

ภาคผนวก ข

เอกสารประกอบการปฏิบัติตาม
มาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม

ภาคผนวก ข.1

เอกสารรับรองระบบการจัดการสิ่งแวดล้อม (ISO 14001)
และระบบการจัดการด้านอาชีวอนามัย
และความปลอดภัย (ISO 45001)

Certificate TH03/2684

The management system of

Star Petroleum Refining Public Company Limited (SPRC)

No. 1, I-3B Road, Map Ta Phut, Muang Rayong, Rayong 21150, Thailand

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

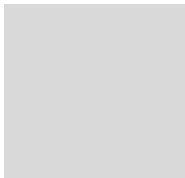
Operation of Crude Oil Refining Process and Manufacture of Asphalt Cement.



This certificate is valid from 16 January 2022 until 16 January 2025 and remains valid subject to satisfactory surveillance audits.

Issue 10. Certified since 07 November 2003.

Authorised by



SGS United Kingdom Ltd.

Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK

t +44 (0)151 350-6666 - www.sgs.com



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Certificate TH04/2685

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ISO 9001:2015

For the following activities

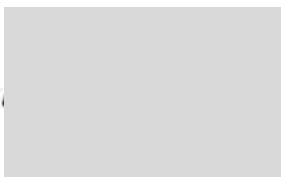
Operation of Crude Oil Refining Process and Manufacture of Asphalt Cement.



This certificate is valid from 16 January 2022 until 16 January 2025 and remains valid subject to satisfactory surveillance audits.

Issue 10. Certified since 16 September 2004.

Authorised by



SGS (Thailand) Ltd.

100 Nanglinchee Road Chongnonsee Yannawa, Bangkok 10120 Thailand

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Certificate TH07/2686

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The management system of

Star Petroleum Refining Public Company Limited (SPRC)

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Rayong 21150, Thailand

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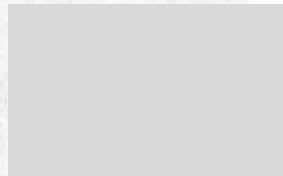
ISO 14001:2015

For the following activities

**Operation of Crude Oil Refining Process and
Manufacture of Asphalt Cement.**

This certificate is valid from 16 January 2022 until 16 January 2025 and
remains valid subject to satisfactory surveillance audits.
Recertification audit due a minimum of 60 days before the expiration date.
Issue 8. Certified since 16 January 2007

Authorised by



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Certificate TH04/2687



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Star Petroleum Refining Public Company Limited (SPRC)

No. 1, I-3B Road, Map Ta Phut, Muang Rayong,
Rayong 21150, Thailand



has been assessed and certified as meeting the requirements of

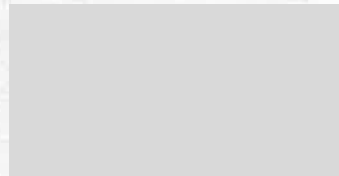
ISO 14001:2015

For the following activities

**Operation of Crude Oil Refining Process and
Manufacture of Asphalt Cement.**

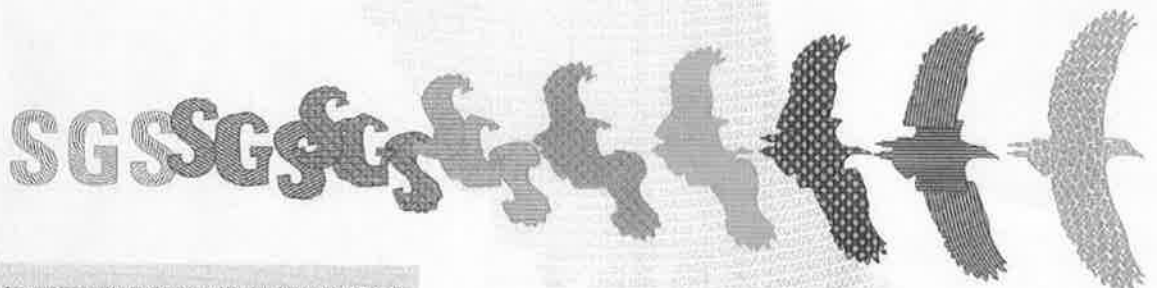
This certificate is valid from 16 January 2022 until 16 January 2025 and
remains valid subject to satisfactory surveillance audits.
Re certification audit due before 6 November 2024
Issue 10. Certified since 16 January 2007

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Certificate TH19/11752

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has been assessed and certified as meeting the requirements of
ISO 45001:2018

For the following activities

Operation of Crude Oil Refining Process and Manufacture of Asphalt Cement.



This certificate is valid from 14 January 2022 until 13 January 2025 and remains valid subject to satisfactory surveillance audits.

Issue 3, Certified since 14 January 2019.

