စေရန်အတွက် ၎င်းတို့၏ လိုက်နာခြင်းများ ကို စောင့်ကြပ်ကြည့်ရှုလိမ့်မည်ဖြစ်သည်။ စောင့်ကြပ်ကြည့်ရှုရေး နည်းဗျူဟာများသည် အပြည်ပြည်ဆိုင်ရာနှင့် ပြည်တွင်းတွင်လက်ခံနိုင်သည့် အလေ့အကျင့်များ၊ ထောက်ပံ့ပို့ဆောင်ရေးနှင့် ကုန်ကျစားရိတ်ထိရောက်မှုနှင့် ကိုက်ညီအောင် ထည့်သွင်းစဉ်းစားထားပါသည်။

ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုရေး အစီရင်ခံစာကို တူးဖော်ရေးပြီးဆုံးပြီး သုံးလအကြာတွင် Woodsideမှ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာနသို့ တင်သွင်းရမည်ဖြစ်ပြီး အများပြည်သူများသိရှိစေရမည်ဖြစ်သည်။ ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုရေး အစီရင်ခံစာတွင် -

- ပတ်ဝန်းကျင်ပင်လယ်သို့ လီတာဂေထက်များသော ယိုဖိတ်မှုများ
- VSP နှင့် SWD လုပ်ဆောင်နေချိန်တွင် ပင်လယ်နို့တိုက် သတ္တဝါများ စောင့်ကြည့်လေ့လာရေး
- သက်ဆိုင်သော စောင့်ကြပ်ကြည့်ရှုရေး အစီရင်ခံစာအပတ်များကို အောက်ဖော်ပြပါ ဇယား ၁.၂ တွင် ဖော်ပြထားပါသည်။
- သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာနမှ ခွင့်ပြုထားသော အခြားသော အစီရင်ခံစာမည့် လိုအပ်ချက်များ

EIA လုပ်ထုံးလုပ်နည်းပါ Article 107အရ၊ Woodsideသည် ၎င်း၏ တာဝန်ဝတ္တရား သို့မဟုတ် လုပ်ဆောင်ချက်များအား လုပ်ဆောင်ရန် ပျက်ကွက်ခြင်း ECC သို့ EMP သို့ အခြားတူညီသော လိုက်နာမှုများအားဖောက်ဖျက်ခြင်းများဖြစ်ပါက သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာနကို စာတင်ပြကာ အသိပေးရမည်ဖြစ်သည်။ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာနအား အရေးတကြီး အသိပေးအပ်သော/အသိပေးရန် လိုအပ်သော ကြီးမားသောသက်ရောက်မှုများအားလဲ ၂၄နာရီအတွင်း အသိပေးရမည်ဖြစ်ပြီး အခြားသော ထိခိုက်မှုကိစ္စများကို Woodsideမှ သိသိချင်း ၇ရက်အတွင်း အကြောင်းကြား ရမည်ဖြစ်သည်။

ဇယား ၁.၂ အေဒီ-၁ စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးမှုဇယား

စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးမှု	ပတ်ဝန်းကျင်နေရာ	ကြွင်းကျန်သက်ရောက်မှု	အစီရင်ခံစာ	တင်သွင်းရန် ခန့်မှန်းခြေ အချိန်ဇယား
ရေအောက်ကြမ်းပြင်၏ ROV ပုံရိပ်များ	ကမ်းလွန် ရေကြမ်းပြင် နေရင်းဒေသများ နှင့် ငါးများ	စ - တာရှည်မဖြစ်ပေါ်သော သက်ရောက်မှု	ROV ပုံရိပ်များပါဝင်သည့် စောင့်ကြည့်လေ့လာမှု အစီရင်ခံစာ	တူးဖော်မှု ဆောင်ရွက်ပြီး ၃လအကြာ
VSP နှင့် SWD ကာလတို့အတွင်း အန္တရာယ်သတ္တဝါများ	အန္တရာယ်ရှိတိုက်သတ္တဝါများနှင့် လိပ်များ	င - တာရှည်မဖြစ်ပေါ်သော သက်ရောက်မှု	VSP သို့မဟုတ် SWD ဆောင်ရွက်မှု ကာလအတွင်း တွေ့မြင်ရသော အန္တရာယ်သတ္တဝါများ ထည့်သွင်းထားသည့် စောင့်ကြည့်လေ့လာမှု အစီရင်ခံစာ	တူးဖော်မှု ဆောင်ရွက်ပြီး ၃လအကြာ
စွန့်ပစ်ပစ္စည်း စွန့်ထုတ်ခြင်း	ကုန်းပေါ်ရှိ အများပြည်သူကျန်းမာရေးနှင့် ဘေးကင်းလုံခြုံရေး	စ - တာရှည်မဖြစ်ပေါ်သော သက်ရောက်မှု	စွန့်ပစ်ပစ္စည်း စွန့်ထုတ်မှုပမာဏများ ပါဝင်သည့် စောင့်ကြည့်လေ့လာမှု အစီရင်ခံစာ	တူးဖော်မှု ဆောင်ရွက်ပြီး ၃လအကြာ
တူးဖော်ရေး ကျစ်စာများ	ကမ်းလွန် ရေကြမ်းပြင် နေရင်းဒေသခံများ နှင့်ငါးများ	င - တာရှည်မဖြစ်ပေါ်သော သက်ရောက်မှု	တွင်းအတွက် ကျစ်စာများတွင် ပုံမှန်သည် IFC (၂၀၁၅) နှင့် အညီ ၆.၉% သာရှိရန် သေချာစေမည့် စောင့်ကြည့်လေ့လာမှု အစီရင်ခံစာ	တူးဖော်မှု ဆောင်ရွက်ပြီး ၃လအကြာ
ဓာတုပစ္စည်းများ	အန္တရာယ် ပတ်ဝန်းကျင်	စ - တာရှည်မဖြစ်ပေါ်သော သက်ရောက်မှု	EIA ပါ ဇယား ၃.၅ တွင် ဖော်ပြထားသည့် စာရင်းအပြင် တူးဖော်ရေးလုပ်ငန်းများ ကာလအတွင်း ဓာတုပစ္စည်း အမျိုးအစားသစ်များ စာရင်းပါဝင်သည့် စောင့်ကြည့်လေ့လာမှု အစီရင်ခံစာ	တူးဖော်မှု ဆောင်ရွက်ပြီး ၃လအကြာ

၁.၇ သက်ဆိုင်သူများနှင့် ချိတ်ဆက်တိုင်ပင်ဆောင်ရွက်ခြင်း

စီမံကိန်းနှင့် စပ်လျဉ်း ၍ သက်ဆိုင်သူများနှင့် တိုင်ပင်ဆွေးနွေးမှုကို ရန်ကုန်နှင့် ကျောက်ဖြူ တို့၌ ၂၀၁၉ခုနှစ် ဧပြီလ တွင် ဆောင်ရွက်ခဲ့ပါသည်။ ရခိုင်တိုင်းဝန်ကြီးနှင့် ၂၀၁၈ခုနှစ် ဒီဇင်ဘာတွင် တွေ့ဆုံတိုင်ပင်မှု ပြုလုပ်ခဲ့ပါသည်။

အစိုးရအရာရှိများ၊ စစ်တွေတက္ကသိုလ်၊ ဒေသခံ ငါးဖမ်းသမားများ၊ ဒေသခံ အရပ်ဖက်အဖွဲ့အစည်းများနှင့် အခြားစိတ်ပါဝင်စားသူများ တက်ရောက်ခဲ့ပါသည်။ အေဒီ-၁ ကမ်းလွန် တူးဖော်မှု လုပ်ငန်းဆောင်တာများနှင့် ပတ်သက်ပြီး တိုင်ပင်ဆွေးနွေးမှုများကို Woodside | ERM နှင့် REM တို့က နိုင်ငံတော်၊ တိုင်းဒေသနှင့် မြို့နယ်အဆင့် (ရွာများရှိ ကိုယ်စားလှယ်များလည်း ပါဝင်ပါသည်) ပြုလုပ်ခဲ့ပြီး စီမံကိန်း ရေးဆွဲခြင်းနှင့် ပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆိုင်ရာ အကြောင်းအရာများကိုလည်း အသိပေးခဲ့ပါသည်။

ယနေ့အထိပြီးစီးခဲ့သော တိုင်ပင်ဆွေးနွေးမှုများ၏ ရည်ညွှန်ချက်မှာ စီမံကိန်းဆိုင်ရာ သတင်း အချက်အလက်များ၊ စီမံကိန်းကြောင့်ထိခိုက်မှုရှိသူများ၏ သတင်းအချက်အလက်ကောက်ယူမှုများနှင့် ဖြစ်နိုင်ခြေရှိသော ဒေတာကွာဟချက်များနှင့် EIA အစီရင်ခံစာအား အဆုံးသတ်နိုင်ရန်အတွက် ဖြစ်ပါသည်။

တိုင်ပင်ဆွေးနွေးမှုတွင် သက်ဆိုင်သူပေါင်းများစွာပါဝင်သော မျက်နှာစုံညီ အစည်းအဝေးပြုလုပ်ခဲ့ပါသည်။ အစည်းအဝေး ပုံစံမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်-

- စီမံကိန်းနှင့် စီမံကိန်းဆောင်ရွက်မည့်သူအကြောင်း တင်ပြခြင်း
- အမေးအဖြေ ကဏ္ဍ၊ နှင့်
- လိုအပ်လျှင် အဖွဲ့လိုက်ဆွေးနွေးမှုများ (FGDs)

သက်ဆိုင်သူများနှင့် ထိတွေ့ဆက်ဆံဆောင်ရွက်ရန် အောက်ပါနည်းလမ်းများကို အသုံးပြုပါသည် -

- **အင်တာဗျူးဆောင်ရွက်ခြင်း** - အစိုးရ ဝန်ထမ်းများ (ဥပမာ - ငါးလုပ်ငန်းဦးစီးဌာန (DoF)၊ အထွေထွေ အုပ်ချုပ်ရေး ဦးစီးဌာန (GAD) ဝန်ထမ်းများ) နှင့် အဓိကအရေးပါသူများ (ဥပမာ - ကမ်းလွန်ငါးဖမ်းသူများ) နှင့် အင်တာဗျူးများ ပြုလုပ်ခဲ့ပါသည်။ ၎င်းတို့ကို ဖွင့်၍မေးသောမေးခွန်းများနှင့် ပိတ်၍ မေးသော မေးခွန်းများပါဝင်သည့် မေးခွန်းပါစာရင်း ကို အသုံးပြုပါသည်။
- **အဖွဲ့လိုက်ဆွေးနွေးခြင်းများ (FGDs)** - သည် သတ်မှတ်ထားသော ဆွေးနွေးရမည့်အကြောင်းအရာနှင့် စပ်လျဉ်း၍နောက်ခံအကြောင်းအရာတူညီသူ (၆ ဦး မှ ၈ ဦးခန့် ရှိ) အုပ်စု အကြား ဆွေးနွေးဆောင် ရွက်မှု ကို ဆိုလိုပါသည်။ ဤကဲ့သို့ ဆွေးနွေးမှုများ၏ အဓိက ရည်ရွယ်ချက်မှာ သတ်မှတ်ထားသည့် ဆွေးနွေးကြသည့်အကြောင်းအရာနှင့် ပတ်သက်၍ ကျေးရွာလူထုဆိုင်ရာသတင်းအချက်အလက်များ ကို စုဆောင်းရယူရန်ဖြစ်ပါသည်။ အဖွဲ့လိုက်ဆွေးနွေးခြင်းများ (FGDs) ကို စီမံကိန်း၏ အခြေခံ အချက်အလက်ကို သိရှိရယူစုဆောင်းရန် ရခိုင်ရှိ ရေလုပ်သားများ နှင့် ဆောင်ရွက် ပါသည်။
- **ပုံစံဘောင်ဖြင့်ဆောင်ရွက်သည့် အင်တာဗျူးများ (Semi- Structured/ Structured Interviews) နှင့် စာရင်းပါအချက်အလက်များစစ်ဆေးမှု** - ဆွေးနွေးမှုများအပြင်၊ ပုံစံဘောင်ဖြင့်ဆောင်ရွက်သည့် အင် တာဗျူးများ နှင့် စာရင်းပါအချက်အလက်များစစ်ဆေးမှုကို ကြိုတင်ပြုစုထားသည့် ဖွင့်၍ သိုမဟုတ် ပိတ်၍ မေးသောခွန်း များ သို့မဟုတ် စာရင်းပါအချက်အလက်များစစ်ဆေးမှု ကို အသေးစိတ်ဆွေးနွေး ရမည့်အကြောင်းအရာများနှင့် ပတ်သက်၍ စုံစမ်းကောက်ယူသည့် နည်းလမ်းအဖြစ် အသုံးပြုပါသည်။ စီမံကိန်း၏ရည်ရွယ်ချက်နှင့်စပ်လျဉ်း၍ အသေးစိတ်အကြောင်း အရာ အချက်အလက်များ (ဥပမာ - ငါးဖမ်းအမျိုးအစား၊ ငါးဖမ်းပိုက်အမျိုးအစား၊ ရေအနက်၊ ငါးအမျိုးအစား၊ စသည့်) ကိုရခိုင်တွင် ကောက်ယူရစီမံခြင်းမှာ ဆောင်ရွက်တော့မည့် စီမံကိန်း၏ သက်ရောက်နိုင်မှု အသေးစိတ်ကို သိရှိနိုင်ရန် ဖြစ်ပါသည်။ အေဒီ-၁ စီမံကိန်းဧရိယာ အတွက် ရေလုပ်ငန်းအချက်အလက်များနှင့် ပတ်သက်၍ ရေလုပ်ငန်းအဖွဲ့အစည်းများနှင့် ဌာနများမှ ပြည်စုံသော အင်တာဗျူး အချက်အလက်များကို စုဆောင်းနိုင်ရန် အလေးထားပါသည်။

နေ့ရက်၊ အချိန်၊ နေရာ၊ သက်ဆိုင်သူများ နှင့် အစည်းဝေးတစ်ခုချင်းစီ၏ ရည်ရွယ်ချက်ကို ဇယား ၁.၃ တွင် တင်ပြထား ပါသည်။

ဇယား ၁.၃ စီမံကိန်းအတွက် ဆောင်ရွက်ခဲ့သည့် တိုင်ပင်ဆွေးနွေးမှုလုပ်ငန်းများ

နေ့ရက်နှင့် နေရာ	သက်ဆိုင်သူများ	တိုင်ပင်ဆွေးနွေးမှု၏ ရည်ရွယ်ချက်
ဒီဇင်ဘာလ ၄ရက်၊ ၂၀၁၈	ဝန်ကြီးချုပ်	<ul style="list-style-type: none"> • စီမံကိန်းအကြောင်းအရာအချက်အလက်များ တင်ပြခြင်း။ • ရခိုင်ပြည်နယ်တွင် တိုင်ပင်မှုများဆောင်ရွက်ရန် လိုအပ်သည့် ခွင့်ပြုချက်များတောင်းခံခြင်း။
ဧပြီ ၁ရက် ၂၀၁၉၊ ကြို့ကုန်း ဆိပ်ကမ်း၊ ရန်ကုန်။	မြန်မာနိုင်ငံ ငါးဖမ်းလုပ်ငန်းရှင်များ အဖွဲ့အစည်း (MMFA)	<ul style="list-style-type: none"> • စီမံကိန်းအကြောင်းအရာအချက်အလက်များ တင်ပြခြင်း။ • ဒေသအဆင့်သတင်းအချက်အလက်များ ရယူခြင်း။ • ဒေသခံ ငါးဖမ်းသမားများ လုပ်ကွက် အေဒီ-၁တွင် ငါးဖမ်းခြင်းမရှိသည်ကို အတည်ပြုရန်
ဧပြီ ၃ရက်၊ ဟိုတယ် ကျောက်ဖြူ၊ ကျောက်ဖြူ	ဒေသတွင်း ငါးဖမ်းသမားများ၊ ECD, DOF, GAD, CSOs, နှင့် ဒေသခံ အဖွဲ့အစည်း	<ul style="list-style-type: none"> • စီမံကိန်းအကြောင်းအရာအချက်အလက်များ တင်ပြခြင်း။ • ဒေသအဆင့်သတင်းအချက်အလက်များ ရယူခြင်း။ • ဒေသခံ ငါးဖမ်းသမားများ လုပ်ကွက် အေဒီ-၁တွင် ငါးဖမ်းခြင်းမရှိသည်ကို အတည်ပြုရန်

ဒေသအဆင့်နှင့် နိုင်ငံတော်အဆင့် တို့၌ စီမံကိန်းဆိုင်ရာသတင်းအချက်အလက်များကို ထုတ်ပြန် တင်ပြနိုင်ရန် နှင့် အေဒီ-၁ ၏ အခြေခံအချက်အလက်များ သဘောပေါက်နားလည်ထားမှုကို အတည်ပြုရယူရန် အစည်းအဝေးများကို ကျင်းပဆောင်ရွက်ပါသည်။ အစည်းအဝေးများ၏ ရလဒ်အကျဉ်းကိုအောက်တွင် တင်ပြ ထားပါသည် -

- စစ်တွေမှ ရေလုပ်သားများသည် ကမ်းမှ အဝေးဆုံး ၃၀ မိုင် (၄၈ ကီလိုမီတာ) ထိထွက်ဖမ်းကြပြီး၊ ကျောက်ဖြူ ရေလုပ်ငန်းများသည် ကမ်းနီးရေပြင်များ (< ၁၀ မိုင်၊ ၁၆ ကီလိုမီတာ) ၌ ဆောင်ရွက်ကြပါသည်။ အေဒီ-၁ စီမံကိန်းဧရိယာအတွင်းဒေသခံငါးလုပ်သားများမှ ငါးဖမ်းဆောင်ရွက်မှုမရှိပါ။ ရခိုင်ပြည်နယ်ပြင်ပမှ ကြီးမားသောရေယာဉ်ကြီးများ (ဥပမာ -မြန်မာနိုင်ငံ အခြားနေရာများမှသို့မဟုတ် နိုင်ငံတကာမှ ဆွဲပိုက်ကြီးရေယာဉ်များ) သည် ၎င်းရေပြင်အတွင်း ငါးဖမ်းဆောင်ရွက်မှု ရှိနေနိုင်ကြောင်း သတိပြုရမည် ဖြစ်ပါသည်။
- ရခိုင်ပြည်နယ် အေဒီ-၁ လုပ်ကွက် ကမ်းလွန် လုပ်ကွက်တွင် ရန်ကုန်တွင်ရှိသော ငါးဖမ်းသမားများလဲ ငါးဖမ်းခြင်းမရှိသည်ကိုလည်း ရန်ကုန်အခြေပြု ငါးဖမ်းသမားများမှ အတည်ပြုပါသည်။
- အသုံးပြုသည့် ငါးဖမ်းကိရိယာများမှာ ဝိုင်း/မော်ရိုပိုက်၊ ဆွဲပိုက်၊ ငါးမျှားတံ နှင့် မျှောပိုက်တို့ ဖြစ်ကြပါသည်။ ၎င်းတို့မှာရခိုင်တွင် အသုံးပြုသည့် တွေ့ရများသည့် ငါးဖမ်းကိရိယာများဖြစ်ပြီး၊ ၂၀၁၈က Woodside အေဒီ-၁နှင့် ၂၀၁၆ က Woodside အေဒီ-၇ အတွက် ယခင်ကောက်ယူ ရရှိခဲ့သည့် အချက်အလက်များနှင့် အတူတူပင် ဖြစ်ပါသည်။
- ငါးဖမ်းလုပ်ငန်းမှာရာသီလိုက်ဆောင်ရွက်မှုဖြစ်ပြီး၊ မိုးရာသီကာလ (ဂျွန်မှဩဂုတ်) အတွင်း ကမ်းလွန်ရေပြင်များ (ဥပမာ - စီမံကိန်းဧရိယာ)တွင် ဆောင်ရွက်မှုမရှိပါ။
- မေးမြန်းခဲ့ကြသည့် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ သိလိုသည်များမှာ ငါးကောင်ရေများ၊ လေထုအရည် အသွေး၊ ရေထုအရည်အသွေး၊ မမျှော်လင့်ထားသည့် ဖြစ်ရပ်များ (ဥပမာ - ဟိုက်ဒရိုကာဗွန် ယိုစိမ့်မှု) နှင့် ကမ်းရိုးတန်းနေရာများအပေါ်ဖြစ်ပေါ်လာနိုင်သည့် သက်ရောက်မှုများနှင့် ပတ်သက်ပါသည်။
- အဓိကမေးမြန်းမှုမှာ လူမှုရေးအကျိုးအမြတ်များ နှင့် လူမှုရေးဆိုင်ရာတာဝန်ယူဆောင်ရွက်မှု (CSR) တို့ ဖြစ်ကြပါသည်။

2. Introduction

2.1 Scope of the EMP

This EMP outlines the proposed drilling activities in AD-1 (The Project) for the period 2020-2023. The Project may include the potential drilling of one or up to eight (8) wells over a four (4) year period, located in the offshore deep waters of AD-1.

This EMP aims to provide an environmental and social management framework by outlining the compliance requirements, mitigation measures, and monitoring programmes to be implemented throughout the Project activities.

This EMP is the means by which the findings of the environmental and social assessment are implemented during the execution of the offshore drilling activities. The objective of this EMP is to demonstrate compliance with the relevant national and international legislation and the Woodside Health, Safety, Environment, and Quality (HSEQ) Policy and Woodside Management System. The EMP lists the obligations and responsibilities of each party involved in the project, stipulates methods and procedures that will be followed, and outlines the environmental and social management actions that will be implemented.

2.2 Purpose and Objectives of the EMP

This EMP describes mitigation and management measures designed to mitigate potential environmental and social impacts of the proposed offshore drilling activities to a level that is considered to be As Low As Reasonably Practicable (ALARP).

Mitigation strategies have been developed to avoid, prevent, or reduce any potential impact on the identified sensitive receptors.

The overarching purpose of this EMP is to:

- Integrate management and mitigation measures into the drilling activities in order to reduce or mitigate any potential environmental and social impacts on natural and socio-economic environments;
- Consider and address the concerns and interests of stakeholders who will potentially be engaged or impacted during execution of the offshore drilling; and
- Establish systems and processes for delivery and implementation of environmental and social requirements in order to meet statutory and compliance standards.

The objectives of the EMP are to:

- Demonstrate continuing compliance with the relevant Myanmar environmental legislation, Woodside Health, Safety, Environment and Quality (HSEQ) Policy and good industry practices;
- Describe the mechanism for implementing identified control, monitoring and management measures to mitigate potentially adverse impacts;
- Provide a framework for mitigating impacts that may be unforeseen or unidentified until offshore drilling is underway;
- Provide assurance to regulators and stakeholders that their requirements with respect to environmental and social performance will be met;
- Undertake monitoring to provide assurance that the control and management measures are being implemented; and
- Combine all of the above in a systematic framework of monitoring, reporting and management that will measure the successful implementation of the project in accordance with Woodside's standards for social and environmental performance, and respond as needed to maintain those objectives (i.e. the Woodside Management System).

Woodside Management System

The Woodside Management System (WMS) provides a structured framework of documentation to set common expectations governing how all employees and contractors at Woodside will work. The WMS is comprised of four elements: Compass & Policies; Expectations; Processes & Procedures; and Guidelines outlined below;

- **Compass & Policies.** Set the enterprise-wide direction for Woodside by governing our behaviours, actions and business decisions and ensuring we meet our legal and other external obligations;
- **Expectations.** Set essential activities or deliverables required to achieve the objectives of the Key Business Activities and provide the basis for development of processes and procedures;
- **Processes and Procedures.** Processes identify the set of interrelated or interacting activities, which transforms inputs into outputs, to systematically achieve a purpose or specific objective. Procedures specify what steps, by whom and when are required to carry out an activity or a process; and
- **Guidelines.** Provide recommended practice and advice on how to perform the steps defined in Procedures, together with supporting information and associated tools. Guidelines provide advice on: how activities or tasks may be performed; information that may be taken into consideration; or, how to use tools and systems.

2.3 Project Overview

This document is the Environmental Management Plan (EMP) for a proposed drilling program of up to eight wells in Block AD-1 (AD-1) in the Rakhine Basin, the Union of Myanmar (Myanmar) (the Project).

The AD-1 Joint Venture (JV) of Woodside and CNPC International Ltd (CNPCI) plan to commence the project in 2020 covering a four year period and involves the drilling of potentially one or up to eight (8) wells (the Project). The target hydrocarbons are dry gas.

A Project Proposal Report (PPR) for AD-1 was submitted to MONREC via Environmental Conservation Department (ECD) on the 31 October 2018 to assess the requirements and level of assessment for future exploration drilling between 2019 and 2023. MONREC determined that future drilling activities of up to 8 wells in AD-1 will be subject to an Environment Management Plan (EMP), therefore instructing Woodside to submit an EMP for the future proposed drilling activities. This assessment was finalised on the 14 December 2018 (Letter No. EIA-2/MOGE (2139 /2018)).

In 2018, the AD-1 JV successfully drilled one well in AD-1 (Aung Siddhi-1 well), under an Environmental Impact Assessment (EIA) approved by the Ministry of Natural Resources and Environmental Conservation (MONREC) in April 2018 via an approval letter. An Environmental Compliance Certificate (ECC) was issued for the Project in May 2019.

This EMP has been prepared to manage the proposed drilling program commencing in 2020 through to 2023 as per the Myanmar EIA Procedure (2015).

The details of the Project are summarised in **Table 2.1**.

Table 2.1: AD-1 Block Details

	Details
Block	Block AD-1, offshore Myanmar as per <i>Figure 1.1</i>
Joint Venture Participants	Woodside – 50% CNPCI – 50%
Project Area and distance from coastline	AD-1 is about 40 miles from Manaung and 60 miles from Sittwe, Rakhine State on the Myanmar mainland coast.
Previous Activities in AD-1 and operator for the activity	CNPCI drilled the Aung Pyi Hein exploration well in AD-1 in March 2015. The AD-1 JV drilled the Aung Siddhi-1 exploration well in AD-1 in May/June 2018.
Scope of Proposed drilling activities for which approval is sought	The proposed drilling program may include the drilling of up to eight wells over a period of four years between 2020 and 2023, in AD-1.
EIA Organisations for proposed activity	ERM and REM

2.4 Project Proponent

Woodside is the operator in AD-1 for drilling activities. Contact details for the Woodside country manager are provided below:

Name: Michelle Grady

Position: Country Manager

Address: Vantage Tower, Level 6, 623 Pyay Road, Kamaryut Township, Yangon, Myanmar

Phone: +95 1 2307460

Email: Michelle.Grady@woodside.com.au

Woodside and CNPCI will each hold 50% interests in each of these blocks. CNPCI is the operator with respect to government liaison and Woodside will be the operator for all other operations and activities (**Table 2.2**).

Table 2.2: Details on AD-1 Operators and Participants

Participant	% Share	Operator
Woodside Energy (Myanmar) Pte Ltd	50	Joint Operator (and operator of the Project)
CNPCI	50	Operator with respect to government liaison

3. Project Description by Project Phase

This section provides details of the Project activities to be conducted within the proposed AD-1 drilling program and an overview of the alternatives considered.

There are no pre-construction, construction, or decommissioning phases associated with the Project. As such, the Project description covers the “operational” i.e., drilling phase only.

3.1 Proposed Project Activities

3.1.1 Project Location

The proposed wells will be drilled in AD-1 and will be located in the offshore deep waters of AD-1. At its closest point, the boundary of AD-1 is approximately 40 miles from the nearest land (**Figure 1.1**). The Project Area is defined as the boundary of the AD-1 Block.

Water depths in AD-1 range between approximately 3,000 ft. to approximately 6,800 ft. on the Abyssal Plain of the Rakhine Basin.

Future well locations will be informed by drilling results and the interpretation of seismic data, however all wells will be located within AD-1.

The wells will be drilled using a dynamically positioned MODU (semi-submersible or drill ship), which will operate within a safety zone of 1,640 ft. radius. The total area temporarily excluded from other marine users at each well site is about 2,625 square ft.

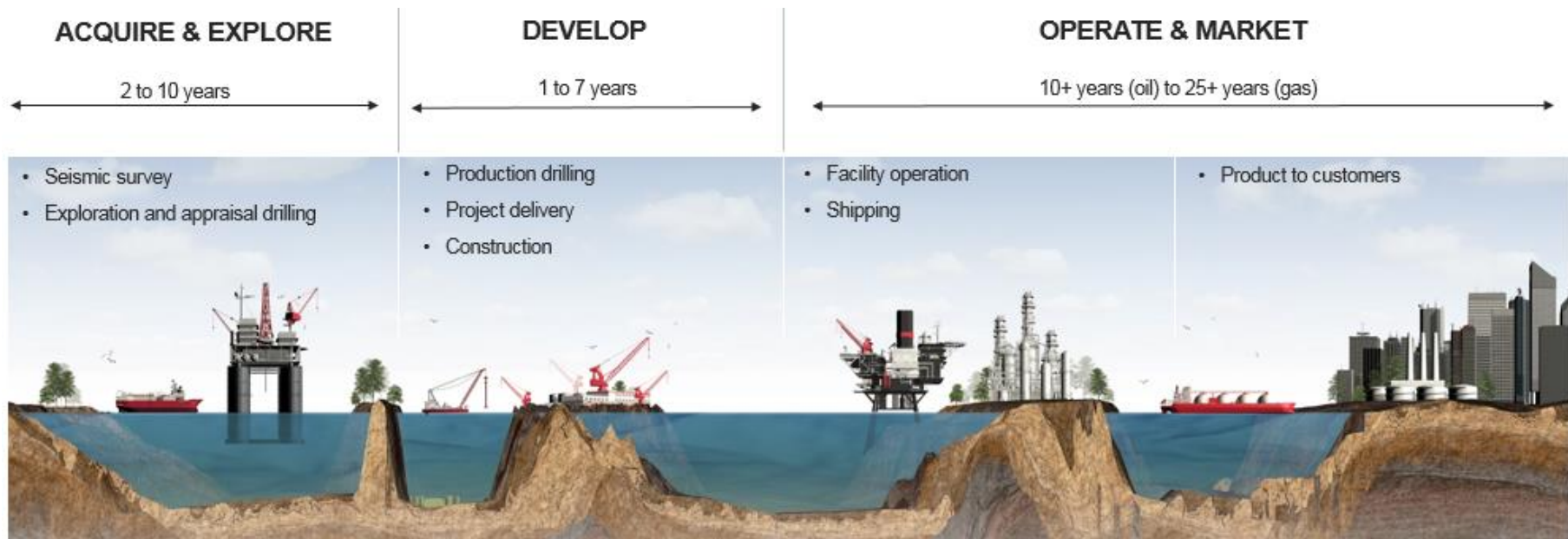
3.1.2 Proposed Project Schedule

The Project is proposed to commence in 2020 and may include the drilling of up to eight wells over a period of four years between 2020 and 2023. The wells are anticipated to take approximately 40 days each to drill and drilling operations will be conducted for 24 hours a day. Drilling will be undertaken one well at a time within Block AD-1.

The well locations for the proposed drilling program are being identified based on subsurface information from previously-acquired AD-1 seismic data. Geophysical data are some of the other inputs also considered in determining a well location. The final number of wells that are drilled will be subject to the outcome of the drilling results, seismic data and decisions of the JV.

Woodside applies a well lifecycle management process for all wells. This process is consistent with international standards and good international industry practice and covers all aspects of design and construction, from specification of the basis of design through to well suspension or abandonment. An indicative image of the oil and gas lifecycle is provided in **Figure 3.1**. The proposed AD-1 drilling program is in the “acquire and explore” phase in which Woodside is identifying and proving the presence and value of hydrocarbons.

Figure 3.1: Indicative Oil and Gas Lifecycle



3.1.3 Project Activities

3.1.3.1 Resource

The Rakhine Basin of north-western offshore Myanmar has a proven biogenic, 'dry gas' petroleum system, characterised by the ubiquitous presence of methane (CH₄) and the absence of higher-end wet-gas (C₂ to C₇ compounds) or liquid (C₈ and above) compounds. The producing Shwe field (Block A-1 and A-3) and the discoveries at Thalin (Block AD-7) and Shwe Yee Htun (Block A-6) all contain 99.9% methane, and extremely low amounts of higher-end carbon molecules, inert gases and H₂S. Biogenic gas comprises methane (>99%), and traces of ethane and propane, and is generated by bacterial degradation of organic matter. These discoveries are separated by 217 miles, which suggests a uniform petroleum system in the Rakhine Basin.

The Rakhine Basin has favourable conditions for biogenic gas generation, including (i) high sedimentation rate to preserve sufficient concentrations of organic matter (food-stock for bacteria); (ii) a large interval of low temperature (<80 °C) sediments allowing for bacteria to thrive; and (iii) modest structuration (with uplift) allowing generated gas to exsolve from background water, migrate and focus into associated traps.

The above outline supports the expectation of dry gas in any future discoveries in AD-1. **Table 3.1** provides the properties of the reservoir fluid from previous wells drilled in the region.

Table 3.1: Composition of Hydrocarbons throughout the Rakhine Basin

Component		Reservoir Composition Mole (%)		
		Shwe Yee Htun-1	Thalin-1A	Shwe
H ₂ S	Hydrogen sulphide	0.0	0.0	0.0
CO ₂	Carbon dioxide	0.1	0.1	0.3
N ₂	Nitrogen	0.2	0.4	0.2
C ₁	Methane	99.5	99.3	98.9
C ₂₊	Ethane plus	0.2	0.2	0.6
Totals:		100.0	100.0	100.0

3.1.3.2 Drilling Activities

Wells are drilled in a location in which a hydrocarbon reservoir may potentially exist.

A dynamically positioned MODU will be used for the Project. Depending on the selected location of the wells, Woodside may drill in waters between 3,000 ft. and 6,800 ft. The MODU will be supported by supply vessels, helicopters, and a supply base for equipment and material storage in Ranong (Thailand).

A typical well will be drilled to a total depth ranging from 2,625 ft. to 13,500 ft. below the seabed (i.e. mudline). Top-hole sections will be drilled riser-less using seawater and water based drilling fluid (WBDF) to circulate drill cuttings from the wellbore, which are released to the seabed. The initial top-hole section will either be jetted or drilled using seawater and a conductor (i.e. steel tubular casing) will be run and cemented in place. Cementing operations provide structural support for the well.

After the conductor is set, further top-hole drilling takes place with WBDF and cuttings are released to the seabed. The top-hole section is then cased and a high pressure wellhead housing installed. Surface casing will be cemented in place. After completion of the top-hole section a blowout preventer (BOP) and marine riser is installed on the wellhead. The BOP is required for well control and a marine riser acts as a conduit between the wellhead and the MODU.

Once the riser is in place, the bottom-hole sections will be drilled using non-aqueous drilling fluid (NADF). The rationale for using NADF is presented in Section 3.3. The riser enables a closed circulation drilling fluid system to be maintained whereby drilling fluids and cuttings from the well are returned to the MODU for separation. Equipment on the MODU separates the NADF from the cuttings with the NADF reused and the cuttings with retained NADF treated for disposal and discharged from the MODU. Disposal of cuttings with retained NADF will be undertaken in accordance with the World Bank Environmental, Health, and Safety Guidelines for Offshore Oil and Gas Development (World Bank, 2015).

A schematic of a typical well is provided in **Figure 3.2** and a summary of a typical well is provided in **Table 3.2**.

Table 3.2: Typical Well Summary

Well Section	Drill Fluid Type	Hole Outer Diameter (inches)	Section Length (ft.)	Location of Discharge
Top hole	Seawater	42"	236	seabed
	WBDF	26"	2,624	seabed
	NADF	17-1/2"	2,624	Returned to MODU prior to treatment and discharge to sea surface
Bottom hole	NADF	12-1/4"	1,640	Returned to MODU prior to treatment and discharge to sea surface
	NADF	8-1/2"	1,640	Returned to MODU prior to treatment and discharge to sea surface
Total depth from sea bed			~8,764	

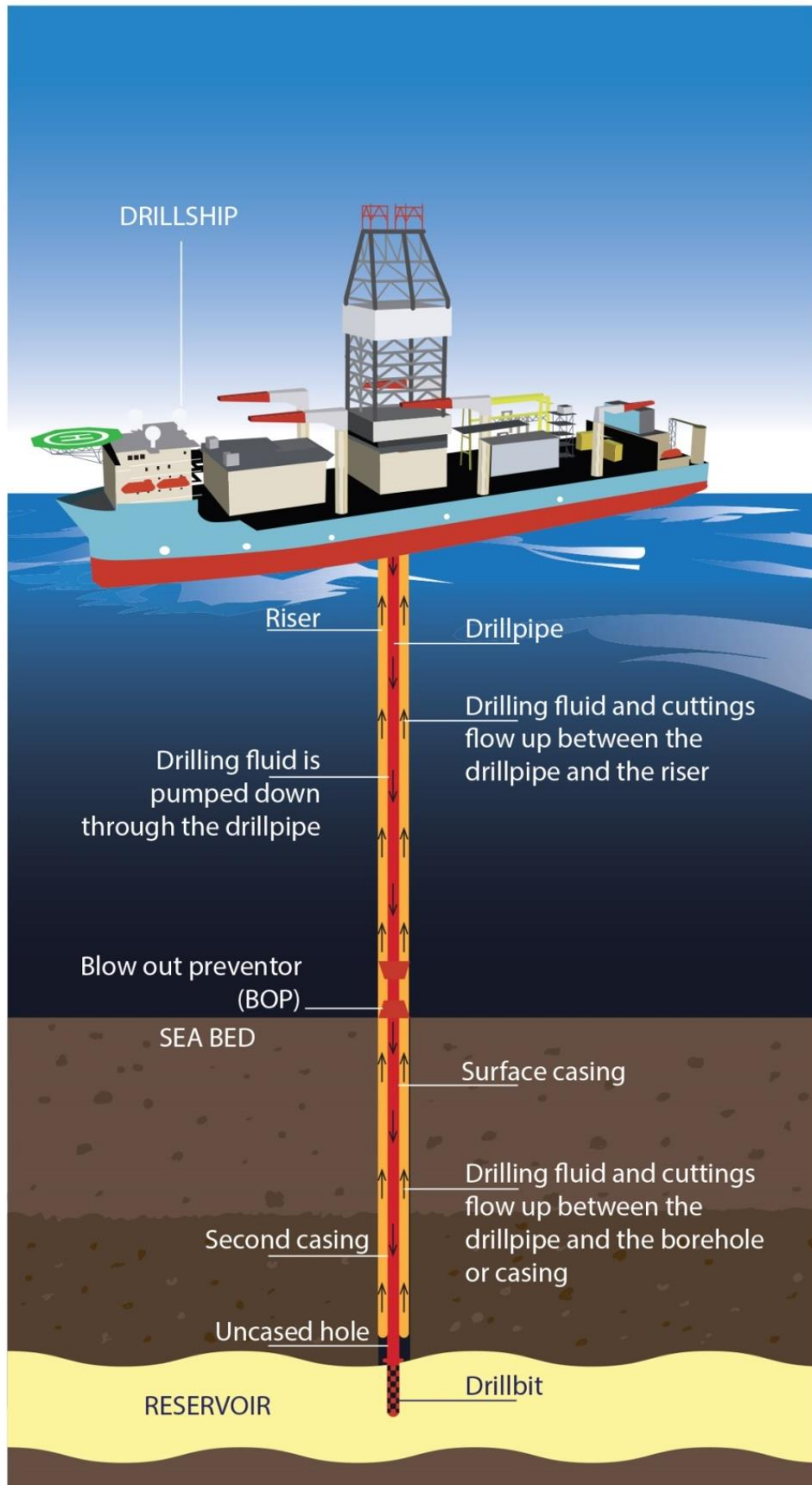


Figure 3.2: Drilling Well Overview Diagram

3.1.3.3 Formation Evaluation

While drilling through the reservoir, full diameter cores may be recovered. Coring is a way of cutting a cylindrical sample of rock in approximately 100 ft. intervals and recovering the sample to surface for future laboratory testing for presence of hydrocarbons.

Once the required depth is reached, the well will be evaluated by running a series of wireline logs. Wireline logs take a series of measurements from inside the wellbore. These measurements are used to characterise formation properties and hydrocarbon presence. Wireline reservoir sampling may be undertaken to collect in-situ reservoir fluids downhole at reservoir conditions. These fluid samples are recovered to surface for future analysis.

If required, wireline logs may include vertical seismic profiling (VSP) and Seismic While Drilling (SWD). These operations involve deployment of an array of geophones at regular intervals, throughout the wellbore. This subsurface seismic data are used to calibrate the previously acquired surface seismic data. To undertake VSP the sound source is suspended in the water column, and recorders, located down hole, to provide a high-resolution seismic image of the immediate vicinity of the well. This will involve intermittent use of the sound over a period of up to 48 hours per well.

SWD may be undertaken to provide real-time seismic data and reduce formation depth uncertainty during drilling operations. During drilling operations with SWD, the sound source is suspended in the water column and recorders, located in the drilling bottom hole assembly (BHA), provide a real-time seismic image up to 330 ft. ahead of the drill bit. The seismic guns are set off once every 5 -10 minutes whilst SWD is in operation. SWD is anticipated to be in operation for approximately 48 hours per hole section where required.

3.1.3.4 Pilot hole

If required, a small diameter pilot hole ($\leq 12 \frac{1}{4}$ ") may be drilled within a 1,640 ft. safety zone around the MODU. The pilot hole is drilled prior to drilling the main well bore to assess any potential shallow hazards. Where seismic data interpretation indicates a potential for shallow gas to be present at a drilling location, a pilot hole may be drilled through the potential shallow gas zone, to determine if the well can be successfully drilled at the location. The small hole size will allow for more efficient protection against a potential unplanned loss of well control if shallow gas is found to be present. A decision will be made on this operation during the well life cycle management process.

3.1.3.5 Side track Core

In the event hydrocarbons are encountered at commercial volumes, a side track core may be drilled to acquire a length of core from the reservoir. The core is taken to provide information on the reservoir sands for planning of any potential future development. In the event a side track core is drilled, the main wellbore will be plugged with cement. A side track core is drilled from the main well bore, and a coring assembly is run to extract the core. After the core assembly is recovered, the drilling of the main wellbore is continued to the sections total depth. The length of the side track core may vary depending on the depth hydrocarbons are encountered.

3.1.3.6 Well Testing

If formation evaluation results indicate the presence of a significant hydrocarbon reservoir, further reservoir analysis may be performed in the form of a Drill Stem Test (DST). If conducted, it is planned a drill stem test will be undertaken after a process of well suspension and re-entry, which will provide information about the reservoir quality, fluid properties, volume and extent. A drill stem test is the controlled production of reservoir fluids to the MODU where they will be flared. All produced reservoir fluids will be combined with a stream of compressed air and then safely and cleanly combusted via burner jets at the end of the burner boom on the rig. The drill stem test flow duration may last for several days. Depending on well test objectives, multiple flow periods may be required. Flaring operations may continue through daylight and night time.

The actual volume and duration of well testing are both subject to the outcomes of drilling and will be minimised to the extent possible. If drill stem testing is to be carried out on the well, the associated intermittent flaring conservatively estimated to be approximately 10 days. The total flared volume of gas is expected to be no more than 450 million standard cubic feet (MMscf).

3.1.3.7 Unplanned Drilling Activities

The following are unplanned drilling activities that may be required if operational or technical issues occur during the Project.

There are a number of drilling activities that are not anticipated as part of normal drilling operations in the drilling program, but may be implemented should the operational need arise. These include the potential for a re-spud, side-track, emergency disconnect sequence (EDS), or well suspension. A re-spud may be required if the conductor or well head slumps (typically during top hole drilling). If the pilot hole results show that the well cannot be drilled in its preferred location, then a backup well targeting the same prospect may be considered.

Re-spudding involves moving the MODU to a suitably close location (e.g. approximately 164 ft. from the original location) to recommence drilling and would result in re-drilling part of the top-hole section. A side-track, or an unplanned deviation in drilling direction using the existing top-hole section, may also be required if operational issues are encountered.

An EDS may be activated if the MODU is required to rapidly disengage from the well. The EDS closes the BOP and disconnects the riser to break the connection between the wellhead and MODU. Common examples of when may be initiated include the movement of the MODU outside of its operating circle or the movement of the MODU to avoid a vessel collision. EDS aims to leave the wellhead in a secure condition but will result in the loss of the drilling fluids/cuttings in the section of the riser from the well head to the MODU following disconnection. When required, an EDS is activated to secure the integrity of the MODU and maintain the safety of rig personnel.

In the event of a cyclone, the rig may disconnect from the seafloor and suspend the well. The rig would then move out of the path of the cyclone to maintain the safety of those on board the rig. Further information on the management of cyclone risks are provided in Section 7.1.6.5 of the Emergency Response Plan.

The environmental aspects of these unplanned drilling activities are the same as those for undertaking the Project and are considered to be adequately addressed in the approved AD-1 EIA Report and this EMP. No significant changes to existing environmental risks or any additional environmental risks are considered likely.

3.1.3.8 End of Well Activities

On the completion of drilling, formation evaluation and well testing operations, each well will be suspended or permanently plugged and abandoned (P&A), depending on well results and planned future use.

If hydrocarbons of commercial volumes are encountered, the JV may decide to suspend the well, which involves leaving the well in a state where the well can be re-entered at a later date. The reasons for this are either to conduct a drill stem test or potential well deepening or both. Suspension involves establishing suitable barriers, removing the riser, BOP, disconnecting and moving the MODU off location. Suspension may be longer than one year. On return to a well following suspension, the MODU reconnects to the well via the riser, and with the BOP in place, barriers are removed and drilling resumes.

Suspension and P&A activities will be undertaken at the end of the well in accordance with established industry procedures. Well suspension would include installing and verifying temporary barriers to prevent any potential release from the well.

P&A activities would include installing and verifying permanent cement barriers to prevent any potential release from the well. Following suspension or P&A, the marine riser and BOP are removed and the MODU is moved to its next location.

This Project consists only of a drilling operations phase. There are no construction or decommissioning related phases. At the end of Project activities, the MODU and all Project vessels will depart the Project Area.

3.2 Vessel Requirements

3.2.1 Dynamically Positioned MODU

A dynamically positioned MODU will be used for the Project; therefore, there will be no anchoring. A dynamically positioned MODU uses satellite navigation and radio transponders in conjunction with thrusters. Information relating to the position of the MODU is provided via a number of seabed transponders, which emit signals that are detected by receivers on the MODU and used to calculate position. The transponders are typically deployed in an array on the seabed, using concrete clump weights. Transponders are typically deployed for the duration of drilling at each well and at the end are recovered, generally by remotely operated vehicle (ROV). **Figure 3.3** provides an example of a dynamically positioned MODU.

A 1,640 ft. safety zone will be implemented around the MODU once on site for the duration of drilling in order to prevent any interactions with other marine users (i.e. shipping or fishing activities). As such, the footprint of the MODU on the sea surface will only cover a small area (less than 0.4 square miles) for each well.

The MODU will be selected following a global tender approved by MOGE in which all bidders are required to comply with relevant HSE standards. The selected MODU will undergo a site inspection and desktop review, with the results reviewed by MOGE as part of the contract approval process.

Woodside uses a combination of in-house subject matter experts and third party specialist contractors to perform audits of the drilling contractor's critical rig equipment and management systems as part of the rig acceptance process. This auditing activity confirms that the drilling contractor's vessel, equipment, personnel and management processes are maintained in good working condition and function to the required minimum standard.

Table 3.3 provides typical details for the type of MODU to be contracted for the drilling program.



Figure 3.3: A dynamically positioned MODU

Table 3.3: Typical MODU Details

Component	Specification
Rig type/design/class	Semi-Submersible or Drill Ship
Accommodation	Up to 200 people
Station keeping	Dynamically Positioned
Max drill depth/water depth	9,840 – 39,370 ft.
Length	+/- 656 ft.
Operating draft	+/- 66 ft.
Transit draft	+/- 33 ft.
Bulk mud and cement storage capacity	35,000- 455,000 ft. ³
Liquid mud storage capacity	56,000 – 105,000 ft. ³
Fuel oil storage capacity	140,000 – 168,000 ft. ³
Drill water storage capacity	70,000 – 98,000 ft. ³

3.2.2 Support Vessels and Equipment

Drilling operations will be supported by three to four vessels used to transport equipment, fuel, materials and waste between the MODU and the supply base which may be located in Ranong (Thailand) with logistics support received from Thaketa (Yangon), Myanmar or Singapore. Support vessels will not anchor within AD-1. **Table 3.4** provides the typical specifications for a support vessel.

Table 3.4: Approximate Support Vessel Specifications

Component	Approximate Support Vessel Specifications	Approximate Fast Support Vessel Specifications
Registered tonnage	5,000	500
Length overall	328 ft.	164 ft.
Breadth	66 ft.	33 ft.
Draft (max)	23 ft.	6.6 ft.
Crew and passenger capacity	50	60

Fuel will be transported to the MODU from the support vessels approximately once a week while at sea (i.e. offshore bunkering). The support vessels will also transfer drilling fluids, base oil, dry bulk materials (barite, gel and cement), and drill water as required and also collect waste materials, for appropriate reuse, recycling or disposal via a suitable port and handling facility in either of the possible supply bases.

During drilling, a ROV is likely to be required to conduct activities close to the seabed including pre-spud visual checks, environmental surveys and maintenance of subsea equipment.

Crew changes may be undertaken via fixed wing or helicopter, most likely from Yangon. Helicopters and other equipment may be re-fuelled on the MODU as required. There will be approximately one to two (up to a maximum of three) round trips per day during drilling operations. Helicopters may refuel *en route* between the airport (most likely Yangon) and the MODU. When crossing the coastline, helicopters will be at a minimum height of approximately 4,000 ft., except when on approach for landing at or climbing away on departure from a coastal airfield.

3.3 Drilling Systems

3.3.1 Drilling Fluids and Chemicals

The function of the drilling fluid is to provide circulation to remove cuttings from the hole, to cool the drill bit and to provide a hydrostatic head exerting a greater pressure than that expected from any formation which may be encountered in order to maintain well control.

Both WBDF and NADF will be used as the drilling fluids for the Project. The volume of WBDF and NADF varies for each well. There is a residual amount of NADF in the cuttings. NADF fluids are not directly discharged; they are only discharged as part of the cuttings. This volume is very small. The management of drill cuttings and fluids is detailed in the Section 7.5.

WBDF will be used in the upper sections of the well. WBDF will be operationally discharged to the marine environment under the following scenarios:

- At the seabed when drilling the top-hole sections riser-less; and
- Operationally discharged from the mud pits below the sea surface if the WBDF cannot be recirculated/ re-used through the drilling fluid system, re-used on the well or used on another well; or stored.

3.3.1.1 Drilling Chemical Selection Process

All chemicals that may potentially be discharged to the marine environment during the drilling program are selected, assessed and internally approved. The Woodside selection and assessment process is consistent with OSPAR (2010a) "Recommendation 2010/4 on a Harmonised Pre-screening Scheme for Offshore Chemical." Chemicals considered for use are assessed in terms of their application, discharge and potential risk to the marine environment.

This includes drilling, cementing, completion and rig chemicals (pipe dopes, threadlock chemicals, etc.).

When a chemical is proposed for use, it is first checked against the United Kingdom's Offshore Chemical Notification Scheme (OCNS) Ranked List of Notified Chemicals. All chemicals on this OCNS list have a 'Hazard Quotient' or 'OCNS Group' which is determined by Centre for Environment Fisheries and Aquaculture Science (CEFAS) based on data provided to them by the chemical vendor. This information may include toxicity, biodegradation, bioaccumulation, normal dose rate, scale of use per installation, and discharge rates and volumes for typical use. Chemicals that have an OCNS Hazard Quotient corresponding to ratings of Gold, Silver, E or D on the OCNS Ranked List of Notified Chemicals, and have no substitution or product warning do not require further assessment, as they are considered to not represent a significant impact on the environment under standard use scenarios and are therefore, considered ALARP and acceptable.

For chemicals that are not on the OCNS Ranked List of Notified Chemicals, or have an OCNS Hazard Quotient white, blue, orange, purple, A, B, C or have product/substitution warning, further assessment is required to understand the environment impacts of the discharge into the marine environment. This assessment includes:

- Analysis of the Eco toxicity and biodegradation of chemicals;
- Environment and any other environmental issues or potential risks;
- Investigation of potential alternatives for the chemical, with preference for options that are on the OCNS Ranked List of Notified Chemicals with OCNS Hazard Quotient of Gold, Silver, or are Group E or D with no substitution or product warning. Environmental, health and safety, operational and technical strengths and weaknesses of each alternative may be included;
- Justification of the selected chemical option;
- Further risk reduction measures i.e. specific controls on the use; and
- A review to check that the environmental risk is ALARP.

A master list of approved chemicals is maintained by Woodside. This list is reviewed regularly to consider if there are alternative chemicals that can replace high priority phase out chemicals currently approved for use.

A list of the approved chemicals is provided to relevant personnel responsible for the selection, provision and use of chemicals.

Once on board the drill ship, the chemicals are stored in appropriate areas according to chemical type.

WBDF consists of approximately 92-98% fresh or saline water, with the remaining 2-8% comprised of drilling fluid additives in the form of hydrated gel (bentonite) sweeps, which are generally inert or readily biodegradable organic polymers.

NADF will be used in deeper sections once the marine riser has been installed. **Table 3.5** provides an indicative list of chemicals to be used in the drilling fluid. Additional or alternative chemicals may be used and will be assessed and selected as described above.

Table 3.5: Indicative Drilling Chemicals

Component	Function	Concentration Range	OCNS Rating
Potassium chloride	Inhibition	77-100	Group E
Guar gum polymer	Viscosifer	3.0-4.5	Group E
Biocide	Bacterial	0.5-1.0	Gold
Barite	Weighting Agent	As required	Gold
Bentonite	Viscosifer	As required	Group E
Calcium carbonate	Reservoir bridging	50-150	Group E
Seawater/drill water	Base fluid	As required	N/A

* Biocides will only be used as a contingency if required. The currently proposed Biocide is Solacide, which is listed as non-toxic in the safety data sheet. In the event any other biocides are proposed for use they will follow the Woodside Chemical Assessment Process. It is noted that the OCNS (OSPAR List of Chemicals for Priority Action (Revised 2013)) lists organohalogens as groups of substances for priority action. Woodside do not approve or propose use of any biocides containing organohalogens.

NADF is only operationally discharged following return to the MODU for separation of fluids and cuttings using solids control equipment to reduce the residual level of NADF on the drill cuttings prior to discharge below the sea surface.

The NADF will be primarily mixed onshore outside of Myanmar and transferred to the MODU by a support vessel, where it will be stored and maintained in the mud pits.

Drilling fluids are mixed either in an onshore dedicated mud plant facility in Ranong in Thailand or in the dedicated mud plant on-board the drillship. The transport to the drill ship is managed by Woodside's logistics team. Transportation of drilling fluids between the supply base and the drillship is by dedicated storage tanks on-board the supply vessels. Transfer from the supply vessel to the drill ship is by dedicated offshore transfer hoses using a specific transfer procedure. The supply vessel shipping route is a direct path north from Ranong, Thailand to the well locations.

During drilling operations, the NADF, like the WBDF, is pumped by high pressure pumps down the drill string and out through the drill bit. NADF are returned via the annulus between the drill string and the casing back to the MODU via the riser.

The used NADF pumped back to the MODU contains drill cuttings and is pumped to the Solids Control Equipment (SCE), where the drill cuttings are removed before being pumped back to the pits ready for re-use. The properties of the NADF are altered (e.g. to increase weight) using additives as required when in the mud pits.

The NADF that cannot be re-used (i.e. do not meet required drilling fluid properties or are mixed in excess of required volumes) will be recovered from the mud pits, disposed of downhole, or returned to the shore base for onshore processing, recycling and/or disposal. The mud pits and associated equipment/infrastructure are cleaned when NADF is no longer required, with wastes returned to shore for disposal where practicable.

All chemicals that may potentially be discharged to the marine environment during the drilling program are selected, assessed and internally approved. The Woodside selection and assessment process is consistent with OSPAR (2010) "Recommendation 2010/4 on a Harmonised Pre-screening Scheme for Offshore Chemical." Chemicals considered for use are assessed in terms of their application, discharge and potential risk to the marine environment. This includes chemicals such as drilling, cementing, completion and rig chemicals (pipe dopes, thread-lock chemicals, etc.).

3.3.1.2 Composition of NADF

The drilling of wells associated with exploring for oil and gas reserves is complex, as the strata of geological formations below the earth's surface present a complex mix of materials with a wide range of properties that influence the drilling. Drilling fluids (muds) are recirculated to the

well from the MODU to serve two primary purposes – lubrication of the drilling process to reduce friction and displacement of the cuttings from the hole and return them to the surface. On return to the surface the muds are treated by physical separation techniques such as shakers and centrifuges to recover and recycle as much of the mud as possible and separate the cuttings for disposal. There are two broad categories of mud systems –WBDF and NADF.

Drilling-fluid constituents can be grouped into several categories, depending on their function in the drilling-fluid system. The major categories are weighting (density control) agents, viscosifiers, thinners, fluid loss reducers, lost circulation material, and commercial chemicals. There are also several minor groups of additives used for special problems such as lubricants, detergents, emulsifiers, defoamers, foaming agents, bactericides and corrosion inhibitors. One of the key parameters in the selection of materials for drilling fluids is toxicity and components are selected preferentially to minimise toxicity as much as possible.

Significant improvements in NADF have delivered increased drilling performance and a significant reduction in the toxicity and environmental impacts of such fluids. There are three groups of NADF as defined by the International Association of Oil and Gas Producers (IOGP) (IOGP 2016). The fluids are grouped based on the aromatic hydrocarbon concentration of the base oil. The lower the aromatic content the lower the toxicity. The groups can be defined as follows:

- Group I fluids have a high aromatic content from the base fluid of crude oil, diesel fuel and conventional mineral oils. These Group 1 fluids are persistent in the ocean and are no longer discharged to the marine environment (IOGP 2016).
- Group II fluids have a medium aromatic content and are produced by refining crude oil.
- Group III fluids a low to negligible aromatic content and includes paraffins, olefins and esters. The fluids are less toxic and are more biodegradable than diesel and mineral oil generated base fluids (IOGP 2016).

