

ภาคผนวกที่ 19
หนังสืออนุญาตให้ส่งกำจัดของเสียไม่อันตราย



ที่ กพ ๕๓๑๐๔/๑๑๐๐

สำนักงานเทศบาลตำบลลานกระบือ

ถนนลานกระบือ – กำแพงเพชร

กำแพงเพชร ๖๒๑๗๐

๑ สิงหาคม ๒๕๕๕

เรื่อง ขอนำส่งมูลฝอยของโครงการพัฒนาปิโตรเลียมในแปลงสัมปทานเอส ๑ เพื่อกำจัดด้วยกรรมวิธีเชิงกล-ชีวภาพ Mechanical Biological Waste Treatment (MBT)

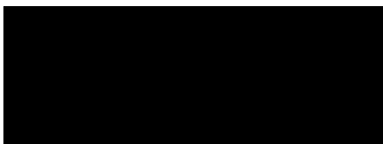
เรียน ผู้จัดการอาวุโส ฝ่ายปฏิบัติการโครงการ เอส ๑

ตามที่บริษัท ปตท.สผ.สยาม จำกัด บริษัทในกลุ่ม บริษัท ปตท.สำรวจและผลิตปิโตรเลียม จำกัด (มหาชน) มีแผนจะดำเนินการกำจัดมูลฝอยของโครงการด้วยกรรมวิธีเชิงกล-ชีวภาพ Mechanical Biological Waste Treatment (MBT) โดยได้ประสานขอความสนับสนุนจากเทศบาลตำบลลานกระบือมาแล้วนั้น

เทศบาลตำบลลานกระบือ มีความยินดีให้ บริษัท ปตท.สผ.สยาม จำกัด ดำเนินการกำจัดมูลฝอยตามโครงการด้วยกรรมวิธีเชิงกล-ชีวภาพ Mechanical Biological Waste Treatment (MBT) ดังกล่าว

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ



นายกเทศมนตรีตำบลลานกระบือ

กองสาธารณสุขและสิ่งแวดล้อม



“ยึดมั่นธรรมาภิบาล บริการเพื่อประชาชน”

ภาคผนวกที่ 20
บันทึกประเภทของเสียและปริมาณของเสีย
(Waste Inventory Report)

2023 OTN Waste Inventory Report

รายการของเสียอันตราย 2566																		
No.	รหัส	ชื่อของเสีย	ปริมาณของเสียต่อถัง 2563 (กิโลกรัม)	รายการที่รับ (กิโลกรัม)												รายการที่ส่งกำจัด	จำนวนที่เหลือ	
				Contractors														
				January	February	March	April	May	June	July	August	September	October	November	December			รวม
ของเสียที่ไม่อันตราย(Non-Hazardous Waste)																		
1	1902	เศษอาหารเปียก (Wet Food Waste)		472	482	356	478	512	336	410	596	395	485	421	367	5,310		
2	1902	ขยะมูลฝอยทั่วไป (Municipal Waste)		1,138	1,058	1,244	1037	1101	1034	805	599	1030	830	1729	928	12,533		
3	1101	กระดาษและกล่องกระดาษ (Paper Packaging)														0		
4	1107	ขวดแก้ว (Glass Packaging)														0		
5	1102	ขวดหรือเศษพลาสติก (Plastic Packaging)														0		
6	1104	เศษโลหะหรือกระป๋องโลหะ (Metallic Packaging)														0		
7	1102	ถังน้ำมันใช้แล้วที่ผ่านการล้าง (Clean Oil Metal Drum) 200 L. (1 ถัง = 17 Kg.)														0		
8	1104	ถังสารเคมีใช้แล้วที่ผ่านการล้าง (Clean Plastic Drum) 200 L. (1 ถัง = 10 Kg.)														0		
ของเสียอันตราย (Hazardous Waste)																		
9	0905	หลอดไฟ (Light Lamp)														0		
10	1001	แบตเตอรี่ (Batteries)														0		
11	1110	กระป๋องชนิดอัดแรงดัน (Aerosol / Spray Can)														0		
12	1109	ภาชนะปนเปื้อน (Contaminated Container)														0		
13	0402	น้ำมันใช้แล้ว (Used Lube Oil)		400	600	0	0	0	200	600	400	1200	0	0	0	3400		
14	1205	ฉนวนกันความร้อน (Insulation)														0		
15	0701	สีหมดอายุ (Expired Paint)														0		
16	0503	วัสดุตัวกรอง (Filter)														0		
17	0503	ผ้าหรือชุดปนเปื้อนน้ำมัน (Rags)		90	30	0	40	70	20	0	0	80	0	185	200	715		
18	1109	ถุงสารเคมี (Chemical Sag & Bag)														0		
19	1501	กากตะกอนปนเปื้อนน้ำมัน (Oil Contaminated Sludge, Wax, Sand)														0		
20	1501	กากตะกอนปนเปื้อนน้ำมัน (Oil Sludge-CNS)														0		
21	1601	น้ำปนเปื้อนน้ำมัน (Oil Contaminated Water-CNS)														0		
22	0101	น้ำจากกระบวนการผลิตที่ปนเปื้อนสารอันตราย (Produced Water)														0		
23	1701	ของเสียติดเชื้อ (wastes whose collection and disposal is subject to special requirements in order to prevent infection)		3	2	2	4	2	0	0	1	1	1	1	1	18		
				Grand Total												21,958		

ภาคผนวกที่ 21

Chemical Management Procedure



PTTEP

PTT Exploration and Production Public Company Limited

Chemical Management Procedure

Document Code: 12148-PDR-SSHE-505/38-R00

November 2019

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Document Subject Chemical Management Procedure

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Document Owner Safety Management Department (CSA)

Prepared by [REDACTED] Operational Safety Engineer

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Review and Approve

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THIS DOCUMENT WILL BE REVIEWED EVERY 5 YEARS FROM DATE OF APPROVAL OR REVISED EARLIER IF NECESSARY.

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INTRODUCTION

1. PURPOSE

This Procedure specifies and guides the acceptable Safety management of chemicals from purchasing, storing, handling, transporting, spill responding to disposing of all chemicals which are used under PTTEP Assets, in order to comply with local law and regulations and International Standards.

The improper use, storage, handling and transport of chemicals may result in worker fatalities, chronic health disease, fire and explosions, environmental impact, and other community concerns. To prevent such events, it is necessary to put in place control measures. The controls of inherent hazards must be established to minimize the risks of incidents to As Low As Reasonably Practicable (ALARP) level.

2. SCOPE

This Procedure applies to all PTTEP Assets including onshore/offshore/support bases and overseas operations.

This Procedure considers chemicals that are used in PTTEP activities. Manufacture and delivery of raw chemicals directly to PTTEP working sites, storage sites, yards or warehouses by suppliers are not covered.

The following are exempted from this Procedure. However, the chemical owners/onsite supervisors are responsible for managing the risk of using chemicals to ALARP level by demonstration through risk assessment and following precautions of the Safety Data Sheet (SDS) strictly.

- Pesticides used by qualified Contractors and control by their Procedures.
- Household chemicals, fertilizers and weed killers.

Remark: In case there are conflicts implementing and managing chemicals to comply with this Procedure, either Thai Domestic Assets or overseas Assets shall fully manage chemicals to comply with the following documents, respectively:

- Local law and regulations.
- Memorandum of Understanding (MOU) and cross-country agreement/treaty of chemical management that each country signed and committed to.
- Acceptable International Standard and best practices.
- PTTEP Chemical Management Procedure.

REQUIREMENTS

3. CHEMICAL MANAGEMENT PROCESS

The chemical management process can be classified into the following 2 main types:

- PTTEP is the chemical owner and PTTEP purchased chemicals from the manufacturer. Purchasing method can also be classified into 2 categories:
 - Stock purchases (via SAP); and
 - Direct purchases (via Purchase Requisition (PR) or Purchase Order (PO)).
- Contractor is the chemical owner and handling chemicals under a contract or work service order.

The chemical management process overview for PTTEP chemical owners and Contractor chemical owners is presented in Appendices A and B, respectively.

4. PRELIMINARY RISK ASSESSMENT FOR NEW CHEMICALS

4.1 IN CASE PTTEP IS THE CHEMICAL OWNER

Before stock purchasing or direct purchasing of new chemicals, including free samples/trials from chemical suppliers, PTTEP chemical owners shall register for chemical pre-registration in order to proceed to the preliminary risk assessment for the new chemicals.

A verification team or committee shall be assigned and set up to verify chemicals during the preliminary risk assessment for new chemicals. The verification team members are to have expertise in multiple disciplines, but are not limited to:

- Safety Discipline;
- Health/Medic/Doctor Discipline;
- Environment Discipline; and
- Permit & License Discipline.

For International Assets, Assets shall have a specific system for preliminary risk assessment for new chemicals. The requirement shall cover, but is not limited to Safety, Health, Environment, and permit & license. Local law and regulations, cross-country agreements/treaties may be embedded in the preliminary risk assessment for new chemicals, as one of the requirements.

For Thai Domestic Assets, Chemical owners shall proceed to the existing system of preliminary risk assessment for new chemicals via either web-based chemical registration (Preferable) or hardcopy form. Details of the preliminary risk assessment process in each step is explained from Sections 4.3 to 4.6.

4.2 IN CASE CONTRACTOR IS THE CHEMICAL OWNER UNDER WORK CONTRACT/SERVICE ORDER

Under a work contract or service order, the Contractor may import, possess, use, handle, store, and transport chemicals. For this case, the Contractor shall be considered as the chemical owner. Chemicals shall not be registered into the PTTEP chemical registration database.

Contractor Verification of Safe Chemicals

In addition, during the pre-mobilization phase of Contractor management, the Contractor shall compile all chemical lists with an SDS which will be handled and used under a work contract/service order. Then, the Contractor shall submit the chemical lists with the SDS to the Contract Holder, Company site representative, site SSHE officer and site medic.

Similarly, the preliminary risk assessment process for new chemicals is applied to Thai Domestic Assets. Contractor shall verify and ensure that all chemicals used under the work contract/service order are safe to handle and manage before commencing work in PTTEP premises. For instance;

- Is the chemical banned based on local law and regulations;
- Is the chemical considered to be a hazardous or non-hazardous chemical based on local law and regulations;
- Etc.

After verification of safe chemicals, the Contractor shall sign the declaration letter of safe chemicals under the work contract/service order. This declaration letter shall be submitted to the Contract Holder, Company site representative, site SSHE officer and site medic before commencing work in PTTEP premises. Once the Contract Holder receives the letter he/she is to sign the letter for endorsement and acknowledgement. A guidance template for a declaration letter of conformity (safe chemicals) under work contract/service order is provided in Appendix C.

4.3 CHEMICAL DOCUMENT PREPARATION AND PRE-REGISTRATION

Before purchasing chemicals, the chemical owner shall obtain the full details of the SDS from the chemical suppliers/manufacturers.

- The SDS for both a single substance and a mixing substance (mixture) must reveal 100% composition/ingredients of the chemical.
- The concentration of each composition can be presented in a range (Min to Max).
- In case there is a secret ingredient or Confidential Business Information (CBI), where the manufacturer does not permit revealing 100% composition/ingredients of a chemical, the chemical owner shall strictly enforce manufacturers to privately submit an SDS detailing 100% of the composition/ingredients of chemical with local authorities (For Thailand, Department of Industrial Work or DIW).

After they have obtained the full details of the SDS, the chemical owner shall proceed to pre-registration by completing/filling in the information for the chemical on web-based chemical registration or completing a hardcopy form and attaching it to the SDS. A sample of a web-based new chemical registration and hardcopy form is presented in Appendix D.

4.4 CHEMICAL REVIEW AND VERIFICATION

When pre-registration of new chemical is submitted via web-based system, this information is to be sent to notify the verification team of the preliminary risk assessment for new chemicals to conduct a chemical review and verification.

4.4.1 Safety Discipline

- Review and approve new chemicals through the web-based chemical registration.
- Identify National Fire Protection Association (NFPA) diamond signs.
- Identify hazardous chemicals and specify any required documents (SOR AOR 1) that are needed to submit to local authorities based on local law.
- Provide specific control or highlight measures that are very necessary to handle and store the chemical safely.

4.4.2 Health/Medic/Doctor Discipline

- Review and approve new chemicals through the web-based chemical registration.
- Identify the NFPA diamond signs.
- Identify and highlight health hazards.
- Provide advice and give comments for chemical owners/users in order to prevent Health hazards.

4.4.3 Environment Discipline

- Review and approve new chemicals through the web-based chemical registration.
- Provide advice and give comments for chemical owners/users to prevent environmental impact.

4.4.4 Permit & License Discipline

- Review and approve new chemicals through the web-based chemical registration.
- Identify dangerous goods in accordance with the local hazardous substance Act. Dangerous Goods type 4 are strictly banned/prohibited in Thailand (Exception: Certified Reference Materials (CRM) that are used for analytical laboratory analysis).
- Coordinate work with local authorities and prepare permit and licenses document to import chemicals before purchasing.

4.5 BANNED SUBSTANCES

For Thai Domestic Assets, all chemicals that are considered as Dangerous Goods Type 4 (Exception: CRM used for analytical laboratory analysis) shall be strictly banned/prohibited, in accordance with the hazardous substance Act.

For International Assets, all chemicals shall be considered as banned substances based on applicable local law and regulations, MOUs and cross-country agreement/treaties of chemical management that each country signed and committed to.

4.6 FINAL APPROVAL AND REGISTERED CHEMICALS

Chemicals can be purchased after approval from all disciplines during the preliminary risk assessment process. Web-based chemicals shall have an identity number generated, known as Registered Chemicals List (RCL) number, for approved chemicals. This RCL number is presented in the form of RCL-Approved Year-Running Number-Chemical Name. For example, RCL-2019-003-Methylene Chloride means Methylene Chloride has been finally approved and registered as the third chemical of year 2019.

There is no expiry date for RCL numbers. The RCL number of chemicals still remains valid until there is any change in composition. For this case, the chemical owner shall repeat the process of pre-registration and preliminary risk assessment for a new chemicals process.

The process overview of a web-based chemical registration is shown in Appendix E.

5. TRAINING

Everyone who is involved with chemicals, from purchasing, storing, handling, transporting, spill responding to disposing of all chemicals shall have a basic knowledge of chemical hazards and safe chemical handling. This basic knowledge of chemical hazards and safe chemical handling can be communicated and provided through appropriate training.

The chemical owner and site SSHE officer of each Asset shall identify the specific training requirements for everyone who is involved with chemicals and then assign the appropriate training.

Contractor shall provide basic knowledge of chemical hazards and safe chemical handling through either in-house or external training to their own Contractor personnel before commencing work with chemicals. Alternatively, the Contractor may seek support from PTTEP to provide the safe chemicals handling and storage for Train-the-Trainer. Afterwards, the Contractor trainer shall provide the training to their own personnel.

6. PURCHASING

Only chemicals with approval and RCL number can be purchased, including stock and direct purchasing. If there is any request for purchasing new chemicals without approval or RCL number from the chemical owner, the procurement team has the authority to reject this request.

If the new chemical has not been approved with an RCL number yet, the chemical owner must proceed to the preliminary risk assessment for a new chemical process which is explained earlier in Section 4.

Chemicals Delivery to Sites by Suppliers

Chemicals delivery to sites/warehouses by suppliers may be considered as SSHE contract mode 3, in accordance with SSHE Contractor management Procedure. SSHE Contract mode 3 means the Contractor/Supplier operates within its own SSHE Management System (SSHE MS) that has no interfaces with the Company SSHE MS and they are not required to report SSHE performance data including incidents to PTTEP. However, this does not exclude the possibility that the EP Company may wish to guide and influence SSHE performance under the contract/service.

Note: Chemical owners/users and procurement shall inform all suppliers that:

- SDS are delivered with chemicals. The SDS is explained in more detail in Appendix F.
- All chemical containers/packages are supplied with Globally Harmonized System of Classification and Labelling of Chemicals (GHS) label.
- Required documents such as SOR AOR 1 by Thai Law shall be available with the chemicals, which are applicable to Thai Domestic Assets.
- Supplier delivery trucks that enter any PTTEP premises are to comply with local law & regulations as well as United Nations (UN) Recommendations on the Transport of Dangerous Goods (UNRTDG).

7. LABELLING

All chemicals used in PTTEP premises shall be identified and their hazards are to be communicated through a GHS label. GHS label shall be applied to:

- All chemical drums/containers/packaging.
- Exception: chemical waste containers (Waste labels shall be applied in accordance with the PTTEP Waste Management Procedure).

GHS label description and format are shown in Appendix G.

Remark: The NFPA label is an optional step to be implemented for packaging/containers as well as transportation. The NFPA Label is explained more in detail in Appendix H.

8. TRANSPORTATION

The Logistics team shall ensure that transportation of hazardous substances is implemented in compliance with local law & regulations as well as International regulations, The International Civil Aviation Organization (ICAO)/International Air Transport Association (IATA) for air transportation, International Maritime Dangerous Goods (IMDG) for marine transportation, European Agreement Concerning the International Carriage of Dangerous Goods by Rail (RID) for rail transportation and

European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) for land transportation.

Remark:

- Personnel, who are involved with transport of dangerous goods/hazard substances by air, shall be trained in dangerous goods and be kept up with recurrent training within 24 months of previous training. Dangerous goods training must be approved by the appropriate authority of the State of the Operator in accordance with the provisions of Annex 6 - Operation of Aircraft.
- Personnel who are involved with marine transport of dangerous goods/hazard substances shall pass the certified training from IMDG.

Land Transportation

The major concerned hazards of chemical spills during land transportation are physical, health, and environmental hazards. A chemical land transportation accident has the potential to affect PTTEP reputation and stakeholders.

- **Competency of Driver for Carriage of Hazardous Substance**

Drivers for carriage of hazardous substances shall be provided appropriate training and have a specific license, in accordance with local law & regulations and ADR requirement.

- **Land Transport Vehicle Specification**

Land transport vehicles for carriage of hazardous substances shall be specifically designed, tested, certified in accordance with local law & regulations and ADR requirement.

- **Mixed Loading Prohibition**

Packages bearing different danger labels shall not loaded together in the same vehicle or container unless mixed loading is permitted. Guidance on mixed loading in the same vehicle or container is presented in the ADR requirement.

- **Placarding**

Placarding and marking of containers, bulk containers, tank containers, portable tanks and vehicles shall be identified with clear visibility, in compliance with local law & regulations as well as the ADR requirement. Transportation signs and a guidance on placard (UNRTDG Classification) are shown in Appendix I.

9. STORAGE

9.1 CHEMICAL INVENTORY

Chemicals in a warehouse/material yard shall be recorded in the chemical inventory list and required documents such as the SDS and Emergency Response Plan shall be in place. The First-in and First-out method shall be implemented for dispatching chemicals to users. A Chemical inventory list should contain the following information as per the guidance:

- Date of receiving, dispatching, expiry.
- Volume, number of containers/packaging, size of container.
- SDS, required documents such as SOR AOR 1 by Thai Law, GHS Label.

9.2 STORAGE AREA

Chemical storage areas, including indoor and outdoor areas, shall be allocated and designated. Chemical storage area specifications for construction shall be well designed in accordance with local law & regulations. Before construction the following items/topics should be taken into account, but are not limited to:

- Wall and fire wall;
- Floor;
- Door and Emergency Exit Door;
- Roof;
- Spill Retention Arrangements;
- Drainage;
- Ventilation System;
- Lighting System, Emergency Lighting, Electrical Appliance;
- Lightning Protection System;
- Hazardous Area Determination;
- Alarm System;
- Fire-fighting system including active and passive system;
- Water storage system for supplying water for an emergency;
- Warning Signs and Safety Signs;
- Eye wash station;
- Traffic Route and Dispatching point; and
- Spill Response Equipment, etc.

Chemicals and hazardous substances shall be segregated properly in the store in compliance with local law and regulations. Appendix J presents the Chemical and Hazardous Substances Storage Table which is applicable for Thailand.

Remark: For International Assets, where in case of no applicable local law & regulation to follow or comply with for chemical and hazardous substances segregation in storage area, the segregation guidance is provided and presented in Appendix K.

For marine transportation (Storage), chemical segregation shall conform to the IMDG, which is presented in Appendix L.

9.3 TEMPORARY STORAGE AREA AT WORKING AREAS

Sometimes, only a small and proper volume of chemicals is moved to a working area and left at the working area for stand-by use. For example, a scale inhibitor drum or container is left standing by the chemical injector tank to feed the production process. The onsite supervisor/chemical user shall pay attention to the following:

- Check the condition of packaging/container.
- SDS and GHS label is available at the working area.
- Segregate and identify the status of chemical containers whether “Full” or “Empty”.
- Empty chemical containers shall be returned to the warehouse/material yard for disposal.
- Barricade the temporary storage area at the working area to prevent access by unauthorized persons.
- Ensure availability of emergency eye wash station or portable eye wash.
- Chemical containers shall be placed inside the bund wall or on the spill canvas to prevent any chemical spill to the Environment.
- Provision of emergency response facilities (Spill and fire-fighting).

Contractor shall follow the above requirements and strictly follow the site rules about safe chemical handling and storage.

10. EMERGENCY RESPONSE AND INCIDENT REPORTING

10.1 EMERGENCY RESPONSE

The chemical owner and chemical user with the Asset team shall prepare and have an emergency response plan in place including for fire & explosion, spills to Environment, unintentional exposure to chemical users, etc., before using the chemical. The emergency response requirement is already given in the SDS of chemicals. Chemical users shall ensure that all emergency equipment and clean up equipment are available and functional on site. Emergency drills shall be scheduled and exercised periodically with support from Assets.

It is important to remark that when in doubt or in case of an emergency when handling or using chemicals, immediate contact with the chemical distributor or manufacturer shall be established.

10.2 CHEMICAL SPILL RESPONSE

For spill response, the chemical owner and chemical user with the Asset team shall develop a chemical spill response plan and encounter spill based on the site requirements.

For International Assets, a chemical spill response plan shall be developed and handled for all tiers of chemical spill incidents in compliance with local legislation and in-country regulations.

10.3 DECONTAMINATION

In case of a chemical spill to the Environment, the site SSHE officer shall arrive at the contamination area and assess the situation before the decontamination process. A specific decontamination plan shall be developed by site SSHE to comply with local legislation, International Standards, and SDS information.

10.4 INCIDENT REPORTING

In case of a chemical spill to Environment or loss of containment, no matter how small the volume is, it shall be considered and reported as an incident in accordance with the PTTEP Incident Management Standard.

11. WASTE MANAGEMENT AND DISPOSAL

When a chemical has expired or is no longer required for operations, including contaminated chemical containers/packages or contaminated chemical waste water, they shall be treated, managed and disposed of under the method in accordance with local legislation, International Standards as well as the PTTEP Waste Management Procedure.

Before transporting containers/packages to waste disposal locations which are approved by the local authority, all containers/packages that contain chemical waste shall be marked and controlled. A full set of SDS or brief SDS of disposed chemicals shall be handed in/submitted to both the transporting and waste disposal Service Companies for their safe operation.

12. PERSONAL PROTECTIVE EQUIPMENT (PPE)

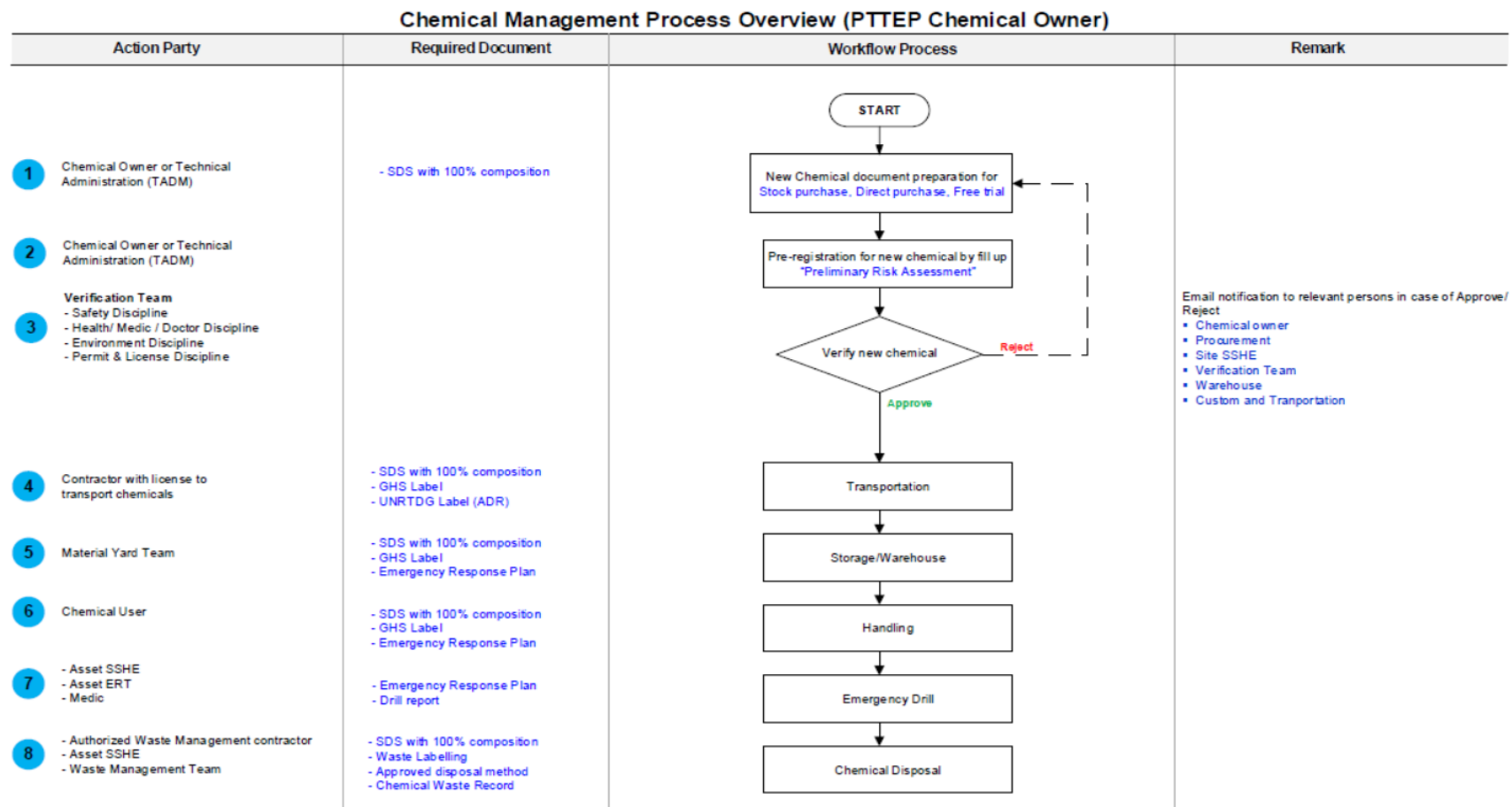
It is necessary to define and provide PPE for routine operations as well as for emergencies. It is mandatory to allocate appropriate PPE for specific chemical handling, as stated in the SDS.

Everyone who is involved with chemical handling shall be trained in the proper use and care of all necessary PPE.

For approved PPE Standards, this information can be obtained from PTTEP Operational Safety Management Standard, Appendix 1: Approved PPE Standard.

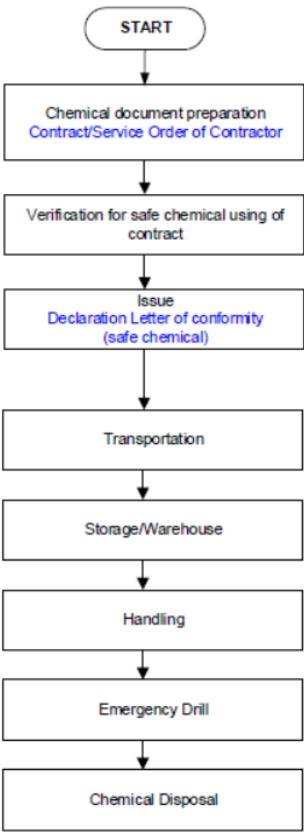
APPENDICES

APPENDIX A: CHEMICAL MANAGEMENT PROCESS OVERVIEW (PTTEP CHEMICAL OWNER)



APPENDIX B: CHEMICAL MANAGEMENT PROCESS OVERVIEW (CONTRACTOR CHEMICAL OWNER)

Chemical Management Process Overview (Contract/Service Order of Contractor)

Action Party	Required Document	Workflow Process	Remark
<p>1 - Contract Holder - Contractor</p> <p>2 Contractor</p> <p>3 Contractor</p> <p>4 Contractor with license to transport chemicals</p> <p>5 - Contract Holder - Contractor</p> <p>6 Chemical User</p> <p>7 - Contractor - CSR - Asset SSHE - Asset ERT - Medic</p> <p>8 - Authorized Waste Management contractor - Asset SSHE - Waste Management Team</p>	<p>- SDS with 100% composition - GHS Label - List of chemical for Contract/Service Order</p> <p>- SDS with 100% composition - GHS Label</p> <p>- SDS with 100% composition - GHS Label - UNRTDG Label (ADR)</p> <p>- SDS with 100% composition - GHS Label - Emergency Response Plan</p> <p>- SDS with 100% composition - GHS Label - Emergency Response Plan</p> <p>- Emergency Response Plan - Drill report</p> <p>- SDS with 100% composition - Approved disposal method - Chemical Waste Record - Waste Labelling</p>	 <pre> graph TD START([START]) --> A[Chemical document preparation Contract/Service Order of Contractor] A --> B[Verification for safe chemical using of contract] B --> C[Issue Declaration Letter of conformity (safe chemical)] C --> D[Transportation] D --> E[Storage/Warehouse] E --> F[Handling] F --> G[Emergency Drill] G --> H[Chemical Disposal] </pre>	<p>Verification in term of law/Regulations - Dangerous Goods type 1-4 - Hazardous chemical</p> <p>Issue to; - Contract Holder - Company Site Representative (CSR) - Asset SSHE - Medic</p> <p>Temporary storage at each site/project</p>

APPENDIX C: DECLARATION LETTER OF CONFORMITY (SAFE CHEMICAL)

Updated Declaration Letter of Conformity (Safe Chemical) form is available on [SSHE Intranet > SSHE MS > SSHE MS Documents > Corporate Tools > Appendix: Chemical Management Procedure](#)

Remark: This form is editable for International Assets. It is designed for Contractors in Thailand only.

Company's Original Letterhead

Declaration Letter of Conformity Safe Chemical

Date of Issue: DD/MM/YYYY

Type of Declaration: ☐ Under Contract ☐ Under Service Order

Purpose of Usage: ☐ Petroleum Industry ☐ Food & Drug ☐ Pest Control ☐ Household

☐ Others.....

Confirmation of Declaration Statement from Company

1. We declare that the product(s) listed below:

Chemical Trade Name	Quantity/Weight/Volume Used in PTTEP Premises

Is/are manufactured/imported by us and we are aware that chemical composition(s) is/are revealed and secret composition(s), known as secret recipe or Confidential Business Information (CBI) in Safety Data Sheet, fully comply with the following requirement:

- ☐ Is/are not dangerous goods type 4 (Except, certificate reference material (CRM) is used for analytical laboratory), according to Hazardous Substance Act, which is applicable for Thailand.
- ☐ Is/are dangerous goods type 1, 2 or 3. We are fully aware that we comply with the further requirements of control/ mitigation according to Hazardous Substance Act, which is applicable for Thailand.
- ☐ Is/are not dangerous goods, according to Hazardous Substance Act, which is applicable for Thailand.
- ☐ Is/are not hazardous chemical, according to Notification of Department of Labor Protection and Welfare about Hazardous Chemical List, which is applicable for Thailand.
- ☐ Is/are not prohibited/ banned according to the memorandum of understanding (MOU) and cross-country agreement/treaty of chemical management that each country signed and committed.
- ☐ Has/have the full detail of Safety Data Sheet (16 Elements) as well as GHS labelling on packaging.
- ☐ Has/have safe design of chemical packaging in compliance with local law and regulation as well as ADR requirement.

2. We declare that the information given above is true and correct.

3. We are aware that under local law and regulation, making a false declaration shall be subjected to the penalty from local authorities/ government, as well as, PTTEP.