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ภาคผนวก ข.2

โปรแกรมการจัดการด้านสิ่งแวดล้อม อาชีวอนามัย และความปลอดภัย (Environmental, Health and Safety Management Programmes)

2023 Health, Safety, ER and Security Objectives, Targets & Management Programs

Areas of Focus /Continual Improvement	Objective	Targets	Management Program	Responsibility	Benefit / Cost Incurred	Completion Target Date 2023 (Start-finish)	Status (Jan-Dec'23)
1. Safe Work Practice	Robust Safe Work Practice System	Complete and go live the e-PTW	Develop the project of e-PTW	QS/41	Improve efficiency and effectiveness of Safe Work Practice Process	Q4	
2. Training and awareness	Maintain EHS awareness of all SPRC family members	Complete the EHS refresher training for SPRC staffs and contractors	Set up the EHS refresher training for SPRC staffs and contractors	QS/42	Incident and injury free workplace	Q4	
3. Health Promotion	Raise awareness of health and wellbeing for all SPRC family members	Overall lipid profile of SPRC staff reduce $\geq 5\%$ compare with previous year	Set up the healthy promotion activity to encourage SPRC family members to reduce lipid profile	QS/43	Wellbeing organization	Q4	
4. RSI	Enhance RSI awareness	Reduce number of high and medium RSI risk 50% from 2022	Set up the RSI awareness workshop with focus group (CF department and other SPRC staffs who have high and medium RSI risk.	QS/43	Incident and injury free workplace	Q4	

Areas of Focus /Continual Improvement	Objective	Targets	Management Program	Responsibility	Benefit / Cost Incurred	Completion Target Date 2023 (Start-finish)	Status (Jan-Dec'23)
5. Emergency Response Preparedness Enhancement	Readiness and high reliability of firefighting equipment and emergency response	Familiar and learning on Advance fire, tank fire, Hazmat and Rescue	5.1 Set up training program in Q1 to Q3	QS/31 & 32	Knowledge on Tank fire, Advance fire etc.	Q3	
6. Emergency Response Preparedness Enhancement	Emergency readiness for SPM operating and Marine terminal	Review and revise Oil Spill Response Contingency Plan	6.1 Conduct the oil spill tabletop for SPM.	QS/3 and PD/18	Readiness of the response team and duty Rota members	Q2 & Q3	
		ICS Training to Oil spill response team	6.2 Set up training course ICS 220, 300, Technic and Tabletop.	QS/3	Readiness of the response team and duty Rota members. Know how to use ICS system and form	Q4	
7. Emergency Response Preparedness Enhancement	Emergency operation center communication improvement	Linkage and improve the communication system in each emergency operation and related room (TE3786 Improve EOC room)	7.1 Propose the proposal to the DRB and get approval for phase 3 7.2 Improvement according to the scope approved	QS/31	Good communication in each location	Phase 4 in Q2-3	

2023 Environmental Objectives, Targets & Management Programs

Significant Aspect	Objective	Target	Management Program	Responsibility	Benefit / Cost Incurred	Completion Target Date (Start-Finish)	Status
1. Legal & Other Requirement	Comply with MOI Notification	Fully Comply and report as per legal timeline	1. DIW VOC Control at tank, flare and shut down & TA	QS/21		Q1-Q4	
			2. CEMs installation and online to DIW	QS/2 & AS/242 (Project Manager)		Q1-Q4	
			3. Waste disposal report,	QS/21		Q4	
	Get effective and practical legal requirement	Provide advocacy and follow up	4. PCD Benzene fence line monitoring,	QS/2			
2. SPM Oil spill Post incident and recovery	Improve reliability of SPM.	Get approval from ONEP	5. Study EIA upgrading project for new buoy SPM.	QS/22		Q4	
3. Emissions to Air	<ul style="list-style-type: none"> Improve determine sources complaints for prevention or mitigation Identify release and prediction during emergency case 	Proactive to control sources prior to get community complaints	6. Continue on TE3791: Fence-line Air Quality Monitoring System Installation, CPDEP Phase 3	QS/21 & AS/244 (Project Manager)		Q4	

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Significant Aspect	Objective	Target	Management Program	Responsibility	Benefit / Cost Incurred	Completion Target Date (Start-Finish)	Status
4. Waste Management	To seek opportunities to improve for waste management.	To support Green Mindset	7. Enhance Office waste segregation	QS/22		Q4	

Note:

1. Community Relationship and Public Affair, please refer to Social Responsibility & Community Outreach Action Plan.
2. Use of Natural Resources, please refer to Energy Roadmap & Sustainable Development (SD) Water Management Roadmap.
3. Release to Air, please refer to SD Air Quality and Climate Change

ภาคผนวก ข.3

นโยบายสิ่งแวดล้อม สุขภาพอนามัย และความปลอดภัย

ENVIRONMENT, HEALTH AND SAFETY POLICY

Star Petroleum Refining Public Company Limited

It is the policy of SPRC to conduct business in a socially responsible and ethical manner with the balance of environment, social and economic that protects safety and health of SPRC family, concerned stakeholders and the environment in the area which may be impacted by our operation.