Woodside will use Group III fluids. These fluids are characterised by PAH contents less than 0.001% and total aromatic contents less than 0.5%. Group III includes synthetic hydrocarbons (olefins, paraffins, and esters). Base fluids such as paraffins and enhanced mineral oil based fluid (EMBF) are also included. In some cases, fluids are blended to attain particular drilling performance conditions.

A summary of commonly used chemicals that may be used in the AD-1 drilling program is presented in **Table 3.6**.

Table 3.6: Summary of Common Chemicals Used in Water and Non Aqueous Drilling Fluids

Function	Purpose	Examples () = commercial name
Weighting Agent	Materials which increase the density of the fluid	Barite
		Calcium carbonate (e.g. G-Seal)
		Calcium Chloride
Viscosifiers	Added to influence the viscosity of the drill fluid	Xanthin gum (e.g. Flowzan)
		Guar gum
		Glycol
		Carboxymethylcellulose
		Polyanionic cellulose (PAC) (e.g. Drispac)
		Starch (e.g. Dual Flo)

Function	Purpose	Examples () = commercial name
		Bentonite
		(e.g. Versagel HT)
		(e.g. VG Supreme)
Shale Stabilizer	Improve well bore condition when drilling through unstable formations	(e.g. K1a Stop/Max-Guard)
		(e.g. Glydril MC)
		(e.g. Soltex)
Thermal Stabilizer	Improve stability of drilling fluids when drilling under high temperature conditions	Driscal D
Buffer/ Scavenger	pH buffer Oxygen scavenger	Ammonium Bisulphate
		Magnesium Oxide
Emulsifiers	Added as a stabiliser for emulsions preventing the liquids from separating	(e.g. Novatec P and Novatec S)
		Lime
Biocide	Added to control microorganisms that can degrade drilling fluids	MIL-BIO NS
Lubricants	Added to reduce the coefficient of friction of water-based drilling fluids, which minimises torque and drag	(e.g. Starglide)
		Used on technical drilling – deviated wells
Corrosion inhibitors	Added to control corrosion	Potassium Chloride (KCl)
		(e.g. IDCAP D acrylic acid copolymer)
		(e.g. Safe-Cor)
Surfactants	Added to reduce interfacial tension between contacting surfaces e.g. oil/water	(e.g. Roemx RX-03X)
		(e.g. DeepClean)
		(e.g. KLEEN-UP)
Caustic Soda	Increase and maintain pH and alkalinity	Caustic Soda
Fluid Loss control agents	Prevention of fluid loss to formations	(e.g. Ecotrol RD)
		(e.g. KwikSeal F, M, C)
		(e.g. M-I X II)
		(e.g. Form-a-Squeeze)
Calcium Controller	Control of density/mud weight	Soda Ash
Hydrate formation prevention	Prevention of hydrates	Monoethylene Glycol - MEG
Dispersant	Dispersion of reactive clays Chemical treatment for cement contaminated fluids	(e.g. SAPP)

Function	Purpose	Examples () = commercial name
Filtration control	Prevention of fluid loss	(e.g. Novatec F)
Base fluid	Base fluid	(e.g. Saraline 185V)

3.3.2 Mud Pits

There are a number of mud pits (tanks) on the MODU that provide capacity to mix, maintain and store fluids required for drilling activities. The mud pits form part of the drilling fluid circulation system. The mud pits and associated equipment may be cleaned out at the end of the MODUs drilling program. The mud pit wash residue will be discharged offshore containing a concentration of less than 1% oil. Mud pit wash residue is not managed under MARPOL as it is a drilling specific requirement as opposed to vessel based requirement.

3.3.3 Drill Cuttings

Drill cuttings are the broken bits of rock and solid material that are removed from the hole when drilling a well. Cuttings generated from the well are expected to range from very fine to very coarse (<0.4 Inch) particle/sediment sizes. Cuttings from top-hole well sections are discharged at the seabed. The bottom-hole sections of the well will be drilled with a marine riser that enables cuttings and drilling fluid to be circulated back to the MODU, where the cuttings are separated from drilling fluids by the Solids Control Equipment (SCE) (**Figure 7.12**). The SCE uses shale shakers to remove coarse cuttings from the drilling fluid. After processing by the shale shakers, the recovered drilling fluid may be directed to centrifuges, which are used to remove fine solids (4.5 to 6 microns). Separated cuttings are subsequently discharged to sea below the sea surface and the drilling fluid is recirculated for re-use. NADF will be required for drilling of the bottom-hole section of well. Discharged NADF cuttings will be limited to 6.9% on average by weight oil on cuttings, after SCE.

For oil on cuttings, the guidelines adopted by the Project and assessed with the agreement of MOGE and MONREC make reference to the 2015 IFC offshore oil and gas guidelines. For each well, it is anticipated that both WBDF and NADF will be used and managed in accordance with the approved management and mitigation measures in Section 5.1.

3.4 Emissions, Discharges and Wastes

3.4.1 Introduction to Greenhouse Gases and Identification of Emission Sources

Greenhouse gases (GHG) are defined as those gases that absorb long-wave radiation within the atmosphere trapping reflected heat. GHG do not, in themselves, cause a direct local impact, but are important in the global context of climate change.

The GHG emissions associated with the proposed operations are methane (CH₄), nitrous oxide (N₂O), and carbon dioxide (CO₂). GHG emissions are all expressed as tonnes of carbon dioxide equivalents (t CO₂-e).

For this assessment, emissions from the Project were estimated and are presented in Sections 3.4.2 and 3.4.3. The emissions identified for the proposed operations are associated with fuel combustion from the drill ship and all marine vessels associated with the program, and flaring of the gas released from the well during testing (fugitive emissions). Emissions were estimated for the drilling of one offshore gas well. No electricity from the grid will be consumed for the proposed activities as they will occur offshore.

3.4.2 GHG Emissions from Fuel Oil Combustion in MODU

GHG emissions associated with fuel oil combustion will be generated during the operation of the MODU, helicopters, and vessels. Emissions of CO₂, CH₄ and N₂O were estimated using

the method described in Section 2.2 of the latest National Greenhouse Accounts Factors (NGA Factors), which is consistent with international good practise (NGA, 2017).

The fuel consumption of the MODU is assumed to be approximately 3,000 tonnes of MGO (low sulphur fuel) per well. The activity data and estimated total fuel oil consumption is shown in **Table 3.7**. The default emission factors used and the resulting GHG emissions are presented in **Table 3.7** and **Table 3.8**.

Table 3.7: Default GHG Emission Factors for Fuel Oil Combustion in Engines

Description	Emission Emission Factor ^a (kg CO _{2-e} /GJ)
CO ₂ default emission factor	73.6
CH ₄ default emission factor	0.07
N ₂ O default emission factor	0.6

a. Table 4 of the 2017 NGA Factors.

Table 3.8: Estimated GHG Emissions (tonnes CO_{2-e}) for Fuel Oil Combustion in Engines

Emissions (tonnes CO _{2-e} /yr)			
CO ₂ Emissions	CH ₄ Emissions	N ₂ O Emissions	Total Emissions
10, 537	937	1010	12,484

Emissions of Sulphur Oxide (SO₂), Nitrogen Oxide (NO_x), PM_{2.5} (atmospheric particulate matter (PM) with a diameter of less than 2.5 micrometres), PM₁₀, volatile organic compounds (VOCs) and carbon monoxide (CO) were quantified based on the National Pollutant Inventory (NPI) Emission Estimate Technique Manual for Combustion Engines V 3.0, and are typical of oil and gas operations of this scale, these are provided in **Table 3.9**.

Table 3.9: Other Estimated Emissions (kg)

Description	Emissions (kg)
SO ₂	0.017
NO _x	52.6
PM _{2.5}	1.6
PM ₁₀	1.6
VOC	1.32
CO	14

3.4.3 GHG Emissions from Gas Flaring During Testing

Flaring of gas from the well during testing will also generate GHG emissions. The actual volume and duration of well testing are both subject to the outcomes of drilling, and will be reduced to the extent possible. The associated intermittent flaring is conservatively estimated to be approximately 10 days per well and the total flared volume of gas is expected to be up to 450 MMscf (million standard cubic feet).

The activity data used to estimate the emissions are shown in **Table 3.10** and the emission factors used are shown in **Table 3.11**. The resulting GHG emissions are shown in **Table 3.12**.

Table 3.10: Activity Data Associated with Gas Flaring during Well Testing

Description	Value
Maximum quantity of gas flared ^a	450 MMscf 12,747,875 Sm ³
Volume of 1 kilomole of gas at STP (1 atm, 15°C) ^b	23.6444 Sm ³ /kmole
Molecular weight of methane ^c	16.043 kg/kmole
Methane density ^d	0.679 kg/Sm ³
Estimated maximum quantity of gas flared ^e	8,650 tonnes

a. MMscf – million standard cubic feet. Standard conditions: 15 degrees Celsius and 1 atm. Converted from MMscf to Sm³ (standard cubic metres) using a conversion factor of 35.3 scf/Sm³.

b. From Section 2.22, 2017 NGER Determination.

c. From Subdivision 2.22, 2017 NGER Determination.

d. Estimated by ERM based on volume of 1 kmole of gas at STP and the molecular weight of methane.

e. Estimated by ERM based on maximum quantity of gas flared in Sm³ and assuming the gas flared is 100% methane, as gas composition data was not available, which is a conservative assumption.

Table 3.11: Default GHG Emission Factors Associated with Gas Flaring

Description	Emission Factor ^a (kg CO _{2-e} /GJ)
CO ₂ default emission factor	2.8
CH ₄ default emission factor	0.8
N ₂ O default emission factor	0.03

a. Table 9 of the 2017 NGA Factors.

Table 3.12: Estimated GHG Emissions (tonnes CO_{2-e}) per Gas Well for Gas Flaring During Well Testing

Emissions (tonnes CO _{2-e} /yr)			
CO ₂ Emissions	CH ₄ Emissions	N ₂ O Emissions	Total Emissions
24,219	6,920	259	31,398

3.4.4 Summary of GHG Emissions Associated with the Proposed Activities and Benchmarking

Table 3.13 summarises the estimated GHG emissions anticipated to be associated with the proposed activities for drilling one offshore gas well. In accordance with the United Nations Framework Convention on Climate Change (UNFCCC), Myanmar is a Non Annex I country. The project's emissions are equivalent to 0.04% of the total greenhouse emission inventory for Myanmar for 2014 (excluding LULUCF).

Table 3.13: Summary of Estimated GHG Emissions (tonnes CO_{2-e})

Emission Source	Emissions (tonnes CO _{2-e} /yr)			
	CO ₂ Emissions	CH ₄ Emissions	N ₂ O Emissions	Total Emissions
Fuel oil combustion in MODU, helicopter, and marine vessels	10,537	937	1,010	12,484
Gas flaring during well testing	24,219	6,920	259	31,398
TOTAL	34,756	7,857	1,269	43,882

3.4.5 Waste Discharges, Disposal and Management

Activities that will generate waste water aboard the MODU include wash down of deck areas for safety purposes, runoff during rainfall and any tank cleaning during and/or at the end of the drilling program. Other wastewater generated by the MODU includes domestic and sanitary wastewater and bilge water that will be treated and monitored aboard before discharge into the surrounding environment. The discharges comply with MARPOL 73/78 requirements (as per vessel class).

The chemicals that may be present in the wastewater have been assessed as part of the Woodside Chemical Assessment process as having low toxicity to the marine environment.

A variety of non-hazardous solid wastes will be generated during drilling such as glass, paper, plastic and wood. There will be no planned discharge of solid wastes to the marine environment. All solid wastes will be collected and disposed of at an appropriate facility. Vessels will be operated in compliance with applicable MARPOL regulations (as per vessel class) and the NEQ Guidelines of Myanmar and will only discharge food and sewage >12 nautical miles (nm) from land.

Hazardous wastes such as lubricants, filters, chemical containers, used equipment or batteries will be stored and consolidated for onshore disposal.

Table 3.14 presents estimates of solid and aqueous wastes to be generated by the fleet during the drilling program.

Table 3.14: Typical Waste Quantities over approximately 40 days Drilling (Tonnes)

Waste Type	Estimated Volume (tonnes) per well	Estimated volume for 2020 (tonnes) for two wells *
Total hazardous (solid and aqueous)	50.7	101.4
Total non-hazardous (solid and aqueous)	45.3	90.6
Total waste	96	192

* The total for 2020 is based on drilling two wells. If up to eight wells are drilled in the period between 2020 and 2023 then the estimated volume would be approximately four times that stated here.

A waste management plan (WMP) is included in Section 7.3. The plan will outline the methods and practices to meet the requirements of the approved AD-1 EIA and this EMP and applicable regulations. The WMP also outlines suitable facilities that could be used for disposal of

hazardous or non-hazardous waste, such as the DOWA facility located in Thilawa, Yangon. This has been audited previously by Woodside.

3.5 Project Alternatives

Alternatives to the Project were considered in the early stages of Project design. This considered the different options available in order to avoid or reduce any adverse environmental and/or social impacts. A summary of the assessment of Project alternatives is provided in **Table 3.15**.

The well locations for AD-1 are in the process of being finalised and therefore no alternatives for such can be presented in this assessment. Well locations are driven by the geological targets selected in advance of drilling, as well as the permit specific commitments to drill wells. The assessment of potential impacts to be addressed will assume that drilling may occur anywhere within the boundaries of AD-1, which is approximately 40 miles from the nearest land at its closest point.

Table 3.15: Summary of Project Alternatives

Options	Alternatives	Selected Alternative	Rationale for selection of alternative
Project	<ul style="list-style-type: none"> Proceed with Project No Project 	Proceed with Project	<p>The 'No Project' alternative would result in no potential further planned drilling in AD-1 and, in turn, a delay to any potential future gas development in AD-1.</p> <p>The potential discovery and development of gas can contribute to stimulating the Myanmar economy. 'No Project' could result in fewer opportunities for gas supply to the domestic market and could lead to less employment opportunities and less economic growth. Given the titleholder obligations regarding AD-1, the 'No project' alternative is not considered commercially, contractually or technically practicable.</p>
Drilling Unit	<ul style="list-style-type: none"> Dynamically positioned MODU Anchored MODU 	Dynamically positioned MODU selected for initial well; rig selection for subsequent wells to be determined.	<p>The dynamically positioned MODU will be used which does not result in impacts to the seabed.</p> <p>An anchored MODU will require anchoring to the seabed. These options would result in seabed impacts.</p> <p>The EIA includes each of the above options.</p>
Drill cutting disposal	<ul style="list-style-type: none"> Cuttings re-injection Ship to shore Offshore disposal of treated cuttings Ship treated cuttings to disposal at another 	Offshore disposal of treated cuttings	<p>Reinjection of drill cuttings is not viable for this Project as this would require the drilling of another well and additional infrastructure.</p> <p>The transport of drill wastes to shore will result in additional transit emissions and the potential effects of onshore waste disposal, as well as additional costs for transport and for possible operational delays. In addition, there are currently limited existing processing facilities in Myanmar licenced to process the cuttings once they are onshore. The onshore disposal of drill cuttings also presents an onshore physical footprint.</p>

Options	Alternatives	Selected Alternative	Rationale for selection of alternative
	<p>deep water location</p>		<p>The anticipated volume of bottom-hole cuttings for each well is 226 m³. Given the dispersive open water characteristics of AD-1, with water depths ranging from approximately 3,037 ft. up to 6,758 ft., the discharge of treated cuttings near the sea surface are expected to result in a highly limited spatial and temporal zone of potential ecological impact and won't extend beyond 328 ft. from the well (Section 7.5.5). Disposal on location also decreases transit emissions and vessel traffic. The selected offshore cuttings disposal option presents the most technically and economically viable option and the option that represents the least adverse overall environmental effects.</p> <p>Given the deep water characteristics of AD-1, shipping the treated cuttings to dispose of at another deep water location would not result in an environmental benefit, and would only result in an increase in vessel traffic and emissions.</p>
<p>Drilling fluid</p>	<ul style="list-style-type: none"> • Wholly WBDF drilling fluid system • WBDF and NADF 	<p>WBDF and NADF</p>	<p>Due to the geological formation characteristics, a wholly WBDF drilling fluid system is not technically feasible at this stage and a NADF drilling fluid system will be required for the deeper sections of the well. The decision to use NADF for a particular well, or a section of a particular well, is based on a variety of factors relevant to well bore conditions such as well temperature, well profile (depth, inclination, and azimuth), well bore stability and well bore friction. The advantages of using NADF include factors such as improved hole stability, minimal fluid invasion and formation damage, and increased penetration rates (quicker drilling). NADFs are also less sensitive to temperature changes, which is particularly applicable to deep-water drilling (as water temperatures at depth can be significantly colder than sea surface temperatures). NADF also aids in corrosion control and suppresses bacteria growth.</p> <p>Significant improvements in the composition of NADF deliver increased drilling performance with a significant reduction in the toxicity and environmental impacts of such fluids. New generation Group III drilling fluids, such as paraffins, olefins and esters are less toxic and are more biodegradable than early generation diesel and mineral oil base fluids.</p> <p>The decision to use NADF is subject to environmental, technical, health and waste management considerations. All chemicals that may be discharged to the marine environment during the drilling program are</p>

Options	Alternatives	Selected Alternative	Rationale for selection of alternative
Well testing	<ul style="list-style-type: none"> • Recovery of hydrocarbons during drill stem testing (DST) instead of flaring. • Flaring 	Flaring	<p>required to be selected and approved as per the Woodside Chemical Assessment Process which is consistent with the UK Offshore Chemical Notification Scheme (OCNS). All Woodside approved chemicals are included on the Chemical Selection List which is regularly reviewed.</p> <hr/> <p>Recovery of hydrocarbons during drill stem testing (DST) and transport of the fluids to a nearby processing facility were considered not to be technically or financially viable alternatives due to the short term temporary nature of the drilling program.</p> <p>Flaring will result in minor localised, temporary and short term impacts to air emissions. The technical, and health and safety challenges involved in capturing small volumes of dry gas outweighs the short term environmental exposure caused by flaring from DST operations. During the DST, flaring will be minimized as much as possible. There are no other alternatives to be considered for this activity.</p>

4. Project's Environmental, Socio-economic and where relevant, Health Policies and Commitments, legal requirements and institutional arrangements

4.1 Corporate Policies

Woodside has adopted a comprehensive Health, Safety, Environment and Quality (HSEQ) Policy, Climate Change Policy and Sustainable Communities Policy, the objectives and principles of which are outlined in **Figure 4.1**, **Figure 4.2** and **Figure 4.3**.

4.2 Legal Requirements and Commitments

All Project mitigation commitments are listed in full in **Table 7.18**.

National laws relating to environmental and social issues within the oil and gas sector and hence their relevance to the Project are included in **Table 4.1**.

Health, Safety, Environment and Quality Policy

OBJECTIVES

Strong health, safety, environment and quality (HSEQ) performance is essential for the success and growth of our business. Our aim is to be recognised as an industry leader in HSEQ through managing our activities in a sustainable manner with respect to our workforce, our communities and the environment.

At Woodside we believe that process and personal safety related incidents, and occupational illnesses, are preventable. We are committed to managing our activities to minimise adverse health, safety or environmental impacts, incorporating a right first time approach to quality.

PRINCIPLES

Woodside will achieve this by:

- implementing a systematic approach to HSEQ risk management
- complying with relevant laws and regulations and applying responsible standards where laws do not exist
- setting, measuring and reviewing objectives and targets that will drive continuous improvement in HSEQ performance
- embedding HSEQ considerations in our business planning and decision making processes
- integrating HSEQ requirements when designing, purchasing, constructing and modifying equipment and facilities
- maintaining a culture in which everybody is aware of their HSEQ obligations and feels empowered to speak up and intervene on HSEQ issues
- undertaking and supporting research to improve our understanding of HSEQ and using science to support impact assessments and evidence based decision making
- taking a collaborative and pro-active approach with our stakeholders
- requiring contractors to comply with our HSEQ expectations in a mutually beneficial manner
- publicly reporting on HSEQ performance

APPLICATION

Responsibility for the application of this policy rests with all Woodside employees, contractors and joint venturers engaged in activities under Woodside operational control. Woodside managers are also responsible for promotion of this policy in non-operated joint ventures.

This policy will be reviewed regularly and updated as required.

December 2015

Figure 4.1: Woodside Health, Safety, Environment and Quality Policy

Climate Change Policy

OBJECTIVE

Woodside recognises the scientific consensus on climate change and the challenge of providing safe, clean, affordable and reliable energy whilst reducing emissions. Woodside is committed to being part of the solution.

We believe hydrocarbons will continue to be vital in meeting the world's energy needs and that the benefits of natural gas, in particular, will see it play an increasingly important role globally both in the energy mix and in reducing greenhouse gas emissions.

PRINCIPLES

Woodside will achieve the objective by:

- Promoting natural gas in the global energy mix as a means to reduce greenhouse gas emissions, support renewable energy and improve local air quality
- Promoting and pursuing a culture of energy efficiency and improved resource use in designs and operations
- Supporting our host countries in their endeavours to set emission reduction targets in accordance with internationally accepted science and to achieve these targets using efficient and stable policies
- Supporting lowest cost abatement through global carbon pricing
- Evaluating the resilience of our portfolio and investment decisions to potential changes in global climate policy
- Setting and publishing targets to encourage innovation and drive reductions in our carbon footprint and energy use
- Pursuing greenhouse gas emission reduction technologies with our peers and scientific institutions

APPLICABILITY

Responsibility for the application of this policy rests with all Woodside employees, contractors and joint venturers engaged in activities under Woodside operational control. Woodside managers are also responsible for promotion of this policy in non-operated joint ventures.

This policy will be reviewed regularly and updated as required.

Approved by the Woodside Petroleum Ltd. Board on 21 February 2017

Figure 4.2: Woodside Climate Change Policy

Sustainable Communities Policy

OBJECTIVE

Woodside builds long-lasting relationships with the communities in which we are active. We act with integrity as we generate positive social and economic outcomes and demonstrate respect for the culture and values of our host communities. Managing our activities in a sustainable way is fundamental to the wellbeing of our workforce, our communities and our environment.

PRINCIPLES

We will achieve this by:

- Proactively engaging with our stakeholders
- Understanding and managing the social impacts and opportunities associated with our activities
- Contributing to host communities in ways that are of mutual benefit to Woodside and the community
- Communicating our progress and performance with stakeholders and host communities
- Working with communities to contribute to their long-term capacity and capability.

APPLICATION

Responsibility for the application of this policy rests with all Woodside employees, contractors and joint venturers engaged in activities under Woodside operational control. Woodside managers are also responsible for promotion of this policy in non-operated joint ventures.

December 2016

Figure 4.3: Woodside Sustainable Communities Policy

Table 4.1: National Legislation Relevant to the Project – Legal Commitment Table

Laws and Regulations	Description
<u>EIA Process</u>	
Constitution of the Republic of the Union of Myanmar, 2008	
The Constitution of the Union of Myanmar is the supreme law of the country and has provisions regarding the protection of the environment in Myanmar. Articles in the Constitution relevant to environmental protection are Articles 37, 42 and 390. They are quoted below:	
Article 37	(a) The Union is the ultimate owner of all lands and all natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union; (b) The Union shall enact necessary law to supervise extraction and utilization of State owned natural resources by economics forces;
Article 42	The Union shall protect and conserve natural environment.
Article 390	Every citizen has the duty to assist the Union in carrying out the following matters: (a) preservation and safeguarding of cultural heritage; (b) environmental conservation; (c) striving for development of human resources; (d) protection and preservation of public property. These three Articles in the Constitution provide a basis for legalizing and institutionalizing environmental health impact assessment and social impact assessment.
The Environmental Conservation Law, 2012	
The Pyidaungsu Hluttaw enacted this law by Law No. 9 of 2012 on the date of 30 March, 2012. The legal mechanism for ESHIA has been put in this law. This law was enacted with the objectives of: (a) To enable to implement the Myanmar National Environmental Policy; (b) To enable to lay down the basic principles and give guidance for systematic integration of the matters of environmental conservation in the sustainable development process; (c) To enable to emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generations; (d) To reclaim ecosystems as may be possible which are starting to degenerate and disappear; (e) To enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially; (f) To enable to implement for promoting public awareness and cooperation in educational for dissemination of environmental perception; (g) To enable to promote international, regional and bilateral cooperation in the matters of environmental conservation; (h) To enable to cooperate with Government Departments, Government Organizations, International Organizations, non-government organizations and individuals in matters of environmental conservation.	

Laws and Regulations	Description
The Environmental Conservation Rules, June 2014	
The Ministry of Natural Resources and Environmental Conservation, in exercise of power conferred under sub-section (a) of section 42 of the Environmental Conservation Law, issues this rules by No. 50 of 2014 on the date of 5 June, 2014.	
Rule 51	The Ministry shall assign duty to the Department for enabling to adopt and carry out the environmental impact assessment system.
Rule 52	The Ministry shall determine the categories of plan, business or activity which shall carry out environmental impact assessment
Rule 53	The Ministry shall to scrutinize whether or not it is necessary to conduct environmental impact assessment, determine the proposed plans, businesses or activities which do not include in stipulation under rule 52
Rule 56	The person who carries out any project, business or activity shall arrange and carry out for conducting the environmental impact assessment for any project, business or activity by a qualified third person or organization accepted by the Ministry.
Rule 58	The Ministry shall form the Environmental Impact Assessment Report Review Body with the experts from the relevant Government departments, Government organizations.
Rule 61	The Ministry may approve and reply on the EIA report or Initial Environmental Examination (EE) or EMP with the guidance of the Committee
Rule 69	<ul style="list-style-type: none"> i. Any person shall not emit, cause to emit, dispose, cause to dispose, pile and cause to pile, by any means, the pollutants and the hazardous waste or hazardous material stipulated by notification under the Law and any of these rules at any place which may affect the public directly or indirectly. ii. Any person shall not carry out to damage the ecosystem and the natural environment which is changing due to such system, except for carrying out with the permission of the Ministry for the interest of the people.
Myanmar EIA Procedure, 2015	
<p>The EIA Procedure sets out the procedures for completing an Initial Environmental Examination (IEE), EIA and/or EMP in Myanmar. This includes information on project categorisation, responsibilities of project developers and ministries, EIA review, monitoring and auditing, among other issues.</p> <p>103. The Project Proponent shall fully implement the EMP, all Project commitments, and conditions, and is liable to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project.</p> <p>104. The Project Proponent shall be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.</p> <p>105. The Project Proponent shall timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.</p>	

Laws and Regulations	Description
	<p>106. The Project Proponent shall, during all phases of the Project (pre-construction, construction, operation, decommissioning, closure and post-closure), engage in continuous, proactive and comprehensive self-monitoring of the Project and activities related thereto, all Adverse Impacts, and compliance with applicable laws, the Rules, this Procedure, standards, the ECC, and the EMP.</p> <p>107. The Project Proponent shall notify and identify in writing to the Ministry any breaches of its obligations or other performance failures or violations of the ECC and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of the Ministry is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of the Project Proponent becoming aware of such incident.</p> <p>108. The Project Proponent shall submit monitoring reports to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP, or periodically as prescribed by the Ministry.</p> <p>109. The monitoring reports shall include:</p> <ul style="list-style-type: none"> a) documentation of compliance with all conditions; b) progress made to date on implementation of the EMP against the submitted implementation schedule; c) difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties; d) number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation; e) accidents or incidents relating to the occupational and community health and safety, and the environment; and f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required. <p>110. Within ten (10) days of completing a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, the Project Proponent shall make such report (except as may relate to National Security concerns) publicly available on the Project's website, at public meeting places (e.g. libraries, community halls) and at the Project offices. Any organization or person may request a digital copy of a monitoring report and the Project shall, within ten (10) days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor.</p> <p>113. For purposes of monitoring and inspection, the Project Proponent:</p> <ul style="list-style-type: none"> a) shall grant to the Ministry and/or its representatives, at any time during normal working hours, access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed; and b) from time to time as and when the Ministry may reasonably require, shall grant the Ministry access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed. <p>115. In the event of an emergency, or where, in the opinion of the Ministry, there is or may exist a violation or risk of violation of the compliance by the Project with all applicable environmental and social requirements, the Project shall grant full and immediate access to the Ministry at any time as may be required by the Ministry.</p> <p>The Project Proponent shall further ensure that the Ministry's rights of access hereunder shall extend to access by the Ministry to the Project's contractors and subcontractors.</p>

Laws and Regulations	Description
National Environmental Quality (Emissions) Guidelines (EQEG), 2015	
	The EQEG sets out emission standards for air, noise and effluent discharges for oil and gas operations. The project shall consider emissions standards in its environment impact assessment and environmental management plan.
Myanmar Investment Law, 2016 and Rules, 2017	
	<p>3. The objectives of this Law are as follows:</p> <ul style="list-style-type: none"> (a) To develop responsible investment businesses which do not cause harm to the natural environment and the society for the benefit of the Union and its citizens; (b) To protect the investors and their investments in accordance with the law; (c) To create job opportunities for the people; (d) To develop human resources; (e) To develop high functioning production, service, and trading sectors. (f) To develop technology and the agriculture, livestock and industrial sectors; (g) To develop various professional fields including infrastructure across the Union; (h) To enable the citizens to be able to work alongside with the international community; and (i) To develop businesses and investments that meet international standards. <p>51. The investor:</p> <ul style="list-style-type: none"> (a) may appoint of any citizen who is a qualified person as senior manager, technical and operational expert, and advisor in his investment within the Union in accordance with the Laws; (b) shall appoint them to replace, after providing for capacity building programs in order to be able to appoint citizens to different level positions of management, technical and operational experts, and advisors; (c) shall appoint only citizens for works which does not require skill; (d) shall appoint skilled citizen and foreign workers, technicians, and staff by signing an employment contract between employer and employee in accordance with the labour laws and rules; (e) shall ensure to obtain the entitlements and rights in the labour laws and rules, including minimum wages and salary, leave, holiday, overtime fee, damages, compensation of the workman, social welfare, and other insurance relating to workers in stipulating the rights and duties of employers and employees and occupational terms and conditions in the employment contract; (f) shall settle disputes arising among employers, among workers, between employers and workers, and technicians or staff in the investment in accordance with the applicable laws. <p>73. The investor shall insure the types of insurance stipulated in the provision of the rules at any insurance enterprise which is entitled to carry out insurance businesses within the Union.</p>

Laws and Regulations	Description
<u>Environmental Protection</u>	
The Protection of Wildlife and Conservation of Natural Areas Law, 2018	
The objectives of this legislation are to implement policy regarding wildlife protection and natural area conservation. This includes the conservation of wildlife, ecosystems and migratory birds, along with endangered fauna and their habitats. Protection may involve contributions towards research or the establishment of zoological gardens and botanical gardens. It also takes account of International Conventions acceded by the State.	
Prevention from Danger of Hazardous Chemical and Associated Material Law (Pyidaungsu Hluttaw Law No 28/2013)	
<p>The objectives of this law are:</p> <ol style="list-style-type: none"> to prevent damage to environmental resources and living organisms due to chemicals and associated materials to provide for the systematic control of businesses using chemicals and associated materials in accordance with government approvals to carry out data gathering and to undertake education and research regarding the safe and systematic utilization of chemicals and associated materials to achieve continuous improvements in worksite safety, health and environmental conservation <p>Chapter 7 – “Any person, who wants to do the business of chemical and associated materials, shall apply to the central body for the acquisition of the license, attached with the management plan for the environmental conservation in accord with the stipulations”.</p> <p>Chapter 8 – “20. License holder shall apply to the central supervising body in accord with the stipulation for the relevant chemicals and associated materials using for his chemicals and associated materials business” for a certificate.</p> <p>“22. The registered certificate holder shall abide by the regulations contained in the registered certificate and shall follow the order and directives issued from time to time by the central supervising body”.</p>	
Myanmar Climate Change Strategy and Action Plan (MCCSAP) 2016–2030	
This Strategy aims to direct investment in a climate-resilient and low-carbon development pathway to secure inclusive and sustainable development in Myanmar by 2030. Specific objectives include increasing the adaptive capacity of vulnerable communities and sectors so that they are resilient to the adverse impacts of climate change; and to create and maximise use of opportunities to pursue a low-carbon development pathway by ensuring development benefits to communities and all economic sectors. The Strategy has identified six key sector entry points, including primary, secondary and service sectors that contribute significantly to current and future economic and social development. The Strategy presents a roadmap to guide Myanmar’s strategic responses to address climate-related risks and opportunities over 15 years.	
National Sustainable Development Strategy, 2009	
<p>Sustainable management of natural resources in Myanmar, from environmental perspective comprises 11 areas, in which mining sector development concerned are as follow:</p> <ul style="list-style-type: none"> • Sustainable forest resources management; • Biodiversity conservation; • Sustainable fresh water resources management; • Environmental quality management and enhancement; 	

Laws and Regulations	Description
<ul style="list-style-type: none"> • Sustainable management of land resources; • Sustainable management for mineral resources utilisation; • Sustainable energy production and consumption; and Sustainable industrial, transport and communication development. 	
<u>Cultural Heritage</u>	
The Protection and Preservation of Cultural Heritage Regions Law, 1998	
<p>The State Peace and Development Council Law enacted this law by Law No. 9/ 98 on the date of 10 September, 1998. The Ministry of Culture may, with the approval of the Government issue notification for the protection of cultural heritage areas are categorized as following kinds of zones / region:</p> <p>a) Ancient monumental zone;</p> <p>b) Ancient site zone.</p> <p>Objectives:</p> <p>a) to implement the protection and preservation policy with respect to perpetuation of cultural heritage that has existed for many years;</p> <p>b) to protect and preserve the cultural heritage regions and the cultural heritage therein so as not to deteriorate due to natural disaster or man-made destruction;</p> <p>c) to uplift hereditary pride and to cause dynamism of patriotic spirit of citizens by protecting and preserving the cultural heritage regions;</p> <p>d) to promote public awareness and will as to the high value of the protection and preservation of the cultural heritage regions;</p> <p>e) to protect the cultural heritage regions from destruction; to carry out protection and preservation of the cultural heritage regions in conformity with the International Convention approved by the State.</p>	
The Conservation of Antique Objects Law, 2016	
<p>The objectives of this law are as follows:</p> <p>a) to implement the policy of protection and preservation for the perpetuation of antique objects;</p> <p>b) to protect and preserve antique objects so as not to deteriorate due to natural disaster or man-made destruction;</p> <p>c) to uplift hereditary pride and to cause dynamism of patriotic spirit by protection and preservation of antique objects;</p> <p>d) to have public awareness of the high value of antique objects;</p> <p>e) to carry out in respect of protection and preservation of antique objects in conformity with the International Convention and Regional Agreement ratified by the State.</p> <p>f) 12. The person who finds any objects which has no owner or custodian, he shall promptly inform the relevant Ward or Village-Tract Administrator if he knows or it seems reasonable to assume that the said object is an antique object.</p>	

Laws and Regulations	Description
The Protection and Preservation of Ancient Monuments Law, 2015	
<p>3. The objectives of this law are as follows:</p> <ul style="list-style-type: none"> a) To implement the protection and preservation policy for the perpetuation of ancient monuments which have existed for many years; b) To protect and preserve cultural heritage regions and ancient monuments so that they are not destroyed by natural disaster or man; c) To uplift hereditary pride and to cause dynamism of patriotic spirit of citizens by protecting and preserving cultural heritage regions; d) To promote public awareness and will as to the high value of the protection and preservation of cultural heritage regions; e) To explore and preserve new ancient monuments; f) To protect cultural heritage regions from destruction; g) To implement protection and preservation of ancient monuments in conformity with international conventions and regional agreements.15. <p>12. If a person who finds an ancient monument of over one hundred years old and above or under the ground or above or under the water which has no owner or custodian knows or it seems reasonable to assume that the said monument is an ancient monument, he shall promptly inform the relevant Ward or Village-Tract Administrative Office.</p> <p>15. A person desirous of any of the followings within the specified area of an ancient monument shall apply to get prior permission to the Department:</p> <p>(c) digging to search petroleum, natural gas, gem or mineral, pipping petroleum and natural gas, constructing factories, connecting national grid, constructing communication tower, constructing or extending infrastructures such as road, bridge, airfield, irrigation and embankment.</p> <p>20. No one shall carry out any of the following acts which is assumed to cause damage to an ancient monument within the specified area of an ancient monument or of a listed ancient monument without prior permission;</p> <ul style="list-style-type: none"> (a) taking photo, video, film or copying and modelling an ancient monument stipulated as a listed ancient monument for commercial purposes; (b) using machines which causes vibration within the specified place of an ancient monument and running various types of vehicles; (c) cultivating, gardening, breeding by blocking nearby ancient monument or doing any other act which can affect an ancient monument; (d) emission of gas such as hot-air balloon which can affect ancient monument; (e) landing and taking off and, flying aeroplane and helicopter which can directly or indirectly affect an ancient monument; (f) discarding chemical substance and rubbish which can affect an ancient monument and the environment. 	
<u>Water Resources</u>	
Myanmar Inland Water Transportation Law, 2015	
<p>This law provides that the Department of Marine Administration (DMA) will regulate on preventing environmental pollution and that water pollution should be reported to the Department within 24 hours. Although the law is entitled “in land navigation” the bounds of these waters are not defined and therefore it has been deemed a reasonable expectation that Woodside comply with this law for all activities. There are no thresholds described for reporting just that water pollution must be reported as below. The following must be reported to the DMA or the nearest police station within 24 hours of occurring. Woodside has agreed to complete this reporting through the on-board MOGE representative:</p>	

Laws and Regulations	Description
<ul style="list-style-type: none"> • vessel capsizing, vessel sinking, abandonment of vessel or wreck of vessel; • serious injury or death on a vessel due to an accident; • damage due to vessel collision; and/or • water pollution. 	<p>Articles relevant to the Project include 28 (B), 34, 35, 36 (D), 21</p>
<p>Myanmar Territorial Sea and Maritime Zones Law, 2017</p>	
<p>This legislation makes provisions for the Territorial Sea, Contiguous Zone, Continental Shelf and Exclusive Economic Zone of Myanmar. It also provides for the penalties should this legislation be contravened.</p> <p>35. Whoever commits any of the following acts shall, on conviction be punished with imprisonment for a term which may extend to 3 years or with fine which may extend to kyats 10,000 or with both:</p> <p>(d) causing water and air pollution, causing damage to a water-course or putting poison in the water in a natural area;</p> <p>(e) possessing or disposing of pollutants or mineral pollutants in a natural area.</p> <p>36. Whoever commits any of the following acts shall, on conviction be punished with imprisonment for a term which may extend to 5 years or with fine which may extend to kyats 30,000 or with both:</p> <p>(b) extracting, collecting or destroying in any manner any kind of protected wild plants within the prescribed area without permission;</p> <p>(c) destroying ecosystem or any natural state in the natural area.</p>	
<p>Myanmar Port Authority Law, 2015</p>	
<p>The Port Authority Law replaces Ports Act which sets out rules for the safety of shipping and the conservation of ports.</p> <p>11. Sub-section (2) of section 21 of the Ports Act as follows:-</p> <p>“Any person who by himself or another so casts or throws any ballast or rubbish or any such other thing or so discharges any oil or water mixed with oil, or the master of any vessel from which the same is so cast, thrown or discharged, shall be punishable with fine not exceeding fifty thousand kyats, and shall pay any reasonable expenses which may be incurred in removing the same”.</p> <p>23 The Myanmar Port Authority, relating to the environmental conservation;</p> <p>(b) shall carry out the distribution of information and technology, taking precautionary measures not to cause oil spills from vessels which carry petroleum, oil and chemical navigating within a port limit, or from oil test wells, oil wells and oil pipelines, or from collision and grounding of vessels;</p> <p>(c) if oil and chemical spill occurs, mentioned in sub-section (b) shall arrange in coordination with the experts, not for causing water pollution, clearing and sanitation. In doing so, the cost may be claimed from the responsible person in accord with the stipulations.</p> <p>80 Any person, so as to cause water pollution or destruction to the environmental resources:</p> <p>(a) shall not cause oil spill or discharge of sludge from the petroleum tanker, oil tanker and chemical tanker navigated within a port limit, or from oil test wells, oil wells and oil pipelines or from collision or grounding of vessels;</p> <p>(b) shall not discharge, dispose or cause to fall dangerous materials, toxic materials, garbage's, sludge and waste from the vessels, above and underwater natural resource exploration rigs and structures within a port limit.</p>	

Laws and Regulations	Description
Conservation of Water Resources and Rivers Law, 2006	
<p>Section 6 outlines prohibitions for the following activities:</p> <ul style="list-style-type: none"> • “No person shall anchor the vessels where vessels are prohibited from anchoring in the rivers and creeks.” • No person shall dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk. • No one shall dispose of any substance into the river creek that may cause damage to waterway or change of watercourse from the bank or vessel.” <p>The aims of this Law are as follows:</p> <ul style="list-style-type: none"> • to conserve and protect the water resources and river systems for beneficial utilization by the public; • to smooth and enhance safety of waterways navigation along rivers and creeks; • to contribute to the development of State economy through improving water resources and river systems; • to protect environmental impact. <p>The empowerment of this Law is provided to the Ministry of Transport for controlling navigation of vessels in the rivers and creeks as well as communicating with local and foreign government and organizations for conservation of water resources, rivers and creeks. Also, to carry out conservation works for water resources, rivers and creeks, in accordance with the relevant international conventions, regional agreements and bilateral agreements for environmental conservation.</p> <p>8. No person shall: (a) carry out any act or channel shifting with the aim to ruin the water resources and rivers and creeks.</p> <p>11. No person shall: (a) dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk.</p> <p>16. No one shall: (a) ply a vessel which is not in conformity with stipulations regarding the size, horse power and number of flat in the river-creek. (b) ply a vessel which is not in conformity with the prescribed draught in the river-creek.</p> <p>18. No one shall drive loading goods above the loaded draught or ply outside the demarcation channel.</p> <p>19. No one shall dispose of any substance into the river-creek that may cause damage to waterway or change of watercourse from the bank or vessel which is plying, vessel which has berthed, anchored, stranded or sunk.</p>	
The Myanmar Marine Fisheries Law, 1990, amended 1993	
<p>The relevance of this law to the offshore component of the Project is that it places restriction on pollution:</p> <p>39. No person shall dispose of living aquatic creatures or any material into the Myanmar Marine Fisheries Waters to cause pollution of water or to harass fishes and other marine organisms.</p> <p>40. No person shall search for and collect any marine products without a licence.</p>	

Laws and Regulations	Description
<u>Socio-Economic</u>	
Public Health Law, 1972	
<p>Purpose: to ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. It is concerned with the protection of peoples' health by controlling the quality and cleanliness of food, drugs, environmental sanitation, epidemic diseases and regulation of private clinics. The project owner will cooperate with the authorized person or organization in line with the section 3 and 5 of said law.</p> <p>Section 3: The project owner will abide by any instruction or stipulation for public health.</p> <p>Section 5: The project owner will accept any inspection, anytime, anywhere if it is needed.</p>	
Myanmar Fire Force Law, 2015	
<p>The objectives of Myanmar Fire Force Law are:</p> <ol style="list-style-type: none"> To take precautionary and preventive measure and loss of state own property, private property, cultural heritage and the lives and property of public due to fire and other natural disasters To organize fire brigade systemically and to train the fire brigade To prevent from fire and to conduct release work when fire disaster, natural disaster, epidemic disease or any kind of certain danger occurs To educate, organize an inside extensively so as to achieve public corporation To participate if in need for national security, peace for the citizens and law and order <p>The relevant Government Department or organization shall, for the purpose of precaution and prevention, obtain the approval of the Fire force Department before granting permission for the following cases:</p> <ol style="list-style-type: none"> Constructing three-storied and above buildings market and condominium buildings, Operating hotel, motel, guest house enterprise Constructing factory, workshop, storage facilities and warehouse Operating business expose to fire hazard by using in inflammable materials or explosive materials Producing and selling fire-extinguishing apparatuses <p>Doing transport business, public utility vehicles train, airplane, helicopter, vessel, ship, etc.</p> <p>The relevant government department or organization shall obtain the opinion of the Fire Services Department for the purpose of fire precaution and prevention, when laying down plans for construction for town, village and downtown or village development plans.</p>	
The Protection of rights of National Race Law, 2015	
<p>Consists of four bills, as submitted to the legislature; Buddhist Women's Special Marriage Bill, Religious Conversion Bill, Monogamy Bill and Population Control Bill.</p>	

Laws and Regulations	Description
<u>Labour</u>	
The Settlement of Labour Dispute Law, 2012	
The Pyidaungsu Hluttaw hereby had enacted this Law for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly.	
Prevention and Control of Communicable Disease Law, 1995	
Chapter 5 of this law states that all persons are responsible for reporting an outbreak of a communicable disease to the nearest Health Officer.	
The Control of Smoking and Consumption of Tobacco Product Law, 2006	
<p>3. The objectives of this Law are as follows;</p> <p>(a) to convince the public that health can be adversely affected due to smoking and consumption of tobacco product and to cause refraining from the use of the same;</p> <p>(b) to protect from the danger which affects public health adversely by creating tobacco smoke-free environment;</p> <p>(c) to obtain a healthy living style of the public including child and youth by preventing the habit of smoking and consumption of tobacco product;</p> <p>(d) to uplift the health, economy and social standard of the public through control of smoking and consumption of tobacco product;</p> <p>(e) to implement measures in conformity with the international convention ratified by Myanmar to control smoking and consumption of tobacco product;</p> <p>9. The person-in-charge shall:</p> <p>(a) keep the caption and mark referring that it is a non-smoking area at the place mentioned in section 6 in accordance with the stipulations.</p> <p>(b) arrange the specific place where smoking is allowed as mentioned in section 7, and keep the caption and mark also referring that it is a specific place where smoking is allowed, in accordance with the stipulations.</p> <p>(c) supervise and carry out measures so that no one shall smoke at the non-smoking area.</p> <p>(d) accept the inspection when the supervisory body comes to the place for which he is responsible.</p>	
Employment and Skill Development Law, 2013	
<p>5. (a) (1) If the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days. But it shall not be related with government department and organization for a permanent employment.</p> <p>(2) If pre training period and probation period are stipulated before the appointment the said trainee shall not be related with the stipulation of sub-section (1).</p> <p>(b) The following particulars shall be included in the employment agreement:</p>	

Laws and Regulations	Description
	<p>(1) the type of employment;</p> <p>(2) the probation period;</p> <p>(3) wage, salary;</p> <p>(4) location of the employment;</p> <p>(5) the term of the agreement;</p> <p>(6) working hour;</p> <p>(7) day off, holiday and leave;</p> <p>(8) overtime;</p> <p>(9) meal arrangement during the work hour;</p> <p>(10) accommodation;</p> <p>(11) medical treatment;</p> <p>(12) ferry arrangement to worksite and travelling;</p> <p>(13) regulations to be followed by the employees;</p> <p>(14) if the employee is sent to attend the training, the limited time agreed by the employee to continue to work after attending the training;</p> <p>(15) resigning and termination of service;</p> <p>(16) termination of agreement;</p> <p>(17) the obligations in accord with the stipulation of the agreement;</p> <p>(18) the cancellation of employment agreement mutually made between employer and employee;</p> <p>(19) other matters;</p> <p>(20) specifying the regulation of the agreement, amending and supplementing;</p> <p>(21) miscellaneous.</p> <p>(c) The worksite regulations contained in the employment agreement shall be in compliance with any existing law and the benefits of the employee shall not be less than those of the any existing law.</p> <p>(d) According to the employment agreement, the Ministry shall issue the notification for paying the stipulated compensation to the employee by the employer, if the work is completed earlier than the stipulated period or the whole work or any part of it have to be terminated due to unexpected condition or the work has to be terminated due to various conditions.</p> <p>(e) The employment agreement made under sub-section (a) shall be related with daily wage workers, piece rate workers who are appointed temporarily in the government department and organization.</p> <p>(f) The worksite regulations and benefits contained in the employment agreement mutually made between the employer and employee or among the employees shall be amended as necessary, in accord with the existing law.</p>

Laws and Regulations	Description
	<p>(g) The employer shall send a copy of the employment agreement made between the employer and employee, to the relevant employment and labour exchange office within the stipulated period and shall get the approval of it.</p> <p>(h) The employment agreement made before the enforcement of this law shall be confirmed up to the end of the term of the original agreement.</p> <p>14. The employer shall carry out the training program in accord with the work requirement in line with the policy of the skill development team to develop the skill relating to the employment for the workers who are proposed to appoint and working at present.</p> <p>15. The Employer:</p> <p>(a) shall carry out the training for each work or compounding the work individually or group-wise by opening on-job training, training systematically at worksite, sending outside training and training by using information technology system, for arranging the training program to enhance the employment skill of the workers;</p> <p>(b) appointing the youths of 16 years as apprentice, shall arrange the training for technology relating to the employment systematically in accord with the regulations prescribed by the skill development team.</p> <p>30. (a) The employer of the industry and service business shall put in to the fund monthly as put in fees without fail for the total wages of the subordinates and the supervisors' salary for not less than 0.5%;</p> <p>(b) Put in money paid under sub-section (a) shall not be deducted from the wage and salary of the employees.</p>
	<p>The Welfare of Labours of Oilfield Act, 1951 (After notification)</p>
	<p>The act provide for the prevention of waste of oil or gas and also the prevention of environmental pollution by petroleum operations. For the labours' Working hours: Higher physical danger risk establishment (e.g. an oil rig): 8 hours/day or 40 hours/week, Medium physical danger risk establishment (e.g. factory, oilfield, open mine): 8 hours/day or 44 hours/week. If factory work is part of a continuous process (i.e. technical reasons): admissible 48 hours/week, 10 hours a day Max. 6 days/week (i.e. Sunday = weekly holiday). For Overtime: 2x normal pay rate. Work on weekly holiday = alternative day off within a period of 2 months. In Practice: No specific rules for offshore workers except in old law—oilfields act. Workers in industrial zones work around 11 hours a day, 6 days a week. Many in oilfields the same, but more dangerous jobs, 40/ week.</p>

Laws and Regulations	Description
The Workmen Compensation Act, 1923, amended 2005	<p>In the Workmen's compensation Act, 1923, the expression " Kyats 2,160 and Kyats 7,200" contained in clause A (i) of sub-section (1) of section 4, the expression "two hundred Kyats" contained in clause A (ii) of sub-section (1) of section 4, the expression "Kyats 3,024and Kyats 10,080" contained in clause B (i) of sub-section (1) of section 4, the expression "twelve hundred Kyats" contained in clause B (ii) of sub-section (1) of section 4, the expression.</p> <ul style="list-style-type: none"> • "one hundred Kyats" contained in the proviso of sub-section (1) of section 8 shall be substituted respectively by the expression "the amount of compensation prescribed by notification by the Ministry of Labour, with the approval of the Government." <p>The expression "subject to a maximum of thirty Kyats" contained in clause D (ii) of sub-section (1) of section 4 of the Workmen's Compensation Act, 1923 shall be deleted.</p> <p>The expression "ten Kyats" contained in sub-section (2) of section 8, the expression "twenty five Kyats" contained in sub-section (4) of section 8, the expression "three hundred Kyats" contained in the first proviso of sub-section (1) of section 30 of the Workmen's Compensation Act, 1923 shall be substituted respectively by the expression "the amount of money prescribed by notification by the Ministry of Labour, with the approval of the Government.</p> <p>The expression "shall be punishable with fine which may extend to one hundred Kyats" contained in sub-section (1) of section 18 A of the Workmen's Compensation Act, 1923 shall be substituted by the expression "shall be punishable with fine which may extend to Kyats 10,000."</p>
Myanmar Labour Organization Law, 2012	<p>This Law was enacted, to protect the rights of the workers, to have good relations among the workers or between the employer and the worker, and to enable to form and carry out the labour organizations systematically and independently.</p>
Minimum Wages Law, 2013	<p>This Law was enacted to meet with the essential needs of the workers, and their families, who are working at the commercial, production and service, agricultural and livestock breeding businesses and with the purpose of increasing the capacity of the workers and for the development of competitiveness.</p>

Laws and Regulations	Description
Payment of Wages Law, 2016	<p>Salaries are to be paid at the end of the month or, depending on the size of the employing enterprise, between 5-10 days before the end of the month. The employer is permitted and required to withhold income tax and social security payments. Other deductions, e.g. for absence, may only be withheld in accordance with the law.</p> <p>Section 3 The employer (a) will pay for salary either Myanmar Kyats or Foreign Cash permitted by National Bank of Myanmar. When delivery the salary (b) If the employer needs to pay the other opportunities or advantages, he can pay cash together with other materials according employee's attitude.</p> <p>Section 4 When the contract finish, employer need to pay the salary (not more than one month) to employees. For the permanent worker, need to pay per monthly. If more than 100 employees, need to pay within the 5 days from the end of month. If fire the employees, need to pay salary within two days after fire. When employee dies due to the accident, need to pay money as an insurance to employee's family within two days.</p> <p>Section 9 When cut the salary due to the employees' absence, total cut salary not more than 50 % of his salary.</p> <p>Section 10 Employer need to approval form the department as a penalty and cannot more than actual ravage rate when cut salary. No cut salary from the employees under 16 age.</p>
Social Security Law, 2012	<p>The Establishments Applied</p> <p><i>Section 11.</i> (a) The following establishments shall be applied with the provisions for compulsory registration for social security system and benefits contained in this Law if they employ minimum number of workers and above determined by the Ministry of Labour in co-ordination with the Social Security Board:</p> <ul style="list-style-type: none"> (i) production industries doing business whether or not they utilize mechanical power or a certain kind of power, works of production, repairing or services, or engineering works, mills, warehouses, establishments; (ii) Government departments, Government organizations and regional administrative organizations doing business; (iii) development organizations; (iv) financial organizations, (v) companies, associations, organizations and their subordinate departments and branch offices doing business; (vi) shops, commercial establishments, public entertaining establishments; (vii) Government departments and Government organizations doing business or transport businesses owned by regional administrative body, and transport businesses carried out with the permission of such department, body or in joint venture with such department or body; (viii) construction works carried out for a period of one year and above under employment agreement; (ix) works carried out with foreign investment or citizen investment or joint ventured businesses; (x) works relating to mining and gemstone contained in any existing law; (xi) works relating to petroleum and natural gas contained in any existing law; (xii) ports and out-ports contained in any existing law; (xiii) works and organizations carried out with freight handling workers;

Laws and Regulations	Description
	<p>(xiv) Ministry of Labour and its subordinate departments and organizations;</p> <p>(xv) establishments determined by the Ministry of Labour from time to time, in co-ordination with the Social Security Board and with the approval of the Union Government; that they shall be applied with the provisions of compulsory registration for Social Security System and benefits contained in this Law.</p> <p>(b) Any establishment which is applied with the provisions of compulsory registration under sub-section (a) shall continue to be applied by this Law even though any of the following situations occurs if it continues to carry out such work:</p> <p>(i) carrying out work by employing under stipulated minimum number of workers but more than one worker;</p> <p>(ii) changing the employer or changing the type of business.</p> <p>Section 15 (a) The following funds are included in the Social Security Fund:</p> <p>(i) health and social care fund;</p> <p>(ii) family assistance fund;</p> <p>(iii) invalidity benefit, superannuation pension benefit, and survivors' benefit fund;</p> <p>(iv) unemployment benefit fund;</p> <p>(v) other social security fund for social security system of compulsory registration and contribution specified by the Ministry of Labour, in co-ordination with the Social Security Board, according to clause (2) of subsection (e) of section 13;</p> <p>(vi) other social security fund specified as to which contribution may be paid after voluntary according to clause (2) of sub-section (e) of section 13;</p> <p>(vii) fund for Social Security Housing Plan;</p> <p>(b) The employers and workers of establishments shall pay contributions to the funds contained in clauses (1), (3),(4) and (5) of sub-section (a) after effecting compulsory registration.</p> <p>(c) The contribution for family assistance benefit fund contained in clause (2) of sub-section (a) shall not be specified in particular, but it shall be re-appropriated from health and social care fund in stipulated ratio.</p> <p>(d) The employers and workers of establishments may pay contribution voluntarily to the funds contained in clauses (6) and (7) of sub-section (a).</p> <p><i>Section 16</i> (a) The following employers shall effect insurance for the workers working at their establishments by compulsorily registering at the relevant township social security office and contribute to the social security fund contained in clauses (1),(3),(4), and (5)of sub-section (a) of section 15 in accord with the stipulations to enable to enjoy social security benefits:</p> <p>(i) employers of establishments;</p> <p>(ii) employers of establishments employing the number of workers, including the relatives of the employers except at least one worker and their wife, husband, children and parents depending upon them, under sub-section(a) of <i>Section 11</i>;</p> <p>(iii) employers of unpaid apprentices and trainees.</p> <p>(b) employers and workers of establishments who are not applied to the Social Security System, or persons under section 20, if they desire to enjoy social security benefits under this Law, shall register voluntarily according to each insurance system at the respective township social security office and contribute to the funds under section 15 in accord with stipulations.</p>