Sincerely,

Signature of Authorized Signatory from Contractor
--

Name of Authorized Signatory

Designation of Authorized Signatory


Signature of Authorized Signatory from PTTEP

Name of PTTEP Contract Holder

PTTEP Acknowledgement

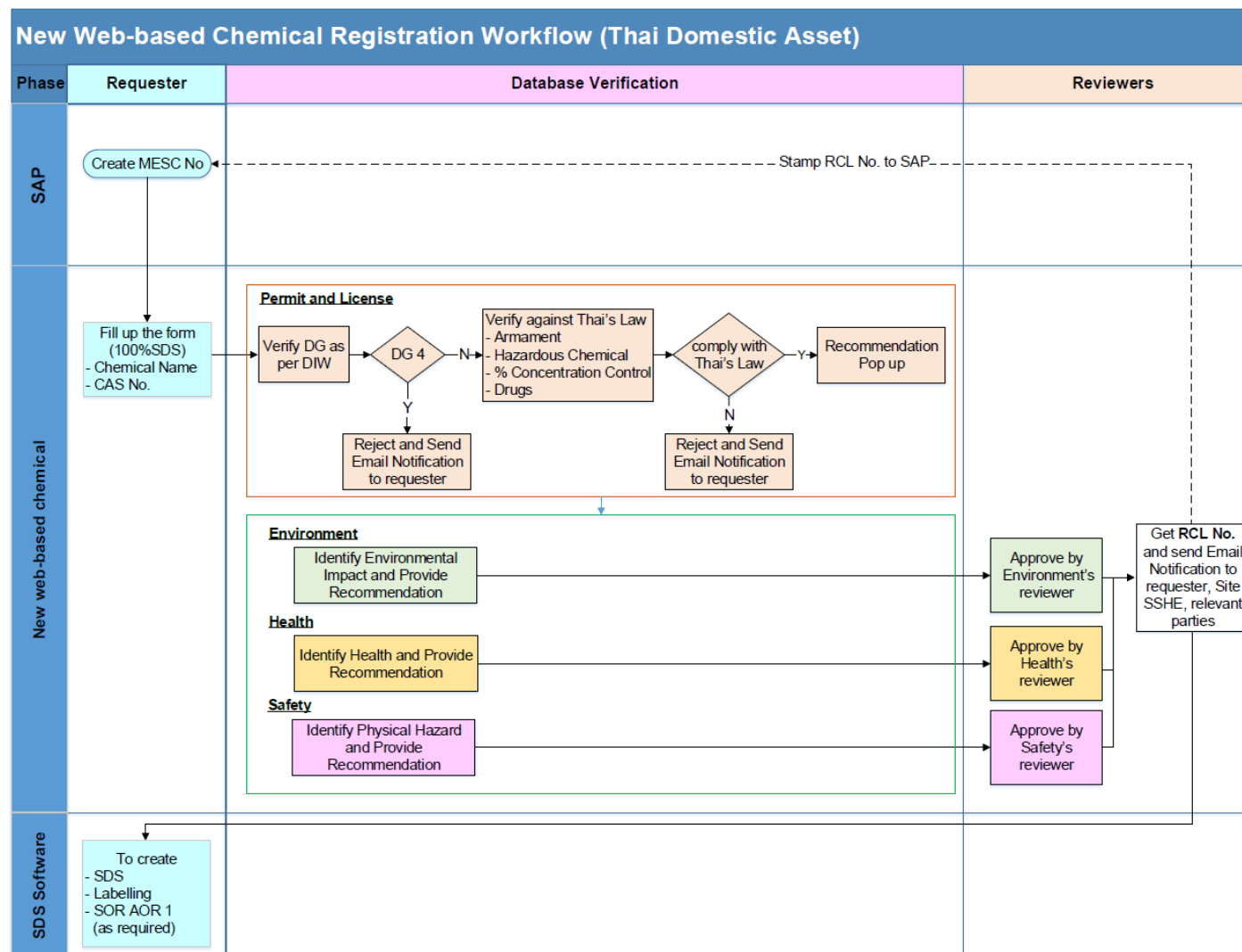
APPENDIX D: PRELIMINARY RISK ASSESSMENT FOR NEW CHEMICAL REGISTRATION FORM (THAI DOMESTIC ASSET)

Updated Preliminary Risk Assessment for New Chemical Registration form is available on [SSHE Intranet > SSHE MS > SSHE MS Documents > Corporate Tools > Appendix: Chemical Management Procedure](#)

	Preliminary Risk Assessment For New Chemical Registration Form (Thai Domestic Asset)		PDR.Ref.No. 11038-PDR-SSHE-505/38-R03	
			Rev.4 Date: Nov 2019	
			Page 1 of 1	
PART 1: to be completed by chemical owner				
RCL No. <input type="text"/>				
Product name/Commercial/Chemical Name:				
Composition Name:		CAS Number:		Weight (%):
Manufacturer/Trader Name:		Working Location (Asset/worksite):		
<input type="checkbox"/> Thai Domestic <input type="checkbox"/> International		Unit Volume (Kg or Liter):		
Propose of Usage:		Total Purchase Volume (Kg or Liter):		
		Mean of Disposal:		
Packaging:		Chemical will be routed to process system or export/product system		
		<input type="checkbox"/> No <input type="checkbox"/> Yes , Please Specify		
Type of Purchase		Special storage required?		
<input type="checkbox"/> Stock Purchase <input type="checkbox"/> Direct Purchase <input type="checkbox"/> Free Trial		<input type="checkbox"/> No <input type="checkbox"/> Yes , Please Specify		
Chemical Owner Name:		Department:		Date:
PART 2: to be completed by verification team				
Permit and License		Environment		
<input type="checkbox"/> Dangerous goods Type <input type="checkbox"/> Non Dangerous goods		Recommendation to prevent enironment impact:		
Composition name Cas No.				
Composition name Cas No.				
Official authority				
Recommendation.....				
Name:	Dept:	Date:	Name:	Dept:
		Date:		
Health		Safety		
<input type="checkbox"/> Acute toxicity <input type="checkbox"/> Germ cell mutagenicity		<input type="checkbox"/> Explosive <input type="checkbox"/> Pyrophoric solids		
<input type="checkbox"/> Skin corrosion/irritation <input type="checkbox"/> Carcinogenicity		<input type="checkbox"/> Flammable gas <input type="checkbox"/> Pyrophoric liquids		
<input type="checkbox"/> Serious eye damage/eye irritation <input type="checkbox"/> Reproductive toxicity		<input type="checkbox"/> Aerosols <input type="checkbox"/> Self-heating substances &mixtures		
<input type="checkbox"/> Aspiration hazard (Ingestion) <input type="checkbox"/> Specific target organ toxicity - repeated exposure		<input type="checkbox"/> Flammable liquids <input type="checkbox"/> Substances &mixtures, which in contact with water, emit flammable gases		
<input type="checkbox"/> Specific target organ toxicity-single exposure <input type="checkbox"/> Respiratory/skin sensitization		<input type="checkbox"/> Flammable solids <input type="checkbox"/> Oxidizing liquids		
Other/Recommendation.....		<input type="checkbox"/> Gas under pressure <input type="checkbox"/> Oxidizing solids		
		<input type="checkbox"/> Corrosive to metals <input type="checkbox"/> Oxidizing gas		
		<input type="checkbox"/> Self-reactive substances and Mixtures <input type="checkbox"/> Organic peroxides		
		<input type="checkbox"/> Desensitized Explosives		
Other/Recommendation.....				
Name:	Dept:	Date:	Name:	Dept:
		Date:		
Approved <input type="checkbox"/> Yes <input type="checkbox"/> No				
Comment (if any).....				



APPENDIX E: PROCESS OVERVIEW OF WEB-BASED CHEMICAL REGISTRATION



APPENDIX F: SAFETY DATA SHEET (SDS)

In accordance with Occupational Safety And Health Administration (OSHA), the Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012, requires that the chemical manufacturer, distributor, or importer provide SDSs (formerly MSDSs or Material Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards. The information contained in the SDS is largely the same as the MSDS, except now the SDSs are required to be presented in a consistent user-friendly, 16-section format which is explained below. The information contained in the SDS must be in **English** (although it may be in other languages as well).

1. Identification
2. Hazard(s) Identification
3. Composition/Information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal information
14. Transport information
15. Regulatory information
16. Other information

APPENDIX G: GHS LABELLING FORMAT

GHS stands for the Globally Harmonized System of Classification and Labelling of Chemicals. The GHS defines and classifies the hazards of chemical products and communicates Health and Safety information on labels and SDSs. The goal is that the same set of rules for classifying hazards, and the same format and content for labels and SDSs will be adopted and used around the world.

GHS covers all hazardous chemicals and may be adopted to cover chemicals in the workplace, chemicals in transport, consumer products, pesticides and pharmaceuticals. The target audiences for GHS include workers, transport workers, emergency responders and consumers.

Classification of the hazards of chemicals based on the GHS rules can be classified into 3 major hazard groups, namely physical hazards, health hazards, and environmental hazards. Within each of these hazard groups there are classes and categories which are summarized in the below table:

Table G1: GHS Hazard Classification

Physical Hazards (17 Classes)	Health Hazards (10 Classes)	Environmental Hazards (2 Classes)
Explosives	Acute Toxicity	Hazardous to the Aquatic Environment
Flammable Gases	Skin Corrosion/Irritation	Hazardous to the Ozone Layer
Aerosols	Serious Eye Damage/Irritation	
Oxidizing Gases	Respiratory or Skin Sensitization	
Gases under Pressure	Germ Cell Mutagenicity	
Flammable Liquids	Carcinogenicity	
Flammable Solids	Reproductive Toxicity	
Self-reactive Substances and Mixtures	Specific Target Organ Toxicity Single Exposure	
Pyrophoric Liquids	Specific Target Organ Toxicity Repeated Exposure	
Pyrophoric Solids	Aspiration Hazard	
Self-heating Substances and Mixtures		
Substances and Mixtures which, in Contact with Water, Emit Flammable Gases		

Physical Hazards (17 Classes)	Health Hazards (10 Classes)	Environmental Hazards (2 Classes)
Oxidizing Liquids		
Oxidizing Solids		
Organic Peroxides		
Corrosive to Metals		
Desensitized Explosives		

GHS-Compliant Label

In accordance with OSHA, chemical labels must include 6 distinct elements:



Figure G1: Example of a GHS-Compliant Label

- Product Identifier:** Normally placed in the upper left hand corner of the label, and corresponds with Section 1 of the SDS. It identifies the hazardous chemical by an appropriate term, and can include the chemical name, code number and/or batch number.
- Signal Word:** There are two types of signal words used to determine the severity of the hazard. For each label, either “Danger” (a more severe hazard) or “Warning” (a less severe hazard) must be used. There is only one word per label and, since hazards exist within a variety of classes, a “Danger”-level warning is used if it exists in any one class.
- Hazard Statement:** Describes the nature and degree of the hazard. Labels can contain multiple hazard statements, and should always be standardized and consistent within each hazard classification category.

4. **Precautionary Statement:** Instructs workers and users on measures for minimizing exposure and lowering the risk of harm from a chemical. There are four different types of precautionary statements that should be provided in the label: a prevention statement that describes how to minimize exposure, a response statement that describes what to do in case of exposure, a statement describing how the chemical should be stored, and a disposal statement with instructions for proper disposal of the chemical.
5. **Supplier Information:** Includes the name, address and telephone number of the chemical manufacturer, supplier or importer.
6. **Pictogram:** Composed of a hazard symbol surrounded by a red border to visually illustrate the hazards of a chemical so they are universally readable. There are currently nine pictograms, and depending on the chemical, a single label can contain multiple pictograms to specify multiple hazards.



Figure G2: GHS Pictograms

For more details, examples of GHS label arrangement on various types of packaging can be found and are presented in the globally harmonized system of classification and labelling of chemical (GHS), 7th revised edition.

APPENDIX H: NFPA704 LABEL SYSTEM (FIRE DIAMOND)

NFPA 704 is a labelling system used to identify hazardous materials. It is published by the National Fire Protection Association (NFPA). NFPA 704 is a supplemental labelling system specifically intended for emergency responders, though other people can read and benefit from these labels in normal working conditions. This NFPA label is an **optional step** to be implemented for packaging/containers as well as for transportation.

The NFPA 704 label contains lots of information in a compact and easy-to-understand format, which is essential in emergency situations. The most recognizable part of the label is the diamond, which is further broken up into four smaller diamonds. Each of the diamonds is color-coded and represents a different type of hazard. Within the diamond is a number (with the exception of the white diamond). The number corresponds to the level of danger a chemical poses.

The lower the number, the lower the hazard. The numbers range from zero to four, with zero representing no hazard at all, and four representing an extreme hazard. Each number also has a specific meaning based on which diamond it is in.



Figure H1: NFPA704 Label

Rating the severity of a hazard in each small diamond shape is explained in the table below.





Table H1: Criteria for Rating the Severity of the Hazard in each Small Diamond Shape





Health (Blue)	
0	Poses no Health hazard, no precautions are necessary and would offer no hazard beyond that of ordinary combustible materials (e.g., water).
1	Exposure would cause irritation with only minor residual injury (e.g., acetone).
2	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g., diethyl ether).
3	Short exposure could cause serious temporary or moderate residual injury (e.g., chlorine).
4	Very short exposure could cause death or major residual injury (e.g., hydrogen cyanide, phosphine, carbon monoxide).
Instability/Reactivity (Yellow)	
0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium).
1	Normally stable, but can become unstable at elevated temperatures and pressures (e.g. propene).
2	Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g., white phosphorus, potassium, sodium).
3	Capable of detonation or explosive decomposition, but requires a strong initiating source, must be heated under confinement before initiation, reacts explosively with water, or will detonate if severely shocked (e.g. ammonium nitrate, chlorine trifluoride).
4	Readily capable of detonation or explosive decomposition at normal temperatures and pressures (e.g., nitro-glycerine, chlorine azide, chlorine dioxide).





Table H1: Criteria for Rating the Severity of the Hazard in each Small Diamond Shape (continued)




Flammability (Red)	
0	Materials that will not burn under typical fire conditions (e.g., carbon dioxide), including intrinsically non-combustible materials such as concrete, stone and sand. (Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes.).
1	Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur (e.g., mineral oil). Includes some finely divided suspended solids that do not require heating before ignition can occur. (Flash point at or above 93.4°C (200°F).
2	Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur (e.g., diesel fuel) and some finely divided suspended solids that do not require heating before ignition can occur. Flash point between 38°C (100°F) and 93°C (200°F).
3	Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions (e.g., gasoline). Liquids having a flash point below 23°C (73°F) and having a boiling point at or above 38°C (100°F) or having a flash point between 23°C (73°F) and 38°C (100°F).
4	Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will burn readily (e.g., acetylene, diethylzinc). Includes pyrophoric substances. Flash point below 23°C (73°F).
Special (White)	
The white "special notice" area can contain several symbols. The following symbols are defined by the NFPA 704 Standard.	
OX	Oxidizer (e.g., potassium perchlorate, ammonium nitrate, hydrogen peroxide).
W	Reacts with water in an unusual or dangerous manner (e.g., cesium, sodium, sulfuric acid).
SA	Simple asphyxiant gas. Specifically limited to the following gases: nitrogen, helium, neon, argon, krypton and xenon.




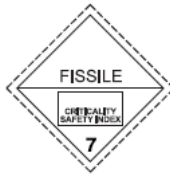
APPENDIX I: TRANSPORTATION SIGNS AND GUIDANCE ON PLACARDS (UNRTDG CLASSIFICATION)




Label model No.	Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 1 hazard: Explosive substances or articles						
1	Divisions 1.1, 1.2, 1.3	Exploding bomb: black	Orange	1 (black)		** Place for division – to be left blank if explosive is the subsidiary hazard * Place for compatibility group – to be left blank if explosive is the subsidiary hazard
1.4	Division 1.4	1.4: black Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm)	Orange	1 (black)		* Place for compatibility group
1.5	Division 1.5	1.5: black Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm)	Orange	1 (black)		* Place for compatibility group
1.6	Division 1.6	1.6: black Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm)	Orange	1 (black)		* Place for compatibility group

Label model No.	Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 2 hazard: Gases						
2.1	Flammable gases	Flame: black or white (except as provided for in 5.2.2.2.1.6 d))	Red	2 (black or white) (except as provided for in 5.2.2.2.1.6 d))		-
2.2	Non-flammable, non-toxic gases	Gas cylinder: black or white	Green	2 (black or white)		-
2.3	Toxic gases	Skull and crossbones: black	White	2 (black)		-
Class 3 hazard: Flammable liquids						
3	-	Flame: black or white	Red	3 (black or white)		-

Label model No.	Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 4.1 hazard: Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives						
4.1	-	Flame: black	White with 7 vertical red stripes	4 (black)		-
Class 4.2 hazard: Substances liable to spontaneous combustion						
4.2	-	Flame: black	Upper half white, lower half red	4 (black)		-
Class 4.3 hazard: Substances which, in contact with water emit flammable gases						
4.3	-	Flame: black or white	Blue	4 (black or white)		-
Class 5.1 hazard: Oxidizing substances						
5.1	-	Flame over circle: black	Yellow	5.1 (black)		-

Label model No.	Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 5.2 hazard: Organic peroxides						
5.2	-	Flame: black or white	Upper half red, lower half yellow	5.2 (black)		-
Class 6.1 hazard: Toxic substances						
6.1	-	Skull and crossbones: black	White	6 (black)		-
Class 6.2 hazard: Infectious substances						
6.2	-	Three crescents superimposed on a circle: black	White	6 (black)		The lower half of the label may bear the inscriptions: "INFECTIOUS SUBSTANCE" and "In the case of damage or leakage immediately notify Public Health Authority" in black colour

Label model No.	Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 7 hazard: Radioactive material						
7A	Category I – WHITE	Trefoil: black	White	7 (black)		Text (mandatory), black in lower half of label: “RADIOACTIVE” “CONTENTS ...” “ACTIVITY ...” One red vertical bar shall follow the word: “RADIOACTIVE”
7B	Category II – YELLOW	Trefoil: black	Upper half yellow with white border, lower half white	7 (black)		Text (mandatory), black in lower half of label: “RADIOACTIVE” “CONTENTS ...” “ACTIVITY ...” In a black outlined box: “TRANSPORT INDEX”; Two red vertical bars shall follow the word: “RADIOACTIVE”
7C	Category III – YELLOW	Trefoil: black	Upper half yellow with white border, lower half white	7 (black)		Text (mandatory), black in lower half of label: “RADIOACTIVE” “CONTENTS ...” “ACTIVITY ...” In a black outlined box: “TRANSPORT INDEX”; Three red vertical bars shall follow the word: “RADIOACTIVE”
7E	Fissile material	-	White	7 (black)		Text (mandatory): black in upper half of label: “FISSILE”; In a black outlined box in the lower half of label: “CRITICALITY SAFETY INDEX”

Label model No.	Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	Note
Class 8 hazard: Corrosive substances						
8	-	Liquids, spilling from two glass vessels and attacking a hand and a metal: black	Upper half white, lower half black with white border	8 (white)		-
Class 9 hazard: Miscellaneous dangerous substances and articles, including environmentally hazardous substances						
9	-	7 vertical stripes in upper half: black	White	9 underlined (black)		-
9A	-	7 vertical stripes in upper half: black; battery group, one broken and emitting flame in lower half: black	White	9 underlined (black)		-

Orange-Colored Plate

Transport units carrying dangerous goods shall display two rectangular orange-colored plates conforming to ADR specifications, set in a vertical plane. They shall be clearly visible. An example of an orange-colored plate with a hazard identification number and UN number is presented in the figure below:

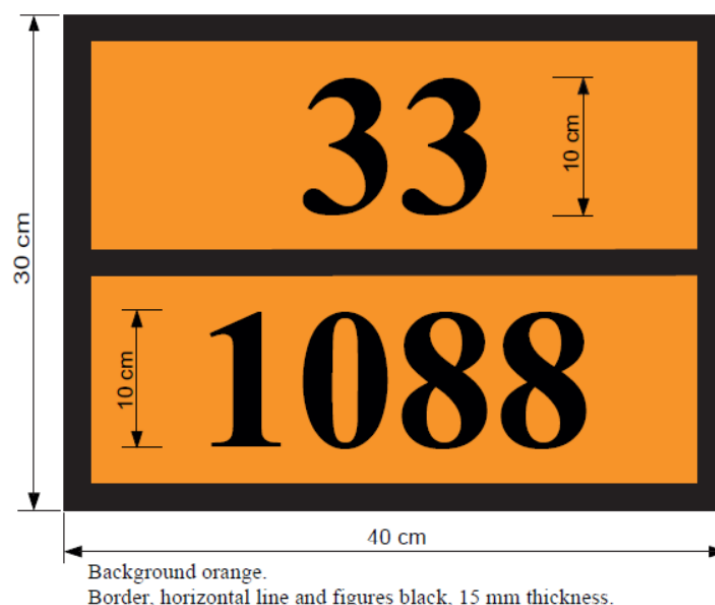


Figure I1: Example of Orange-Colored Plate with Hazard Identification Number and UN Number

The upper part of the plate represents a hazard identification number, also known as the Kemler Code (2 or 3 figures preceded, where appropriate, by the letter X. The figures indicate the following hazards:

- 2 Emission of gas due to pressure or to chemical reaction
- 3 Flammability of liquids (vapors) and gases or self-heating liquid
- 4 Flammability of solids or self-heating solid
- 5 Oxidizing (fire-intensifying) effect
- 6 Toxicity or risk of infection
- 7 Radioactivity
- 8 Corrosivity
- 9 Risk of spontaneous violent reaction
- X Prefixed by the letter "X". Indicates that the substance will react dangerously with water.

The lower part of the plate represents the UN number. UN numbers (United Nations numbers) are four-digit numbers that identify hazardous materials, and articles (such as explosives, flammable liquids, oxidizers, toxic liquids, etc.) in the framework of International transport. Some hazardous substances have their own UN numbers (e.g. acrylamide has UN 2074).

Example of Placarding and Marking of Vehicles

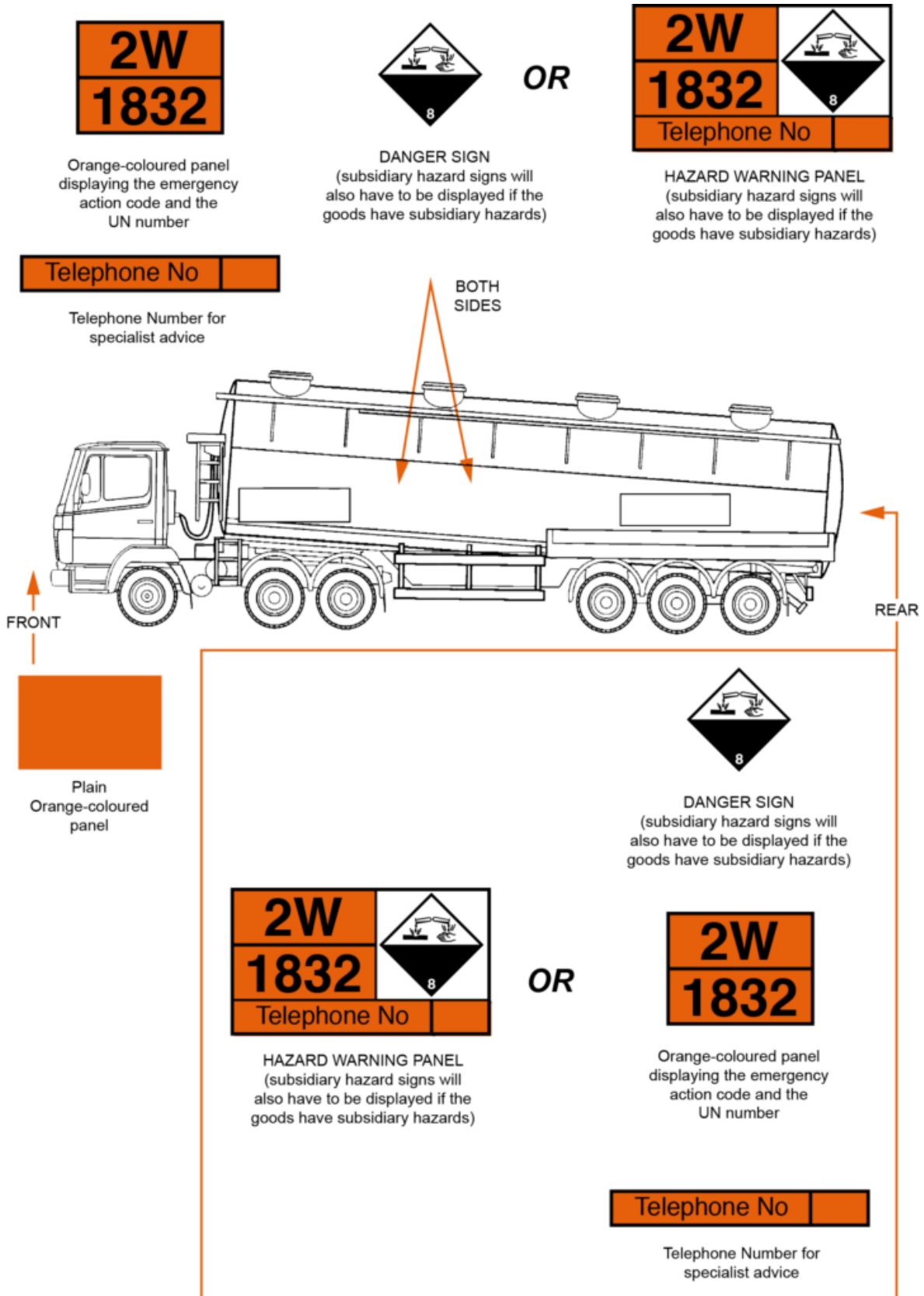


Figure I2: Example of Placarding and Marking of Vehicles

APPENDIX J: CHEMICAL SEGREGATION FOR LAND STORAGE (THAI DOMESTIC ASSET)

Storage Class		1	2A	2B	3A	3B	4.1A	4.1B	4.2	4.3	5.1A	5.1B	5.1C	5.2	6.1A	6.1B	6.2	7	8A	8B	10	11	12	13
Explosive	1	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pressurized, liquefied, dissolved gases	2A	-	17	4	-	-	-	-	-	-	-	-	10	-	-	-	-	18	5	-	-	5	-	-
Pressurized Small Gas Containers (aerosol can)	2B	-	4	-	1	1	-	-	-	-	-	-	10	-	2	2	-	18	4	4	6	6	6	6
Flammable liquids	3A	-	-	1	17	-	-	-	-	-	-	-	-	-	-	-	-	18	9	9	-	3	-	-
	3B	-	-	1	-	-	12	4	-	4	-	-	-	7	-	-	-	18	-	-	-	-	-	-
Flammable solids	4.1A	-	-	-	-	12	17	12	-	-	-	-	-	14	-	-	-	-	12	12	12	12	12	12
	4.1B	-	-	-	-	4	12	-	4	4	-	-	-	13	8	-	-	18	-	-	-	-	-	-
Substances liable to spontaneous combustion	4.2	-	-	-	-	-	-	4	-	4	-	-	-	-	-	-	-	18	4	4	4	4	-	-
Substance which in contact with water emit flammable gases	4.3	-	-	-	-	4	-	4	4	-	-	-	-	-	-	-	-	18	4	4	4	4	4	-
Oxidizing substances	5.1A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.1B	-	-	-	-	-	-	-	-	-	-	-	10	-	15	15	-	18	11	-	11	11	-	-
	5.1C	-	10	10	-	-	-	-	-	-	-	10	17	-	-	-	-	18	10	10	10	10	10	10
Organic peroxides	5.2	-	-	-	-	7	14	13	-	-	-	-	-	17	-	-	-	-	-	-	16	16	16	16
Combustible toxic substances	6.1A	-	-	2	-	-	-	8	-	-	-	15	-	-	-	-	-	18	-	-	-	3	-	-
Non-combustible toxic substances	6.1B	-	-	2	-	-	-	-	-	-	-	15	-	-	-	-	-	18	-	-	-	3	-	-
Infectious substances	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Radioactive substances	7	-	18	18	18	18	-	18	18	18	-	18	18	-	18	18	-	-	18	18	18	18	18	18
Combustible corrosive substances	8A	-	5	4	9	-	12	-	4	4	-	11	10	-	-	-	-	18	-	-	-	-	-	-
Non-combustible corrosive substances	8B	-	-	4	9	-	12	-	4	4	-	-	10	-	-	-	-	18	-	-	-	-	-	-
Combustible liquids (unless 3A or 3B)	10	-	-	6	-	-	12	-	4	4	-	11	10	16	-	-	-	18	-	-	-	-	-	-
Combustible solids	11	-	5	6	3	-	12	-	4	4	-	11	10	16	3	3	-	18	-	-	-	-	-	-
Non-combustible liquids	12	-	-	6	-	-	12	-	-	4	-	-	10	16	-	-	-	18	-	-	-	-	-	-
Non-combustible solids	13	-	-	6	-	-	12	-	-	-	-	-	10	16	-	-	-	18	-	-	-	-	-	-



mixed storage is permitted in principle



mixed storage is permitted under conditions specified by numbers



separated storage

Storage Conditions according to the Storage Table

1. Mixed storage of flammable liquids and pressured gas container (aerosol) is permitted under the following conditions: The compartment must be ventilated and the total number of goods stored should not exceed 60 % of the useable capacity of the warehouse. The total quantity of flammable liquids and contents of the aerosol dispenser should not exceed 100,000 liters.
2. Pressurized gas containers can be stored together with toxic substances under the following conditions: The size of the fire compartment must be limited to 60 m² and the maximum capacity of the goods is limited to 60 % of the total capacity of the compartment. The temperature of the room should not exceed above 50 °C. The compartment must be ventilated and must have two emergency exits. At each exit a 6-kg ABC powder fire extinguisher must be available. If the compartment is bigger than 60 m² then these goods have to be segregated by appropriate measures or separated.
3. Materials that cause the rapid start or spread of fire, such as packaging materials, should be separated from toxic substances or flammable liquids.
4. Mixed storage is permitted if the products do not react with each other in the event of an incident. This can be achieved by segregated storage, e.g. physical separation, large gaps, separate containment basins, storage in safety cabinets.
5. In the storage room in which the maximum of 50 filled pressurized gas cylinders are permitted to store, out of these numbers, not more than 25 pressurized gas cylinders with flammable, oxidizing or toxic gases are permitted. Combustible substances (8A and 11) (excluding flammable liquids) may be stored if the storage area is separated from the pressurized gas cylinders by a wall with at least 2-m height made of non-combustible materials and the combustible substances is stored away from the wall at least 5 m.
6. Mixed storage is permitted if the safety requirements for the entire stock are applied to meet the requirements of storage class 2B.
7. Mixed storage is permitted for flammable liquids having a flash point above 61 °C provided that the mixed storage will not react in the dangerous way (combustion and/or evolution of considerable heat, evolution of flammable, asphyxiant, and/or toxic gases, formation of corrosive substances, the formation of unstable substances, or dangerous rise in pressure). In such case there must be safety distances (5 metres) between those goods.
8. Flammable toxic substances (6.1A) may be stored together with flammable solids (4.1B).
9. Flammable liquids and corrosive substances in breakable containers must not be stored together except that the preventive measures are adopted to prevent the interaction with each other in the event of an incident.
10. Mixed storage is permitted except with flammable gases.
11. Additional preventive measures are required to get approval from the Department of Industrial Works for the safety storage.
12. Flammable solids (4.1A) having explosive property may be stored together with other substances of class 3B, 4.1B, 8A, 8B, 10, 11, 12 or 13 if the safety distances designed to prevent any danger to the surroundings of a warehouse are adequate or may be required to increase. This must be checked in each case.
13. Mixed storage of organic peroxides (5.2) and flammable solids (4.1B) is permitted.
14. Mixed storage with propellants and radical initiators is permitted if they do not contain any heavy metals.
15. Oxidizing substances (5.1B) may be stored together with combustible toxic substances (6.1A) and non-combustible toxic substances (6.1B) up to a total quantity of 20 tons by taking the following safety measures: The warehouse must have a fire alarm system, an automatic fire extinguishing system and a company-run semi-professional fire brigade (employed only for firefighting with the company owned fire truck. Quantities up to 1 ton don't require these additional safety measures.
16. When organic peroxides are stored together with other chemical and hazardous substances, it is necessary to check in each case whether the safety distances (between the warehouse and the communities) designed around the warehouse is adequate to prevent any dangers or it is needed to be increased.
17. Specific safety requirements of each substance shall be considered.
18. Radioactive substances should be considered separately according to the IAEA Safety Standards and with the approval of the competent authority.

Storage of Small-Quantity Substances

Storage of small-quantity substances in the storage facility means the storage of some specific chemical and hazardous substances in small quantities, which are substances in the storage classes 2B, 3A, 3B, 4.1B, 4.3, 5.1B, 5.1C, 5.2, 6.1A, 6.1B, 8A, 8B, 10, 11, 12 and 13 together with other kinds of substances of large quantities, where normally the mixed storage is prohibited but, if necessary, is temporarily permitted for storage in small quantities. However, it must be assured that:

1. The Safety measures necessary for other classes of chemical and hazardous substances are sufficient.
2. These small-quantity chemical and hazardous substances must not be interactive with other chemicals and hazardous substances already stored.
3. The distance measures are added, for example a 5-m safety distance, a safety cabinet or a special compartment for separate storage, etc.
4. A separation, e.g. walls or wire mesh, is installed for the storage of aerosols.

The storage of small-quantity chemicals and hazardous substances that are permitted shall be as per the following table:

Table J1: Storage of Small-Quantity Chemicals and Hazardous Substances

Storage Class	Storage Facility having storage capacity < 5,000 kg	Storage Facility having storage capacity > 5,000 kg
1	-	-
2A	-	-
2B	500 cans	500 cans
3A	Flammable liquids having flash point < 23°C, 100 liters; Flammable liquids having flash point between 23-60°C, 200 liters	Flammable liquids having flash point < 23°C, 100 liters; Flammable liquids having flash point between 23-60°C, 200 liters
3B	< 5,000 kg	5,000 kg
4.1A	-	-
4.1B	200 kg	200 kg
4.2	-	-
4.3	200 kg	-
5.1A	-	-
5.1B	200 kg	200 kg
5.1C	100 kg	-
5.2	100 kg (In small packaging with capacity of less than 100 g for solids and 25 ml for liquids only)	-

Storage Class	Storage Facility having storage capacity < 5,000 kg	Storage Facility having storage capacity > 5,000 kg
6.1A	50 kg	50 kg
6.1B	200 kg	200 kg
6.2	-	-
7	-	-
8A	< 5,000 kg	5,000 kg
8B	< 5,000 kg	5,000 kg
10	< 5,000 kg	5,000 kg
11	< 5,000 kg	5,000 kg
12	< 5,000 kg	5,000 kg
13	< 5,000 kg	5,000 kg










































Storage classes 1, 2A, 4.1A, 4.2, 5.1A, 6.2, and 7, even in small quantities, are not permitted for mixed storage with other storage classes. They must strictly comply with the Chemical and Hazardous Substances Storage Table, presented earlier in Appendix H.