SPRC is committed to organizational culture and environment where Environment, Health and Safety (EHS) are recognized as value-based and built on a mindset intolerant of any level, frequency or severity of incident and injury. We believe that all injuries can be prevented, and our goal of incident and injury free operations is achievable.

Our commitment on Operational Excellence (OE) is embodied in EHS value of building Incident and Injury Free (IIF) leadership and a caring family mindset.

This culture is reflected in SPRC Environment, Health and Safety Policy as follows:

1. Achieve EHS excellence including compliance with all applicable EHS legal, regulatory and other requirements.
2. Integrate EHS performance as a part of SPRC key performance Indicators and place the management of EHS as a prime responsibility of line management. Inspire every individual be responsible for his/her own safety and the safety of others.
3. Create Incident and Injury Free (IIF) culture, apply pollution prevention, risk-based thinking, and pro-active methods to promote personal and process safety and minimize impacts to environment and health. When unsafe situation occurs, we stop work and take action.
4. Creatively promote awareness, understanding, involvement and leadership of SPRC personnel in EHS management system and programs through relationship building, training, engagement, and consultation.
5. Build a safe, reliable, and healthy workplace and a healthier, mindful and disciplined SPRC family to drive toward incident and injury free operations, prevent injuries and process safety incidents and make long-lasting healthy lifestyle and wellness.
6. Build low carbons and resource-circulating society throughout green supply chain management to minimize Climate Changes impact, ensure efficient use of the natural resources and to deliver environmentally friendly products for sustainable development.
7. Foster caring, communication, understanding, and cooperation related to EHS issues including EHS objectives within SPRC and between SPRC, surrounding communities and business and Thai governmental bodies.
8. Review the compliance of EHS policy, management system and programs and make corrective actions where required.
9. Implement continual improvement in SPRC Environmental, Health and Safety performance to aim the sustainability.

This policy applies to all SPRC personnel and the conduct of the SPRC's business and operations by considering Life Cycle Perspective. Safety covers both personal and process safety.

Responsibility

1. The Management is responsible for providing adequate and appropriate resources to implement the EHS policy and management system.
2. All SPRC personnel shall be responsible for their own safety and safety of others and shall always make time for people to extend the "circle of influence" and spread IIF culture.
3. All SPRC personnel shall know, understand and carry out duties in accordance with EHS training and instructions and actively participate in the development and implementation of EHS programs, procedures and standards.

Procedures

1. SPRC shall ensure that the EHS policy is documented, implemented, maintained, updated, monitored and communicated to everyone in order to meet or exceed applicable EHS standards/practices which lead to the excellent performance in EHS aspects for SPRC personnel and other stakeholders.
2. SPRC shall maintain awareness and focus for all SPRC personnel on EHS standards, rules & regulations and procedures through training, promotion and communications.
3. SPRC shall ensure effective functioning of EHS Management System and always seek opportunities for continual improvements through utilization of available best practices.

Robert J. Dobrik
Chief Executive Officer

Revision No.: 05
Date: 5 Jan. 2022

นโยบายสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย

บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) มีนโยบายดำเนินธุรกิจด้วยความรับผิดชอบต่อลูกค้า ความปลอดภัยสุขภาพอนามัยของสมาชิกครอบครัวบริษัทฯ ผู้มีส่วนได้เสียที่เกี่ยวข้อง ตลอดจนสิ่งแวดล้อม สังคม และเศรษฐกิจ ในพื้นที่ซึ่งอาจได้รับผลกระทบจากการดำเนินธุรกิจของบริษัทฯ

บริษัทฯ มีความมุ่งมั่นในการสร้างวัฒนธรรมองค์กรที่ยึดถือด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยเป็นค่านิยมหลักและมีแนวคิดที่จะไม่ยอมให้มีอุบัติเหตุและการบาดเจ็บเกิดขึ้นไม่ว่าจะเป็นความรุนแรงหรือความถี่ระดับไหน บริษัทฯ มีความเชื่อว่าการบาดเจ็บสามารถป้องกันได้ และสามารถบรรลุเป้าหมายการทำงานที่ปราศจากอุบัติเหตุและการบาดเจ็บได้

ค่านิยมหลักของบริษัทฯ ในด้านความเป็นเลิศในการปฏิบัติงานถูกรวบอยู่ในค่านิยมด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยในการสร้างแนวคิดความเป็นผู้นำด้านการงานโดยปราศจากอุบัติเหตุและการบาดเจ็บและครอบครัวแห่งความห่วงใยผู้อาวุโส

ดังนั้นจึงกำหนดให้มีนโยบายสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยไว้ดังต่อไปนี้