Laws and Regulations	Description
	<p>(c) before effecting insurance under sub-section(a) and (b) after registration, a person to be insured shall undergo medical examination in accord with the stipulations and shall submit the medical certificate when effecting registration as an insured person.</p> <p><i>Section 48 (a)</i> The employer shall effect insurance by registering for employment injury benefit insurance system contained in section 45 at the relevant township social security office and pay contribution to employment injury benefit fund in accord with stipulations in order that workers applied to provisions of compulsory registration may obtain the employment injury benefits.</p> <p>(b) The employers may affect insurance by registering voluntarily for insurance of the workers who are not applied to provisions of compulsory registration for employment injury benefit insurance system, by paying stipulated contribution to employment injury benefit insurance fund;</p> <p>(c) When registering to effect insurance for employment injury benefit in accord with sub-sections (a) and (b), the worker shall submit medical certificate.</p> <p><i>Section 49 (a)</i> The employers and insured persons of establishments where the employer had registered compulsorily in accordance with sub-section (a) of section 48 or where the employer had registered voluntarily in accord with sub-section (b) of section 48 who have paid contribution to employment injury benefit fund shall not apply to the provisions contained in the Workmen's Compensation Act as regards the employment injury benefit;</p> <p><i>Section 51</i> The employer (a) shall pay contribution monthly to Employment Injury Benefit Fund at the rates stipulated under section 50. Moreover he shall also bear the expenses for paying as such; (b) shall pay defaulting fee stipulated under section 88, in addition to the contribution if fails to contribute after effecting insurance for employment injury benefit.</p> <p><i>Section 53 (a)</i> The employers and workers shall co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment;</p> <p><i>Section 54 (a)</i> The employer shall report to the relevant township social security office immediately if a serious employment accident occurs to his insured worker. There shall not be any delay without sufficient cause to report as such.</p> <p>(b) A team of officers and other staff who inspect the establishments, if it is found out the employment injury, death, and contracting disease, shall report to the relevant township social security office in accord with the stipulations.</p> <p><i>Section 75</i> The employer of establishments applied by this Law: (a) shall prepare and keep the following records and lists correctly and submit to the relevant township social security office in accord with the stipulations:</p> <ul style="list-style-type: none"> i) records and lists of workers' daily attendance; ii) records of appointing new worker, employing worker by changing of work, suspension from work, dismissal from work and resignation from work; iii) records of promotion and paying remuneration; iv) records and lists of employers, managers, and administrators; and records of changes of them; <p>(b) shall inform the relevant township social security office if the following matters arise:</p> <ul style="list-style-type: none"> i) change in number of workers and address of establishment; ii) change of employer, change of business, suspension from work, and termination of work; iii) employment injury, employment death, and occupational diseases; <p>(c) shall produce work records and lists on requirement of inspection team or official assigned duty under this Law by the Social Security Head Office and various Regional Social Security Offices.</p>

Laws and Regulations	Description
	<p><i>Section 76</i> Relating to the social security and employment injury benefit: (a) the Social Security Board may, to know and decide whether or not the employers keep work record and lists to be kept under this Law systematically, keep records of contribution paid to the social security fund and employment injury fund, contribute correctly, open accounts for each insured person, and the insured workers receive social security and employment injury benefits correctly, and whether or not the stipulated reports are submitted, require the relevant department to investigate or cause to investigate by a suitable person or body by forming it; (b) if it is necessary, the Social Security Board or person assigned duty by that Board or the investigation team may summon and examine the relevant employers and workers and other necessary persons, and require them to submit evidence; (c) the Social Security Board or the person assigned duty by that Board or the investigation team may, if it is necessary, enter into and investigate the establishment.</p> <p><i>Section 77</i> Any employer of establishments concerning with the social security and employment injury benefit: (a) shall not maintain incorrectly, alter or delete records contained in section 74, and sub-section (a) of section 75; (b) shall not report incorrectly to the relevant township social security office relating to the number of workers and contributions; (c) shall not refuse when the inspection team or the official requires under this Law or in accord with duty assigned by the Social Security Board, to produce those records, reports, and other necessary documents; (d) shall not fail to attend when he is summoned by the inspection team or the official under this Law or in accord with the assignment of the Social Security Board or various regional Social Security Office.</p>
	<p>Oilfields (Labour & Welfare) Act (1951) (amended in 1953)</p>
	<p>The act provide for the prevention of waste of oil or gas and also the prevention of environmental pollution by petroleum operations. There mentions wide range of protection measures for O&G workers, covering health, safety and worker welfare issues. It also covers working hours, holidays and extensive prescriptions on employing children as well as setting up an inspection.</p>
	<p>Leave and Holiday Act, 1951</p>
	<p>Under the Leave and Holiday Act (1951), every employee shall be granted paid public holidays as announced by the Government in the Myanmar Gazette. On average, Myanmar has 26 public holidays per year, depending on the date of the variable holidays. Myanmar law recognizes various types of leave. Leave is governed by the Leave and Holidays Act (1951), but additional rules may apply in accordance with other laws, such as the Social Security Law (2012) for employees contributing to the Social Security Fund.</p>
	<p><u>Oil and Gas Specific</u></p>
	<p>The Petroleum Act (1939) and Rules, 1937</p>
	<p>This act refers that the import, transport or store of any petroleum cannot be made save in accordance to the rules that may be defined by the President of the Union.</p> <p>“All receptacles containing dangerous petroleum shall have a stamped, embossed, painted or printed warning, either on the receptacle itself or, where that is impracticable, displayed near the receptacle, exhibiting in conspicuous characters the words “Petrol” or “Motor Spirit”, or an equivalent warning of the dangerous nature of the petroleum”.</p> <p>It also establishes the needs and exemptions from licenses and authorizes the testing of petroleum by the President of the Union and rules that might issue rules on that regard.</p>

Laws and Regulations	Description
Myanmar Petroleum and Petroleum Products Law, 2017	<p>The Petroleum and Petroleum Products Law (the “PPPL”) 2017 was enacted on 1st August 2017 to repeal the Petroleum Act 1934. The PPPL contains the provisions on import and export, transportation, storage, refinery, distribution, inspection and testing of petroleum and petroleum products and issuance of relevant licenses.</p> <p>Articles related to the Project include; 8(A) (C) (D) (E) (G) (H), 9 (A) (C) (D) (E), 10 (B) (D), Storage Tank Section 10 (A) (E) (D), 11</p>
The Oilfields Act, 1918, amended in 1919, 2010	<p>This act provides clarification on activities within the oil and gas industry, and provides the Government with the power to define and alter limits of any notified oilfield. In addition, the Government may make rules for regulating all matters connected with many operations related to the extraction of oil and/or gas. The Act also provides guidance and issues such as preventing oil and gas wastes, reporting of fires, accidents and other occurrences and regulating the collection and disposal of both oil and gas.</p>
Industrial Use Explosive Substance Law, 2018	<p>This Act covers the use of explosive substances in Myanmar and must be followed by any persons who use explosive substances.</p> <p>2. In this Act, the expression “explosive substance” shall be deemed to include any materials for making any explosive substance; also any apparatus, machine, implement or material used, on intended to be used, or adapted for causing, or aiding in causing, any explosion in or with any explosive substance; also any part of any such apparatus, machine or implement.</p>
Myanmar Aviation Act, 1934 amended in 2004	<p>5. Power of Central Government to make rules.- (1) a [Subject to the provisions of section 14,] the b [Central Government] may, by notification in the b [Official Gazette], make rules c [regulating the manufacture,] possession, use, operation, sale, import or export of any aircraft or class of aircraft d [and for securing the safety of aircraft operation.] (2) Without prejudice to the generality of the foregoing power, such rules may provide for - (a) the authorities by which any of the powers conferred by or under this Act are to be exercised; e [(aa) the regulation of air transport services, and the prohibition of the use of aircraft in such services except under the authority of and in accordance with a licence authorising the establishment of the service; f [(ab) the economic regulation of civil aviation and air transport services, including the approval, disapproval or revision of tariff of operators of air transport services; the officers or authorities who may exercise powers in this behalf; the procedure to be followed, and the factors to be taken into account by such officers or authorities; appeals to the Central Government against orders of such officers or authorities and all other matters connected with such tariff.</p> <p>8. Power to detain aircraft.- (1) Any authority authorised in this behalf by the a [Central Government] may detain any aircraft, if in the opinion of such authority(a) having regard to the nature of an intended flight, the flight of such aircraft would involve danger to persons in the aircraft or to any other persons or property, or (b) such detention is necessary to secure compliance with any of the provisions of this Act or the rules applicable to such aircraft; or such detention is necessary to prevent a contravention of any rule made under b [clause (h) or clause (i) of sub-section(2) of section 5] c [or to implement any order made by any Court]. (2) d [Subject to the provisions of section 14,] the a [Central Government] may, by notification in the e [Official Gazette] make rules regulating all matters incidental or subsidiary to the exercise of this power.</p>

Laws and Regulations	Description
Myanmar Engineering Council Law, 2013	<p>The Objectives of this law are as follows:</p> <p>(a) to develop the dignity, ethical principles and ability of Myanmar citizen engineers, graduate technologists and technicians who are working in the engineering services sector;</p> <p>(b) to explore beneficial, useful and good methods to research and develop the State's natural resources and human resources with the least environmental impact by a combination of engineering technology and information technology;</p> <p>(c) to guide, control, maintain and take necessary action with regard to specified standards and norms relating to specified subjects, systematic methods, safety and ethical principles and duties in teaching engineering subjects and in technological research and services;</p> <p>(d) to perform engineering and technological activities of the State and tasks assigned by the relevant ministry or organization from time to time.</p> <p>37. No one shall perform any engineering work and technological work which are specified as being dangerous to the public by a rule enacted under this law without having received a registration certificate issued by the council, except for engineers appointed in a government department or an organization in the performance of their duties.</p>
The Law On Standardization, 2014	<p>The objectives of Law on Standardization are as follows:</p> <ul style="list-style-type: none"> • to enable to determine Myanmar Standards; • to enable to support export promotion by enhancing quality of production organizations and their products, production processes and services; • to enable to protect the consumers and users by guaranteeing imports and products are not lower than prescribed standard, and safe from health hazards; • to enable to support protection of environment related to products, production processes and services from impact, and conservation of natural resources; • to enable to protect manufacturing, distributing and importing the disqualified goods which do not meet the prescribed standard and those which are not safe and endangered to the environment; • to support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade to facilitate technological transfer and innovation by using the standards for the development of national economic and social activities in accordance with the national development program.

Laws and Regulations	Description
The Science and Technology Development Law, 1994	
	<ul style="list-style-type: none">• To carry out development of Science and Technology for promotion of industrial production contributory towards the National Economic Development Plans;• To carry out Research and Development for the increased extraction and utilization of domestic raw materials and the promotion of industrial production enterprises based on modern Science and Technology;• To effect Technology Transfer for the promotion of production processes and the improvement of the quality of goods; To nurture luminaries required for the development of Science and Technology and for Research and Development and to improve their qualifications.
Import and Export Law, 2012	
	7. A person who obtained any license shall not violate the conditions contained in the license.

A summary of the international and Myanmar national environmental standards relevant to the Project are shown in **Table 4.2**.

Table 4.2: Environmental Standards of Relevance to the Project

Environmental Parameter	Standard	Details
Air Emissions	MARPOL Annex VI	<p>Vessels will be in compliance with applicable MARPOL 73/78 Regulations for the prevention of air pollution from ships (Annex I) (as applicable or required by vessel class).</p> <p>Vessels will have a Ship Energy Efficiency Management Plan (SEEMP) providing for fuel efficient vessel operations.</p> <p>The MODU will have International Air Pollution Prevention (IAPP) certificates. Certification under MARPOL will confirm that engines and other combustion emission sources on the vessel (excluding emission sources directly associated with the extraction of hydrocarbons, such as flaring) meet IMO standards.</p>
Waste Discharges Sewage Food waste Storage displacement water Bilgewater Deck drainage	MARPOL Annex I & V (as applicable or required by vessel class)	<p>The support vessels will operate in compliance with MARPOL Annex I: any oil-in-water content of discharges should not exceed 15 ppm. General waste (excluding food) will not be disposed of to sea in line with MARPOL Annex V requirements. Combustible wastes will be segregated and disposed by incinerator on-board, should an incinerator be available on the selected vessel. Non-combustible and recyclable wastes will be stored in containers and returned to the selected vessel shore base for disposal. Food waste will be macerated into smaller pieces (0.98 inch) prior to discharge overboard (if discharged <12 nm from shore).</p> <p>Hazardous wastes will be stored on the vessels in appropriate containers with labels. Hazardous waste storage will be designated in accordance with their Safety Data Sheet (SDS). Hazardous wastes will be returned to the vessels' selected shore base and sent to a licensed disposal facility by a licensed waste contractor.</p>
Underwater generation	sound Adapted from JNCC Guidelines ⁽¹⁾	A visual check for marine mammals, marine turtles and whale sharks within 0.6 miles (observation zone) of the MODU or vessel for 20 minutes prior to commencing VSP or SWD operations.

(1) The JNCC Guidelines for minimising the risk of injury and disturbance to marine mammals from seismic surveys, 2010

Environmental Parameter	Standard	Details
		<p>During periods of low visibility (where the observation zone cannot be clearly viewed out to 0.6 miles), including night-time, the VSP or SWD source may be used as described in operating procedures, provided that:</p> <p>There have not been three or more marine mammal, marine turtle or whale shark shut down situations during the preceding 24 hour period; or</p> <p>If operations were not previously underway during the preceding 24 hours, a period of continual observation was undertaken in good visibility for at least two hours (to the extent of the observation zone) within the preceding 24 hour period and no marine mammal, marine turtle or whale sharks were sighted.</p>
Spills	MARPOL Annex I	<p>Support vessel standard operating procedures to be prepared and implemented including (if appropriate) an offshore bunkering procedure. Contingency plans will be prepared and implemented, e.g. vessel Shipboard Oil Pollution Emergency Plans (SOPEPs).</p> <p>All Project commitments are listed in full in Table 7.18.</p>
Drilling fluids and cuttings (non-aqueous drilling fluid)	NEQs and IFC (2015)	<p>Non-aqueous drilling fluid, re-inject or ship-to-shore; no discharge to sea.</p> <p>Drilled cuttings, re-inject or ship-to-shore; no discharge except:</p> <ul style="list-style-type: none"> • Oil concentration lower than 1% by weight on dry cuttings • Mercury maximum 1 milligram per kilogram (mg/kg) dry weight in stock barite • Cadmium maximum 3 mg/kg dry weight in stock barite • Discharge via a caisson at least 49 ft. below sea surface <p>For existing facilities (as per the 2015 IFC offshore oil and gas guidelines and the MOGE Letter to PSC Companies, Ref. MD-3/6(0736) 2016, Dated 19 September, 2016: Use of Group III non-aqueous base fluids and treatment in cutting dryers. Maximum residual Non Aqueous Phase Drilling Fluid (6.9% (C16 -C18 internal olefins) or 9.4% (C12-C14 ester or C8 esters) on wet cuttings.</p> <p><i>Note: IFC EHS Guidelines for Offshore Oil and Gas (2015) define new facilities as those that include offshore MODUs which have been newly designed or structurally modified for the project. The wells will be drilled with an existing facility.</i></p>

Environmental Parameter	Standard	Details
Drilling fluids and cuttings (water-based drilling fluid)	NEQs and IFC (2015)	Water-based drilling fluid, re-inject or ship-to- shore; no discharge to sea. Water-based drilling fluids and cuttings, re-inject or ship-to-shore; no discharge to sea except: <ul style="list-style-type: none">• Mercury 1 mg/kg dry weight in stock barite• Cadmium 3 mg/kg dry weight in stock barite• Maximum chloride concentration must be less than four time's ambient concentration of fresh or brackish receiving water Discharge via a caisson at least 49 ft. below sea surface

4.3 Institutional Arrangements

Woodside is committed to providing the resources essential to the implementation of the EMP. Resources include the appropriate human resources and specialised skills. The roles and responsibilities for environmental and social management and implementation of the EMP are outlined in **Table 4.3**.

Table 4.3: Environmental & Social Management Organisation Roles and Responsibilities

Position	Responsibility
Office-based Personnel	
Woodside Well Delivery Manager	<ul style="list-style-type: none"> • Ensure that drilling operations are undertaken as per this EMP. • Provide sufficient resources to implement the management measures in this EMP. • Relevant personnel will be provided with an environmental induction at the start of the drilling program. The MODU start-up meets the requirements of the Woodside Drilling and Managing Rig Operations Process.
Woodside Drilling Superintendent	<ul style="list-style-type: none"> • Ensure that the drilling program meets the requirements detailed in this EMP. • Ensure that changes to the drilling program are communicated to the Drilling & Completions Environmental Adviser. • Ensure reporting of environmental incidents meets external reporting requirements and Woodside's internal requirements. • Ensure corrective actions raised from environmental inspections are tracked and closed out.
Woodside Drilling Engineers	<ul style="list-style-type: none"> • Ensure that changes to the drilling program are communicated to the Drilling & Completions Environmental Adviser. • Ensure that all drill and completions fluid chemical components and other fluids that are used downhole have been reviewed by the Drilling & Completions Environmental Adviser.
Woodside Drilling and Completions Environmental Adviser	<ul style="list-style-type: none"> • Prepare environmental component of relevant Induction Package. • Assist with the review, investigation and reporting of environmental incidents. • Ensure environmental monitoring and inspections/audits are undertaken as per the requirements of this EMP. • Liaise with relevant regulatory authorities as required. • Assist in preparation of external regulatory reports required, in line with environmental approval requirements and Woodside incident reporting procedures. • Monitor and close out corrective actions identified during environmental monitoring or inspections. • Provide advice to the Well Site Manager and Drilling Superintendent and communicate the commitments within the EMP
Woodside Corporate Affairs Adviser	<ul style="list-style-type: none"> • Implement the Stakeholder Engagement Plan (SEP). • Report on stakeholder consultation. • Ensure ongoing liaison as required.
MODU-based Personnel	
Offshore Installation Manager	<ul style="list-style-type: none"> • The MODU's management system and procedures are implemented. • Ensure that relevant corrective actions related to incidents and inspections are identified, tracked and closed out.

Position	Responsibility
	<ul style="list-style-type: none"> • Ensure that personnel starting work on the MODU receive an environmental induction and are competent to undertake the work they have been assigned. • Ensure emergency drills are conducted as per the MODU's schedule. • Ensure the MODU's Emergency Response Team has been given sufficient training to implement the MODUs SOPEP. • Ensure that any environmental incidents are reported immediately to the Well Site Manager.
Well Site Manager	<ul style="list-style-type: none"> • Ensure that the drilling / completions programs are undertaken as detailed in this EMP. • Ensure that the management measures detailed in this EMP are implemented on the MODU. • Ensure that the environmental incidents are reported as per to the Drilling Superintendent. • Ensure that periodic environmental inspections are completed. • Ensure that relevant corrective actions related to incidents and inspections are identified, tracked and closed out.
Woodside HSE Adviser Offshore	<ul style="list-style-type: none"> • Ensure that the activities are undertaken as outlined in this EMP • Support the Well Site Manager to ensure the monitoring requirements are met and the EMP is implemented on the MODU. • Ensure environmental incidents are reported • Ensure periodic environmental inspections are completed
Vessel-based Personnel	
Vessel Master	<ul style="list-style-type: none"> • Ensure the vessel management system and procedures are implemented. • Ensure that personnel commencing work on the vessel receive an environmental induction and are competent to undertake the work they have been assigned. • Ensure SOPEP drills are conducted as per the vessel's schedule. • Ensure the vessel Emergency Response Team has been given sufficient training to implement the SOPEP. • Ensure any environmental incidents or breaches of this EMP are reported immediately to the Woodside Well Site Manager.

Woodside will work with and coordinate the contractors to ensure that contractors are aware of and competent with respect to:

- Environmental and social impacts that could potentially arise from their activities.
- Necessity of conforming to the requirements of the EIA and EMP (i.e. implementing the control and mitigation measures) in order to avoid or reduce those impacts.
- Roles and responsibilities to achieve that conformity, including with regard to change management and emergency response.
- Documentation and reporting requirements and other EMP compliance requirements.

5. Summary of Impacts and Mitigation Measures

5.1 Impacts and Mitigation

The approved AD-1 EIA assessed the potential impacts and proposed mitigation and management measures to reduce the level of the impact. The EIA concluded that potential impacts are typically short term, localised and are well understood from previous experience in the industry, with little or no evidence of adverse consequences on the majority of environmental or social receptors.

Previous drilling was conducted in AD-1 between May and June 2018. The mitigation measures in the approved EMP were successfully implemented throughout the duration of the activity. Routine monitoring of environmental performance during the activity was conducted in accordance with the EMP. This information was used to demonstrate compliance with regulatory requirements which also provides verification of the effectiveness of the implemented mitigation measures. The monitoring program confirmed all environmental parameters were within the limits described in the approved EMP and all commitments were met for the AD-1 drilling activity in 2018.

The potential impacts and the associated mitigation measures relevant to this AD-1 EMP, as previously assessed and verified for the 2018 AD-1 exploration drilling, were detailed in the approved 2018 AD-1 EIA and continue to be relevant for the Project. A summary of the potential impacts and mitigation s presented in **Table 5.1**.

Table 5.1: Summary of Potential Impacts and Mitigation

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to ambient air quality from the MODU, support vessels, helicopters, machinery and flaring</p>	<ul style="list-style-type: none"> • Low sulphur fuel (0.05% sulphur by mass) will be used where available. • The well test duration will be reduced to the extent practicable. • Engine maintenance to minimise unburned hydrocarbons. • Vessels will be in compliance with applicable MARPOL 73/78 Regulations for the prevention of air pollution from ships (Annex I) (as applicable or required by vessel class). • Vessels will have a SEEMP providing for fuel efficient vessel operations, in accordance with the requirements of Annex VI MARPOL 73/78 (as applicable or required by vessel class); • The MODU will have International Air Pollution Prevention (IAPP) certificates, in accordance with the requirements of Annex VI MARPOL 73/78 (as applicable or required by vessel class). Certification under MARPOL will confirm that engines and other combustion emission sources on the vessel (excluding emission sources directly associated with the extraction of hydrocarbons, such as flaring) meet IMO standards. 	<p>Residual Impact - F</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to water quality, sediment quality, plankton, fish, and offshore benthic habitats and communities from drill cuttings and drilling mud discharge</p>	<ul style="list-style-type: none"> • WBDF to be used as far as practicable during the drilling program - NADF shall only be used where WBDF cannot provide the required technical specifications. • Average oil on cuttings for the well will be limited to 6.9% or less by weight. • All residual NADF will be returned to shore for reconditioning, re-use or disposal. No bulk discharge of NADF drilling fluids will be permitted offshore. • Where cuttings with retained NADF are discharged overboard, they will be discharged below the water line. • NADF will be selected by Woodside with consideration of the OSPAR rating of chemicals with lower toxicity. Group III chemicals will be used (refer to Section 3.3.1.1 for more information). • Chemicals for discharge or release to sea to be selected and approved as per the Woodside Chemical Assessment Process and included on the Chemical Selection List. • No biocides containing organohalogens will be used. • Only Group (III) Synthetic Organic Base Fluids will be used. • Contractor to conduct bulk operational discharges under the MODU Permit to Work (PTW) system and in accordance with relevant regulations. • The average oil content for discharge of mud pit wash residue will be limited to less than 1% by volume. • Drill cuttings will comply with IFC Environmental, Health and Safety Guidelines for Offshore Oil and Gas Development (2015). 	<p>Residual Impact for Sediment Quality, Water Quality Plankton, and Fish – E</p> <p>Residual Impact for Offshore Benthic Habitats and Communities – F</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to marine mammals, marine turtles, plankton, and fish from increases in ambient underwater sound and generation of sound pressure levels from Vertical Seismic Profiling (VSP) and Seismic While Drilling (SWD)</p>	<ul style="list-style-type: none"> • A trained crew member will be utilised during VSP or SWD operations to monitor and record marine mammal, marine turtle and whale shark observations. • A visual check for marine mammals, marine turtles and whale sharks within 0.6 miles (observation zone) of the MODU or vessel for 20 minutes prior to commencing VSP or SWD operations. • Visual observations of the observation zone (0.6 miles) must be maintained continuously to identify if there are any marine fauna present. • During periods of low visibility (where the observation zone cannot be clearly viewed out to 0.6 miles), including night-time, the sound source may be used as described in operating procedures, provided that: <ul style="list-style-type: none"> ○ There have not been three or more marine mammal, marine turtle or whale shark shut down situations during the preceding 24 hour period; or ○ If operations were not previously underway during the preceding 24 hours, a period of continual observation was undertaken in good visibility for at least two hours (to the extent of the observation zone) within the preceding 24 hour period and no marine mammal, marine turtle or whale sharks were sighted. • Pre start meeting with crew to include marine fauna observation and reporting. During the pre-start meeting, alert all crews to immediately report to the trained observer when they observe any marine mammals, marine turtles or whale sharks during and prior to the activity. The pre-start meeting will cover the likelihood of marine mammal, marine turtle or whale shark observations and required actions if they are sighted. 	<p>Residual Impact for Marine Mammals and Marine Turtles– E</p> <p>Residual Impact for Plankton and Fish Communities - F</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to fishing activities and shipping within AD-1 due to the presence of the MODU and support vessels during the proposed drilling activities</p>	<ul style="list-style-type: none"> • A 1,640 ft. radius safety zone will be maintained around the MODU as required. • Myanmar speaking crew members available on board the MODU. There will be MOGE representatives on-board. • Implementation of the Stakeholder Engagement Plan (SEP) to provide timely information to stakeholders prior to the commencement of the proposed drilling program. • Issuance of Notice to Mariners to alert any fishers and other marine users present in AD-1 of the location and timing of the MODU and associated activities. • Disclosure and implementation of the Grievance Mechanism for the Project to provide an avenue for stakeholders, including those in fishing communities, to raise concerns, and implement timely investigation. • MODU and support vessels (as applicable or required by vessel class) will comply with international regulations for collision avoidance (COLREGs 1972), navigation and watch-keeping, including: <ul style="list-style-type: none"> ○ Maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar). ○ Navigation light display requirements, including visibility, light position/shape and noise signals appropriate to activity. ○ Maintenance of minimum safe manning levels. ○ Maintenance of navigation equipment in efficient working order (compass / radar / communications). ○ Navigational systems and equipment as specified in Regulation 19 of Chapter V of SOLAS. ○ Automatic Identification System installed as applicable or required by vessel class, in accordance with Regulation 19 of Chapter V of SOLAS. • Support vessels will not travel greater than 6 knots within 984 ft of a whale, if sighted, (caution zone) and approach no closer than 328 ft from a whale, if sighted, (note this standard does not apply to support vessels engaged in limited/constrained manoeuvrability activities near the MODU) • Vessel bridge crew to maintain continuous visual watch of any hazards (including marine mammals and marine turtles). 	<p>Residual Impact - F</p>
<p>Potential impacts to marine mammals, fishing vessels and shipping from unplanned collisions</p>	This cell is shared with the row above and contains the same list of mitigation measures	<p>Risk Rating for Marine Mammals - Moderate</p>
This cell is shared with the row above and contains the same text	This cell is shared with the row above and contains the same list of mitigation measures	<p>Risk Rating for Fishing and Shipping - Moderate</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts to marine water quality and secondary impacts to biodiversity, and fishing activity and socio-economic factors from accidental spills or leaks</p>	<ul style="list-style-type: none"> • Survey vessels will adopt industry standard good practices with regards to housekeeping and refuelling/containment procedures to reduce the likelihood of spills occurring. In accordance with relevant international standards, survey vessels will also have a Shipboard Oil Pollution Emergency Plan (SOPEP) and appropriate spill response equipment to respond to deck spills and leaks. • Vessels will hold a valid International Oil Pollution Prevention Certificate (IOPP) certificate. • Implementation of the following controls as a minimum during fuel bunkering: <ul style="list-style-type: none"> ○ Bunkering to commence during daylight hours; ○ Visual monitoring of gauges, hoses, fittings and the sea surface before and during bunkering; ○ Dry break couplings fitted to transfer hose. • Spill response kits located in proximity to chemical and hydrocarbon storage/bunkering areas and appropriately stocked/replenished as required. • Crew trained in spill prevention and use of spill response equipment. • Implementation of the Woodside Oil Spill Response Plan (detailed in <i>Section 7.4</i>). • A 1,640 ft. radius safety zone will be maintained around the MODU as required. The Vessel Master will manage vessel access and activities within this zone. • MODU and support vessels (as applicable or required by vessel class) will comply with international regulations for collision avoidance (COLREGs 1972), navigation and watch-keeping, including: <ul style="list-style-type: none"> ○ Maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar). ○ Navigation light display requirements, including visibility, light position/shape and noise signals appropriate to activity. ○ Maintenance of minimum safe manning levels. ○ Maintenance of navigation equipment in efficient working order (compass/radar / communications). ○ Navigational systems and equipment as specified in Regulation 19 of Chapter V of SOLAS. ○ Automatic Identification System installed (as applicable or required by vessel class) in accordance with Regulation 19 of Chapter V of SOLAS. • All chemical and/or hydrocarbon wastes will be segregated into clearly marked containers prior to onshore disposal by a licensed waste management contractor, as per the relevant SDSs. • Issuance of Notice to Mariners to alert any fishers and other marine users present in AD-1 of the location and timing of the MODU and associated activities. Disclosure and implementation of the Grievance Mechanism for the Project to provide an avenue for stakeholders, including those in fishing communities, to raise concerns, and implement timely investigation. 	<p>Risk Rating for marine water quality and secondary impacts to biodiversity - Moderate</p>
		<p>Risk Rating for fishing activity and socio-economic factors - Moderate</p>

Potential Impact/Issue	Control / Mitigation Measures	Significance of Residual Impact (Planned Events) or Risk Rating (Unplanned Events)
<p>Potential impacts on ambient air quality and workers on the MODU from unplanned loss of well control resulting in gas release</p>	<ul style="list-style-type: none"> • Discrete hydrocarbon zones within the well shall be isolated from each other (to prevent cross flow) by a minimum of one barrier, which can be either mechanical (e.g. cement or well casing), or hydrostatic (e.g. drilling fluid). • All permeable zones penetrated by the well bore, containing hydrocarbons or over-pressured water, shall be isolated from the surface environment by a minimum of two barriers (i.e. primary and secondary); unless a shallow hazard study confirms that a single fluid barrier is appropriate during the initial stages of well construction. • All normally pressured permeable water-bearing formations shall be isolated from the surface by a minimum of one barrier. • Barriers shall be effective over the lifetime of well construction or production. • Effectiveness of primary and secondary barriers shall be verified (physical evidence of the correct placement and performance). • Any fluid barrier must comprise drilling fluid of a suitable weight, composition and volume to account for pore pressure and over-pressure zones during drilling. • Subsea Blowout Preventer (BOP) specification and function/pressure testing will be undertaken in accordance with API Standard 53 4th Edition (API 53), requiring the following: <ul style="list-style-type: none"> ○ One annular preventer. ○ Two pipe rams (excluding the test rams). ○ A MODU is required to have a minimum of two sets of shear rams, one of which must be capable of sealing. ○ On activation of the shear ram a seal is provided which creates a barrier to the reservoir to reduce/prevent further hydrocarbon discharges. ○ If the BOP's operation cannot be achieved from the MODU, the rams within the BOP can be operated by ROV. 	<p>Risk Rating for ambient air quality - Low</p>
		<p>Risk Rating for workers - Low</p>

Significance	Definition
A	Applicable limits or standards are substantially exceeded and/ or catastrophic or major magnitude impacts are expected to receptors of medium/ high or high sensitivity respectively. For impacts assessed as being of Significance Level A, further mitigation is required to reduce the potential magnitude of the impact in order for the activity to proceed.
B	Applicable limits or standards are exceeded and/ or moderate, major or catastrophic magnitude impacts are expected to occur to receptors of high, medium or low sensitivity respectively. Impacts assessed as Significance Level B should be avoided as far as practicable and further control/ mitigation measures considered. If impacts of Significance Level B remain after ALARP is reached, Vice President (VP) approval is required to proceed.
C	Impacts are close to applicable limits or standards, or within standards but with potential for occasional exceedance. Minor, moderate or major magnitude impacts are predicted to occur to receptors of high, medium or low sensitivity respectively. Further control/mitigation measures should be considered. If impacts of Significance Level C remain once ALARP is reached, General Manager Environment or Country Manager approval is required to proceed.
D	Impact magnitude is within applicable standards but is considered to have significance. Slight, minor or moderate impacts are predicted to occur to receptors of high, medium or low sensitivity respectively. It should be shown that an impact of Significance Level D has been reduced to ALARP levels and is being managed and monitored effectively.
E	The receptor will experience a noticeable effect, but the impact magnitude is sufficiently small and well within applicable standards, and/or the receptor is of low value. An activity can proceed with impacts deemed to be of Significance Level E, although impacts should still be managed and monitored.
F	For an impact of Significance Level F the receptor will essentially not be affected by a particular activity, or the predicted effect is deemed to be indistinguishable from natural background variations.

This presents the level of sign-off or authority that is required for the business to accept this risk

Severe	Risk at this level requires immediate (no more than 12 hours) communication to the Woodside CEO and divisional EVP/SVP via VP Risk and Compliance
Very High	Risk at this level requires immediate (no more than 12 hours) communication to the divisional EVP/SVP with concurrent communication to VP Risk and Compliance
High	Risk at this level requires timely communication to SVP/VP of business unit or function
Moderate	Risk at this level requires timely communication to line manager (i.e. relevant Asset or Project Manager)
Low	Risk at this level requires timely communication to line manager

5.2 Cumulative Impact Assessment

This section presents the Cumulative Impact Assessment (CIA), which includes identification of existing and/or potential Projects or activities, which could cause cumulative impacts, the impact assessment methodology, and, recommendations for the mitigation measures, if required. Cumulative impacts refer to the additional impacts that may be generated by other developments or activities near and within AD-1 that when added to the impacts of the Project combine to cause a greater impact. Such impacts may arise due to spatial overlap (e.g. overlap in spatial extent of sediment quality) or temporal overlap (e.g. underwater sound impacts caused by VSP or SWD activities at the same time from different sources). It is important to note that the drilling of each well will be over a limited duration (approximately 40 days each). In addition, drilling will be undertaken one well at a time within AD-1. The final number of wells and drilling schedule will be determined by the subsurface interpretation.

5.2.1 Impact Assessment Methodology

The methodology adopted for the CIA is the same as the methodology presented in Section 6 of the approved AD-1 EIA. Receptors are given the same sensitivity; however, impact magnitude will consider the cumulative effect from the Project and the other projects / activities under consideration. A CIA considers the residual impacts reported for the Project and evaluates these alongside potential impacts from other projects/activities that may affect common resources and receptors. The ultimate goal of this analysis is to capture the total effects of many actions over time that would be missed by evaluating each action individually. The CIA will also define the geographic and temporal boundaries to identify other relevant projects or activities, which could interact with the Project. The cumulative assessment will be the same as the impact assessment process and once the initial impact assessment is performed, mitigation and management measures will be developed for all significant impacts and the residual impact will be calculated for each relevant receptor.

5.2.2 Existing or Proposed Developments in the Study Area

AD-1 is located in offshore Myanmar waters and is surrounded by other offshore oil and gas blocks: A-1 and AD-7 in the north, A-3 in the east, AD-9, AD-2 and A-4 in the south and AD-8 in the west (**Figure 5.1**).

At the time of writing, these are the following known potential planned activities during the AD-1 drilling program:

- Within Block A-1 and A-3: Production drilling and platform installation; and
- Within Block A-3: Possible drilling of exploration wells.

There are no further known potential planned activities over the course of the drilling program, albeit subject to change due to the four year timespan.

Woodside is the Operator of neighbouring blocks AD-8 and AD-7; therefore it is unlikely that drilling in these blocks will occur concurrently. However, given the duration of the proposed drilling program (2020-2023), it is possible that other activities, such as seismic and/ or exploration drilling may occur in the neighbouring blocks. However, the potential impacts from these activities are typically short term, localised and are well understood from previous experience in the industry, with little or no evidence of adverse consequences on the majority of environmental or social receptors.

5.2.3 Potential Impacts and Mitigation

Each of the factors identified in the development specific impact assessment has been considered:

- Physical presence.
- Underwater noise.
- Drill cuttings and fluids.
- Gaseous emissions.
- Unplanned spills.

5.2.3.1 Physical Presence

Vessel and helicopter movements are planned to occur during the Project, and are anticipated to potentially occur in the neighbouring blocks. Helicopter movements will occur in the nearby Shwe Field Development in A-1 and A-3 during the AD-1 drilling activity. There are not expected to be any potential cumulative impact from additional helicopter movements associated with the AD-1 drilling activity given such movements will be limited (only 1-2 per day), short term (40 days) and emissions are expected to be minor.

Movement of supply vessels will occur in open oceanic waters as well as closer to the mainland for logistical requirements. The majority of vessel movements will be in close proximity to the drill location with minimal overlap in vessel movements expected. Any increases in vessel movements will represent a negligible incremental increase in vessel traffic and are unlikely to have an impact on commercial fishing or shipping in the area. The drilling is a short-term activity (40 days at each well) and the footprint of the MODU and safety zone is also relatively small (2,625 square ft. which is approximately 0.01% of AD-1). Any restriction on fishing activities will only be in a limited area for a limited period of time and there is unlikely to be any significant impact or disruption.

The majority of vessel movements will be in close proximity to the drill location with minimal overlap in vessel movements expected. Any increases in vessel movements will represent a negligible incremental increase in vessel traffic and are unlikely to have an impact on commercial fishing or shipping in the area

It is expected that the potential cumulative impacts on fishing or shipping, if properly mitigated, will be localised and the impact will be of **No Lasting Effect** significance overall. In addition, only a small number of fishers are expected to fish in or in the vicinity of AD-1.

5.2.3.2 Underwater Noise

Underwater noise generated by VSP or SWD operations will be of limited duration due to the temporary nature of activities (intermittent use of the sound source up to 48 hour period, per well).

Secondary data indicates that underwater noise emissions, similar to those experienced by the Project, were predicted to attenuate to about 160 dB re 1µPa within about 2000 ft. of the source.

Therefore potential impact from cumulative sound generation, given that the area of impact for Project activities is small (limited to 2,000 ft. around the MODU), distant from neighbouring activities, and of a very short duration (ten hours), the resulting cumulative impacts is considered to be of **No Lasting Effect**.

5.2.3.3 Drill Cuttings

The dispersion and fate of drill cuttings and drilling fluids discharged within AD-1 are predicted to effect a relatively small offshore area and won't extend beyond 328 ft. from the well (Section 7.5). Drill cuttings and fluids discharges typically disperse rapidly in close proximity to the discharge point. Given impacts will be localised to the well site, and given the distance between

the AD-1 Project Area and neighbouring blocks, cumulative effects are expected to be of **No Lasting Effect**.

5.2.3.4 Gaseous Emission

Gaseous emissions from other oil and gas projects typically disperse rapidly in close proximity to the discharge point. Due to the distance between the Project and any other developments (i.e. from the mainland and as there are no offshore developments in the Study Area), cumulative effects are expected to be of **No Lasting Effect**.

5.2.3.5 Unplanned Spills

The risk of cumulative impact of hydrocarbons spills from Project activities within the Rakhine Basin is low as large scale events, though acknowledging that they can occur, are extremely rare. The Project will have in place an Emergency Response Plan detailing its spill response (Section 7.1). Given the highly unlikely nature of simultaneous spills, and the implementation of standard mitigation measures, impacts would be expected to be of **No Lasting Effect**.

6. Overall Budget of the EMP

It is estimated that the overall annual budget for implementing the EMP for the drilling program is between \$500k and \$1M AUD. Many of the management and mitigation measures are embedded controls as part of the standard operational costs of the MODU and vessels.

7. Management and Monitoring Sub-Plans

The Project is located in an offshore deep water environment with lower environmental and social sensitivities. The Project Activities are short term, (approximately 40 days per well), and potential impacts from the Project activities are temporary and localised. Therefore due to the nature and scale of the activity, this section presents the following management and monitoring sub plans for the Project.

The management and monitoring of noise, vibrations, wastewater, air quality, chemicals, water quality, biodiversity, occupational and community health and safety, cultural heritage, and employment and training have already been considered in the EIA.

The following sub-plans have been prepared as they are the most applicable to the activity:

- Emergency Response Plan (ERP);
- Marine Biodiversity Management Plan;
- Waste Management Plan (WMP);
- Oil Spill Response Plan (OSRP);
- Drill Cutting and Fluid Management Plan; and
- Ballast Water Management Plan.

Table 7.18 presents the management measures including the implementation schedule and responsible parties for all Project commitments.

7.1 Emergency Response Plan

7.1.1 Objectives

Woodside will respond to emergency situations from its drilling activities in Myanmar and has a comprehensive and scalable emergency and crisis management framework. The framework incorporates arrangements, processes, and procedures that align with internationally adopted emergency management principles and philosophies.

Woodside defines an “incident” as a man-made or natural situation or event that is either accidentally or deliberately caused, that requires an immediate response to mitigate, contain, control and resolve.

Woodside defines a “crisis” as a critical event or series of events, with consequences of sufficient magnitude to seriously threaten Woodside’s people, the environment, assets, reputation, livelihood or essential services, or a combination thereof.

Effective management of any incident relies on competent and capable personnel that are able to enact plans and processes to mobilise resources, conduct notifications and coordinate support measures to assist the affected site with delivering an effective response.

7.1.1.1 Emergency Framework

Woodside has an emergency framework, arrangements, processes and capabilities in place that are designed to protect people and broader business interests and aligned with internationally adopted emergency management principles and philosophies. To achieve this aim the framework relies on the application of the following protection priorities that must be considered in order of priority during any response (PEARLS system):

- People – the safety and security of our people;
- Environment – the preservation of the environment;
- Asset – protection of our assets;
- Reputation – the preservation and where possible enhancement of our reputation;

- Livelihood – protection of our license to operate; and
- Services – protection of our critical business functions.

In order to support the implementation of the emergency framework, Woodside maintains an emergency communications centre located in Perth that provides a dedicated 24/7 global monitoring, travel tracking, coordination and emergency communications support service to all Woodside personnel and activities in Australia and abroad.

Preparedness of our emergency and crisis management teams is vital to mitigate a range of incidents that may require coordination across multiple locations involving a variety of stakeholders and response agencies. In support of this, Woodside conducts regular companywide crisis exercises and training.

7.1.2 Legal Requirements

Woodside and its contractors will comply with applicable emergency response legislation and regulations in Myanmar.

7.1.3 Overview maps and site layout maps, images, aerial photos, satellite images

There are no applicable overview maps, satellite images, or site layout maps associated with this Emergency Response Plan. For emergency response operations involving evacuation, an example of a lifeboat that will be available on the MODU during the AD-1 drilling activities is provided in **Figure 7.1**.

Helicopters that may be used in the event of an emergency to evacuate personnel on board the MODU are shown in **Figure 7.2**. Photos of an example MODU to be used during drilling are provided in **Figure 7.3** and **Figure 7.4**.



Figure 7.1: An example of a lifeboat



Figure 7.2: Helicopter



Figure 7.3: Example MODU and Support Vessel

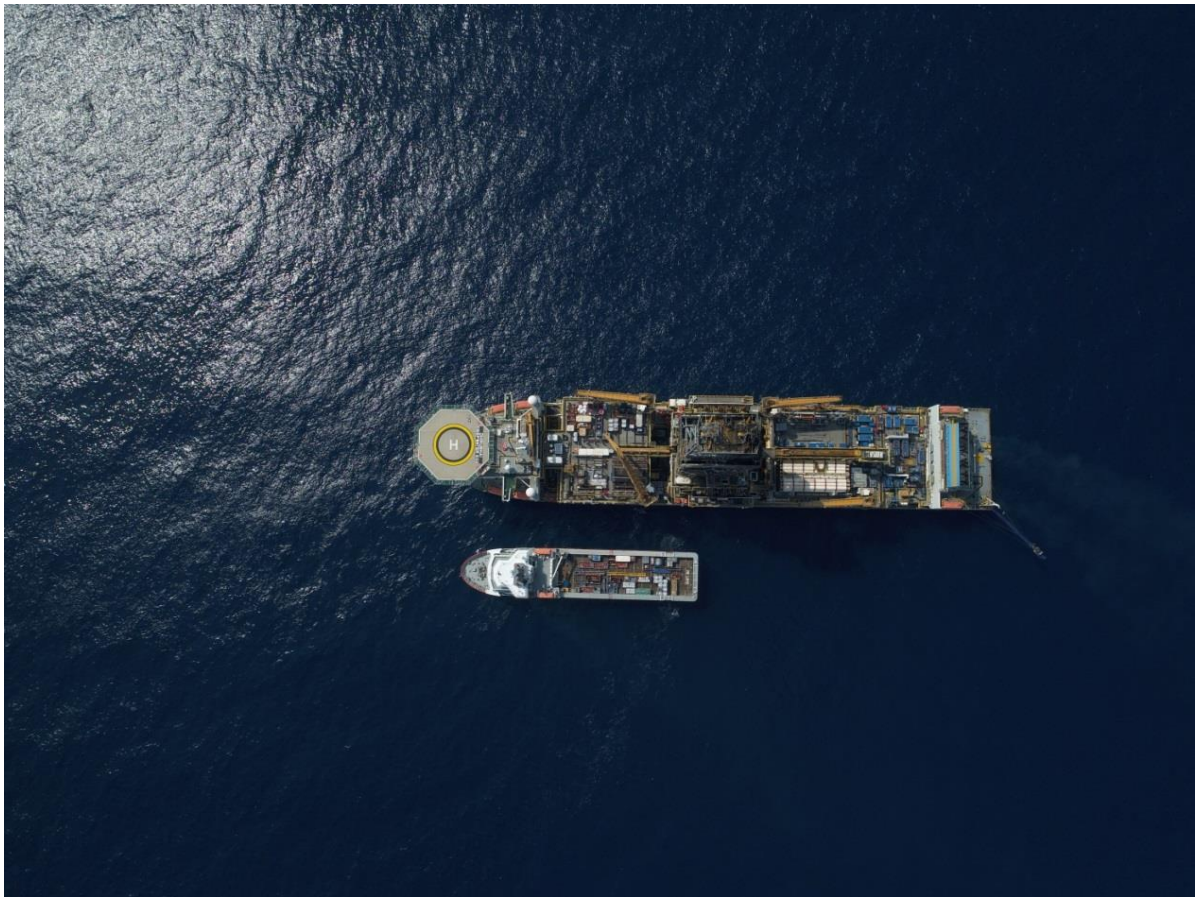


Figure 7.4: Example MODU and Support Vessel (from above)

7.1.4 Implementation Schedule

Emergency response actions, if required, will be implemented for the duration of the proposed drilling program.

7.1.5 Management Actions

Woodside will respond to emergency situations from its drilling activities in Myanmar.

The Woodside emergency management planning and response involves integration and alignment with Woodside's Myanmar resources, national and emergency management agencies and regulators, support organisations, and contractors. The drill rig contractor is responsible for managing drilling operations and any emergency on the rig. Woodside validates the drill rig contractors' emergency response procedures to demonstrate alignment with Woodside's emergency response approach. This emergency response plan outlines the key emergency scenarios and how they are managed.

This Emergency Response Plan (ERP) contains instructions for support relating to:

- Medical emergencies including medevac procedures;
- Evacuation procedures including in case of fire;
- Search and rescue – includes man-overboard procedures and helicopter ditching;
- Fire and explosion; and
- Natural disasters such as heavy weather/cyclone plan and earthquakes.

7.1.6 Response Approach

Woodside has a tiered response arrangement that escalates the level of support provided. Incidents are classified based on three tiers as follows (**Figure 7.5**).

7.1.6.1 Level 1 – Operational Response (Myanmar based incident control)

A Level 1 incident is defined as an incident that can be resolved through the use of rig-based and local resources, equipment and personnel.

The Myanmar Operations Point (MOP) will act as an In-Country Incident Management Team (IMT) and will be the only onshore emergency support group activated when the emergency can be controlled with in-country resources.

7.1.6.2 Level 2 – Operational Support (Corporate Incident Coordination Centre incident control)

A Level 2 incident is an incident that requires organisational and management support.

Emergency management support is provided via the activation of part or all of the Corporate Incident Coordination Centre (CICC). The objectives involve providing additional resources to support the site.

7.1.6.3 Level 3 – Strategic Management (Corporate Incident Coordination Centre incident control and Crisis Management Team activation)

A Level 3 incident is an incident that requires actions to be taken by the organisation, to respond to, and recover from critical events which seriously threaten the organisation’s people, environment, assets, reputation, livelihood or services (PEARLS). Level 3 emergencies require activation of the Crisis Management Team (CMT) to provide corporate strategic direction due to the possible impact on reputation, liabilities, business continuity and stakeholders.

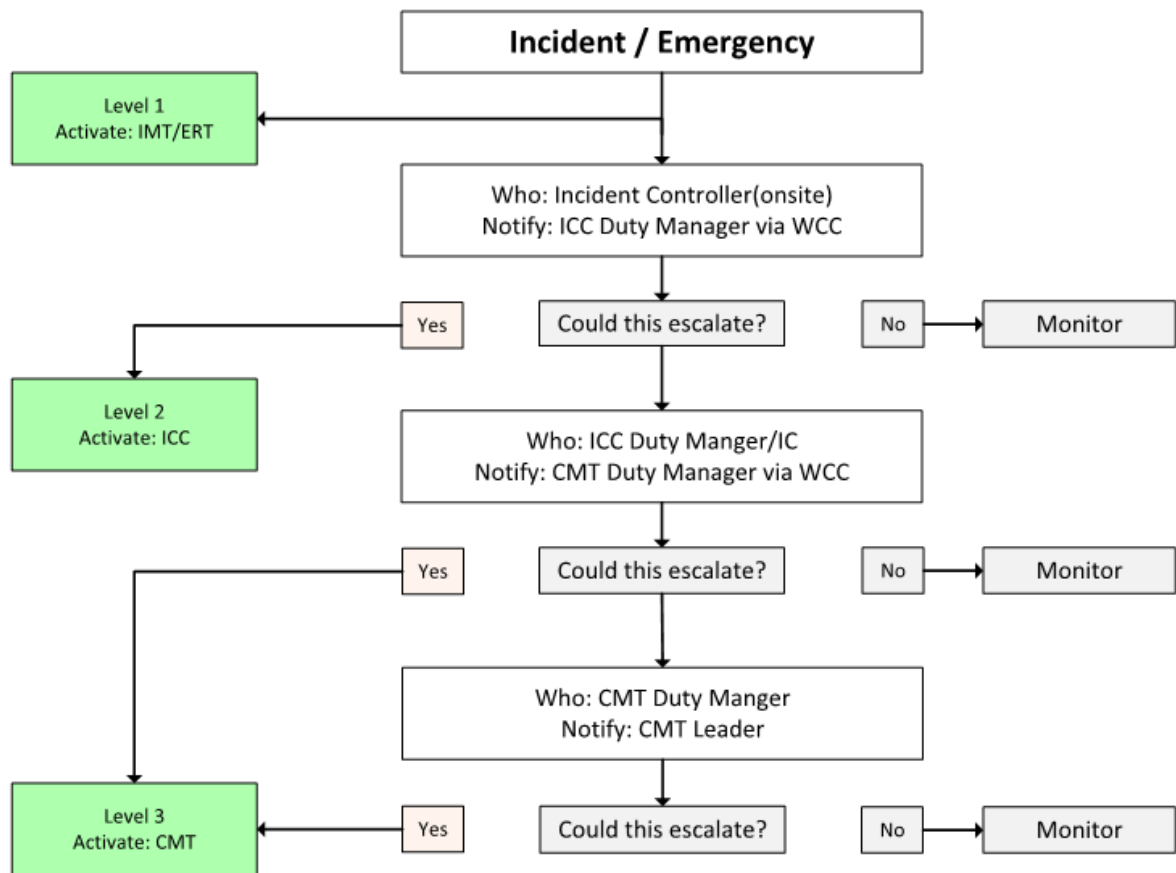


Figure 7.5: Woodside’s Tiered Response Arrangement

The following sections provide the response actions specific to this Myanmar ERP.

7.1.6.4 Health Care and Medical Emergency

All crew members need a valid offshore medical Fitness Certificate prior to commencing work. Woodside have two (2) doctors on board the drill ship at all times. They will be available 24 hours for emergencies for general complaints, illnesses, and emergencies.

All likely medical conditions and injuries that may present during the drilling program have been considered and an evacuation route identified. End to end care of all casualties will be provided. Injured persons will be assessed by the rig medical staff and identified as either, Priority 1 (Life threatening Injuries), Priority 2 (Significant Injuries), or Priority 3 (Minor Injuries). This assessment is confirmed by the medical evacuation doctor.

Evacuation from the MODU will primarily be conducted using a medically equipped helicopter or if necessary a fast supply boat. Specialist medical personnel have been contracted for the drilling including paramedics and Myanmar registered doctors.

Woodside have committed to transporting any injured or unwell person on the rig that has been assessed as requiring medical evacuation to the International SOS (ISOS) clinic or one of the preferred onshore healthcare facilities in Yangon where they can be stabilised.

A Myanmar registered ISOS Topside Doctor (English speaking) will be on board for all Myanmar based operations. The evacuation process is provided in **Figure 7.6**.

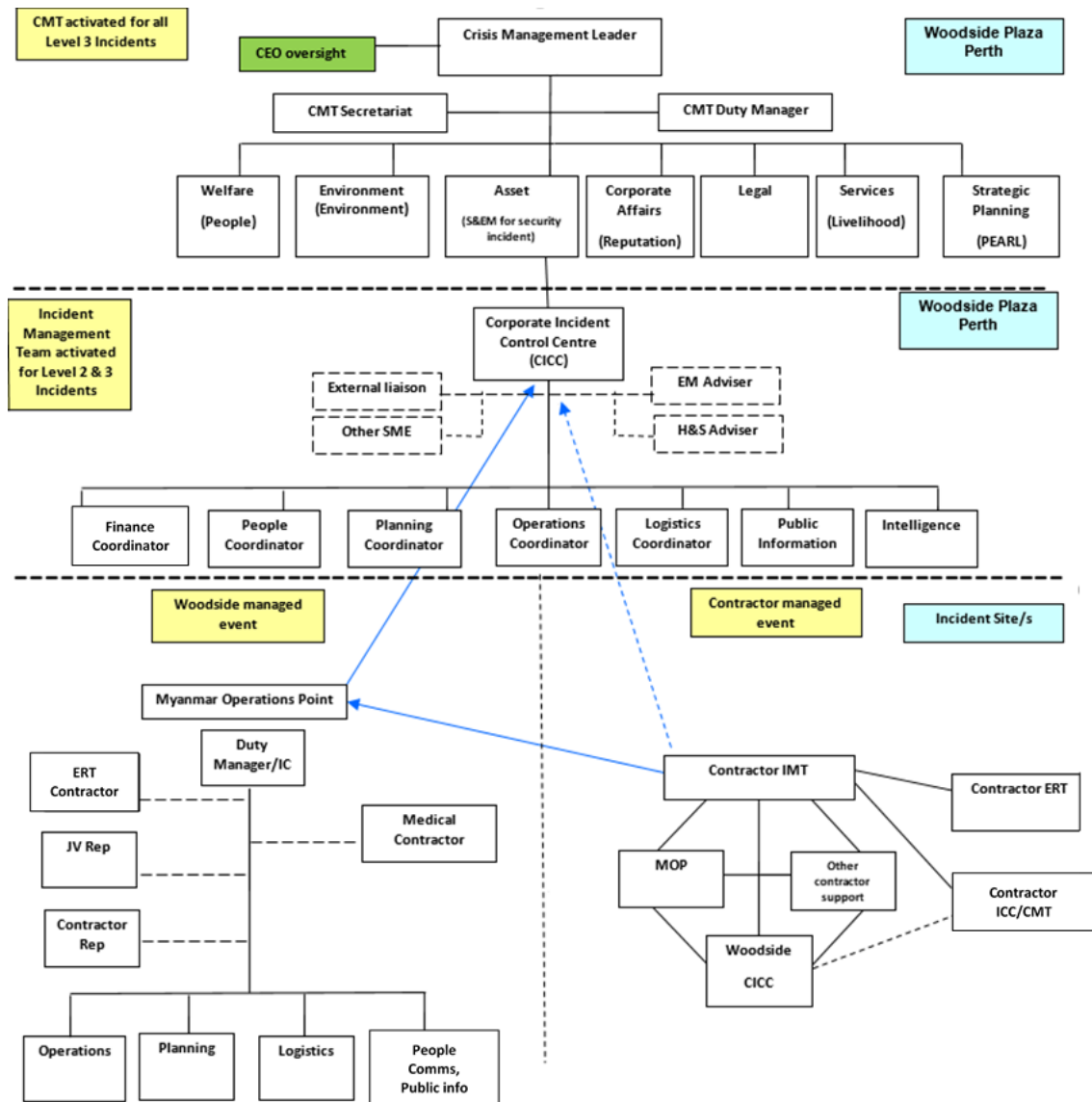


Figure 7.6: Myanmar medical evacuations process

7.1.6.5 Cyclone Management

Comprehensive cyclone preparedness enables the effective coordination of the safe, timely, and efficient response to potential cyclones during drilling. The management approach aims to reduce the impact of a cyclone to people, environment, assets, the company's reputation, and livelihood.

Depending on the stage of the drilling, in the event of a cyclone, the rig may disconnect from the seafloor and suspend the well. The rig would then move out of the path of the cyclone to maintain the safety of those on board the rig.

The safest cyclone management approach is to take early avoidance action as early action enables the drill rig to set a course to take the rig away from the probable track of the cyclone. This relies on accurate weather forecasting. In order to predict potential cyclones and to calculate the critical path of a cyclone, Woodside accesses two long range weather forecasting services. In support of these services, the Woodside metocean team are utilised to review the meteorological data and provide response advice.

It is recognised that the cyclone season in Myanmar is around the seasonal transitional months of April and October each year, however due to the unpredictability of cyclones they can form from time to time outside of these months.

7.1.6.6 Search and Rescue

Any offshore maritime incidents are to be reported immediately to the MOGE personnel on the rig and through the Myanmar Duty Manager / Business Resilience Manager (DM/BRM) who will initiate the required reporting and notification protocols to resolve the situation.

In the event of a search and rescue incident, the activation of any Myanmar Navy marine search and rescue operations will be initiated by the Duty Manager /BRM in consultation with MOGE.

If a helicopter fails to complete its flight to the planned destination and ditches into the ocean, search and rescue operations will be required to recover personnel to a place of safety. Aviation and marine search and rescue arrangements for the program shall be primarily provided by Woodside through contracted marine and aviation assets; with incident notification to, and external assistance coordination by, the Myanmar Navy.

The Myanmar Navy has the authority to call on all available helicopter services and marine vessels within the program region to aid in search and rescue process.