APPENDIX K: CHEMICAL SEGREGATION FOR LAND STORAGE (GUIDANCE FOR INTERNATIONAL ASSET)

This chemical segregation of chemicals/dangerous substances table (*Reference: HSG71 Chemical warehousing, the storage of packaged dangerous substances*) is recommended and is a guide for International Assets, where in case there are no applicable local law & regulations to follow or comply with.

Chemicals stored according to this table must comply with the following instructions:

Segregate from	These combinations should not be kept in the same building compartment or outdoor storage compound. Compartment walls should be imperforate, of at least 30 minute fire resistance and sufficiently durable to withstand normal wear and tear. Brick or concrete construction is recommended. An alternative is to provide separate outdoor storage compounds with an adequate space between them.
Separation may not be necessary	Separation may not be necessary, but consult suppliers about requirements for individual substances. In particular, note that some types of chemicals within the same class, particularly Class 8 corrosives, may react violently, generate a lot of heat if mixed, or evolve toxic fumes.
ISOLATE	This is used for organic peroxides, for which dedicated buildings are recommended. Alternatively, some peroxides may be stored outside in fire resisting secure cabinets. In either case, adequate separation from other buildings and boundaries is required.
KEEP APART	Separate packages by at least 3 metres in the storeroom or storage area outdoors. Materials in non combustible packaging that are not dangerous substances and present a low fire hazard may be stored in the separation area. This standard of separation should be regarded as a minimum between substances known to react together readily, if that reaction would increase the danger of an escalating incident.
Segregate from KEEP APART	The lower standard refers to the outside storage of gas cylinders. Where non-liquefied flammable gases are concerned, the 3 metre segregation distance may be reduced to 1 metre.

CLASS		1	2		3	4			5		6	8	
Chemical Segregation By Chemical Group.		 	 		 		 		 	 	 	 	
Explosive	 1.0 Explosive		Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	
Compressed gases	2.1 Flammable		Segregate From	Keep Apart	Segregate from or Keep Apart	Segregate From	Segregate From	Segregate From	Segregate From	ISOLATE	Keep Apart	Keep Apart	
	 2.2 Non Toxic Non flammable		Segregate From	Keep Apart	Keep Apart	Keep Apart	Segregation may not be necessary	Segregate From	Segregation may not be necessary	Segregation may not be necessary	Segregation may not be necessary	Keep Apart	
	2.3 Toxic		Segregate From	Segregate from or Keep Apart	Keep Apart	Segregate From	Keep Apart	Segregate From	Keep Apart	Segregation may not be necessary	Segregate From	Segregation may not be necessary	Keep Apart
Flammable liquids	 		Segregate From	Segregate From	Keep Apart	Segregate From	Keep Apart	Segregate From	Segregate From	ISOLATE	Keep Apart	Keep Apart	
Flammable solids	4.1 Readily combustible		Segregate From	Segregate From	Segregation may not be necessary	Keep Apart	Keep Apart	Keep Apart	Segregate From	Segregate From	Segregate From	Keep Apart	Segregation may not be necessary
	 4.2 Spontaneously combustible		Segregate From	Segregate From	Segregate From	Segregate From	Keep Apart	Keep Apart	Keep Apart	Segregate From	ISOLATE	Keep Apart	Keep Apart
	4.3 Dangerous when wet		Segregate From	Segregate From	Segregation may not be necessary	Keep Apart	Segregate From	Keep Apart	Keep Apart	Keep Apart	Segregate From	Segregation may not be necessary	Segregation may not be necessary
Oxidising substances	5.1 Oxidising substance			Segregate From	Segregate From	Segregation may not be necessary	Segregation may not be necessary	Segregate From	Segregate From	Keep Apart	Segregate From	Keep Apart	Keep Apart
	5.2 Organic peroxide		Segregate From	ISOLATE	Segregate From	Segregate From	ISOLATE	Segregate From	ISOLATE	Segregate From	Segregate From	Keep Apart	Keep Apart
Toxic	   TOXIC		Segregate From	Keep Apart	Segregation may not be necessary	Segregation may not be necessary	Keep Apart	Keep Apart	Keep Apart	Segregation may not be necessary	Keep Apart	Keep Apart	Segregation may not be necessary
Corrosive	 		Segregate From	Keep Apart	Keep Apart	Keep Apart	Keep Apart	Segregation may not be necessary	Keep Apart	Segregation may not be necessary	Keep Apart	Keep Apart	Segregation may not be necessary

APPENDIX L: CHEMICAL SEGREGATION FOR MARINE STORAGE (IMDG)

Class	1.1 1.2 1.5	1.3 1.6	1.4	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7	8	9
Explosives 1.1 1.2 1.5	X	X	X	4	2	2	4	4	4	4	4	4	2	4	2	4	X
Explosives 1.3 1.6	X	X	X	4	2	2	4	3	3	4	4	4	2	4	2	2	X
Explosives 1.4	X	X	X	2	1	1	2	2	2	2	2	2	X	4	2	2	X
Flammable gases 2.1	4	4	2	X	X	X	2	1	2	X	2	2	X	4	2	1	X
Non-toxic, non-flammable gases 2.2	2	2	1	X	X	X	1	X	1	X	X	1	X	2	1	X	X
Toxic gases 2.3	2	2	1	X	X	X	2	X	2	X	X	2	X	2	1	X	X
Flammable liquids 3	4	4	2	2	1	2	X	X	2	1	2	2	X	3	2	X	X
Flammable solids 4.1	4	3	2	1	X	X	X	X	1	X	1	2	X	3	2	1	X
Substances liable to spontaneous combustion 4.2	4	3	2	2	1	2	2	1	X	1	2	2	1	3	2	1	X
Substances which, in contact with water, emit flammable gases 4.3	4	4	2	X	X	X	1	X	1	X	2	2	X	2	2	1	X
Oxidizing substances (agents) 5.1	4	4	2	2	X	X	2	1	2	2	X	2	1	3	1	2	X
Organic peroxides 5.2	4	4	2	2	1	2	2	2	2	2	2	X	1	3	2	2	X
Toxic substances 6.1	2	2	X	X	X	X	X	X	1	X	1	1	X	1	X	X	X
Infectious substances 6.2	4	4	4	4	2	2	3	3	3	2	3	3	1	X	3	3	X
Radioactive materials 7	2	2	2	2	1	1	2	2	2	2	1	2	X	3	X	2	X
Corrosives 8	4	2	2	1	X	X	X	1	1	1	2	2	X	3	2	X	X
Miscellaneous dangerous substances and articles 9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Numbers and symbols relate to the following terms as defined in this section:

1	1 – “Away from” or > 3 m
2	2 – “Separated from” or > 6 m
3	3 – “Separated by a complete compartment or hold form” or > 12 m
4	4 – “Separated longitudinally by an intervening complete compartment or hold from” or >24 m
X	X – The segregation, if any, is shown in individual schedules

ROLES AND RESPONSIBILITIES

Roles	Responsibilities
Document Owner	<p>The owner of the Procedure is the VP, Safety Management Department, with responsibilities for:</p> <ul style="list-style-type: none"> ■ Issuing the Chemical Management Procedure and its revisions. ■ Ensuring effective implementation of the Procedure.
Document Custodian	<p>The custodian of the Procedure is the Manager, Operational Safety Section, with responsibilities for:</p> <ul style="list-style-type: none"> ■ Identifying deficiencies or potential improvements. ■ Initiating periodic revision. ■ Maintaining revision history and document status register.
Asset Manager	<ul style="list-style-type: none"> ■ Ensure chemical management is maintained and implemented effectively to comply with this Procedure, local law, and International Standards. ■ Ensure chemical management at site is audited and ensures that a chemical site inspection is conducted periodically. ■ Ensure adequate and competent personnel to handle chemicals. ■ Ensure proper storage space and equipment, including PPE are allocated ■ Ensure chemical management at site meets the requirements of this Standard, local law, and International Standards. ■ Ensure that a contingency plan and emergency response plan for chemicals are in place and effective.
Chemical Owner (example: Project Owner, Project Engineer, Contract Holder, Superintendent, Supervisor, Technical Administration)	<ul style="list-style-type: none"> ■ Follow and comply with Chemical Management Procedure. ■ Ensure all new chemicals obtain approval from a preliminary risk assessment. ■ Ensure full details of the safety data sheet and labelling of all chemicals are available and easy to access for the chemical users, safety personnel and medics. ■ Ensure all personnel who handle chemicals are competent and are provided training. ■ Ensure all on-site chemicals are handled, stored, and disposed of safely.

Roles	Responsibilities
Chemical Owner (continued)	<ul style="list-style-type: none"> ■ Prepare a contingency plan and emergency response plan for chemicals, with the Asset team, that are in place and communicated to chemical users and emergency responders. Ensure emergency drills are conducted periodically. ■ Monitor and manage an inventory of chemicals and provide proper chemical containers in case of any volume transferring.
Chemical User (example: Supervisor, Foreman, Operator, Technician)	<ul style="list-style-type: none"> ■ Pass training for chemical management as required by local law or appropriate training and be assessed as “Competent” to use, handle, store, transport chemicals. ■ Strictly follow the SDS and clearly understand the details of the SDS before handling chemicals. SDS shall be easy to access at working areas, with the site medic and the site safety room. ■ Ensure that globally harmonized system of classification and clear and visible labelling of chemicals (GHS label) and chemicals warning signs are place. ■ Wear PPE properly and ensure it is in good condition. ■ Maintain the “Chemical Inventory” record, so that it is kept updated during its life cycle. ■ Identify chemical hazards & risks, control measures in the Job Safety Analysis (JSA) and communicate the JSA to colleagues or line under command. ■ Conduct emergency drills or chemical spill drills periodically with the Asset team. ■ In case of a spill or emergency, stop the leak and perform chemical spill recovery.
Corporate Safety	<ul style="list-style-type: none"> ■ Review and approve all new chemicals registration through a preliminary risk assessment. <ul style="list-style-type: none"> □ For Thai Domestic Assets, a preliminary risk assessment for new chemicals shall be conducted and reviewed via the web-based chemical registration. □ For International Assets, a preliminary risk assessment for new chemicals shall be conducted and reviewed via a specific system. International Assets shall set up a verification team for preliminary risk assessment for new chemicals. ■ Monitor and review any updates of local law and International Standards periodically.

Roles	Responsibilities
Corporate Safety (continued)	<ul style="list-style-type: none"> ■ Give advice to chemical owners for reviewing the preliminary risk assessment for new chemicals. ■ Develop and provide chemical management training for personnel who are involved with chemicals. ■ Monitor and conduct chemical audits in compliance with this Procedure.
Corporate Environment	<ul style="list-style-type: none"> ■ Review and approve all new chemicals registration through a preliminary risk assessment. <ul style="list-style-type: none"> □ Verify and provide advice to prevent any environmental impact in a preliminary risk assessment.
Corporate Health	<ul style="list-style-type: none"> ■ Review and approve all new chemicals registration through a preliminary risk assessment. <ul style="list-style-type: none"> □ Verify and highlight Health hazards with specific controls in a preliminary risk assessment.
Site SSHE	<ul style="list-style-type: none"> ■ Support Asset manager to ensure that chemical management Procedure is followed and implemented effectively. ■ Keep a record of chemical lists, SDS packages, GHS labels. ■ Support Corporate safety to arrange or provide chemical management training for personnel who are involved with chemicals. ■ Ensure implementing control of safe work practices and operational control in accordance with this Procedure. ■ Advise chemical users at site on how to work with chemicals safely. ■ Communicate chemical management Procedure and chemical awareness campaigns to personnel at site. ■ Support chemical spill exercises and emergency during spill and clean-up.
Chemical Purchaser	<ul style="list-style-type: none"> ■ Follow chemical management Procedure, especially section 6: Purchasing.
Permit and License Team	<ul style="list-style-type: none"> ■ Review and approve all new chemicals registration through a preliminary risk assessment. <ul style="list-style-type: none"> □ Verify all new chemicals used in PTTEP premises are not banned as dangerous good type 4 (Exception: CRM is used for analytical laboratory work), according to Hazardous Substance Act. ■ Coordinate with local authorities and prepare permit and licenses documents to import chemicals before purchasing.

Roles	Responsibilities
Warehouse Personnel	<ul style="list-style-type: none"> ■ Maintain safe and good housekeeping for storing, handling and transporting chemicals both in the warehouse, including areas indoors and outdoors. ■ Check and ensure that the SDS, GHS label and safety signs are in place and visible. ■ Ensure chemicals are segregated and kept in storage/warehouse and chemical transportation in compliance with local law, this Standard, and International Standards. ■ Ensure all fire protection systems, spill protection, ventilation systems are well designed and in place for the chemical storage area/warehouse. ■ Ensure all personnel who are involved with chemicals are competent and have passed the appropriate training. ■ Ensure that the contingency plan and emergency response plan for chemicals are in place and effective, and that the chemical spill drill and chemical-on-fire drills are conducted periodically with the Asset team.
Customs and Transportation Support Team	<ul style="list-style-type: none"> ■ Identify safety scope for safe transportation of dangerous goods/chemicals in the contract and services order. ■ Ensure that Contractors under contract/service order of transportation of dangerous goods/chemicals comply with local law and regulations as well as the ADR requirements.
Contractor	<ul style="list-style-type: none"> ■ Strictly follow and manage chemicals used in the PTTEP premises are in compliance with this Procedure, local law, and International Standards. ■ Collect and combine all chemicals documents including SDSs, GHS labels, and warning signs. Then, submit these documents to the Contract Holder, site safety, and site medic prior to commencing work. ■ Under the contract/service order, conduct self-verification of safe chemicals and issue declaration letter of conformity of safe chemicals. Then, this document shall be submitted to the Contract Holder, Company site representative and Asset safety officer. ■ Provide appropriate chemical awareness training to all personnel who are involved with chemicals. Maintain the record of training.

Roles	Responsibilities
Contractor (continued)	<ul style="list-style-type: none"><li data-bbox="598 322 1401 394">■ Allocate equipment and proper PPE to personnel for managing and handling chemicals safely.<li data-bbox="598 416 1401 528">■ Provide emergency response equipment at work sites such as spill recovery kits, fire extinguishers, and eye wash stations/ portable.

DEFINITION AND ACRONYMS

Set out below are common specific terms presented in alphabetical order:

Term	Definition
As Low As Reasonably Practicable (ALARP)	A term used to define tolerable risk acceptance only where risk reduction is impractical or where a cost benefit analysis has been carried out and a judgment made that the cost of further risk reduction is grossly disproportionate when compared to the actual risk reduction that would be achieved.
Asset	Refers to an operating Asset, site, or location within a respective Function Group.
Certified Reference Materials	Reference material accompanied by a certificate, one or more of whose property values are certified by a Procedure which establishes its traceability to an accurate realization of the unit in which the property values are expressed, and for which each certified value is accompanied by an uncertainty at a stated level of confidence.
Corporate	Refers to the PTTEP business groups hierarchically above Asset level, and located in the PTTEP headquarters, Bangkok.
Department	A subgroup within a Function Group, Division or Asset.
Division	A business group may have one or more distinct groups within its hierarchy. These are referred to as Divisions.
Function Group	Refers to a Corporate level business group. These may have associated Divisions, Departments, or operational Assets within their hierarchy.
Hazard	A hazard is an intrinsic property of anything with the potential to cause harm. Harm includes ill-health, and injury, damage to property, plant, products or the Environment, production losses, or increased liabilities
Hazard Identification	The process to identify potential sources of harm to people, the environment, asset, reputation, business or schedule.
Risk Assessment	The process covering hazard identification, risk analysis and risk evaluation.
Waste	<p>a) Any discarded, rejected, abandoned, unwanted or surplus matter, whether or not intended for sale or for recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter; or</p> <p>b) Anything declared by regulation to be waste, whether of value or not.</p>

Acronyms	Description
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARP	As Low As Reasonably Practicable
CBI	Confidential Business Information
CRM	Certified Reference Materials
DIW	Department of Industrial Work
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
HCS	Hazard Communication Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
JSA	Job Safety Analysis
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
OSHA	Occupational Safety And Health Administration
PO	Purchase Order
PPE	Personall Protective Equipment
PR	Purchase Requisition
RCL	Registered Chemicals List
RID	European Agreement Concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
SSHE MS	Safety, Security, Health and Environment Management System
UN	United Nations
UNRTDG	UN Recommendations on the Transport of Dangerous Goods

REFERENCES

Document Code	Document Title
PTTEP SSHE Controlling Documents	
11038-STD-SSHE-305	SSHE Training and Competency Standard
11038-STD-SSHE-401	SSHE Risk Management Standard
SSHE-106-STD-540	Operational Safety Management Standard
SSHE-106-STD-560	Occupational Health Management Standard
11003-PDR-SSHE-403-001	Health Risk Assessment Procedure
SSHE-106-PDR-521	Waste Management Procedure
Other Reference Documents	
-	European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), 2019
-	Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 7 th Edition, 2017
-	Hazardous Substance Act BE 2562
-	International Maritime Dangerous Goods (IMDG) Code, 2018 Edition
-	Ministerial Regulation on the Prescribing of Standards for Administration, Management and Performance of Occupational Safety, Health and Work Environment in Relation to Hazardous Chemicals B.E.2556 (A.D.2013)
-	Notification of Department of Industrial Works for Safe Chemicals and Dangerous Goods Manual, BE 2550
HSG71	Chemical Warehousing, the storage of packaged dangerous substances, 4 th Edition, 2009.
NFPA 704	Standard System for the Identification of the Hazards of Materials for Emergency Response, 2017 Edition

REVISION HISTORY

Rev.	Description of Revision
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0	Authorized by: CSH, Date: November 2019
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| | <ul style="list-style-type: none">■ This new Procedure is downgraded from Standard.■ Revised the number of physical, health, and environmental hazards elements in compliance with globally harmonized system of classification and labelling of chemicals (GHS), 7th Edition, issued Jul 2019.■ Revised role and responsibility of personnel involved with chemical management■ Revised scope of this Procedure, especially the exemption part.■ Added hierarchy of document compliance in the scope.■ Classified chemical management process into 2 main categories which are where PTTEP is the chemical owner and where Contractor is the chemical owner.■ Revised preliminary risk assessment process for new chemicals.■ Revised banned substances and removed the previous banned substance table.■ Added Contractor Verification of Safe Chemicals before commencing work under contract/service order. |
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HSE



GREATWALL DRILLING COMPANY

OIL, CHEMICAL HANDLING AND EMERGENCY PLAN PROCEDURE

HSE-03-009

REVISION SHEET

Rev. N°	Reason For Revision	Date	Prepared By	Checked By	Approved By
01	Issued for comments	06.12.2001	LD/SD/XH		
02	Issued for approval	18.01.2002	LD/SD/XH		
03	Issued for comments	25.10.2010			
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05	Issued for comments	29.09.2019	NC		
05	Issued for comments	15.07.2020	NC		

CONTROL OF THIS MANUAL

The HSE Department is responsible for the development and maintenance of this procedure.
All subsequent revisions of the procedure shall be approved by the HSE Manager.

REGISTRATION AND DISTRIBUTION

The procedure is issued as follows:

<u>Controlled copies</u>	<i>The controlled copies are distributed to personnel for regular use and shall be systematically updated. Controlled copies are issued to the GWDC library, clients (upon request), all sites/units and major subcontractors.</i>
<u>Uncontrolled copies</u>	<i>Uncontrolled copies are distributed for information and information purposes. Such manuals shall be properly marked, and are NOT subject to revisions.</i>

The HSE Department shall keep the track of the registration and distribution of the HSE Procedures. All controlled copies shall be registered and stamped as “CONTROLLED COPY” before delivery to the end user. The end user shall sign upon receipt of the controlled copy of the HSE Procedures. Every controlled copy shall be returned back to the HSE Department if the end user has no any further need for it. The HSE Department is responsible to send updates for all the controlled copies after revisions. This shall be achieved as replacement of the particular pages subjected to the revisions or as a replacement of the whole Procedure. Uncontrolled copy stamped as “CONTROLLED COPY” before delivery and is not subject to update upon revisions.

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1 GENERAL

1.1 PURPOSE AND SCOPE

This Procedure details oil and chemical handling procedures for oil and chemicals to proper handling and management spill situations arising out of any Greatwall Drilling Company drilling operation activity.

The “Oil, Chemicals handling and Emergency plan Procedure” is part of the Greatwall Drilling Company Emergency Response Documentation (ref. HSE-03-007).

Response capabilities and times (if applicable) are outlined in the well specific environmental risk analysis, which are usually provided by the Client. These analyses include details of the means to comply with, or exceed, the minimum requirements for oil spill recovery capability.

1.2 RESPONSIBILITY

HSE Manager is responsible that this procedure is updated after the organizational or operational changes, if necessary.

1.3 NON CONFORMANCE TREATMENT

All deviations from the guidelines given in this procedure shall be treated in accordance with HSE-03-014 “Non-Conformance and Corrective Action procedure”.

2 DEFINITIONS

For the purpose of response planning, Greatwall Drilling Company will recognize two categories of oil spill:

1. Minor

Spill can be handled by Rig site and/or area resources or it will disperse naturally and rapidly without posing any threat to sensitive areas or vulnerable resources.

2. Major

This category includes large incidents or ongoing spills (e.g. blowout) which have the potential to cause significant pollution impact. Spills which cannot be immediately dealt with using unit and/or area resources and require the mobilization of external equipment and personnel to facilitate clean-up and recovery. The term oil spill includes accidental or deliberate discharge of diesel, refined oils, crude, condensate, water with an oil content above statutory discharge limits, drilling mud base oils and oil based mud, drop-out from flares, chemicals etc.

3. Acute pollution

Acute pollution means significant pollution that occurs suddenly and that is not permitted. A spill greater than 1 m³ (35 cf.) must always be considered as acute pollution.

4. Oil

Oil includes crude and refined hydrocarbons such as diesel, hydraulic fluid, and lube oil. It can also include oily sludge, oil refuse, or other petroleum-related products or by-products.

5. Hazardous substances

Hazardous substances include glycol, methanol, drilling mud, seawater, corrosion inhibitors, and produced water, essentially anything other than potable water. All chemical spills should be reported so that potential exposure hazards can be evaluated, and disposal can be managed safely.

6. On pad

On pad includes gravel pads and roads, well houses and unlined well cellars. Depending on the type of construction, some cellars are considered secondary containment.

7. Secondary containment

Secondary containment means built-in pits, dikes, berms, portable drip pans, liners, metal skids, or other impermeable devices. Reporting is required to ensure proper cleanup and disposal, but spills in secondary containment are not necessarily reportable to the local government.

3 OIL AND CHEMICAL HANDLING GUIDELINES

Any incident that releases a contaminant into the environment can be considered a spill, and will be taken very seriously by Greatwall Drilling Company. The regulations that apply to spill prevention, reporting, and response are complex, and the penalties for noncompliance are severe.

Most of spills are small drips and leaks onto gravel pads, from vehicles and equipment, but preparation must be made to respond to the most catastrophic event. All spills in operating areas must be cleaned up to the satisfaction and the appropriate regulatory agencies.

Prevention shall be the first and most effective line of defense against spills and it is everyone's responsibility.

Many spills occur during routine fueling, pumping, and other fluid transfer operations. Most of these spills can be avoided by paying attention and taking simple precautions. Greatwall Drilling Company has established field-wide fluid transfer guidelines, which are summarized below.

1. Check all vehicles and equipment. If a leak is apparent, or there are other obvious problems with the equipment stop the job and have repairs done.
2. Surface liners may be used to contain leaks for a short time during critical operations; however, liners are not an acceptable substitute for maintenance.
3. Park vehicles and equipment away from water bodies, forest and wildlife habitat. Do not park on the edges of pads.
4. Position equipment so that valves, piping, tanks, etc are protected from damage by other vehicles or equipment.
5. Verify that adequate surface liners and sorbents are on hand.
6. Inspect hoses, connections, valves, etc., before starting any fluid transfers. Be sure that valves are in the proper on/off position and each connection is tightened properly.
7. Before starting, check all tank and container levels, valves, and vents to prevent overfilling or accidental releases.
8. Surface liners are required under all potential spill points.
9. Maintain a constant line-of-sight with critical components throughout the transfer procedure. Be prepared to stop the transfer immediately if you notice any leak. Do not attempt to fix a leak while fluid is being transferred.
10. Never leave fluid transfer operations unattended.
11. After the transfer is complete, continue to take these precautions while breaking connections.
12. When finished, check the area for spills. Report all spills immediately to the appropriate number in your operating area.

4 LINER AND CHEMICAL BUNDLING USE PROCEDURE

Operating procedure for liner use and chemical bund must be followed at all Rig sites.

Each operating area can add site-specific requirements to the requirements for liners use.

Liners are not a substitute for good maintenance. Any unit that is dripping or leaking must be repaired as soon as possible.

4.1 OFF THE PAD

Maximum protection of the soil and surface waters is the primary objective. Appropriately sized liners must be placed under the radiator, engine, or other areas of potential leakage whenever equipment is operating, or parked and running. Liners should be used as needed to prevent drips and small spills under parked and non-operating equipment. Equipment with known leaks must be immediately released from the job.

Liners are specifically required as follows:

- Under all support equipment (heaters, compressors, generators, etc.)
- Under heavy and light duty parked equipment (dozers, loaders, cranes, trucks, etc.)
- During all fluid transfers, at all connection points, from the beginning of hook-up through disconnection
- Under fuel/fluid storage containers
- Chemical sack and fluid containment out of concrete pad with temporary bundling.

4.2 ON THE PAD

Gravel protection, good housekeeping, and spill prevention are the primary objectives. Equipment with known leaks must be immediately released from the job if liners are not available and properly used.

Surface liners or drip pans should only be used as a temporary measure until the equipment is repaired. "Known leakers" that are not repaired promptly will be removed from the job.

Appropriately sized liners must be placed under the radiator, engine, or other areas of potential spills/leaks as follows:

- Under well service equipment (wireline, slickline, coil tubing, etc.)
- Under all support equipment without built-in containment systems (heaters, compressors, bleed tanks, etc.)
- Under all stationary heavy equipment (loaders, cranes, etc.)

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- During all fluid transfers, at all connection points, from the beginning of hook-up through disconnection
- Under all drums used as primary containment for waste fluids (bleed backs, pressure relief, temporary storage)

4.3 PARKING AREAS

Appropriately sized surface liners or drip pans are required under any parked vehicle or equipment, whether it is running or not, if it is dripping engine oil or other fluids.

5 SECONDARY CONTAINMENT

Secondary containment is required by law around many above ground storage tanks. In general, containment must be able to hold 110% of the volume of the largest tank.

All oil storage tanks larger than 660 gallons require impermeable containment (e.g., dikes or catchment basins) sized for the largest single compartment or tank. These tanks should be located to ensure that oil will not reach navigable water. All tanks larger than 10,000 gallons, including portable tanks, which contain petroleum-based products must have 110% containment.

Well cellars and well houses

Most new wells are equipped with steel- or concrete-lined cellars that effectively contain fluid. However, many older wells have unlined cellars that are not considered secondary containment. Well houses are not considered secondary containment either.

Temporary containment

Surface liners and drip pans provide portable protection under leaking equipment or connections. Secondary containment that is damaged, collapsed, or full of water cannot do its job.

6 NOTIFICATION AND REPORTING

Anytime when the observer who observed any oil or solutions material are being to spilling or spreading are any matter of the volume of material have to responsibility to reporting to Client representative, Rig Manager or HSE officer to acknowledge in charging the situation. And if the situations a spill greater than 1 m³ (35 cf.) has a duty to provide immediate notification in accordance with the applicable regulations.

Responsible for notification and reporting during activities is the Project manager. Normally it will be agreed with the Client that the Rig Manager will be delegated the responsibility for these activities.

Details of responsibility definition for notification and who should be notified, are given in the flow sheet in Appendix 1.

The following documentation contains information on notification and reporting of accidents/incidents in general:

1. Blowout Emergency Response procedure (HSE-03-019)
2. Emergency drill procedure (HSE-03-008)
3. Reporting, Handling and Documenting Accidents/Incidents procedure (HSE-03-013)
4. Investigation of the Major Accidents (HSE-03-025)

All serious accidents and near misses including spills during drilling activities shall be notified to the Authorities.

7 RESPONSE

The appropriate response to a spill will depend on a number of factors and is situation specific.

7.1 REPORTING PROCEDURE

To report a spill, call the appropriate number and provide the following information:

- Person responsible
- Contact phone number
- Substance spilled
- Location of spill
- Approximate amount spilled
- Possible cause of the spill
- Cleanup activities under way

A follow-up written report may be required. Documentation procedures vary between Projects depending on the law requirements and contract/Client requirements.

Greatwall Drilling Company requires reporting within 30 minutes of all spills, discharges, and releases of oil and hazardous substances in our operating areas. This ensures proper response, cleanup, disposal, and timely agency reporting. ADEC interprets “immediate” to mean.

Minor spills are not reportable to regulatory agencies, and some will not be counted as recordable incidents.

Spills that are on the pad, contained, under control, small in volume, and can be cleaned up by the spiller or the Greatwall Drilling Company site personnel, must be reported to the following Rig Manager, HSE Supervisor or Project Manager.

Spills involving injuries, fires or safety hazards, uncontrollable or continuously releasing material, blowouts, or spills into waterways must be reported to the following emergency number by Rig Manager/HSE Supervisor:

Position	Phone No:
Government Agency	
Client representative	
HSE dept.	

7.2 MINOR SPILLS WHICH DO NOT ENTER THE ENVIRONMENT

The “spiller” may be able to take care of the minor spill cleanup, but Rig Manager and HSE supervisor should always be consulted.

Cleanup workers must be equipped with the correct personal protective equipment, such as rubber gloves, overall and boots. Spill may be collected mechanically in to the waste container bins or may be washed down with appropriate detergents and spilled by clean water, or recovered by using absorbents and steam cleaners. Use of detergents shall be minimized as much as possible.

Report to the Rig Manager and fill the form in accordance to HSE-03-013 Reporting, handling & documenting of accidents and incidents procedure.

7.3 MINOR SPILLS WHICH ENTER THE ENVIRONMENT

Response at Rig site

Access the rate of oil dispersion due to wind and wave action. If the spill threatens flora and fauna, the Rig manager will notify Project manager.

Maintain observation of spill status. Log events and keep the Client manager advised. Take corrective action to minimize further spill risk from similar sources.

7.4 MAJOR SPILL WHICH ENTER THE ENVIRONMENT

Response

In the case of spills greater than 1 m³ (35 cf.) wind and weather conditions, the type of oil spilled, characteristics and location will determine the most appropriate response to the situation.

It will be the responsibility of the Project Manager, after consideration of all the facts, and following discussions with the Client representative, to initiate the appropriate response.

Response at Rig site

Issue notification and assess the rate of spill dispersion due to wind and weather action. Advise with the Project Manager about the spill status and the requirement to mobilize oil spill clean-up equipment. If clean-up equipment is available at Rig site, commence deployment. Maintain observation of spill status. Log events.

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Response in Head office in Bangkok

Notify Authorities and mobilize the appropriate Emergency Response Team. Review the spill status and plan the most appropriate course of action. Mobilize resources as required. Establish the necessary support organization. On completion of the spill clearance operations, investigate and fully report the incident in accordance to HSE-03-013 *Reporting, handling & documenting of accidents and incidents procedure*.

ภาคผนวกที่ 22
Spill Management Plan



PTTEP

PTT Exploration and Production Public Company Limited

Spill Management Plan

Document Number: 12146-PDR-SSHE-501/03-R03

March 2023

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This document shall be reviewed every 5 years from the date of approval or revised earlier if necessary.

Revision History			
Rev.	Description of Revision	Authorized by	Effective Date
0	New	CSH	December 2011
1	<ul style="list-style-type: none"> Add list of approved dispersants in Thailand Add request form of dispersant application for approval in Thailand Add Tier2 Equipment Stockpile Update Role & Responsibility of Corporate and asset during exploration drilling phase Update Role & Responsibility of Corporate and asset during production drilling phase Update Role & Responsibility of Corporate and asset for Tier 2 & 3 Equipment Request Update Tier 2 and Tier 3 Communication Flow and appendices 	TSH	December 2016
2	<ul style="list-style-type: none"> Add summary of spill management team leader Add minimum requirements of Asset Spill Response Plan preparation, response techniques, consequence analysis, training, and exercise Add list of Spill Response Equipment under PTTEP and the alliances Update document title and contents reorganization. Update contact number of Thailand and International Authority and Organization 	CSH	March 2018
3	<ul style="list-style-type: none"> Added additional information about spill management for newly acquired asset, tool for self-assessment of spill capability, and example of Thai Offshore Oil Spill Crisis Response Plan in Appendix A. Clarified spill response responsibility for all E&P phases. Updated content reorganization, SIMA tool, IESG response resources and request form, tier 3 resources mobilization, and spill exercise to align with international guideline. 	CSH	March 2023



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INTRODUCTION

1.0 PURPOSE

The Spill Management Plan is developed to outline the preparation of response actions and resources needed for an spill incident. The necessary response actions include the following as a minimum; the requirements of the Asset Spill Response Plan preparation, the response organization and protocol, the notification and interface between PTTEP Headquarters and assets and/or the external agencies including government agencies and other related organizations, resources preparation, including capability assessment and document review and update. This plan guides PTTEP assets for preparation and implementation of an effective spill response.

The Asset Spill Response Plan discussed in this document is intended to include not only the operating asset spill response plan, but also the support functions, i.e. seismic, drilling exploration and drilling production response plan. In some cases, bridging documents from contractors who provide the main activities to PTTEP (i.e. seismic and drilling) are required in order to establish the interface between these organizations as well as ensuring the alignment and prompt response.

2.0 SCOPE

This plan applies to all PTTEP assets and support functions in preparation and implementation of the effective spill response in all activities of Exploration and Production (E&P) Phases, i.e. seismic exploration, exploration and production drilling, production and decommissioning activities, including the storage, offloading and logistics support.