1. บรรลุความเป็นเลิศด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย รวมทั้งปฏิบัติตามกฎหมาย ระเบียบข้อบังคับและมาตรฐานที่เกี่ยวข้องกับการประกอบกิจการของบริษัทฯ
2. กำหนดให้มีการปฏิบัติงานด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยเป็นหัวใจในค่านิยมของบริษัทฯ และกำหนดให้มีการประเมินค่านิยมด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยเป็นประจำทุกปี เพื่อบูรณาการและปรับปรุงการดำเนินงานด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย
3. สร้างวัฒนธรรมการทำงานโดยปราศจากอุบัติเหตุและการบาดเจ็บ (HSE) ใช้วิธีการป้องกันและพิชิตได้หมด (Pollution Prevention) ใช้วิธีการแบบพื้นฐานของความเสี่ยง (Risk-based thinking) และดำเนินการเชิงรุก (Pro-active) เพื่อส่งเสริมความปลอดภัยส่วนบุคคลและความปลอดภัยของระบบการผลิต และลดผลกระทบด้านสิ่งแวดล้อมและสุขภาพอนามัย หากมีสถานการณ์ที่ไม่ปลอดภัยเกิดขึ้น เราทุกคนมีอำนาจในการแจ้งเตือน
4. ได้มีการสร้างเสริมสร้างวัฒนธรรมด้านความปลอดภัยขององค์กร มีชาวต่างชาติเข้าใจ มีส่วนร่วมและมีความเป็นผู้นำโดยโครงการด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยผ่านการสร้างวัฒนธรรม การฝึกอบรม การสร้างความผูกพันกับองค์กรและการบริหาร
5. กำหนดการส่งเสริมการทำงานด้านความปลอดภัย เพื่อให้เกิดความปลอดภัยและส่งเสริมให้พนักงานสุขภาพอนามัยที่ดี มีชีวิตและมีความสุขในการทำงานปราศจากอุบัติเหตุและการบาดเจ็บ ป้องกันการบาดเจ็บและลดการสูญหายจากกระบวนการผลิตและคุณภาพชีวิตได้อย่างยั่งยืน
6. สร้างสิ่งแวดล้อมงานด้านความปลอดภัยในการทำงาน ผ่านกระบวนการบริหารจัดการห่วงโซ่อุปทานที่เป็นมิตรต่อสิ่งแวดล้อม เพื่อลดผลกระทบจากการเปลี่ยนแปลงของสภาพภูมิอากาศ การจัดการอย่างมีประสิทธิภาพ และส่งเสริมผลิตภัณฑ์ที่เป็นมิตรต่อสิ่งแวดล้อม เพื่อการพัฒนาอย่างยั่งยืน
7. เสริมสร้างความเข้าใจและความรู้เกี่ยวกับความปลอดภัย และระหว่างบริษัทฯ กับชุมชนใกล้เคียงองค์กรที่เกี่ยวข้องและหน่วยงานของรัฐบาล ทางด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย ทั้งนี้โดยครอบคลุมถึงวัตถุประสงค์และเป้าหมายที่กำหนดไว้
8. จัดให้มีการทบทวนนโยบาย ระบบการจัดการ โครงการด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย และดำเนินการปรับปรุงแก้ไข
9. พัฒนาการดำเนินงานด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยอย่างต่อเนื่องเพื่อความยั่งยืน

นโยบายสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยมีเจตนารมณ์ในการปฏิบัติงานของบุคลากรทุกคน ในทุกๆ กิจกรรมของบริษัทฯ และค่านิยมหลักที่เราร่วมกันขององค์กรคือการสร้างวัฒนธรรมด้านความปลอดภัยในทุกระดับทั้งความปลอดภัยส่วนบุคคลและผลกระทบต่อระบบการผลิต

หน้าที่ความรับผิดชอบ

1. ผู้บริหารมีหน้าที่ในการจัดสรรทรัพยากรที่เหมาะสม และเพียงพอต่อการดำเนินการตามนโยบายและระบบบริหารจัดการด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย
2. บุคลากรทุกคนของบริษัทฯ ต้องรับผิดชอบต่อการปฏิบัติตามนโยบายและวัตถุประสงค์ที่ตั้งไว้ และต้องให้ความร่วมมือกับทุกคนในการขยาย "ขอบเขตแห่งการรับผิดชอบ" ของตนตามวัฒนธรรมการทำงานโดยปราศจากอุบัติเหตุและการบาดเจ็บ
3. บุคลากรทุกคนของบริษัทฯ มีหน้าที่ในการรับรู้ เข้าใจและปฏิบัติตามกฎข้อบังคับของการปฏิบัติงานและความปลอดภัยที่ได้รับจากการฝึกอบรมด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย ตลอดจนการมีส่วนร่วมในการพัฒนาและปฏิบัติตามมาตรฐานระเบียบปฏิบัติงานและโครงการต่าง ๆ ในด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย

การนำไปปฏิบัติ

1. บริษัทฯ ต้องดำเนินการเพื่อให้นโยบายสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยมีการจัดทำและบูรณาการเป็นลายลักษณ์อักษร มีการนำไปปฏิบัติ ดำรงไว้ ปรับปรุงแก้ไข ติดตามตรวจสอบและมีการสื่อสารไปยังผู้เกี่ยวข้องทุกคน เพื่อให้ได้ผลการดำเนินงานด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยตามมาตรฐานและวัตถุประสงค์ที่กำหนดไว้ ซึ่งจะทำให้ทุกคนเป็นเลิศของการทำงานด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยสำหรับบุคลากรและผู้บริหารได้เสียของบริษัทฯ
2. บริษัทฯ ต้องคำนึงถึงความตระหนักและใส่ใจสำหรับบุคลากรของบริษัทฯ ทุกคนในเรื่องของมาตรฐาน กฎระเบียบข้อบังคับและระเบียบปฏิบัติงานด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัย ผ่านทางการฝึกอบรม การส่งเสริมประชาสัมพันธ์และการสื่อสาร
3. บริษัทฯ ต้องดำเนินการเพื่อให้มั่นใจว่าระบบบริหารจัดการด้านสิ่งแวดล้อม สุขภาพอนามัยและความปลอดภัยมีการดำเนินงานอย่างมีประสิทธิภาพ และแสวงหาโอกาสในการปรับปรุงระบบอย่างต่อเนื่อง โดยการนำเอามาตรฐานและวิธีการปฏิบัติมาให้ได้และได้รับการยอมรับมาใช้

โรเบิร์ต โจเซฟ โดบรีค
ประธานเจ้าหน้าที่บริหาร

ปรับปรุงแก้ไขครั้งที่: 5
วันที่ 5 มกราคม 2565

PRODUCT QUALITY POLICY

Star Petroleum Refining Public Company Limited

It is the policy of SPRC to provide quality products which meet specifications required by law, other applicable standards and customer's expectations.

Ensuring product integrity is critical to satisfying customer needs and expectations for quality and value in SPRC's products. This is vital to insure SPRC products' reputation, quality image and maintenance industry trust.

It is reflected in SPRC Product Quality Policy as follows:

- Provide customers with products and services which meet agreed specifications and performance requirements as well as comply with all applicable product quality laws and regulations and other requirements every time.
- Provide products which are safe and effective for their intended use when handled and used according to recommended guidelines and procedures.
- Working within an Incident and Injury Free culture, apply the continual Quality Management process to secure SPRC's competitive edge with the aim of being best in class and to continue to provide customers satisfaction.
- Stimulate innovation, involvement and co-operation at all levels of the organization to enhance the development of products quality and integrity.
- Implement continual improvement in quality performance and measure appropriate performance indicators resulting in meeting of the agreed specifications and performance requirement of the products in order to gain competitive advantage, enhance shareholder value, and exceed customer expectations.

This policy applies to all SPRC personnel and the conduct of the SPRC's business and operations and shall include all SPRC products sold by SPRC through direct sales and/or off-take agreements.



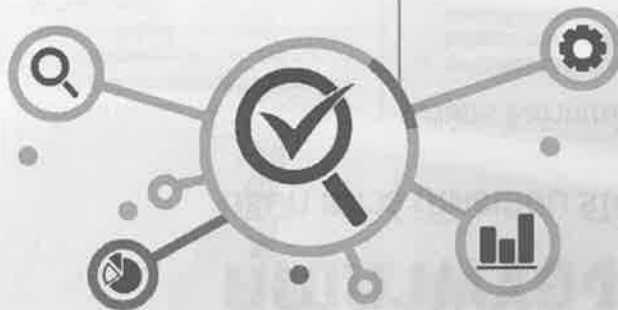
Responsibility

The Management is responsible for the integrity of SPRC products that it manufactures and sells. The Management is also responsible to provide adequate and appropriate resources to implement the Product Quality Policy and related management system and ensuring that SPRC personnel understand the roles and responsibilities toward the product quality.

All SPRC personnel shall know, understand, and carry out duties to achieve the Product Quality specifications.

Procedures

1. SPRC products shall comply with all applicable legal and business requirements/standards.
2. Products which SPRC manufactures, and sells are tested in accredited laboratories.
3. SPRC shall foster a climate in which innovation and initiative are encouraged and shall demonstrate commitment to continual improvement by recognizing and rewarding SPRC personnel accordingly.
4. SPRC shall incorporate House of Quality to actively promote and facilitate communication and cooperation within and across functions in order to improve product quality, supply reliability, services and work processes.
5. Performance against those standards will be monitored and feedback regularly.