To manage the potential for loss of control of the helicopter resulting in a search and rescue event, the helicopters utilised to support drilling operations, have the capacity for flight location and status reporting. Emergency response and search and rescue protocols are activated by the transport contractor in the event:

- Loss of contact with an aircraft in flight for 10 minutes, either radio contact and / or lost satellite tracking system signal;
- Activation of emergency beacons; or
- Any emergency transmission from the aircraft.

Woodside or their subcontractors will be immediately contacted by the transport contractor when any helicopter emergency response affecting the drilling program occurs.

7.1.6.7 Fire and explosion

The MODU is designed to prevent the spread of vapours, gases and dust in order to mitigate against fire and explosion through the use of passive protection systems. Combined with equipment, control of work (permit to work systems), training and competence of personnel, these preventative controls ensure that the risk of fire and explosion is mitigated to ALARP. Well testing (if applicable) has further controls in place to ensure the risks are mitigated to ALARP.

Detection systems

Fire and gas (F&G) detection systems provide notice to facility personnel that a fire or gas event exists on board the MODU. Detectors, such as heat and smoke detectors, fire detectors, hydrocarbon gas detectors and flame detectors are fitted throughout the MODU.

Isolation system

An isolation system works to isolate the area or event to reduce the extent of impact. The emergency shutdown system (ESD) is designed to minimise the consequences of an emergency situation related to the uncontrolled release of hydrocarbons, outbreak of fire in hazardous areas, or other serious incidents. Control of the ESD system is only possible from dedicated safety operator stations.

The ESD system:

- Provides protection to personnel
- Minimizes the risk of pollution
- Protects the rig and its equipment

Deluge system

The MODU has a deluge system which provides a means of reducing the likelihood of ignition of any escaping hydrocarbons and/or assists with the cooling, controlling or extinguishing of a fire.

The deluge system is supplied with water from the MODU firewater distribution system via deluge valves. Deluge valves are located remotely from the area it is protecting to reduce the likelihood of impairment by fire or explosion in that area.

Evacuation

In the unlikely event of a fire or explosion on the rig, the fire and emergency alarm will trigger a mustering of the rig crew at assigned mustering stations. A head count is undertaken at each mustering station to account for personnel on board.

If required, the sounding of "Prepare to Abandon Ship" through the communication system will trigger all personnel to evacuate.

The following means of evacuation will be available on the MODU, in the preferred order listed below:

- Helicopter – The preferred means of evacuation in the event that evacuation is necessary and it is possible to get onshore support is by helicopter. Helicopter evacuation may take time depending on the distance to shore. The Rig helideck would require to be operational at the time of evacuation. In the event of a major fire or explosion, loss of stability, or other rapidly progressing event, helicopter evacuation would be unlikely.
- Lifeboats – Lifeboats are the primary means of evacuation in the event that helicopter evacuation is not possible. Lifeboats are commonly located on the primary forward side and on the secondary aft side of a MODU. The lifeboats on-board the MODU will accommodate all personnel with contingency. Prior to the evacuation process being initiated personnel are checked for wearing appropriate clothing and life jackets. The "Prepare to Abandon Ship" signal will be given to the personnel while they are at their mustering stations. The lifeboats will be then lowered into the ocean. All lifeboats have been designed as per SOLAS to be self-righting and outfitted with safety equipment (e.g. external water spray system, smoke ingress protection, emergency rations, portable GMDSS handheld radios, and radar transponders) in accordance with SOLAS Regulations.
- Life rafts – Are the secondary means of evacuation in the event that lifeboat evacuation is not possible. Depending on the rigs contractor the amount and location may change of the life rafts.

- Tertiary Evacuation – Tertiary evacuation (abandonment) arrangements are in place in the event that both primary and secondary means of evacuation are not possible.

Lifeboats and life rafts evacuating personnel from the facility will collect together once in the water. If the Standby Vessel (SBV) is on station, each lifeboat will attempt to transfer people to the SBV, as weather and safety conditions permit. The SBV may use an on-board fast rescue craft or may rescue survivors directly onto the vessel. The success of this operation depends on the prevailing weather condition. In situations where a significant number of the people end up in the water, helicopter assistance will reduce the rescue time.

7.1.7 Monitoring Plans

The implementation of this ERP is continually reviewed by the drilling contractor and Woodside representatives during the operations, and after the occurrence of any accidents or emergency situations, to ensure that lessons learnt inform continuous improvement. Emergency exercises will be undertaken on a regular basis to confirm adequacy of response strategies and investigations of accidents or incidents will follow formal documented procedures.

Emergency drills at the facility will be completed in accordance with the rig drill schedule as part of overall emergency preparedness. These drills may test the response arrangements for one or some of the following scenarios:

- Pit drill and blowout drill for each drill crew (recorded in the International Association of Drilling Contractors (IADC) report);
- Man overboard;
- Environmental spill;
- Search, rescue and mock injury drill;
- Helicopter emergency drill;
- Fire and abandon ship.

Additional drills to address specific risks (for example, shallow gas or well test) are conducted in preparation for the relevant operation. The Well Site Manager is responsible for ensuring these drills or exercises are conducted.

The Environmental Monitoring Report submitted to ECD will also provide a list of any emergency situations that have occurred, if applicable.

7.1.8 Projected Budgets and Responsibilities

7.1.8.1 Budget

The budget for emergency response is based on the level of response required (i.e., Level 1 to 3). Woodside have a contract in place with ISOS to provide assistance with medical emergency situations.

7.1.8.2 Responsibilities

In general, the drilling contractor has the primary role for all emergency response and cyclone evacuation. Woodside will provide support as required, including logistical support during cyclone evacuations.

The Master will be in command during all offshore emergencies, unless otherwise arranged, and will be supported by the Woodside Well Site Manager for all incidents on the facility. The Master has the authority to take any measures necessary to ensure the safety of all personnel on board. This includes deploying the emergency response teams on board, engaging external assistance, and requesting Woodside support via helicopters, support vessels, and logistics. The rig's ERP applies to the rig and the 1640 ft. exclusion zone. Any vessel within this zone must comply with the rig's Emergency Response Plan.

Table 7.1 provides the emergency levels and who should be activated and notified at each level of emergency.

Table 7.1: Levels of Emergencies

Incident Classification	Activate	Notify
<u>Level 1</u> : Drilling Contractor Operational Response	Rig Response Consider activating Woodside (to assist with technical expertise, Myanmar resources and local notifications) and the CICC if required for Hydrocarbon Spill Response <i>For onshore emergency, activate the appropriate Myanmar emergency authorities</i>	Drilling contractor master Drilling contractor rig manager Woodside Drilling Superintendent Woodside Myanmar Duty Manager (MOP) Woodside Well Site Manager Woodside Communications Centre (WCC) MOGE
<u>Level 2</u> : Drilling Contractor Operational / Tactical Support	Drilling contractor IMT (Myanmar) Woodside Well Site Manager Woodside CICC DM	Drilling contractor rig manager Woodside CMT Duty Manager (via WCC) MOGE (As government reps)
<u>Level 3</u> : Drilling contractor (Level 3) Tactical / Strategic	Woodside Well Site Manager Woodside CICC Woodside CMT	Drilling contractor Chief Executive Officer (CEO) MOGE & MONREC (as per Article 107 of the EIA Procedure) Woodside CEO

Media releases, public statements, and liaison outside of the Incident Management Teams will be developed in joint collaboration between Woodside and the drilling contractor. The release of any external communications will be approved by the respective Incident Commanders and jointly endorsed by the respective CICC's and approved by the respective Crisis Management Teams for simultaneous release. For Level 3 responses, the CMT will handle all media and PEARL issues, the CICC will provide tactical support to the MOP.

7.1.8.3 Integration with Relevant Myanmar Stakeholders and Key Responsibilities

In the event of an emergency during drilling activities, both the drilling contractor and Woodside are involved in managing a response. The responsibilities and notifications to be executed during a response vary depending on the event, as reflected in **Table 7.2**.

Table 7.2: Key functions and responsibilities during and emergency response event

Key Function	Responsibility
EMERGENCY MANAGEMENT	
Command of rig-based emergencies (including 1640 ft. exclusion zone)	Contractor
Command of non-rig based emergencies	Woodside
Emergency centre for incident support for rig-based emergencies (including 1640 ft. zone)	Contractor (primary) Woodside (support)
Emergency centre for incident support for non-rig based emergencies (spills to environment, well)	Contractor (primary) Woodside (support)

Key Function	Responsibility	
integrity, incidents outside the 1640 ft. exclusion zone)		
Site Emergency Response Team on MODU	Contractor (primary)	Woodside (support)
Command of rig-based emergencies (including 1640 ft. exclusion zone)	Contractor	
Command of non-rig based emergencies		Woodside
Emergency centre for incident support for rig-based emergencies (including 1640 ft. zone)	Contractor (primary)	Woodside (support)
NOTIFICATION		
Notification of dangerous occurrences to Myanmar Navy (via MOGE)		Woodside
Notification of spills to Department of Marine Administration (via MOGE)		Woodside
Notification of incident to Maritime Authority via MOGE personnel on MODU		Woodside
Notification to Woodside service providers		Woodside
Notification to Drilling Contractor service providers	Contractor	
Notification of Rig related fatality to Police	Contractor	Woodside
MEDIA		
Preparation of media release (Joint)	Contractor (Prepare)	Woodside (agree)
Media liaison (Joint Woodside and drilling contractor Media Management Team)	Contractor	Woodside
HYDROCARBON SPILL		
Spill to environment response (within project area)		Woodside
Spill contained on drill ship (or outside project area)	Contractor	
SEARCH & RESCUE (SAR)		
Initiate SAR operation (initial) Air/Marine	Contractor (Capt)	
Provide SAR facilities (helicopters, vessels etc.) and assist in SAR operations.	Contractor	
Notification and Liaison with the Maritime Authority	Contractor (Capt)	
MEDIVAC		
Initiate Medivac process	Contractor	
Medivac arrangements		Woodside (approved)
Mobilise helicopters and get casualty to hospital		Woodside
Co-ordination of continued onshore medical arrangements after stabilisation	Contractor personal	Woodside personnel
WELFARE		
Critical incident support counselling	Contractor personal	Woodside personnel
Welfare arrangements co-ordination	Contractor personal	Woodside personnel

7.2 Marine Biodiversity Management Plan

7.2.1 Objectives

The objective of this marine biodiversity management plan is to ensure that Woodside implements appropriate mitigation and management measures during the proposed drilling program to protect marine biodiversity. As per the impact assessment presented in the approved AD-1 EIA report, the proposed program will be undertaken greater than 40 miles from the nearest land and the potential impacts of the drilling program are not expected to impact any coastal habitats. Section 5 of the approved AD-1 EIA provides a description of the surrounding environment and a summary of the potential marine biodiversity found in the deep water and coastal environments in the northern Bay of Bengal and the marine receptors this plans aims to protect is provided below:

Offshore Benthic Habitats and Benthic Communities

- In the seafloor sediment of the Rakhine Basin, macrofauna such as polychaetes, molluscs, crustaceans, and echinoderms can be found.

Fish Assemblages

- In the open ocean of AD-1, commercially important fish, such as sword fish (*Xiphias gladius*), striped Marlin (*Tetrapturus audax*), sailfish (*Istiophorus platypterus*), hairtails (*Trichiurus lepturus*), bigeye (*Priacanthus hamrur*), jellyfish, lizardfish (*Saurida tumbil*), tooth-ponyfish, (*Gazza minuta*), Japanese threadfin bream (*Nemipterus japonicas*), spiny cheek Lanternfish (*Benthosema fibulatum*), *Decapterus* sp. and Indian anchovy (*Stolephorus indicus*) can be found.
- AD-1 intersects with fishing blocks in the waters of Rakhine State (A-3, A-7 and A-8). Those fishing blocks are areas where the commercially important fishes are caught including Clupeidae (Herring and Anchovies), Scombridae (Mackerel and Tuna) and demersal species (Snapper, Thread Fin / Indian Salmon and Croakers). These blocks are also fishing grounds for Acetes (small shrimp).
- The IUCN Red List Near Threatened species, the narrow barred Spanish Mackerel (*Scomberomorus commerson*), can also be found seasonally.
- Gurnards, cusk eels, crustaceans (shrimps, crabs, and lobsters), (cuttlefish and octopus) can be caught in the lower slope area of the Rakhine Basin in water depths between 650 and 1640 ft, which is near AD-1.
- Shark species *Carcharhinus longimanus* and stingray species *Dasyatis* sp. could also occur in AD-1.
- Whale Sharks (*Rhincodon typus*) can be found during December to March in the AD-1 area. This species is listed as a species of conservation concern on the IUCN Red List.

Marine Mammals

- In Myanmar waters, the following IUCN red list whale species could be present; Blue Whale (*Balaenoptera musculus*) (Endangered), Fin Whale (*Balaenoptera physalus*) (Endangered), Sperm Whale (*Physeter microcephalus*) (Vulnerable), Humpback Whale (*Megaptera novaeangliae*), Bryde's Whale (*Balaenoptera edeni*), Longman's Beaked Whale (*Indopacetus pacificus*), Strap-Toothed Whale (*Mesoplodon layardii*), Blainville's Beaked Whale (*Mesoplodon densirostris*), Risso's Dolphin (*Grampus griseus*), Dwarf Sperm Whale (*Kogia sima*), Fraser's Dolphin (*Lagenodelphis hosei*) and Rough-Toothed Dolphin (*Steno bredanensis*).
- When conducting a seismic survey in Block AD-7, which is nearest to AD-1, the following IUCN listed species of conservation concern were observed; Melon Headed whales (*Peponocephala electra*), Indo-Pacific Bottle-Nose Dolphins (*Tursiops aduncus*) and Spinner Dolphin (*Stenella longirostris*).

Marine Turtles

- Myanmar waters host five species of marine turtles, all of which are IUCN-listed threatened species. These are the olive ridley turtle (*Lepidochelys olivacea*; Endangered), loggerhead turtle (*Caretta caretta*; Endangered), green turtle (*Chelonia mydas*; Vulnerable), hawksbill turtle (*Eretmochelys imbricata*; Critically Endangered), and the leatherback turtle (*Dermochelys coriacea*; Endangered). Among them, the olive ridley, green, and hawksbill turtles may nest along the Ramree Island and Manaung Island (approximately 50 and 40 miles respectively from AD-1).
- Oyster Island Key Biodiversity Area (KBA) is located 52 miles from the AD-1 well location. This area is designated as a KBA due to the potential presence of hawksbill, green, and loggerhead turtles.

Marine Birds

- Marine birds such as gulls, storm petrels, Jaegers (Skuas) and two types of tern (Little Tern (*Sterna albifrons*) and Brown Bobby (*Sula leucogaster*)) can be found in coastal areas east of AD-1, 60 miles or greater from AD-1.
- Nantha Island Important Bird Area (IBA) is over 50 miles east of the AD-1 and globally threatened species such as Bar-Headed Goose (*Anser indicus*), Spoon billed Sandpiper (*Calidris pygmaea*) and spotted greenshank (*Tringa guttifer*) have significant populations on this island.

Coastal Habitats

- Irrawaddy Dolphin (*Orcaella brevirostris*) can be present in the May Yu, Kalartan and Lay Myoe rivers near the coast of Rakhine to the east of AD-1 (over 60 miles from AD-1).
- In coastal areas to the east of AD-1 (40 miles from AD-1), 10 types of seagrass have been recorded; *Syringodium isoetifolium*, *Cymodocea rotundata*, *C. serrulata*, *Halodule uninervis*, *H. pinifolia*, *Enhalus acoroides*, *Thalassia hemprichii*, *Halophila beccarii*, *H. decipiens* and *H. major*. These seagrass meadows serve as nurseries and feeding grounds for fish, prawns and crabs. They also provide feeding grounds for Dugong dugon, which are listed on IUCN Red list as Vulnerable.

7.2.2 Legal Requirements

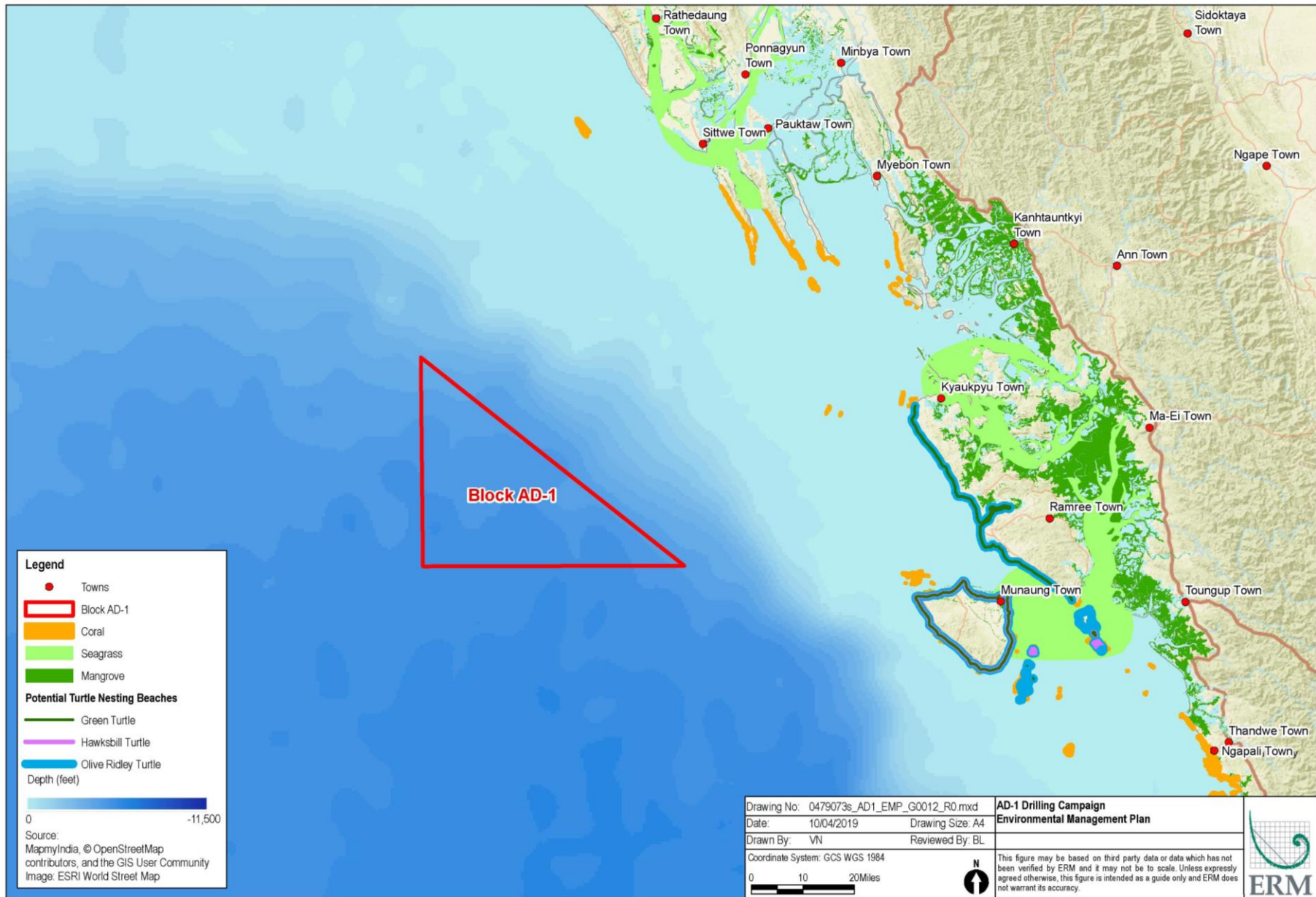
Woodside and its contractors will comply with applicable biodiversity legislation and regulations in Myanmar.

- The Protection of Wildlife and Conservation of Natural Areas Law, 2018.
- The Protection of Wildlife, Wild Plant and Conservation of Natural Areas Rules, 2002.
- The Myanmar Marine Fisheries Law, 1990, amended 1993.
- Myanmar Aquaculture Law and Rules, 1989.

7.2.3 Overview maps and site layout maps, images, aerial photos, satellite images

Figure 7.7 provides an overview of the surrounding environment, including the location of sensitive receptors in proximity to AD-1.

Figure 7.7: Coastal Habitats and Marine Turtle Nesting Sites



7.2.4 Implementation Schedule

Biodiversity management actions will be implemented for the duration of the proposed drilling program and as shown in **Table 7.18**.

7.2.5 Management Actions

All mitigation and management measures related to the marine receptors are outlined in **Table 7.18**. **Table 7.3** describes the commitment Woodside will implement during the proposed drilling program to protect marine biodiversity in AD-1. These are consistent with good practice and IFC Environment Health and Safety Guidelines Offshore Development (2015) requirements.

Table 7.3: Commitments to Ensure Protection of Marine Biodiversity

Commitments to be implemented for the protection of marine biodiversity	Marine habitats	Fish and Plankton	Marine Mammals	Marine Turtles	Marine Birds	Water Quality	Benthic Habitats
Vessels will have valid International Sewage Pollution Prevention (ISPP) Certificate.							
Discharge of sewage into the sea is prohibited, except when the vessel has in operation an approved sewage treatment plant or when the drill ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than 3 nm from the nearest land.							
Sewage which is not comminuted or disinfected has to be discharged at a distance of more than 12 nm from the nearest land.							
Garbage discharged by the drill ship is passed through a grinder so that it is capable of passing through a screen with no opening wider than 0.98 inch: this applies to support vessels within the 1,640 ft. safety zone.							
Average oil on cuttings for the well will be limited to 6.9% or less by weight.							
All residual NADF will be returned to shore for reconditioning, re-use or disposal. No bulk discharge of NADF drilling fluids will be permitted offshore.							
Where cuttings with retained NADF are discharged overboard, they will be discharged below the water line.							
Chemicals for discharge or release to sea to be selected and approved as per the Woodside Chemical Assessment Process and included on the Chemical Selection List.							

Commitments to be implemented for the protection of marine biodiversity	Marine habitats	Fish and Plankton	Marine Mammals	Marine Turtles	Marine Birds	Water Quality	Benthic Habitats
No biocides containing organohalogens will be used							
Only Group (III) Synthetic Organic Base Fluids will be used.							
Contractor to conduct bulk operational discharges under the drill ship Permit to Work (PTW) system and in accordance with relevant regulations.							
The average oil content for discharge of mud pit wash residue will be limited to less than 1% by volume. This typically occurs at the end the drilling programme.							
Vessel WMP (or equivalent) must contain as a minimum:							
Waste handling equipment, waste storage containers, and spill response equipment appropriate to the type and volume of waste will be provided at waste storage areas.							
All hazardous wastes will be segregated prior to onshore disposal.							
General waste (excluding food) will not be disposed of to sea.							
Vessels >400 tonnes (or certified for >15 persons on-board) will have a Garbage Record Book.							
All contracted vessels will comply with IMO Ballast Water requirements.							
MODU will not enter nearshore waters in Myanmar during the drilling program.							

Commitments to be implemented for the protection of marine biodiversity	Marine habitats	Fish and Plankton	Marine Mammals	Marine Turtles	Marine Birds	Water Quality	Benthic Habitats
Implementation of Woodside's invasive marine species management process							
A 1,640 ft. radius safety zone will be maintained around the drill ship as required.							
Support vessels will not travel greater than 6 knots within 984 ft. of a whale, if sighted, (caution zone) and approach no closer than 328 ft from a whale, if sighted, (Note this standard does not apply to support vessels engaged in limited/constrained manoeuvrability activities near the drill ship)							
Vessel bridge crew to maintain continuous visual watch of any hazards (including marine mammals and marine turtles).							
A trained crew member will be utilised during VSP or SWD operations to monitor and record marine mammal, marine turtle and whale shark observations.							
Drill ship and support vessels (as applicable or required by vessel class) operate in compliance with MARPOL 73/78 Annex I (Reg. 7, 17 and 37) including:							
Vessels will hold a valid International Oil Pollution Prevention Certificate (IOPP) certificate							
Vessels will hold an Oil Spill Response Plan (called an Oil Pollution Emergency Plan or OPEP' by Woodside) on board to implement in a spill incident requiring capability beyond the SOPEP.							
Vessels will maintain an oil record book.							

Commitments to be implemented for the protection of marine biodiversity	Marine habitats	Fish and Plankton	Marine Mammals	Marine Turtles	Marine Birds	Water Quality	Benthic Habitats
Shipboard Oil Pollution Emergency Plans (SOPEPs) will be developed, approved and kept on-board vessels, as applicable or required by vessel class							
Woodside will conduct a marine assurance audit of vessels to demonstrate compliance with relevant standards.							
Vessel standard operating procedures and a fuel bunkering plan will be prepared and implemented.							
Bunding will be in place for isolated point sources of contamination and the perimeter of larger, generic areas.							
Implementation of the following controls as a minimum during fuel bunkering: Bunkering to commence during daylight hours; Visual monitoring of gauges, hoses, fittings and the sea surface before and during bunkering; Dry break couplings fitted to transfer hose.							
Spill response kits located in proximity to chemical and hydrocarbon storage/bunkering areas and appropriately stocked/replenished as required.							
Crew trained in spill prevention and use of spill response equipment.							
Implementation of the Woodside Oil Spill Response Plan (as per <i>Section 7.4</i>).							

Commitments to be implemented for the protection of marine biodiversity	Marine habitats	Fish and Plankton	Marine Mammals	Marine Turtles	Marine Birds	Water Quality	Benthic Habitats
All chemical and/or hydrocarbon wastes will be segregated into clearly marked containers prior to onshore disposal by a licensed waste management contractor, as per the relevant SDSs.							
Woodside's Well Lifecycle Management Process (WLMP), Well Barrier Engineering Standard and Well Control Engineering requirements to ensure well design, construction and operation are managed and controlled will be implemented. The mitigation measures listed under the specific action reflect the WLMP process requirements.							

7.2.6 Monitoring Plans

Monitoring will be implemented to demonstrate compliance with both regulatory and Woodside's good practice and will also provide verification of the effectiveness of the implemented control measures. The 2018 monitoring program demonstrated the successful implementation of the 2018 approved AD-1 EIA's environmental management commitments. It showed the potential impacts are typically short term and are well understood from previous experience in the industry, with little or no evidence of adverse consequences on the majority of environmental or social receptors in line with the approved AD-1 EIA (ERM 2019). The monitoring below was undertaken as part of the 2018 monitoring program to support the biodiversity management plan, as approved in the AD-1 EIA. This provides the background and justification for the future monitoring required to support this biodiversity management plan.

7.2.6.1 ROV Images of Seabed

A Remotely Operated Vehicle (ROV) equipped with a standard operational video camera recorded imagery of the seabed surrounding the well site Aung Siddhi (at a depth of approximately 4593 ft). The video footage was accessed and reviewed by a Woodside marine scientist with respect to describing the physical seabed habitat and benthic communities. The observed seabed at the well site was composed of soft, fine, muddy sediment generally homogeneous with some mounds, burrow and tracks indicating mobile biota present but not observed in this deep and dark environment. The physical and biological environment as seen from the ROV video footage is consistent with the description of the environment as presented in the approved AD-1 EIA. The ROV Images of seabed will continue to be collected under this EMP's monitoring program.

7.2.6.2 Water Quality

The marine water quality samples were collected at a pre-defined location on 2nd May 2018 and 18th June 2018 using a support vessel approximately 1640 ft from the drillship and in accordance with the Marine Water Sample Collection Standard Operating Procedure for the pre-drilling (baseline) and post-drilling sampling (Woodside 2018b). The samples were collected approximately 5 ft. below the surface waters and were analysed for physical parameters, metals and Total Petroleum Hydrocarbons.

The AD-1 environmental monitoring program results show that no changes in water quality were detected post-drilling when compared to baseline water quality measured parameters (ERM 2019). This validates the EIA Study which assessed the impact to water quality to be "indistinguishable from natural variation".

Therefore, based on the results of the marine water quality monitoring results, the seawater in AD-1 are considered to be undisturbed with no evidence of contamination caused by the AD-1 drilling activities.

Water quality sampling will not be undertaken for this EMP's monitoring program.

7.2.6.3 Sediment Sampling

Seabed sediment sampling was undertaken pre-drilling (baseline) and post drilling as part of the 2018 monitoring program (Woodside 2018b). Sediment sample collection sites were pre-determined and comprised set distances along a transect along which the eight sites were sampled from a site as close as operationally feasible (16.4 ft.) to the maximum working range of the ROV (820 ft.).

Modelling was conducted for the EIA study which conclude that ecological impacts from drilling fluid and cuttings discharge would be localised to 1,312 ft. around the well centre and associated with a localised area of sediment deposition (ERM 2019). This means the Area of Influence for impacts such as physical and chemical changes to the seabed sediment quality and burial of offshore benthic communities is extremely small scale and localised and highly unlikely to have toxic impact to benthic and pelagic communities.

Laboratory analysis was undertaken of the sediment for metals and polyaromatic hydrocarbons in both baseline and post drilling. The results showed that changes to the sediment were limited to no further than 82 ft. from the well centre. These results showed the changes to the sediment were closer to the well centre than predicted in the EIA study.

Sediment sampling will not be undertaken for this EMP's monitoring program.

7.2.6.4 Marine Fauna Observations during Vertical Seismic Profiling (VSP) and Seismic Whilst Drilling (SWD)

SWD was conducted once during the AD-1 drilling activity on the 8th of May 2018 from 16:00 – 22:00. There was no marine fauna observed prior to or during this activity.

The Marine Fauna observation will continue to be collected under this EMP's monitoring program.

7.2.6.5 Plankton (knowledge building)

Plankton samples were collected as part of the 2018 monitoring program to build knowledge of the offshore marine environment in Myanmar. The plankton samples were sent to Dr San Tha Tun (Head of Marine Science) from the Mawlamyine. The samples were received on 12 July 2018.

Plankton samples were collected to the northwest of the well site outside the 1640 ft. exclusion zone during daylight hours. The samples were collected by sinking each net in turn below the surface waters to an approximate depth of 33 ft. and then hauling to the surface. The results showed the plankton community sampling provided an indication of species in the offshore pelagic waters (0-32 ft.) of the Rakhine Basin. Species recorded are common and widespread in Myanmar Waters.

Plankton sampling will not be undertaken for this EMP's monitoring program.

7.2.6.6 Benthic Communities (knowledge building)

Benthic communities were sampled as part of the 2018 drilling program to build knowledge of the deep water, offshore marine environment in Myanmar. The Macro-benthos samples were sent to Dr Cherry Aung (Head of Marine Science) from the Patheingyi University. Samples were received on the 10 August 2018.

Using the sediment sample material from the cores collected for sediment quality, the top 4-8 inch of the sediment were transferred to a container and each sample sieved to retain any macro-benthos present in the sediment. The results of the sediment samples did not find any macrobenthic fauna from the sieved sediment.

Benthic sampling will not be undertaken for this EMP's monitoring program.

7.2.6.7 The Biodiversity Monitoring Program

Monitoring will be implemented to demonstrate compliance with both regulatory and The EIA 2018 monitoring program concluded that potential impacts are typically short term and are well understood from previous experience in the industry, with little or no evidence of adverse consequences on the majority of environmental or social receptors.

A monitoring table relevant to marine biodiversity management for the drilling program of AD-1 in the deep water, offshore water of Myanmar is presented in **Table 7.4**.

Table 7.4: Biodiversity Monitoring

Monitoring	Receptor	Residual Impact	Report	Approximate Submission Timing
ROV images of seabed	Offshore benthic habitats and communities	F – No lasting effect	Monitoring Report to include ROV images	3 months after completion of drilling
Marine Fauna during VSP and SWD	Marine Mammals and turtles	E – No lasting effect	Monitoring Report to include any marine fauna sightings during VSP or SWD	3 months after completion of drilling

The Environmental Monitoring Reports summarising the outcomes of these programs will be submitted to ECD three months after completion of the drilling program.

The full list of monitoring to be conducted for the Project is provided in **Table 7.19**.

7.2.7 Projected Budgets and Responsibilities

7.2.7.1 Budgets

The budget for managing biodiversity is included in drilling activities' budget presented in Section 5.2 of this EMP.

7.2.7.2 Responsibilities

Whilst biodiversity management is the responsibility of all Woodside employees and contractors at some level, the following roles are central to biodiversity management (**Table 7.5**).

Table 7.5: Biodiversity Management Roles and Responsibilities

Role	Responsibilities
Well Site Manager (WSM)	<ul style="list-style-type: none"> Ensure Woodside and third party contractor personnel (including rig personnel) are aware of, and adhere to, the commitments of Table 7.18.
Drilling and Completions Environment Adviser	<ul style="list-style-type: none"> Provide oversight and support of marine biodiversity management plan activities; Ensure environmental awareness induction to relevant contractors prior to commencing drilling activities have been undertaken. Assurance of compliance with the EMP commitments made in Table 7.18.

7.3 Waste Management Plan

7.3.1 Objectives

The objectives of this Waste Management Plan (WMP) are to:

- Ensure waste is managed in a controlled and environmentally sound manner consistent with Woodside's HSEQ Policy, and performance standards;
- Comply with all statutory and contractual requirements concerning the management of waste;

- Ensure resources are recovered where possible and safe to do so, for re-use and recycling; and
- Ensure appropriate recording and tracking occurs for all wastes generated.

7.3.2 Legal Requirements

Woodside and its contractors will comply with waste management legislation and regulations in Myanmar and any other country that any activities associated with the drilling program take place in, as relevant, pertaining to the handling, storage, transportation, treatment and disposal of the waste streams and various waste types generated during drilling activities.

7.3.2.1 The International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997(MARPOL)

To date Myanmar has ratified Annex I, II, III, IV, and V of MARPOL73/78.

- Annex I covers the prevention of pollution by oil and oily water in relation to the discharge from vessels and tankers;
- Annex II covers the control of pollution by noxious liquid substances in bulk and prevents any discharge within 12 nautical miles of the coast;
- Annex III covers the prevention of pollution by harmful substances carried by sea in packaged form;
- Annex IV covers the prevention of pollution by sewage from ships; and
- Annex V covers the prevention of pollution by garbage from ships.

7.3.2.2 Basel Convention

The Convention regulates the transboundary movements of hazardous wastes and provides obligations to its Parties to ensure that such wastes are managed and disposed of in an environmentally sound manner.

7.3.3 Overview maps and site layout maps, images, aerial photos, satellite images

There are no applicable overview maps, satellite images, or site layout maps associated with this Waste Management Plan.

7.3.4 Implementation Schedule

Waste management actions will be implemented for the duration of the proposed drilling program and as shown in **Table 7.18**.

7.3.5 Management Actions

The plan covers the segregation, storage, transfer, disposal, and recording of waste. The waste management hierarchy is applied to minimise the amount of waste to be disposed (**Figure 7.8**).

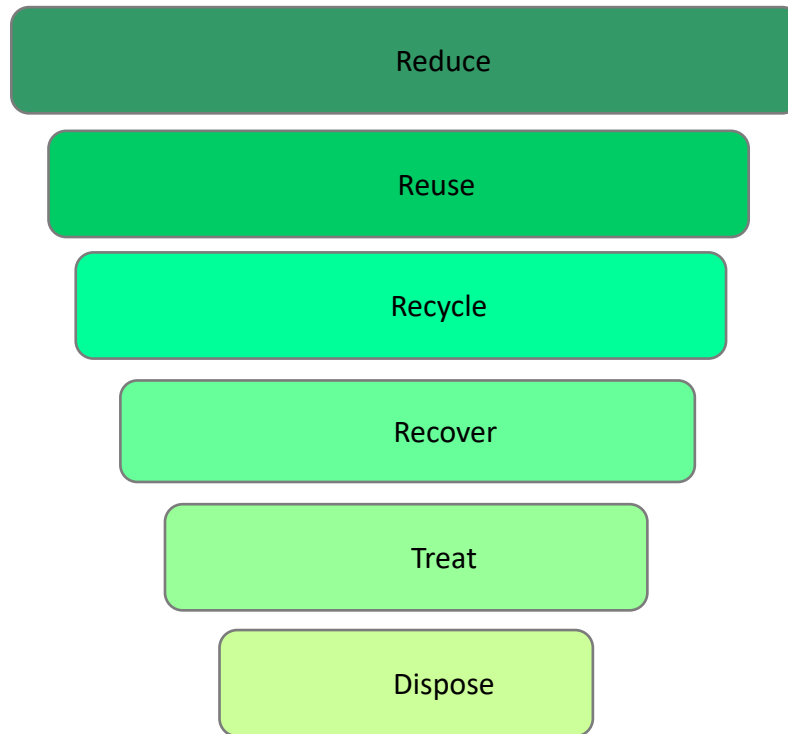


Figure 7.8: Waste Management Hierarchy

7.3.5.1 Waste Streams

Waste streams fall into one of four waste groups. This enables planning for appropriate segregation and disposal of waste (**Table 7.6**):

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

Table 7.6: Waste Streams

Hazardous recyclable	Non-hazardous recyclable	Hazardous non-recyclable	non-hazardous non-recyclable
Aerosol cans, batteries (non-alkaline), empty drums, fluorescent tubes, waste oil (engine, hydraulic).	Aluminium cans, paper, cardboard, newspapers, plastic bottles, cooking oil, metal, glass, batteries (alkaline), printer toner cartridges, wood/ timber.	Oily rags, dry oily absorbents, oily PPE, oil filters, empty chemical/ paint/ solvent/ thinner containers/ tins, gaskets, insulation.	Food waste, general rubbish, rubber.

7.3.5.2 Hazardous Waste

Hazardous waste is any waste that if not handled, stored, or disposed of in an appropriate manner presents a significant risk with regards to health, safety, and environment. All chemical and/or hydrocarbon wastes will be segregated into clearly marked containers prior to onshore disposal by a licensed waste management contractor, as per the relevant SDSs.

7.3.5.3 Non-Hazardous Waste

Non-hazardous waste, or general waste, refers to waste products that do not pose a direct risk to health, safety or the environment. Non-hazardous waste must be disposed into the general waste bins, located throughout each vessel. These bins are emptied into the compactor or the skip inserts and loaded into the general waste skips.

7.3.5.4 Recyclable Waste

Recycling reduces the quantity of waste sent to landfill, subsequently reducing the environmental footprint from Woodside’s activities. Recyclable wastes shall be placed in the correct waste receptacles and labelled as recyclable.

Note that some products may be recyclable and also hazardous (for example lead acid batteries and some drums).

Recyclable wastes arriving onshore are sent to the appropriate recycling facility by the waste contractor.

All personnel shall ensure that recyclable waste skips or wheelie bins are not contaminated with other wastes. Waste skips that are labelled as recyclable, but are contaminated with other wastes, will not be recycled.

7.3.5.5 Waste Segregation and Bin Selection

Waste must be placed in the correct receptacle to:

- Avoid generating new hazards (e.g. cross-contamination: hazardous/nonhazardous and recyclable/non-recyclable);
- Maximise recycling and re-use opportunities;
- Reduce landfill volume and expensive hazardous waste treatment; and
- Meet Woodside’s requirements to record and report all waste streams accurately.

It is also important to choose the correct bin / storage solution taking into account the type of waste to be stored, the storage location and disposal capabilities. Bin types are presented in **Table 7.7**.

Table 7.7: Types of bins used for Drilling and Completions activities

Bin Type	Bin use
Wheelie Bins	Wheelie bins are positioned around the MODU decks and shall be colour coded and labelled according to the different waste streams. Some bins are provided on an as-required basis only.
Skips	Skips on the MODU decks are normally for disposal of general waste. Steel recycling or hazardous waste skips may be arranged depending on space restrictions and if large volumes of these materials are being generated. Skips must be covered to prevent windblown waste, particularly where lighter waste materials are disposed (e.g. galley waste).
Bulky Bag	Bulky bags are usually used for lightweight recyclable products such as plastic containers, tins, aluminium cans, and cardboard.
Liquid Waste Containers	Liquid waste products may be placed in plastic drums, steel drums, intermediate bulk container (IBCs) or ISO containers. Waste products may include waste oil, greases or liquids from separators. Storage in a bunded area is preferred. Alternatively temporary bunding is required, where practicable. Liquid wastes must be correctly labelled, stored, and segregated (according to hazard).

7.3.5.6 Offshore Waste Management Process

Step 1: Waste on the rig is segregated into hazardous, general, and recyclable wastes within suitable bins that are clearly labelled. When bins/drums are used on the rig for waste materials, they are clearly labelled with a Drilling & Completions (D&C) Waste label and have rig name and waste type clearly written on it.

Step 2: Bins/drums are sent onshore for disposal. Each bin/drum must have a D&C Waste label with rig name and waste type clearly written on each. If the bin/drum is placed inside a shipping container, the shipping container must also have a rig backload label.

Step 3: Each waste bin/drum sent onshore must be on the backload manifest.

Step 4: Waste transported onshore must be recorded in a waste database and the data supplied to the D&C Environment Adviser on a monthly basis.

Step 5: Any non-compliances with this WMP are to be recorded and actions implemented to prevent reoccurrence.

Step 6: Wastes will be received onshore and disposed of by the waste contractor or sub-contractor. The waste contractor or sub-contractor shall comply with the legal requirements for that country as well as meet Woodside standards.

Step 7: The waste contractor will issue the sub-contractor with a Waste Disposal Certificate upon collection of the wastes, at which point they become operator of the waste and assume all legal responsibility for waste management.

7.3.5.7 Waste Disposal Locations

Suitably approved and fully licensed waste contractors providing waste treatment and disposal services are assessed by Woodside in line with international good practice. The facilities must have biological, chemical, or physical treatment of the waste material to render it nonhazardous prior to final disposal. Facilities must be specially designed to receive the waste, i.e. hazardous waste to hazardous waste processing facilities. Waste facilities are audited to assess the potential HSE and operational risks associated with each final disposal location.

Locations in and outside of Myanmar could potentially be used during the drilling program. Within Myanmar, the DOWA facility located in Thilawa, Yangon could be used for hazardous and non-hazardous waste disposal. The facility has been audited previously. Outside of Myanmar, there are also suitable waste handling facilities in Bangkok, Thailand.

7.3.6 Monitoring Plans

Monitoring will be implemented to demonstrate compliance with both regulatory and Woodside's internal procedures and, will also provide verification of the effectiveness of the implemented control measures. A program of periodic monitoring of the waste management starts at mobilisation and continues through the duration to completion. This information is collected using the tools and systems such as daily drilling reports, quarterly reviews, and internal auditing (as provided in the EMP Commitments **Table 7.18**).

Aqueous discharges will be inspected to check compliance with MARPOL. Quantities of waste and NADF cuttings discharged will be recorded.

The Environmental Monitoring Report submitted to ECD will also provide a list of the volume of waste disposed to shore-based waste facilities, detailed in **Table 7.8**.

Table 7.8 Waste Monitoring commitment

Monitoring	Receptor	Residual Impact	Report	Approximate Submission Timing
Waste Disposal	Onshore public health and safety	F- No lasting effect	Monitoring Report to include volumes of waste disposed	3 months after completion of drilling

The Environmental Monitoring Reports summarising the outcomes of these programs will be submitted to ECD three months after completion of the drilling program.

The full list of monitoring to be conducted for the Project is provided in **Table 7.19**.

7.3.7 Projected Budgets and Responsibilities

7.3.7.1 Budgets

The budget for managing waste is included in drilling activities' budget presented in Section 5.2 of this EMP.

7.3.7.2 Responsibilities

Whilst waste management is the responsibility of all Woodside employees and contractors at some level, the following roles are central to the waste management process. Each key role has a set of responsibilities, which shall be carried out for the effective operation of the Waste Management Process (**Table 7.9**).

Table 7.9: Waste Management Roles and Responsibilities

Role	Responsibilities
Waste Contractors	<ul style="list-style-type: none"> Meeting the requirements of the contract; and Collection and emptying of waste bins and skips, all fees, all transport, cleaning and returning bins and skips to Woodside.
Offshore Drilling Logistics Coordinator (ODLC) or Delegated Waste Focal Point	<p>The ODLC (or Delegated Waste Focal Point) is accountable for waste management on the rig and the appropriate transport of waste to the relevant Onshore Supply Base/waste facility. The ODLC responsibilities are to:</p> <ul style="list-style-type: none"> Be a focal point offshore for all personnel on the MODU in relation to waste queries; Ensure all hazardous and recyclable wastes are correctly packaged, labelled and handled; Notify the Supply Base Waste Management Supervisor of hazardous waste before transport to shore, and ensure it is clearly identified on manifest (sent before the waste reaches shore); Order and maintain a sufficient supply of waste transport containers and waste skip labels on the MODU and support vessels; Ensure dispatch manifesting of waste materials is thorough; and Report any non-conformance with this plan to the Well Site Manager who will report this to the D&C Environment Advisor as an incident report in Woodside's First Priority Event Reporting Database.

Role	Responsibilities
Supply Base Supervisor	<p>Accountability for waste transported to the Onshore Supply Base/waste facility, once on site, becomes the responsibility of the Supply Base Supervisor. The Supply Base Supervisor's responsibilities are to:</p> <ul style="list-style-type: none"> • Coordinate disposal logistics and tracking of waste streams; • Engage with D&C Environment Advisor to ensure all incidents / non-conformances are reported internally; • Act as focal point for daily waste operations and waste planning (i.e. major maintenance); • Ensure the ODLC manages waste as per this WMP; • Ensure the ODLC is trained in the requirements of this WMP.
Well Site Manager (WSM)	<ul style="list-style-type: none"> • Ensure Woodside and third party contractor personnel (including rig personnel) are aware of, and adhere to, the segregation and recycling of waste as described in this WMP; • Ensure the rig contractor implements its waste management procedure and that this procedure is consistent with this WMP; • Ensure site inspections/observations include waste management.
Drilling and Completions Environment Advisor	<ul style="list-style-type: none"> • Provide advice and support regarding waste management; • Provide reports to the rig detailing the amount of waste sent onshore and where disposed; • Keep this WMP up to date; • Ensure all personnel involved in waste management know and understand the requirements of this plan; • Audit/inspect offshore and onshore compliance with this plan as required; • Liaise with the ODLC and International Logistics Team Lead on waste disposal issues and management.
Woodside Sponsor	<p>Contract</p> <ul style="list-style-type: none"> • Ensure the waste management contractors meet the contractual and external legal requirements; • Ensure the waste management contractors comply with Woodside's HSE standards and objectives; and • Provide recommendations to the D&C Environment Advisor on the waste contractor's environmental performance in relation to waste non-conformance and as identified in contract reviews and audits.

7.4 Oil Spill Response Plan

Woodside's emergency management arrangements adopt a comprehensive and integrated all hazards approach that involves coordinated actions to prevent or mitigate risks, being prepared for any emergency, and a timely and co-ordinated response to facilitate recovery to normal business operations. Woodside will respond to emergency situations from its drilling activities in Myanmar.

7.4.1 Objectives

At all times human life, health, and safety is paramount and is considered to be the immediate priority. The level of response will depend on the:

- type of hydrocarbon spilled.
- size of the spill.
- location of the spill.
- circumstances of the spill.
- weather conditions.

7.4.2 Legal Requirements

7.4.2.1 International Conventions

To date, Myanmar has not ratified any of the major oil spill conventions (International Convention on Oil Pollution Preparedness 1990, Civil Liability Convention 1992, Fund Convention and Supplementary Fund Protocol 1992) and has ratified Annex I,II,III, IV and V of MARPOL73/78, described in section 7.3.2.1.

7.4.2.2 Myanmar Port Authority Law 2015

The Myanmar Port Authority Law provides that the Myanmar Port Authority may claim damages from relevant organisations and individuals for water pollution or environmental damage caused by spills. The Myanmar Port Authority under this law may also claim the cost of preventing water pollution, removal and cleaning up of any oil from the person responsible.

7.4.2.3 Inland Navigation Vessel Law Of 2015

This law provides that the DMA will regulate on preventing environmental pollution and that water pollution should be reported to the Department within 24 hours. Although the law is entitled “in land navigation” the bounds of these waters are not defined and therefore it has been deemed a reasonable expectation that Woodside comply with this law for all activities. There are no thresholds described for reporting just that water pollution must be reported as below. The following must be reported to the DMA or the nearest police station within 24 hours of occurring. Woodside has agreed to complete this reporting through the on-board MOGE representative:

- vessel capsizing, vessel sinking, abandonment of vessel or wreck of vessel
- serious injury or death on a vessel due to an accident
- damage due to vessel collision and/or
- water pollution.

7.4.2.4 Environmental Conservation Rules 2014

MONREC (then known as MOECAP) issued the Environmental Conservation Rules 2014 to stipulate details and methods to enforce a number of provisions of the environmental conservation law.

7.4.3 Overview maps and site layout maps, images, aerial photos, satellite images

There are no applicable overview maps, satellite images, or site layout maps associated with this Oil Spill Response Plan.

Woodside is responsible for all oil spill response for the Project. An example of a SOPEP Kit available on board the MODU during Woodside's drilling activities is provided in **Figure 7.9**. An example of a BOP that will be launched to the seafloor for use during drilling activities is shown in **Figure 7.10**.

To ensure Woodside are ready for emergency response situations, Woodside conduct exercises in emergency response; shown in **Figure 7.11**.



Figure 7.9: An example of a SOPEP Kit

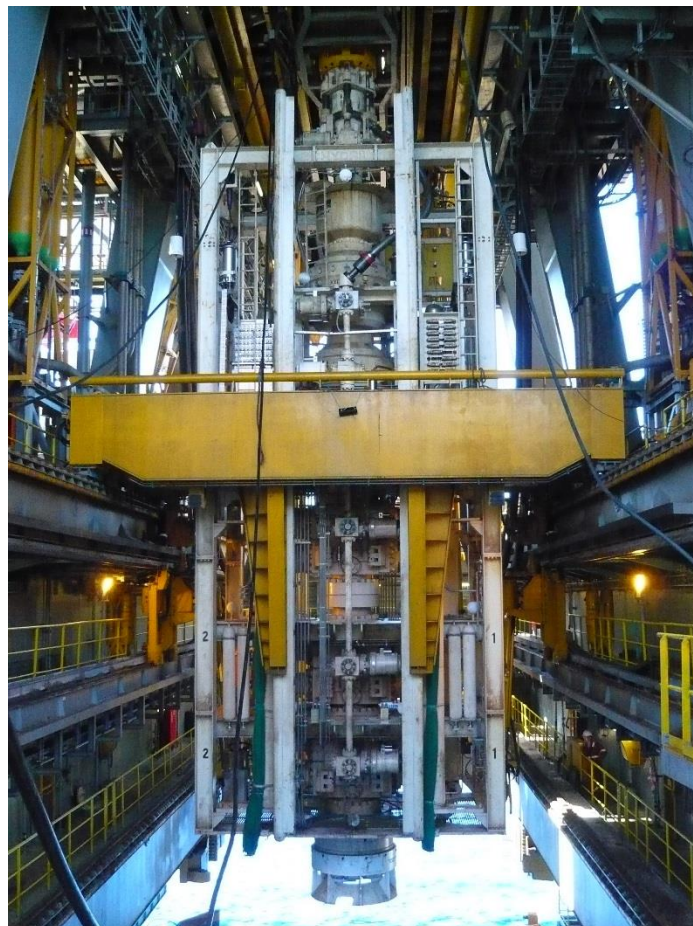


Figure 7.10: An example of a BOP



Figure 7.11: Emergency Response Exercise

7.4.4 Implementation Schedule

Oil spill response actions will be implemented for the duration of the proposed drilling program and as shown in **Table 7.18**. There are several proven hydrocarbon spill response strategies which can be utilised in response to hydrocarbon spills in the open ocean marine environment. For hydrocarbon spills to the marine environment, Woodside considers the use of the following response strategies:

- Monitor and Evaluate (Operational Monitoring);
- Wildlife Response;
- Offshore Containment and Recovery;
- Chemical Dispersion; (aerial, vessel and subsea)
- Shoreline Protection & Deflection; and
- Shoreline Clean-up.

An evaluation and assessment of each response strategy and the risks of implementing the response strategy is undertaken for an activity or facility.

7.4.5 Management Actions

The Woodside OSRP is defined using a 3 tiered approach.

Level 1 – Operational Response (Myanmar based incident control)

A Level 1 incident is defined as an incident that can be resolved through the use of local resources, equipment and personnel.

The Myanmar Operations Point (MOP) will act as an In-Country Incident Management Team (IMT) and will be the only onshore emergency support group activated when the emergency can be controlled with in-country resources.

Level 2 – Operational Support (Corporate Incident Coordination Centre incident control)

A Level 2 incident is an incident that requires organisational and management support. Emergency management support is provided via the activation of part or all of the Corporate Incident Coordination Centre (CICC). The objectives involve providing additional resources to support the site.

Level 3 – Strategic Management (Corporate Incident Coordination Centre incident control and Crisis Management Team activation)

A Level 3 incident is an incident that requires actions to be taken by the organisation, to respond to, and recover from critical events which seriously threaten the organisation's people, environment, assets, reputation, livelihood or services (PEARLS). Level 3 emergencies require activation of the Crisis Management Team (CMT) to provide corporate strategic direction due to the possible impact on reputation, liabilities, business continuity and stakeholders.

Woodside considers the use of a wide range of response measures for hydrocarbon spill events, and develop specific plans that factor in the credible spill scenarios, anticipated hydrocarbon type and metocean and weather conditions. This allows targeted plans and resourcing requirements to be identified for each activity. **Table 7.10** provides the credible spill scenarios that would trigger this Oil Spill Response Plan.

Table 7.10: AD-1 credible spill scenarios

Credible Spill Scenarios		
Scenario	Product	Volumes
Loss of containment	Dry Gas	228 million standard cubic feet per day (MMSCFD)
Vessel collision	Marine Grade Oil	3,708 ft. ³
Bunkering spill	Marine Grade Oil	282 ft. ³

For the AD-1 drilling program, Woodside note that the credible scenarios are associated with a dry gas blow-out or MGO spills associated with bunkering or vessel collision, and that the anticipated weather conditions offshore Myanmar (high temperatures, high energy) would cause significant weathering of any spilled liquid hydrocarbons leaving only a small percentage of residue that will biodegrade over time. A combination of these factors means that for the AD-1 drilling program, some response measures such as monitoring would be effective, whereas others such as dispersant application would be largely ineffective.

The Response Summary for Level 1 and 2/3 is provided in **Table 7.11** and **Table 7.12**.

Table 7.11: Level 1 Response Summary

Strategies		Dry Gas	MDO /MGO	Pre Identified Tactics
Monitor and Evaluate	Surveillance and Reconnaissance	No	Yes	Instruct Onsite incident controller to deploy satellite tracking buoy located on the MODU. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
Monitor and Evaluate	Predictive Modelling	No	Yes	Undertake initial modelling for hydrocarbon spill and undertake weathering fate analysis (e.g. using Automated Data Inquiry for Oil Spills (ADIOS)). Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
		No	Yes	Commence Oil Spill Trajectory modelling via a third party. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
	Surveillance and Reconnaissance	No	Yes	Commence aerial observations in daylight hours if the slick spreads away from the source to a point where it is no longer visible. Aerial surveillance observer to complete log. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
		No	Yes	Initiate satellite imagery acquisition of the spill if it is no longer visible from the source Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
	Detecting for the presence and properties of hydrocarbons in water	No	No	A small Marine Diesel Oil (MDO)/MGO release will be best tracked through surface observations.
	Pre-emptive Assessment of Sensitive Receptors	No	No	Impact to sensitive receptors would not be expected from a level 1 spill.

Strategies		Dry Gas	MDO /MGO	Pre Identified Tactics
	Shoreline Assessment	No	No	Impact to shorelines would not be expected from a level 1 spill.
Surface Dispersant		No	No	Due to the properties of MDO/MGO, including its tendency to rapidly spread to form thin films/sheens, dispersant application would be ineffective. NADFs also display the same behaviour. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
Containment and Recovery		No	No	Due to the properties of MDO/MGO, including its tendency to rapidly spread to form thin films/sheens, containment and recovery would be ineffective. NADFs also display the same behaviour. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
Shoreline Protection		No	No	Impact to shorelines is not expected.
Shoreline Clean-up		No	No	Impact to shorelines is not expected.
Oiled Wildlife Response		No	Yes	If oiled wildlife response is required, escalate to a Level 2 incident (Table 7.12). Consider the need to mobilise Sea Alarm via OSRL if there is a threat of wildlife becoming oiled.
In-situ Burning		No	No	In-situ burning is not considered a feasible response to a Dry Gas or MDO/MGO spill.
Subsea First Response Toolkit (SFRT) – Debris Clearance System		No	No	The SFRT is not a feasible response for a level 1 spill
SFRT – BOP pressure injection system		No	No	The SFRT pressure injection system is not a feasible response for a level 1 spill
SFRT – Subsea Dispersant Application Tooling System		No	No	Subsea dispersant is not a feasible response for a level 1 spill

Strategies	Dry Gas	MDO /MGO	Pre Identified Tactics
Capping Stack	No	No	A Capping Stack is not a feasible response to a level 1 spill
Relief Well	No	No	A Relief Well is not a feasible response for a level 1 spill
Scientific Monitoring	No	No	Notify Woodside science team of spill event through the WCC.

Table 7.12: Level 2/3 Response Summary

Strategies		Dry Gas	MDO/ MGO	Pre Identified Tactics
Monitor and Evaluate	Surveillance and Reconnaissance	No	Yes	Instruct Onsite incident controller to deploy satellite tracking buoy located on the MODU. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
Monitor and Evaluate	Predictive Modelling	No	Yes	Commence Oil Spill Trajectory modelling via a third party. Dry Gas is not persistent on the surface, therefore this is not a recommended strategy for dry gas.
		No	Yes	Commence aerial observations in daylight hours if the slick spreads away from the source to a point where it is no longer visible. Aerial surveillance observer to complete log. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
	Surveillance and Reconnaissance	No	Yes	Initiate satellite imagery acquisition of the spill if it is no longer visible from the source Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
		No	Yes	Instruct Onsite incident controller to deploy satellite tracking buoy located on the MODU.