Compliance with the requirements described in this plan is mandated for all PTTEP assets and their subsidiaries. In the countries where local regulations exist, this plan shall be read and implemented in conjunction with all relevant regulations or adopted as a minimum requirement if this plan is more stringent than the regulatory requirements. Where PTTEP is a joint venture partner or joint operator under PTTEP operational or financial control, compliance with this document is also mandated where PTTEP has legal obligations on the spill response and management, unless otherwise specified in the operational agreement.

3.0 DEFINITIONS AND ACRONYMS

3.1 TERMS AND DEFINITIONS

All terms and definitions in this document can be reached at [SSHE Intranet > SSHE MS > SSHE Terms and Definitions](#).

3.2 ACRONYMS

All acronyms in this document are available at [SSHE Intranet > SSHE MS > SSHE Acronym](#).

REQUIREMENTS

4.0 SPILL MANAGEMENT

Generally, spill management in the oil and gas exploration and production business is classified based on the 3-tiered response system in accordance with the IPIECA-IOGP good practice guide related to oil spill preparedness and response.

Activation of each tier response and management team is based on the capability of response resources as defined below:

- Tier 1: Asset capability necessary to handle local spill and/or initial response
- Tier 2: Local and National capability to supplement a tier 1 response
- Tier 3: Global and International capability required due to scale, complexities, and/or global potential impact

Classification of tier responses shall follow the SSHE Risk Management Standard (11038-STD-SSHE-401), Emergency and Crisis Management Standard (11038-STD-SSHE-501), and PTTEP Incident Management Standard (11038-STD-SSHE-601) for more details and definition of severity or impact to people, environment, asset, and reputation as well as incident management and reporting protocol.

4.1 SPILL MANAGEMENT ORGANIZATION

4.1.1 PTTEP 3-Tier Response

Figure 1 shows the 3-tier spill response organization as well as necessary internal and external resources. Tier 1 response requires internal resources whereas tier 2 and 3 responses require national and international resources, respectively. Members of each tier response team shall refer to the Emergency and Crisis Management Standard (11038-STD-SSHE-501).

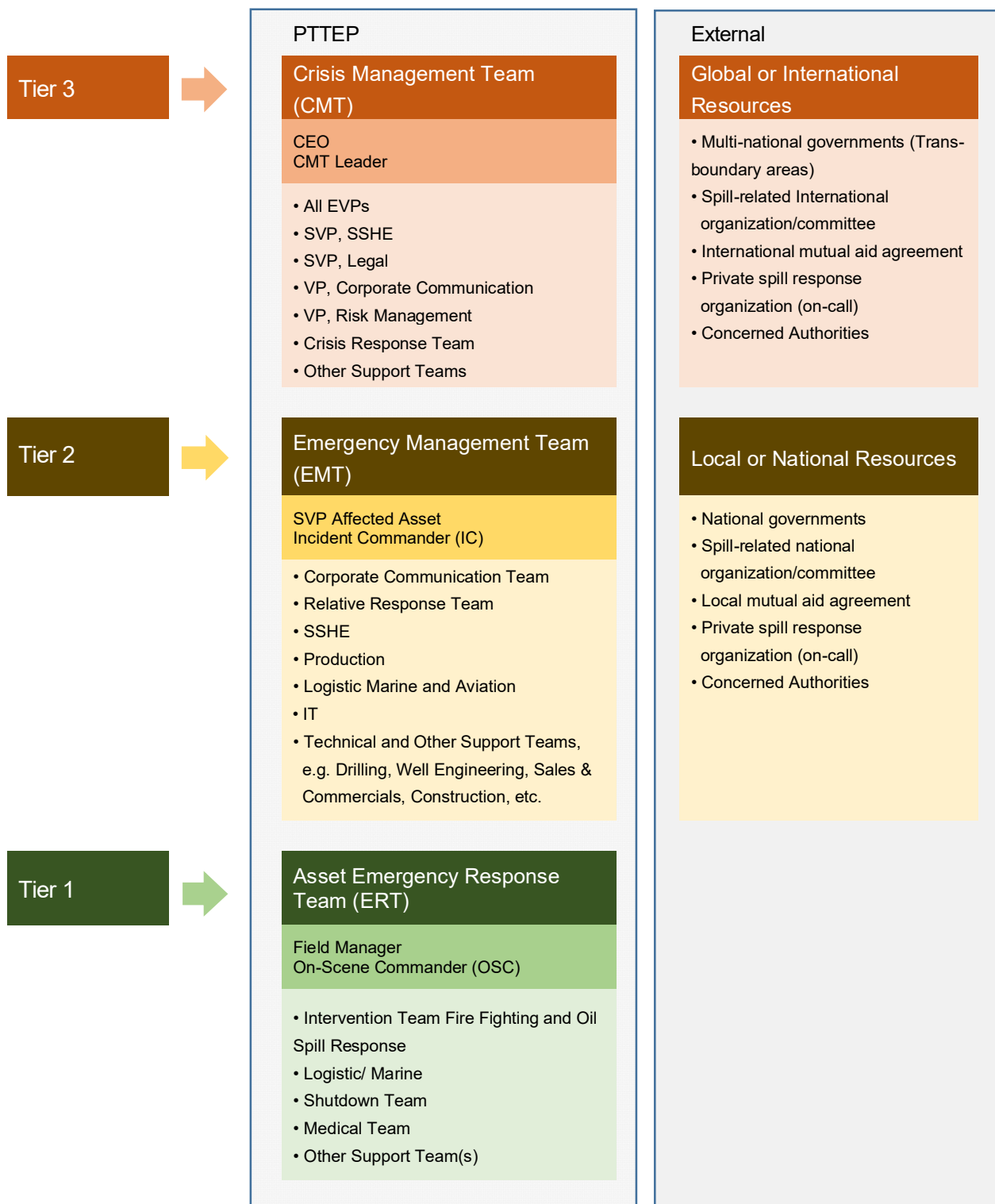


Figure 1: Tier Response Organization and Resources

In case that Thailand offshore oil spill response is escalated to tier 3, the Crisis Management Team (CMT) shall be activated. The example of Oil Spill Crisis Response Plan (CRP) as presented in Appendix A can be referred to as guidance. For production assets under a Production Sharing Contract (PSC) scheme, linkage of emergency and crisis management organization between PTTEP and government agencies shall be defined and established.

4.1.2 Spill Response and Management Team Duty

The authorized persons of E&P activities in each phase are different which results in different designated persons of spill response and management team leaders of each tier response as summarized in Table 1. Although the team leader is different, the team member of each Tier at each phase is commonly the same, except for the technical support, as listed in 3.1.1 in which their specific duties shall be described in the Asset Spill Response Plan. The technical support can be requested from each relevant discipline subject to the incident description.

Table 1: Summary of Team Leaders

Team Leader	Spill Management Team Leader of each E&P Phases			
	Seismic Exploration	Drilling Exploration	Drilling Production	Production
Tier 1: On-scene Commander	VP under Geosciences, Subsurface, and Exploration Division	<Spill on rig> Drilling Supervisor (DSV)		Field Manager
		<Spill to sea>		
		Drilling Supervisor (DSV)	Field Manager	
Tier 2: Incident Commander	SVP of affected asset (Thailand) Asset Country Manager (Overseas)			
Tier 3: CMT Leader	CEO or Designated Top Management			
Technical Support	VP/ Field manager of affected asset	Field manager of affected asset/ Drilling Contractor	VP of affected asset	
	Depends on incident situation and shall be requested from the affected asset			

4.2 SPILL NOTIFICATION PROCESS

Initial internal and external notification of spill incidents shall follow the protocol and reporting requirements as determined in the Incident Management Standard (11038-STD-SSHE-601-R07) which covers the reporting channel, period, and organization to be notified within PTTEP and externally to the government agencies both for Thailand and International assets. External notification of spill incidents which have occurred within Thailand jurisdiction is summarized in Appendix B. Contact numbers of Thailand and International authorities and organization are provided in Appendix C.

For Thailand assets, the need of a National Oil Spill Response Plan activation shall be discussed during the initial notification to government agencies. Certain information shall be provided to the government agencies, e.g. estimated spill volume, sensitive environmental resources and facilities, other potential risks, etc.

It is the responsibility of the International assets to determine the in-country notification process of all internal and external communications for all tiers of spill incidents, including communication with PTTEP headquarters. The communication protocol shall be documented in the asset Spill Response Plan. The protocol shall include the communication channel to the authorities, notification timelines to the authorities, and the responsible person who is authorized to initiate the communication. The contact numbers of authorities in each operating country shall be provided and kept up to date in the asset Spill Response Plan.

For any updated situation to external media and relatives, refer to the Crisis Communication Guideline (12145-GDL-004) under Branding Communications and Knowledge Intelligence Division (CBK).

4.3 SPILL RESPONSE RESOURCES

Spill response resources in this plan, are defined as spill response and management plan and other supporting documentation, trained personnel, and sufficient equipment and supplies which may come from local, regional, or international sources in accordance with 3-tier classification. These resources shall be identified in the Asset Spill Response Plan based on their operational risk assessment results, e.g. by conducting spill capability assessment, etc., regulatory requirements, international convention, e.g. MARPOL, etc., hydrocarbon amount and characteristic, nearby sensitive areas and supporting facilities, and planning scenarios.

The agreement or spill response organization for spill response resources at each asset and tier response is recommended to be prepared in advance to ensure the availability of the resources when spill incident has occurred.

4.3.1 Asset Spill Response Plan Preparation

PTTEP assets shall prepare and implement asset Spill Response Plans and supporting documentation. The Asset Spill Response Plan shall be scoped and scaled according to the type of operation undertaken, the level of risk associated with the operations, and assurance of compliance with applicable local and national regulations. Asset Spill Response Plan shall include the necessary information which assist assets to identify and specify the key processes and resources that are crucial to respond to the spill incidents, both for the initial and subsequent stages. PTTEP assets can develop their own plan, either integration with Asset Emergency Response Plan or separately, by following the requirements stated below. A recommended structure of the Asset Spill Response Plan is listed in Appendix D.

The Asset Spill Response Plan shall comply with the National Oil Spill Response Plan of the country of operation as well as relevant PTTEP standards and procedures. Each of asset's Spill Response Plans shall be reviewed by Corporate SSHE Division for advice and alignment with this plan and other compulsory documents.

4.3.2 Spill Scenario Consequence Analysis

Based upon the risk assessment results, the asset shall identify potential spill scenarios and documents in the asset Spill Response Plan, then the detailed consequence analysis shall be conducted to confirm consequences from the spill and identify resources at risk which include environmental and socio-economic resources that could be affected, and assess the degree of sensitivity of those resources, as well as impact mitigation and minimization measures, specifically for:

- Worst credible case of spill scenario(s) for oil type(s) that potentially have a significant contribution to the risk (high likelihood, high potential discharge volume or low likelihood but high severity)
- Any additional potential spill scenarios that generate essential planning factors.

Criteria for justification are referred to in the SSHE Risk Management Standard (11038-STD-SSHE-401).

4.3.2.1 Spill Trajectory Model

The objective of numerical simulation of spill fate and trajectory is to estimate the physical changes which spilled oil undergoes especially offshore or on open waters (i.e. the weathering processes which include evaporation, spreading, natural dispersion, emulsification, and shoreline stranding) and its potential pathways, travel times, surface distribution and associated volumes under the prevailing climate.

The spill trajectory model shall be developed based on the risk assessment results to provide the area of impact or consequence for consideration in the environmental and socio-economic severity and to guide decisions for a suitable response strategy.

Examples of 2 types of spill trajectory modelling output are shown in Figure 2:

- Stochastic models primarily are used for contingency planning purposes which apply historical wind and current conditions to simulate multiple spill trajectories that together give a statistical output
- Deterministic models typically are used in both response and contingency planning scenarios, which utilize a single set of wind and current conditions (for example the most probable) to simulate a single spill trajectory

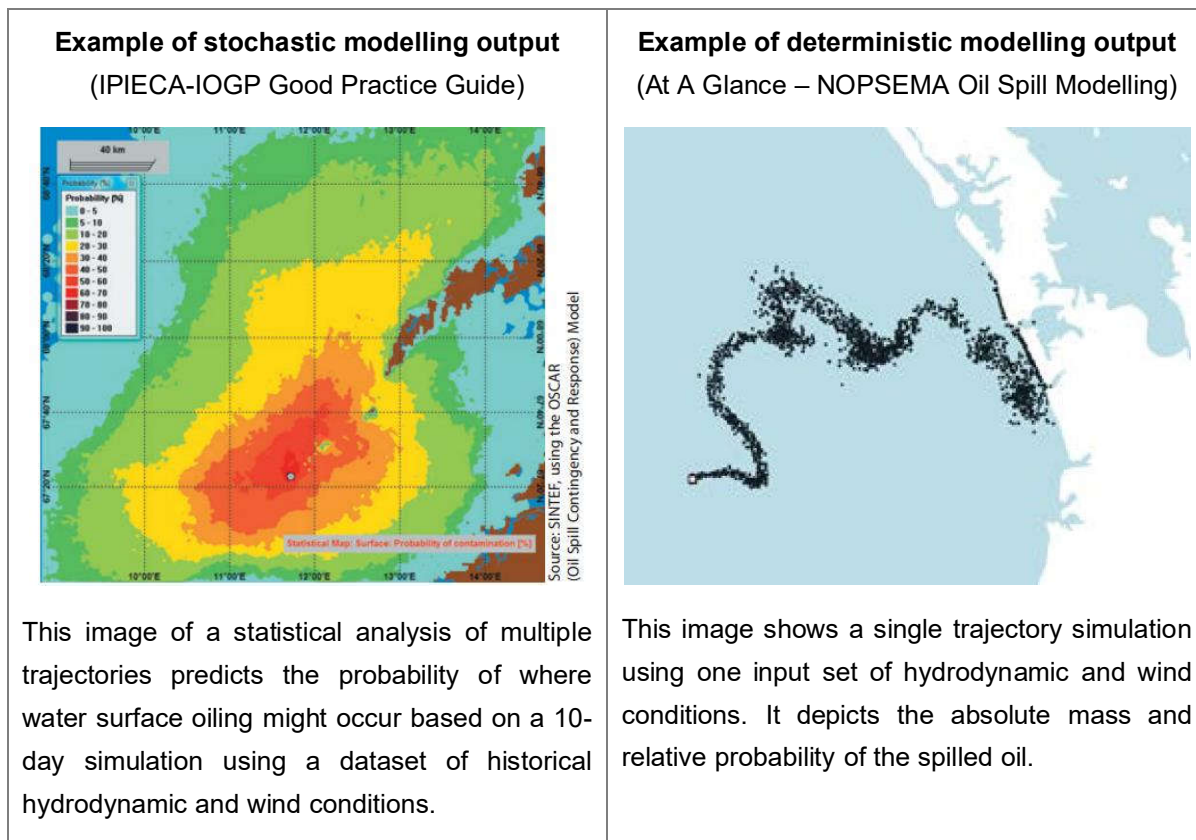


Figure 2: Example of Spill Modelling Output

4.3.2.2 Sensitivity Mapping

Once asset has identified the spill scenario, the trajectory of the oil, and how it behaves in the environment, it is necessary to identify and characterize relevant sensitive resources and receptors within the influence area.

Mapping of ecological and socio-economic resources allows the identification of those which may lie in the trajectory of spill. Mapping shall be performed within the influence area of the potential spill. The IPIECA/IMO/IOGP Good Practice Guidance on Sensitivity Mapping for Oil Spill Response (Revision 2016) provides examples of mapping both ecological and socio-economic resources. Environmental impact assessments and monitoring data can provide valuable input to the mapping of resources and sensitive receptors. With confidential agreement, operators within the same area are encouraged to share information on ecological and socio-economic resources to secure efficient mapping and consistent input.

The assessment of potential consequences is recommended to be made for time periods (i.e. monthly, seasonal or yearly) as relevant for the activity or operation that is posing the risk. It is also recommended that a full year field activity at least should have a seasonal resolution in the consequence assessment as this can provide important information and input to risk management and advice on risk reducing measures for time-limited operations.

The available information such as the Environmental Sensitivity Index (ESI), Environmental Sensitivity Maps (ESM), etc. can be accessed from published sources or national database or equivalent. The sensitivity map from the environmental impact assessment report can be partially applied.

4.3.3 Response Strategy Development

Following the identification of sensitive resources and priority protection sites, PTTEP assets shall identify the appropriate response strategies, which are comprised of viable response techniques which can adequately mitigate the impact and consequences of each oil spill scenario.

A response strategy can consist of a single response technique or a combination of techniques. A list of the response techniques and its requirements are listed in Appendix E. The response strategy should be established in consultation with the relevant authorities and stakeholders, with consideration given to Spill Impact Mitigation Assessment (SIMA).

4.3.3.1 Spill Impact Mitigation Assessment (SIMA)

When considering the suitable response technique, the SIMA shall be considered to determine the best response options that are the most effective, feasible and will minimize the impact from the selected planning scenario on the environment and the community including ecological, socio-economic, and cultural aspects. As such, the Asset Spill Response Plan shall document the following information as shown in Figure 3 when selecting the response option.

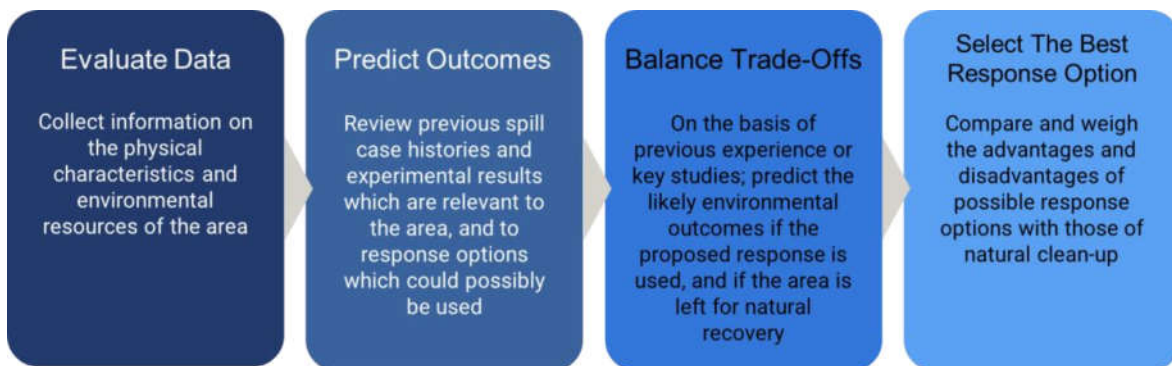


Figure 3: Steps of Net Environmental Benefit Analysis (NEBA)

Assets shall ensure that the response priorities selected are aligned with the national or regional register of priority areas. Where different protection priority ranking is assigned to a specific resource compared to these national or regional register, justifications for the difference is to be specified.

It is important to note that the SIMA process is generally applicable to larger or higher consequence oil spill scenarios where multiple spill response options are being considered. It is not value-added to conduct SIMA for smaller, lower consequence spills where only one or two response options are contemplated or feasible.

4.3.4 Spill Response Resources

4.3.4.1 Tier 1 - Asset Resources

PTTEP Assets shall provide and ensure the availability of spill response resources on each location as identified in their planning scenario. The identification of necessary spill response resources shall be documented in the asset Spill Response Plan. Asset representative shall ensure the readiness of the Asset Spill Response Plan and the sufficient equipment and resources for combating spill up to a Tier 1. A preventive maintenance plan of spill response equipment shall be established and followed for prompt spill response. Asset ERT members shall be trained to promptly respond and become familiar with all available spill response equipment.

For seismic exploration, the spill response equipment and services from reliable local contractors is recommended to prepare by Geosciences, Subsurface, and Exploration Division under the advisory guidance of the Corporate SSHE Division.

For drilling exploration and production, the drilling contractor shall provide on-site spill response equipment and personnel as per their contract agreement to ensure that tier 1 can be handled. Drilling contractor is responsible for any spills occurring within the boundary of the rig itself, while Corporate SSHE and assets are responsible for the spills reaching the environment for drilling exploration and production respectively.

In case dispersant application is required for Thailand assets, it is the asset's responsibility to request the approval from the Pollution Control Department (PCD) before use when the water depth is less than 10 meters referred from Nation Oil Spill Plan. The request form for approval of dispersant application in Thailand and list of approved dispersants for Thailand assets is provided in Appendix F and G, respectively. To expedite the approval period, the completeness of information and appropriate volume of dispersant application filled in the form shall be provided. In general, the consideration result would be sent to the requestor within 5 hours after submitting the request to PCD. For the International assets, this process could be different which may require the different approval process to comply with local regulations as well as any prohibition of using some dispersant in some country.

In case the incident reaches tier 2 and 3, the Corporate SSHE Division will be responsible for dispersant application approval process.

4.3.4.2 Tier 2 – Local and National Resources

Thailand Asset

Corporate SSHE Division shall provide and seek other available equipment and resources to support asset spill response including all E&P phases. These resources, i.e. equipment, personnel, and logistic support, specified in the following documents, but not limited to, shall be included in asset Spill Response Plan.

- Onshore Operating Asset: Local contract availability, National level regulators or agencies and National Oil Spill Response Organizations (OSROs)

- Offshore Operating Asset: Nearby operators, regional operators, national level regulators or agencies and National Oil Spill Response Organizations (OSROs)

Pre-arrangement or exercises to test the mobilization is highly recommended to conduct by asset to ensure the availability and validity of Tier 2 resources and secure spill response support.

PTT Group is a member of the Oil Industry Environmental Safety Group Association (IESG) in Thailand. All PTTEP assets in Thailand are able to request additional resources and the trained personnel from outsource under IESG's contract via corporate by using Oil Spill Response Resources Request Form as provided in Appendix H. PTTEP authorized personnel for IESG including tier 2 resources support activation, which is recommended to be asset SVP, SSHE Manager or Corporate SSHE SVP/VP, shall be included asset Spill Response Plan. The list of IESG available resources is shown in Appendix I and the estimated mobilization time to Thailand offshore asset for national assistance from the nearest IESG site is shown in Appendix J.

Further, assets in Thailand may also request resources from the Marine Department through activation of the National Oil Spill Response Plan. This allows the asset to have access to the national resources, which include equipment, vessels, and technical specialists. PTTEP assets shall identify tier 2 resources in Asset Spill Response Plan for the purpose of pre-assessment whether the available resources are sufficient to handle with tier 2 spills or otherwise refer to this plan. When resources from in-country mutual aid agreement is required to respond to the spill, the National Oil Spill Response Plan will be incorporated with the company plan. The role and responsibility of the emergency response team and support team will be in accordance with both plans.

International Asset

It is recognized that some International assets may also be legally bounded to attain membership for their local tier 2 organizations or Contractors as specified by laws and regulations of the country where PTTEP operates in all E&P phases (e.g. PIMMAG, OSCT, etc.). All assets shall adhere to the in-country legislative requirements and ensure the familiarity of the call-out procedure for the respective tier 2 organizations or contractors.

Similar to Thailand assets, the international assets should ascertain similar processes to access to the national resources of their country. PTTEP authorized personnel for tier 2 resources provider activation, which is recommended to be Country Manager or SSHE Manager, shall be included in the asset Spill Response Plan.

4.3.4.3 Tier 3 – Global and International Resources

Currently, the international service provider for PTTEP is the Oil Spill Response Limited (OSRL) Group for which PTTEP has access to their resources via PTT Group membership. The OSRL activation can be done through PTT Group as per the following steps, in which is a list of PTTEP authorized personnel is provided, Appendix K.

- PTTEP Authorized Personnel shall fill out the PTT Group Notification form and Mobilization Authorization Form submit to PTT for their information as provided in Appendix L and M, respectively

- Then, the OSRL Notification and Mobilization Procedure shall be followed as described in Appendix N. PTTEP Authorized Personnel shall fill out the OSRL Notification Form and Mobilization Authorization Form, and submit it to OSRL for requesting their services as provided in Appendix O and P, respectively

Corporate SSHE is responsible for assisting the asset in securing OSRL resources for their prompt response. OSRL resources available for membership can be found in the OSRL website.

For planning purposes, the assets shall take into account the lead time required for mobilization of OSRL resources in their asset Spill Response Plan. However, the global alliance from PTTEP and OSRL requires lead time for internal preparation and logistic arrangement.

Equipment Mobilization

PTTEP is responsible for the logistics of any resources from OSRL from the point of handover whilst OSRL handles the equipment transfer up to the point of handover (i.e. at OSRL base or departure airport/port) where there is a transfer of responsibility. Mobilization time for air and sea transport is dependent on availability and location of the chartered aircraft or supply vessel. Table 2 summarizes the various mobilization methods of OSRL's equipment.

Table 2: OSRL's Equipment Mobilization Method

Mobilization by	Remarks
Land	This refers to the use of truck/lorries for transportation of equipment from OSRL's nearest base before subsequent transfer to vessels.
Sea	Depending on location of spill, the supply vessel can also be chartered in-country where the nearest OSRL base is located. Equipment is loaded at the OSRL base and sails directly to the spill site.
Air	Equipment is loaded into chartered cargo aircraft which will then fly into the identified airport of entry upon the clearance of permits and customs etc.

Aerial Dispersant Aircraft Mobilization

Two types of aerial dispersant aircraft provided by OSRL can be mobilized in a spill: C130 departing from Senai, Malaysia and B727 departing from Doncaster, UK. OSRL's nearest support site to PTTEP's country of operations, the nearest airport to PTTEP asset's location, estimated mobilization time and flight time from OSRL's base to these airports are summarized in Appendix Q. However, contingency time, e.g. custom clearance and immigration, are not included.

4.3.5 Spill Training and Exercise

Asset shall develop spill training and exercise programs with consultation from Corporate SSHE Division based on the applicable national and local regulations as well as the requirements stated in this plan and SSHE Training and Competency Standard (11038-STD-SSHE-305). The training and exercise program shall include the personnel with their role and responsibility to manage and respond to the spill incident.

It is recommended to consider determining the frequency and number of personnel to be trained in each role and involved in exercises and factors such as staff turnover rate, staff rotation to prepare for a prolonged response, and stand-by requirements for on duty responders as well as backup staff to support an ongoing response.

Asset shall organize the spill exercise to be in accordance with the applicable national and local regulation. Exercise activities may be undertaken using a variety of types as shown in Table . The estimated duration and frequency provided as guidance excludes the time of planning and preparation, which may be significant. An exercise can contain a mix of these types.

- Oil field asset: it is mandatory to conduct the spill exercises to cover all types of exercise as shown in Table 3.
- Gas field asset: the spill exercise arrangement is depended on asset's spill risk profile and scenario. However, it is recommended to conduct any types of spill exercise at least once a year, e.g. following to asset emergency exercise, pre-fire plan, etc.

These exercises may be conducted separately or in conjunction with other exercises as long as they are well documented. The training and exercise programs and records shall be documented for further tracking and reference. Opportunities for improvement and actions arising from these activities shall be documented and recorded in close-out exercise or audit report to ensure that the actions are being implemented in a timely manner.

Asset shall also ensure that the monitoring for training with expiration date and requires refresher periodically is being done and documented properly to ensure the sustainability of personnel knowledge and competence.

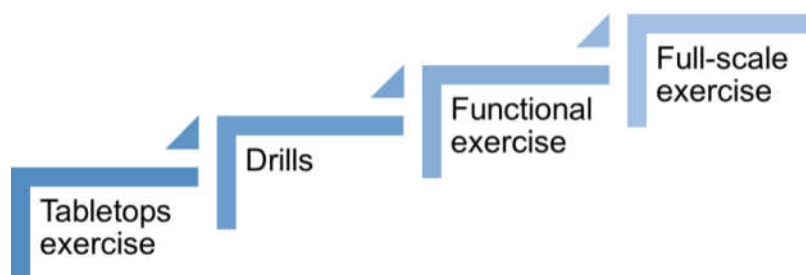


Figure 4: The progressive of the development of exercise program

Table 3: Types of Spill Exercise (IPIECA-IOGP, 2016)

Type	Detail Exercise	Frequency	Responsible party
Tabletop Exercises (Duration: 2 to 4 hrs.)	<ul style="list-style-type: none"> • Discussion of simulated scenario in the asset spill response plan/contingency plan • Build competency and confidence in the implementation of the asset spill response and contingency plan • Predetermine set of specific objectives • Be part of functional exercise preparation 	At least once per asset/year	Site SSHE/ Asset SSHE
Drills (Duration: 2 to 4 hrs.)	<ul style="list-style-type: none"> • Validate a specific function or capability in a single organization • Be commonly used to provide training on new equipment, validate procedures to practice and maintain current skills, e.g. • For example, test the notification and alert procedures in an oil spill response plan, test a tactical booming plan, dispersant spraying practice, etc. 	At least once per asset/year	Site SSHE/ Asset SSHE
Functional Exercises (Duration: 4 to 8 hrs.)	<ul style="list-style-type: none"> • Validate and evaluate capacities, multiple functions, or interdependent groups of functions • Be conducted in a realistic or real-time environment movement of personnel and equipment is usually simulated. • Can be integrated with Annual Emergency/ Crisis Management Exercise 	At least once per asset/year	Asset SSHE
Full scale exercise (Duration: 8 to 72 hrs.)	<ul style="list-style-type: none"> • May involve multiple authorities, relevant organizations, and jurisdictions, and can validate many elements of preparedness. • Test plans and procedures across the span of asset's crisis management and emergency response arrangements • Can involve national capability (Tier 2) and regional or international support (Tier 3), i.e., trans-boundary response issues • Include personnel and resources mobilization and deployment 	Once every five years, however, it is subject to resource's availability	Asset SSHE/ Corporate SSHE

4.3.6 Spill Capability Assessment

An asset shall plan to conduct the capability assessment with the consultation of the Corporate SSHE Division. The spill capability assessment shall be carried out for newly acquired assets to assess and ensure that the asset spill response meets the operation's risk level. The frequency of the capability assessment depends on the results of the risk assessment and consideration of the following:

- When there is any significant change in oil spill risk profile, e.g. new assets are introduced
- Upon any significant oil spill incident occurrence
- When new information on spill management is known

It is recommended that the capability review process is in line with the IPIECA-IOGP industry good practice guidelines for tiered response and includes the following assessments as a minimum:

- Review of oil Spill Response Plans and relevant tactical plans including SIMA
- Availability and suitability of oil spill response tier 1 (onsite) resources
- Availability of tier 2 and tier 3 resources
- Review of logistical arrangements
- Review of training and exercise program

For an effective tier 2 and tier 3 capability assessment, PTTEP shall utilize a third party to conduct the activities. The assessment results shall identify the gaps and recommendations for improving of the asset and Company spill response capability. The gaps and recommendations shall be followed up following to Audit and Review Standard (1038-STD-SSHE-701).

Spill capability assessment checklists are available to assist PTTEP assets to self-assess their level of preparedness to respond to an oil spill incident, including notification and mobilization of tier 2 and 3 resources and identification of infrastructure required to support the response. The spill capability assessment checklist is provided in Appendix R or can be found in OSRL's website (<https://www.oilspillresponse.com/tools/ready-check/>).

4.3.7 Asset Spill Response Plan Review and Update

Where the national or local regulation dictates a system of review and evaluation for approved plans, it shall take precedence. In the absence of regulatory guidance, asset shall develop and implement a program for review to ensure sustained readiness and competency to align at least with document review period or significant deviation following to SSHE Documentation Management Procedure (11038-PDR-SSHE-304/01).

The review and update to Asset Spill Response Plan shall be undertaken when there are any updates from, but not limited to:

- Oil spill risk profile e.g. new assets are introduced, or additional oil types are identified

- Response arrangements, including any changes to external notification and response contractors
- Location of operation (e.g. drilling campaigns) and sensitive resources
- Legislation or regulations in the country of operation
- International standards and industry good practices
- Relevant PTTEP corporate standards and procedures

Where applicable, if major changes occurred that could potentially affect the validity or effectiveness of the plan, resubmission to the approving authority in the country of operations shall be undertaken as required per local regulations and PTTEP corporate.

ROLES AND RESPONSIBILITIES

Roles and Responsibilities of relevant personnel shall follow the Emergency and Crisis Management Standard (11038-STD-SSHE-501), Emergency Management Plan (12148-PDR-SSHE-501/02), and Crisis Management Plan (12148-PDR-SSHE-501/01).