Robert J. Dobrik
Chief Executive Officer

Revision No.: 4
Date: 1 June 2022

นโยบาย คุณภาพของผลิตภัณฑ์

บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) เป็นนโยบายที่ผลิตและจัดจำหน่ายผลิตภัณฑ์ที่มีคุณภาพ ตรงตามข้อกำหนดของกฎหมาย มาตรฐานต่างๆ ที่มีผลบังคับใช้ต่อผลิตภัณฑ์และตรงตามความต้องการของลูกค้า

การทำให้เกิดความเชื่อมั่นต่อคุณภาพของผลิตภัณฑ์ถือเป็นสิ่งสำคัญในการตอบสนองความต้องการและความคาดหวังของลูกค้าในเรื่องของคุณภาพและคุณค่าผลิตภัณฑ์ของบริษัทฯ นี่ถือเป็นส่วนสำคัญที่สุดที่จะรับประกันชื่อเสียงภาพลักษณ์ที่ดีต่อผลิตภัณฑ์ของบริษัทฯ ตลอดจนรักษาความเชื่อมั่นและความไว้วางใจจากคู่ค้าสหกรณ์ที่มีต่อบริษัทฯ

บริษัทฯ จึงกำหนดให้มีนโยบายคุณภาพของผลิตภัณฑ์ไว้ดังต่อไปนี้

- จัดหาสินค้าและบริการให้ตรงตามความต้องการและข้อกำหนดที่ได้ตกลงกับไว้กับลูกค้ารวมถึงคุณภาพของสินค้าและบริการนั้นจะต้องได้มาตรฐานตามข้อกำหนดของกฎหมายและมาตรฐานต่างๆ ที่มีผลบังคับใช้ต่อผลิตภัณฑ์ในด้านคุณภาพตลอดเวลา
- ดำเนินการผลิตผลิตภัณฑ์ที่ปลอดภัยและมีประสิทธิภาพให้เป็นไปตามข้อกำหนดของผลิตภัณฑ์ที่ได้ระบุไว้ในระเบียบปฏิบัติงาน
- ปฏิบัติงานภายใต้วัฒนธรรมการทำงานโดยปราศจากอุบัติเหตุและการบาดเจ็บ ใช้กระบวนการบริหารคุณภาพทั่วทั้งองค์กรที่ทำให้บริษัทฯ รักษาความได้เปรียบในการแข่งขัน เพื่อเป็นผู้นำในธุรกิจ และสามารถตอบสนองความพึงพอใจของลูกค้าได้อย่างต่อเนื่อง
- กระตุ้นพนักงานทุกระดับของบริษัทฯ ให้เกิดนวัตกรรม ความร่วมมือและการมีส่วนร่วมเพื่อเสริมสร้างการพัฒนาคุณภาพและความสมบูรณ์พร้อมของผลิตภัณฑ์
- ดำเนินงานในเรื่องการปรับปรุงคุณภาพอย่างต่อเนื่องและการพัฒนาตัวชี้วัดผลการดำเนินงานที่บริหารตามข้อกำหนดของผลิตภัณฑ์และความต้องการที่ตกลงกัน เพื่อที่จะรักษาความได้เปรียบในการแข่งขันทางธุรกิจ เพื่อบูลค่าให้กับผู้ถือหุ้นและตอบสนองต่อความคาดหวังของลูกค้า

นโยบายคุณภาพของผลิตภัณฑ์นี้มีขอบเขตรอบคลุมถึงบุคลากรทุกคนของบริษัทฯ การดำเนินการที่จะดำเนินการผลิตของบริษัทฯ ตลอดจนผลิตภัณฑ์ทุกชนิดของบริษัทฯ ทั้งที่จัดจำหน่ายโดยทั่วไปและจัดจำหน่ายผ่านทางผู้ถือหุ้น



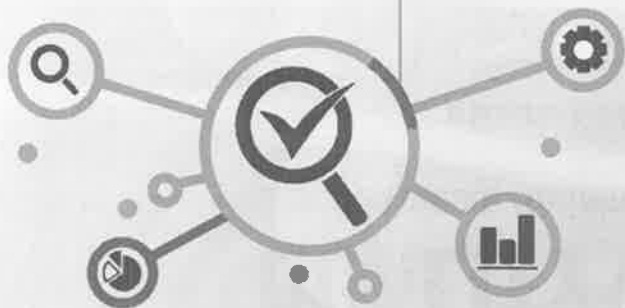
หน้าที่ความรับผิดชอบ

ผู้บริหารมีหน้าที่รับผิดชอบต่อความสมบูรณ์พร้อมของผลิตภัณฑ์ที่ผลิตและจัดจำหน่ายของบริษัทฯ นอกจากนี้ยังมีหน้าที่ในการส่งเสริมทรัพยากรที่เหมาะสม และเพียงพอต่อการดำเนินการตามนโยบายคุณภาพของผลิตภัณฑ์และระบบบริหารจัดการด้านคุณภาพ ตลอดจนทำให้เกิดความมั่นใจว่าบุคลากรของบริษัทฯ เข้าใจถึงบทบาทหน้าที่ของตนเองที่มีต่อคุณภาพของผลิตภัณฑ์