Strategies		Dry Gas	MDO/ MGO	Pre Identified Tactics
				Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
	Detecting for the presence and properties of hydrocarbons in water	No	No	A small MDO/MGO release will be best tracked through surface observations.
	Pre-emptive Assessment of Sensitive Receptors	No	No	Impact to sensitive receptors would not be expected from a level 1 spill.
	Shoreline Assessment	No	No	Impact to shorelines would not be expected from a level 1 spill.
Surface Dispersant		No	No	Due to the properties of MDO/MGO, including its tendency to rapidly spread to form thin films/sheens, dispersant application would be ineffective. NADFs also display the same behaviour. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
Mechanical Dispersion		No	No	Due to the properties of MDO/MGO, including its tendency to rapidly spread to form thin films/sheens, containment and recovery would be ineffective. NADFs also display the same behaviour. Dry Gas is not persistent on the surface; therefore this is not a recommended strategy for dry gas.
Containment and Recovery		No	No	Impact to shorelines is not expected.
Shoreline Protection		No	No	Impact to shorelines is not expected.
Shoreline Clean-up		No	No	Due to the properties of MDO/MGO, including its tendency to rapidly spread to form thin films/sheens, dispersant application would be ineffective. NADFs also display the same behaviour. Dry Gas is not persistent on the surface, therefore this is not a recommended strategy for dry gas.

Strategies	Dry Gas	MDO/ MGO	Pre Identified Tactics
Oiled Wildlife Response	No	Yes	Consider the need to mobilise Sea Alarm via OSRL and trained Woodside responders. If required, activate immediately. OSRL Duty Manager can be contact on +65 6266 1566. Ensure notification and mobilisation forms are sent to OSRL.
In-situ Burning	No	No	In-Situ burning is not considered a feasible response to a Dry Gas or MDO spill.
Subsea First Response Toolkit (SFRT) – Debris Clearance System	Possibly	No	The feasibility of the use of a SFRT will be assessed in the event of a spill.
SFRT – BOP pressure injection system	Possibly	No	The feasibility of the use of a SFRT will be assessed in the event of a spill.
SFRT – Subsea Dispersant Application Tooling System	No	No	No subsea release of liquid hydrocarbons credible scenarios identified. Subsea dispersant is not a feasible response for a Dry Gas well.
Capping Stack	Possibly	No	Use of a capping stack should be assessed on the day. If required, mobilise capping stack to location via third party.
Relief Well	Possibly	No	The feasibility of a relief well will be assessed in the event of a spill.
Scientific Monitoring	No	Possibly	Notify Woodside science team of spill event through the WCC.

7.4.6 Monitoring Plans

Monitoring will be implemented to demonstrate compliance with both regulatory and Woodside's internal procedures and will also provide verification of the effectiveness of the implemented control measures. This information is collected using the tools and systems such as daily drilling reports, quarterly reviews, and internal auditing (as per the Commitment **Table 7.18**).

Refuelling will be visually monitored during refuelling of gauges, hoses, fittings and sea surface and any incidents will be recorded in the Incident report forms.

Any accidental releases or leaks will be recorded in the safety record and reported to MOGE as per the requirements of the EIA Procedure (Article 107).

The Environmental Monitoring Reports submitted to ECD will also provide a list of any spills to the marine environment greater than 80 litres.

7.4.7 Projected Budgets and Responsibilities

7.4.7.1 Budgets

The budget for oil spill response depends on the nature and scale of the spill. Woodside have however, contracted Oil Spill Response Limited (OSRL) to provide assistance for spills.

7.4.7.2 Responsibilities

In the event of a hydrocarbon spill it is the responsibility of the drilling contractor to implement their SOPEP. However, in the event the spill enters the marine environment, Woodside is responsible for managing the environmental response. The responsibility to implement this Oil Spill Response Plan, in the event of a hydrocarbon spill to the marine environment, is held by the drilling contractors Well Site Manager.

In the event of an emergency of any type, the MODU Captain will assume overall onsite command and act as the Emergency Response Coordinator (ERC). All persons aboard the MODU/support vessels will be required to act under the ERC's directions. The MODU/support vessels will maintain communications with the onshore Drilling Superintendent and/or other emergency services in the event of an emergency. Emergency response support can be provided by the Contractor's emergency centre or WCC if requested by the ERC. The MODU and support vessels will have on-board equipment for responding to emergencies including but not limited to medical equipment, fire-fighting equipment, and oil spill equipment.

Control Agency

Under current arrangements operators are the control agency and are responsible for oil spill contingency and response within their operating blocks and are required to have all necessary oil spill response equipment. Note: The Department of Marine Administration (DMA) are the Jurisdictional Authority in Myanmar and may direct / override Woodside control.

Incident Management Team (IMT)

The IMT can comprise of a series of functional groups to support a spill response, including Planning, Operations, Logistics, and Source Control. The Woodside Planning Team are responsible for the tactical and strategic planning to deliver the hydrocarbon spill response. They are also responsible for coordinating the delivery of the Incident Action Plans and managing the spill intelligence (including operational monitoring) and communications planning. The Woodside Operations Team manages activities to deliver the hydrocarbon spill response in the field. Logistics arrange all the human, physical, or financial resources required to support the spill response such as equipment, supply, facilities, vessels, aircraft, and catering. Woodside Source Control provides the planning, support and operational management of arrangements for control of a well blowout such as a capping stack, relief well drilling and subsea dispersant deployment.

The primary responsibility of the IMT is to ensure the safety and security of all personnel. This may then include the safe deployment of site-based emergency response teams to combat the spill.

Crisis Management Team (CMT)

The Woodside CMT is located in Perth and is typically activated for a large hydrocarbon spill (Level 2/3) which could seriously threaten People, Environment, Assets, Reputation, Livelihood, or essential Services (PEARLS), or any combination of these elements. Such an event is not considered likely during the proposed AD-1 drilling program, as per the credible spill scenarios in **Table 7.10**. The CMT will provide strategic level support to the Myanmar IMT to enhance emergency response effectiveness and assist recovery to normal operations. The decision to activate the CMT will be made by the CMT Leader, in consultation with the CMT Duty Manager, who will receive regular situational updates from the Woodside Myanmar Duty Manager.

Incident Management Team Responsibilities

Well Site Manager

In the event of a hydrocarbon spill from the MODU, the Well Site Manager (WSM) will take command of the management of the response. As the Incident Controller (IC), the WSM shall immediately notify the Myanmar Duty Manager (DM) who will also carry out notifications as per this plan. The Myanmar DM/WSM must notify the Woodside Communications Centre (WCC) of the emergency. Note for a Level 2/3 spill, the CICC DM becomes the IC. For a spill from a support vessel, the Vessel Master will be IC and Woodside would provide support through the WSM/ Myanmar DM.

Woodside Communications Centre

Responsibilities include:

- Activation of the Woodside CICC Perth scalable to the needs of the incident;
- Notification of the incident to the Woodside Myanmar DM; and
- Create record of the event to establish a single operating picture.

Woodside Myanmar Duty Manager

The Woodside Myanmar Duty Manager (Myanmar DM) is a rostered position available on a 24/7 basis to establish onshore incident management and coordination in Myanmar and emergency support to the MODU.

Duties include:

- Maintain regular contact with the MODU PIC during any emergency and activate the MOP personnel to assist with the Myanmar-based support of the emergency situation.
- The Myanmar DM will lead the MOP, or assign the MOP leadership to an appropriate delegate.
- Provide timely updates to the WCC and the drilling contractor Incident Management Team (Perth) and regular situation updates as appropriate.
- Shall brief the Woodside Country Manager on the situation and consequences of the emergency as appropriate.

Myanmar Operations Point

The Myanmar Operations Point (MOP) can be stood up (via Woodside Myanmar DM) to assist in the event of a full or partial callout of the emergency response teams or as deemed appropriate. The MOP will be activated as determined by the rostered Myanmar DM. The Myanmar DM will identify the personnel required to meet the operational and technical support needs of the incident.

Responsibilities of the MOP:

- Provide operational and technical support to the MODU during any offshore emergency;
- Assist with the coordination and procurement of local resources to support emergency response operations or recovery;
- Provide support to any spill response emanating from the drilling program and interface with other incident management teams established for a significant spill; and
- Record MOP actions taken in managing the emergency.

Woodside Corporate Incident Coordination Centre (CICC) (Perth)

Responsibilities include:

- Developing an IAP in support of the site/facility IMT;
- Planning for extended support to operations of the incident;
- Providing, where required, technical support to the response during any offshore emergency.
- Assisting with the coordination and procurement of local resources to support emergency response operations or recovery where required;
- Interfacing with the CMT as required;
- Maintaining contact with external agencies and governments for support and reporting purposes (in conjunction with Woodside Corporate Affairs);
- Providing support to contractors/facility operators who operate sites on behalf of Woodside; and
- Recording of actions undertaken whilst supporting the emergency response.

The Oil Spill Preparedness Manager is responsible for the ongoing development, review, and maintenance of this Oil Spill Response Plan. The following roles are central to the oil spill response. Each key role has a set of responsibilities which shall be carried out for the effective operation of the Oil Spill Response Process (**Table 7.13** and **Table 7.14**).

Table 7.13: Oil Spill Response Roles and Responsibilities – Level 1 Incident Response Notifications

Notification timing	Person Notification	Making	Authority /Company
Immediately	Well Site Manager (WSM) Or Support Vessel Master (if support vessel spill)		Woodside Myanmar Operations Point (MOP)
Immediately	Support Vessel Master (support vessel spill only)		Well Site Manager (WSM)
Immediately	Myanmar DM		Woodside Communication Centre (WCC)
ASAP (Within 24 hours) if spill to the marine environment is greater than 80 litres	WSM (Written report to be reviewed by Drilling Superintendent and Environment)		MOGE (who will forward to MONREC and DMA)
ASAP	Myanmar DM		Woodside Myanmar Office

Table 7.14: Oil Spill Response Roles and Responsibilities – Level 2 Incident Response Notifications

Notification timing	Person Notification	Making	Authority /Company
Immediately	Well Site Manager (WSM) or Support Vessel Master (if support vessel spill)		Woodside Myanmar Operations Point (MOP)
Immediately	Support Vessel Master (support vessel based spill only)		Well Site Manager (WSM)
Immediately	Myanmar DM		Woodside Communication Centre (WCC)
ASAP (Within 24hrs)	WSM		MOGE
	WSM		
ASAP (Within 24 hours) <u>if spill to the marine environment is greater than 80 litres</u>	WSM (Written report to be reviewed by Drilling Superintendent and D&C Environment)		MOGE (who will forward to MONREC and DMA)
ASAP	Myanmar DM		Woodside Myanmar Office
ASAP	WCC Duty Manager		Woodside CICC
ASAP	WCC Duty Manager		OSRL

7.5 Drill Cuttings and Fluid Management Plan

7.5.1 Objectives

The objectives of this plan are to:

- Ensure drill cuttings and fluids are managed in a controlled and appropriate manner consistent with Woodside's Health, Safety and Environment (HSE) Policy, and performance standards;
- Comply with all statutory and contractual requirements concerning the management of waste; and
- Ensure appropriate monitoring occurs for drill cuttings and fluids.

7.5.2 Legal Requirements

Myanmar National Environmental Quality (Emission) Guideline 2015 - Table 7.15)

These national Guidelines provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health. Specifically for drill cuttings and fluids they require the treatment and disposal in accordance with applicable standards provided in the IFC EHS Onshore Oil and Gas Development guideline.

Table 7.15: IFC EHS Onshore Oil and Gas Development guideline

Drill Fluid Type	IFC Guideline
WBDF	<p>1) WBDF: Reinject or ship-to-shore, no discharge to sea except:</p> <ul style="list-style-type: none"> • In compliance with 96 hr. LC-50 of Suspended Particulate Phase (SPP)-3% vol. toxicity test first for drilling fluids or alternatively testing based on standard toxicity assessment species (preferably site-specific species) <p>2) WBDF cuttings: Reinject or ship-to-shore, no discharge to sea except:</p> <ul style="list-style-type: none"> • Facilities located beyond 3 miles from shore; • Hg: 1 mg/kg dry weight in stock barite • Cd: 3 mg/kg dry weight in stock barite • Maximum chloride concentration must be less than four times the ambient concentration of fresh or brackish receiving water <p>Discharge via a caisson (at least 49 ft. below sea surface is recommended whenever applicable; in any case, a good dispersion of the solids on the seabed should be demonstrated)</p>
NADF	<p>1) NADF: Reinject or ship-to-shore, no discharge to sea</p> <p>2) Drilled cuttings: Reinject or ship-to-shore, no discharge to sea except:</p> <ul style="list-style-type: none"> • Facilities located beyond 3 miles from shore; • For new facilities: Organic Phase Drilling Fluid concentration lower than 1% by weight on dry cuttings; • For existing facilities: Use of Group III non-aqueous base fluids and treatment in cutting dryers. Maximum residual Non Aqueous Phase Drilling Fluid (NAF) 6.9% (C16 -C18 internal olefins) or 9.4% (C12-C14 ester or C8 esters) on wet cuttings; • Hg: max 1 mg/kg dry weight in stock barite • Cd: max 3 mg/kg dry weight in stock barite <p>Discharge via a caisson (at least 49 ft. below surface is recommended whenever applicable; in any case, a good dispersion of the solids on the seabed should be demonstrated)</p>

7.5.3 Overview maps and site layout maps, images, aerial photos, satellite images

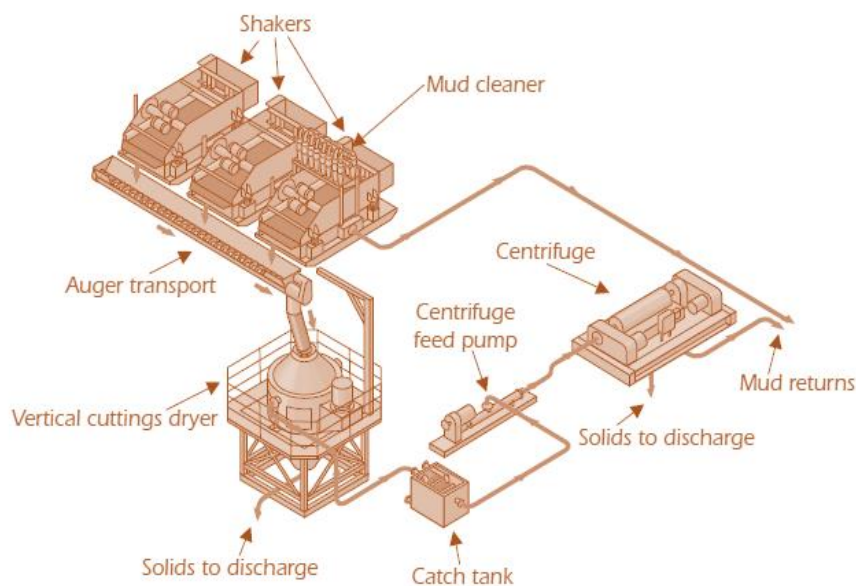


Figure 7.12: Diagram of a solids control system for drill cuttings and drilling fluids (Generic drill rig) (IOGP, 2003)

7.5.4 Implementation Schedule

Drill cuttings and drill fluids actions will be implemented for the duration of the proposed drilling program and as shown in **Table 7.18**.

7.5.5 Management Actions

The plan covers the formation of drill cuttings, selection of drill fluids, and treatment of drill cuttings, discharge of drill fluids and drill cuttings, and modelling of discharged drill cuttings.

7.5.5.1 Overview of Drill Fluids

Drilling fluids, also referred to as drilling muds, are an integral component of the drilling process. Drilling fluids consist of a water or non-water base fluid and various solid and liquid additives that allow for optimal drilling performance.

Drilling fluids are used to:

- Remove drill cuttings from the bore hole and transport them to the surface
- Lubricate and cool the drill bit
- Maintain well control and formation stability

There are two primary types of drilling fluids; water based drilling fluid (WBDF) and non-aqueous drilling fluid (NADF). The types of chemicals used in drilling fluids are continually evolving as operators seek to improve drilling performance and reduce environmental and safety risks.

Water-Based Drilling Fluid (WBDF)

WBDF consist of about 92–98% fresh or saline water as a base fluid, with the remaining 2–8% comprising of drilling fluid additives that are generally inert or readily biodegradable organic polymers. WBDFs are a non-toxic and low-cost drilling fluid option and are usually used when drilling the top-hole section of a well.

Non-Aqueous Drilling Fluid (NADF)

NADFs contain a mineral oil or synthetic hydrocarbon base fluid which is usually emulsified with a brine and often contains barite, clays or polymers and various additives. When drilling becomes more complex and higher risk below the top-hole section of a well, NADF are often required as they provide superior technical performance and well stability.

The IOGP classifies base fluids for NADF into three groups according to their aromatic content, a significant determining factor of environmental effects (**Figure 7.13**). Traditionally, Group I and Group II NADFs were used for drilling operations, however, recent advances in technology and stricter environmental regulations have led to the development and use of Group III NADFs.

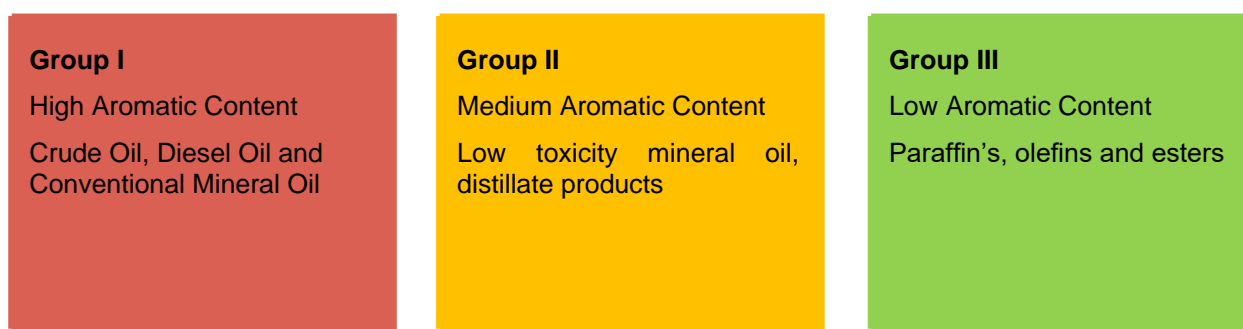


Figure 7.13: The IOGP classification of NADFs based on the aromatic content of the base fluid (IOGP 2016)

7.5.5.2 Overview of Drill Cuttings

Drill cuttings are the broken bits of rock and solid material that are removed from the hole when drilling a well. Cuttings generated from the well are expected to range from very fine to very coarse (<0.4 inches) particle/sediment sizes.

Selection of Drilling Fluid

The selection of drilling fluid is driven by:

1. Drilling requirements such as formation type and well design
2. Environmental requirements such as environmental regulations
3. Safety considerations
4. Cost

All chemicals considered for use in drilling fluids are assessed in terms of their Eco toxicity, biodegradation and potential risk to the marine environment. The type of drilling fluids have been selected prior to the activity. The selection of drilling additives for drilling fluids takes into account concentration, toxicity, bioavailability and bioaccumulation potential.

Woodside will use Group III fluids. These fluids are characterised by PAH contents less than 0.001% and total aromatic contents less than 0.5%. Group III includes synthetic hydrocarbons (olefins, paraffins, and esters). Base fluids such as paraffins and enhanced mineral oil based fluid (EMBF) are also included. In some cases, fluids are blended to attain particular drilling performance conditions.

Processing and Treatment of Drill Cuttings

Top-hole section drill cuttings, that contain residual WBDFs, are disposed at the seabed forming a cuttings pile around the well bore. Once the riser has been installed, drill cuttings and used drilling fluids (WBDF and NADF) are transported from the well, through the riser, to the drill rig where they undergo processing, with the separation of drilling fluids for reuse and waste disposal of drill cuttings and attached drilling fluids below the sea surface into the marine environment. The cuttings are separated from drilling fluids by the SCE. The SCE uses shale shakers to remove coarse cuttings from the drilling fluid. After processing by the shale shakers, the recovered drilling fluid may be directed to centrifuges, which are used to remove fine solids (4.5 to 6 microns). Separated cuttings are subsequently discharged to sea below the sea surface and the drilling fluid is recirculated for reuse.

Monitoring Oil on Cuttings (OOC)

NADF coated cuttings samples will be collected and analysed from all waste streams including the rig shakers, centrifuge discharge and cuttings dryer at regular intervals. Only the cuttings waste streams discharged to the environment will be used to calculate the OOC. The samples will be used to ensure that the drill cuttings do not exceed 6.9% wet weight OOC.

Preventing exceedance of 6.9% wet weight OOC

OOC will be monitored to ensure that it does not exceed 6.9% wet weight OOC. The only way an exceedance can occur is if equipment breaks down. In this case, the operation will be halted to make repairs to ensure that the OOC does not go over 6.9% wet weight.

If there is an exceedance, this will be reported to the Regulator.

Discharge of Drill Cuttings and Fluids

Top-hole section drill cuttings, that contain residual WBDFs, are disposed at the seabed forming a cuttings pile around the well bore. Once the riser has been installed, drill cuttings and used drilling fluids (WBDF and NADF) are transported from the well, through the riser, to the drill rig.

Once drill cuttings have been separated from drilling fluid by the solids control equipment, they are discharged below the sea surface to enable good dispersion.

All residual NADF will be returned to shore for reconditioning, re-use or disposal at an appropriate facility.

Modelling of Drill Cuttings

In the EIA Report for the AD-1 Drilling Program, potential impacts from drill cuttings and drilling fluids discharge on water quality, sediment quality, and marine sensitive receptors (e.g. pelagic and benthic communities) were assessed. In accordance with the Woodside Environmental Impact Assessment Guidelines, mitigations were proposed to reduce the level of potential impact.

To assess the potential impacts from discharged drill cuttings, a modelling study was commissioned to inform the EIA Study. The modelling study included numerical modelling techniques to predict total suspended sediments (TSS, mg/L) and sediment deposition on the seabed (thickness, mm) from discharge of both WBDF cutting at the seabed and NADF cuttings overboard the MODU below the sea surface. The model showed that the 'area of influence' of sediment deposition is expected to be highly localised, and a 'zone of potential ecological impact' (i.e. where sediments are deposited on the seabed to a thickness of >0.26 inch) is limited to within 328 ft. of the well site. Similarly, elevated Total Suspended Solids (TSS) was highly localised and sediment deposition and elevated TSS return to levels just detectable (cuttings area of influence defined as 0.04 inch and 0.3 mg/L, respectively) within 1,312 ft. of the well site.

The residual impact significance for NADF drill cuttings discharge (after controls and mitigation are in place) was assessed to be Significance Level 'E' in that "the receptor will experience a noticeable effect, but the impact magnitude is sufficiently small and well within applicable standards". For WBDF drill cuttings discharge the residual impact significance was assessed to be Significance Level 'F' in that "the receptor will essentially not be affected by a particular activity, or the predicted effect is deemed to be indistinguishable from natural background variations".

7.5.6 Monitoring Plans

7.5.6.1 Monitoring in AD-1

To meet the commitments of the ECD approval letter for the EIA Report (April 2018), Woodside commissioned an Environmental Monitoring Study, which included sampling for sediment quality, water quality, plankton and benthic communities, the results of which are discussed in Section 7.2.6.3.

The outcomes of the Environmental Monitoring Study showed that changes to the sediment were limited and closer to the well centre than predicted in the EIA study. Based on these outcomes, no further sediment monitoring is planned for the AD-1 Drilling Campaign.

The commitments in the monitoring reports for drill cutting and fluids are in Table 7.16.

Table 7.16: Drill cutting and fluid monitoring commitments

Monitoring	Receptor	Residual Impact	Report	Approximate Submission Timing
Drill Cuttings	Offshore benthic habitats and communities	E – No lasting effect	Monitoring report to confirm average oil on cuttings for the well have been 6.9% in accordance with IFC (2015)	3 months after completion of drilling

Monitoring	Receptor	Residual Impact	Report	Approximate Submission Timing
Chemicals	Marine environment	F- No lasting effect	Monitoring Report to include a list of any new chemicals types (Function) used during drilling program in addition to those listed in Table 3.5 .	3 months after completion of drilling

The Environmental Monitoring Reports summarising the outcomes of these programs will be submitted to ECD three months after completion of the drilling program.

The full list of monitoring to be conducted for the Project is provided in **Table 7.19**.

7.5.7 Projected Budgets and Responsibilities

7.5.7.1 Budgets

The budget for managing drill cuttings and fluids is included in drilling programs' budget presented in Section 6. All drill cuttings and fluids management actions presented above are built into drilling activities' systems, process and procedures.

7.5.7.2 Responsibilities

Whilst drill cuttings and fluids management is the responsibility of all Woodside employees and contractors at some level, the following roles are central to the waste management process. Each key role has a set of responsibilities which shall be carried out for the effective operation of the Waste Management Process (**Table 7.17**).

Table 7.17: Roles and Responsibilities

Role	Responsibility
Woodside Engineer	Drilling Ensure that all chemicals considered for use in drilling fluids are assessed in terms of their eco-toxicity, biodegradation and potential risk to the marine environment. Ensure the use of Group III fluids if using NADF.
Offshore Compliance Advisor	Drilling Fluid Collect and analyse samples from the rig shakers, centrifuge discharge and cuttings dryer. Inform the well site manager if the OOC have exceeded 6.9% wet weight.
Well Site Manager (WSM)	Ensure Woodside and third party contractor personnel (including rig personnel) are aware of, and adhere to, the treatment and discharge of drill cuttings and fluids as described in this Drill Cuttings and Drill Fluids Management Plan; Ensure the rig contractor implements its drill cuttings and fluids management procedure and that this procedure is consistent with the drill cuttings and fluids Management Plan (this plan); Ensure site inspections/observations include drill cuttings and fluids management, Ensure that operations are halted if OOC have exceeded 6.9% wet weight. Inform the Drilling and Completions Environment Adviser of any exceedances of OOC and report this to the Regulator.
Drilling and Completions Environment Adviser	Provide advice and support regarding drill cuttings and fluids; Implement Woodside's chemical section process, keep this drill cuttings and fluids Management Plan up to date; Ensure all personnel involved in drill cuttings and fluids know and understand the requirements of this plan;

Role	Responsibility
	Audit/inspect compliance with this plan as required; Liaise with the Offshore Drilling Fluid Compliance Advisor on drill cuttings and fluids issues and management.
Woodside Sponsor	Contract Ensure the drillship contractors meet the contractual and external legal requirements; Ensure the rig contractor comply with Woodside's HSE standards and objectives; and Provide recommendations to the D&C Environment Advisor on the rig's environmental performance in relation to drill cuttings and drill fluids non-conformance and as identified in contract reviews and audits.

7.6 Ballast Water Management Plan

7.6.1 Objectives

This Ballast Water Management Plan has been developed to provide guidance to the vessel's crew in the effective operation of the ballast water exchange system. The Plan provides standard operational guidance for the planning and management of vessel's ballast water and sediments via ballast water exchange, and the procedures to be followed. This includes advice regarding the uptake of ballast water, step-by-step procedures, sequences for ballast water exchange, and any operational restrictions.

7.6.2 Legal Requirements

This Plan is written in accordance with the requirements of Regulation B-1 of the International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004 (the Convention), the associated Guidelines and the ABS Ballast Water Exchange Guide.

7.6.3 Overview maps and site layout maps, images, aerial photos, satellite images

There are no applicable overview maps, satellite images, or site layout maps associated with this Ballast Water Management Plan.

7.6.4 Implementation Schedule

Ballast water management actions will be implemented for the prior to the proposed drilling program.

7.6.5 Management Actions

7.6.5.1 Operational Guidance

The estimated time to complete ballast water exchange is 33 hours. Ballast water exchange for international voyages are to be accomplished in deep ocean areas or open seas that offer a means of limiting the probability that coastal aquatic species will be transferred in vessel's ballast water. The Project will:

- Conduct ballast water exchange at least 200 nautical miles from the nearest land and in water of at least 656 ft. in depth;
- If the vessel cannot conduct ballast water exchange in accordance with the above mentioned, the exchange is to be conducted as far from the nearest land as possible, but at least 50 nautical miles from the nearest land and in water depth of at least 656 ft.; and
- Ballast Water Exchange must only be conducted in sea state 4 or less.

When ballasting, every effort should be made to avoid the uptake of potential harmful aquatic organisms, pathogens and sediment that may contact such organisms. The uptake of ballast water should be minimized or, where practicable, avoided in areas and situations such as:

- Areas with outbreaks, infections or known population of harmful organisms and pathogens;

- Areas with current phytoplankton blooms e.g. algae blooms, red tide, nearby sewage outfalls;
- Nearby dredging operations;
- When tidal stream is known to be more turbid; and
- Areas where tidal flushing is known to be poor.

7.6.5.2 Safety Procedures for the Vessel and Crew

The Chief Mate and Dynamic Positioning Operator/Watch Officer must be trained and proficient in the operation of the ballast control station and emergency ballasting procedures. Safety considerations to be taken into account are listed, but not limited to, the following aspects:

- Avoidance of over and under pressurization of ballast tanks;
- Free surface effects on stability, and sloshing loads in slack tanks;
- Maximum pumping / flow rates to ensure the tank is not subject to a pressure greater than that for which it has been designed. Only one ballast pump should be used at a time unless undivided attention is given to the ballast operation;
- Internal transfer of ballast; and
- Ballast Water Exchange must only be conducted in sea state 4 or less.

7.6.5.3 Procedures for the Disposal of Sediments

Ballast Water Management and Sediment Control are practical steps that are to be taken during ballast water uptake to avoid the accumulation of sediments. However, it is recognized that sediments will be taken on-board and will settle on tank surfaces. The volume of sediment in the ballast tanks should be monitored on a regular basis and removed on a timely basis as found necessary without compromising the safety or operational efficiency of the vessel. Sediment will only be removed from ballast tanks when the vessel is outside 200 nm from land and in water depths over 656 ft.

7.6.5.4 Biofouling Management Plan and Record Book

The Biofouling Management Plan is to provide guidance to the Master and crew of the ship, as well as other interested parties, on measures that are used to minimize the risk of transferring invasive aquatic species present in the ship's biofouling between geographical locations.

The vessel will inspect all internal and external hull components including piping every 10 years. Cleaning of biofouling will be accomplished when performance of the vessel is affected.

The anti-fouling systems on-board this vessel are both active and passive:

- Active protection is provided by two separate cathodic protection systems:
- Hull System - Impressed cathodic protection system which features reference and sacrificial anodes located in the wetted area of the hull.
- Marine growth protection system - featuring aluminium and copper anodes located in the section side of the seawater system.
- Passive protection is provided is provided by earth bonding across larger flange connections in fluid service, use of freshwater cooling circuits wherever possible and a comprehensive painting program.
- Require hull coating description.

The disposal of biological waste generated by the cleaning process when the cleaning is conducted by or under the direct supervision of the ship owner, Master or crew is consistent

with applicable national and local laws and regulations, so that viable biofouling or chemical and physical pollutants are not released into the local aquatic environment where they may cause harm.

The Master and crew adhere to the following measures:

1. In-water cleaning is to be conducted in accordance with applicable national and local laws and regulations.
2. In-water cleaning shall not be conducted in marine sensitive areas (such as marine sanctuaries/preserves, or coral reefs, areas where tidal flushing is known to be poor).
3. Removal of microfouling is to be performed by soft methods aimed at preventing damage to the anti-fouling coating system.
4. Where significant macro growth is detected, it is removed or treated (if this can be done without damaging the anti-fouling coating system). Such removal or treatment is conducted in such a manner as to minimize the release of both anti-fouling coating or paint debris, and viable adult, juvenile, or reproductive stages of macrofouling organisms. Any material collected is disposed of in a manner which does not pose a risk to the aquatic environment.
5. Caution is exercised when cleaning heavily fouled anti-fouling coating systems which may result in a premature depletion of the anti-fouling coating system and may create a pulse of biocide that can harm the local environment. Depleted anti-fouling coating systems on hulls will rapidly re-foul. In-water cleaning or scrubbing of hulls for the purposes of delaying dry-dockings beyond the specified service life of the coating is in general to be avoided.
6. During dry-docking periods, the Master obtains confirmation from the facility that measures consistent with applicable national and local laws and regulation aimed at preventing biofouling organisms or chemical and physical pollutants from being released into the local aquatic environment, have been implemented.
7. Retractable equipment, such as transducers and similar equipment, have been lowered and extended to permit access for the removal of biofouling from the equipment and its housing.

7.6.6 Monitoring Plans

In accordance with IMO Regulation B-2 of the Annex to the International Convention for the Control and Management of Ship's Ballast Water and Sediments, a record is to be kept of each ballast water operation.

A Ballast Water Reporting Form, will be utilized to record all Ballast Water Exchanges that relate to this plan. The form will be made available to Port State Authorities upon request. Additionally, the recording of all ballast water exchanges will be logged in the Republic of Marshall Islands Official Logbook. These documents will be archived on the vessel and available for inspection.

The Biofouling Record Book is maintained for the Vessel's Planned Maintenance System (PMS). This is to assist the ship owner and operator to evaluate the efficacy of the specific anti-fouling systems and operational practices on the ship in particular, and of the biofouling management plan in general. The record book could also assist interested State authorities to quickly and efficiently assess the potential biofouling risk of the ship, and thus minimize delays to ship operations.

7.6.7 Projected Budgets and Responsibilities

7.6.7.1 Responsibilities

The Vessel Master has the responsibility to contact the appropriate port State authorities in advance of the vessel's arrival to obtain any specific instructions relative to the reporting and discharge of the ballast waters.

The Master has overall responsibility and must ensure that the Ballast Water Management Plan is clearly understood by the appointed Officer and by any crew that may be involved.

The Chief Mate has the primary responsibility to act as the Ballast Water Management Officer. He is responsible to the Master for conducting the ballast water exchange while maintaining the stability of the vessel. The responsibilities include:

- Ensure that the ballast water management procedure is followed and recorded;
- Follow the applicable Ballast Exchange Sequence or develop a new sequence on the basis of ship's assessment criteria, condition of hull, equipment and weather forecast;
- Ensure adequate and enough personnel and equipment are available for the execution;
- Ensure that the sequence is followed in the prepared order;
- Communicate with shore base;
- Maintain the Ballast Water Record Book and all other relevant/applicable documentation;
- Prepare the appropriate national or port ballast water declaration prior to arrival at destination;
- Assist the port state control officers for any sampling that has to be carried out; and
- Conduct familiarization and training of crew in ballast water management requirements and applicable shipboard systems and procedures.

The duty officer must advise the Master on the progress of the plan at regular intervals.

Should there be any doubt, or if the management plan does not keep to the schedule, the Master shall be advised accordingly.

The Dynamic Positioning Operator/Watch Officer will be responsible to the Chief Mate for the proper line up and operations of ballast tanks, valves, and pumps.

7.6.7.2 Budgets

The budget for managing ballast water is included in drilling activities' budget presented in Section 6 of this EMP.

7.7 EMP Commitment Table

Table 7.18 presents the EMP commitment table for the drilling program including the implementation schedule, responsible parties, and management actions for all Project Commitments.

Table 7.18: Commitments Table

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action	Responsible Project Team Member	Schedule	Records			
Fuel combustion to power engines and machinery on-board MODU and support vessels	SS1	Impacts from exhaust emissions on ambient air quality	SS1.1	Use of low sulphur fuel (sulphur content not to exceed 0.05% m/m) when it is available.	SS1.1.1	Contractor to provide specifications of fuel to be used by MODU and vessels.	Contractor	Pre-mobilisation and during the drilling program	Copy of marine fuel specifications.
			SS1.2	<ul style="list-style-type: none"> The well test duration will be minimised to the extent possible. Engine maintenance to minimise unburned hydrocarbons. 	SS1.2.1	Well test design to minimise duration.	Contractor / Woodside	Pre-mobilisation	N/A
			SS1.3	Vessels will have a SEEMP providing for fuel efficient vessel operations, in accordance with the requirements of Annex VI MARPOL 73/78 (as applicable or required by vessel class).	SS1.3.1	Contractor to have SEEMP in place. Contractor to provide MARPOL IAPP certification for the MODU and vessels (as applicable or required by vessel class).	Contractor / Woodside	Pre-mobilisation	SEEMP
			SS1.4	Vessels will be in compliance with applicable MARPOL 73/78 Regulations for the prevention of air pollution from ships (Annex I) (as applicable or required by vessel class).	SS1.4.1	Contractor to provide MARPOL IAPP certification for the MODU and vessels (as applicable or required by vessel class).	Contractor	Pre-mobilisation	MARPOL IAPP certificates
	SS2	Impacts from Greenhouse Gas Emissions from the MODU, Support Vessels, Machinery Engines and Flaring	SS2.1	The MODU will have International Air Pollution Prevention (IAPP) certificates, in accordance with the requirements of Annex VI MARPOL 73/78 (as applicable or required by vessel class). Certification under MARPOL will confirm that engines and other combustion emission sources on the vessel (excluding emission sources directly associated with the extraction of hydrocarbons, such as flaring) meet IMO standards.	SS2.1.1	Contractor to provide MARPOL IAPP certification for the MODU and vessels (as applicable or required by vessel class).	Contractor	Pre-mobilisation	MARPOL IAPP certificates
Routine discharges from MODU and support vessels, including sewage, food waste, ballast and storage displacement water, bilge water and deck drainage.	SS3	Impacts of sewage and grey water on marine water quality and localised adverse impacts to marine biota	SS3.1	<p>The MODU will comply with applicable MARPOL 73/78 Annex IV requirements (as required by vessel class) (Reg 4 and 8), including:</p> <ul style="list-style-type: none"> Vessels will have valid International Sewage Pollution Prevention (ISPP) Certificate. Discharge of sewage into the sea is prohibited, except when the vessel has in operation an approved sewage treatment plant or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than 3 nm from the nearest land. <p>Sewage which is not comminuted or disinfected has to be discharged at a distance of more than 12 nm from the nearest land.</p>	SS3.1.1	Contractor to provide MARPOL ISPP certification and maintain vessel discharge log book for MODU.	Contractor	Pre-mobilisation and during the drilling program	MARPOL ISPP certificate Vessel discharges log book

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action	Responsible Project Team Member	Schedule	Records	
	SS4	Impacts of putrescible (food) wastes on marine water quality and localised adverse impacts to marine biota	SS4.1 The MODU (as applicable or required by vessel class) will comply with applicable MARPOL 73/78 Annex V requirements (Reg. 3), including garbage discharged by the MODU is passed through a grinder so that it is capable of passing through a screen with no opening wider than 0.98 inch: this applies to support vessels within the 1,640 ft. safety zone.	SS4.1.1 Contractor to provide MARPOL Garbage Certificate of Compliance and maintain Garbage Record Book / vessel discharge log book for MODU.	Contractor	Pre-mobilisation and during the drilling program	MARPOL Garbage Certificate of Compliance Garbage Record Book / Vessel discharges log book
	SS5	Impacts of bilge water and deck drainage on marine water quality and localised adverse impacts to marine biota	SS5.1 The MODU and support vessels will comply with applicable MARPOL 73/78 Annex I requirements (Reg 7, 14 and 17) including: <ul style="list-style-type: none"> Vessels will have valid IOPP certificate. Bilge water contaminated with hydrocarbons must be contained and disposed of onshore, unless the oil in water (OIW) content is within 15 ppm and an IMO approved oil/water separator (as applicable or required by vessel class) is used to treat the bilge water. Vessels will maintain an oil record book. No direct overboard drainage from sludge/drain/dirty oil/bilge water collecting tanks. 	SS5.1.1 Contractor to provide MARPOL IOPP certification and maintain vessel discharge log/oil record book for MODU and vessels.	Contractor	Pre-mobilisation and during the drilling program	MARPOL IOPP certificate Oil Record Book / Vessel discharges log book
			SS5.2 <ul style="list-style-type: none"> A current IOPP Certificate for the drill ship will be provided prior to drilling in 2020. In the case where another rig may be used for future wells, the appropriate certification will be issued to ECD prior to drilling. 	SS5.2.1 Woodside to provide IOPP certificate to ECD	Woodside	Prior to drilling program	IOPP Certificate
	SS6	Impacts of drill cuttings and drilling fluids on marine water quality	SS6.1 <ul style="list-style-type: none"> WBDF to be used as far as practicable during the drilling program - NADF shall only be used where WBDF cannot provide the required technical specifications. Average oil on cuttings for each well will be limited to 6.9% or less by weight. All residual NADF will be returned to shore for reconditioning, re-use or disposal. No bulk discharge of NADF drilling fluids will be permitted offshore. Where cuttings with retained NADF are discharged overboard, they will be discharged below the water line. NADF will be selected by Woodside with consideration of the OSPAR rating of chemicals with lower toxicity. Group III chemicals will be used (refer to Section 4.3.3 for more information). Chemicals for discharge or release to sea to be selected and approved as per the Woodside Chemical Assessment Process and included on the Chemical Selection List. No biocides containing organohalogens will be used. 	SS6.1.1 WBDF to be used as far as practicable during the drilling program – NADF shall only be used where WBDF cannot provide the required technical specifications.	Woodside/ Contractor	Pre-mobilisation and during the drilling program	Chemical use and approval records. PTW records
				SS6.1.2 The average oil content for discharge of mud pit wash residue will be limited to less than 1% by volume.	Woodside/ Contractor	During the drilling program	MODU log book
				SS6.1.3 Average oil on cuttings for the well will be limited to 6.9% or less by weight.	Woodside/ Contractor	During the drilling program	Oil on Cutting % records
				SS6.1.4 All residual NADF will be returned to shore for reconditioning, re-use or disposal.	Woodside/ Contractor	During the drilling program	MODU log book
				SS6.1.5 No bulk discharge of NADF drilling fluids will be permitted offshore.	Woodside/ Contractor	During the drilling program	MODU log book

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action		Responsible Project Team Member	Schedule	Records
		<ul style="list-style-type: none"> • Only Group (III) Synthetic Organic Base Fluids will be used. • Contractor to conduct bulk operational discharges under the MODU Permit to Work (PTW) system and in accordance with relevant regulations. • The average oil content for discharge of mud pit wash residue will be limited to less than 1% by volume. This typically occurs at the end the drilling programme. • Drill cuttings will comply with IFC environmental, health and safety guidelines for offshore oil and gas development (2015). • A Drill Cuttings and Fluid Plan will be submitted to ECD (refer to Section 7.5). • Woodside will maintain a list of indicative Drilling Chemicals as described in Table 3.5. • Woodside to inform ECD for additional chemicals and environmental mitigation measure as per relevant international guidelines, via the Environmental Monitoring Report. • Woodside will report the amount of NADF cuttings discharged and oil on cuttings via the Environmental Monitoring Report. 	SS6.1.6	Where cuttings with retained NADF are discharged overboard, they will be discharged below the water line.	Woodside/ Contractor	During the drilling program	MODU log book
			SS6.1.7	NADF will be selected by Woodside with consideration of the OSPAR rating of chemicals with lower toxicity. Group III chemicals will be used (refer to Section 4.3.3 for more information).	Woodside/ Contractor	Pre-mobilisation and during drilling program	NADF Start-up checklist
			SS6.1.8	Chemicals for discharge or release to sea to be selected and approved as per the Woodside Chemical Assessment Process and included on the Chemical Selection List.	Woodside/ Contractor	Pre-mobilisation and during drilling program	Chemical use and approval records. Chemical Selection List
			SS6.1.9	No biocides containing organohalogens will be used.	Woodside / Contractor	Pre-mobilisation and during drilling program	Chemical use and approval records. Chemical Selection List
			SS6.1.10	Only Group (III) Synthetic Organic Base Fluids will be used.	Woodside / Contractor	Pre-mobilisation and during drilling program	Chemical use and approval records. Chemical Selection List
			SS6.1.11	Contractor to conduct bulk operational discharges under the MODU PTW system.	Woodside/ Contractor	Pre-mobilisation and during drilling program	PTW records
			SS6.1.12	A Drill Cuttings and Fluid Plan will be submitted to ECD (refer to Section 7.5).	Woodside	Pre-mobilisation	Drill Cuttings and Fluid Plan
			SS6.1.13	Woodside will maintain a list of indicative Drilling Chemicals as described in Table 3.5 .	Woodside	During the drilling program	Chemical use and approval records. Chemical Selection List
			SS6.1.15	Woodside will provide the list of chemicals used in the Environmental Monitoring Report. This will include the list of chemicals not in the EIA and EMP and details of the further assessment process.	Woodside	Post drilling program	Environmental Monitoring Report
			SS6.1.16	Woodside will report the amount of NADF cuttings discharged and oil on cuttings via the Environmental Monitoring Report.	Woodside	Post drilling program	Environmental Monitoring Report

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action	Responsible Project Team Member	Schedule	Records			
			SS6.1.17	Woodside will inform ECD of the additional chemicals and environmental mitigation measures as per relevant international guidelines, via the Environmental Monitoring Report.	Woodside	Post drilling program	Environmental Monitoring Report		
Solid & hazardous waste generation from MODU and support vessels.	SS7	Impacts due to solid and hazardous waste generation and disposal from vessels.	SS7.1	<p>The MODU and support vessels will comply with applicable MARPOL 73/78 Annex V requirements (as required by vessel class) (Reg. 10.2 and 10.3) including:</p> <ul style="list-style-type: none"> Vessel WMP (or equivalent) must contain as a minimum: <ul style="list-style-type: none"> - Waste handling equipment, waste storage containers, and spill response equipment appropriate to the type and volume of waste will be provided at waste storage areas. - All hazardous wastes will be segregated prior to onshore disposal. General waste (excluding food) will not be disposed of to sea. Vessels >400 tonnes (or certified for >15 persons on-board) will have a Garbage Record Book. 	SS7.1.1	Contractor WMP and contractor to maintain Garbage Record Book for MODU and vessels.	Contractor	Pre-mobilisation and during drilling program	MARPOL Garbage Certificate of Compliance Contractor WMP Garbage Record Book.
					SS7.1.2	A Waste Management Plan has been developed and will be implemented. The Plan is included in Section 7.3.	Woodside	During drilling program	Waste Management Plan
Operation of MODU and support vessel.	SS8	Introduction of invasive marine species (IMS) to the marine environment	SS8.1	All contracted vessels will comply with IMO Ballast Water requirements.	SS8.1.1	Vessels to maintain records of ballast water uptake and discharge locations.	Woodside and Contractor	Pre-mobilisation and during the drilling program	Contractor ballast water log book
					SS8.1.2	A Ballast Water Management Plan for the vessels and MODU has been prepared and will be implemented. This Plan is included in Section 7.6.	Woodside	At commencement of the program	Ballast Water Management Plan
			SS8.2	Implementation of Woodside's IMS management process	SS8.2.1	Woodside IMS risk assessment process and management plan will be applied.	Woodside and Contractor	Pre-mobilisation	Woodside IMS records
			SS8.3	With regards to ballast water analysis, monitoring, and management; Woodside will follow the request of DMA's requirements.	SS8.3.1	With regards to ballast water analysis, monitoring, and management; Woodside will follow the request of DMA's requirements.	Woodside	Pre-mobilisation	N/A
			SS8.4	Woodside will engage with the Myanmar Port State Authority prior to operation.	SS8.4.1	Woodside will engage with the Myanmar Port State Authority prior to operation.	Woodside	Pre-mobilisation	N/A
			SS8.3	MODU will not enter nearshore waters in Myanmar during the drilling program.	SS8.3.1	MODU not to enter nearshore (within 12 nm of the coast) waters during the drilling program.	Woodside and Contractor	During the drilling program	MODU log book

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action	Responsible Project Team Member	Schedule	Records			
	SS9	Impacts on Fishing Activity and Shipping from Physical Presence of MODU and Vessels	SS9.1	A 1,640 ft. radius safety zone will be maintained around the MODU as required.	SS9.1.1	Contractor to implementation of 1,640 ft. safety zone. The Vessel Master will manage vessel access and activities within this zone.	Contractor Vessel Master	During drilling program	MODU and vessel communications logs
			SS9.2	Myanmar speaking crew members available on board the MODU. There will be MOGE representatives onboard.	SS9.2.1	Contractor to ensure the provision of Myanmar speaking crew on board the MODU.	Contractor	During drilling program	MODU log book
			SS9.3	<ul style="list-style-type: none"> Implementation of the SEP to provide timely information to stakeholders prior to the commencement of the proposed drilling program. Issuance of Notice to Mariners to alert any fishers and other marine users present in AD-1 of the location and timing of the MODU and associated activities. 	SS9.3.1	Woodside will implement the SEP and provide required information for Notice to Mariners. Woodside will distribute the Notice to Mariners to the DOF in Sittwe and Kyaukphyu. Woodside will meet with the Myanmar Navy's Maritime Rescue Coordination Centre (MRCC) prior to drilling to share project details.	Woodside	Pre-mobilisation and during drilling program	Woodside's SEP Notice to Mariners transmittal record
			SS9.4	Disclosure and implementation of the Grievance Mechanism for the Project to provide an avenue for stakeholders, including those in fishing communities, to raise concerns, and implement timely investigation..	SS9.4.1	Woodside to disclose Grievance Mechanism to maritime authorities, fisheries authorities, fishing communities and other marine users. Woodside will successfully implement the Grievance Mechanism.	Woodside	Pre-mobilisation and during drilling program	Woodside's records of disclosure
			SS9.5	MODU and support vessels (as applicable or required by vessel class) will comply with international regulations for collision avoidance (COLREGs 1972), navigation and watch-keeping, including: <ul style="list-style-type: none"> Maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar). Navigation light display requirements, including visibility, light position/shape and noise signals appropriate to activity. Maintenance of minimum safe manning levels. Maintenance of navigation equipment in efficient working order (compass/radar / communications). Navigational systems and equipment as specified in Regulation 19 of Chapter V of SOLAS. Automatic Identification System installed as applicable or required by vessel class, in accordance with Regulation 19 of Chapter V of SOLAS 	SS9.5.1	Inspection to confirm implementation of relevant navigational and communication requirements for MODU and support vessels operating at sea.	Contractor	Pre-mobilisation and during drilling program	MODU/vessel certification Vessel log books Inspection report.

Project Activity	Potential Impact/Issue		Control / Mitigation Measures		Specific Action		Responsible Project Team Member	Schedule	Records
	SS10	Unplanned Accidental Collision of Support Vessels with Marine Mammals and Marine Turtles	SS10.1	<ul style="list-style-type: none"> Support vessels will not travel greater than 6 knots within 984 ft. of a whale, if sighted, (caution zone) and approach no closer than 328ft. from a whale, if sighted, (Note this standard does not apply to support vessels engaged in limited/constrained maneuverability activities near the MODU) Vessel bridge crew to maintain continuous visual watch of any hazards (including marine mammals and marine turtles). 	SS10.1.1	Contractor to maintain visual watch for any hazards and support vessels to not travel within 984 ft. of a whale if sighted.	As per SS9.5.1	As per SS9.5.1	As per SS9.5.1
			SS10.2	<ul style="list-style-type: none"> Avoid vessel collision with marine mammals and turtles. 	SS10.2.1	Woodside and contractor to avoid collisions with marine mammals and turtles.	Woodside & Contractor	During drilling program	Marine mammal observation report.
Discharge of acoustic seismic source during VSP or SWD operations	SS11	Impacts from underwater noise generation on marine fauna	SS11.1	A trained crew member will be utilised during VSP or SWD operations to monitor and record marine mammal, marine turtle and whale shark observations.	SS11.1.1	<ul style="list-style-type: none"> A trained crew member will be utilised during VSP or SWD operations to monitor and record marine fauna observations. 	Contractor	During VSP or SWD operations	Marine mammal observation report. Crew Inductions records
			SS11.2	Visual observations during daylight hours	SS11.2.1	<ul style="list-style-type: none"> Visual check for marine fauna within 0.6 miles (observation zone) of the MODU or vessel for 20 minutes prior to commencing VSP or SWD operations. Visual observations of the observation zone must be maintained continuously to identify if there are any marine fauna present. 	Contractor	During VSP or SWD operations	Marine mammal observation report
			SS11.3	Low visibility / night-time procedures	SS11.3.1	<p>During periods of low visibility (where the observation zone cannot be clearly viewed out to 0.6 miles), including night-time, the VSP or SWD source may be used as described in operating procedures, provided that:</p> <ul style="list-style-type: none"> There have not been three or more shut down situations during the preceding 24 hour period. If operations were not previously underway during the preceding 24 hours, a period of continual observation was undertaken in good visibility for at least two hours (to the extent of the observation zone) within the preceding 24 hour period and no marine fauna were sighted. 	Contractor	During VSP or SWD operations	Marine mammal observation Report

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action	Responsible Project Team Member	Schedule	Records			
		SS11.4	Pre-start meeting and crew briefings	SS11.4.1	Pre start meeting with crew to include marine fauna observation and reporting. During the pre-start meeting, alert all crew to immediately report to the trained observer when they observe any marine fauna during and prior to the activity. The pre-start meeting will cover the likelihood of whale observations and required actions if they are sighted.	Contractor	During VSP or SWD operations	Marine mammal observation Report	
Unplanned spills	SS12	Impacts from unplanned spills of hydrocarbons / chemicals on marine fauna and habitats	SS12.1	<p>MODU and support vessels (as applicable or required by vessel class) operate in compliance with MARPOL 73/78 Annex I (Reg. 7, 17 and 37) including:</p> <ul style="list-style-type: none"> Vessels will hold a valid International Oil Pollution Prevention Certificate (IOPP) certificate Vessels will hold an Oil Spill Response Plan (called an Oil Pollution Emergency Plan or 'OPEP' by Woodside) on board to implement in a spill incident requiring capability beyond the SOPEP Vessels will maintain an oil record book. Shipboard Oil Pollution Emergency Plans (SOPEPs) will be developed, approved and kept on-board vessels, as applicable or required by vessel class Woodside will conduct a marine assurance audit of vessels to demonstrate compliance with relevant standards. Vessel standard operating procedures and a fuel bunkering plan will be prepared and implemented. Bundling will be in place for isolated point sources of contamination and the perimeter of larger, generic areas. 	SS12.1.1	<ul style="list-style-type: none"> Contractor to provide MARPOL IOPP certification and maintain oil record book for MODU and vessels. SOPEP available. Provide the emergency response plan prior to ECD and DMA prior to operations 	Contractor	Pre-mobilisation	<p>MARPOL certification, (IOPP) Certificate and vessel discharges log book (Oil Record Book).</p> <p>SOPEP</p> <p>Audit records</p>
			SS12.2	<ul style="list-style-type: none"> Implementation of the following controls as a minimum during fuel bunkering: <ul style="list-style-type: none"> Bunkering to commence during daylight hours; Visual monitoring of gauges, hoses, fittings and the sea surface before and during bunkering; Dry break couplings fitted to transfer hose. 	SS12.2.1	Development and implementation of bunkering procedures.	Contractor/Woodside	During drilling program	<p>Bunkering records</p> <p>Spill kit inventory lists</p>
			SS12.3	Spill response kits located in proximity to chemical and hydrocarbon storage/bunkering areas and appropriately stocked/replenished as required.	SS12.3.1	Contractor to provide and replenish spill response kits adjacent to chemical and hydrocarbon storage/bunkering areas.	Contractor	Pre-mobilisation and during drilling program	N/A
			SS12.4	Crew trained in spill prevention and use of spill response equipment.	SS12.4.1	Crew induction to include spill prevention and use of spill response equipment.	Contractor	Pre-mobilisation and during drilling program	Crew induction training records

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action	Responsible Project Team Member	Schedule	Records		
		SS12.5	Implementation of the Woodside Oil Spill Response Plan (as per Section 7.4).	SS12.5.1	Contractor and Woodside to follow Oil Spill Response Plan, if spill occurs.	Contractor/ Woodside	Pre-mobilisation and during drilling program	OPEP
		SS12.6	<ul style="list-style-type: none"> A 1,640 ft. radius safety zone will be maintained around the MODU as required. The Vessel Master will manage vessel access and activities within this zone. 	As per SS9.1.1	As per SS9.1.1	As per SS9.1.1	As per SS9.1.1	As per SS9.1.1
		SS12.7	<ul style="list-style-type: none"> MODU and support vessels (as applicable or required by vessel class) will comply with international regulations for collision avoidance (COLREGs 1972), navigation and watch-keeping, including: <ul style="list-style-type: none"> Maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar). Navigation light display requirements, including visibility, light position/shape and noise signals appropriate to activity. Maintenance of minimum safe manning levels. Maintenance of navigation equipment in efficient working order (compass/radar / communications). Navigational systems and equipment as specified in Regulation 19 of Chapter V of SOLAS. Automatic Identification System installed (as applicable or required by vessel class) in accordance with Regulation 19 of Chapter V of SOLAS. 	As per SS9.5.1	Inspection to confirm implementation of relevant navigational and communication requirements for MODU and support vessels operating at sea.	As per SS9.5.1	As per SS9.5.1	As per SS9.5.1
		SS12.8	Woodside will commit to follow the National Oil Spill Contingency Plan guidelines once they are released.	SS12.8.1	Woodside to follow the National Oil Spill Contingency Plan guidelines once they are released.	Woodside	Once guidelines released	N/A
		SS12.9	Woodside commit to a mobilising a response (to the worst case spill) time of 29 hours	SS12.9.1	Woodside commit to a mobilising a response (to the worst case spill) time of 29 hours	Woodside	During drilling program	Environmental Monitoring Report.
		SS12.10	All chemical and/or hydrocarbon wastes will be segregated into clearly marked containers prior to onshore disposal by a licensed waste management contractor, as per the relevant SDSs.	SS12.10.1	Contractor to ensure segregation of hydrocarbon and chemical wastes as per SDS and maintain Garbage Record Book for MODU and vessels	Contractor	During drilling program	Contractor WMP Garbage Record Book.
		Unplanned loss of well control resulting in gas release	SS13 Impacts of unplanned Well Blowout Resulting in Gas Release on Pelagic Communities, Public Health and Safety and Fishing Activities	SS13.1	<ul style="list-style-type: none"> Woodside's Well Lifecycle Management Process (WLMP), Well Barrier Engineering Standard and Well Control Engineering requirements to ensure well design, construction and operation are managed and controlled will be implemented. The mitigation measures listed under the specific action reflect the WLMP process requirements. 	SS13.1.1	Woodside's WLMP, Well Barrier Engineering Standard and Well Control Engineering requirements to ensure well design, construction and operation are managed and controlled will be implemented. The mitigation measures listed reflect the WLMP process requirements. Woodside's Well Barriers Engineering Standard includes the following requirements: <ul style="list-style-type: none"> Discrete hydrocarbon zones within the well shall be isolated from each other (to 	Woodside/ Contractor

Project Activity	Potential Impact/Issue		Control / Mitigation Measures		Specific Action		Responsible Project Team Member	Schedule	Records
						<p>prevent cross flow) by a minimum of one barrier, which can be either mechanical (e.g. cement or well casing), or hydrostatic (e.g. drilling fluid).</p> <ul style="list-style-type: none"> • All permeable zones penetrated by the well bore, containing hydrocarbons or over-pressured water, shall be isolated from the surface environment by a minimum of two barriers (i.e. primary and secondary); unless a shallow hazard study confirms that a single fluid barrier is appropriate during the initial stages of well construction. • All normally pressured permeable water-bearing formations shall be isolated from the surface by a minimum of one barrier. • Barriers shall be effective over the lifetime of well construction or production. • Effectiveness of primary and secondary barriers shall be verified (physical evidence of the correct placement and performance). • Any fluid barrier must comprise drilling fluid of a suitable weight, composition and volume to account for pore pressure and over-pressure zones during drilling. • Subsea Blowout Preventer (BOP) specification and function/pressure testing will be undertaken in accordance with API Standard 53 4th Edition (API 53), requiring the following: <ul style="list-style-type: none"> ○ One annular preventer. ○ Two pipe rams (excluding the test rams). ○ A MODU is required to have a minimum of two sets of shear rams, one of which must be capable of sealing. ○ On activation of the shear ram a seal is provided which creates a barrier to the reservoir to reduce/prevent further hydrocarbon discharges. • If the BOP's operation cannot be achieved from the MODU, the rams within the BOP can be operated by ROV. 			
					SS13.1.2	<ul style="list-style-type: none"> • Woodside will commit to follow the final National Oil Spill Contingency Plan guidelines once they are released. 	Woodside	Once final guidelines are released	N/A

Project Activity	Potential Impact/Issue	Control / Mitigation Measures	Specific Action	Responsible Project Team Member	Schedule	Records		
			SS13.1.3	<ul style="list-style-type: none"> Woodside will inform ECD immediately if liquid hydrocarbons are encountered. 	Woodside	During drilling program	Well Lifecycle Management Process (WLMP) documentation	
Unplanned collisions	SS13 Impacts from Unplanned Collisions on Fishing Vessels and Other Marine Users	As per SS9.1 to SS9.5	As per SS9.1 to SS9.5	As per SS9.1 to SS9.5	As per SS9.1 to SS9.5	As per SS9.1 to SS9.5		
Emergency Situations	SS14 Impacts associated with emergency situations such as man-made or natural situations or events	SS14.1	Woodside will implement an Emergency Response Plan (ERP).	SS14.1	<ul style="list-style-type: none"> An ERP will be in place and will cover: <ul style="list-style-type: none"> Medical emergencies including medevac procedures Evacuation procedures including in case of fire Search and rescue – includes man-overboard procedures and helicopter ditching Fire and explosion 	Woodside	During drilling program	ERP
Contractor Management	SS15 Impacts from contractors	SS15.1	No catching, hunting, or killing of any marine animals will be allowed from the contractors.	SS15.1.1	<ul style="list-style-type: none"> Woodside to ensure contractors are not allowed to catch, hunt or kill marine animals. 	Woodside	Pre and during drilling program	Contracts
		SS15.2	There will be one Myanmar doctor on board the drill ship that will have a certificate from the Myanmar Medical Council.	SS15.2.1	<ul style="list-style-type: none"> There will be one Myanmar doctor on board the drill ship that will have a certificate from the Myanmar Medical Council. 	Contractor	Prior to drilling program	N/A
		SS15.3	The contractor will conduct environmental awareness training for all contractors prior to commencing drilling activities.	SS15.2.1	<ul style="list-style-type: none"> The contractor will conduct environmental awareness training for all contractors prior to commencing drilling activities. 	Contractor	Prior to drilling program	Induction / Training Records
General	SS16 General	SS16.1	Woodside commit to undertake baseline and monitoring as per Table 7.19	SS16.1.1	<ul style="list-style-type: none"> Woodside commit to undertake baseline and monitoring as per Table 7.19 and report the findings in the Environmental Monitoring Report. 	Woodside	Pre and during drilling program	Environmental Monitoring Report
		SS16.2	Woodside commit to following all relevant legislation as per Table 3.2 of the AD-1 EIA	SS16.2.1	<ul style="list-style-type: none"> Woodside commit to following all relevant legislation as per Table 3.2 of the EIA 	Woodside	Pre and during drilling program	N/A
		SS16.3	Woodside will take responsibility for any consequences of environmental impacts.	SS16.3.1	<ul style="list-style-type: none"> Woodside will take responsibility for any consequences of environmental impacts. 	Woodside	During drilling program	N/A

7.8 Monitoring and Reporting

Monitoring will be implemented to demonstrate compliance with regulatory requirements and, will also provide verification of the effectiveness of the implemented control measures. A program of periodic monitoring of the Project starts at mobilisation and continues through the duration to completion. This information is collected using the tools and systems such as daily drilling reports, quarterly reviews, and internal auditing (as shown in the EMP Commitment **Table 7.18**).