REFERENCES

Document Number	Document Title
PTTEP Controlling Documents	
11038-STD-SSHE-305	SSHE Training and Competency Standard
11038-STD-SSHE-401	SSHE Risk Management Standard
11038-STD-SSHE-501	Emergency and Crisis Management Standard
11038-STD-SSHE-601	Incident Management Standard
12148-PDR-SSHE-501/01	Crisis Management Plan
12146-PDR-SSHE-503/01	Waste Management Procedure
12148-PDR-SSHE-501/02	Emergency Management Plan
Other Reference Documents	
-	Guidelines on implementing spill impact mitigation assessment (SIMA); International Petroleum Industry Environmental Conservation Association (IPIECA); 2017
-	National Plan for Oil Spill Protection (TH only); Ministry of Transport; 2002
-	Oil Spill Exercises Good Practice Guidelines for the Development of an Effective Exercise Programme; International Petroleum Industry Environmental Conservation Association (IPIECA); 2016
-	Oil Spill Response Field Guides; Oil Spill Response Limited (OSRL); 2013

APPENDICES

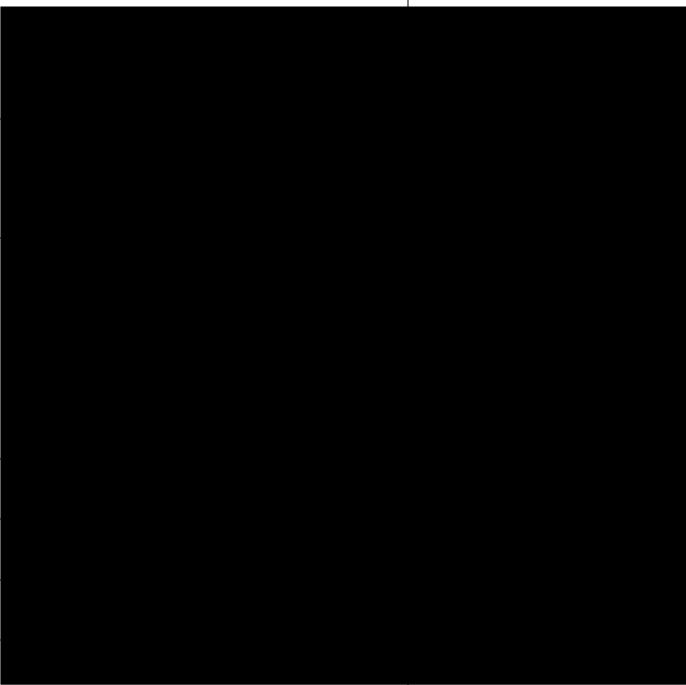
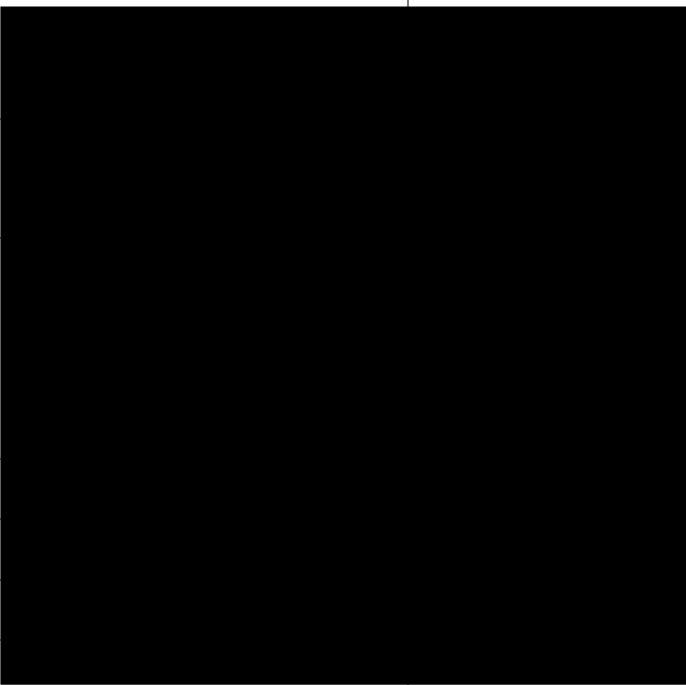
APPENDIX A: EXAMPLE OF THAILAND OFFSHORE OIL SPILL CRISIS RESPONSE PLAN

An example of Thailand Offshore Oil Spill Crisis Response Plan is available on [SSHE Intranet > SSHE MS > SSHE MS Documents > Corporate Tools > Appendix–Spill Management Plan](#).

APPENDIX B: EXTERNAL NOTIFICATION OF SPILL INCIDENT IN THAILAND

Spill Incident Volume	Notify	Reporting timescale	Reported by
>1 bbl	<ul style="list-style-type: none"> Department of Mineral Fuels (DMF) Marine Department (MD) for spill to water 	Initial report by phone or e-mail within 24 hrs. and followed by a written report within 72 hrs.	Asset SSHE
> Approx. 149.75 bbls (20 tonnes) or Local and National capability to supplement a Tier 1 response	<ul style="list-style-type: none"> Department of Disaster Prevention and Mitigation (DDPM) for spill on land PTT Group IESG OSRL for Tier 3 	Initial report by phone or e-mail within 24 hrs.	EMT for Tier 2 and CMT for Tier 3/ Corporate SSHE Division by Operational Safety Section

APPENDIX C: NATIONAL AND INTERNATIONAL AUTHORITIES AND ORGANIZATION CONTACT LIST

Organization	Tel	Fax
Department of Mineral Fuels (DMF)		
Department of Disaster Prevention and Mitigation		
Marine Department (MD)		
Pollution Control Department (PCD)		
IESG		
PTT Command Centre		
OSRL Singapore base		

APPENDIX D: RECOMMENDED STRUCTURE OF ASSET SPILL RESPONSE PLAN

Note: ✓ = Required
 + = Recommended (may depend on the planning scenario)
 X = Not required

Section	Description	Offshore	Onshore
1. Introduction			
1.1 Objective	<ul style="list-style-type: none"> Describe the overall purpose of the Spill Response Plan Include statement of PTTEP's guiding principles of protecting people, environment, asset, and reputation 	✓	✓
1.2 Scope	A summary description of operations and facilities covered by the Spill Response Plan	✓	✓
1.3 Interface with Other Plan	<ul style="list-style-type: none"> Identify other plans the Spill Response Plan interfaces with Demonstrate how it integrates with other plans. These plans include, but not limited to: <ul style="list-style-type: none"> Crisis management plan Emergency management plan Environmental Impact Assessment Report Bridging documents / Well control plans 	✓	✓
1.4 Document Control	<ul style="list-style-type: none"> Specify approval dates and sign-offs by internal management, plan custodian, distribution list, review and update records Include approvals obtained from authority, if applicable 	✓	✓
2. Notifications and Reporting			
2.1 Internal Notification	<ul style="list-style-type: none"> Develop a clear written procedure to immediately notify and report to internal stakeholders and initiate a response showing appropriate response levels, as well as response escalation procedure Include contact details, notification method (e.g. phone, fax, email, etc.) and team/person responsible for performing the notification. This may be reflected in the form of a flowchart <p><i>Refer to Emergency and Crisis Management Standard (1038-STD-SSHE-501-R05) for emergency notification standard</i></p>	✓	✓

Section	Description	Offshore	Onshore
2.2 External Notification	<ul style="list-style-type: none"> Develop a clear written procedure to notify and report to external stakeholder which needs to be done at the early stage of the incident i.e. authorities, shareholders, OSROs and other contractors Include contact details, notification method (e.g. phone, fax, email, etc.) and team/person responsible for performing the notification 	✓	✓
3. Assessments			
3.1 Site Assessment	Provide a checklist/guideline to conduct initial site safety and spill assessment	✓	✓
	Provide key facility information	✓	✓
	Identify environmental and socio-economic sensitivities	✓	✓
	Determine current and forecasted meteorological and hydrodynamic conditions	✓	✗
3.2 Volume and Trajectory Assessment	A summary or checklist of: <ul style="list-style-type: none"> Spill surveillance methods (aerial surveillance, tracking buoys, etc.) Spill observation and assessment guidance Spill trajectory and modelling including required input data 	✓	+
3.3 Tier Assessment	Evaluate the scale, Tier level, and impact of the incident (following the National Oil Spill Contingency Plan, if any or as described in this Guideline) as well as the escalation potential	✓	✓
4. Response Management			
4.1 Response Organization	<ul style="list-style-type: none"> Include organization of the response teams (ERT, EMT, CMT) and their relationship with each other Include overall responsibility of the team and management of processes and procedures within each team Include the response management facility location and activation procedure <i>Refer to Emergency Management Plan (12148-PDR-SSHE-501/02-R04) and Incident Management Standard (11038-STD-SSHE-601-R07)</i>	✓	✓

Section	Description	Offshore	Onshore
4.2 Roles and Responsibilities	Main role and responsibility of the key personnel in the response team, including action checklist described for each stage of response. <i>Refer to Emergency Management Plan (12148-PDR-SSHE-501/02-R04) and Incident Management Standard (11038-STD-SSHE-601-R07)</i>	✓	✓
5. Action Checklist			
Establish initial action checklists for key personnel in the EMT as follows, as a minimum:			
<ul style="list-style-type: none"> Initial response priorities and objectives Initial actions and strategy decision guide Activation of response management team Activation and deployment of resources 		✓	✓
6. Response Strategy			
6.1 Response Strategies	<ul style="list-style-type: none"> Develop strategy decision guidance (flow charts, scenario matrix, and NEBA/SIMA decision guidance) Include scenario-specific response strategy summaries and regulatory pre-approvals and/or approval application procedures if any 	✓	✓
6.2 On Water Response	Offshore and near-shore response capabilities and general tactical plans	✓	✗
6.3 Shoreline Response	Shoreline response capabilities and general tactical plans.	+	✗
6.4 Inland Response	Inland waterway and onshore response capabilities and general tactical plans.	✗	✓
7. Sensitive Areas			
Provide summary of sensitivities identified in the area and the protection priorities. Maps may be included for ease of reference. This information should be supported with the Baseline Environmental Settings information in the Reference Material.		✓	✓
8. Response Resources			
8.1 Tier 1 Capability	Include a summary and reference to Tier 1 resources inventories including required logistics support, internal contact information and mobilization timescale	✓	✓

Section	Description	Offshore	Onshore
8.2 Tier 2 Arrangement	Provide a summary and reference to Tier 2 Arrangement including, but not limited to: <ul style="list-style-type: none"> Contracted resources inventories and services list Mobilization procedure and timeframes Contact information including authorized personnel for resources activation Required logistics support Additional non-contracted resources and services list including government resources, vessels of opportunity, local labor sources and volunteers, and subject matter experts or specialty expertise Resourcing procedures for non-contracted services 	✓	✓
8.3 Tier 3 Arrangement	Include a summary and reference to Tier 3 arrangements, including accessing international mutual aid, contact information, contracted OSRO mobilization procedures, resources, and response timeframes. Procedures for immigration and customs, and any emergency dispensation information for cross-border movement of personnel, equipment and material	✓	✓
9. Supporting Response Element			
9.1 Waste Management Procedure	Provide guidance for handling oily waste.	✓	✓
9.2 Oiled Wildlife Response	Provide guidance for handling wildlife impacted by oil spill.	+	+
9.3 Stakeholder Engagement and Communications	Provide guidance for engaging and communicating with Stakeholders.	+	+
9.4 Economic Assessment and Compensation	Provide guidance for conducting economic assessment and compensation.	+	+
9.5 Environmental Impact Assessment (Including Sampling)	Provide guidance for conducting environmental impact assessment.	+	+

Section	Description	Offshore	Onshore
10. Decontamination			
10.1 Requirement	Summarize health, safety, and environmental requirement for decontamination.	✓	✓
10.2 Decontamination Procedure	<ul style="list-style-type: none"> • Provide guidance for developing a spill-specific decontamination plan including standard procedures of setting up decontamination area, zoning, etc. and list of approved cleaning agents • Provide information on pre-designated decontamination sites, if any 	✓	✓
11. Termination of Response			
11.1 Demobilization Procedure	<ul style="list-style-type: none"> • Provide guidance for developing a spill-specific demobilization plan • Provide standard procedures for demobilizing resources e.g. final equipment and vessel inspections, personnel checkout, resupply of consumables, claims for repairs, return of hired gear, etc. 	✓	✓
11.2 Response Termination	<ul style="list-style-type: none"> • Provide guidance on establishing treatment end points and response termination criteria • Include information regarding the roles with authority to sign off on completed areas and approve termination of the response 	✓	✓
11.3 Response Debrief	<ul style="list-style-type: none"> • Include responsibilities and guidelines for conducting post-response debrief, conducting post-spill analysis and develop report, etc. • Include documentation requirements. <p><i>Refer to Incident Management Standard (11038-STD-SSHE-601-R07)</i></p>	✓	✓
Supporting Documentation or Appendices			
Site- Specific Tactical Response Plan	Provide operational maps identifying the sensitivity the site-specific tactical plans that cover the area to be protected, worksite configuration, and other considerations and useful information necessary to facilitate rapid and effective response	+	+

Section	Description	Offshore	Onshore
Reference Material	<p>Consist of the Spill Response Plan justification and other preparedness material including but not limited to:</p> <ul style="list-style-type: none"> • Oil spill risk assessment result and scenario planning • Applicable requirement from international convention, national and local regulations on oil spill response • Operational overview which describes the facility and/or operations (including facility information, oil types and volumes handled, oil properties and weathering data, etc.) • Oil spill modelling result • Baseline environmental settings including meteorological and hydrodynamic information and socio-economic information • Training and exercise program • Plan and equipment review and audit schedule 	✓	✓
Directories	<p>Provide directories of resources and contact that are potentially needed during response including, external contractors, response organization, vessel of opportunity, logistics contractors, etc. This may be updated frequently.</p>	✓	✓

APPENDIX E: LIST OF RESPONSE TECHNIQUES

Response Technique Options	Requirements
Source Control	<p>Source control techniques are usually linked with other emergency response plans/documents which provide specific actions to stop or minimize the release of oil from the source. Details in the Spill Response Plan or supporting documents shall include a description of the interface between the Spill Response Plan and other specific internal/external emergency response documents. For the incident management, the Spill Response Plan should describe how the source control team interface with the spill response team. Where specialized resources are required, the Spill Response Plan shall inform EMT/CMT in advance for the availability of these resources.</p> <p>Source control technique shall be considered for the following scenarios:</p> <p>For spills originating from the well, source control techniques are linked to Well Blowout/Source Control Contingency Plan which should have already detailed the emergency response procedures in the event of an incident involving the well. Specialized resources include vessels and technical specialists who are trained in conducting well control management are often required for such spills. Confirm availability or provide contact of the specialized resources e.g. support vessels equipped with dynamic positioning and cranes with appropriate lifting capacity.</p> <p>For spills originating from vessels (e.g. oil tankers, FPSOs, etc.), source control techniques onboard are linked with SOPEP which shall be executed by the vessel captain and vessel emergency response team, while on-water spills shall include containment by booming around the source and on-water recovery. Deployment techniques will be the same as At Sea Containment and Recovery. Communication linkage and mobilization period between spill site and support site is recommended to exercise to ensure the readiness and effectiveness.</p> <p>For spills from stationary offshore storage tanks or pipelines, the source control measures shall consider loss of primary containment. The response techniques are linked with the site Emergency Response procedures to shut down, contain and recover the spill. Migration of oil from the source is managed with the same techniques as At Sea Containment and Recovery. Communication linkage and mobilization period between spill site and support site is recommended to exercise to ensure the readiness and effectiveness.</p>

Response Technique Options	Requirements
Source Control (continue)	<p>For spills from onshore storage tanks, pipelines or land transports, the source control measures shall consider the loss of primary containment. The response techniques are linked with the site Emergency Response procedures to shut down, contain and recover the spill. Migration of oil from the source is managed with the same techniques as Inland Response.</p>
Surveillance, Modelling and Visualization	<p>Description of the surveillance platform (e.g. aircraft, vessels, installations, on-foot, vehicles, subsea) and trained observers to support the implementation of the response technique. If specialist monitoring and/or remote sensing techniques (e.g. satellite imagery, oil detecting radar) are available to supplement surveillance methods, these shall be described in the Spill Response Plan or supporting documentation. However, safety shall be considered as the first priority when monitoring at spill site. Remote sensing observation is recommended for safety issue found while entering the spill area.</p> <p>When spill modelling is intended to be used together with the surveillance capability, the model shall be capable of being recalibrated regularly as new field data is generated. Communication methods to relay information between response teams (strategic (EMT) and tactical/field (ERT) shall be described in a plan or supporting documentation.</p>
Offshore Dispersant Application Surface and Subsea	<p>Pre-approval from applicable regulators/authorities for the use of surface and/or subsea-applied dispersant, or where no formal pre-approval mechanism exists, seek approval on the basis that such approval may be granted by or at the time of a spill incident response. Authorized person who asking for approval will indicated in Corporate Spill Contingency Plan.</p> <p>Confirm that the capability includes dispersant(s) for surface and/or subsea application that are effective for the oil type(s) included in the selected spill planning scenarios and are identified in the applicable country-approved list of dispersants (if available). Confirm that any applicable country-specific legal and regulatory restrictions on applying dispersant (e.g. water depth, distance from shore) are known, are described in the Spill Response Plan, and that the intended dispersant use complies with those restrictions.</p> <p>Confirm local availability of on-site stocks of dispersant to support an initial response to the selected spill planning scenarios and identify supplementary dispersant stocks and supply chains needed to maintain on-going dispersant operations. Exercise the mobilization period for additional dispersant from support site to spill area. Confirm the means to monitor the effectiveness of the oil-dispersant mix.</p>

Response Technique Options	Requirements
Offshore Dispersant Application Surface and Subsea (continue)	Confirm the availability of suitable subsea dispersant injection devices and related ancillaries, and the platforms for transport and deployment.
In Situ Burning	<p>Pre-approval from applicable regulators/authorities for the use of in situ burning, or where no formal pre-approval mechanism exists, seek approval on the basis that such approval may be granted by or at the time of a spill incident response.</p> <p>Consider the weather conditions and limitations prior to burn.</p> <p>Confirm the availability of resources such as vessels and boom designed for burning operations, ignition sources and related ancillaries.</p> <p>Confirm the means to monitor the effectiveness of the burning operations and atmospheric dispersion.</p>
At Sea (Offshore and Nearshore) Containment and Recovery	<p>Describe in the Spill Response Plan or supporting documentation, the availability of specialist and non-specialist resources, including:</p> <ol style="list-style-type: none"> Vessels, booms, and skimmers suitable for the prevailing operating conditions and oil characteristics Offshore temporary storage available for recovered oil and water Methods to transfer recovered oil and water and pre-separation Onshore reception and temporary storage facilities for recovered oil and water Surveillance aircraft to locate oil, direct the vessels and monitor effectiveness
Protection of Sensitive Resources (Offshore, Shoreline and Inland)	Identify environmental and socioeconomic sensitivities and agree on priorities for protection with applicable stakeholders and in accordance with regulatory requirements. Information regarding environmental and socio-economic sensitivity can be found in the environmental impact assessment report. A summary of this and initial response actions shall be presented in the Spill Response Plan or supporting documentation as site-specific tactical response plans.
Shoreline and Inland Assessment	If planning scenarios show there is potential for shoreline oiling, describe them in the Spill Response Plan or supporting documentation, the capability for carrying out a Shoreline Clean-up Assessment Technique (SCAT).
Shoreline Clean-up	If planning scenarios show there is potential for shoreline oiling, describe them in the Spill Response Plan or supporting documentation the roles and responsibilities for shoreline clean-up operations with national and provincial agencies/authorities. Clean-up resources shall be identified, including potential contractors and sources of plant/labour etc.

Response Technique Options	Requirements
Shoreline Clean-up (continue)	Reception and temporary storage facilities for recovered oil and materials shall be described in the Spill Response Plan or supporting documentation. Describe the processes to locate oil, direct the clean-up operations and monitor effectiveness.
Inland Response	<p>If planning scenarios show there is potential for an inland response, whether they are on land or on inland waterway, describe them in the Spill Response Plan or supporting documentation, the range of logistical issues that could influence the response implementation (e.g. access, remoteness of operations, special precautions for designated, private and/or sensitive areas) and the availability of resources for the response. The communication system shall be available 24/7 and exercise as scheduled, especially mobile carriers.</p> <p>For spill scenarios at a fixed location (drilling well pad, storage tank, product pipeline, pump house or other fixed structures): Confirm the availability of specialist and non-specialist resources, including, vehicles, heavy machinery, equipment and tools for the environment, terrain, and hydrological and geological conditions, above and below ground. Reception and temporary storage facilities for recovered oil and materials shall be described in the Spill Response Plan or supporting documentation.</p> <p>Describe the processes to locate oil, direct the clean-up operations and monitor effectiveness. Specialist and non-specialist equipment to monitor on/below ground and groundwater contamination as determined by the selected spill planning scenarios shall be described, along with the means to measure the quantities of recovered oil and other materials.</p> <p>For spill scenarios on mobile carriers on land (e.g. road / rail tankers) : Map out the available resources and critical sensitive area/receptor within the known transportation route. Provide estimated response times of nearest specialist and non-specialist resources, including vehicles, heavy machinery, equipment and tools to respond to different types of environments, terrain, and hydrological and geological conditions. The processes to locate oil, direct clean-up operations and conduct monitoring program shall be similar with the processes described for fixed structures.</p>

Response Technique Options	Requirements
Oiled Wildlife Response	<p>If planning scenarios identify the potential for oiled wildlife or the presence of endangered or legally protected species, then identify the available oiled wildlife specialists (whether locally available or internationally available) to respond to the incident. This may be sourced from the relevant government authorities, response organizations or non-governmental organizations. Critical information to be included in the Spill Response Plan or supporting oiled wildlife response plan are the notification procedures to engage these specialists, arrangements for wildlife protection and the response methodology for oiled wildlife.</p>
Waste Management	<p>Identify any country-specific or local legal and regulatory requirements pertaining to hazardous and non-hazardous waste management (including notification requirements, and how to set up temporary storage areas). Local availability of sufficient waste storage equipment and approved waste contractors for transportation of hazardous wastes shall be identified with contractual agreements for these services in place. Further, the final waste disposal location for each type of waste stream shall be identified with verification that the facility has the capability to accept the estimated volume of waste as identified in the planning scenario.</p> <p>Refer to the PTTEP's Waste Management Procedure for further guidance in waste management procedure (2146-PDR-SSHE-503/01).</p> <p>A summary of this information shall be presented in the Spill Response Plan or supporting documentation as the site-specific tactical response plans.</p>
Stakeholder Engagement and Communications	<p>Identify stakeholders who share the risk and maintain a database of these stakeholders and their contact information. A program shall be drawn to conduct regular communication with the stakeholders based on country-specific or local legal requirements and the duration of the operation. The frequency and need of stakeholder's engagement should be specified in the Spill Response Plan or supporting documents for engagement during the planning process or in a response stage.</p>

Response Technique Options	Requirements
Economic Assessment and Compensation	<p>Identify environmental and socioeconomic sensitivities that may be potentially impacted by spill from the operations. The Spill Response Plan or supporting documents should include a process for mobilizing resources to assess the impacts, to evaluate and to process claims and compensation to impacted communities. This shall include documentation preservation processes and any associated legal requirements of records and data. General information of socio-economic can be found in environmental impact assessment report related organization in operating country.</p>
Environmental Sampling, Monitoring and Assessment	<p>A monitoring program shall be implemented before, in between and after accidents to aid in decision making, to monitor technique effectiveness or to determine the extent of spill impact to the environment.</p> <p>Confirm the capability of subject matter experts, qualified sampling organizations and laboratories, and the equipment and logistics required to execute the monitoring program. This shall include the local compliance requirements for environmental monitoring.</p> <p>The sampling and monitoring procedures and the resources to support this assessment shall be included in the Spill Response Plan or supporting documents.</p>

APPENDIX F: REQUEST FORM FOR APPROVAL OF DISPERSANT APPLICATION IN THAILAND

กรมควบคุมมลพิษ คำขออนุญาตใช้สารเคมีจัดการน้ำมัน

เขียนที่.....
วันที่.....เดือน.....พ.ศ.....

เรียน อธิบดีกรมควบคุมมลพิษ

หน่วยงาน.....
ขออนุญาตใช้สารเคมีจัดการน้ำมันชนิด.....
เพื่อจัดการน้ำมันที่รั่วไหลจากสาเหตุ.....
สถานที่เกิดเหตุ.....
พิกัด.....
วันที่เกิดเหตุ.....เดือน.....พ.ศ.....เวลา.....
ชนิดน้ำมันที่รั่วไหล.....ปริมาตร.....ลิตร
น้ำมันรั่วไหลมาแล้ว.....วัน โดยทางหน่วยงานมีความประสงค์ในการใช้สารเคมีจัดการน้ำมันชนิดดังกล่าวข้างต้นเพื่อจัดการน้ำมันบริเวณ.....
จำนวน.....ลิตร โดยวิธี.....

ลงชื่อ.....ผู้ยื่นคำขอ
(.....)

ตำแหน่ง.....

สถานที่ติดต่อของผู้ยื่นคำขอ.....

โทรศัพท์.....โทรสาร.....

Pager.....e-mail

สถานที่ติดต่อกรมควบคุมมลพิษ

ในเวลาราชการ

นอกเวลาราชการ

กรมควบคุมมลพิษ 92 ซอยพหลโยธิน 7 ถนนพหลโยธิน แขวงสามเสนใน เขตพญาไท กรุงเทพฯ 10400	อธิบดีกรมควบคุมมลพิษ	0 2521 8682 / 0 1896 3594
	รองอธิบดีกรมควบคุมมลพิษ	0 2235 6536 / 0 1938 8018
	รองอธิบดีกรมควบคุมมลพิษ	0 2465 8938 / 0 1442 2661
	ผอ. สำนักจัดการคุณภาพน้ำ	0 2411 1341 / 0 1622 4124
	ผอ. ส่วนแหล่งน้ำทะเล	0 2973 4088 / 0-1816-4280

APPENDIX G: LIST OF APPROVED DISPERSANTS FOR THAILAND ASSETS

รายชื่อสารเคมีขจัดคราบน้ำมันที่อนุญาตให้ใช้ในประเทศไทย
กรณีแก้ไขปัญหาน้ำมันรั่วไหล

ลำดับที่	ชื่อสารเคมี	บริเวณที่ อนุญาตให้ ใช้ได้ ¹	วันหมดอายุ	วันจดทะเบียน/ วันที่ปรับปรุง	หน่วยงานที่ อนุญาต ²
1	Accell Clean® DWD	*		18 กรกฎาคม 2554	U.S. EPA.
2	Agma DR 379	S B RS	20 มิถุนายน 2559		MMO
3	Agma OSD 569	S B RS	20 มิถุนายน 2559		MMO
4	BIODISPERS (FROMERLY PETROBIODISPERS)	*		28 มิถุนายน 2545	U.S. EPA.
5	Caflon OSD	S B RS	20 ธันวาคม 2561		MMO
6	CHEMAX 307 oil spill dispersant	*	-	-	TISI
7	COREXIT® EC9500A	S	12 ธันวาคม 2561	13 เมษายน 2537/ 18 ธันวาคม 2538	MMO U.S. EPA.
8	COREXIT® EC9500B	*		1 สิงหาคม 2556	U.S. EPA.
9	COREXIT EC9527A (Formerly Corexit 9527)	*		10 มีนาคม 2521/ 18 ธันวาคม 2538	U.S. EPA.
10	DASIC SLICKGONE NS/ Slickgone NS	S B RS	20 กุมภาพันธ์ 2562		AMSA / MMO
11	DASIC SLICKGONE EW/ Slickgone EW	S B RS	25 เมษายน 2561		AMSA / MMO
12	DISPERSIT SPC 1000TM	*		22 เมษายน 2542	U.S. EPA.
13	FFT-Solution®	*		1 พฤศจิกายน 2554	U.S. EPA.
14	Finasol OSR 51	S B RS	27 มิถุนายน 2560		AMSA MMO
15	Finasol OSR 52	S B RS	18 มีนาคม 2563	30 มกราคม 2546	MMO U.S. EPA.
16	JD-109	*		20 กันยายน 2543	U.S. EPA.

ลำดับที่	ชื่อสารเคมี	บริเวณที่อนุญาตให้ใช้ได้ ¹	วันหมดอายุ	วันจดทะเบียน/วันที่ปรับปรุง	หน่วยงานที่อนุญาต ²
17	JD-2000™	*		6 สิงหาคม 2544	U.S. EPA
18	MARE CLEAN 200	*		23 กุมภาพันธ์ 2531/ 26 มกราคม 2539	U.S. EPA
19	MARINE D-BLUE CLEAN™	*		23 เมษายน 2555	U.S. EPA
20	NEOS AB3000	*		22 เมษายน 2528/ 26 มกราคม 2539	U.S. EPA
21	NOKOMIS 3-AA	*		31 กรกฎาคม 2551	U.S. EPA
22	NOKOMIS 3-F4	*		4 มีนาคม 2545	U.S. EPA
23	OSD/LT Oil Spill Dispersant	S B RS	20 มิถุนายน 2559		MMO
24	OSR 4000	S B RS	7 สิงหาคม 2561		MMO
25	Radiagreen OSD	S	19 กุมภาพันธ์ 2563		MMO
26	SAF-RON GOLD (a/k/a SF-GOLD DISPERSANT	*		3 มกราคม 2548	U.S. EPA
27	SEA BRAT #4	*		26 พฤศจิกายน 2545	U.S. EPA
28	SEACARE ECOSPERSE	S B RS	20 มีนาคม 2560		MMO
29	SEACARE ECOSPERSE 52 (see FINASOL OSR 52)	S B RS	25 เมษายน 2561	30 มกราคม 2546	MMO U.S.EPA
30	Seacare Ecosperse LT23	S B RS	28 ตุลาคม 2561		MMO
31	SEACARE E.P.A. (see Dispersit SPC 1000™)	*		22 เมษายน 2542	U.S. EPA
32	Seacare OSD	S B RS	10 พฤษภาคม 2561		MMO
33	Seacare OSD2	S B RS	28 ตุลาคม 2561		MMO

ลำดับที่	ชื่อสารเคมี	บริเวณที่อนุญาตให้ใช้ได้ ¹	วันหมดอายุ	วันจดทะเบียน/วันที่ปรับปรุง	หน่วยงานที่อนุญาต ²
34	SF-GOLD DISPERSANT (see SAF-RON GOLD)	*		3 มกราคม 2548	U.S.EPA
35	Super-dispersant 25	S B RS	17 มีนาคม 2563		MMO
36	SUPERPERSE TM WAO2500	*		23 มีนาคม 2554	U.S.EPA
37	ZI-400	*		16 มิถุนายน 2548	U.S.EPA
38	ZI - 400 OIL SPILL DISPERSANT (see ZI-400)	*		16 มิถุนายน 2548	U.S.EPA

ปรับปรุงข้อมูลล่าสุด 19 พฤษภาคม 2558

หมายเหตุ

¹ อนุญาตให้ใช้ในพื้นที่

- S ■ Sea ทะเล
- B ■ Beach ชายหาดทราย
- RS ■ Rocky shore ชายหาดหิน
- * ■ ไม่ได้ระบุ

² หน่วยงานที่อนุญาต

- Marine Management Organisation : MMO สหราชอาณาจักร
- U.S. Environmental Protection Agency : U.S. EPA สหรัฐอเมริกา
- Australian Maritime Safety Authority : AMSA ประเทศออสเตรเลีย
- Thai Industrial Standards Institute : TISI ประเทศไทย

APPENDIX H: IESG OIL SPILL RESPONSE RESOURCES REQUEST FORM



Oil Spill Response Assistance and Interface Procedure

Appendix F: OSR Resources Request Form

แบบฟอร์มการขอรับการสนับสนุนในการขจัดคราบน้ำมันสำหรับสมาชิก

ส่วนที่ 1 Contact Details

ชื่อผู้ขอการสนับสนุน.....

ตำแหน่ง.....บริษัท/หน่วยงาน.....

หมายเลขโทรศัพท์.....หมายเลขโทรสาร.....

อีเมล.....

ที่อยู่ Command Center.....

รายการอุปกรณ์ที่ขอการสนับสนุน.....

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รายการอื่นๆ ที่ขอการสนับสนุน.....

.....

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สถานที่จัดส่ง

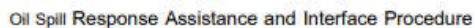
☐ รับเอง

☐ จัดส่งให้ (โปรดระบุสถานที่จัดส่ง).....

ลายเซ็น.....

ลงชื่อผู้ร้องขอ(ตัวบรรจง).....

วันที่.....เวลา.....