บุคลากรทุกคนของบริษัทฯ มีหน้าที่ในการรับรู้ เข้าใจและปฏิบัติตามให้ถูกต้องตามขั้นตอนเพื่อให้ผลิตภัณฑ์มีคุณภาพตามที่กำหนด

การนำไปปฏิบัติ

1. ผลิตภัณฑ์ของบริษัทฯ จะต้องมีความตรงตามข้อกำหนดด้านกฎหมายตลอดจนมาตรฐานต่างๆ ที่มีผลบังคับใช้ต่อผลิตภัณฑ์
2. ผลิตภัณฑ์ของบริษัทฯ ที่ผลิตและจัดจำหน่ายจะต้องได้รับการทดสอบและรับรองคุณภาพจากห้องปฏิบัติการที่ได้รับการรับรองและเชื่อถือได้
3. บริษัทฯ สนับสนุนอำนาจในการดำเนินการให้เกิดนวัตกรรมและความคิดริเริ่มสร้างสรรค์ และบริษัทฯ มีความมุ่งมั่นที่จะทำให้เกิดการปรับปรุงคุณภาพของผลิตภัณฑ์อย่างต่อเนื่องโดยการขึ้นแบบใหม่ให้รางวัลแก่บุคลากรของบริษัทฯ ที่มีส่วนร่วม
4. บริษัทฯ ใช้กระบวนการของ "House of Quality" ในการส่งเสริมให้เกิดการสื่อสารและการประสานงานที่มีประสิทธิภาพภายในของบริษัทฯ เพื่อให้เกิดการปรับปรุงคุณภาพของผลิตภัณฑ์ การให้บริการ รวมถึงกระบวนการทำงานอย่างยั่งยืน
5. ผลการดำเนินงานที่ไม่เป็นไปตามมาตรฐานจะถูกติดตามและแก้ไขอย่างเป็นประจำ



ไธเบิร์ต ใจชีพ โดบริค
ประธานเจ้าหน้าที่บริหาร

ปรับปรุงแก้ไขครั้งที่: 4
วันที่ 1 มิถุนายน 2565



Policy 400
Environment, Health and Safety

**Prepared
by:**

Angkana Panyaopas
Manager QEHS (QS)

Krisda Chaikul
Manager Process Safety (PS)

Reviewed and Approved by:

Timothy A. Potter
Chief Executive Officer (CE)

Distribution List

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00	TQM Coordinator – QS/1	EDMS

Amendment List

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1. Policy

It is the policy of SPRC to conduct business in a socially responsible and ethical manner that protects safety and health of SPRC family, concerned stakeholders and the environment in the area which may be impacted by our operation.

SPRC is committed to organizational culture and environment where Environment, Health and Safety (EHS) are recognized as value-based and built on a mindset intolerant of any level, frequency or severity of incident and injury. We believe that all injuries can be prevented and our goal of incident and injury free operations is achievable.

Our commitment on Operational Excellence (OE) is embodied in EHS value of building Incident and Injury Free (IIF) leadership and a caring family mindset.

This culture is reflected in SPRC Environment, Health and Safety Policy as follows:

1. Achieve EHS excellence including compliance with all applicable EHS legal, regulatory and other requirements.
2. Integrate EHS performance as a part of SPRC key performance Indicators and place the management of EHS as a prime responsibility of line management. Inspire every individual be responsible for his/her own safety and the safety of others.
3. Create Incident and Injury Free (IIF) culture, apply pollution prevention, risk-based thinking and pro-active methods to promote personal and process safety and minimize impacts to environment and health. When unsafe situation occur we stop work and take action.
4. Creatively promote awareness, understanding, involvement and leadership of SPRC personnel in EHS management system and programs through relationship building, training, engagement and consultation.
5. Build a safe, reliable and healthy workplace and a healthier, mindful and disciplined SPRC family to drive toward incident and injury free operations, prevent injuries and process safety incidents and make long-lasting healthy lifestyle and wellness.
6. Foster caring, communication, understanding and cooperation related to EHS issues including EHS objectives within SPRC and between SPRC, surrounding communities and business and Thai governmental bodies.
7. Review the compliance of EHS policy, management system and programs and make corrective actions where required.

8. Implement continual improvement in SPRC Environmental, Health and Safety performance to aim the sustainability.

2. Scope

This policy applies to all SPRC personnel and the conduct of the SPRC's business and operations by considering Life Cycle Perspective. Safety covers both personal and process safety.

3. Responsibility

1. The Management is responsible for providing adequate and appropriate resources to implement the EHS policy and management system.
2. All SPRC personnel shall be responsible for their own safety and safety of others and shall always make time for people to extend the "circle of influence" and spread IIF culture.
3. All SPRC personnel shall know, understand and carry out duties in accordance with EHS training and instructions and actively participate in the development and implementation of EHS programs, procedures and standards.