The environmental management commitments for the 2018 AD-1 drilling campaign was successfully implemented throughout the duration of the activity. Routine monitoring of environmental performance during the activity was conducted in accordance with the approved EMP. The monitoring program has confirmed all environmental parameters were within the limits described in the EMP of the approved EIA. Woodside has provided justification in section 7.2.6 for not undertaking further water and sediment quality sampling for the Project.

Compliance will be monitored to ensure that subcontractors meet contractual obligations with respect to work practices and design specifications (e.g. Project emission standards). The monitoring strategies consider consistency with internationally and locally acceptable practices, logistics and cost effectiveness.

Woodside will submit an Environmental Monitoring Report to ECD three (3) months after drilling completion and will be made public. The monitoring reports will include:

- Any spills to the marine environment greater than 80 litres;
- Marine mammal observations during VSP and SWD; and
- Relevant monitoring reporting commitments are presented in **Table 7.19**;
- Other reporting requirements as per the approval of the Project from MONREC.

As per Article 107 of the EIA Procedure, Woodside shall notify and identify in writing to MONREC any breaches of its obligations or other performance failures or violations of the ECC, or equivalent, and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of MONREC is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of Woodside becoming aware of such incident.

Table 7.19: AD-1 Project Monitoring and Reporting Commitments

Monitoring	Receptor	Residual Impact	Report	Approximate Submission Timing
ROV images of seabed	Offshore benthic habitats and communities	F – No lasting effect	Monitoring Report to include ROV images	3 months after completion of drilling
Marine Fauna during VSP and SWD	Marine Mammals and turtles	E – No lasting effect	Monitoring Report to include any marine fauna sightings during VSP or SWD	3 months after completion of drilling
Waste Disposal	Onshore public health and safety	F- No lasting effect	Monitoring Report to include volumes of waste disposed	3 months after completion of drilling
Drill Cuttings	Offshore benthic habitats and communities Water Quality Sediment Quality	E – No lasting effect	Monitoring report to confirm average oil on cuttings for the well have been 6.9% in accordance with IFC (2015)	3 months after completion of drilling
Chemicals	Offshore benthic habitats and communities Water Quality Sediment Quality	F- No lasting effect	Monitoring Report to include a list of any new chemicals types (Function) used during drilling program in addition to those listed in Table 3.5 .	3 months after completion of drilling

8. Public Consultation

This section presents a summary of the consultation undertaken in support of the AD-1 EIA and this EMP, including descriptions of:

- Purpose of consultation;
- Methodology and approach;
- Summary of consultation activities undertaken;
- Summary of main comments received during consultation;
- Further engagement activities and disclosure;
- Social responsibility; and
- Woodside's Grievance Mechanism.

8.1 Purpose of the Consultation

The purpose of the consultation is to inform the EMP. Previous consultation has been conducted in Yangon, Sittwe, and Kyaukphyu in 2017 for the 2018 AD-1 Drilling EIA Report. This EMP is a continuation of the exploration activities in AD-1. The previous engagement conducted, that supports the identification of stakeholders, is presented in **Table 8.1** and information collected from this engagement was used to identify stakeholders for EMP engagement. The objectives for stakeholder engagement were to:

- Introduce relevant stakeholders to the JV and its planned Project activities;
- Identify stakeholders and communities potentially affected by Project activities;
- Gather baseline information on the social and biological environment within the Project's Study Area; and
- Engage with potentially affected groups to understand the scope of fishing activities, potential Project impacts, perceptions and concerns and discuss appropriate mitigation measures.

Table 8.1: Previous Consultation Activities Undertaken for AD1 Exploration Activities

Date, location	Stakeholders	Purpose
12th June, 2017 Chief Minister Office, Sittwe	Chief Minister	<ul style="list-style-type: none"> • Present information on Project. • Seek permissions and approvals required to conduct engagement in Rakhine State.
12th June, 2017 Hotel Memory, Sittwe	Rakhine Economic Initiative	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information.
12th June, 2017 Sittwe University	Sittwe University	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information.
13th June, 2017 Sittwe Town Hall	Town hall meeting - Government (11) - Non-governmental organisation (NGO) (5)	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1.
14th June, 2017 Kyaukphyu Town Hall	Town hall meeting - Government (7) - Public (52) - NGO (1)	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1.
30th October, 2017 Yangon DoF and MFF Office	Yangon DoF and MFF	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information.
31st October, 2017, MCRB Office	Myanmar Centre for Responsible Business (MCRB)	<ul style="list-style-type: none"> • Present information on Project. • Seek opinions and Feedback on the EIA Study.
28th November, 2017, General Administration Office, Kyauk Pphyu	Town hall meeting - Government officer (24) - Public (9)	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1. • Disclosure of the EIA Report Executive Summary.
29th November, 2017 General Administration Office, Sittwe	Town hall meeting - Government officer (14) - Public (36)	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1. • Disclosure of the EIA Report Executive Summary.

8.2 Methodology and Approach

This section outlines the key principles, approach, stakeholder identification, and methodology for engagement for the Project.

8.2.1 Key Principles

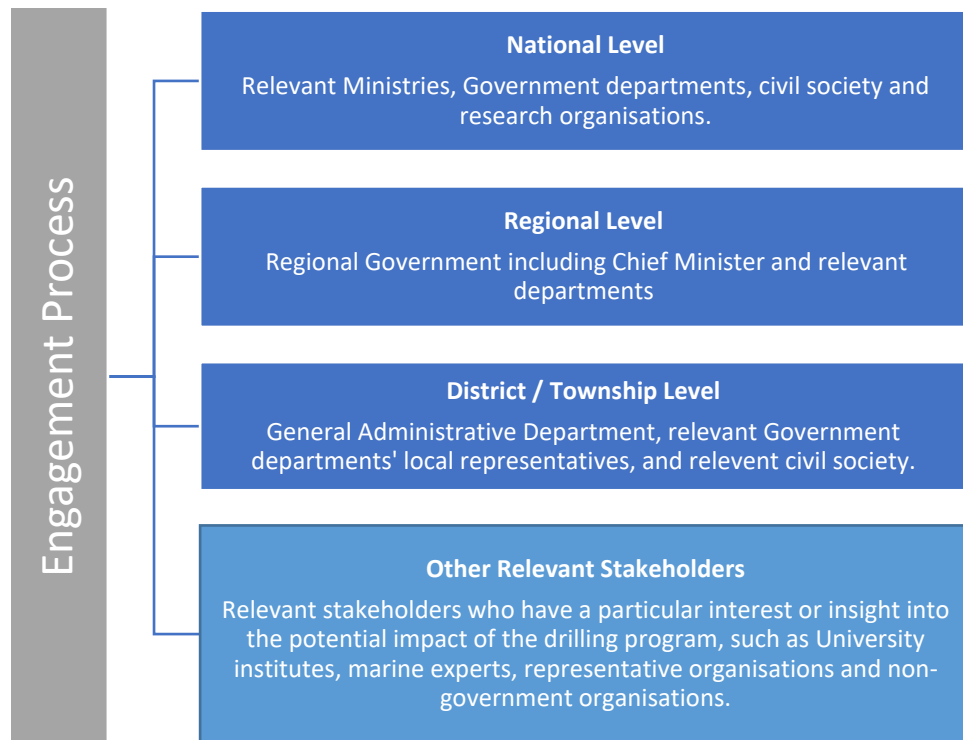
The consultation process was guided by the following key principles:

- **Inclusive:** The consultations were organised to ensure representation of potentially affected and interested stakeholders. A separate focus group discussion (FGD) was undertaken with fishers and boat owners.
- **Sharing of information:** At the township level consultations, emphasis was given to build community level understanding of the Project. All Project information was disclosed in Myanmar language.
- **Participatory:** Stakeholders were encouraged to actively participate in the consultations and were always given the opportunity to ask questions.

8.2.2 Overall Approach

Stakeholder engagement was conducted across administrative levels, subject to the permission of responsible authorities. **Figure 8.1** provides an overview of the engagement undertaken including: National, State, and district and township levels. Information on the purpose of engaging at each level is provided below:

- **National Level:** focused on government agencies with regulatory and policy making responsibility. The purpose of this engagement was to introduce the Project and Woodside and to seek clarity on the EIA process and requirements related to stakeholder engagement and disclosure.
- **Regional Level:** focused on obtaining required permission for engagement activities at the township level and accessing information on offshore and inshore fishing activities in the state.
- **District / Township Level:** the purpose of engagement was to make the community aware of the Project, seek an understanding of specific issues and stakeholder concerns in the individual townships, discuss potential impacts and mitigation measures and obtain district and township level social and environmental data.

Figure 8.1: Engagement with Key Stakeholders

8.2.3 Identification of Relevant Stakeholders and Potential Issues

Given the offshore location of the Project Area and the confined spatial extent of the potential impacts, it is unlikely that local communities from the adjacent coastline will be impacted so local consultation was focused on fishers and their representatives as well as civil society organisations.

Woodside, ERM, and REM have conducted numerous consultation activities in Rakhine for offshore gas projects. Drawing from this experience, stakeholder mapping was performed by social specialists to identify the areas where consultation should occur. It is important to tailor consultation to potentially affected communities and interested parties to reduce stakeholder fatigue, unnecessary alarm over the proposed activities, and misunderstandings of the area in which impacts may occur. For this project, the closest land is 40 miles from AD-1. The coastal townships along the neighbouring coastline of northern Rakhine were considered in terms of potential to be impacted and stakeholder interest (based on existing knowledge of the area). **Table 8.2** provides the rationale for selection of consultation meetings.

Stakeholder engagement is an ongoing process and as such new stakeholders may emerge as the Project progresses. Newly identified stakeholders will be incorporated into stakeholder planning.

Table 8.2: Rationale for Stakeholder Mapping in Northern Rakhine

Area	Rationale for Inclusion / Exclusion from Consultation
Rakhine Fisher (Yangon)	<p>Based on discussions with Sittwe DOF, the fishers that travel furthest offshore (i.e., those with Offshore Fishing Licenses) come from Yangon.</p> <p>As such, Rakhine Fishers in Yangon are potentially affected communities and were targeted for consultation.</p>
Sittwe Township	<p>Sittwe Town is on the coast and 63 miles from AD-1. This area is a large port for fishing and has a large fish market. Woodside have travelled to Sittwe numerous times in 2015-2018. Based on information received from Sittwe DOF, Sittwe GAD, and local fishers; fishing is conducted in “inshore waters” defined by DOF as within 10 NM (11.5 miles) from the coast. No fishers from Sittwe Township fish in AD-1 and therefore, no local Sittwe Township fishers are potentially affected communities. There are a number of interested parties.</p> <p>No consultation required. However, information will be disclosed on the Project via newspapers and at local public places.</p> <p>Due to ongoing security concerns and internal procedures, Woodside’s access to Sittwe is currently restricted.</p>
Kyaukphyu Township	<p>Kyaukphyu Town is on the coast in the north of Ramree island and 60 miles from AD-1. This area is a large port for fishing and has a large fish market. Woodside have travelled to Kyaukphyu numerous times in 2015-2018. Based on information received from Kyaukphyu DOF, Kyaukphyu GAD, and local fishers; fishing is conducted in “inshore waters” defined by DOF as within 10 NM (11.5 miles) from the coast. No fishers from Kyaukphyu Township fish in AD-1 and therefore, no local Kyaukphyu Township fishers are potentially affected communities. There are a number of interested parties.</p> <p>Although no potentially affected communities; consultation will be conducted for interested parties. In addition, information will be disclosed on the Project via newspapers and at local public places.</p>
Ramree Township	<p>Ramree Township is located south of Ramree island and is 60 miles from the Project Area. This is a small town and fishing is conducted in “inshore waters” defined by DOF as within 10 NM (11.5 miles) from the coast. No fishers from Ramree Township fish in AD-1 and therefore, no local Ramree Township fishers are potentially affected communities.</p> <p>No consultation required. However, information will be disclosed on the Project via newspapers and at local public places.</p>
Manaung Township	<p>Manaung is an island located offshore Rakhine and is 40 miles from AD-1. Previous consultation conducted by ERM and REM confirm that the fishing is conducted in the “inshore waters” defined by DOF as within 10 NM (11.5 miles) from the coast. The shallow waters of Manaung are a popular fishing ground for many Rakhine fishers (including those from southern Townships such as Gwa and Thandwe). However, no fishers from Manaung or these southern townships fish in AD-1 and therefore, no local Manaung Township fishers are potentially affected communities.</p> <p>No consultation required. However, information will be disclosed on the Project via newspapers and at local public places.</p>

8.2.4 Consultation Methodology

The stakeholder consultation meetings were structured as followed:

- **Introductions and information disclosure:** Introduce the JV, the Project, the EIA and or EMP, the proposed stakeholder engagement process, the potential environmental and social impacts and mitigation to help the stakeholders understand the Project and the JV's intentions for engagement.
- **Question and answer session:** for all stakeholders in the meetings to raise concerns, comments or ask questions to which the JV can directly respond.
- **Data collection:** Collection of more in-depth information through FGDs with key stakeholder groups in a town hall meeting setting.

The following tools and techniques were used to engage stakeholders:

- **Interviews:** Interviews were conducted with Government officials (e.g. DoF, GAD officials) and key informants (e.g. offshore fishers). These were guided by a list of questions, both open-ended and closed.
- **FGDs:** refers to a discussion carried out amongst a group of people (6-8) from a similar background/profile on a specific topic. The primary purpose of such discussions is to gather an insights from the group about particular issues that could be relevant to the project. FGDs were undertaken with fishers in Sittwe and Kyaukphyu to inform the baseline understanding of the Project.
- **Semi-structured/ structured interviews and checklists:** Apart from discussions, the process of semi-structured/structured interviews and checklists is used as a method of inquiry in which a pre-determined set of open or closed questions or check points are used to gather further information pertaining to specific themes or issues. For the purpose of the Project, detailed topic-specific checklists (such as fishing type, fishing gear, depths, type of fish catch etc.) were administered to improve understanding of local socio-economic activities adjacent to the Project area. Special attention was given to collecting in-depth interview data from fisheries organisations and departments with fishing data for the AD-1 Project Area.

Tools to support and document the engagement process are shown in **Table 8.3**.

Table 8.3: Tools used for Stakeholder Engagement

Checklist / Tools	Purpose
Posters/presentation	Approximately 20 slides which included information on Woodside, information on the Project activities and timeline, potential impacts and mitigation, and contacts details. The slide pack for the presentation is provided in Appendix A.
Focus Group Discussion – Fishing	Questions tailored to fishing locations, catch, seasons, boats and fishing gear used.
Maps and other visual tools	A large map that shows AD-1 and the surrounding area was used during the meetings to discuss fishing patterns. Other visual tools include fishing gear pictures to help local fishers identify the gear they use.

Information was communicated using visual media (including factsheets and powerpoint presentations) and was provided in local Myanmar language.

Stakeholders were given time to share their concerns and views and any further clarifications they required. Any queries raised by the stakeholders were responded to and also noted to feed into the EMP.

8.3 Summary of Consultation Activities Undertaken

Project stakeholder consultation was undertaken in Yangon and Kyaukphyu in April 2019. Engagement with the Rakhine Chief Minister was also conducted in December 2018. The consultation meetings were arranged in liaison with the Rakhine Chief Minister's office and GAD offices in Sittwe and Kyaukphyu and the MMFA in Yangon. The locations for these meeting were recommended by the GAD based on the Project's requirements to engage with coastal communities.

Attendees included fishing associations, government officials, Sittwe University, local fishers, local fish traders and boat associations, local CSOs and other interested parties. Fishermen were invited through the Department of Fisheries and boat owner associations as well as inviting people who attended previous meetings with Woodside.

The purpose of the April 2019 engagement was to update stakeholders and introduce the EMP level of assessment set for the proposed AD-1 drilling program. The key consultations are shown in **Table 8.4**. Photographs taken during public consultations are shown in **Figure 8.2**. The materials used and questionnaires and meetings minutes are provided in **Appendix A**.

Table 8.4: Consultation Activities Undertaken for the EMP

Date, location	Stakeholders	Purpose
4 th December 2018 Sittwe	Chief Minister	<ul style="list-style-type: none"> • Present information on Project. • Seek permissions and approvals required to conduct engagement in Rakhine State
1st April, 2019 Kyo Kone Jetty, Yangon	Myanmar Marine Fisheries Association (MMFA)	<ul style="list-style-type: none"> • Present information on Project. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1.
3rd April, 2019 Hotel Kyaukphyu, Kyaukphyu	Local fishers, ECD, DOF, GAD, CSOs, local community	<ul style="list-style-type: none"> • Present information on Project. • Present outcomes of 2018 drilling in AD-1 including excellent environmental performance and no interaction with fishers. • Obtain regional level data and information. • Confirm that local fishers unlikely to be fishing in AD-1.

Figure 8.2: Photos from 2019 Consultation Activities



Fishing questionnaires in Kyaukphyu Town hall



Presentation in Kyaukphyu Town hall Meeting



Meeting with MMFA



Yangon fish market visit

8.4 Summary of Main Comments Received During Consultation Meetings

During consultation activities, no significant concerns or objections were raised in relation to the proposed Project. Communities generally did not have many environmental and social concerns about the Project. However, the local communities were concerned about sustainable development in Rakhine State in general and many of the queries were related to profit and resource sharing between the Union and State Levels.

A summary of the main questions raised is provided in **Table 8.5**.

Table 8.5: Summary of Key Questions, Responses and Consideration for the EIA and EMP

Question Theme	Discussion and Responses	Consideration for EMP Study
Project Information Disclosure	<p>One query was received relating to informing local community of the Project.</p> <p>Woodside responded that they will engage with the local community regarding their activities as per the EIA Procedure requirements as well as continually inform local communities of Project progress and other information.</p>	<p>Section 8.5 of this EMP discusses the further engagement and disclosure that will be conducted for the Project.</p>
<u>Benefit Sharing and Transparency</u>	<p>Queries relating to budget sharing between Union and State Government were raised.</p> <p>Woodside have a Production Sharing Contract (PSC) with MOGE, under the ministry of Electricity and Energy. This is a confidential agreement with the company and Government which outlines the benefit sharing. A template PSC is available from the Government. Woodside also responded that they have submitted data for two EITI reports in Myanmar.</p> <p>MOGE responded that foreign countries' drilling companies were invited to invest in the production of natural resources to fulfil energy supply requirements in Myanmar. Host countries like Myanmar have a lack of investment and technology for the surveys and exploration. Woodside were selected to help identify potential reservoirs and help to address the lack of technology / material / machine requirements for drilling in Myanmar.</p>	<p>This is not of consideration for the EMP but is important to note for Woodside's ongoing business.</p>
<u>Impacts on the Marine Environment</u>	<p>Environmental queries were raised related to impact on water quality.</p> <p>Woodside discussed that environmental concerns are a main consideration of the impact assessment. Woodside have been collaborating and engaging with local experts in Myanmar to support the impact assessment and EMP.</p> <p>For wastes, all waste and waste-water will be handled, managed, disposed and/or discharged in accordance with international standards (i.e. MARPOL).</p> <p>Much of the discussion focused on recent water pollution near Maddae Island (which is not associated with this Project).</p>	<p>Table 5.1 of the EMP provides a summary of the impact assessment.</p>

Question Theme	Discussion and Responses	Consideration for EMP Study
<u>Impacts to Fish and Fishing</u>	<p>Queries related to fish and fishing were raised.</p> <p>It was noted that direct and indirect impacts to fish and fishing were a key focus of the impact assessment.</p> <p>Fish are not sensitive to drilling activities and all discharges to the marine environment are rapidly diluted and dispersed and will not cause impacts to fish populations. As AD-1 is 40 miles from the nearest land, there is limited potential overlap with fishing activity.</p>	Table 5.1 of the EMP provides a summary of the impact assessment.
<u>Corporate Social Responsibility (CSR) and Social Benefits</u>	<p>Queries related to social benefit were raised.</p> <p>Woodside responded that they are now in the early stages of exploration in Myanmar. Woodside's approach to social investment and CSR programs is to increase the level of investment and benefit as it moves through the development lifecycle so that social benefits are maximised once production starts and revenue is being derived from a project. It is not certain that the project will reach the production stage and that there are many steps beforehand, which could take up to 10 years.</p> <p>In countries where Woodside operate, the CSR programs focus on early childhood development, education and capacity building.</p>	Although CSR is not part of an EIA Study, information on Woodside CSR is provided in Section 8.6.

8.5 Further Engagement Activities and Disclosure

Stakeholder consultation undertaken to date confirmed that potential impacts as a result of Project activities will be small in scale and of limited extent.

Future engagement activities will consist of the following and are shown in detail in **Table 8.6**:

- Disclosure of the Final EMP; the Executive Summary of the EMP Report will be distributed to the DOF and ECD in Yangon, Sittwe, Kyaukphyu, and the DOF and MFF in Yangon;
- Engagement with relevant regional officials/authorities and Government organisations on the outcomes of the Environmental Impact Assessment; and
- Ongoing communications with interested and potentially affected stakeholders during the drilling program. While impacts on local communities and other coastal activities are considered unlikely, ongoing project information will be provided to local areas.

Woodside will provide activity updates in the form of a factsheet and other accessible communications. A grievance mechanism will be in place during operations, in line with the steps required under the EIA Procedure, as well as international good practice.

If significant issues, concerns or impacts are identified, further stakeholder consultation with relevant, interested or affected stakeholders may be undertaken during the proposed drilling program.

Table 8.6: Stakeholder Communication and Notifications

Timing	Purpose	Stakeholder/Group	Method of communication/notification
Following lodgement of EMP for assessment	Disclose EMP	<ul style="list-style-type: none"> Relevant regional officials/authorities Relevant Government organisations Offshore fishers and representative groups Other relevant stakeholders General public MFF 	<ul style="list-style-type: none"> Hardcopy EMP executive summary (Myanmar) made available in the DOF office in Sittwe, Kyaukphyu, Ramree, and Manaung (Rakhine) and the MFF and DOF office Yangon Publish Project information on relevant Department of Information noticeboards; Regional and national advertising – via newspapers and radio. EIA (English) and executive summary (Myanmar and English) available on Woodside website
Prior to the commencement of a drilling program in any calendar year	Notification of commencement and location of drilling activities. Outline safety measures and grievance mechanism.	<ul style="list-style-type: none"> DoF (Yangon, Sittwe, Manaung, Ramree, and Kyaukphyu) MFF (Yangon) Relevant regional officials/authorities Relevant Government organisations Fishers 	<ul style="list-style-type: none"> Written notification via factsheet Publication on Woodside website Regional and national advertising Factsheet provided on DOI notice board at GAD offices in Rakhine
During the Project program	Provide an update, answer any questions and address any grievances.	<ul style="list-style-type: none"> Meet with DOF and MFF (Yangon) 	<ul style="list-style-type: none"> Face-to-face
During the Project program	Address any community concerns that may arise during Project activities.	<ul style="list-style-type: none"> Implement Woodside's Grievance Mechanism. This will be described in the EIA. 	<ul style="list-style-type: none"> Information about Woodside's Grievance Mechanism, including how and who people should contact if they have a concern, is included in factsheets, presentations and the EIA.

8.6 Social Responsibility

Woodside, as operator for AD-1, is committed to corporate social responsibility (CSR) in Myanmar and its approach is outlined below.

Woodside's CSR processes are focused on building social licence to operate and strengthening relationships with stakeholders by anticipating, understanding and responding to stakeholders' rights, interests, concerns and expectations.

Woodside's approach is to identify capacity and capability opportunities for priority locations, this is determined through:

- Engagement and building relationships with stakeholders; and
- Understanding our business activities and the impacts they may have on local communities.



As part of Woodside's CSR, Woodside has a phased and integrated social contribution strategy. This aligns with business build in which social contribution increases with the level of business activity and impact. The strategy is aligned with the United Nations Sustainable Development Goals and focuses on:

- **Opportunities:** We believe there is shared value for our business and our communities by creating opportunities in education, employment and enterprise.
- **Knowledge:** To do this, we take the time to improve our knowledge of what's needed, to understand the environment we work in, our impacts and the opportunities to work with and support both community and government. We focus on environment, climate change and innovation/technology.
- **Resilience:** By doing this we help build resilience in our host communities so they can take advantage of the opportunities we create. We focus on safety and health, infrastructure, culture and community identity.

Woodside recognise each host country and community will have unique and varied priorities and we work to understand areas of mutual benefit for long-term strategic investment in the communities where we operate.

During the exploration phase, Woodside's social investment in Myanmar relates to all its permits and is not activity or project specific. Woodside (and most international O&G companies) make modest social investments during exploration when potential impacts are likely to be minor. In development and operations, when potential impacts and opportunities could be more significant, social investment generally increases. The majority of social investment to date has been 100% Woodside investment. In a development / operation scenario, the relevant joint venture would develop a social investment program.

In the event that there is a commercial discovery of gas and this proceeds to development and production, and consistent with Woodside's CSR approach to working with host communities, full consideration will be given to social investment in Rakhine State. As part of this process, Woodside will work with stakeholders to identify appropriate and timely social investment focused on building capacity and capability for mutual benefits and shared value.

Local communities would be engaged as part of these assessment activities to ensure social investment / CSR programs are developed to meet community needs and to leverage and maximise opportunities associated with a potential development.

For reference, Woodside is already collaborating with international and local organisations in Myanmar to ensure our company delivers strong and sustainable benefits. Woodside's CSR program in Myanmar to date includes the following:

- **Knowledge:** Enhancing marine science capability through partnership with Flora and Fauna International and Patheingyi University Marine Science Department; building local knowledge and capacity through a partnership with Yangon Technological University by providing practical work experience program for Petroleum Engineering students delivered by Unitem Training, supporting the Wildlife Conservation Society to conduct fisheries assessments and socio-economic surveys to determine the occurrence of marine fisheries and marine wildlife in the Ayeyarwady region
- **Opportunities:** Investment in Ayeyarwady children and families through the Woodside Development Fund – Woodside's commitment to early childhood development. In association with Save the Children, Plan International and working with local civil society organisation Pann Pyo Lett, the Woodside Development Fund has delivered parenting-education programs in 10 communities in the Thabaung Township in the Ayeyarwady

region adjacent to Woodside's offshore exploration permits. The program has recently been extended to other communities in proximity to Thabaung; and

- Resilience: Emergency relief through Save the Children and Plan International to support families and children in response to 2015 flooding in the Rakhine State and Ayeyarwady Region.

In addition Woodside is assisting to create opportunities in education and employment through investment in:

- The Woodside Myanmar Postgraduate Scholarship with the University of Western Australia, under which a Myanmar national has completed a two-year masters' degree in the area of Public Health; and
- The Myanmar Professional Development program, under which seven (7) Myanmar nationals studying in Australia have had the opportunity to complete an internship at Woodside's headquarters in Perth, Western Australia. These internships have been in the areas of health, safety, environment and quality; finance; civil and structural engineering; and petroleum engineering.

Woodside's CSR program is reviewed at regular intervals. If a potential hydrocarbon development opportunity is identified and begins to be matured (see **Figure 3.1**), Woodside will review the CSR program.

8.7 Woodside's Myanmar Grievance Mechanism

Woodside seeks to build strong relationships with stakeholders and manage the impact of its business activities on individuals and communities. Nevertheless, it recognises that complaints about its activities may arise from time to time. Our Community Grievance Mechanism Procedure provides a framework for community stakeholders to raise questions or concerns with Woodside and have them addressed in a prompt and respectful manner. Woodside, on behalf of the JV, aims to respond to all complaints from community stakeholders which it receives, regardless of whether they stem from actual or perceived issues. Woodside seeks to foster trust in the process and its outcomes and will communicate this Procedure in an understandable manner to relevant individuals and communities. Should a grievance or complaint be made, a similar process to the following will be carried out on behalf of the JV:

- The complaint/grievance (which can be presented in a variety of methods of communication) will be received by the Community Liaison Officer (CLO).
- Grievance recorded in Myanmar's Community Grievance Register.
- Grievance assessed and assigned to an internal "owner".
- The grievance will be acknowledged by informing the complainant.
- Grievance investigated by the internal "owner".
- A suitable response will be made to the complainant.
- Should the response be accepted by the complainant, a resolution will be made and relevant actions implemented.
- Should the complainant not accept the response, a review will be carried out.
- Once resolved, the grievance will be closed out and recorded in the Grievance Register.

The Grievance Mechanism is required for the Project's drilling operations phase, and this Procedure is illustrated in **Figure 8.3**.

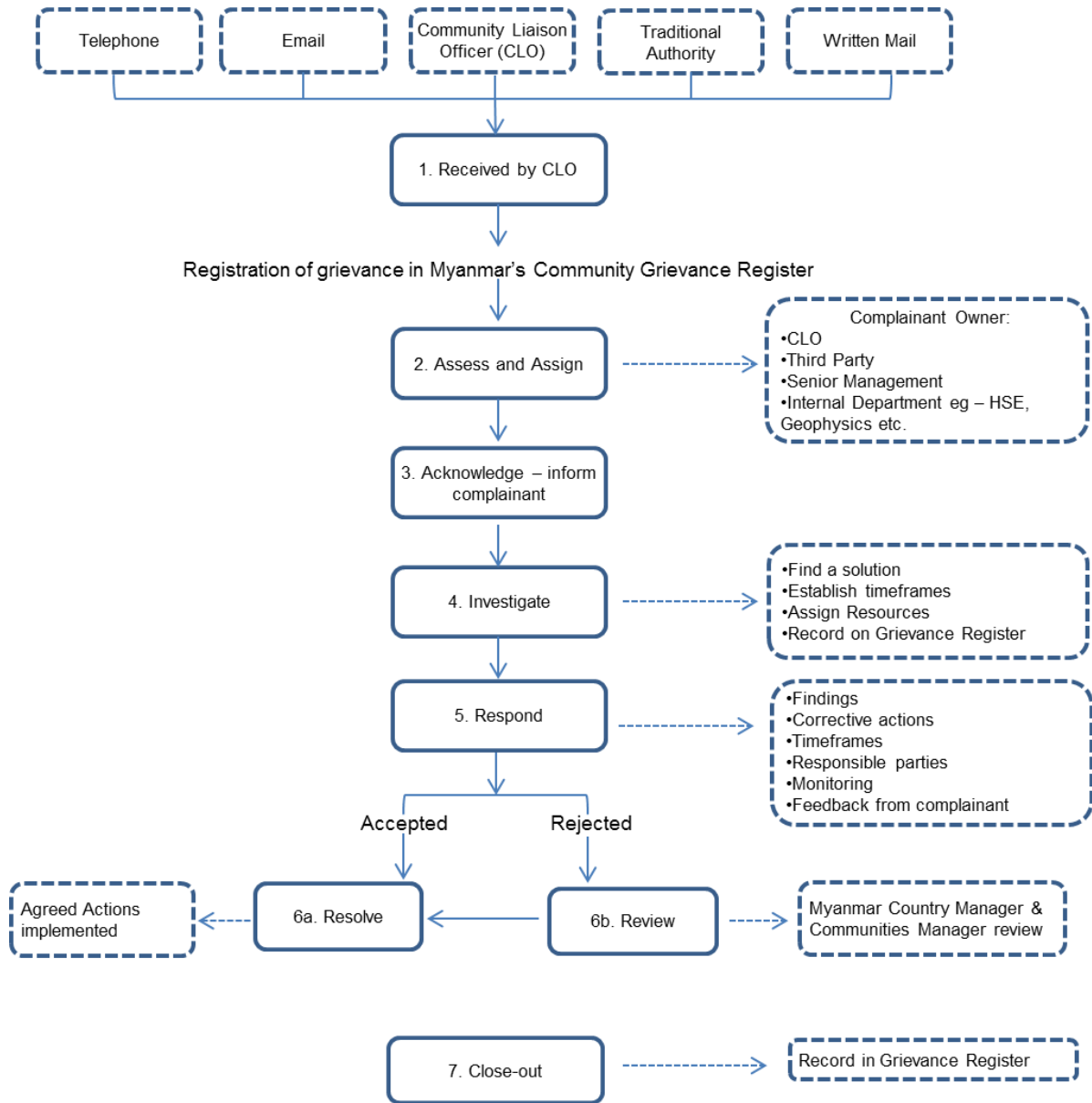


Figure 8.3: Woodside's Grievance Mechanism in Myanmar

9. References

ERM (2019). Woodside AD-1 Drilling: Environmental Monitoring Report. Report prepared for Woodside Energy (Myanmar) Pte Ltd.

MetOcean Solutions Ltd (2017). Numerical modelling of the dispersal and deposition of cuttings discharged to the sea from Myanmar AD-1 prospect, Bay of Bengal.

Woodside (2018a). AD-1 Drilling Environmental Impact Assessment Report.

Woodside (2018b). AD-1 Drilling: Post Activity Environmental Monitoring Report.

Appendix A Public Consultation Materials

Meeting of Minutes: Scoping Public Consultation of Exploration Drilling in Block AD-1 and AD-8 of Woodside

Detail:

Project	Exploration Drilling of Woodside	Region / State	Rakhine
Venue	Hotel KyaukPyu	Township	KyaukPyu
District	KyaukPyu		
Objective	Public Consultation Meeting		
Date	3 rd April 2019		
Time	2:00-4:00 PM		

- U Kyaw Zay Ya (Deputy Director, MOGE) gave an introductory speech.
- Mr. Stephen Munday (Woodside) explained and presented about Woodside Company, and upcoming activities with video clip of drilling.
- Mr. Julian Seah (Woodside) explained about the activities concerned with environment.
- Daw Phyu Phyu Win Oo (Woodside) presented about purpose of meeting with local community.

Comment from U Tun Lwin (Private School Tutor)

- For Shwe Project, the local community were not informed about the project.
- What is the arrangement to explain project information to the local community? Are there any contracts or MOU between Woodside and government? If yes, can we see these?
- Last year water pollution occurred from the Shwe Gas Project. The Government responded that it was not from the project.
- A community-based organization took samples of this water and sent it for lab analysis. The Ministry of Electricity and Energy also took water samples but the lab results are different. We would like MOGE to lead and help the community-based organization to get reliable lab analysis.

Response from Mr. Stephen Munday (Woodside)

- Woodside will engage with the local community regarding our activities. This will be continual and not just today. We will share project progress and other information. In Myanmar, the Oil & Gas Blocks are developed in Joint Venture with MOGE. There is a Production Sharing Contract (PSC) with MOGE, under the ministry of Electricity and Energy. This is a confidential agreement with the company and Government. A template PSC is available from the Government but we cannot share our PSC.

Response from U Kyaw Zeya (MOGE)

- When the water around Maddae Island was polluted, a representative officer from MOGE conducted an inspection. According to the report of this officer, the pollution occurred near the mouth of Than Sit River. Local communities suspected that this pollution is from the activities of Maddae Island. Ships carrying oil travel to and from this Island as there is a storage and distribution facility on the island for oil. The local community thought that leakage of oils from those ships caused the water pollution. However, there are system in place on the vessels and at the facility to avoid spillage of oil into the water. There is also a monitoring team for the facility and any leakage of oil would be recorded.
- When the ship connects to the jetty, there are Custom, Immigration, and monitoring teams that inspect the vessel. The water quality lab results from the MOGE showed that this water was not dangerous to human health. The results were disclosed to the relevant township departments. We suggest to discuss with township departments regarding your concerns.

Comment from U Tun Kyi (KyaukPyu Rural Development Association, KRDA)

- Where do Woodside sell the gas? When the PSC is signed, there are fees for the MOU and signature bonuses between company and government. Can you provide these terms?
- We do not know how to rehabilitate the environment and if the project will affect the environment or not.
- Many companies do not take any responsibility or accountability. The Government does not care about the local community. Woodside is a reputable international company and we want to know that the impacts will be mitigated and what Woodside can do to help rehabilitation in local region, for impacts caused either directly by Woodside or by the government.
- There is no CSR in Maddae Island, so the local community are angry.

Response from Mr. Stephen Munday (Woodside)

- We are currently in the exploration phase. It will take about 15 years from this phase to commercial production phase. The gas found last year was not enough for mass production so we need to keep looking. Woodside are not currently making any profit so there is currently no gas to sell. In the future, when we know more about the amount of gas, Woodside will plan how to sell and distribute.
- The purpose of this meeting is to gather local concerns.
- If we get to the stage of commercial production, we will start to consider social benefit projects. Woodside conduct CSR where we operate commercially and we usually conduct in a few key areas; education, early childhood development, as well as capacity building and knowledge sharing.

Comment from U Tun Kyi (KyaukPyu Rural Development Association, KRDA)

- ERM have undertaken many EIA in Myanmar. The EIA reports are written in English. There are not many local people who can read in English.
- Request for ERM to prepare the report in Myanmar language.
- What is the status of the EIA report? If it is finished, I would like to receive it.

Response from Daw Phyu Phyu Win Oo (Woodside)

- The executive summary of the EIA Report is written in Myanmar language and is uploaded to Woodside website. We can also send you a copy if you request it.
- The EIA Report for last year's activity is finished and was disclosed to the public.

Response from Ms. Becky Summons (ERM)

- The EIA report is a very large document, which has a lot of technical and scientific information. It is prepared in English in accordance with the EIA Procedure. However, there is a non technical executive summary which is prepared in Myanmar language which summarises the EIA. This is around 20 pages.
- ERM translate this into Myanmar language and distributes to the relevant Township Administrative Office and in the Department of Fisheries. Thank you for your comments. Please let ERM know if you have any suggestions on where or how you would like us to distribute this report.
- ERM are currently preparing the EIA Report. We want to make the information easily understandable by all people. If you have any advice, please contact ERM at the numbers we provided.

Comment from U Soe Shwe (Community Ethnic Rural Development Association, CERDA)

- Myanmar is trying to be a member of EITI. Did Woodside contribute any information to EITI for four published reports?
- In AD-1 and AD-8, Woodside and CNPC have 50-50 share. During the EITI process, it is difficult to get information from government enterprises for Chinese companies.
- Now Woodside is in drilling stage; for commercial production, will there be any agreement between Woodside and China Company for sharing information. Has there been any preliminary discussion for on issue?

Response from Mr. Stephen Munday (Woodside)

- Thanks for your comments.
- For the four EITI reports mentioned by U Soe Shwe, Woodside provide information for two reports.
- In Australia, as Woodside is a public company, we regularly announce financial statistics, as we are on the stock exchange reports. The 50-50 split between Woodside and CNPC is the amount of investment. The operation including disclosure of information will be controlled by Woodside.
- Woodside will conduct the drilling and mitigate environmental and social impacts in accordance with national and international requirements.

Comment from U Soe Shwe (Community Ethnic Rural Development Association, CERDA)

- In Myanmar, although there are many offshore Block, only the PSC for TOTAL was disclosed to the public.
- This was not done by the Myanmar government but as per company rules. Does Woodside has policy to disclose the contract to public? Or it will be undertaken with the approval of government? Consider in EIA process, EITI contract transparency.

Response from Mr. Stephen Munday (Woodside)

- Disclosing PSC of TOTAL to the public has not yet known before. Normally, information concerned for financial agreement are not usually disclosed to public. Public interest to the contract will inform to administration. For the time being now, it is no guarantee to share the information concerned with contract. Contract transparency of EITI requirement will review and disclose if it is necessary.

Comment from U Kyaw Than (National Congress Representative)

- Through presentation, it is known that Woodside have dug over six hundred wells. It is not known in which countries was undertaken. Is there any providing for local community when MOU is signed in those countries?
- When Shwe project was implemented in our region, central government control the natural resources according to government Law. Local community do not get any benefit at all. Local community only receive impacts from project. Is this intended to mislead local community by this presentation? Does the project stop if local community disagree?

Response from Mr. Stephen Munday (Woodside)

- Woodside dug about six hundred wells in Australia. In Myanmar, only ten wells have been undertaken. In other countries such as African, there dug a few wells. Sharing financial in Australia is not the same as in Myanmar. Major proportion of main income from selling oil is given to common wealth government, union level. It also needs to share to state government. Moreover, Woodside has to give local administrators.
- In some part of the world, there practising by entering the Production Sharing Contract as in Myanmar and in some others, there also practices the ways as mentioned above.
- In Australia, Woodside always discusses with local community, listens the voice of public, provide suitable arrangement. Woodside has good relationship with people living near the project. Moreover, has a continuous relationship with people from fisheries. Therefore, Woodside is undertaking businesses

without any difficulty with public. These are examples of Woodside practising. Woodside will undertake the business with this kind of approaches.

Attendance List

No	Name	Position	Department/ Organization/ Address
1.	U Kyaw Than	MP	Ahmyothar Hluttaw
2.	U Kyaw Than	Ward Leader	Ah Shae Pite Seik ward
3.	U Tin Maung Win	Fisheries Owner	Pyin Phyu Maw
4.	U Maung Yin Htwe	Fisheries Owner	Pyin Phyu Maw
5.	U Zin Htu	Deputy Officer	Department of Fishery
6.	U Zaw Wate	Chairman	Rakhitatakwin
7.	U Myat Hlaing	Offshore representative	Representative of Boat Association
8.	U Khin Maung Tun	Village Leader	PyinPhyu Maw
9.	U Saw Thiha	Ward Leader	Ah Nut Pine Ward
10.	U Kyaw Myo Htwe	Ward Leader	Myit Nar Tan
11.	U Zaw Oo	Observer	Made Kyun
12.	U Tun Kyi	Coordinator	KRDA, KyaukPhyu
13.	U Soe Shwe	PM	CERDA, KyaukPhyu
14.	U Tun Lwin	Coordinator	KNSG
15.	U San Tin	Member	DuWunFree Funeral Service Society
16.	U Nyunt Tin	Member	DuWunFree Funeral Service Society
17.	U Thein Aung	Deputy Staff Officer	Agricultural Department
18.	U Hla Win		Ma La Kyun
19.	U Maung Win		Ma La Kyun
20.	U Myo Lwin Oo	Deputy Staff Officer	ECD
21.	U Maung Khin Aung	Member	KRDA, Kyauk Phyu
22.	U Lin Yar Zar	Township Officer	Forest Department
23.	U Htay Lwin	Member	Du Wun Free Funeral Service Society
24.	U Tin Chan	Village Leader	Nga La Pwe
25.	U Win Min Thein	10 Household Leader	Nga La Pwe
26.	U Saw HlaTun	Village Leader	Say Ti Ya
27.	U Maung Hla Htwe	Fisherman	Say Ti Ya
28.	U Win Maung	Fisherman	Say Ti Ya
29.	U Kyaw Kyaw Soe	Patron	Lay Wady Ku La Rakhita
30.	U Soe Win Tun	Sub Departmental Head	Directorate of Industrial Supervision

No	Name	Position	Department/ Organization/ Address
31	U Soe Naing	Ward Leader	Ah Doe Ya Ward
32	U Than Tun	Patron	Rakhita Ta Khwin and Baytwe
33	U Kyaw Nay Win	Finance	Rakhita Ta Khwin and Baytwe
34	U MyoTun Lin Oo	Secretary	Rakhita Ta Khwin and Baytwe
35	U Than Hlaing	Ward Leader	Zay Ti Taung Ward
36	U Min MinZaw	Deputy Staff Officer	GAD
37	U PhyoWai Lin	LD	GAD
38	U Win Maung	Chairman	Lay Wady Ku La Rakhita
39	U Khin Min	DMG/DVB	

Photo



Meeting of Minutes: Stakeholder Engagement Meeting for Woodside Drilling in Block AD-1 and AD-8, Offshore Rakhine, Myanmar

Detail:

Project	Woodside Drilling in Block AD-1 and AD-8	Region / State	Yangon
Venue	Kyo Kone Jetty		
Objective	Meeting with Myanmar Marine Fisheries Association (MMFA)		
Date	1 st April 2019		
Time	9:30 AM – 11:00 PM		

- U Maung Maung Soe, Chairman of Myanmar Marine Fisheries Association in Yangon, welcomed the team and provided information on their fishing activities, generally as a whole and specifically as in Rakhine Region.
- U Maung Lwin, member of MMFA (representative of Rakhine State), Kyauk Phyu based fishing boats who has around 30 fishing boats in Rakhine, provided detailed information on fishing activities and raised his concerns on the related project.
- U Nay Lin Oo, Daw Phyu Phyu Win Oo, Mr. Seah Julian and Mr. Stephen Munday from Woodside gave a brief explanation of their Project.
- Daw Myat Mon Swe, Senior Consultant, ERM, introduced the meeting, gave an overview of the project activities and Environmental Impact Assessment procedure, and lead the entire focal group discussion.

Question and Answer Section

Question from Daw Myat Mon Swe, ERM

- Please provide us an overview of fishing activities in Rakhine offshore.

Response from U Maung Maung Soe, Chairman of Myanmar Marine Fisheries Association

- There are around 300 fishing boats from Yangon, which conduct the fishing activities in Rakhine offshore fishing grounds.
- Apart from these, around 20 boats from Rakhine are also fishing in the same grounds. However, boats from Yangon are more advanced and have large capacity.
- Since water depth after Fishing Blocks A7, A11, A16 and B1 gets deeper, our fishing boats generally do not navigating beyond those Blocks; not even to the outer edge of those Blocks. It is very rare that fishing boats cross over those Blocks.
- U Maung Lwin should be the focal person to provide all the local information of fishing activities in Rakhine, I recommend only him to be conducted the questionnaires.

Question from Daw Myat Mon Swe, ERM

- Please provide an overview of your fishing activities and distance offshore.

Response from U Maung Lwin, Rakhine based fishing boats owner

- I own around 30 fishing boats that all fish in Rakhine fishing Blocks.
- We are not permitted to fish within 10 nautical miles of coast.
- Normally, we fish 10 to 15 miles from the inshore/offshore boundary, which is around 20-25 miles from the coastline. (Refer to photo below of GPS route of fishing boat from around 10:30AM on 1st April 2019).
- According to the live GPS on my boats, currently boats are fishing in fishing Block A1 and down to A4, A9, A13, A18 and B4.

Question from U Maung Maung Soe, Chairman of Myanmar Marine Fisheries Association

- We aware that this Oil and Gas Project is one of the priority sectors at the Union level. I would like to know whether our fishing grounds overlap with the project.

Response from Daw Myat Mon Swe, ERM

- Woodside drilling sites, AD8 and AD1, are around 40 miles away from coastline.
- As U Maung Lwin mentioned, the furthest distance of fishing boats is 25 miles from the coastline. There is no overlap.

Question from Daw Myat Mon Swe, ERM

- Do you have any concern regarding the drilling activities of Woodside AD-8 and AD-1?

Response from U Maung Maung Soe, Chairman of Myanmar Marine Fisheries Association

- As long as the drilling does not overlap with our fishing grounds and is not effecting our livelihood, we have no issues. We understand and respect the need for the project.

Response from U Maung Lwin, Rakhine based fishing boats owner

- I have four concerns regarding the oil and gas sector effecting our own business: (1) During exploration, blocking our fishing grounds with exclusion zones for security; (2) During drilling, we have to give up our fishing grounds; (3) During commercial production phase, impacts to our livelihood are greater due to the pipeline to the mainland; and (4) Oil and gas can contaminate the water (e.g., from spillages, and accident during drilling or transport)
- If none of the above four concerns will occur then we do not have concerns.

Response from U Nay Lin Oo and Mr. Stephen Munday, Woodside, to U Maung Lwin's concern

- The drilling will be a short period of 45-60 days. The drilling activities are not overlapping with your fishing grounds in Myanmar, and we are not conducting seismic activities. Even though Block AD1 and AD8 seem large on the map, the area occupied by the drill ship is small. We will consider your concerns when we conduct the project. Should we progress to a further stage (production), we will consult with you again.

Response from Daw Myat Mon Swe, ERM to U Maung Lwin's concern

- We will prepare an Environmental Management Plan (EMP), which will include an emergency response plan, waste management, and regular environmental monitoring to Woodside. The EMP outlines the commitments and mitigation measures for Woodside to ensure impacts are reduced.

Question from Mr. Stephen Munday, Woodside

- Are there any illegal fishing activities in Rakhine fishing grounds?

Response from U Maung Soe, Chairman of Myanmar Marine Fisheries Association

- We adhere to the restrictions for the closed season from the Department of Fisheries. This is from June to August. Annually, we work for nine months and rest for the three close months.
- Especially during the closed season, boats from Thailand sometimes come to Rakhine fishing grounds and conduct illegal fishing.
- If you encounter any fishing activities during June, July, and August, it is mostly illegal fishing from Thailand.

Question from U Maung Lwin, Rakhine based fishing boats owner

- We have seen some oil and gas activities in our fishing grounds not in deep water; although they are not supposed to.

Response from U Nay Lin Oo, Woodside

- Yes, some of the drilling or seismic surveys are nearer to the shore; from drilling rigs operates in water up to 500 ft (e.g., jack-up rig). However, our activities in AD1 and AD8 are in water depths of around 2600ft. Our project will not be in your fishing grounds.

Comment from U Maung Maung Soe, Chairman of Myanmar Marine Fisheries Association

- We note that your Block AD-1 and AD-8 are in the route of the annual tropical storm. You should prepare for that.

Response from U Nay Lin Oo, Woodside

- Thank you for your highlighting your concerns due to natural disaster. We are aware and have preparation in place for natural hazards.
- Normally, it takes 48 hours to unassemble the drilling parts to move from a place to another for our drilling ship. On board, we have a forecasting and monitoring system, which forecasts weekly, monthly and yearly.

Question from U Maung Maung Soe, Chairman of Myanmar Marine Fisheries Association

- Normally what month of a year do you conduct your drilling activities?

Response from U Nay Lin Oo, Daw Phyu Phyu Win Oo, Mr. Stephen Munday, Woodside

- Normally we start drilling right after we got Environmental Compliance Certificate from Environmental Conservation Department.
- Last drilling was conducted March to October.
- Woodside also committed that MMFA, and local fishermen from Yangon and Rakhine will be kept updated of our proposed schedule.

Question from Daw Myat Mon Swe, ERM and U Nay Lin Oo, Woodside

- Do you have any other questions, comment and suggestion for this AD-1 and AD-8 drilling project?

Response from U Maung Soe, Chairman of Myanmar Marine Fisheries Association and U Maung Lwin, Rakhine based fishing boats owner

- As long as we do not have overlap of fishing grounds, and the four concerns that U Maung Lwin mentioned are considered, we do not have any more concerns.

Summary of Meeting

A Focal Group Discussion with Woodside, ERM, Myanmar Marine Fishery Association (MMFA) and local fishermen was held in Kyo Kone Jetty on 1st April 2019. ERM provided the overview of EIA procedure, received the concerns from stakeholders and presented EMP that is prepared for Woodside. The main four concerns raised from MMFA and local fisherman were noted, while there is no overlap between fishing ground and the drilling project site. Woodside also committed that MMFA, and local fishermen from Yangon and Rakhine will be kept updated of project activities.