รายการอุปกรณ์ที่ให้การสนับสนุน

รายการอื่นๆ ที่ให้การสนับสนุน

หมายเหตุ ให้บันทึกการรายการอุปกรณ์ให้ครบถ้วนหรือใช้แบบฟอร์มที่สะดวกกว่า

ลงชื่อ.....ผู้ยืนยันให้นำของออก/ให้การสนับสนุน

ตำแหน่ง _____ วันที่ _____ เวลา _____

โทรศัพท์

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APPENDIX I: LIST OF IESG RESOURCES

Type of Equipment	Size or Capacity	Total Quantity	Sattahip	Songkhla	Insurance Value	Daily rate		Daily rate	
						Government		Non-member	
						In Use	Stand-by Baht	In Use	Stand-by Baht
OIL CONTAINMENT BOOMS									
Complete set and ready to deploy									
1. Offshore Boom Air inflatable Auto Boom Lamor LAN 1500 in set composed with Hydraulic reel, power pack and air blower	200 m.	8	6	2	3,954,000	39,875	19,940	79,750	39,875
2. Offshore Boom Air inflatable Auto Boom Lamor LAN 1800 in set composed with Hydraulic reel, power pack and air blower	200 m.	1	1		4,032,000	42,085	21,045	84,170	42,085
3. Nearshore boom Air inflatable LAMOR ILB 1100 in set composed with Hydraulic reel, power pack and air blower	200 m.	10	8	2	2,565,650	65,225	32,615	130,450	65,225
4. Sea Sentinel Boom Vikoma Sentinel 900 in set composed with Hydraulic reel, power pack and air blower	200 m.	4	2	2	2,589,000	63,025	31,515	126,050	63,025
5. Beach Boom Desmi Ro Beach 800 in set composed with water pump and air blower	100 m.	3	2	1	1,064,000	33,150	16,575	66,300	33,150
6. Shore Guardian 400 in set composed with water pump, air blower (diesel engine)	100 m.	2	1	1	1,303,500	28,080	14,040	56,160	28,080

Type of Equipment	Size or Capacity	Total Quantity	Sattahip	Songkhla	Insurance Value	Daily rate		Daily rate	
						Government		Non-member	
						In Use	Stand-by Baht	In Use	Stand-by Baht
7. Solid Boom SK-Boom model SK-C105U	200 m.	2		2	759,000	25,300	12,650	50,600	25,300
8. Solid Boom SK-Boom model SK-C90U	200 m.	2		2	706,200	23,550	11,775	47,100	23,550
9. Solid Boom SK-Boom model SK-C75U (Bangkok)	200 m.	1			663,400	22,120	11,060	44,240	22,120
10. Solid Boom Supermax	150 m.	1	1		783,860	26,130	13,065	52,260	26,130
11. Solid Boom Flexi 900	200 m.	2		2	660,000	22,000	11,000	44,000	22,000
Booms									
Offshore Boom Air inflatable Auto Boom Lamor LAN 1800 w/ winder and build -in power pack	200 m.	1	1		3,544,000	39,375	19,690	78,750	39,375
Offshore Boom Air inflatable Auto Boom Lamor LAN 1500 w/ winder	200 m.	7	5	2	3,223,900	35,825	17,915	71,650	35,825
Nearshore boom Air inflatable LAMOR ILB 1100 w/ winder	200 m.	10	8	2	1,835,000	61,175	30,590	122,350	61,175
Sea Sentinel Boom Vikoma Sentinel 900 w/ winder	200 m.	4	2	2	1,751,000	58,365	29,185	116,730	58,365
Beach Boom Desmi Ro Beach 800	100 m.	3	2	1	884,000	29,475	14,750	58,950	29,475
Shore Guardian 400	100 m.	2	1	1	749,500	25,000	12,500	50,000	25,000

Type of Equipment	Size or Capacity	Total Quantity	Sattahip	Songkhla	Insurance Value	Daily rate		Daily rate	
						Government		Non-member	
						In Use	Stand-by Baht	In Use	Stand-by Baht
Boom components									
Air Blower ; "LAMOR", DAB70Y - 3 KW Diesel Engine, Capacity 400 m3/hr		8	6	2	441,700	2,450	1,225	4,900	2,450
Air Blower ; Elastec, 7 HP Diesel Engine, capacity 3000 CFM		4	2	2	488,000	2,710	1,355	5,420	2,710
Air inflator LBP 350				1	350,000	1,950	975	3,900	1,950
Back pack air blower Gasoline Engine, Capacity 1200 m3/hr		3	3		120,000	675	350	1,350	675
Power pack with build-in air blower (Auto boom LAN 1500)		2	2		556,000	3,100	1,550	6,200	3,100
Hydraulic Power Pack LPP7 - 7 KW Diesel Engine, Hi press 170 bar		5	4	1	288,900	1,600	800	3,200	1,600
Hydraulic power pack (for Sea Sentinel Boom)		4	2	2	350,000	1,950	975	3,900	1,950
Power pack SN P750-3222 (for offshore boom Auto LAN 1500)			1		122,500	700	350	1,400	700
Pacer water pump for beach boom		5	4	1	66,000	370	185	740	370

Type of Equipment	Size or Capacity	Total Quantity	Sattahip	Songkhla	Insurance Value	Daily rate		Daily rate	
						Government		Non-member	
						In Use	Stand-by Baht	In Use	Stand-by Baht
OIL RECOVERY SKIMMERS									
Complete set and ready to deploy									
12. Lamor Brush - Weir Skimmer LWS 500 W/P in set composed with Oil Transfer pump GTA70 and Hydraulic power pack LPP35K 35KW, Diesel engine	70 m3/hr.	1	1		3,519,000	19,550	9,775	39,100	19,550
13. Multi skimmer, LAMOR LMS/P in set composed with oil transfer pump GT A30 and Hydraulic power pack LPP250	30 m3/hr.	3	1	1 - BKK 1 - SKL	3,416,938	19,000	9,500	38,000	19,000
14. Weir Skimmer Desmi 250 in set composed with oil transfer pump and power pack			1		3,505,000	19,475	9,740	38,950	19,475
15. Brush Disc Skimmer Lamor Minimax 12 in set composed with Power pack with pump Spate C75	12 m3/hr.	4	3	1	822,400	4,570	2,285	9,140	4,570
16. Disc Skimmer T12 in set composed with Power pack with pump Spate C75	12 m3/hr.	4	3	1	616,800	3,425	1,713	6,850	3,425
17. Rope Mob Skimmer		3	2	1	680,000	3,350	1,675	6,700	3,350
18. Power Vac Skimmer		6	4	2	453,900	2,525	1,265	5,050	2,525
19. Weir Skimmer, Desmi Mini-Max in set composed with spate pump 75C	12 m3/hr.	1		1	580,000	3,225	1,613	6,450	3,225
20. Floating Suction Head, Vikoma Delta Head in set composed with spate pump 75C	12 m3/hr.	1		1	427,395	2,375	1,188	4,750	2,375

Type of Equipment	Size or Capacity	Total Quantity	Sattahip	Songkhla	Insurance Value	Daily rate		Daily rate		
						Government		Non-member		
						In Use	Stand-by Baht	In Use	Stand-by Baht	
OIL DISPERSANT SPRAYERS										
Complete set and ready to deploy										
21. Dispersant Spray Set; Lamor Boat Spray 100 Dual AFEDO nozzles in set composed with pump unit and 2 AFEDO nozzles	100 L/min.	8	6	2	800,500	4,445	2,223	8,890	4,445	
22. Portable Dispersant Sprayer		4	3	1	120,000	675	340	1,350	675	
OIL STORAGE TANKS										
Complete set and ready to deploy										
23. Oil storage tank Lamor LCT TSC11.4	10 m3	4	2	2	318,900	5,315	2,660	10,630	5,315	
24. Fast Tank 2000	10 m3	6	4	2	358,950	5,980	2,990	11,960	5,980	
ANCILLARIES - OTHERS										
25. Spate pump C75					377,400	2,100	1,050	4,200	2,100	
26. 10 ft. 2 doors Storage containers for offshore					334,000	1,850	925	3,700	1,850	
27. Cargo Basket (70"x70"x50")					184,000	1,025	513	2,050	1,025	

APPENDIX J: ESTIMATED MOBILIZATION TIME TO THAILAND OFFSHORE ASSET FOR NATIONAL ASSISTANCE FROM THE NEAREST IESG SITE

Asset	IESG Nearest Site	Nearest Airport to PTTEP Assets	In-land Preparation & Mobilization time (hrs.)	Vessel Mobilization time (hrs.)	Total time (hrs.)
ART	Songkhla	Hat Yai (HDY)	6	16	22
G2/61	Songkhla	Hat Yai (HDY)	6	18	24
G1/61	Songkhla	Hat Yai (HDY)	6	18	24

APPENDIX K: LIST OF PTTEP AUTHORIZED PERSONNEL FOR OSRL ACTIVATION (AS OF JANUARY 2023)

No.	Name	Position/Job Title	Telephone	Mobile	Email Address
1		SVP, Thai Offshore 1 Asset			
2		SVP, Thai Offshore 2 Asset			
3		SVP, Thai Offshore 3 Asset			
4		Acting SVP, Thai Onshore Asset			
5		SVP, Safety, Security, Health & Environment Division			
6		SVP, Exploration Project Division			
7		SVP, Development Project Division			
8		Acting SVP, Myanmar Asset			
9		VP, Algeria Development Project			
10		Country Manager, Malaysia Asset			
11		VP, Safety Management Department			
12		VP, Environment Management Department			
13		SSHE Manager, Myanmar Asset			
14		SSHE Manager, Myanmar Asset (Yadana)			



No.	Name	Position/Job Title	Telephone	Mobile	Email Address
15		SSHE Manager, Algeria Hassi Bir Rekaiz Project			
16		Co-HSE Manager, Algeria Groupement BIR-SEBA (GBRS)			
17		Head of SSHE Section, Malaysia Asset			
18		Head of SSHE Operations and Project Support, Malaysia Asset			

**APPENDIX L: IESG OIL SPILL RESPONSE RESOURCES REQUEST FORM**

PTT Public Company Limited (PTT)

Communication Centre:

Oil Spill Response and East Asia Response Limited (OSRL)

Singapore Base:**Southampton Base:****Notification Form – Page 1 of 2**

To: PTT Communication Center	Date:
Cc: OSRL	Warning! Ensure telephone contact has been established with the Duty Manager before using Email communication.
From:	Position:
Company:	Contact Number:
Subject: For Your Information	Incident name:
OBLIGATORY INFORMATION REQUIRED – COMPLETE ALL DETAILS	
Name of person in charge	
Position	
Company	
Contact telephone number	
Contact fax number	
Email address	
Spill Details	
Location of spill	
Description of slick (size/direction appearance)	
Latitude / Longitude	
Situation (cross box)	
Date & Time of spill	
Source of spill	
Quantity (if know)	
Spill status (cross box)	
Action taken so far	
Oil type & characteristics	
Name	
Viscosity	
API/SG	
Pour point	
Asphaltene	
Weather	
Wind speed and direction	
Sea state	
Sea temperature	
Tides	
Forecast	



PTT Public Company Limited (PTT)

Communication Centre:

Oil Spill Response and East Asia Response Limited (OSRL)

Singapore Base:**Southampton Base:**

Notification Form – Page 2 of 2

ADDITIONAL INFORMATION REQUIRED – COMPLETE DETAILS IF KNOW	
Resources at risk	
Clean up resources	
On site / Ordered	
Nearest airport (if know)	
Runway length	
Handling facilities	
Customs	
Handling agent	
Vessel availability	
Equipment deployment	
Recovered oil storage	
Equipment logistics	
Transport	
Secure storage	
Port of embarkation	
Location of command centre	
Other designated contacts	
Special requirements of country	
Security	
Visa	
Medical advise	
Vaccinations	
Others (specify)	
Climate information	

**APPENDIX M: PTT GROUP MOBILIZATION AUTHORIZATION FORM****Mobilisation Authorisation**

To: PTT Communication Center	Date:
Tel: [REDACTED]	
From:	Position:
Company:	Contact Number:
Subject: Mobilisation of OSRL	Incident name:

I, _____ (Name in Block Capitals)
hereby authorise to request PTT for the activation of OSRL and its resources in connection
with the oil spill incident of _____ (Name of Ship/Oil Rig or Terminal)
as of _____ (Time) on _____ (Date)

OSRL shall work under the direction of:

Name: _____
Position: _____
Company: _____

Signature _____ Position _____
Company name _____

To: OSRL	Date:
[REDACTED]	[REDACTED]
From: PTT Public Company Limited	Contact Number: [REDACTED]
Subject: Mobilisation of OSRL	Incident name:

I, _____ (Name in Block Capitals)
hereby authorize the activation of OSRL and its resources in connection with the oil spill
incident of _____ (Name of Ship/Oil Rig or Terminal)
as of _____ (Time) on _____ (Date)

Signature _____ Position _____
PTT Public Company Limited

APPENDIX N: OSRL NOTIFICATION AND MOBILIZATION PROCEDURE

OSRL Request Step

PTTEP is a participant member with OSRL, and therefore has immediate access to Tier 3 technical advice, resources and expertise 365 days a year on a 24-hour basis. The following steps should be followed to request OSRL's support:

- In the event of an incident, a call should be placed to one of the following numbers. The Duty Manager (DM) will call Client back within 10 minutes of receiving notification of the call.

Emergency Contact (TELEPHONE)

[REDACTED]

[REDACTED]

Emergency Contact (FAX)

[REDACTED]

[REDACTED]

- Complete the Notification (Appendix L) and Mobilization Authorization forms (Appendix M) as necessary, which can be sent to OSRL by fax or email.
- Under the Participant Member Agreement which governs the mobilization of resources from OSRL, OSRL must receive official notification to mobilize from one of PTTEP's Nominated Call-out Authorities, summarized in Appendix H. These are individuals within PTTEP who have been appointed to approve the expenditure of mobilizing Tier 3 equipment.

APPENDIX O: OSRL NOTIFICATION FORM



OSRL Notification Form

(Initial Incident Information)

Warning! Please telephone the Duty Manager before e-mailing or faxing this form

To	Duty Manager		
OSRL Base	Southampton, UK	Loyang, Singapore	Fort Lauderdale, USA
Telephone			
Emergency Fax			
Email			

Guidance: This information will be used to develop and recommend the most appropriate response strategy. If new information should become available, or the situation changes, please inform the Duty Manager as soon as possible.

Section 1 – Contact Details					
Member Company					
Name of Person Notifying OSRL					
Job Title (Designation)					
Direct Phone Number	Country code		Number		
Mobile Number	Country code		Number		
Fax Number					
Email Address					
Command Centre Address					
Date and Time of Notification	Date and Time		Time Zone		
Section 2 – Location					
Country / Region of Spill					
Latitude of spill (north/south)					
Longitude of Spill (east/west)					
Area Affected	<input type="checkbox"/> Offshore	<input type="checkbox"/> Subsea	<input type="checkbox"/> Shoreline	<input type="checkbox"/> Estuary	<input type="checkbox"/> Other
	<input type="checkbox"/> Port	<input type="checkbox"/> Harbour	<input type="checkbox"/> Inland	<input type="checkbox"/> River	
Water Depth (if applicable)					
Section 3 – Spill Details					
Date and Time of Spill				Time Zone	
Source of Spill					
Cause of Spill					
Status of Spill	<input type="checkbox"/> Secured		<input type="checkbox"/> Uncontrolled		<input type="checkbox"/> Unknown
Product Properties	Product Name / Type				State Units Provide an assay sheet if available. <input type="checkbox"/> Assay sheet provided
	Specific Gravity	API			
	Pour Point				
	Wax Content				
	Asphaltene				
	Sulphur Content				
	Viscosity	Reference Temperature °C			
Type of Release	Instantaneous Release	<input type="checkbox"/>	Volume		
	OR				
	Continuous Release	<input type="checkbox"/>	Release Rate		
State Units					

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Section 3 – Spill Details continued					
Description of Observed Spill	Estimated Quantity				State Units
	Size				
	Appearance				
	Direction of Travel				
Section 4 – Weather and Modelling					
Weather forecast provided? e.g. Excel/Word	<input type="checkbox"/> Yes	<input type="checkbox"/> No, OSRL to source a weather forecast			
Sea Temperature				State Units	
Sea State					
Visibility					
Cloud Base					
Do you require Oil Spill Trajectory Modelling?	<input type="checkbox"/> Surface 2D	<input type="checkbox"/> Sub-surface 3D Additional time and costs apply	<input type="checkbox"/> Not at this time		
Sub-surface 3D Modelling Information if requested	Gas to Oil Ratio	Sm ³ /m ³	Release Hole Diameter	m	
Section 5 – Safety and Security					
Highlight any known safety or security risks e.g. high levels of H ₂ S, high risk country				<input type="checkbox"/> Not Applicable	
Describe security arrangements for OSRL staff				<input type="checkbox"/> Not Applicable	
Section 6 – Resources at Risk (if available)					
Environmental or socio-economic sensitivities that may be impacted. Provide the relevant oil spill contingency plan and sensitivity maps if available.				<input type="checkbox"/> Contingency plan included <input type="checkbox"/> Sensitivity maps included	
Section 7 – Equipment (if available)					
Equipment already deployed or being mobilised (other than OSRL resources)					
Section 8 – Further Information					

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APPENDIX P: OSRL MOBILIZATION AUTHORIZATION FORM



Mobilisation Authorisation Form

Please do not hesitate in contacting the duty manager at the earliest opportunity in the event of an incident or potential incident. Please ensure you telephone the Duty Manager before e-mailing or faxing this completed form

Safety and Security

Oil Spill Response Limited's safety policy requires us to work closely with the mobilising party to ensure all aspects of safety and security are addressed for our personnel.

To	Duty Manager		
OSRL Base	Southampton, UK	Loyang, Singapore	Fort Lauderdale, USA
Telephone			
Emergency Fax			
Email			

Details of Authorised Contact			
Incident Name			
Mobilising Company			
Name of Person Authorising OSRL			
Position of Authorising Representative			
Direct Phone Number	Country Code	Number	
Mobile Number			
Fax Number			
Email Address			

Invoice Address if available	
Purchase Order Number	

I, the above named Authorising Representative for the Mobilising Company, approve activation of Oil Spill Response Limited and its resources in connection with the above incident under the terms of the Agreement in place between the above stated Company and Oil Spill Response Limited.

Signature:		Date / Time:		
------------	--	--------------	--	--

If Oil Spill Response Limited personnel are to work under another party's direction please complete details below:

Directing Party's Details	
Company	
Contact Name	
Position in Incident	
Direct Phone Number	
Mobile Number	
Fax Number	
Email Address	

APPENDIX Q: ESTIMATED MOBILIZATION AND FLIGHT TIME FOR OSRL'S AERIAL DISPERSANT CAPABILITY

Country	OSRL Nearest Site	Nearest Airport to PTTEP Assets	Mobilization time (hrs)	Flight time (hrs)	Total time (hrs)
Algeria	United Kingdom	Houari Boumediene (DAAG)	6	9	15
Australia	Singapore	Darwin	6	8	14
Canada	United Kingdom	1st day to St John's (YYT) 2nd day to Calgary International (YCC)	6	15.5	>25
Mozambique	United Kingdom	Maputo	6	20.5	25.5
Myanmar	Singapore	Yangon	6	4	10
Thailand	Singapore	Suvarnabhumi Airport	6	3	9
		Hat Yai Airport	6	2.25	8.25
Malaysia	Singapore	Senai Airport	6	0.4	6.4

APPENDIX R: SPILL CAPABILITY ASSESSMENT CHECKLIST

Section 1 Management Organization & Training

It is essential that there is a robust management structure to lead the response to any incident. The members of the response team should be aware of their individual roles and responsibilities and trained in oil spill response. The team should be aware of how IESG and its members interface with their response organization. The organization should be regularly exercised.

Management Organization & Training		1	2	3
Reference document – OSCP				
M1	Is there a management structure for dealing with an oil spill incident?			
M2	Are all members of the team aware of their individual Roles and Responsibilities?			
M3	Is there a Response management System in place?			
M4	Have all of the team members been trained in oil spill response?			
M5	Have members of the management team been briefed in how IESG and its member operate and their respective responsibilities?			
M6	When was the management team last exercise?			

Section 2 Planning

There should be a contingency plan in place to co-ordinate the response to an oil spill which will bring together various elements of the response, including cleanup equipment. It should be kept up to date and tested on a regular basis. The plan should interface with other adjacent plans. And, should have an appropriate and relevant risk assessment and identify where resources to support tier 1, 2 and 3 response can be accessed.

Planning		1	2	3
Reference document – OSCP				
P1	Is there a contingency plan in place?			
P2	When was it last review/update?			
P3	When was the plan last exercise?			
P4	Does the plan integrate with IESG response?			
P5	Does the plan interface with national and other adjacent local plans?			
P6	Does the plan risk assessment reflect the scope of the operation and anticipate credible level of IESG and its members' involvement?			
P7	Does the credible Tier 1 spill scenario identified?			
P8	Does the cleanup equipment appropriate with the Tier 1 spill scenario?			
P9	Does the equipment maintenance and test program in place?			
P10	Does the equipment mobilization & deployment logistics been planned and tested?			

Section 3 Notification and Mobilization

An effective response is dependent upon an effective notification and mobilization system to alert the responders. This section deals with the alerting system, and ensures that all parties are aware of the required information and authorities to mobilize the support response from IESG and its members.

Notification and Mobilization		1	2	3
Reference document – OSCP				
N1	Is there a procedure in place to notify IESG of an incident?			
N2	When was it last review/update? (<i>notification procedure</i>)			
N3	When was the procedure last exercise?			
N4	Is there a procedure in place to mobilize IESG support in the event of an incident?			
N5	When was it last review/update? (<i>mobilization procedure</i>)			
N6	When was the system last exercise?			
N7	Are you aware of the information needed by IESG & members to mobilize a response?			
N8	Are you aware of the advice and information support that can be accessed from IESG?			
N9	Are you aware of the response time likely to be achieved in the event of a call?			

Section 4 Response

In order for IESG and its members to be able to respond effectively with the member (spill owner) there is a need for infrastructure items to support the response. This section deals with these elements.

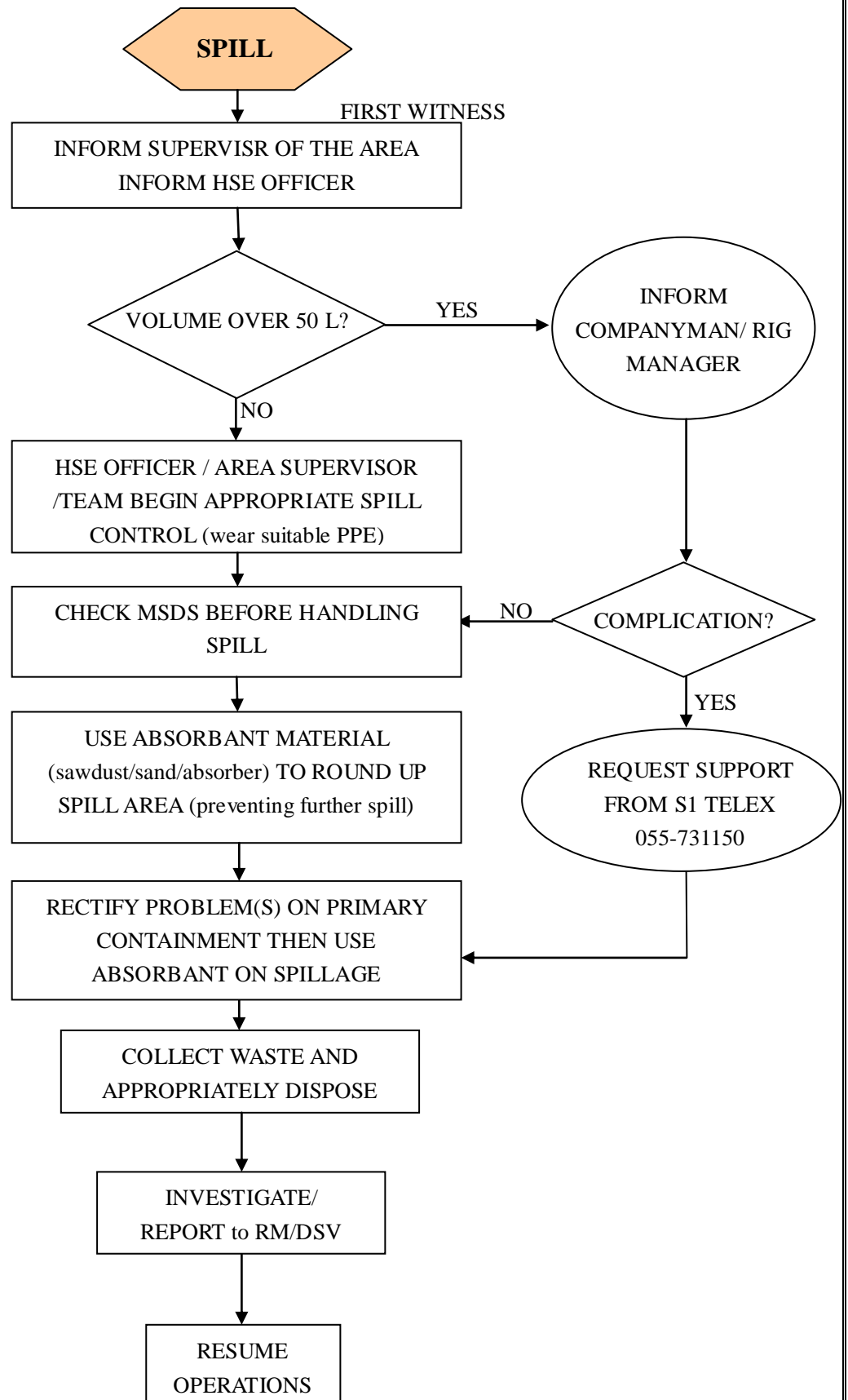
Response		1	2	3
Reference document – OSCP				
R1	Is there a safety management plan in place for response operations?			
R2	Have response personnel been trained in the safety aspects of oil spill response?			
R3	Is there a communications system to enable effective co-ordination of the response?			
R4	Have secure equipment stockpile areas been identified?			
R5	Have the logistical arrangements been identified to import and deploy additional equipment delivered by IESG and its members?			
R6	Has a waste management plan been developed for the response operation?			
R7	When was the system last exercise?			

Answers to the questions are recorded on a numerical matrix indicating whether the issue is considered to be adequately addressed. Certain aspects are considered critical success factors, and failure in these areas would be

material to the ability of IESG and its members to assist the member (spill owner), or more importantly, for the member to be able to respond effectively. The answers should be dependent upon the question context.

Answers	Status
Yes / Satisfactory / this year	1
In need of action / Review / last year	2
No / Unsatisfactory/ Before last year	3

GW80 Flow chart when spill happen



ภาคผนวกที่ 23
เอกสารการจ้างแรงงานท้องถิ่น



ใบสมัครงาน

(Application Form)

ตำแหน่งที่ต้องการ : Extrahand	เงินเดือนที่ต้องการ : -
หลักฐานประกอบการสมัครงาน (สำหรับเจ้าหน้าที่เป็นผู้ออก) <input type="radio"/> รูปถ่ายหน้าตรง จำนวน 1 รูป <input type="radio"/> สำเนาทะเบียนบ้าน <input type="radio"/> สำเนาบัตรประชาชน <input type="radio"/> ใบรับรองการศึกษา <input type="radio"/> ใบผ่านทหาร <input type="radio"/> ใบเลขที่บัตรผู้เสียภาษี <input type="radio"/> สำเนาบัตรประกันสังคม <input type="radio"/> ใบขับขี่ <input type="radio"/> อื่นๆ.....	

ใบสมัครเป็นส่วนหนึ่งในการพิจารณา โปรดกรอกข้อความให้ครบถ้วน

Application Form is a part of consideration, please fill this form completely

ประวัติส่วนตัว Personal Background

ชื่อ - สกุล				เพศ	<input type="radio"/> ชาย	<input type="radio"/> หญิง
Name - Surname				Sex	Male	Female
วัน / เดือน / ปี เกิด		สัญชาติ	ไทย	เชื้อชาติ	ไทย	ศาสนา
Date of Birth		Nationality	ไทย	Race	ไทย	Religion
อายุ		ส่วนสูง		น้ำหนัก		กลุ่มเลือด
Age		Height		Weight		Blood Group
สถานที่เกิด		โทรศัพท์มือถือ		บ้าน		ที่ทำงาน
Place of Birth		Mobile Phone		Home		Office
ที่อยู่ปัจจุบัน	จ. นครราชสีมา					
Present Address	จ. นครราชสีมา					
ที่อยู่ตามทะเบียน	จ. นครราชสีมา					
A Residence Registration	จ. นครราชสีมา					
บัตรประชาชนเลขที่		ออกให้ ณ	จ. นครราชสีมา	จังหวัด	นครราชสีมา	
ID Card No.		Issued at	นครราชสีมา	Province	Nakhon Ratchasima	
วันออกบัตร		บัตรหมดอายุ		วันออกบัตร		
Issued date		Expired date		Issued at		
บัตรประกันสังคมเลขที่		ออกให้ ณ		ออกให้ ณ		
Social Security Card No.		Issued at		Issued at		
สถานะความเป็นอยู่	<input checked="" type="radio"/> บ้านส่วนตัว	<input type="radio"/> บ้านเช่า	<input type="radio"/> อาศัยอยู่กับพ่อแม่	<input type="radio"/> อาศัยอยู่กับผู้อื่น		
Living Status	Own home	Rent home	Live with parents	Live with other		
สถานะครอบครัว	<input checked="" type="radio"/> โสด	<input type="radio"/> แต่งงาน	<input type="radio"/> หย่า	<input type="radio"/> โสด	<input type="radio"/> แยกกันอยู่	
Marital Status	Single	Married	Divorced	Widowed	Separated	
กรณีแต่งงาน	<input type="radio"/> จดทะเบียน	<input type="radio"/> ไม่จดทะเบียน	คู่สมรสมีรายได้หรือไม่	<input type="radio"/> มี	<input type="radio"/> ไม่มี	
If Married	Registered	Non-Registered	Spouse has any income?	Yes	No	
ชื่อคู่สมรส			อาชีพ	สถานที่ทำงาน		
Spouse's Name			Occupation	Firm Address		
จำนวนบุตร	จำนวนบุตรที่กำลังศึกษา		จำนวนบุตรที่อายุเกิน 21 ปี			
No. of Children	Children in school		Children over 21 year			
ชื่อบิดา	อายุ	อาชีพ	<input type="radio"/> มีชีวิตอยู่	<input type="radio"/> ถึงแก่กรรม		
Name of Father	Age	Occupation	Alive	Passed away		
ชื่อมารดา	อายุ	อาชีพ	<input type="radio"/> มีชีวิตอยู่	<input type="radio"/> ถึงแก่กรรม		
Name of Mother	Age	Occupation	Alive	Passed away		
สถานะทางทหาร	<input type="radio"/> ได้รับการยกเว้น	<input type="radio"/> ศึกษาวิชาทหาร	<input type="radio"/> ผ่านการเกณฑ์ทหาร	<input type="radio"/> อื่นๆ		
Military Service	Exempted	Military	Discharged	Other		

ประวัติการศึกษา Educational Background

ระดับการศึกษา Education	ชื่อสถาบัน Name of Institute	จังหวัด - ประเทศ Country	ปีการศึกษา Year Attended		วิชาที่ศึกษา / วิชาที่ได้รับ Course Taken Completed
			จาก From	ถึง To	
ประถมศึกษา Primary	ร.ร บ้านคลองขมิ้น	พิจิตร	2521	2542	
มัธยมศึกษา Secondary					
อาชีวศึกษา Vocational					
อนุปริญญา Higher Vocational					
ปริญญาตรี Bachelor Degree					
อื่นๆ Other					

ภาษา Languages

ประเภทภาษา Type of Language	การพูด Speaking			การเข้าใจ Understanding			การอ่าน Reading			การเขียน Writing		
	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair
ไทย Thai	/			/			/			/		
อังกฤษ English			/			/			/			/
จีน Chinese			/			/			/			/
อื่นๆ Other												

ประวัติการทำงาน Employment History

ชื่อสถานประกอบการ (List of Employed)	ระยะเวลา Date Employed		ตำแหน่ง Position	เงินเดือนครั้งสุดท้าย Last Salary
	จาก From	ถึง To		

บุคคลที่ไม่ใช่ญาติซึ่งทราบประวัติของท่านและบริษัทสามารถสอบถามได้

Persons other than relatives can be contacted

ชื่อ - สกุล Name	ความสัมพันธ์ Relationship	สถานที่ทำงาน / ที่อยู่ Firm Address	ตำแหน่ง Position	โทรศัพท์ Telephone
ความรู้พิเศษ Special ability	คอมพิวเตอร์ Computer	เทเล็กซ์ Telex	เครื่องโทรสาร Facsimile	พิมพ์ดีด Typing
ในด้านแหล่งที่ต้องการมีการรับประกัน Can you provide a guarantor?	ไม่ขัดข้อง Yes		ขัดข้อง No	
ในการปฏิบัติงานเป็นกะหมุนเวียนกันไป Can you work shift by shift?	ไม่ขัดข้อง Yes		ขัดข้อง No	
ในการปฏิบัติงาน สามารถเปลี่ยนแปลงตำแหน่งหน้าที่ได้ตามความเหมาะสม Can you rotate your work position?		ไม่ขัดข้อง Yes	ขัดข้อง No	
เป็นประจำ Always		ไม่ขัดข้อง Yes	ขัดข้อง No	
การปฏิบัติงานต่างจังหวัด Can you work up country?	เป็นครั้งคราว Sometime	ไม่ขัดข้อง Yes	ขัดข้อง No	

ท่านเคยทำผิดกฎหมาย หรือ ต้องคดีอาญาหรือไม่ Have you ever breaking law?	<input checked="" type="radio"/> ไม่เคย No	<input type="radio"/> เคย เหตุผล Yes . reason
ท่านมีโรคติดต่อ โรคเรื้อรัง หรือไม่ Do you have infectious disease or chronic disease?	<input checked="" type="radio"/> ไม่มี No	<input type="radio"/> มี Yes.....
ท่านมีโรคประจำตัว หรือไม่	<input checked="" type="radio"/> ไม่เคย	<input type="radio"/> เคย โรค.....
ท่านเคยมีปัญหาหัวหน้าส่วนอุตสาหกรรม หรือ อุตสาหกรรมใดก็ตามหรือไม่ Have you ever dismissed from any company?	<input checked="" type="radio"/> ไม่เคย No	<input type="radio"/> เคย เหตุผล Yes . reason
บุคคลในบริษัทที่ท่านรู้จักคุ้นเคยชื่อ Relative or friends working in this company		ความสัมพันธ์ Relationship
ท่านพร้อมที่จะปฏิบัติงานกับบริษัทในวันที่ : Date available to start work		
ข้าพเจ้าขอรับรองว่า ข้อความข้างต้นทั้งหมดนี้เป็นความจริงทุกประการ หากข้อความตอนหนึ่งตอนใดไม่ตรงกับความเป็นจริง ข้าพเจ้าขอยอมรับว่า การที่ข้าพเจ้าได้ ตกลงนั้นเป็นอันโมฆะทันที Certify that all of the statements in this application are true and correct to the best of my knowledge and any false information willfully given shall be sufficient reason to dismiss me from the service		
วันที่ 23 / 11 / 66 Date	ลายมือชื่อผู้สมัครงาน..... Applicant's Signature	
สำหรับบริษัท (For Company Use Only)		
ผู้สัมภาษณ์..... Interviewer	วันที่สัมภาษณ์..... Date of Interview	
ผลการสัมภาษณ์..... Decision reached	ตำแหน่งงานที่บรรจุ..... Position for which considered	
วันที่เริ่มจ้างงาน..... Date of Employment	บังคับบัญชาโดย..... Report to	
อัตราเงินเดือน..... Salary	เงื่อนไขอื่นๆ..... Other conditions	
กำหนดระยะเวลาทดลองงาน..... Probation Term		
ลายมือชื่อผู้สัมภาษณ์..... Interviewer Signature	สัญญาจ้างทดลองงานฉบับที่..... Probation Contract No.	
หมายเหตุ..... Remark	อนุมัติโดย..... Approved by	
	ผู้ให้อนุมัติ..... Final Approval (Managing Director)	
	วันที่..... Date	

-V3

-ตัวแจ้วที่ท้าวานเก่า ๘ 15-30 วิ 4



ใบสมัครงาน

(Application Form)

Back up

ไม่ทนได้ ~ 15 - 16 2.11 66

* พร้อมส่งเอกสาร 15 ถึงงาน 16

ตำแหน่งที่ต้องการ : Extra Hand (เด็กรับจ้าง)	เงินเดือนที่ต้องการ
Position applied for	Expected start
หลักฐานประกอบการสมัครงาน (สำหรับเจ้าหน้าที่เป็นผู้กรอก)	
<input type="radio"/> รูปถ่ายหน้าตรง จำนวน 1 รูป	<input type="radio"/> สำเนาทะเบียนบ้าน
<input type="radio"/> ใบรับรองการศึกษา	<input type="radio"/> ใบผ่านทหาร
<input type="radio"/> สำเนาบัตรประกันสังคม	<input type="radio"/> ใบขับขี่
<input type="radio"/> สำเนาบัตรประชาชน	<input type="radio"/> ใบเลขที่บัตรผู้เสียภาษี
<input type="radio"/> อื่นๆ.....	