Attendance List

No.	Name	Occupation/Organisation	Address
1	U Maung Soe	Chairman of Myanmar Marine Fisheries Association (MMFA)	Yangon
2	U Maung Lwin	Member of MMFA (Rakhine State)	Kyauk Phyu, Rakhine
3	U Nay Lin Oo	Woodside	Yangon
4	Daw Phyu Pyu Win Oo	Woodside	Yangon
5	Mr. Seah Julian	Woodside	Yangon
6	Mr. Stephen Munday	Woodside	Yangon
7	Daw Myat Myint Zu	EQM	-
8	U Kyaw Ko Ko	EQM	Yangon
9	Daw Myat Mon Swe	ERM	Yangon
10	U Zin Thaw Oo	ERM	Yangon
11	Dr. Mya Hpoo Ngone	ERM	Yangon

Photo






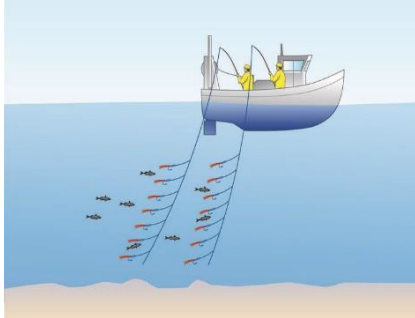


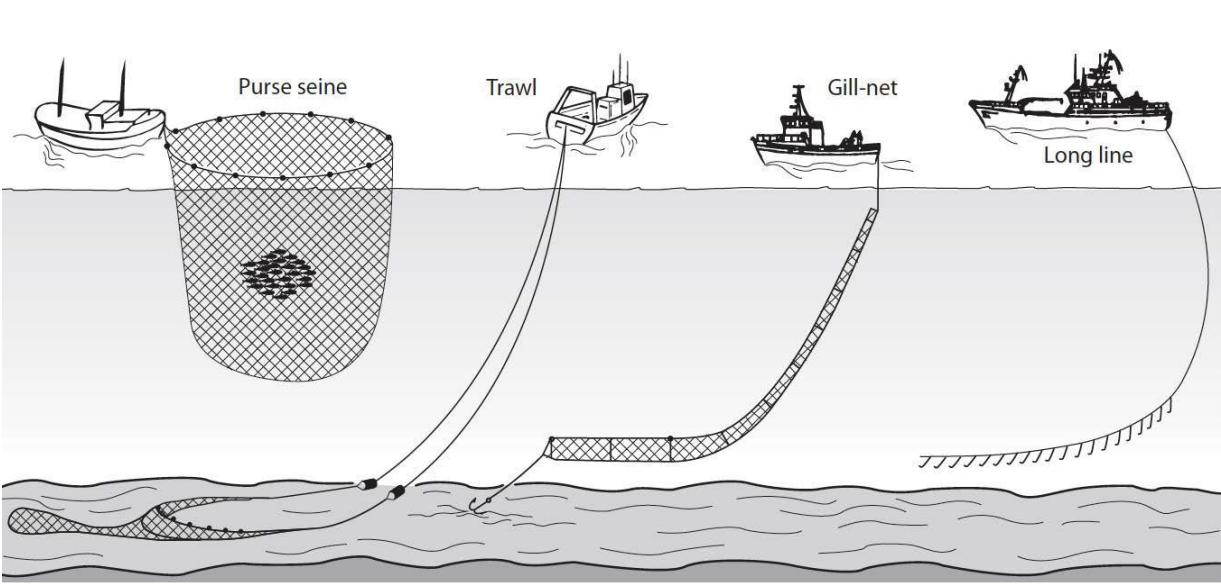
Fishing Questionnaire

Please fill in the blanks /circle the option

Date of survey	3-4-2019
Village	Nga La Pwe
Village Tract	Taung Yin
Township	Kyaukphyu
State / Region	Rakhine
Number of people in group	2

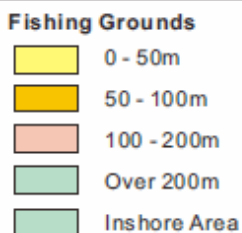
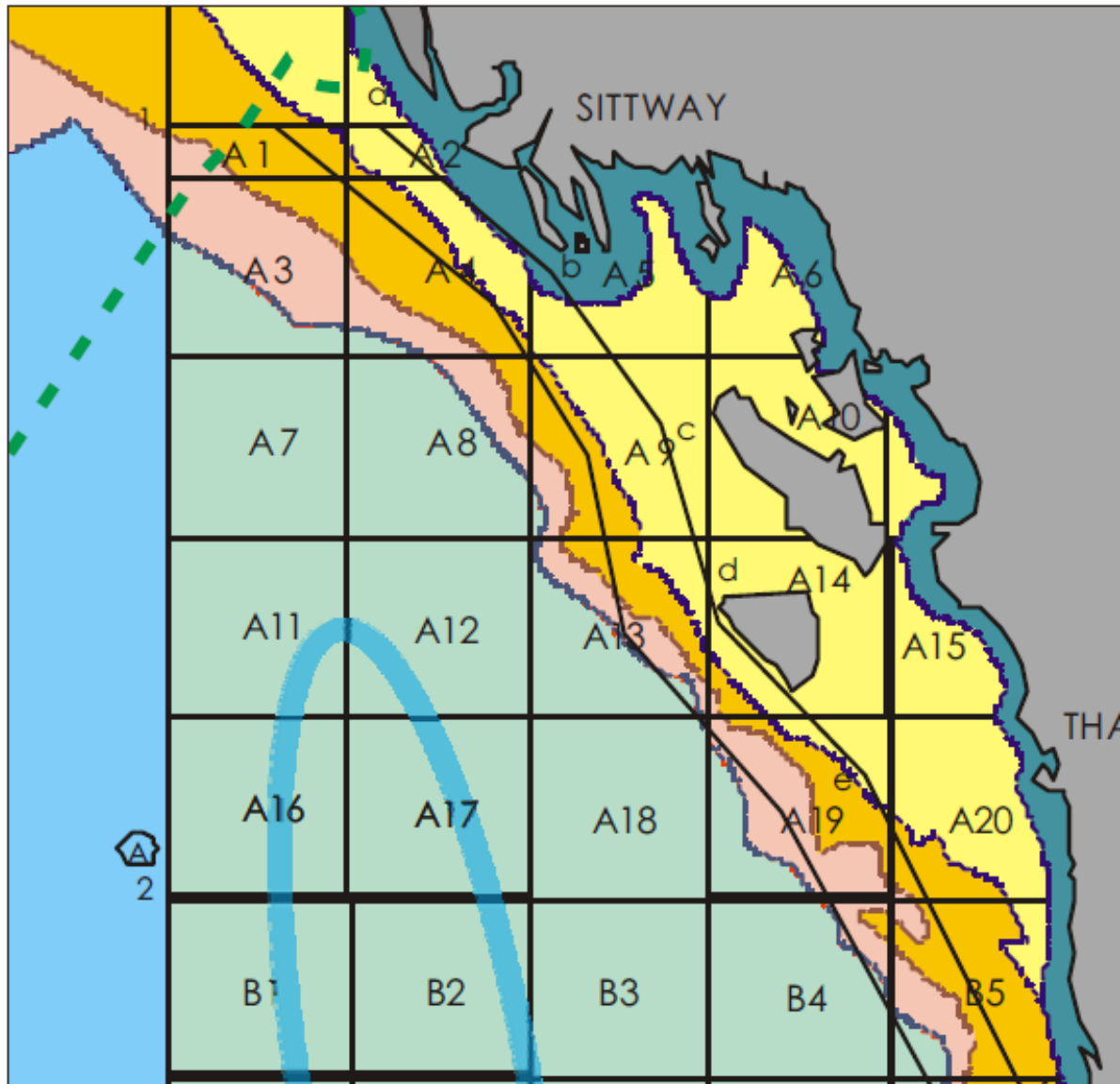
Section A Fishing Vessels and Gear

Size	Small (< 25 ft. long / onshore)	Large (> 25 ft. long / offshore)
Carrying Capacity (<i>Viss/kg/ppl</i>) – <i>provide units</i>	500 Viss	Over 1000 Viss
What is the maximum distance offshore you fish in? – <i>units</i>	35miles	40 – 60 miles
Do you know the maximum water depth? – <i>units</i>	25meter	60 meter
How many boats in your village/ward? – <i>provide details of the area covered</i>	35	12
Average time spent at sea – <i>units</i>	6 days	1 month
Number of people on board vessel	4	15
Time spent travelling to fishing ground – <i>units</i>	2hours	4 to 7 hours
Estimated distance from the coast – <i>units</i>	-	-
Type of fishing net used – <i>see photos below – circle applicable</i>	-	-

<p>1. Hand Line/ ငါးရှာချိတ်ဖြင့် ငါးများခြင်း</p>	<p>2. Netting/ ကွန်ပစ်ခြင်း</p>	<p>3. Trapping/ မြူးထောင်</p>	
			
<p>4. Hook and Line/ ဓမ္မ ၂၁ လို ကံ</p>	<p>5. Spearing/ မှိုန်းထိုးငါးဖမ်းခြင်း</p>	<p>6. Jigging(လှေဖြင့်ငါးဖမ်းခြင်း)</p>	
			
<p>7. Beach / Purse seine/ ကမ်းခြေပိုင်းချုပ်ငါးဖမ်းခြင်း(ငါးပက်ခြင်း)</p>	<p>8. Trawling/ တရွတ်ဆွဲငါးဖမ်းခြင်း</p>	<p>9. Gill Netting (ပိုက်ချငါးဖမ်းခြင်း)</p>	<p>10. Long-line /ငါးရှားတန်းငါးဖမ်းခြင်း</p>
			

Section B – Fishing Locations

Do you know which Fishing Block you fish in?	A 6 and A10
Where are the best fishing locations?	A 7, A9, A11,A 14,
Where do small vessels fish?	A9, A14
Where do large vessels fish?	A7, A9, A11, A14
Where do you fish in rainy season?	A9, A14
Where do you fish in the dry season?	A 7, A9, A11,A 14



Section C Fish Species – Circle the species caught

A) Clupeidae (herrings, shads, sardines, and hilsa)



B) Engraulidae (anchovy)



C) Scombridae (mackerel, tuna, and bonito)



D) Carangidae (jacks and scads)



E) Reef Species (Snapper / Grouper)



F) Prawns



G) Squid



Section D – Summary of Fishing

Fishing Gear (1-10)	Fish Species (A-G)	Location (inshore/offshore)	Time of year (months? Wet/dry season)
1			
2			
3			
4			
5			
6			
7			
8 Trawling	A to G	Offshore	All season
9 Gill Netting	B, E, F	Inshore	10months
10			

Section E – Additional Information

Are there any fishing restrictions imposed by the Fisheries Department?	Yes
Have your fishing activities changed in recent years? If so, how?	Yes, changed the fishing activities. Rare fish and changed the seasonal fish
Do you undertake any activities/work, other than fishing?	Yes we do , the agriculture and trade
How do you communicate offshore?	
How would you like information to be disclosed?	Direct from company.
Do you have any concerns regarding the proposed offshore drilling activities described previously? If yes, What/Why?	Worry about that fishing block will narrow.
Have you ever seen drill rig or drilling activities during your fishing?	Never
If our activities do not overlap with your fishing grounds, do you want to continue to be engaged on future activities?	Yes
What are the main causes of lost equipment?	Large oil vessels come in to the inshore and caught the net with chasing boat.
How frequently do you lose nets?	2 to 3 times.
Where do you get your fishing license? Is it state or regional level?	Fishery Department, Kyaukphyu District.
Does the DOF monitor your catches? If so, please explain.	Yes, DOF monitor our activities. Restricting the small fishing net usage and close season.




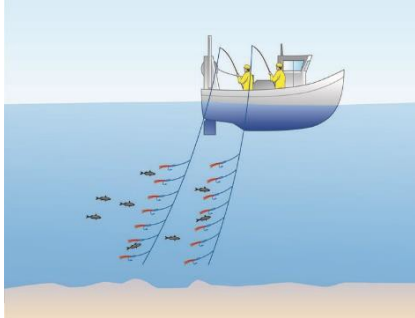


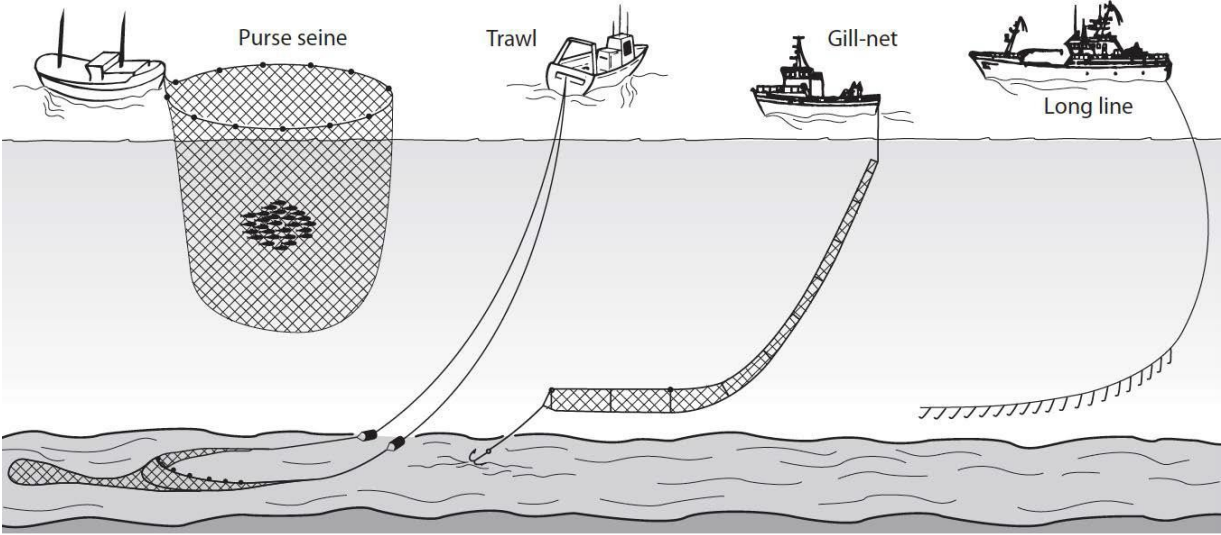
Fishing Questionnaire

Please fill in the blanks /circle the option

Date of survey	3-4-2019
Village	Say Ti Ya
Village Tract	Taung Yin
Township	Kyaukphyu
State / Region	Rakhine
Number of people in group	3

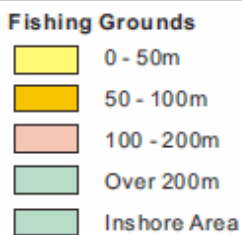
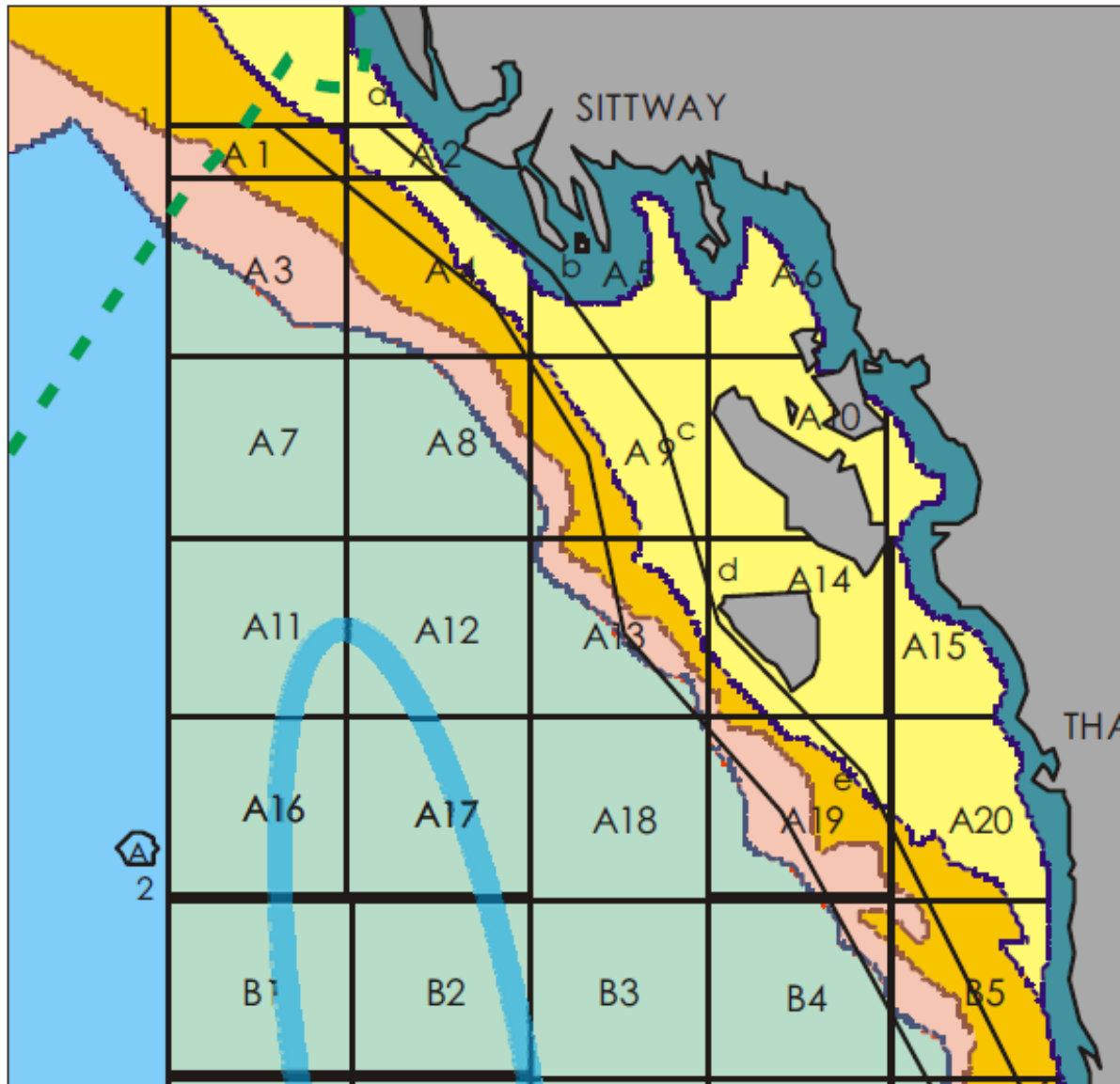
Section A Fishing Vessels and Gear

Size	Small (< 25 ft. long / onshore)	Large (> 25 ft. long / offshore)
Carrying Capacity (<i>Viss/kg/ppl</i>) – <i>provide units</i>	500 Viss	-
What is the maximum distance offshore you fish in? – <i>units</i>	10 miles	-
Do you know the maximum water depth? – <i>units</i>	100feets	-
How many boats in your village/ward? – <i>provide details of the area covered</i>	9	-
Average time spent at sea – <i>units</i>	1 Night	-
Number of people on board vessel	3	-
Time spent travelling to fishing ground – <i>units</i>	1 to 2hours	-
Estimated distance from the coast – <i>units</i>	-	-
Type of fishing net used – <i>see photos below – circle applicable</i>	-	-

<p>1. Hand Line/ ငါးရှာချိတ်ဖြင့် ငါးများခြင်း</p>	<p>2. Netting/ ကွန်ပစ်ခြင်း</p>	<p>3. Trapping/ မြူးထောင်</p>	
			
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Section B – Fishing Locations

Do you know which Fishing Block you fish in?	A 6
Where are the best fishing locations?	A 6, A9,
Where do small vessels fish?	A6, A9
Where do large vessels fish?	-
Where do you fish in rainy season?	A6
Where do you fish in the dry season?	A9



Section C Fish Species – Circle the species caught

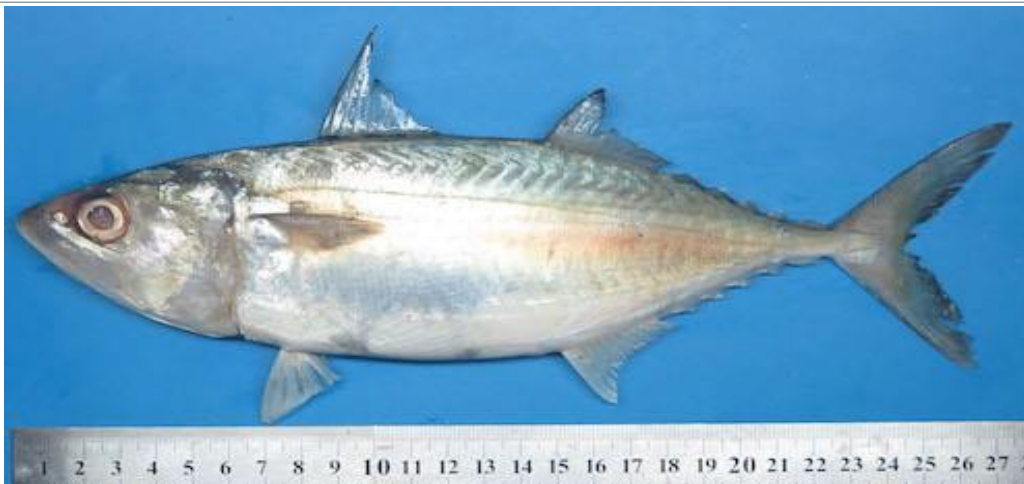
A) Clupeidae (herrings, shads, sardines, and hilsa)



B) Engraulidae (anchovy)



C) Scombridae (mackerel, tuna, and bonito)



D) Carangidae (jacks and scads)



E) Reef Species (Snapper / Grouper)



F) Prawns



G) Squid



Section D – Summary of Fishing

Fishing Gear (1-10)	Fish Species (A-G)	Location (inshore/offshore)	Time of year (months? Wet/dry season)
1			
2			
3			
4			
5			
6			
7			
8			
9 Gill Netting	A, C, D, E, G	Inshore	9months
10			

Section E – Additional Information

Are there any fishing restrictions imposed by the Fisheries Department?	Yes
Have your fishing activities changed in recent years? If so, how?	Yes, changed the fishing activities. Rare fish and changed the seasonal fish
Do you undertake any activities/work, other than fishing?	Yes we do , the Gardening and Vegetable
How do you communicate offshore?	From Township General Administrative Department
How would you like information to be disclosed?	Direct from company.
Do you have any concerns regarding the proposed offshore drilling activities described previously? If yes, What/Why?	Worry about that fishing block will narrow.
Have you ever seen drill rig or drilling activities during your fishing?	Never
If our activities do not overlap with your fishing grounds, do you want to continue to be engaged on future activities?	Yes
What are the main causes of lost equipment?	Large oil vessels come in to the inshore and caught the net with chasing boat.
How frequently do you lose nets?	2 to 3 times.
Where do you get your fishing license? Is it state or regional level?	Fishery Department, Kyaukphyu District.
Does the DOF monitor your catches? If so, please explain.	Yes, DOF monitor our activities. Restricting the small fishing net usage and close season.




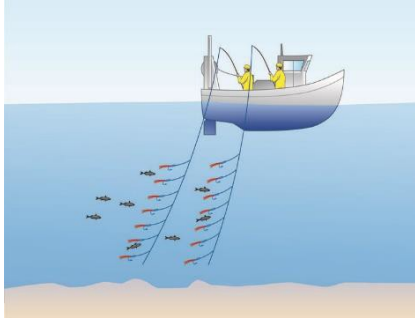


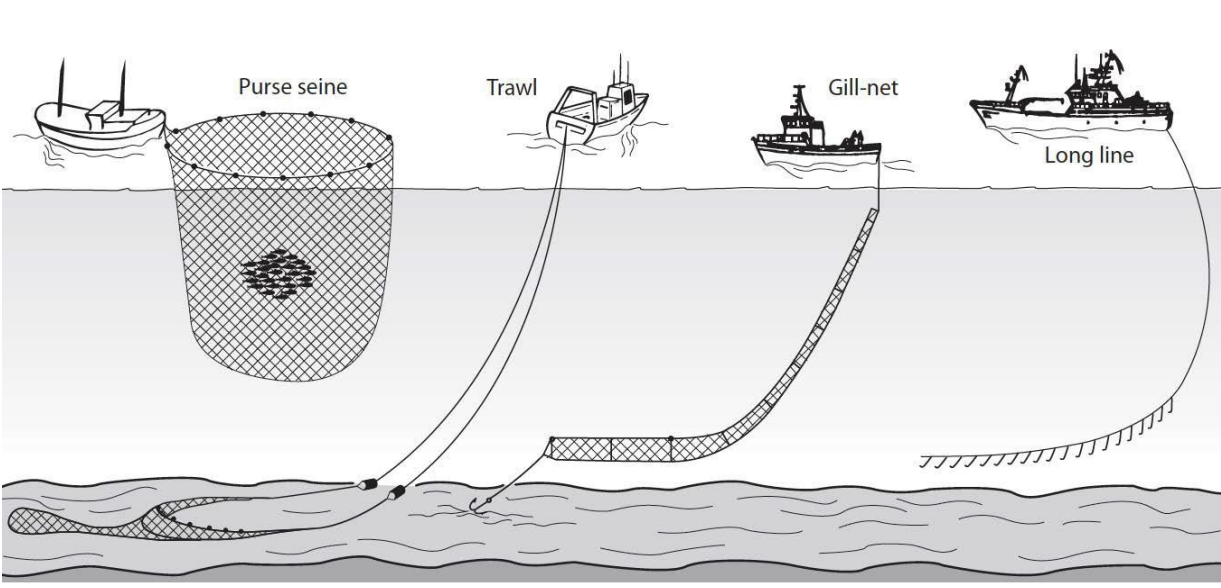
Fishing Questionnaire

Please fill in the blanks /circle the option

Date of survey	3-4-2019
Village	Pyin Phyu Maw
Village Tract	-
Township	Kyaukphyu
State / Region	Rakhine
Number of people in group	3

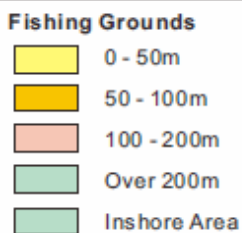
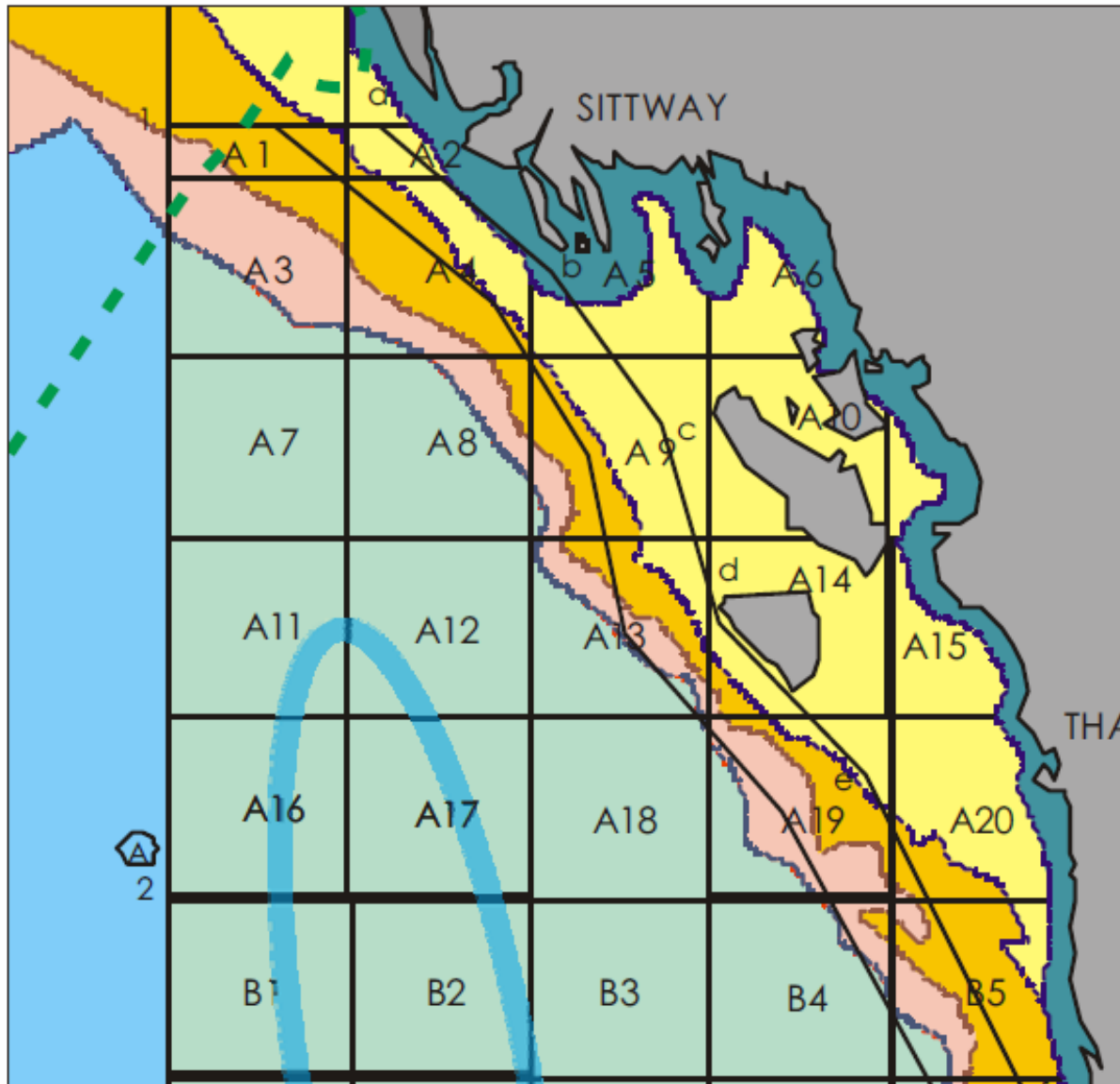
Section A Fishing Vessels and Gear

Size	Small (< 25 ft. long / onshore)	Large (> 25 ft. long / offshore)
Carrying Capacity (<i>Viss/kg/ppl</i>) – provide units	100 to 200 Viss	4000 Viss
What is the maximum distance offshore you fish in? – units	Near the coastal area and Seik Island	International Water
Do you know the maximum water depth? – units	40 – 60 ft	-
How many boats in your village/ward? – provide details of the area covered	>40	20
Average time spent at sea – units	In a day	10 to 15days (rainy season)
Number of people on board vessel	3 to 5	10 - 15
Time spent travelling to fishing ground – units	-	-
Estimated distance from the coast – units	-	-
Type of fishing net used – see photos below – circle applicable	-	-

<p>1. Hand Line/ ငါးရှာချိတ်ဖြင့် ငါးရှားခြင်း</p>	<p>2. Netting/ ကွန်ပစ်ခြင်း</p>	<p>3. Trapping/ မြူးထောင်</p>	
			
<p>4. Hook and Line/ ဓမ္မဉာဏ်</p>	<p>5. Spearing/ မှိုန်းထိုးငါးဖမ်းခြင်း</p>	<p>6. Jiggging(လှေဖြင့်ငါးဖမ်းခြင်း)</p>	
			
<p>7. Beach / Purse seine/ ကမ်းခြေပိုင်းချုပ်ငါးဖမ်းခြင်း(ငါးပက်ခြင်း)</p>	<p>8. Trawling/ တရွတ်ဆွဲငါးဖမ်းခြင်း</p>	<p>9. Gill Netting (ပိုက်ချင်းငါးဖမ်းခြင်း)</p>	<p>10. Long-line /ငါးရှားတန်းငါးဖမ်းခြင်း</p>
			

Section B – Fishing Locations

Do you know which Fishing Block you fish in?	
Where are the best fishing locations?	
Where do small vessels fish?	
Where do large vessels fish?	
Where do you fish in rainy season?	
Where do you fish in the dry season?	



Section C Fish Species – Circle the species caught

A) Clupeidae (herrings, shads, sardines, and hilsa)



B) Engraulidae (anchovy)



C) Scombridae (mackerel, tuna, and bonito)



D) Carangidae (jacks and scads)



E) Reef Species (Snapper / Grouper)



F) Prawns



G) Squid



Section D – Summary of Fishing

Fishing Gear (1-10)	Fish Species (A-G)	Location (inshore/offshore)	Time of year (months? Wet/dry season)
1 Kyar Pite (Local Name)	A to F	Fishing Block A6, A10, A17	Dry Season
2 Trawling (sometime in Offshore)	A to	Offshore	Stop in rainy season
3			
4			
5			
6			
7			
8			All season
9			10months
10			

Section E – Additional Information

Are there any fishing restrictions imposed by the Fisheries Department?	Yes
Have your fishing activities changed in recent years? If so, how?	Yes, changed the fishing activities. Rare fish and changed the seasonal fish
Do you undertake any activities/work, other than fishing?	Yes we do , the agriculture and trade
How do you communicate offshore?	
How would you like information to be disclosed?	Direct from company.
Do you have any concerns regarding the proposed offshore drilling activities described previously? If yes, What/Why?	Worry about that fishing block will narrow.
Have you ever seen drill rig or drilling activities during your fishing?	Never
If our activities do not overlap with your fishing grounds, do you want to continue to be engaged on future activities?	Yes
What are the main causes of lost equipment?	Large oil vessels come in to the inshore and caught the net with chasing boat.
How frequently do you lose nets?	2 to 3 times.
Where do you get your fishing license? Is it state or regional level?	Fishery Department, Kyaukphyu District.
Does the DOF monitor your catches? If so, please explain.	Yes, DOF monitor our activities. Restricting the small fishing net usage and close season.



စီမံကိန်းနှင့်ပတ်သက်ဆက်နွယ်သူများနှင့်တွေ့ဆုံခြင်း သတင်းအချက်အလက်များ

ဧပြီလ ၂၀၁၉

အဆိုပြု တွင်းတူးဖော်ခြင်းလုပ်ငန်းစဉ် ကမ်းလွန်လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ -ရခိုင်ဘေစင်

အဓိကအချက်အလက်များ

- + Woodside ကုမ္ပဏီသည် ဓာတ်ငွေ့ရှာဖွေတွေ့ရှိစေရေး ရည်မှန်းချက်ဖြင့် ကမ်းလွန်လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ တို့တွင် ကမ်းလွန်ရေခဲတွင်းတူးဖော်ခြင်းလုပ်ငန်း များလုပ်ဆောင်ရန် အဆိုပြုထားပါသည်။
- + လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ တို့သည် အနီးဆုံးကုန်းမြေမှ (၄၀) မိုင် (၆၄ ကီလိုမီတာ) ရေမိုင် ၃၅မိုင်) ကွာဝေးပြီး လုပ်ကွက်၏ရေအနက်သည် ခန့်မှန်းခြေ (၃၀၀၀) ပေ မှ (၆၈၀၀) ပေ ခန့်အထိ ရှိပါသည်။
- + ကမ်းမြေမှအကွာအဝေးနှင့် ရေအနက် အချက်အလက်များပေါ် မူတည်ပြီး ဒေသခံငါးဖမ်းလုပ်ငန်း များအပေါ် သက်ရောက်နိုင်မှု မရှိပါ။
- + ကနဦးအစတွင်းတူးဖော်ခြင်းကို ၂၀၂၀ခုနှစ်အတွင်းတွင် စတင်ဆောင်ရွက်သွားမည်ဖြစ်ပြီး အခြား အလားအလာရှိသော ထပ်မံတူးဖော်မည့်တွင်းများကိုမူ ၎င်းနှစ်နှစ်နောက်ပိုင်းများတွင် ထပ်မံဆောင်ရွက်သွား မည်ဖြစ်ပါသည်။
- + Woodside ကုမ္ပဏီသည် မြန်မာနိုင်ငံပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅) အရ ပတ်ဝန်းကျင်ဆိုင်ရာပတ်သက်ဆက်နွယ်သော ခွင့်ပြုချက်ကိုရယူရန် စတင်ဆောင်ရွက်လျက်ရှိပြီး စီမံကိန်းနှင့်ပတ်သက်ဆက်နွယ်သူများနှင့် တွေ့ဆုံရန်လည်း စီမံကိန်းအကြောင်းကို ဆွေးနွေးအကြံပြု တင်ပြခြင်းများဆောင်ရွက်လျက် ရှိပါသည်။
- + Woodside သည် မြန်မာနိုင်ငံနှင့် ဩစတြေးလျနိုင်ငံတို့တွင် ကျန်းမာရေးနှင့် လုပ်ငန်းခွင်အတွင်း ဘေးအန္တရာယ်ကင်းရှင်းရေးတို့အပြင်ပတ်ဝန်းကျင်ဆိုင်ရာလုပ်ဆောင်ချက်များကို တာဝန်ယူ ဆောင်ရွက်လျက်ရှိသော ကုမ္ပဏီတစ်ခုအဖြစ် မှတ်တမ်းတင်ထားခြင်းခံရပါသည်။
- + ကျွန်ုပ်တို့သည် မြန်မာနိုင်ငံတွင် ၂၀၁၅ ကတည်းမှစ၍ တွင်း ၁၀တွင်း တူးဖော်ခဲ့ပြီးဖြစ်ပြီး ဩစတြေးလျနိုင်ငံအပါအဝင် ကမ္ဘာ့အနှံ့အပြားတွင် တွင်းပေါင်း၆၀၀ကျော် တူးဖော်ခဲ့ပြီးဖြစ်ပါသည်။

နောက်ခံအချက်အလက်

Woodside Energy (Myanmar) Pte Ltd သည် အဆိုပြုထားသော ကမ်းလွန်လုပ်ကွက် အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ တို့တွင် အော်ပရေတာအဖြစ် ရေခဲတွင်းတူးဖော်ခြင်းလုပ်ငန်းများကို ဆောင်ရွက်လျက်ရှိပြီး ထိုလုပ်ကွက်အတွင်းတွင် ဟိုက်ဒရိုကာဘွန်သိုင်းရာ လှောင်ကန်ကြီးကို တူးဖော်အကဲဖြတ် နိုင်ဖို့ရာ ရည်သန်လျက်ရှိပါသည်။ ထိုတွင်းတူးဖော်ဆောင်ရွက်ခြင်းများကို ဆောင်ရွက်ရာတွင် Woodside ၏ ပေါ်လစီမူဝါဒ၊ စံချိန်စံညွှန်း၊ လမ်းညွှန်ချက်များနှင့်အညီ ဆောင်ရွက်မည်ဖြစ်ပြီး မြန်မာပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေလုပ်ထုံးလုပ်နည်း များနှင့်အညီ ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

ပထမအစမ်းတွင်းတူးဖော်ခြင်းကို ၂၀၂၀ခုနှစ် အတွင်းတွင် စတင်ဆောင်ရွက်သွားမည်ဖြစ်ပြီး အခြားအလားအလာ ရှိနိုင်သော ထပ်မံတူးဖော်မည့်တွင်းများကိုမူ ၎င်းနှစ်နှစ်နောက်ပိုင်းများတွင် အကျိုးတူပူးပေါင်းဆောင်ရွက်သူများနှင့် ခွင့်ပြုချက်ရယူကာ ထပ်မံဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

Woodside အကြောင်း

Woodside သည် ဩစတြေးလျနိုင်ငံအခြေစိုက် အတွေ့အကြုံများသော သဘာဝဓာတ်ငွေ့ ထုတ်လုပ်သည့် အော်ပရေတာဖြစ်ပြီး လွတ်လပ်သည့် အကြီးမားဆုံးရေနံနှင့်သဘာဝဓာတ်ငွေ့ ကုမ္ပဏီတစ်ခုဖြစ်ပါသည်။ နှစ်ပေါင်း (၆၀) အတွေ့အကြုံများနှင့် အကျိုးတူပူးပေါင်းဆောင်ရွက်သူ များ၏ ရွေးချယ်မှုများအရ ကျွန်ုပ်တို့၏ဆောင်ရွက်နိုင်စွမ်းအား ကမ္ဘာ့အဆင့်အဖြစ် မှတ်ကျောက်တင်ခံထားရခြင်း ဖြစ်ပါသည်။

Woodside အနေဖြင့် မြန်မာနိုင်ငံတွင် ၂၀၁၃ ခုနှစ်မှစတင်၍ လုပ်ငန်းများဆောင်ရွက်ခဲ့ပြီး ဧရိယာစုစုပေါင်း ခန့်မှန်းခြေ (၅၆၆၀၀)

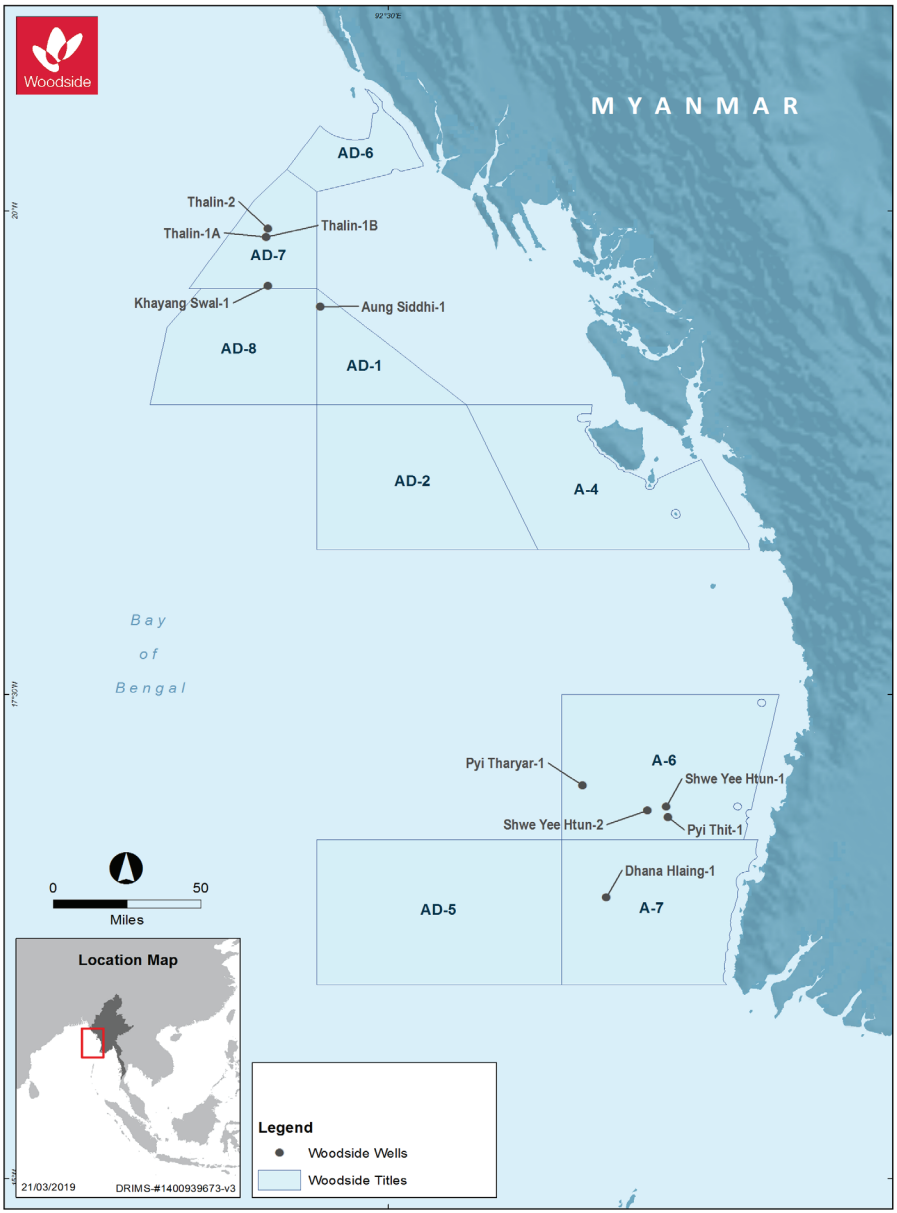
စတုရန်းကီလိုမီတာခန့်ဖြင့် ရခိုင်ကမ်းလွန်ဒေသတွင် အကျယ်ပြန့် ဆုံး ဆောင်ရွက်နေသော ကုမ္ပဏီတစ်ခု ဖြစ်ပါသည်။

ဒေသခံများနှင့်ကာလရှည်စွာ အဓိပ္ပါယ်ရှိသော ဆောင်ရွက်သည့် ဆက်ဆံရေးသည် မိမိတို့၏ တူးဖော်ရေးလိုင်စင် တည်တံ့ခိုင်မြဲစေခြင်း အဓိက ကျကြောင်း ကျွန်ုပ်တို့ အသိအမှတ်ပြုပါသည်။

Woodside အနေဖြင့် လူမှုဝန်းကျင်နှင့်ပတ်ဝန်းကျင် ဘေးအန္တရာယ်ကင်းရှင်းလုံခြုံရေးအား ကောင်းမွန်စွာဆောင်ရွက် ခြင်းတို့သည် မိမိတို့၏လုပ်ငန်းအပေါ် တိုးတက်မှုနှင့်အောင်မြင်မှု များကိုရရှိစေမည်ဟု ယုံကြည်ပါသည်။

မိမိတို့လုပ်အားစု၊ လူမှုအဖွဲ့အစည်းနှင့် သဘာဝပတ်ဝန်းကျင်အား အလေးထားသော ရေရှည်တည်တံ့ခိုင်မြဲသော လုပ်ဆောင်မှုများဖြင့် လူမှုဝန်းကျင်နှင့်ပတ်ဝန်းကျင် ဘေးအန္တရာယ်ကင်းရှင်းလုံခြုံရေးအားအလေးထားသော စက်မှုလုပ်ငန်းတွင် ဦးဆောင်နိုင်သူအဖြစ် အသိအမှတ်ပြုခြင်းရရှိမှုကို ကျွန်ုပ်တို့ ဦးတည်ပါသည်။

ကျွန်ုပ်တို့၏ ရိုးသားဖြောင့်မတ်ခြင်း၊ လေးစားမှုရှိခြင်း၊ အကျိုးပြုလုပ်ဆောင်ခြင်း၊ စည်းကမ်းလိုက်နာခြင်းနှင့် ထူးချွန်စွာ အတူတကွ ပူးပေါင်းဆောင်ရွက်ခြင်း စသည့် မိမိတို့၏တန်ဖိုးများကို ထိန်းသိမ်းရန် ကတိကဝတ်ပြုပါသည်။



Location map in Myanmar

ယခင်ဆောင်ရွက်ခဲ့ပြီးသော Woodside ၏ လုပ်ဆောင်ချက်များ

Woodside ၏ မြန်မာနိုင်ငံတွင် တွင်းတူးဖော်ခြင်းများသည် ကောင်းမွန်သော နိုင်ငံတကာအတွေ့အကြုံများနှင့်အတူ ကျင့်သုံးဆောင်ရွက်လျက်ရှိပြီး ဆောင်ရွက်ခဲ့စဉ်အတွင်း ကျန်းမာရေး၊ ဘေးကင်း လုံခြုံရေးထိခိုက်မှုများအပြင် ပတ်ဝန်းကျင်ဆိုင်ရာ မတော်တဆထိခိုက်မှုများနှင့် အခြားပင်လယ်ရေ ကြောင်းအသုံးပြုသူများအပေါ် နှောင့်ယှက်မှုများ တစ်စုံတစ်ရာ တွေ့ကြုံခြင်း မရှိခဲ့ပေ။

ကျွန်ုပ်တို့သည် မြန်မာနိုင်ငံတွင် ရေနံတွင်းပေါင်း ၁၀ တွင်းကို အောင်မြင်စွာနှင့် လုံခြုံစိတ်ချစွာ တူးဖော်နိုင်ခဲ့ပြီးဖြစ်ပြီး ဓာတ်ငွေတွင်းများအဖြစ် ရှာဖွေတွေ့ရှိခဲ့ပြီး ဖြစ်ပါသည်။

၂၀၁၈ ခုနှစ်တွင်လည်း လုပ်ကွက်အမှတ် အေဒီ-၁ အတွင်းတွင် အောင်သိဒ္ဓိ-၁ ရှာဖွေရေးတွင်းတူးဖော်နိုင် ခဲ့ပြီး ဓာတ်ငွေရှာဖွေတွေ့ရှိ ခဲ့ပါသည်။

Woodside သည် လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈တို့နှင့် ကပ်လျက်ရှိသော လုပ်ကွက်အမှတ် အေဒီ-၇တွင် အော်ပရေတာအဖြစ် ဆောင်ရွက်လျက်ရှိပြီး တွင်း ၃တွင်း (သဘာဝဓာတ်ငွေတွေ့ရှိသော သလင်း-၁ အေ အပါအဝင်) တို့ကို အောင်မြင်စွာတူးဖော်ခဲ့ပြီး ဖြစ်ပါသည်။

Woodside သည် အဓိကအားဖြင့် ရခိုင်ကမ်းလွန် မြောက်ဘက်ပိုင်းတွင် ဆောင်ရွက်ခဲ့ပြီးသော၊ ဆောင်ရွက်ဆဲဖြစ်သော လုပ်ငန်းစဉ်များသည် ကမ်းလွန်ရေနက် ပိုင်းတွင်သာ ဆောင်ရွက်ပြီး

ရခိုင်ပြည်နယ်အတွင်းရှိ ကုန်းတွင်းပိုင်းတွင်း လုပ်ဆောင်မှုများ အနည်းဆုံးဖြင့် (ဟယ်လီကော်ပတာတွင်းကိုသာ) ဆောင်ရွက်ပါသည်။

ကျွန်ုပ်တို့သည် စီမံကိန်းနှင့်ပတ်သက် ဆက်နွယ်သူများနှင့် စဉ်ဆက်မပြတ် တွေ့ဆုံညှိနှိုင်းခဲ့ပြီး မိမိတို့၏လုပ်ငန်းဆောင်ရွက်ချက်များနှင့် ထုတ်ဖော်ချက်များကို ကျယ်ပြန့်စွာ ရှင်းလင်းတင်ပြခဲ့ပြီးဖြစ်ပါသည်။ ထို့တွေ့ဆုံဆွေးနွေးခြင်းများသည် ပြည်သူလူထုနှင့် စီမံကိန်းအကြောင်းစိတ်ပါဝင်စားသူများကို အချက်အလက်များ မျှဝေပေးခြင်း၊ စိုးရိမ်မှုများကို မှတ်သားခြင်း (ကမ်းရိုးတန်းနေ ငါးဖမ်းလုပ်ငန်းများ လုပ်ကိုင်နေသည့် ဒေသခံများ အပါအဝင်) တို့ကို ဆောင်ရွက်စေခြင်း ဖြစ်ပါသည်။

အဆိုပြုတွင်းတူးဖော်ခြင်း လုပ်ငန်းစဉ်များ

Woodsideသည် လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ တို့တွင် တွင်းတူးဖော်ခြင်းများ ဆောင်ရွက်သွားရန်ရှိပြီး အလားအလာရှိသော ဓာတ်ငွေ သိုက်အသစ်များကို ရှာဖွေတွေ့ရှိနိုင်ရန် ရည်ရွယ်ချက်ထားရှိပါသည်။

အဆိုပြုတွင်းတူးဖော်မည့် တည်နေရာနှင့် အချိန်ကာလများကို အတိအကျ မသတ်မှတ်နိုင်သေးသော်လည်း တူးဖော်မည့်တွင်းအားလုံးသည် လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ တို့၏နယ်နိမိတ်အတွင်းထဲတွင်းသာ တူးဖော်ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

လုပ်ကွက်အမှတ် အေဒီ-၁ ၏ အနီးဆုံးနယ်နိမိတ်သည် ကမ်းခြေမှ (၄၀) မိုင် (၆၄ ကီလိုမီတာ၊ ရေမိုင် ၃၅မိုင်) ခန့်ကွာဝေးလျက်ရှိပြီး ဧရိယာ (၉၈၈) စတုရန်းမိုင် (၂,၅၆၀ စတုရန်းကီလိုမီတာ) ကျယ်ဝန်းပါသည်။

လုပ်ကွက်အမှတ် အေဒီ-၈ ၏ အနီးဆုံးနယ်နိမိတ်သည် ကမ်းခြေမှ (၅၇) မိုင် (၉၂ ကီလိုမီတာ၊ ရေမိုင် ၅၀မိုင်) ခန့်ကွာဝေးလျက်ရှိပြီး ဧရိယာ (၂,၀၀၈) စတုရန်းမိုင် (၅,၂၀၀ စတုရန်းကီလိုမီတာ) ကျယ်ဝန်းပါသည်။

လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ တို့တွင် ပင်လယ်ရေအောက်အနက်မှာ ခန့်မှန်းချေ (၃၀၀၀) ပေမှ (၆၈၀၀) ပေအထိ တည်ရှိပါသည်။

တွင်းတူးဖော်ခြင်းကို ၂၀၂၀ခုနှစ် အတွင်းတွင် စတင်ဆောင်ရွက်သွားမည်ဖြစ်ပြီး အခြားအလားအလာရှိနိုင်သော ထပ်မံတူးဖော်မည့်တွင်းများကိုမူ ၎င်းနှစ်နှောက်ပိုင်းများတွင် အကျိုးတူပူး င်းဆောင်ရွက်သူများနှင့် ခွင့်ပြုချက်ရယူကာ ထပ်မံဆောင်ရွက်သွားမည်ဖြစ်ပြီး တွင်းတစ်တွင်းစီလျှင် (၄၀)ရက်ကြာ အချိန်ယူ၍ တူးဖော်ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။

ကျွန်ုပ်တို့ထံမှ တွင်းတူးဖော်မည့်အချိန်ကာလ၊ တည်နေရာနှင့် သတင်းအချက်အလက်များကိုလည်း စတင် တွင်းတူးဖော်ဆောင်ရွက်မည့် အချိန်ကာလများတွင် ဆက်သွယ်ဆောင်ရွက်ပေးသွားမည် ဖြစ်ပါသည်။

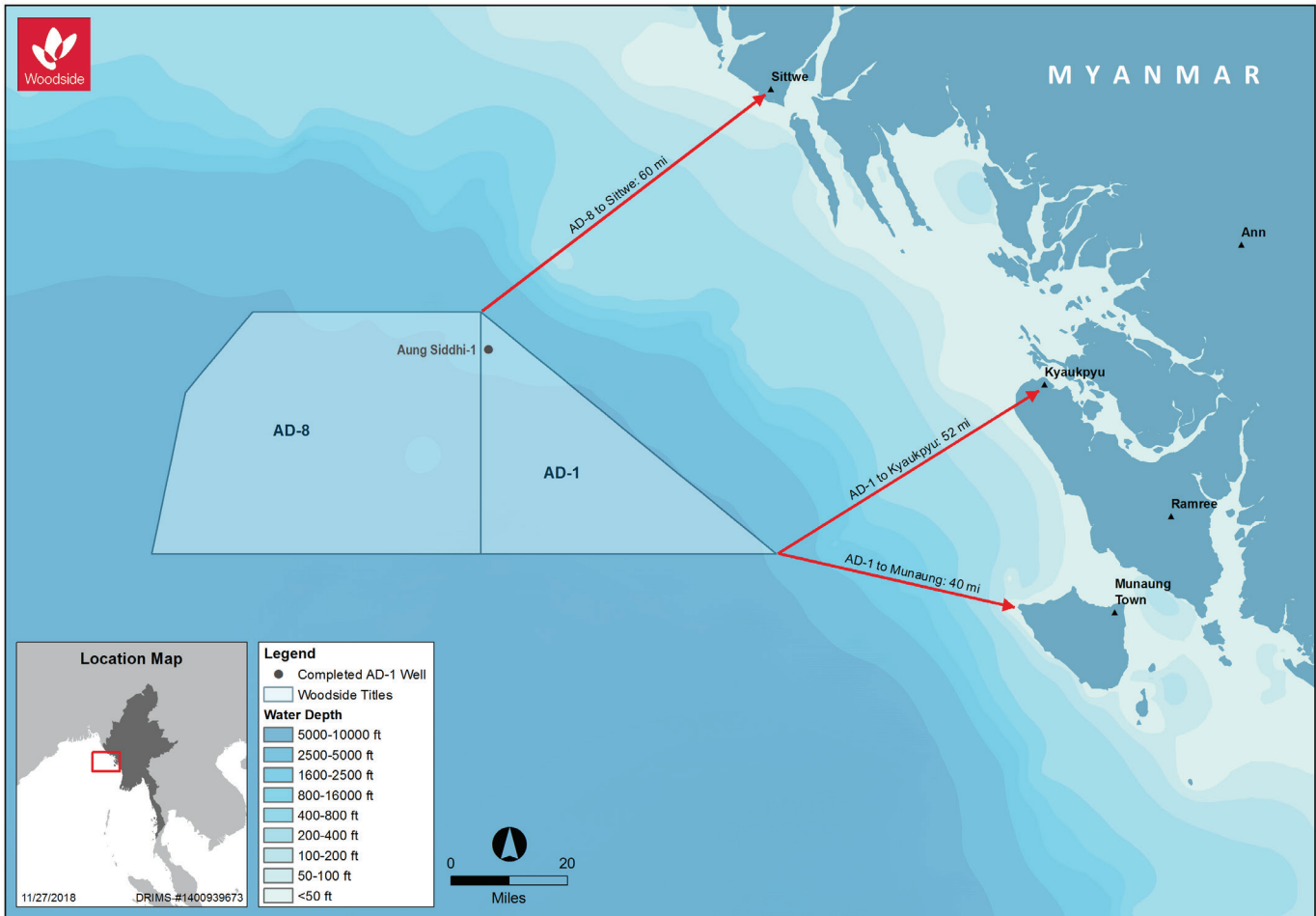


Figure 1: Permit WA-404-P wellhead locations

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ ခွင့်ပြုချက်များ

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ (EIA) လုပ်ထုံးလုပ်နည်း (၂၀၁၅)အရ ပတ်ဝန်းကျင်ဆိုင်ရာ ခွင့်ပြုချက်များရရှိစေရန် အထောက်အပံ့နှင့် အဆိုပြုလုပ်ဆောင်ချက်များ၏ စီမံမှုအား အကြောင်းကြားရန်အတွက် လိုအပ်သော သက်ရောက်မှုဆန်းစစ်ခြင်းများအား Woodside မှဆောင်ရွက်လျက်ရှိပါသည်။

၂၀၁၈ ဧပြီလတွင် Woodside အေဒီ-၁ လုပ်ကွက်အတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) အား သယ်ယူပို့ဆောင်ရေးနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဝန်ကြီးဌာနမှ ခွင့်ပြုခြင်းဖြစ်ပါသည်။ အဆိုပါခွင့်ပြုချက်နှင့်အညီ Woodside သည် အဆိုပြုထားသော အေဒီ-၁ လုပ်ကွက်အတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအမံများ (EMP) ကိုလည်း ပြင်ဆင်လျက်ရှိပါသည်။

Woodside သည် အေဒီ-၁ လုပ်ကွက်အတွင်းတွင် အဆိုပြုထားသော တူးဖော်မှုများကို ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (EIA) အတွက်လိုအပ်သော နယ်ပယ်တိုင်းတာသတ်မှတ်ခြင်း (Scoping) အားလုပ်ဆောင်နေပြီ ဖြစ်ပါသည်။

အေဒီ-၈ ၏ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) အား ရေးဆွဲပြီးပါက မြန်မာ့ရေနံနှင့်သဘာဝဓာတ်ငွေ့လုပ်ငန်း (MOGE) မှတဆင့် သယ်ယူပို့ဆောင်ရေးနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဝန်ကြီးဌာန (MONREC) သို့ တင်ပြသွားမည်ဖြစ်ပါသည်။

တွင်းတူးခြင်းများမလုပ်ဆောင်မှီ Woodside ၏ စီမံခန့်ခွဲမှုစနစ်နှင့် နိုင်ငံတကာအတွေ့အကြုံတို့နှင့်အညီ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအမံများအား လုပ်ဆောင်မည်ဖြစ်ပါသည်။

သက်ရောက်မှုများအားစီမံခန့်ခွဲခြင်း

အဆိုပြုထားသော တွင်းတူးများအား ရွေ့လျားသွားလာနိုင်သော တွင်းတူးစင် (MODU) တစ်ခုဖြစ်သော တွင်းတူးသင်္ဘော တစ်စီး (သို့မဟုတ်) တစ်ဝက်တစ်ပျက်မြုပ်တွင်းတူးစင် (a semi-submersible drilling rig) ဖြင့် တူးဖော်ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။ ထောက်ပံ့ရေးယာဉ်များသည် တူးဖော်ခြင်းအချိန်ကာလအတွင်း ရှိနေမည်ဖြစ်ပြီး အနည်းဆုံးရေယာဉ်တစ်စီးမှာ ရွေးချယ်ထားသည့် တွင်းတူးစင်အနီးတွင် အချိန်ပြည့် အသင့် ရှိနေမည်ဖြစ်ပါသည်။

တွင်းတူးဖော်ခြင်း ဆောင်ရွက်နေစဉ် ရွေ့လျားသွားလာနိုင်သော တွင်းတူးစင်၏ ပေ ၁၅၀၀ ပတ်လည် လုံခြုံရေးနယ်မြေကို ထားရှိပါမည်။ Woodside သည် ရေကြောင်းအသုံးပြုသူများကို ကြိုတင်ကာကွယ်ရေးအနေဖြင့် ရေမိုင် (၂.၅) မိုင်ပတ်လည်ကို လုံခြုံရေးအတွက် ထားရှိရန် တောင်းဆိုထားပါသည်။

Woodside သည် ရှာဖွေတူးဖော်ရေး၊ အစမ်းတွင်းနှင့် တူးဖော်ထုတ်လုပ်ရေးတွင်း လုပ်ငန်းများ အား ဆောင်ရွက်ရာတွင် အောင်မြင်သောအတွေ့အကြုံများကို ပါပါသည်။ ထို့အတူ အဆိုပြုထားသော တွင်းတူးများကို တူးဖော်လုပ်ဆောင်ရာတွင်လည်း အောင်သိဒ္ဓိ-၁ တွင်းတူးဖော်ရာတွင် အောင်မြင်စွာဆောင်ရွက်ခဲ့သော ထိခိုက်မှုကို လျော့ချနိုင်ခြင်းများနှင့် စီမံခန့်ခွဲမှုနည်းလမ်းများအတိုင်း ဆက်လက်လုပ်ဆောင်မည်ဖြစ်ပါသည်။ ၎င်းတွင်းပိတ်သော အစီအစဉ်များမှာ -

- + လုပ်ငန်းဆောင်ရွက်မည့် တည်နေရာဖော်ပြထားသော ရေကြောင်းသတ်ပေးချက်အား လုပ်ငန်းမစတင်မှီ စီမံခန့်ခွဲမှုနှင့် သက်ဆိုင်သူများအား ကြေညာခြင်း၊

- + တွင်းတူးဖော်ခြင်းဆောင်ရွက်နေစဉ်အတွင်း ယာဉ်တိုက်မှုမဖြစ်ပွားစေရန် ရွေ့လျားသွားလာနိုင်သော တွင်းတူးစင် (MODU) ၏ ပေ ၁၅၀၀ ပတ်လည်အတွင်း လုံခြုံရေးနယ်မြေကို ထားရှိခြင်း၊
- + ထောက်ပံ့ရေးယာဉ်တစ်စီးအား အသင့်အနေအထားဖြင့်ထားရှိပြီး တူးဖော်ရေးလုပ်ငန်းလုပ်ဆောင်နေစဉ်ကာလ အတွင်း ဆက်သွယ်ရေးအတွက် အထောက်အကူပြုခြင်း၊
- + ရေအောက်အင်္ဂါဝါသတ္တဝါများအား ယာဉ်သွားလာမှုများနှင့် ထိခိုက်မှုဖြစ်ပွားခြင်းမှကာကွယ်ရန် နည်းလမ်းများအားဆောင်ရွက်ခြင်း၊
- + ပုံမှန်စွန့်ပစ်ခြင်းအားလုံးအား မြန်မာနိုင်ငံ၏ လမ်းညွှန်ချက်များနှင့် အပြည့်အညီဆိုင်ရာ ရေယာဉ်များမှ ညစ်ညမ်းမှု ကာကွယ်ရေးအပြည့်အညီဆိုင်ရာ ကွန်ဗန်းရှင်းအမှတ် ၇၃/၇၈ ကိုက်ညီမှုအောင်ဆောင်ရွက်ခြင်း၊
- + တူးဖော်ရာမှထွက်လာသော ဖြတ်တောက်စများအား သင့်တော်အောင် စီမံခန့်ခွဲပြီး ရေအောက်ကိုပြန်လည်စွန့်ပစ်ခြင်း။
- + အခြားစွန့်ပစ်ပစ္စည်းများကို ရေယာဉ်ပေါ်သို့ သယ်ဆောင်သွားပြီး သင့်တော်သောကုန်းတွင်းဒေသတွင် စွန့်ပစ်ခြင်း
- + စတင်သုံးဆီပြန်လည်ဖြည့်တင်းခြင်းလုပ်ငန်းစဉ်အား ရေအောက်အင်္ဂါဝါပတ်ဝန်းကျင်အား မထိခိုက် စေရန် ဆောင်ရွက်ခြင်း၊
- + ဆီယိုစိမ့်မှုအား တုံ့ပြန်သည့် သင့်တော်သော အစီအစဉ်များနှင့် လိုအပ်သောပစ္စည်းကိရိယာများထားရှိခြင်း၊

လူထုတွေ့ဆုံ ညှိနှိုင်းတိုင်ပင်ဆွေးနွေးခြင်း

Woodside သည် ဒေသခံပြည်သူလူထုများနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာသဘောတူညီချက်များနှင့် စီမံကိန်းဆိုင်ရာ အဆိုပြုတွင်းတွင်းအစီအစဉ်များအား ဆွေးနွေးတိုင်ပင်လျက်ရှိပါသည်။

Woodside သည် လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၈ တို့နှင့် ကပ်လျက်ရှိသော လုပ်ကွက် အေဒီ-၇တွင် ဆောင်ရွက်ခဲ့သော လုပ်ငန်းစဉ်များနှင့် ၂၀၁၈ ခုနှစ်အတွင်းဆောင်ရွက်ခဲ့သော လုပ်ကွက် အေဒီ-၁ တို့နှင့် သက်ဆိုင်သည့် ဒေသခံပြည်သူများနှင့် တွေ့ဆုံဆွေးနွေးမှုများကို ဆောင်ရွက်ခဲ့ပြီးဖြစ်ပါသည်။

အဆိုပါ ပြည်သူ့ထုတ်ဖော်ချက်ဆွေးနွေးခြင်း များအရ ကမ်းလှန်ရန်ကိစ္စများ၊ ဧရိယာအကာအဝေးနှင့် အချိန်တိုအတွင်း ဆောင်ရွက်ရသည့် လုပ်ငန်းစဉ်ဖြစ်သောကြောင့် သက်ရောက်နိုင်ခြေသည် နည်းပါးကြောင်း တွေ့ရှိခဲ့ရပါသည်။

ဆောင်ရွက်ပြီးခဲ့သော လူထုဆွေးနွေးပွဲများအရ အဓိကဒေသခံငါးဖမ်းလုပ်ငန်းများမှာ ကမ်းရိုးတန်းကုန်းပိုင်းမှ ၁၀ မိုင် (၁၉ကီလိုမီတာ) အတွင်းတွင် ဆောင်ရွက်ခြင်းကြောင့် ဒေသခံငါးဖမ်းရေးယာဉ်များနှင့်စီမံကိန်းလုပ်ဆောင်မှုများအကြား ထိတွေ့ခြင်း တစ်စုံတစ်ရာ မရှိခြင်းအား တွေ့ရှိခဲ့ရပါသည်။

ရခိုင်ပြည်နယ်ပြင်ပမှ အချို့သော စီးပွားဖြစ်ရေးယာဉ်များမှ ရခိုင်ပြည်နယ်ရေနက်ပိုင်းအတွင်း ငါးဖမ်းဆီးမှုများရှိသော်လည်း ထိရောက်သက်ရောက်နိုင်ခြေများမှာ ယာယီနှင့် အနည်းငယ်မျှသာဖြစ်ပါသည်။

လုပ်ကွက်အမှတ် အေဒီ-၁ နှင့် အေဒီ-၇ တွင်ဆောင်ရွက်ခဲ့သည့် လုပ်ငန်းစဉ်များအတွင်း ဒေသခံပြည်သူများ၏

သတင်းအချက်အလက်များအရ ရေယာဉ်အနည်းငယ်နှင့် အခြားပင်လယ်ရေကြောင်း သွားလာရေးအား နှောင့်ယှက်မှုအနည်းငယ်သာ တွေ့ရှိရပါသည်။

အကျိုးတူ ပူးပေါင်းဆောင်ရွက်သူများ

ရေနံလုပ်ကွက် အေဒီ-၁ နှင့် အေဒီ-၈ အား Woodside (၅၀%) နှင့် CNPCI (၅၀%) ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။ Woodsideသည် စီမံကိန်းဆောင်ရွက်သူ အော်ပရေတာအဖြစ် လုပ်ငန်းစဉ်များ အားလုံးကို ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။

Woodside ၏ နှစ်နာမူများအတွက် ဆောင်ရွက်ချက်

Woodside သည် ပြည်သူများ၊ ပါဝင်ပတ်သက်သူများနှင့် ရင်းနှီးမှုခိုင်မာစေရန် ဆောင်ရွက်လျက်ရှိပြီး စီမံကိန်းကြောင့် ပြည်သူ့ထုထုများအပေါ် သက်ရောက်မှုများကို စီမံဆောင်ရွက်လျက်ရှိပါသည်။ Woodside သည် ၎င်းနှင့် ပတ်သက်သည့် ပြည်သူများ၏အကြံပြုချက်များ၊ စိုးရိမ်မှုများ နှင့် မေးခွန်းများကို လေးလေးစားစားဖြေရှင်းပေးလျက် ရှိပါသည်။

ပြည်သူများအနေဖြင့် နှစ်နာမူများအတွက် Woodside ထံ ဖုန်း၊ အီးမေးလ် (သို့) လူကိုယ်တိုင်ဖြစ်စေ ဆက်သွယ်နိုင်ရန်လည်း ဆောင်ရွက်ထားရှိပါသည်။

- + တိုင်ကြားမှုကို လက်ခံရရှိကြောင်း အသိပေးခြင်း။
- + မှတ်တမ်းတင်ခြင်း၊ အကဲဖြတ်ခြင်း၊ ထို့နောက် အကြောင်းအရာအား စုံစမ်းစစ်ဆေးရန် တာဝန်ရှိသော လူပုဂ္ဂိုလ်အား လွှဲပြောင်းပေးခြင်း။
- + ကြောင်းအရာအား စုံစမ်းပြီးနောက် တိုင်ကြားမှုအား သင့်တော်သည့် တုံ့ပြန်မှုပေးခြင်း။

- + တိုင်ကြားသူအနေဖြင့် တုံ့ပြန်မှုကိုလက်ခံပါက သင့်တော်သည့် ဆောင်ရွက်မှုများကို အကောင်အထည်ဖော် ဆောင်ရွက်ပေးပြီး ဖြေရှင်းခြင်း။
- + အကယ်၍ တိုင်ကြားသူသည် တုံ့ပြန်မှုကို လက်မခံပါက ၎င်းလက်ခံသည်အထိ ဆောင်ရွက်ပေးခြင်း။
- + နှောင်တွင် ကိုးကားနိုင်ရန်အတွက် ဖြေရှင်းချက်များကို မှတ်တမ်းတင်ထားခြင်း။

မေးခွန်းများ (သို့) နှစ်နာချက်များကို Woodside သို့ အကြောင်းကြားလိုပါက

အီးမေးလ် ပို့ခြင်း feedback@woodside.com.au (သို့) woodside.myanmar@erm.com

- + Woodside ဖုန်း - +၉၅ (၀) ၁ ၂၃၀၇၄၆၀
- + အောက်ပါ Woodside နှင့် ERM ရုံးများသို့ တိုက်ရိုက်ဆက်သွယ်ခြင်း
- + Woodside Myanmar ရုံး
 - + ၆လွှာ၊ အမှတ် ၆၂၃ ဗန်းတေ့ချ်တာဝါ ကမာရွတ်မြို့နယ်၊ ရန်ကုန်မြို့။
- + ERM ရန်ကုန်ရုံး
 - + ယူနစ် ၀၁၊ ၂၀ အလွှာ၊ ခရစ်စတယ်တာဝါ၊ ဂျန်းရှင်းစတု၊ ကျွန်းတောလမ်း၊ ကမာရွတ်မြို့နယ်၊ ရန်ကုန်မြို့။

အကြံပြုချက်များ၊ သိလိုသည့်အချက်များ ပံ့ပိုးပေးခြင်း

ယခုသတင်းအချက်အလက်များအား www.woodside.com.au တွင် ရယူနိုင်ပါသည်။

ယခုသတင်းအချက်အလက်များသည် ၂၀၁၉ ဇူလိုင်လအထိ လက်ရှိဖြစ်ပါသည်။ အဆိုပြုထားသော အချိန်များမှာ အပြောင်းအလဲ ရှိနိုင်ပါသည်။ အဆိုပြုထားသော လုပ်ငန်းစဉ်များမှာ အကျိုးတူ ပူးပေါင်းဆောင်ရွက်သူများ အုပ်ချုပ်သူများ၏ ခွင့်ပြုချက်၊ စီးပွားဖြစ် အစီအစဉ်များအပေါ်တွင် မူတည်ပါသည်။

www.woodside.com.au



ရခိုင်ကမ်းလွန်ရေနံလုပ်ကွက် AD-1 နှင့် AD-8 တွင် အဆိုပြု ရေနံတွင်းတူးခြင်း

Woodside Energy (Myanmar)
Pte Ltd

၂၀၁၉ ခုနှစ်၊ ဧပြီလ



Woodside

Disclaimer and important notice

This presentation contains forward looking statements that are subject to risk factors associated with oil and gas businesses. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to: price fluctuations, actual demand, currency fluctuations, drilling and production results, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

All references to dollars, cents or \$ in this presentation are to US currency, unless otherwise stated.

References to "Woodside" may be references to Woodside Petroleum Ltd. or its applicable subsidiaries.



Notes on Petroleum Resource Estimates

Unless otherwise stated, all petroleum resource estimates are quoted as at the balance date (i.e. 31 December) of the Reserves Statement in Woodside's most recent Annual Report released to ASX and available at <http://www.woodside.com.au/Investors-Media/Announcements>, net Woodside share at standard oilfield conditions of 14.696 psi (101.325 kPa) and 60 degrees Fahrenheit (15.56 deg Celsius). Woodside is not aware of any new information or data that materially affects the information included in the Reserves Statement. All the material assumptions and technical parameters underpinning the estimates in the Reserves Statement continue to apply and have not materially changed.

Woodside reports reserves net of the fuel and flare required for production, processing and transportation up to a reference point. For offshore oil projects and floating LNG (FLNG) projects, the reference point is defined as the outlet of the floating production storage and offloading (FPSO) or FLNG facility, while for the onshore gas projects the reference point is defined as the inlet to the downstream (onshore) processing facility.

Woodside uses both deterministic and probabilistic methods for estimation of petroleum resources at the field and project levels. Unless otherwise stated, all petroleum estimates reported at the company or region level are aggregated by arithmetic summation by category. Note that the aggregated Proved level may be a very conservative estimate due to the portfolio effects of arithmetic summation.

'MMboe' means millions (10^6) of barrels of oil equivalent. Dry gas volumes, defined as 'C4 minus' hydrocarbon components and non-hydrocarbon volumes that are present in sales product, are converted to oil equivalent volumes via a constant conversion factor, which for Woodside is 5.7 Bcf of dry gas per 1 MMboe. Volumes of oil and condensate, defined as 'C5 plus' petroleum components, are converted from MMbbl to MMboe on a 1:1 ratio.

Unless otherwise stated all petroleum resource estimates refer to those estimates set out in the Reserves Statement in Woodside's most recent Annual Report released to ASX and available at <http://www.woodside.com.au/Investors-Media/Announcements>. Woodside is not aware of any new information or data that materially affects the information included in the Annual Report. All the material assumptions and technical parameters underpinning the estimates in the Annual Report continue to apply and have not materially changed.

The estimates of petroleum resources are based on and fairly represent information and supporting documentation prepared by qualified petroleum reserves and resources evaluators. The estimates have been approved by Mr Ian F. Sylvester, Woodside's Vice President Reservoir Management, who is a full-time employee of the company and a member of the Society of Petroleum Engineers. Mr Sylvester's qualifications include a Master of Engineering (Petroleum Engineering) from Imperial College, University of London, England, and more than 20 years of relevant experience.



- ၁) မိတ်ဆက်ခြင်း - (၅)မိနစ်
- ၂) ရှင်းလင်းတင်ပြခြင်း - (၂၅)မိနစ်
- ၃) အမေးအဖြေကဏ္ဍ
- ၄) ဒေသခံငါးဖမ်းလုပ်သားများ၊ ဒေသခံများ နှင့် အုပ်စုဖွဲ့ ဆွေးနွေးခြင်း - (၂၀) မိနစ်

Woodside အကြောင်းရှင်းလင်းတင်ပြခြင်း

စီမံကိန်းအကြောင်း ဖော်ပြချက်

သတင်း အချက်အလက်များ စုဆောင်းခြင်း

တွေ့ဆုံဆွေးနွေးခြင်း၏ အရေးပါမှု

ထိခိုက်မှုဆန်းစစ်ခြင်း၏ တွေ့ရှိချက်များ

ဆက်လက်ဆောင်ရွက်မည့်အဆင့်များ

ဆက်သွယ်နိုင်မည့် အကြောင်းရှင်းလင်းခြင်း



Woodside အကြောင်း ရှင်းလင်းတင်ပြခြင်း

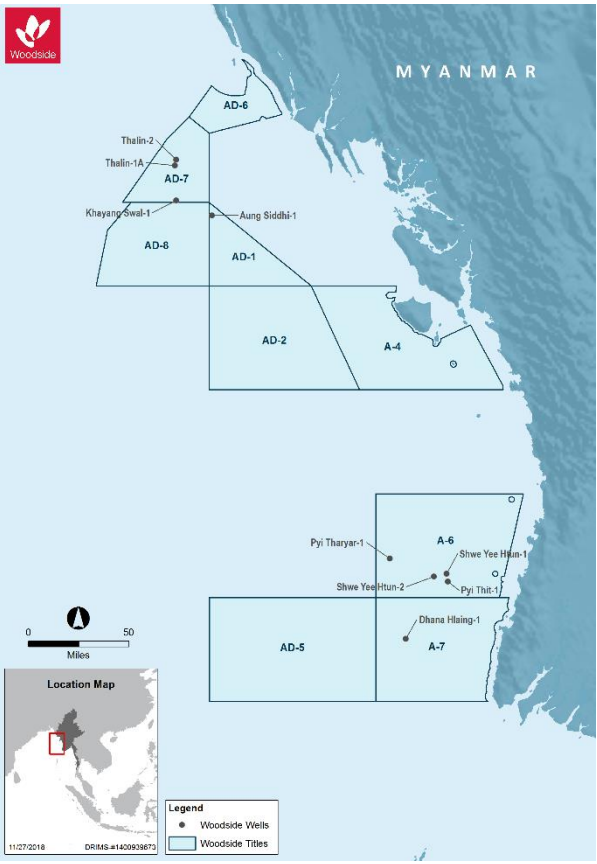


Woodside အကြောင်း ရှင်းလင်းတင်ပြခြင်း

- + သြစတေးလျနိုင်ငံ၏ လွတ်လပ်သော ရေနံနှင့် သဘာဝဓာတ်ငွေ့ကုမ္ပဏီကြီး တစ်ခုဖြစ်သည်။
- + မြန်မာနိုင်ငံတွင် ၂၀၁၃ ခုနှစ် မှ စတင်၍ ဆောင်ရွက်ခဲ့သည်။
- + ရှည်ကြာသော သမိုင်းကြောင်း တစ်လျှောက် ရေနံရှာဖွေခြင်းနှင့် ထုတ်လုပ်ခြင်းတို့တွင် သဘာဝပတ်ဝန်းကျင်နှင့် ဘေးကင်းလုံခြုံရေးတို့၌ တာဝန်ယူမှုရှိသည့် ကုမ္ပဏီဖြစ်သည်။
- + Woodside အနေဖြင့် တစ်ကမ္ဘာလုံးတွင် တွင်းပေါင်း (၆၃၀) ကျော် - မြန်မာနိုင်ငံ ရေနက်ပိုင်းရှိ တွင်း (၁၀) တွင်း အပါအဝင် - တူးခဲ့ပြီး ဖြစ်ပါသည်။



မြန်မာနိုင်ငံရှိ Woodside ၏ ရေနံလုပ်ကွက်များ



မြန်မာနိုင်ငံကမ်းလွန်တွင် ရေနံလုပ်ကွက် (၉) နေရာတွင် ဆောင်ရွက်သည်။

- + A-7၊ AD-5၊ AD-1 ၊ AD-8 နှင့် AD-6 တွင် အော်ပရေတာအဖြစ် ဆောင်ရွက်သည်။
- + A-6 နှင့် AD-7 တွင် တွဲဖက်အော်ပရေတာအဖြစ် ဆောင်ရွက်သည်။
- + AD-2 နှင့် A-4 တွင် အော်ပရေတာအဖြစ် ဆောင်ရွက်ခြင်းမရှိပါ။

AD-1	<ul style="list-style-type: none"> ▪ Woodside Energy (Myanmar) Pte Ltd (Woodside) (Operator) ၅၀% 	၅၀%
	<ul style="list-style-type: none"> ▪ CNPC International Ltd 	၅၀%

AD-8	<ul style="list-style-type: none"> ▪ Woodside Energy (Operator) ၅၀% 	၅၀%
	<ul style="list-style-type: none"> ▪ CNPC International Ltd 	၅၀%



ကျွန်ုပ်တို့၏လုပ်ငန်းစဉ်များ

ဆည်းပူးခြင်းနှင့်စုစမ်းရှာဖွေခြင်း

(၂-၁၀) နှစ်

ဖွံ့ဖြိုးတိုးတက်ခြင်း

(၁-၇) နှစ်

လုပ်ငန်းဆောင်ရွက်ခြင်းနှင့် ဈေးကွက်တည်ဆောက်ခြင်း

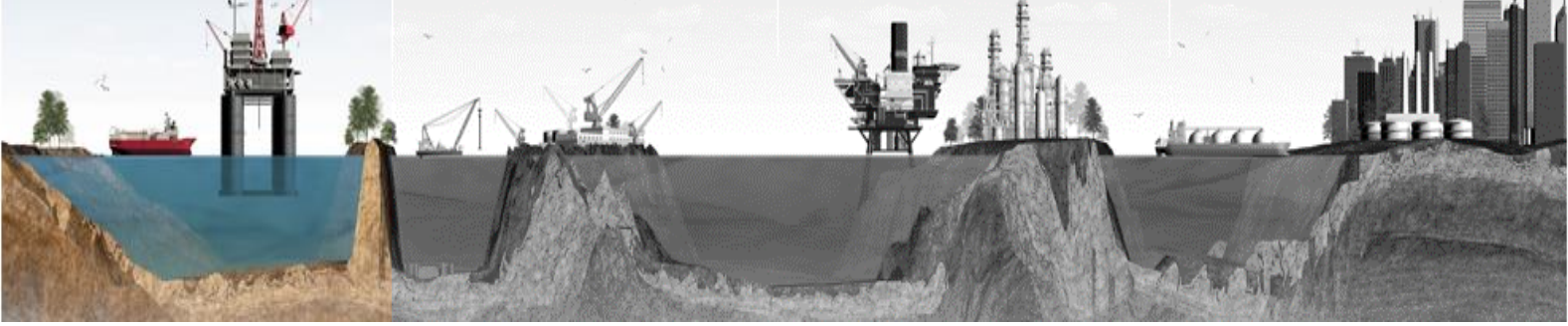
၁၀ နှစ်နှင့်အထက် (ရေနံ)၊ ၂၅ နှစ်နှင့်အထက် (ဓါတ်ငွေ့)

- ဆိုက်စမစ်စူးစမ်းလေ့လာခြင်း
- ရေနံရှာဖွေရေးနှင့် အက် ဖြတ်တွင်းတူးခြင်း

- ရေနံတူးဖော်ထုတ်လုပ်ခြင်း
- စီမံကိန်းလက်ခံခြင်း
- တည်ဆောက်ခြင်း

- အထောက်အကူပြုပစ္စည်းများ၊ အဆောက်အအုံများဖြင့် လုပ်ငန်းဆောင်ရွက်ခြင်း
- သင်္ဘောဖြင့် ပို့ဆောင်ခြင်း

- သုံးစွဲသူများထံ ပို့ဆောင်ခြင်း



၂၀၁၈တွင် AD-1 ဌာနတွင်းတူးခွဲသည့်အစီအစဉ်

အောင်သိဒ္ဓိ-၁ တွင်းအား ဘေးအန္တရာယ်ကင်းစွာ တူးဖော်နိုင်ခြင်း (မေ-ဇွန်)

သဘာဝဓါတ်ငွေ့အား အဓိကနေရာနစ်ခုတွင်တွေ့ - ဆက်လက်ခွဲခြားစီစစ်လျက်ရှိ

ကျန်းမာရေး၊ လုံခြုံရေးနှင့် သဘာဝပတ်ဝန်းကျင် တို့ကိုအကောင်းဆုံး လုပ်ဆောင်ခဲ့

သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ စုဆောင်းခြင်း-

- ပင်လယ်ကြမ်းပြင်နေ ရေအောက်သတ္တဝါ ငယ်လေးများ၏ နေရင်းဒေသ
- အနည်အနှစ်နှင့် ရေအရည်အသွေး
- ပင်လယ်ရေနှင့် ရေအောက်နန်းအနည်အနှစ်နေ သတ္တဝါငယ်လေးများ

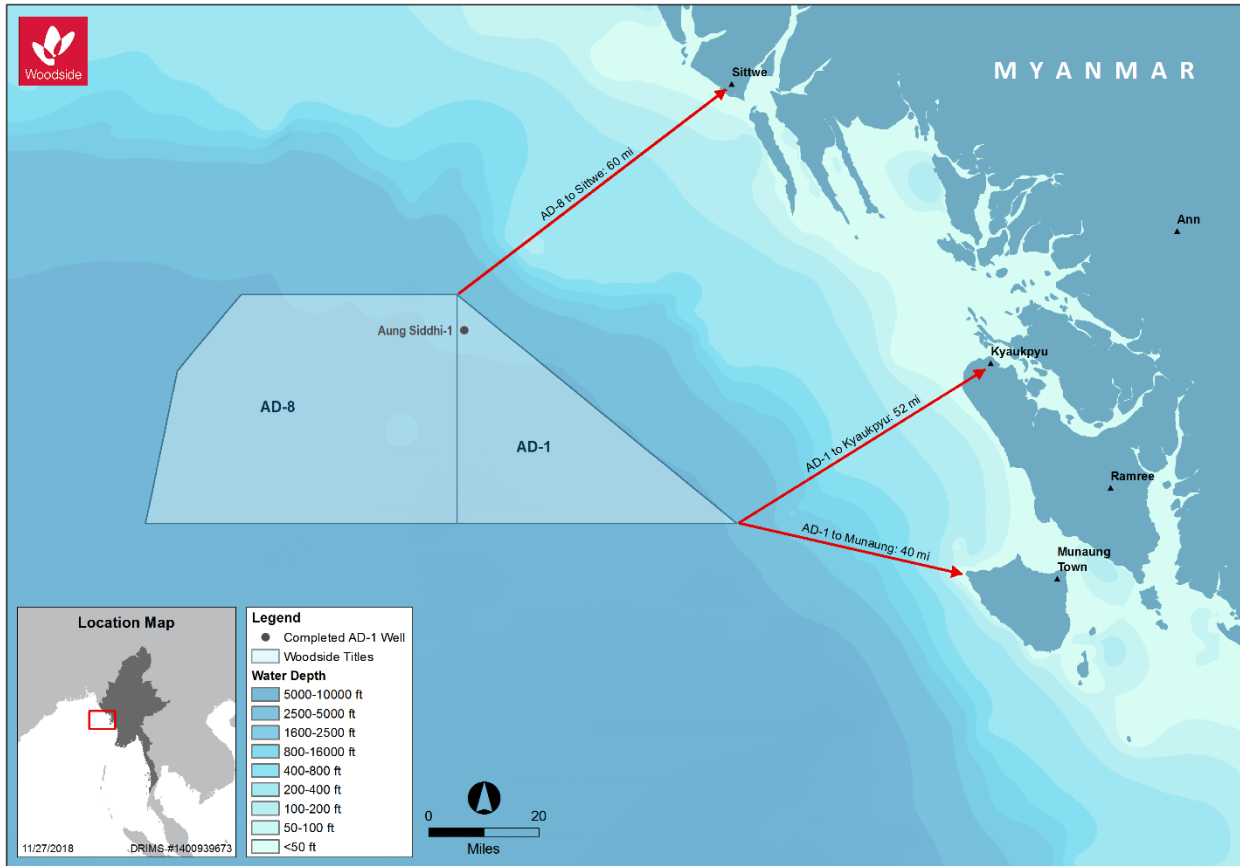
အတည်ပြုထားသော EIA အတိုင်း သင့်တော်သော စီမံခန့်ခွဲမှုဆိုင်ရာနည်းလမ်းများဖြင့် ဆောင်ရွက်လျက်ရှိ



အဆိုပြုတွင်း
တူးဖော်ခြင်း
လုပ်ငန်းစဉ်များ



စီမံကိန်းတည်နေရာ



အဆိုပြုတွင်းတူးဖော်ခြင်း လုပ်ငန်းစဉ်များ

တွင်းများသည် ယခင်ကဲ့သို့ ကမ်းလွန် ရေနက်ပိုင်းတွင် တည်ရှိမည် ။ (ပေ ၃,၀၀၀ အထက်)

ရွေ့လျား ကမ်းလွန်တူးဖော်ရေးယူနစ် (MODU) ဟုခေါ်သော ယာဉ်အား အသုံးပြုမည်။

တွင်းတူးခြင်းလုပ်ငန်းစဉ်သည် တစ်တွင်းလျှင် ခန့်မှန်းခြေအားဖြင့် ရက် (၄၀) ခန့် ကြာမြင့်မည် ဖြစ်ပါသည်။

တွင်းတူးခြင်းလုပ်ငန်းစဉ်ကို တစ်နေ့လျှင် (၂၄) နာရီကြာ ဆောင်ရွက်မည်။

လုံခြုံရေးအတွက် ယာဉ်၏ (၁,၅၀၀) ပေ အချင်းဝက်ပတ်လည်အား လုံခြုံရေးရန်အဖြစ် တူးဖော်ရေးလုပ်ငန်း လုပ်ဆောင်နေစဉ် ခေတ္တခဏ သတ်မှတ်ထားရှိမည်။

တွင်းတူးခြင်းလုပ်ငန်းအတွက် လိုအပ်သောပစ္စည်းကိရိယာများ၊ လောင်စာဆီနှင့် စွန့်ပစ်ပစ္စည်းများ ပို့ဆောင်ရေးကို ထောက်ပံ့ရေးယာဉ် ၃ စီးမှ ၄ စီးဖြင့် အထောက်အကူပြုမည်ဖြစ်ပါသည်။



ရှာဖွေတူးဖော်ခြင်း လုပ်ငန်းစဉ်အား ရှင်းလင်းတင်ပြခြင်း



<https://www.youtube.com/watch?v=xUoul3ZsTC8>

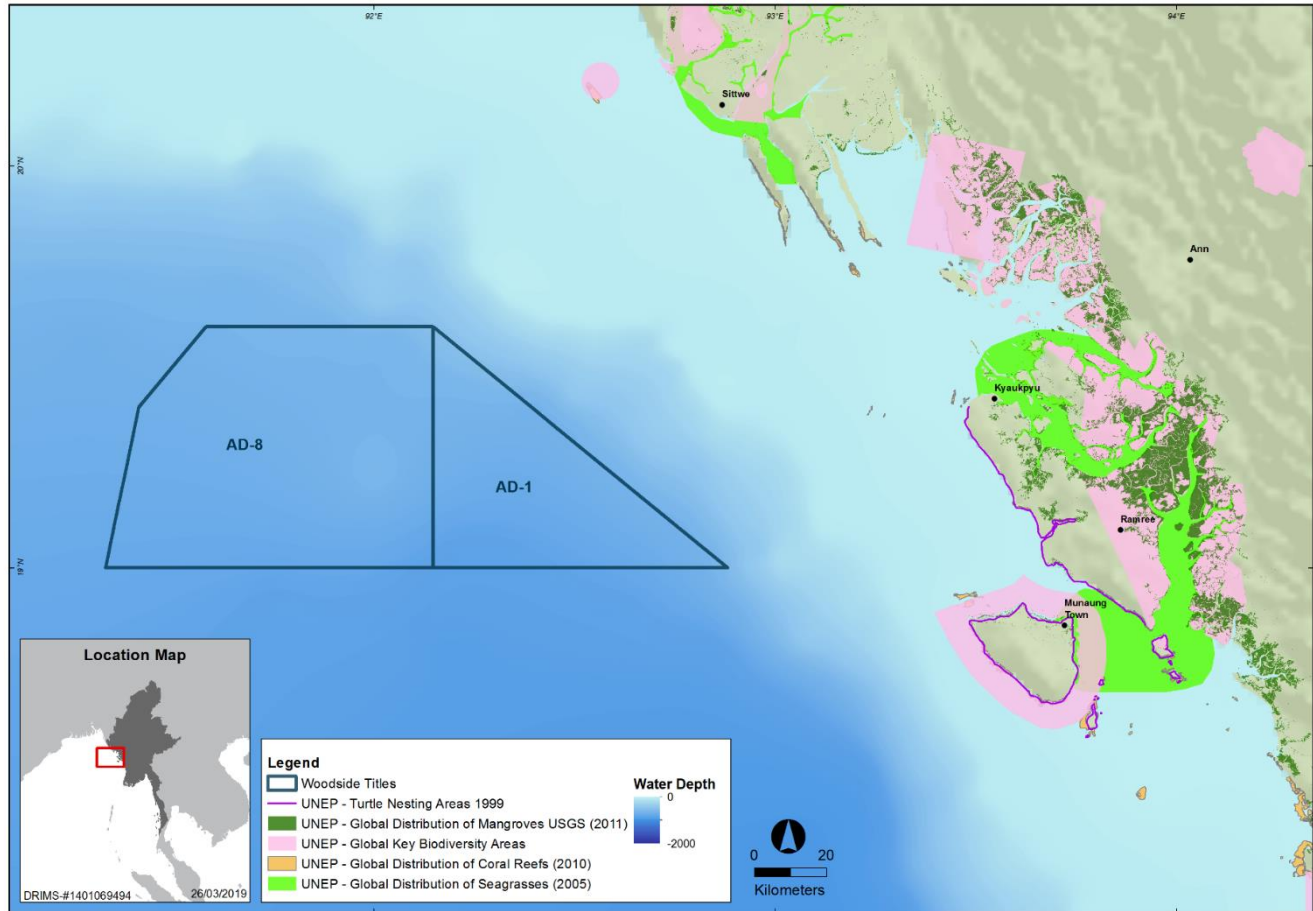


လက်ရှိသဘာဝပတ်ဝန်းကျင်
အခြေအနေနှင့် အချက်အလက်များ
စုဆောင်းခြင်း



Woodside

အဓိကကျသော ဇီဝမျိုးကွဲဒေသများ (KBAs)



ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြည့်ရေးအစီအမံများ



ROV Imagery



စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲမှု



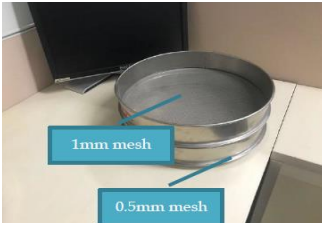
နန်းအနည်များ နမူနာ ကောက်ယူမှု



ပင်လယ်နေ သတ္တဝါများ စစ်တမ်းကောက်ယူမှု

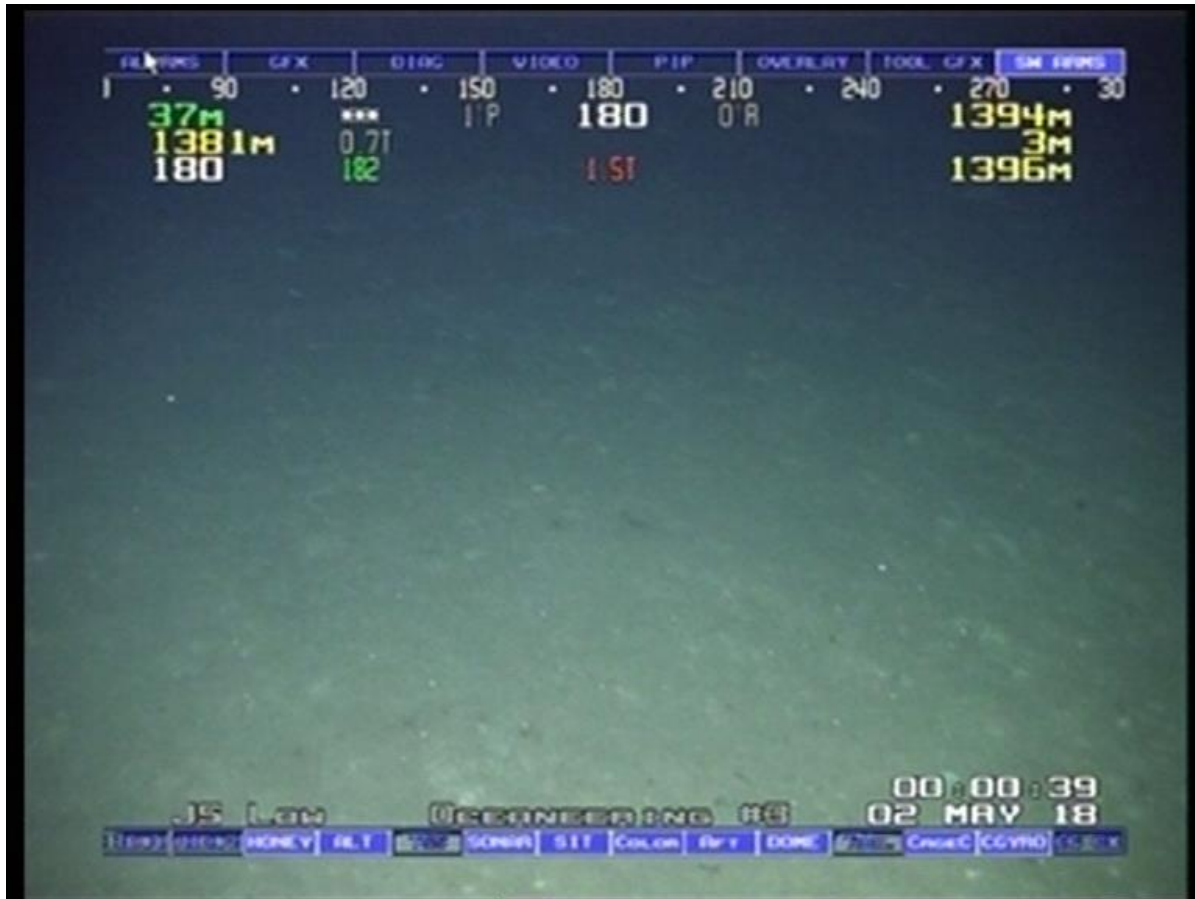


ရေ အရည်အသွေး နမူနာ ကောက်ယူမှု



Macro Benthos များစစ်တမ်းကောက်ယူမှု

ROV Video



ရေနှင့်နန်းအနည်အနှစ်များ၏ အရည်အသွေး

နန်းအနည်အနှစ်

- EIAများတွင် ဖော်ပြခဲ့သည့်အတိုင်း ရေနက်ပတ်ဝန်းကျင်ဒေသ ဂေဟစနစ်များသည် အလွန်ထိခိုက်လွယ်သော ဂေဟစနစ်များ မဟုတ်ကြပါ။
- တွင်းတူးရာမှထွက်လာသော အပိုင်းအစများကို ပင်လယ်မျက်နှာပြင်သို့ စွန့်ပစ်ခြင်းနှင့် ကမ်းလွန်ရေနေသတ္တဝါများအပေါ် သက်ရောက်နိုင်မှုမှာ အနည်းငယ်သာဖြစ်ပြီး ဒေသတွင်းတွင်သာဖြစ်မည်။

ရေအရည်အသွေး

- တွင်းတူးဖော်မှုလုပ်ဆောင်ချက်များ မတိုင်မှီနှင့် အပြီးတွင် ရေစမ်းစစ်မှုများပြုလုပ်ရာတွင် ပင်လယ်ရေအရည်အသွေးအား ထိခိုက်မှုမရှိသည်ကို တွေ့ရသည်။

ခြုံငုံတွေ့ရှိချက်များ

- သက်ရောက်မှုများအား ဖြေလျော့ခြင်းနှင့် စီမံခန့်ခွဲမှုများအား ထိရောက်စွာ လုပ်ဆောင်နိုင်ပါသည်။

ထိခိုက်မှုဆန်းစစ်ခြင်း



Woodside

တွင်းတူးခြင်းကြောင့် အဓိကဖြစ်နိုင်ချေရှိသောသက်ရောက်မှုများနှင့် လျော့ချနိုင်မည့် နည်းလမ်းများ

ထိခိုက်မှုအား လျော့ချနိုင်သည့် နည်းလမ်းများ

<ul style="list-style-type: none"> • တွင်းမှစွန့်ပစ်ပစ္စည်းများ • မိလ္လာ၊ သင်္ဘောကုန်းပတ် ရေစွန့်ထုတ်ခြင်းနှင့် စားကြွင်းစားကျန်များ • အစိုင်အခဲနှင့် အန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများ 	<ul style="list-style-type: none"> • စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု အစီအစဉ်- လျော့ချခြင်း၊ ပြန်လည်သုံးစွဲခြင်း၊ ပြန်လည်စီရင်သုံးစွဲခြင်းများ အပါအဝင် • ဆီပါသော ရေများအား ခွဲထုတ်ခြင်း/စစ်ထုတ်ခြင်း နည်းလမ်းများဖြင့် သန့်စင်ခြင်း၊ • MARPOL နှင့် NEQ များအတိုင်း လိုက်နာဆောင်ရွက်ခြင်း၊ • စွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲသည့် ပစ္စည်း၊ နေရာ တို့တွင် သင့်တော်စွာဆောင်ရွက်သွားမည်။
<ul style="list-style-type: none"> • ဖြတ်စများနှင့် တွင်းတူးရည်စွန့်ထုတ်မှု 	<ul style="list-style-type: none"> • ဖြတ်စများနှင့် တွင်းတူးရည်စွန့်ပစ်မှုပမာဏအား တတ်နိုင်သရွေ့ အနည်းဆုံး ဖြစ်စေရန် စီမံခန့်ခွဲခြင်း၊ • တွင်းတူးရည် နှင့် ဓါတုပစ္စည်းများ ရွေးချယ်ရာတွင် ပတ်ဝန်းကျင်ဆိုင်ရာ အကဲဖြတ်ခြင်း ဆောင်ရွက်ပြီးမှသာ ရွေးချယ်ခြင်း၊ • ဖြတ်တောက်ရာတွင် ဆီအသုံးပြုမှုအား ၆.၉% ထိကန့်သတ်ခြင်း၊
<ul style="list-style-type: none"> • ထုတ်လွှတ်မှုများ 	<ul style="list-style-type: none"> • MARPOL ညွှန်ကြားချက်အား လိုက်နာဆောင်ရွက်ခြင်း၊ • ပစ္စည်းကိရိယာများ ထိန်းသိမ်းခြင်း၊
<ul style="list-style-type: none"> • အခြားကမ်းလွန်ရေယာဉ်များနှင့် အပြန်အလှန် ပူးပေါင်းဆောင်ရွက်ခြင်း၊ 	<ul style="list-style-type: none"> • ရေကြောင်းသတိပေးချက် ထုတ်ပြန်ခြင်း၊ • ဆက်သွယ်ဆောင်ရွက်ရာတွင် လွယ်ကူစေရန် ထောက်ပံ့ရေးသင်္ဘောများ ထားရှိခြင်း၊
<ul style="list-style-type: none"> • ရေနံတွင်း၊ တွင်းတူးစင် (သို့မဟုတ်) ရေယာဉ်များမှ စီစဉ်ထားခြင်းမရှိသော စွန့်ပစ်မှုများ 	<ul style="list-style-type: none"> • ပေါက်ထွက်ခြင်း မဖြစ်စေရန် အရံအတားများ တပ်ဆင်ခြင်း၊ • အရေးပေါ်အခြေအနေ တုံ့ပြန်မှု အစီအစဉ်၊ • သင့်တော်သည့် ပစ္စည်းကိရိယာများအား သင်္ဘောများပေါ်တွင် ထားရှိခြင်း၊



တွေ့ဆုံဆွေးနွေးခြင်း၏ အရေးပါမှု

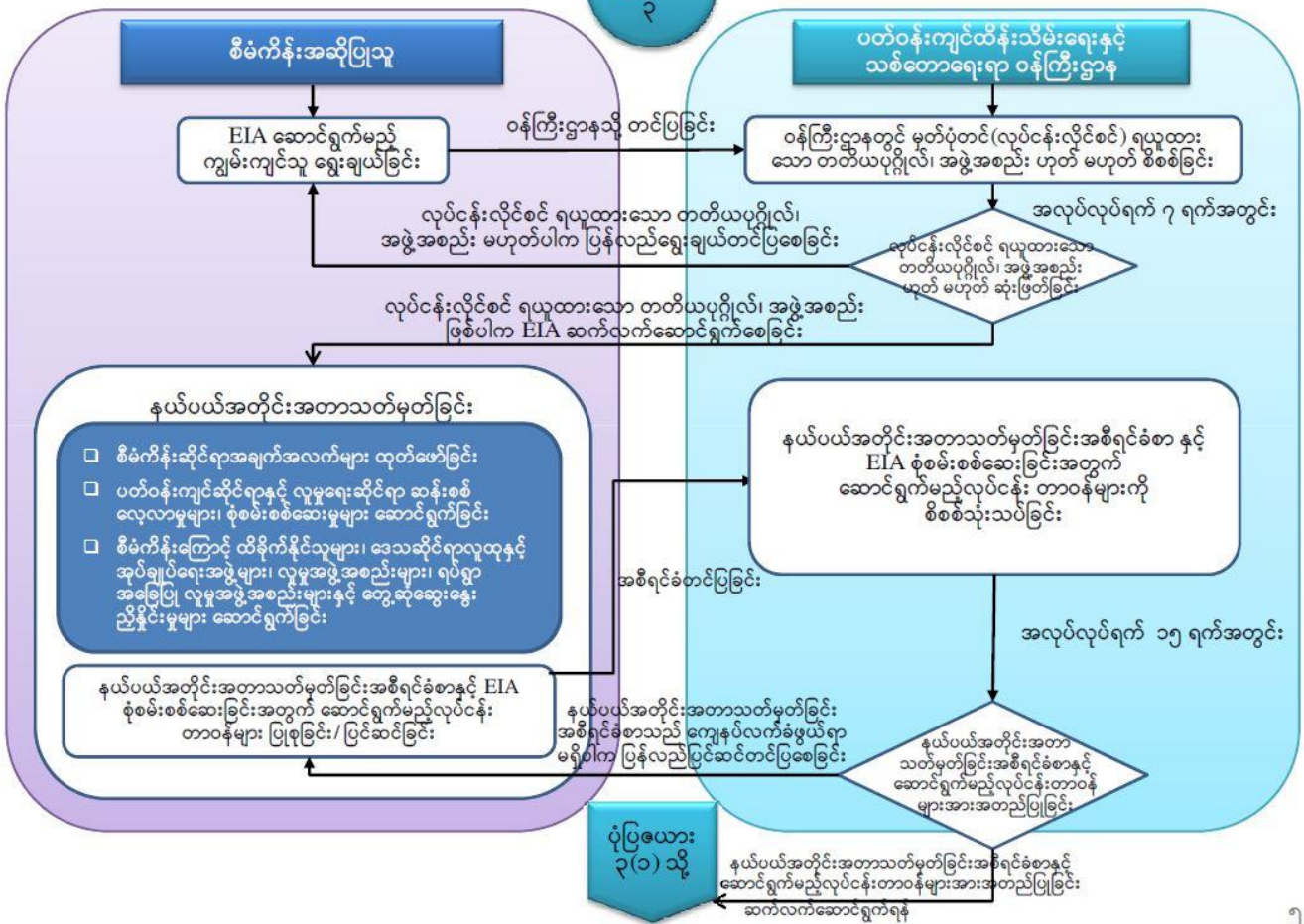


Woodside

EIA လုပ်ငန်းစဉ် - စီမံကိန်း၏ လက်ရှိအဆင့်

EIA နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း

ပုံပြဇယား ၃



ရခိုင်ပြည်နယ်ရှိ ငါးဖမ်းလုပ်ငန်း

- Woodside နှင့် ERM သည် ၂၀၁၅ ခုနှစ်မှ စတင်၍ ရခိုင်ရှိ ငါးဖမ်းသမားများနှင့် တွေ့ဆုံဆွေးနွေးမှုများ ပြုလုပ်ခဲ့ပါသည်။
- ဒေသခံငါးဖမ်းလုပ်ငန်းသည် ကမ်းရိုးတန်းမှ မိုင်၃၀အကွာအတွင်း အများစုလုပ်ကိုင်ပါသည်။
- ရခိုင်ကမ်းလွန်ရေနက်ပိုင်းတွင်မူ ရခိုင်ပြည်နယ်ပြင်ပမှ ငါးဖမ်းရေယာဉ်ကြီးတချို့ လာရောက် ငါးဖမ်းကြပါသည်။



ယခင် ၂၀၁၈ ခုနှစ် အောင်သိဒ္ဓိ-၁ တူးဖော်ခြင်း လုပ်ငန်းစဉ် တလျှောက်လုံးတွင် ငါးဖမ်းသင်္ဘောများ (သို့) အခြားရေယာဉ်များနှင့် ထိခိုက်မှုများ လုံးဝမရှိခဲ့ပါ။



တွေ့ဆုံဆွေးနွေးမှု နည်းလမ်း

ပြည်ထောင်စုအဆင့်

- သက်ဆိုင်ရာ အစိုးရ အဖွဲ့အစည်းများဖြင့် တွေ့ဆုံဆွေးနွေးခြင်း (သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာန နှင့် မြန်မာ့ရေနံနှင့် သဘာဝဓါတ်ငွေ့လုပ်ငန်း အပါအဝင်)။

ပြည်နယ်အဆင့်

- ဒေသတွင်း အစိုးရအဖွဲ့ အစည်းများနှင့် တွေ့ဆုံဆွေးနွေးတင်ပြခြင်း (ရခိုင်ပြည်နယ် ဝန်ကြီးချုပ်၊ အထွေထွေ အုပ်ချုပ်ရေး ဦးစီးဌာန)
- ပြည်နယ်အဆင့် အစိုးရဌာနများနှင့် အဖွဲ့အစည်းများ နှင့် တွေ့ဆုံခြင်း၊
- လူထုအကျိုးပြုအဖွဲ့အစည်းနှင့် အခြားသော စိတ်ဝင်စားသည့် အဖွဲ့အစည်းများနှင့် တွေ့ဆုံခြင်း။

မြို့နယ်အဆင့်

- မြို့နယ် အုပ်ချုပ်ရေးမှူးများနှင့် ကျေးရွာအုပ်စု အုပ်ချုပ်ရေးမှူးများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း။
- ဒေသခံ ပြည်သူများနှင့် တွေ့ဆုံ ညှိနှိုင်းခြင်း။
- လူထုအကျိုးပြုအဖွဲ့အစည်းများ၊ စိတ်ပါဝင်စားသူများနှင့် အမျိုးသား/ ပြည်သူ့ လွှတ်တော်ကိုယ်စားလှယ်များနှင့် တွေ့ဆုံ ဆွေးနွေးခြင်း။



ဆောင်ရွက်သွားမည့် စီမံကိန်းနှင့် ပတ်သက်ဆက်နွှယ်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်းဆိုင်ရာ လုပ်ငန်းစဉ်များ

ရက်စွဲ နှင့် တည်နေရာ	စီမံကိန်းနှင့် ပတ်သက်ဆက်နွှယ်သူများ
ဒီဇင်ဘာလ (၄) ရက်၊ ၂၀၁၈၊ ဝန်ကြီးချုပ် ရုံးခန်း	ဝန်ကြီးချုပ်၊ သက်ဆိုင်သည့် ဝန်ကြီးများနှင့် အစိုးရအဖွဲ့ဝင်များ။
ဒီဇင်ဘာလ (၆) ရက်၊ ၂၀၁၈၊ ရန်ကုန်	ငါးလုပ်ငန်းဦးစီးဌာနနှင့် မြန်မာနိုင်ငံငါးလုပ်ငန်း အဖွဲ့ချုပ်
ဧပြီလ၊ ၂၀၁၉ ကျောက်ဖြူ	အထွေထွေအုပ်ချုပ်ရေး ဦးစီးဌာန၊ လူထုအကျိုးပြု အဖွဲ့အစည်းများနှင့် စိတ်ပါဝင်စားသူများ။
ဧပြီလ၊ ၂၀၁၉ ရန်ကုန်	ရခိုင်တွင် ကမ်းလွန်ငါးဖမ်းလုပ်ကိုင်နေသော ရန်ကုန်အခြေစိုက် ငါးဖမ်းသမားများ၊ ငါးဖမ်းအဖွဲ့အစည်းများ



ဆက်လက်ဆောင်ရွက်မည့် လုပ်ငန်းစဉ်များ



Woodside

ဆက်လက်ဆောင်ရွက်မည့်လုပ်ငန်းစဉ်များ

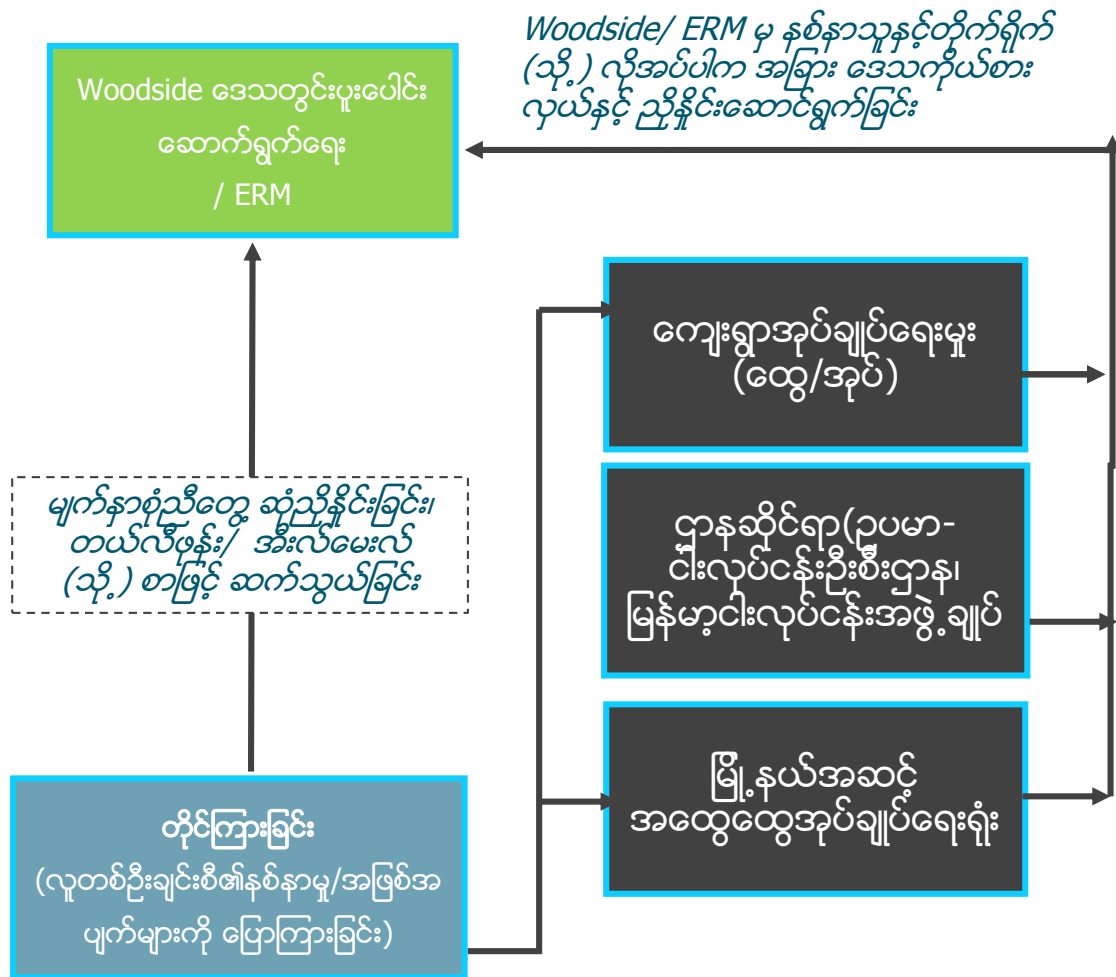
- + နယ်ပယ်အတိုင်းတာသတ်မှတ်ခြင်း အစီရင်ခံစာနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာအတွက် လုပ်ငန်းတာဝန်များ ပြုစုခြင်း၊
- + နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းကို အများပြည်သူသို့ ထုတ်ပြန် အသိပေးခြင်း၊
- + ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအတွက် ပြည်နယ်အဆင့် သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း၊

ဆက်သွယ်ဆောင်ရွက်နိုင်မည့်နည်းလမ်း



Woodside

ဒေသခံအတွင်း နစ်နာမှုများအတွက် ညှိနှိုင်းမှုလုပ်ငန်းစဉ်



ထပ်မံဆွေးနွေးအကြံပြုလိုသည်များ

ယခု (သို့မဟုတ်) နောင်တွင် စီမံကိန်းနှင့်ပတ်သက်၍ မေးခွန်းများ (သို့) အကြံပြုချက်များရှိပါက အောက်ပါလိပ်စာတို့ထံ ဆွေးနွေးပြောကြားနိုင်ပါသည်။

- ဆက်သွယ်ရန်- Woodside: ဒေါ်ဖြူဖြူဝင်းဦး (သို့) ဦးနေလင်းဦး
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Environmental Management Plan for Exploration Drilling in Block AD-1

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