ใบสมัครเป็นส่วนหนึ่งในการพิจารณา โปรดกรอกข้อความให้ครบถ้วน

Application Form is a part of consideration, please fill this form completely

ประวัติส่วนตัว Personal Background

ชื่อ - สกุล				เพศ	<input checked="" type="radio"/> ชาย	<input type="radio"/> หญิง
Name - Sur				Sex	Male	Female
วัน / เดือน / ปี เกิด		สัญชาติ	ไทย	เชื้อชาติ	ไทย	ศาสนา
Date of Birth		Nationality	Thai	Race	Thai	Religion
อายุ		ส่วนสูง		น้ำหนัก		กรุ๊ปเลือด
Age		Height		Weight		Blood Group
สถานที่เกิด	พระนครศรีอยุธยา	โทรศัพท์มือถือ		บ้าน	-	ที่ทำงาน
Place of Birth		Mobile Phone		Home		Office
ที่อยู่ปัจจุบัน	ในพวง อ.สามกระบือ จ. กทม. 62170					
Present Address						
ที่อยู่คนทะเบียนบ้าน	ในพวง อ.สามกระบือ จ. กทม. 62170					
A Residence Registration						
บัตรประชาชนเลขที่		ออกให้ ณ อำเภอ / เขต	สามกระบือ	จังหวัด	กรุงเทพมหานคร	
ID. Card No.		Issued at		Province		
วันออกบัตร		บัตรหมดอายุ		บัตรประจำตัวผู้เสียภาษีเลขที่		
Issued date		Expired date		Tax ID Card No.		
บัตรประกันสังคมเลขที่		ออกให้ ณ				
Social Security Card No.		Issued at				
สถานะความเป็นอยู่	<input checked="" type="radio"/> บ้านส่วนตัว	<input type="radio"/> บ้านเช่า	<input type="radio"/> อาศัย บิดา-มารดา	<input type="radio"/> อาศัยอยู่กับผู้อื่น		
Living Status	Own home	Rent home	Live with parents	Live with other		
สถานะครอบครัว	<input checked="" type="radio"/> โสด	<input type="radio"/> แต่งงาน	<input type="radio"/> หย่า	<input type="radio"/> หม้าย	<input type="radio"/> แยกกันอยู่	
Marital Status	Single	Married	Divorced	Widowed	Separated	
กรณีแต่งงาน	<input type="radio"/> จดทะเบียน	<input type="radio"/> ไม่จดทะเบียน	คู่สมรสมีเงินได้หรือไม่	<input type="radio"/> มี	<input type="radio"/> ไม่มี	
If Married	Registered	Non-Registered	Spouse has any income?	Yes	No	
ชื่อคู่สมรส				อาชีพ	สถานที่ทำงาน	
Spouse's Name				Occupation	Firm Address	
จำนวนบุตร	จำนวนบุตรที่กำลังศึกษา		จำนวนบุตรที่อายุเกิน 21 ปี			
No. of Children	Children in school		Children over 21 year			
ชื่อบิดา		อายุ		อาชีพ		
Name		Age		Occup		
ชื่อมารดา		อายุ		อาชีพ		
Name		Age		Occup		
สถานะทางทหาร	<input type="radio"/> ได้รับการยกเว้น	<input type="radio"/> ศึกษาวิชาทหาร	<input checked="" type="radio"/> ผ่านการเกณฑ์ทหาร	<input type="radio"/> อื่นๆ		
Military Service	Exempted	Military	Discharged	Other		

ประวัติการศึกษา Educational Background

ระดับการศึกษา Education	ชื่อสถาบัน Name of Institute	จังหวัด / ประเทศ Country	ปีการศึกษา Year Attended		วิชาที่ศึกษา / วุฒิที่ได้รับ Course Taken Complete
			จาก From	ถึง To	
ประถมศึกษา Primary	โรงเรียน ชุมพลสาทรกระบี่	ฉะเชิงเทรา	2553	2554	สามัญ / ประถมศึกษา
มัธยมศึกษา Secondary	โรงเรียน สาทรกระบี่วิทยา	ฉะเชิงเทรา	2554	2559	สำเร็จชั้น / มัธยมศึกษาตอนปลาย
อาชีวศึกษา Vocational	วิทยาลัยเทคนิคอุตสาหกรรมยานยนต์ ราชบุรี	ราชบุรี	2560	2562	เทคนิคยานยนต์ / ปวส.
อนุปริญญา Higher Vocational					
ปริญญาตรี Bachelor Degree					
อื่นๆ Other					

ภาษา Languages

ประเภทภาษา Type of Language	การพูด Speaking			การเข้าใจ Understanding			การอ่าน Reading			การเขียน Writing		
	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair
ไทย Thai	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
อังกฤษ English			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
จีน Chinese												
อื่นๆ Other												

ประวัติการทำงาน Employment History

ชื่อสถานประกอบการ (List of Employed)	ระยะเวลา Date Employed		ตำแหน่ง Position	เงินเดือนครั้งสุดท้าย Last Salary
	จาก From	ถึง To		
	2560	2561		
	2562	2563		
	2564	ปัจจุบัน		

บุคคลที่ไม่ใช่ญาติซึ่งทราบประวัติของท่านและบริษัทสามารถสอบถามได้

Persons other than relatives can be contacted

ชื่อ - สกุล Name	ความสัมพันธ์ Relationship	สถานที่ทำงาน / ที่อยู่ Firm Address	ตำแหน่ง Position	โทรศัพท์ Telephone

ความรู้พิเศษ Special ability	<input checked="" type="radio"/> คอมพิวเตอร์ Computer	<input type="radio"/> เทเล็กซ์ Telex	<input type="radio"/> เครื่องโทรสาร Facsimile	<input type="radio"/> พิมพ์ดีด Typing	<input type="radio"/> อื่นๆ Other
ในตำแหน่งนี้ต้องการมีการค้ำประกัน Can you provide a guarantor?	<input checked="" type="radio"/> ไม่ขัดข้อง Yes	<input type="radio"/> ขัดข้อง No			
ในการปฏิบัติงานเป็นกะหมุนเวียนกันไป Can you work shift by shift?	<input checked="" type="radio"/> ไม่ขัดข้อง Yes	<input type="radio"/> ขัดข้อง No			
ในการปฏิบัติงาน สามารถเปลี่ยนแปลงตำแหน่งหน้าที่ได้ตามความเหมาะสม Can you rotate your work position?	<input checked="" type="radio"/> ไม่ขัดข้อง Yes	<input type="radio"/> ขัดข้อง No			
การปฏิบัติงานต่างจังหวัด Can you work up country?	เป็นประจำ Always	<input checked="" type="radio"/> ไม่ขัดข้อง Yes	<input type="radio"/> ขัดข้อง No		
	เป็นครั้งคราว Sometime	<input checked="" type="radio"/> ไม่ขัดข้อง Yes	<input type="radio"/> ขัดข้อง No		

ท่านเคยทำผิดกฎหมาย หรือ ต้องคดีอาญาหรือไม่ ☒ ไม่เคย ☐ เคย เหตุผล.....
Have you ever breaking law? No Yes , reason

ท่านมีโรคติดต่อ โรคเรื้อรัง หรือไม่ ☒ ไม่มี ☐ มี.....
Do you have infectious disease or chronic disease ? No Yes.....

ท่านมีโรคประจำตัว หรือไม่ ☒ ไม่เคย ☐ เคย.....
โรค.....

ท่านเคยมีปัญหาหัวใจล้มเหลว หรือ อาการอื่นๆใกล้เคียงหรือไม่ ☒ ไม่เคย ☐ เคย.....

ท่านเคยถูกไล่ออกจากงานหรือไม่ ☒ ไม่เคย ☐ เคย เหตุผล.....
Have you ever dismissed from any company? No Yes , reason

บุคคลในบริษัทที่ท่านรู้จักคุ้นเคยชื่อ [REDACTED] ความสัมพันธ์ [REDACTED]
Relative or friends working in this company Relationship

ท่านพร้อมที่จะปฏิบัติงานกับบริษัทในวันที่ : หากผ่านเกณฑ์การคัดเลือก (พร้อมกันนี้ หรืออาจจะขอเวลาไม่เกิน 7 วัน)
Date available to start work * หากเป็นไปไม่ได้ขอในโทรศัพท์จะแจ้ง.

ข้าพเจ้าขอรับรองว่า ข้อความข้างต้นทั้งหมดนี้เป็นความจริงทุกประการ หากข้อความตอนหนึ่งตอนใดไม่ตรงกับความเป็นจริง ข้าพเจ้าขอยอมรับว่า การว่าจ้าง
คลงกเป็นอันโมฆะทันที
Certify that all of the statements in this application are true and correct to the best of my knowledge and any false information
willfully given shall be sufficient reason to dismiss me from the service

วันที่
Date

ลงชื่อผู้สมัครงาน.....
Applicant's Signature

สำหรับบริษัท (For Company Use Only)

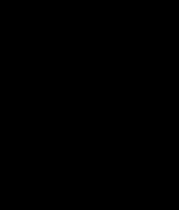
ผู้สัมภาษณ์..... Interviewer	วันที่สัมภาษณ์..... Date of Interview
ผลการสัมภาษณ์..... Decision reached	ตำแหน่งงานที่บรรจุ..... Position for which considered
วันที่เริ่มจ้างงาน..... Date of Employment	บังคับบัญชาโดย..... Report to
อัตราเงินเดือน..... Salary	เงื่อนไขอื่นๆ..... Other conditions
กำหนดระยะเวลาทดลองงาน..... Probation Term	สัญญาจ้างทดลองงานเลขที่..... Probation Contract No.
ลายมือชื่อผู้สัมภาษณ์..... Interviewer Signature	อนุมัติโดย..... Approved by
หมายเหตุ..... Remark	ผู้มีอำนาจอนุมัติ..... Final Approval (Managing Director)
	วันที่ Date

(P' Ton.) 21/11/2018. (B)
Vaccine. 3 10/11.



(Application Form)

ตำแหน่งที่ต้องการ : Position applied for	Extrahandl.	เงินเดือนที่ต้องการ Expected starting salary
หลักฐานประกอบการสมัครงาน (สำหรับเจ้าหน้าที่เป็นผู้กรอก)		
<input checked="" type="radio"/> รูปถ่ายหน้าตรง จำนวน 1 รูป	<input checked="" type="radio"/> สำเนาทะเบียนบ้าน	<input checked="" type="radio"/> สำเนาบัตรประชาชน
<input checked="" type="radio"/> ใบรับรองการศึกษา	<input checked="" type="radio"/> ใบผ่านทหาร	<input type="radio"/> ใบเลขที่บัตรผู้เสียภาษี
<input type="radio"/> สำเนาบัตรประกันสังคม	<input type="radio"/> ใบขับขี่	<input type="radio"/> อื่นๆ.....

ประวัติส่วนตัว *Personal Background*

ชื่อ - สกุล		เพศ <input checked="" type="radio"/> ชาย <input type="radio"/> หญิง	
Name - Su		Sex Male Female	
วัน / เดือน / ปี เกิด :		สัญชาติ ไทย	
Date of Birth		Nationality Thai	
อายุ		เชื้อชาติ ไทย	
Age		Race Thai	
ส่วนสูง		ศาสนา พุทธ	
Height		Religion Buddhist	
น้ำหนัก		กรุ๊ปเลือด	
Weight		Blood Group	
สถานที่เกิด รพ. มาระกา		โทรศัพท์มือถือ	
Place of Birth		Mobile Phone	
ที่อยู่ปัจจุบัน		ที่ทำงาน	
Present Address		Office	
ที่อยู่ตามทะเบียน		A Residence Registration	
บัตรประชาชนเลขที่		ออกให้ ณ อำเภอ / เขต มาระกา จังหวัด นนทบุรี	
ID. Card No.		Issued at	
วันออกบัตร		บัตรประจำตัวผู้เสียภาษีเลขที่	
Issued date		Tax ID Card No.	
บัตรประกันสังคมเลขที่		ออกให้ ณ	
Social Security Card No.		Issued at	
สถานะความเป็นอยู่ <input type="radio"/> บ้านส่วนตัว <input type="radio"/> บ้านเช่า <input checked="" type="radio"/> อาศัย บิดา-มารดา <input type="radio"/> อาศัยอยู่กับผู้อื่น		Living Status Own home Rent home Live with parents Live with other	
สถานะครอบครัว <input checked="" type="radio"/> โสด <input type="radio"/> แต่งงาน <input type="radio"/> หย่า <input type="radio"/> หม้าย <input type="radio"/> แยกกันอยู่		Marital Status Single Married Divorced Widowed Separated	
กรณีแต่งงาน <input type="radio"/> จดทะเบียน <input type="radio"/> ไม่ได้จด		คู่สมรสมีเงินได้หรือไม่ <input type="radio"/> มี <input type="radio"/> ไม่มี	
If Married Registered Non-Registered		Spouse has any income? Yes No	
ชื่อคู่สมรส		อาชีพ	
Spouse's Name		Occupation	
จำนวนบุตร		จำนวนบุตรที่กำลังศึกษา	
No. of Children		Children in school	
จำนวนบุตรที่อายุเกิน 21 ปี		ชื่อบิดา	
Children over 21 year		Name of Father	
ชื่อมารดา		อายุ	
Name of Mother		Age	
อาชีพ		อาชีพ	
Occupation		Occupation	
สถานะทางทหาร <input type="radio"/> ได้รับการยกเว้น <input type="radio"/> ศึกษาวิชาทหาร <input checked="" type="radio"/> ผ่านการเกณฑ์ทหาร <input type="radio"/> อื่นๆ		Military Service Exempted Military Discharged Other	

ประวัติการศึกษา *Educational Background*

ระดับการศึกษา Education	ชื่อสถาบัน Name of Institute	จังหวัด / ประเทศ Country	ปีการศึกษา Year Attended		วิชาที่ศึกษา / วิชาที่ได้รับ Course Taken Completed
			จาก From	ถึง To	
ประถมศึกษา Primary					
มัธยมศึกษา Secondary					
อาชีวศึกษา Vocational					
อนุปริญญา Higher Vocational	วิทยาลัยเทคนิคชลบุรี	ชลบุรี	1/๗๓/๖๓	12/๗๓/๖๕	ยังไม่สำเร็จตามคุณสมบัติ
ปริญญาตรี Bachelor Degree					
อื่นๆ Other					

ภาษา *Languages*

ประเภทภาษา Type of Language	การพูด Speaking			การเข้าใจ Understanding			การอ่าน Reading			การเขียน Writing		
	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair	ดีมาก Exc	ดี good	พอใช้ Fair
ไทย Thai	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
อังกฤษ English			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
จีน Chinese			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
อื่นๆ Other			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>

ประวัติการทำงาน *Employment History*

ชื่อสถานประกอบการ (List of Employed)	ระยะเวลา Date Employed		ตำแหน่ง Position	เงินเดือนครั้งสุดท้าย Last Salary
	จาก From	ถึง To		

บุคคลที่ไม่ใช่ญาติซึ่งทราบประวัติของท่านและบริษัทสามารถสอบถามได้

Persons other than relatives can be contacted

ชื่อ - สกุล Name	ความสัมพันธ์ Relationship	สถานที่ทำงาน / ที่อยู่ Firm Address	ตำแหน่ง Position	โทรศัพท์ Telephone
ความรู้พิเศษ Special ability	คอมพิวเตอร์ Computer	เทเล็กซ์ Telex	เครื่องโทรสาร Facsimile	พิมพ์ดีด Typing
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ในตำแหน่งที่ต้องการมีการค้ำประกัน Can you provide a guarantor?	<input type="radio"/> ไม่ชัดเจน Yes	<input type="radio"/> ไม่ชัดเจน No		
ในการปฏิบัติงานเป็นกะหมุนเวียนกันไป Can you work shift by shift?	<input type="radio"/> ไม่ชัดเจน Yes	<input type="radio"/> ไม่ชัดเจน No		
ในการปฏิบัติงาน สามารถเปลี่ยนแปลงตำแหน่งหน้าที่ได้ตามความเหมาะสม Can you rotate your work position?	<input type="radio"/> ไม่ชัดเจน Yes	<input type="radio"/> ไม่ชัดเจน No		
การปฏิบัติงานต่างจังหวัด Can you work up country?	เป็นประจำ Always	<input type="radio"/> ไม่ชัดเจน Yes	<input type="radio"/> ไม่ชัดเจน No	
	เป็นครั้งคราว Sometime	<input type="radio"/> ไม่ชัดเจน Yes	<input type="radio"/> ไม่ชัดเจน No	

ท่านเคยทำผิดกฎหมาย หรือ ต้องคดีอาญาหรือไม่ Have you ever breaking law?	<input checked="" type="radio"/> ไม่เคย No	<input type="radio"/> เคย เหตุผล Yes , reason
ท่านมีโรคติดต่อ โรคเรื้อรัง หรือไม่ Do you have infectious disease or chronic disease ?	<input checked="" type="radio"/> ไม่มี No	<input type="radio"/> มี Yes.....
ท่านมีโรคประจำตัว หรือไม่	<input checked="" type="radio"/> ไม่เคย	<input type="radio"/> เคย โรค.....
ท่านเคยมีปัญหาลุ่ล่หลุด หรือ อาการอื่น ๆ ใกล้เคียงหรือไม่	<input checked="" type="radio"/> ไม่เคย	<input type="radio"/> เคย
ท่านเคยถูกไล่ออกจากงานหรือไม่ Have you ever dismissed from any company?	<input checked="" type="radio"/> ไม่เคย No	<input type="radio"/> เคย เหตุผล Yes , reason
บุคคลในบริษัทที่ท่านรู้จักคุ้นเคยชื่อ Relative or friends working in this company	[Redacted] ความสัมพันธ์ Relationship [Redacted]	
ท่านพร้อมที่จะปฏิบัติงานกับบริษัทในวันที่ : ๑ ธันวาคม ๒๕๖๕ หรือ เริ่มงานได้ทันที Date available to start work		
ข้าพเจ้าขอรับรองว่า ข้อความข้างต้นทั้งหมดนี้เป็นความจริงทุกประการ หากข้อความตอนหนึ่งตอนใดไม่ตรงกับความเป็นจริง ข้าพเจ้ายอมรับว่า การว่าจ้างที่ตกลงนั้นเป็นอันโมฆะทันที Certify that all of the statements in this application are true and correct to the best of my knowledge and any false information willfully given shall be sufficient reason to dismiss me from the service		
วันที่ ๗ / ๑๐ / ๒๕๖๕ Date	ลงชื่อผู้สมัครงาน..... Applicant's Signature	
สำหรับบริษัท (For Company Use Only)		
ผู้สัมภาษณ์..... Interviewer	วันที่สัมภาษณ์..... Date of Interview	
ผลการสัมภาษณ์..... Decision reached	ตำแหน่งงานที่บรรจุ..... Position for which considered	
วันที่เริ่มจ้างงาน..... Date of Employment	บังคับบัญชาโดย..... Report to	
อัตราเงินเดือน..... Salary	เงื่อนไขอื่นๆ..... Other conditions	
.....		
กำหนดระยะเวลาทดลองงาน..... Probation Term	สัญญาจ้างทดลองงานเลขที่..... Probation Contract No.	
ลายมือชื่อผู้สัมภาษณ์..... Interviewer Signature	อนุมัติโดย..... Approved by	
หมายเหตุ..... Remark	ผู้มีอำนาจอนุมัติ..... Final Approval (Managing Director)	
วันที่...../...../..... Date		

ภาคผนวกที่ 24
บันทึกการตรวจวัดแอลกอฮอล์

ALCOHOL TESTING REPORT (RIG GW-80)
Company : Greatwall Drilling Company Limited

Date : 7-2-23 TIME : 5:30 AM

Location : LKT-2A TIME : 5:30 PM

EQUIPMENT DETAILS
NAME : DRAGER Alcotest 6510 plus TYPE : KH7910
LAST CALIBRATION DATE
RESULT FROM TEST NO. 8

EQUIPMENT DETAILS
NAME : DRAGER Alcotest 6510 plus TYPE : KH7910
LAST CALIBRATION DATE
RESULT FROM TEST NO. 8

NO.	POSITION	Day Shift B				NO.	POSITION	Night Shift C			
		NAME	SIGNATURE	TEST (mg%)	Temp.			NAME	SIGNATURE	TEST (mg%)	Temp.
1	Toolpusher			0	36.0	1	Toolpusher			0	36.1
2	Driller			0	36.2	2	Driller			0	36.1
3				0	36.2	3				0	36.1
4	A/D			0	36.8	4	A/D			0	36.8
5	F/M (R/N)			0	36.8	5	F/M (R/N)			0	36.8
6	F/M (R/B)			0	36.8	6	F/M (R/B)			0	36.8
7	F/M (E/B)			0	36.8	7	F/M (E/B)			0	36.8
8	Derrickman T.			0	36.8	8	Derrickman			0	36.8
9	Asst F/M(R/B)			0	36.8	9	Asst Derrick			0	36.8
10	R/N			0	36.8	10	R/N (T)			0	36.8
11	R/N (T)			0	36.8	11	R/N(T.)			0	36.8
12	R/B T.			0	36.8	12	R/B Trainee			0	36.8
13	R/B T.			0	36.8	13	R/B T.			0	36.8
14	R/B			0	36.8	14	R/B (T)			0	36.8
15	R/B			0	36.8	15	R/B T.			0	36.8
16	Extrahand			0	36.8	16	Extrahand			0	36.8
17	Extrahand			0	36.8	17	Extrahand			0	36.8
18	Extrahand T.			0	36.8	18	Extrahand			0	36.8
19	Mechanic H.			0	36.8	19	Extrahand T.			0	36.8
20	Welder T.			0	36.8	20	Radio-op.			0	36.8
21	Welder T.			0	36.8	21	Crane Driver			0	36.8
22	Electrician			0	36.8	22	Roomkey			0	36.8
23	Electrician Helper			0	36.8	23				0	36.8
24	Driver			0	36.8	24				0	36.8
25	Driver			0	36.8	25				0	36.8
26	Roomkey			0	36.8	26				0	36.8
27	HSE-Officer			0	36.8	27				0	36.8
28	HSE-Officer			0	36.8	28				0	36.8
29	HSE-Officer			0	36.8	29				0	36.8
30	Radio-op.			0	36.8	30				0	36.8
31	Roomlady			0	36.8	31				0	36.8
32	Trainee			0	36.8	32				0	36.8
33	Crane Driver			0	36.8	33				0	36.8
34				0	36.8	34				0	36.8
35				0	36.8	35				0	36.8

Medic GW-80

HSE-Officer GW-80

GW-80 Rep. (Rig Manager)

PTTEP Rep. (DSV)

ภาคผนวกที่ 25
การตรวจสอบสภาพพนักงาน

ภาคผนวกที่ 26
ใบอนุญาตทำงาน

SECTION 1 : Work Description

Site name: S1 Area/Platform: Drilling Rig GW80
Location: N/A Operation unit: N/A
Unit no.: N/A Equipment: Mud pump Tag no.:

PTW is related to MOC

☒ Yes (MOD/Deferral/Derogation/Downgrade Situation No.) ☒ No

Work/Task Description:

Check mud pump LKU-ZD47(ZDBV) section.1

☒ Naked Flame Hot Work☐ Non-Naked Flame Hot Work

Hazard Identification:

1 Area classification

2 Hazard classification

Process hydrocarbon

Flammable material

Mercury/Toxic gas

Hazardous chemical

Equipment with moving/rotating part

Crane/Lifting/Rigging

Asphyxiates/Confined space/Water mist/FM200/CO₂ release

Environmental hazard (weather, temp.)

Other

☒ Hazardous area☐ Unclassified area / Non-Hazardous area

Pressure hazard

Working at height

Insufficient light

Biological hazard

Pinch point/sharp object

Routine/Simple lift

Work on edge/over water

Falling/Dropped/Flying objects

Dust/Fume/Smoke

Hot/Cold surface

Ergonomic hazard

Slipping/tripping

Ignition Source

Electricity

HV (> 1kV.)

LV

Radiography

Loud Noise

Vibration

Spill

Explosive

Complementary permit :

Process/Mech./Inst. Isolation

HV LV Electrical Isolation

Confined space entry

Radiography

Diving ROV Man

Anchoring/De-anchoring

Excavation Pressure testing

Complementary PTW No.

☐ Self ☐ Isolation cross reference (ICR)

Other attachment:

JIMS

Sketch/Drawing

JSA/Procedure/Plan Change mud pump

Lifting Plan

Other

Material / Tool / Work requirements:

☐ Scaffolding/Ladder☐ Hand tool☐ Ex. Elect./Battery/Pneum./Hyd.Tool☐ Non-Ex. Elect./Battery Tool☐ Other☐ Mobile Engine: Gen./Comp.☐ Gas/Pressurized cylinder☐ Crane/Lifting

Performing Authority Name:

Position:

Department: GW80

Signature:

Date: 2023-02-22 17:39:09

SECTION 2 : Safety Precautions

(The undersigned certifies that all requirements fulfilled and job can be started)

Precautionary Requirements

Process System Requirements:

Equipment electrically isolated, locked and tagged

Emergency stop latched and tagged

Equipment isolated by valve / spade / blind, locked, tagged

Equipment fully depressurized / flushed / fully drained

Equipment inerted / purged / ventilated

System inhibit / override / bypass (See section 3)

Other

Safety Requirements:

Equipment / Area free of flammables / combustibles

No HC release in working area / Close JB before venting HC

Whip check & safety pin installed on hose connection

Equipment integrity check / emergency stop test before use

Available of Work Plan / Procedure / Program on site

Gloves: rubber / leather / high volt / welding / hyflex

Hearing protection / Safety goggles / Face shield / Cold suit

Air supply / Half mask / Full face mask: Type

Disposable coveralls: Chemical / Mercury protection

Safety harness with: double life lines/inertia reel/fall arrester

Work vest / Life buoy / Standby boat

Limit the working hours / Rotate worker every hour(s)

Fire extinguisher / Fire hose & nozzle run-out / Fire blanket

Spark, Slag, Dust containment / Habitat / Pressurized habitat

Warning sign / Barrier tape / Scaffold / Secure ladder

Protection guard / Cover / Frame / Lanyard / Finger saver

Stay clear of: moving / rotating part / line of fire / hot surface

Additional ventilation / Safety lighting: zone

Spill containment / Absorbents / Earth wire connected

Standby Operator/ Technician/ Firewatch/ Rescuer/ Safety

Working under inclement weather criteria/requirements

Available of JSA / Risk assessment / SDS on site

Toolbox talk / Pre-job safety meeting

Correct handling/working posture/Use lifting aid/Lifting plan

Personal / Stand alone gas detector in place

Gas check: Prior to starting / Frequency hrs./time

Oxygen / LEL / Toxic:

Inform concerned parties

Maintain good housekeeping

Other

Operating Authority Name:

Signature:

Date / Time: 22/2/23

Safety Authority Name:

Signature:

Date / Time: 22 Feb 23

*In case NFHW

Area Authority

Signature:

Date / Time: 22/2/23

Permit Validity

Date: (DD/MM/YY) 22/02/23

Time: 07:00:00

TO

Date: (DD/MM/YY) 23/02/23

Time: 07:00:00

SECTION 3 : Inhibited/Overridden Systems

☐ Fire and Gas Detection☐ Extinguishing System☐ ESD System☐ Others

Unit/Tag No.

Inhibited/Overridden

De-Inhibited

Unit/Tag No.

Inhibited/Overridden

De-Inhibited

Unit/Tag No.

Inhibited/Overridden

De-Inhibited

SECTION 4 : Execution and Handback

Permit Issuing / Handback

Date: 22/2/23

Date:

Date:

Date:

Date:

Date:

Task Supervisor name

Shift Controller name

Worksite Controller name

Safety Authority / Worksite Safety Controller name

Validating Date (dd/mm)

Validating Time (hh:mm)

Handback Date (dd/mm)

Handback Time (hh:mm)

Equipment status: A=Available, NA=Not available

Worksite Controller name

Task Supervisor name

Shift Controller name

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Job Safety Analysis Form

Job Title: Check and maintenance on Mud Pumps

Permit to work No. SI-HWP-2023-033A

Location LRV-ZDA7

Job Owner (Contract sponsor)

No.	Work Step	Hazard arising	Risk Assessment				Control	Risk Assessment				Action party
			P	E	A	R		P	E	A	R	
1.	Issue Permit to work	Misunderstanding	4D	1D	4D	3D	Conduct the Pre job Meeting. Discussed the steps and hazards.	1A	1A	1A	1A	T/P
2.	Preparation for the job	Trip, Slip and falling hazards	2C	1C	1C	1C	No hurry and watch your steps. Clean slippery surface.	1B	1B	1B	1B	Crews
		Wrong/damaged tools result in pinched fingers	2C	1C	1C	1C	Use proper Inspected tools.	1B	1B	1B	1B	Crews
3.	Energy Isolation	Improper lock out & tag out	4D	1D	4D	4D	Use supplementary certificate for energy isolation. Lock out / tag out should be done by competent person. Only one man to isolate the equipment.	1B	1B	1B	1B	Electrician
		Electric shock.	4D	1D	4D	4D	Only electrician authorized to perform isolate the equipment.	1B	1B	1B	1B	Electrician
4.	Bleed off	Personal Injury	4D	1D	4D	3D	Barricade area before bleed off. All crew stay clear from bleed off line. Make Sure all pressure is Bleed Off.	1B	1B	1B	1B	Crews
5.	Open pump and check valves, seats, pistons, Replace worn parts	Pinched Point	2C	1C	1C	1C	Correct hand placement. Wear glove.	1B	1B	1B	1B	Crews
		Fall down from mud pump.	3D	1D	3D	2D	Do not stand at edge of mud pump. Clean the mud or water on top of mud pump.	1B	1B	1B	1B	Crews
		Crew stand on line of fire while using hammer.	2C	1C	1C	1C	Look around and make sure nobody stands on line of fire before using hammer.	1B	1B	1B	1B	Crews
		Debris fly away hurt somebody	2C	1C	1C	1C	Do not use hammer to hammer. Keep a safe distance from hammer. Cut the mushroomed head of hammer in time.	1B	1B	1B	1B	Crews
6.	Clean up mess and keep back the tools	Pinched Point	2C	1C	1C	1C	Correct hand placement. Wear glove.	1B	1B	1B	1B	Crews
		Fall down from mud pump.	3D	1D	3D	2D	Do not stand at edge of mud pump. Clean the mud or water on top of mud pump.	1B	1B	1B	1B	Crews
		Water or mud splashed in eyes.	3D	1D	3D	2D	Wear safety glasses.	1A	1A	1A	1A	Crews
7.	De isolate mud pump.	Electrical shock.	4D	1D	4D	4D	Only electrician to lock out. Ensure grounding properly installed.	1B	1B	1B	1B	Crews
		Left some tools inside mud pump	1C	1C	2C	1C	Double check before start pump.	1A	1A	1A	1A	Crews

		Mud pump started suddenly. Some crew caught between mud pump.	4D	1D	4D	4D	Ensure all crew stay clear from mud pump area. Only who isolated equipment to keep the key.	1B	1B	1B	1B	Crews
--	--	---	----	----	----	----	--	----	----	----	----	-------

Life Saving Program

				✓						✓		
				✓		✓			✓			

I acknowledge that I have read and clearly understood the above analysis of activities and hazards.

Performing Authority (PA)	Contract Sponsor (PTTEP)	Task Supervisor (TS)	Safety Authority (SA)	Operating Authority (OA)
Signature	Signature	Signature	Signature	Signature
Company <i>SW-80</i>	Company <i>PTTEP</i>	Company <i>SW-80</i>	Company <i>SW-80</i>	Company
Date <i>22/02/23</i>	Date <i>22 Feb 23</i>	Date <i>22-2-23</i>	Date <i>22 Feb 23</i>	Date <i>23/02/23</i>

Personal involve

Name	Position	Name	Position	Name	Position

ภาคผนวกที่ 27

เอกสารแสดงการตรวจสอบสภาพ Forklift และ Crane

รายการทดสอบส่วนประกอบและอุปกรณ์สำหรับรถปั่นจันทันและเรือปั่นจันทัน(ปั่นจันทันชนิดเคลื่อนที่)
ตามประกาศกรมสวัสดิการและคุ้มครองแรงงานเรื่องหลักเกณฑ์และวิธีการทดสอบส่วนประกอบและ
อุปกรณ์ของปั่นจันทัน

ข้าพเจ้า [REDACTED] อายุ [REDACTED] ปี
 ที่อยู่เลขที่ [REDACTED] หมู่ที่ [REDACTED] ถนนพิษณุโลก-เด่นชัย ตำบล/แขวงในเมือง
 อำเภอ/เขต เมืองพิษณุโลก จังหวัด พิษณุโลก โทรศัพท์ [REDACTED]
 สถานที่ทำงาน บริษัท อินเทอร์เน็ตเอดิสันส์ทรีแอนด์เซอร์วิฟเคชั่นเซอร์วิสเซล (ประเทศไทย) บจก.
 เลขที่ [REDACTED] ตรอก/ซอย [REDACTED] - ถนน [REDACTED] ครีอยุธยา
 ตำบล/แขวง [REDACTED] ถนนพญาไท อำเภอ/เขต [REDACTED] ราชเทวี จังหวัด กรุงเทพมหานคร
 โทรศัพท์ [REDACTED]

ได้รับใบอนุญาตประกอบวิชาชีพวิศวกรรมควบคุม สาขาเครื่องกล ตามพระราชบัญญัติวิศวกร พ.ศ. 2542 และไม่ได้ยื่นระหว่างถูกสั่งพักใช้ใบอนุญาตหรือถูกเพิกถอนใบอนุญาต

ระดับ วุฒิศวกร เลขทะเบียน [REDACTED] วันที่หมดอายุ 20 พฤศจิกายน 2566

ข้าพเจ้าได้ทำการทดสอบส่วนประกอบและอุปกรณ์บนจันทิที่ใช้ในงาน

☐ อุตสาหกรรม ☒ ก่อสร้าง ☐ อื่นๆ.....

ของนิติบุคคล [REDACTED]
ที่อยู่เลขที่ [REDACTED] หมู่ [REDACTED] ตรอก/ซอย [REDACTED] ถนน พิษณุโลก-อุตรดิตถ์ ตำบล/แขวง ดอนทอง
อำเภอ/เขต เมือง จังหวัด พิษณุโลก โทรศัพท์ [REDACTED] โทรสาร [REDACTED]
เมื่อวันที่ 24 พฤศจิกายน 2565 ขณะทดสอบบันทึกใช้งานอยู่ที่ LKN-A Site in Uttaradit, Thailand

ชื่อผู้บังคับบัญชััน (1)..... ☐ ผ่านการอบรม(มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม
 ผู้บังคับบัญชััน (2)..... ☐ ผ่านการอบรม(มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม
 ผู้บังคับบัญชััน (3)..... ☐ ผ่านการอบรม(มีหลักฐานแสดง) ☐ ไม่ผ่านการอบรม

ข้าพเจ้าได้ทำการทดสอบขั้นต้นและอุปกรณ์ตามรายการทดสอบที่ระบุไว้ในเอกสารแนบท้ายและได้ปรับปรุงแก้ไขส่วนที่
ขาดหรือบกพร่องจนใช้งานได้ถูกต้องปลอดภัยพร้อมทั้งมีการถ่ายภาพของวิศวกรขณะทดสอบแล้ว

จึงขอรับรองว่าปิ่นจั่นเครื่องนี้ใช้งานได้อย่างปลอดภัยตามข้อที่50แห่งกฎกระทรวง
จัดการด้านความปลอดภัยอาชีวอนามัยและสภาพแวดล้อมในการทำงานเกี่ยวกับเครื่องจักร

(ลงชื่อ).....

(ลงชื่อ).....

วิศวกรรมทดสอบ

นายจาง/ผู้กระทำแทน

สำหรับเจ้าหน้าที่

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รายการทดสอบปั้นจั่น

1. แบบปั้นจั่น

☒ รถปั้นจั่นไฮดรอลิคลอยยาง

☐ รถปั้นจั่นล้อตีนตะขาบ

☐ เรือปั้นจั่น

☐ แบบอื่นๆ (ระบุ).....

ชนิดปั้นจั่น : ..Rough Terrain Crane

จำนวน Part Line Main Hook: ..8...Part Line

2. ผู้ผลิต

สร้างโดย: TADANO LTD ประเทศ: Japan

รุ่น: ..TR-500M-2-00103...Serial No: [REDACTED]

ปีที่ผลิต: ..1994/10...ตามมาตรฐาน(ถ้ามี):

ผู้นำเข้า/ผู้จำหน่าย(ถ้ามี):



3. ขนาดพิกัดยกอย่างปลอดภัย (Safe Working Load) ☒ ผู้ผลิตกำหนด

☐ วิศวกรกำหนด^①

☒ ที่น้ำหนักยกมากที่สุด: 45.00 ตัน. ที่ Boom Length: 9.7 เมตร. ที่ Working Radius: 2.5 เมตร. ขาที่ยึดสูงสุด: 7.25 เมตร.

☒ ที่น้ำหนักยกน้อยสุด: 0.55 ตัน. ที่ Boom Length: 41.2 เมตร. ที่ Working Radius: 34.0 เมตร. ขาที่ยึดสูงสุด: 7.25 เมตร

☐ อื่นๆ.....

4. รายละเอียดคุณลักษณะ (Specification) และคู่มือการใช้งานการประกอบทดสอบการซ่อมบำรุงและการตรวจสอบ

☒ มีมาพร้อมกับปั้นจั่น

☐ มีโดยวิศวกรกำหนดขึ้น

5. การดัดแปลงแก้ไขส่วนหนึ่งส่วนใดของปั้นจั่น^②

☐ มี(ระบุ)

☒ ไม่มี

6. โครงสร้างปั้นจั่น

6.1 สภาพโครงสร้างหลักปั้นจั่น^③

☒ เรียบร้อย

☐ ไม่เรียบร้อย (ระบุ)

6.2 สภาพรอยเชื่อมตอ

☒ เรียบร้อย

☐ ไม่เรียบร้อย (ระบุ)

6.3 สภาพของนอตสลักเกลียวยึดและหมุดยึด

☒ เรียบร้อย

☐ ไม่เรียบร้อย (ระบุ)

7. การยึดปั้นจั่นไว้กับรถเรือแพโป๊ะหรือพาหนะลอยน้ำอื่นที่มั่นคง^④

☒ เรียบร้อย

☐ ไม่เรียบร้อย (ระบุ)

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13. ม้วนลวดสลิง รอก และตะขอ (Wire rope drum, Sheave and Hook)

12.3 สภาพม้วนลวดสลิง

Main Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
Auxiliary Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

12.4 การจัดเรียงตัวของสลิงในม้วนลวดสลิง

Main Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
Auxiliary Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

12.5 มีลวดสลิงเหลืออยู่ในม้วนลวดสลิงตลอดเวลาที่ปั้นจั่นทำงานอย่างน้อย 5 รอบ (ตามข้อบังคับของ ปตท.สผ.)

Main Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
Auxiliary Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

12.6 อัตราส่วนระหว่างเส้นผ่านศูนย์กลางของรอกกับเส้นผ่านศูนย์กลางของลวดสลิง และสภาพของรอก

13.4.1 Main Hoist - วัสดุที่ใช้ทำรอก Steel

ก. รอกปลายแขนปั้นจั่นไม่น้อยกว่า 18:1 (Diameter 340 mm.)

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ข. รอกของตะขอไม่น้อยกว่า 16 :1 (Diameter 340 mm.)

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ค. รอกหลังแขนปั้นจั่นไม่น้อยกว่า 15:1 (Diameter _____ mm.)

☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

☒ ไม่มีติดตั้งไว้

ง. สภาพโดยทั่วไปของรอก

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

จ. การหมุนตัวของรอกทุกตัว

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ฉ. การสึกหรอของร่องสลิงของรอกโดยการใช้ Groove Gauge

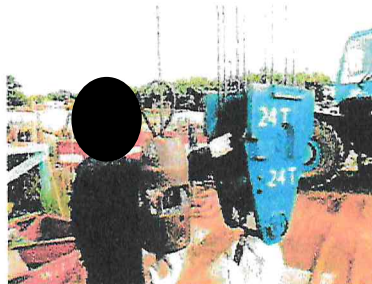
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ช. การ์ดป้องกันลวดสลิงหลุดออกจากรอก (ทุกรอก)

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ซ. การหล่อลื่นของลูกปืน (Bearing)

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____



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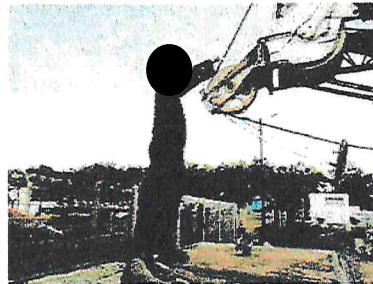
ครั้งต่อไป: 23 กุมภาพันธ์ 2566

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13.41 Auxiliary Hoist วัสดุที่ใช้ทำรอก Steel

- ก. รอกปลายแขนบนขึ้นไม่น้อยกว่า 18:1 (Diameter 350 mm.)
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- ข. รอกของตะขอไม่น้อยกว่า 16 :1 (Diameter - mm.)
☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- ค. รอกหลังแขนบนขึ้นไม่น้อยกว่า 15:1 (Diameter - mm.)
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
☐ ไม่มีติดตั้งไว้
- ง. สภาพโดยทั่วไปของรอก
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- จ. การหมุนตัวของรอกทุกตัว
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- ฉ. การสึกหรอของร่องสลิงของรอกโดยการใช้ Groove Gauge
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- ช. การป้องกันลวดสลิงหลุดออกจากรอก (ทุกรอก)
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- ซ. สภาพและการหล่อลื่นของลูกปืน (Bearing)
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____



13.5 สภาพตะขอ

13.5.1 Main Hook

- ก. การบิดตัวของตะขอ
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- ข. การถ่างออกของปากตะขอต้องน้อยกว่าร้อยละ 5
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
 ระยะเปิดของตะขออ้างอิง (เดิม) 212 mm, ปัจจุบัน 212 mm, การเปลี่ยนแปลง _____ %
- ค. การสึกหรอที่ท้องตะขอต้องน้อยกว่าร้อยละ 10
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
 ความหนาที่ท้องตะขออ้างอิง (เดิม) 180 mm, ปัจจุบัน 180 mm, การเปลี่ยนแปลง _____ %
- ง. ต้องไม่มีส่วนหนึ่งส่วนใดของตะขอแตกหรือร้าว
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____
- จ. ไม่มีการเสียรูปทรงหรือสึกหรอของห่วงตะขอ
☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

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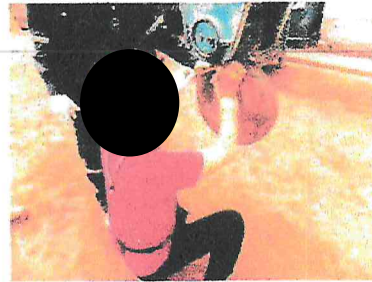
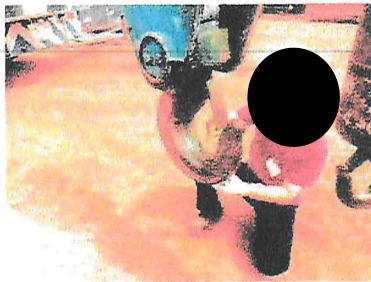
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จ. มีชุดล็อกป้องกันลวดสลิงหลุดจากตะขอ

☒ เรียบร้อย

□ ไม่เรียบร้อย (ระบุ)



13.5.2 Auxiliary Hoist

ก. การปิดตัวของตะขอ

☒ เรียบร้อย

☐ ไม่เรียบร้อย(ระบุ)

ข. การถ่างออกของปากตะขอตองน้อยกว่าร้อยละ 5

☒ เรียบร้อย

□ ไม่เรียบร้อย (ระบ)

ระยะเปิดของตะขออ้างอิง (เดิม) 100 mm, ปัจจุบัน 100 mm, การเปลี่ยนแปลง %

ค. การสักรอที่ทองตะขอตองนอยกวารอยละ10

☒ เรียบร้อย

☐ ไม่เรียบร้อย (ระบุ)

ความหนาที่ของตะขอล้างอิง (เดิม) 80 mm, ปัจจุบัน 80 mm, การเปลี่ยนแปลง _____ %

ง. ต้องไม่มีส่วนหนึ่งส่วนใดของตะขอแตกหรือร้าว

☒ เรียบร้อย

□ ไม่เรียบร้อย (ระบ)

จ. ไม่มีการเสียรูปทรงหรือสีหรือของห้วงตะขอ

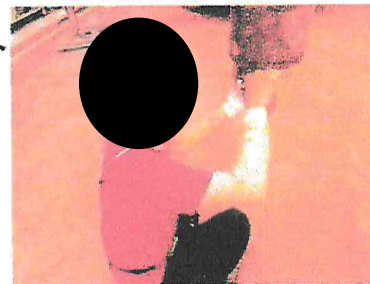
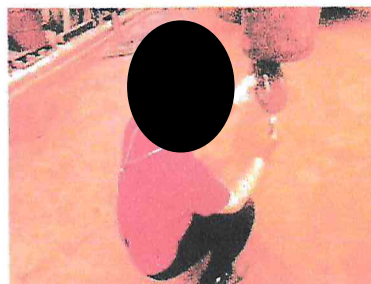
☒ เรียบร้อย

□ ไม่เรียบร้อย (ระบ)

จ. มีชุดล็อกป้องกันลวดสลิงหลุดจากตะขอ

☒ เรียบร้อย

□ ไม่เรียบร้อย (ระบบ)



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Main Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

Auxiliary Hoist ☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

16.5 ไม่ถูกกีดขวางจนชำรุดมากจนเห็นได้ชัดเจน

Main Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

Auxiliary Hoist ☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

17. อุปกรณ์ป้องกันมิให้แนวแขนต่อเคลื่อนตกจากแนวเดิมเกิน 5 องศา (ไม่มีใช้ในเครื่องจักรกล)

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

18. สัญญาณเสียงและแสงไฟเตือนตลอดเวลาที่ปั้นจั่นทำงาน

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

19. ป้ายบอกพิกัดน้ำหนักยกติดไว้ที่ปั้นจั่นและรอกของตะขอ

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

20. ตารางยกสิ่งของติดไว้ในบริเวณที่ผู้บังคับปั้นจั่นเห็นได้ชัดเจน

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

21. รูปภาพการใช้สัญญาณมือในการสื่อสารระหว่างผู้ปฏิบัติงานเกี่ยวกับปั้นจั่นติดไว้ที่จุดหรือตำแหน่งที่ลูกจ้างผู้ปฏิบัติงานเห็นได้ชัดเจน

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

22. เครื่องดับเพลิงพร้อมใช้งานได้ที่ห้องบังคับปั้นจั่น (6A20B)

☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

23. ระบบความปลอดภัย (SAFETY DEVICE), ตรวจสอบค่า ณ จุดที่ทำการทดสอบน้ำหนัก

23.1 Load Indicator ($\pm 2\%$ Max.) ☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ค่าที่อ่านได้จาก Calibrated Load Cell: 24.1 t, ค่าที่อ่านได้จากเครื่อง Load Indicator: 24.1 t.

ความเที่ยงตรงของเครื่อง Load Indicator: _____ %

23.2 Boom Angle Indicator ☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ค่าที่อ่านได้จาก Inclinator: 63.9° , ค่าที่อ่านได้จากเครื่อง Boom Angle Indicator: 63.9°

ความเที่ยงตรงของเครื่อง Boom Angle Indicator: _____ %

23.3 Boom length indicator ☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ค่าที่วัดได้จริง: 16.0 m., ค่าที่อ่านได้จากเครื่อง Boom Length Indicator: 16.0 m.

ความเที่ยงตรงของเครื่อง Boom Length Indicator: _____ %

23.4 Radius indicator ☐ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

ค่าที่วัดได้จริง: 6.0 m., ค่าที่อ่านได้จากเครื่อง Radius Indicator: 6.0 m.

ความเที่ยงตรงของเครื่อง Radius Indicator: _____ %

23.5 Limit Switch (Cut and Alarm)

Main Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

Auxiliary Hoist ☒ เรียบร้อย ☐ ไม่เรียบร้อย (ระบุ) _____

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รูปภาพประกอบการตรวจสอบเครื่อง



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คำชี้แจงรายการทดสอบส่วนประกอบและอุปกรณ์สำหรับปั้นจั่น (ชนิดเคลื่อนที่)

- ① วิศวกรต้องคำนวณหาขนาดพิกัดยกอย่างปลอดภัยของปั้นจั่นแต่ละชนิด
- ② วิศวกรต้องคำนวณทางวิศวกรรมพร้อมกับการทดสอบกรณีมีการดัดแปลงส่วนที่เกี่ยวข้องกับโครงสร้างที่มีผลต่อการรับน้ำหนัก
- ③ โครงสร้างหลักหมายถึงชิ้นส่วนที่รับน้ำหนัก หรือรับแรงของปั้นจั่นขณะยก เช่น คานเสาเพลาล้อรางเลื่อน แขนต่อข้อต่อทุกจุด สลักเกลียวยึดและแนวเชื่อมเป็นต้น
- ④ ต้องมีเอกสารการรับรองการติดตั้งปั้นจั่นบนรถเรือแพโป๊ะหรือพาหนะลอยน้ำอย่างอื่นโดยผู้ได้รับใบอนุญาตประกอบวิชาชีพวิศวกรรมควบคุมตามพระราชบัญญัติวิศวกร พ.ศ. 2542
- ⑤ ให้มีการทดสอบความแม่นยำที่เกี่ยวข้องกับสิ่งต่อไปนี้ทิศทางระยะความเร็วรัศมีมุมยก
- ⑥ ระบบความปลอดภัย(SAFETY DEVICE)
 - Load indicator หมายถึงอุปกรณ์แสดงน้ำหนักยกอุปกรณ์
 - Boom Angle indicator หมายถึงอุปกรณ์แสดงสถานะมุมของแขน
 - Boom length indicator หมายถึงอุปกรณ์แสดงสถานะความยาวของแขน
 - Radius indicator หมายถึงอุปกรณ์แสดงสถานะรัศมีการทำงาน
 - Limit Switch หมายถึงอุปกรณ์ป้องกันตะขอชนปลายบูม
- ⑦ Outriggers หมายถึงความรวมถึงแขนหรือขาที่ยึดทั้งชนิดรูปตัว H และตัว A ข่ายันสลักยึดแผ่นรอง และระบบไฮดรอลิก
- ⑧ น้ำหนักที่ใช้ทดสอบการยกอาจใช้การทดสอบด้วยน้ำหนักจริงหรือทดสอบด้วยน้ำหนักจำลองเช่น Load Cell หรือ Dynamometer เป็นต้น

เครื่องมือที่ใช้วัดขนาดและเส้นผ่านศูนย์กลางของลวดสลักเกลียวตะขอ และอื่นๆ เช่น เวอร์เนียคาลิเปอร์ หรือเครื่องมืออื่นที่มีความละเอียดในการวัดไม่น้อยกว่า 0.1 มิลลิเมตร

การตรวจสอบแนวเชื่อมโดยใช้ดุลยพินิจของวิศวกรผู้ทดสอบเช่นการตรวจสอบด้วยสายตา

การใช้สารแทรกซึมผงแม่เหล็ก (Magnetic Particle Inspection) คลื่นเสียงรังสีเป็นต้นตามสภาพและความจำเป็นของชิ้นงาน

อื่นๆระบุให้วิศวกรผู้ทดสอบระบุอุปกรณ์หรือเครื่องมือที่ใช้ในการทดสอบนอกเหนือจากที่กล่าวมาแล้ว
- ⑨ กรณีปั้นจั่นที่ใช้งานแล้วให้ทดสอบการรับน้ำหนักที่ 1.25 เท่าของน้ำหนักที่ใช้งานจริงสูงสุดโดยไม่เกินพิกัดยกอย่างปลอดภัยที่ผู้ผลิตออกแบบไว้ เช่น

ตัวอย่างที่ 1

ที่ผู้ผลิตออกแบบไว้ 10 ตัน ใช้งานจริงสูงสุด 6 ตันจะต้องทดสอบที่ 6 X 1.25 จะเท่ากับ 7.5 ตัน ดังนั้นต้องทดสอบการรับน้ำหนักที่ 7.5 ตัน

ตัวอย่างที่ 2

ปั้นจั่นที่ผู้ผลิตออกแบบไว้ 10 ตัน ใช้งานจริงสูงสุด 9 ตันจะต้องทดสอบที่ 9 X 1.25 จะเท่ากับ 11.25 ตัน แต่เนื่องจากเกินกว่าน้ำหนักที่ผู้ผลิตออกแบบไว้ ดังนั้นต้องทดสอบการรับน้ำหนักที่ 10 ตัน

เรียบร้อย หมายถึงมีถูกต้องครบถ้วนใช้การได้จริง

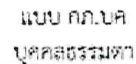
ไม่เรียบร้อย หมายถึงไม่มีไม่ถูกต้องไม่ครบถ้วนใช้การไม่ได้หรือมีสภาพไม่พร้อมใช้งาน

หมายเหตุ วิศวกรผู้ลงนามจะต้องกรอกข้อมูลให้รายละเอียดไว้ในแบบให้เรียบร้อยและครบถ้วนที่สุดด้วยความถูกต้องเที่ยงตรง โดยความรับผิดชอบในความปลอดภัยของส่วนรวมตามจรรยาบรรณและมารยาทอันดีในการประกอบวิชาชีพวิศวกรรม

วันที่ตรวจสอบ: 24 พฤศจิกายน 2565

ออกไป: 23 กุมภาพันธ์ 2566

..... วิศวกรผู้ทดสอบ



จึงน่าจะเขียนได้

เลขบัตรประชาชน [REDACTED].....
 ที่อยู่ [REDACTED] ถนนพหลโยธิน-เด่นชัย ตำบลสนมเข้ อำเภอเมืองพิษณุโลก จังหวัดพิษณุโลก.....
 เป็นบุคคลผู้ให้บริการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ตามกฎกระทรวง
 กำหนดมาตรฐานในการบริหาร จัดการ และดำเนินการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
 ในการทำงานเกี่ยวกับเครื่องจักร ปั่นจั่น และหม้อน้ำ พ.ศ. ๒๕๖๔ ในการเป็นผู้ให้บริการทดสอบปั้นจั่น ทั้งนี้
 สามารถดำเนินการได้เฉพาะงานตามประเภทและขนาด ตามกฎหมายว่าด้วยวิศวกร ประกอบกับกฎกระทรวง
 การขึ้นทะเบียนและการอนุญาตให้บริการเพื่อส่งเสริมความปลอดภัย อาชีวอนามัย และสภาพแวดล้อม
 ในการทำงาน พ.ศ. ๒๕๖๔ แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน

W.F. Ladd

For Crane Test and Inspection ของนิติบุคคล (Sriphiphatphitsanulok (1989) Co.,Ltd.)

ให้ไว้ ณ วันที่ ๑๖ มกราคม พ.ศ. ๒๕๖๕

Certificate No. MI POR JOR 2 071/22/034 LKU

ตรวจสอบวันที่: 21 Nov, 2022

สถานที่ตรวจสอบ LKN-A Site Uttaradit

รับรองตำแน่งถูกต้อง

(.....)

รับรองสำเนาถูกต้อง



วิภาส วิทวัสกร บรรณารักษ์
ตามพระราชบัญญัติสารภาพ พ.ศ. ๒๕๖๖

ชื่อ-สกุล [REDACTED]
เลขประจำตัวประชาชน [REDACTED]
ประกอบอาชีพ [REDACTED]
อาชีพ วุฒิชัยกร เลขทะเบียน [REDACTED]
วันหมดอายุ 27 พ.ย. 2566 วันที่ออก 20 พ.ย. 2566
วันหมดอายุ 11 ม.ย. 2566 วันที่ [REDACTED]
วันหมดอายุ 27 พ.ย. 2566 วันที่ออก 20 พ.ย. 2566

Inspection Place LKN-A Site / Utharadit Th.

Inspected Machine Rough Terrain Crane

Inspection Date 24 Nov 2022

สถานที่ติดต่อ สำนักงานท่าหลวงวิศวกรรม

[REDACTED]

ต.ในเมือง อ.เมือง จังหวัดพิษณุโลก 65000

Tel [REDACTED], Email: [REDACTED]



intertek

Total Quality. Assured.



LOAD TEST & VISUAL INSPECTION CERTIFICATE

No: MI LT VI 071 / 22 / 042 LKU

Client Name: Sripiphatphitsanulok (1989) Co.,Ltd.

Actual Owner: Sripiphatphitsanulok (1989) Co.,Ltd.

Work Location: LKN-A Site in Uttaradit, Thailand

Attention to: [REDACTED]

Description of Lifting Equipment

Rough Terrain Crane 45 Ton. S/N: 581378 (Crane No. SP-07) # 70-1372 พันทิป
Manufacturer : TADANO LTD. /JAPAN
Carrier Type/Model : TR-500M-2-00103
Year of Manufacture : 1994-10
Capacity: 45 Tons./ SWL. 24.10 Ton.
Boom Type / Length : Telescopic Boom /6 Section / Length 41.20 M.
Main Hoist Rope : OD 18.00 mm. (Std.18.00 mm.)
Part of Line : 8 Part Lines.
Aux Hoist Rope : OD 17.90 mm. (Std.18.00 mm.)
Part of Line : Single Part Line
Main/Aux.Hook Block 45 Tons/ 4 Tons
Main Hook Marking Point Length A-B : 212 mm.
Aux.Hook Marking Point Length A-B : 100 mm.
Holding Time 10 mminuted

Load Test

Boom Radius	Boom Length	Function Test 100%	Test Load 110%
6 M	16 Meters	21.90 Tons	Load Test Main Hook 24.10 Tons.
6 M	16 Meters	3.63 Tons	Load Test Aux. Hook 4.00 Tons.

Safety Device

A) Anti-Two Block Limit Switch Cut Out	Functional
B) Mechanical Angle Indicator	Functional
C) Boom/Wire Rope Sling	Satisfactory
D) Hook/Sheave Block	Satisfactory
E) Winch and Travel Brakes	Satisfactory
F) Safe/Rate Load Indication	Satisfactory

Note : Equipment(s) Tested/Inspected are shown in Picture below



Method Of Inspection: As per the following Procedures:

- ☒ Intertek : MI-SOP-001-TH2012 rev.2 General Inspection for Lifting Equipment./ Update : 15 February 2014
- ☐ Mubadala : Inspection of Lifting Equipment Procedure Doc No. TH-POT-AI-QA-PRC-0132-R6 Created / Update : 04 December 2018
- ☒ PTTEP: General Instruction for PTTEP Lifting Equipment Integrity Inspection Procedure Document no. CMS-12089-PDR-401,CMS-12089-GDL-404 Rev.0-0 Revision Date : Dec 2016
- ☐ Chevron Thailand - Portable Lifting Equipment Operating Practices : Appendix 2 - guide for examination and testing of containers V1.3 Date 1 July 2016.
- ☐ Ophir Group Company - Lifting Operation and Lifting Equipment : OE-013 Rev.03 Date 01 Aug 2016.
- ☒ Customer's Instructions.

Scope of Inspection

Thorough Visual Inspection of Lifting Equipment Prior and After Proof Load Test.

Witness Proof Load Test of said Lifting Equipment.

Results of Inspection : Satisfactory.

Equipment Used

Load Cell S/N: 1076 Certificate No. NTT-CT-009-2022-065 Newtech Technology Co., Ltd. Date of Cal : 29 Oct 2022 . Next of Cal : 28 Oct 2023

Vernier Caliper S/N: 13237165 Certificate No: D220071 Brecht Technology Calibration Co., Ltd. Date of Cal : 06 May 2022. Next of Cal : 05 May 2023

Measuring Steel Tape S/N: 0-471727-57 Certificate No: D220089 Brecht Technology Calibration Co., Ltd. Date of Cal : 02 July 202 . Next of Cal : 01 July 2023

Notes

This report describe the condition of all items inspected, at time of inspection.

Customer's representative are advised of the condition of all items inspected, at time of inspection or immediately after.

Magnetic Particle Inspection Report (MPI) shell by attached with certificate. Issue by: Intertek. Report No: MI MPI 071 / 22 / 150 LKU Date Inspection : 24 November 2022

Intertek Industry and Certification Services (Thailand) Ltd. Inspection Report No. MI IR 071 / 22 / 011 LKU

SEE LIABILITY OVERLEAF

Following Procedures Chevron : Date of Inspection:

Next of Inspection :

Following Procedures PTTEP(S1) : Date of Inspection:

24-Nov-22

Next of Inspection :

23-Feb-23

Following Procedures Customer's : Date of Inspection:

Next of Inspection :



Inspector/Sign Name

Intertek Industry and Certification Services (Thailand) Ltd.



Customer Representative



Magnetic Particle Inspection Certificate

No: MI MPI 071 / 22 / 150 LKU

Client Name: Sripiphatphitsanuloke (1989) Co.,Ltd
Actual Owner: Sripiphatphitsanuloke (1989) Co.,Ltd
Work Location: LKN-A Site in Uttaradit, Thailand
Attention to: [REDACTED]

Method Of Inspection

- | | |
|---|---|
| <input type="checkbox"/> MPI (Dry Magnetic Power) | <input type="checkbox"/> Various methods were used; please refer to picture |
| <input checked="" type="checkbox"/> MPI (Black Magnetic Ink & White Contrast Aid) | <input type="checkbox"/> After Visual inspection |
| <input type="checkbox"/> MPI (Wet Fluorescent Magnetic Particle & Black light) | <input checked="" type="checkbox"/> Before and after load test |

Acceptance Criteria

Procedure/ Specification

- ☐ AWS D1.1
☒ ASTM E-709
☒ Customer's Instructions
☒ Intertek Procedure No. MI 022
rev 02 Magnetic Particle Inspection

Area Inspected

- ☐ Lifting Pad eye
☐ Weldment Area
☐ Full Body
☒ Stress Areas
☒ Customer's Indications

Surface Preparation

- ☐ Grinding
☒ Brushing
☐ Other

Material Used

- ☒ Magnaflux 7 HF
☒ Magnaflux WCP-2
☐ Others

Equipment Used

- ☒ AC Yoke ☐ Permanent Magnet
S/N: 6641
Cal Date: 06 May 2022
Light Meter S/N: Q892240
Light Intensity: 40,020 LUX
Field Indicator: Pie Gauge

Material type of part Inspected

- ☒ Carbon steel, Thickness N/A

Magnetizing Technic

- ☒ Yoke
☒ Continuous ☐ Residual

Magnetizing Current type

- ☒ AC ☐ DC
☐ Permanent

Magnetic Particle

- ☒ Wet ☐ Dry
☒ Visible ☐ Fluorescent

Particle Application

- ☒ Spray

Surface Temperature

- ☒ Ambient Temp

Equipment Identification/Description

Equipment Name	Area, Quantity inspected	Serial No./WIN No.	Remark
Rough Terrain Crane 45 Ton.	Mian Hook And Aux Hook	581378 (Crane No. SP-07)	
		# 70-1372 พิษณุโลก	

Area(s) inspected are indicated in Picture below



Results Of Inspection

- ☐ Crack (S) found (Please see picture)
☐ Various results found (Refer to picture)
☒ Was found to be free of surface crack at the time of Inspection
☐ Other (See Comments)

At the time of Inspection, no visible defects that could be detrimental to Equipment's Safe Usage are found

Comments:

This certificate represent our finding at time, date and place of inspection only.

Magnetic Particle Inspection (MPI) was examined .

Refer to Inspection Report No. MI IR 071 / 22 / 011 LKU

Following Procedures Chevron :

Date of Inspection:

Following Procedures PTTEP (S1) :

Date of Inspection:

24 November 2022

Following Procedures Customer's :

Date of Inspection:

Next of Inspection :

Next of Inspection :

23 February 2023

Next of Inspection



NDT Inspector Name [REDACTED]

MT/PT Level II ASNT (SNT-TC-1A)

Customer Representative

Intertek Industry and Certification Services (Thailand) Ltd.

ภาคผนวกที่ 28

เอกสารการตรวจสอบการดำเนินงานด้านความปลอดภัย
มั่นคง สุขภาพและสิ่งแวดล้อม (Internal Audit)

Weekly Hazard Hunt Sharing

Rig GW80 at S1 -LKU-ZD (Ext) location



Thursday 13th February 2023.

GW80 – Finding items GWDC After



Repair cover at mud pump

Passion to Explore for a Sustainable Future 3

GW80 – Finding items GWDC After



Install traffic cone as a warning to be careful.

Passion to Explore for a Sustainable Future 5

GW80 – Finding items

Before



Found cover of mud pump not good condition.

Passion to Explore for a Sustainable Future 2

GW80 – Finding items GWDC

Before



Found concrete at rig site can cause slip and trip hazard if someone didn't notice .

Passion to Explore for a Sustainable Future 4

GW80 – Finding items

Before



Found casing protector obstruct walk way.

Passion to Explore for a Sustainable Future 6

GW80 – Finding items GWDC
After



Move casing protector to basket prevent slip trip hazard.

GW80 – Finding items APED
Before



Found cover of mud tank open when working near cover can cause falling down.

GW80 – Finding items APED
After



Remind crews after finish job must be closed cover of mud tank.

GW80 – Finding items GWDC
Before



Found many hose on mud tank can case slip and trip hazard.

GW80 – Finding items GWDC
After



Install safety sign (Slip hazard) and remind crews careful when working on the mud tank.

GW80 – Finding items MI-SWACO
Before



Found the water hose was obstruct walk way of shaker house.

GW80 – Finding items MI-SWACO

After



Keep it to proper place, prevent slip and trip hazard, and inform to pit boss after finish task have to housekeeping every tim



GW80 – Finding items EXLOG

Before



Found safety Hemet was placed in an improper position.



GW80 – Finding items EXLOG

After



Hang at helmet area prevent falling down.



GW80 – Finding items SLB_DD/MWD

Before



Someone put the box near the exit door. Someone can step on it then slip and fall down the floor.



GW80 – Finding items SLB_DD/MWD

After



move the box the proper place and housekeeping for correction.



QUESTIONS
Q&A
ANSWERS