4. Procedures

1. SPRC shall ensure that the EHS policy is documented, implemented, maintained, updated, monitored and communicated to everyone in order to meet or exceed applicable EHS standards/practices which lead to the excellent performance in EHS aspects for SPRC personnel and other stakeholders.
2. SPRC shall maintain awareness and focus for all SPRC personnel on EHS standards, rules & regulations and procedures through training, promotion and communications.
3. SPRC shall ensure effective functioning of EHS Management System and always seek opportunities for continual improvements through utilization of available best practices.

ภาคผนวก ข.4

ตำแนห่งสื่อนำส่งรายงานผลการปฏิบัติตาม
มาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม
และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม
ต่อหน่วยงานอนุญาต



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED

บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

เลขทะเบียนนิติบุคคล 0107555000155

SPRC-QS-OUT-23-1488

วันที่ 25 มกราคม พ.ศ. 2566

เรื่อง ขอนำส่งรายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม โครงการท่าเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) ครั้งที่ 2/2565 ระหว่างเดือนกรกฎาคม ถึงธันวาคม พ.ศ. 2565

เรียน อธิบดีกรมเจ้าท่า

สิ่งที่ส่งมาด้วย รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม โครงการท่าเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) จำนวน 3 เล่ม และ CD-ROM จำนวน 4 แผ่น

ตามที่ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) ได้รับความเห็นชอบในรายงานการเปลี่ยนแปลงรายละเอียดโครงการในรายงานการประเมินผลกระทบสิ่งแวดล้อม โครงการท่าเทียบเรือ (ครั้งที่ 4) (EIA) ตามหนังสือ ที่ ออก 5102.3.1/1266 ลงวันที่ 7 พฤษภาคม พ.ศ. 2562 ซึ่งโครงการตั้งอยู่ในนิคมอุตสาหกรรมมาบตาพุด ตำบลมาบตาพุด อำเภอเมืองระยอง จังหวัดระยอง เลขทะเบียนโรงงาน น. 49-1/2537-ญนพ. นั้น

เพื่อให้เป็นไปตามประกาศกระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม เรื่อง หลักเกณฑ์ และวิธีการจัดทำรายงานผลการปฏิบัติตามมาตรการที่กำหนดไว้ในรายงานการประเมินผลกระทบสิ่งแวดล้อม ซึ่งผู้ดำเนินการ หรือผู้ขออนุญาต จะต้องจัดทำเมื่อได้รับอนุญาตให้ดำเนินโครงการหรือกิจการแล้ว พ.ศ.2561 ทางบริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) จึงได้ขอนำส่งรายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม โครงการท่าเทียบเรือ ครั้งที่ 2/2565 ระหว่างเดือนกรกฎาคม ถึงธันวาคม พ.ศ. 2565 ดังรายละเอียดตามสิ่งที่ส่งมาด้วย เพื่อให้หน่วยงานของท่านพิจารณาและดำเนินการตามขั้นตอนต่อไป

หากท่านมีข้อเสนอแนะหรือต้องการข้อมูลเพิ่มเติมประการใด ขอความกรุณาติดต่อนางนิภา นิมมานเศรษฐกุล ผู้เชี่ยวชาญด้านสิ่งแวดล้อม หมายเลขโทรศัพท์ 038-699-313

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ



ผู้จัดการฝ่ายบริหารระบบความปลอดภัย

คุณภาพสิ่งแวดล้อม และอาชีวอนามัย

๒๖ ม.ค. ๒๕๖๖

กรมเจ้าท่า

นายเป็นผู้รับ-นางสาววิภาดา น้อยสีลัง



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED

บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

เลขทะเบียนนิติบุคคล 0107555000155

SPRC-QS-OUT-22-1488

วันที่ 25 มกราคม พ.ศ. 2566

เรื่อง ขอนำส่งรายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม โครงการทำเหมืองแร่ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) ครั้งที่ 2/2565 ระหว่างเดือนกรกฎาคม ถึงธันวาคม พ.ศ. 2565

เรียน ผู้อำนวยการสำนักงานท่าเรืออุตสาหกรรมมาบตาพุด

สิ่งที่ส่งมาด้วย รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม โครงการทำเหมืองแร่ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) จำนวน 1 เล่ม และ CD-ROM จำนวน 1 แผ่น

ตามที่ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) ได้รับความเห็นชอบในรายงานการเปลี่ยนแปลงรายละเอียดโครงการในรายงานการประเมินผลกระทบสิ่งแวดล้อม โครงการทำเหมืองแร่ (ครั้งที่ 4) (EIA) ตามหนังสือ ที่ ออก 5102.3.1/1266 ลงวันที่ 7 พฤษภาคม พ.ศ. 2562 ซึ่งโครงการตั้งอยู่ในนิคมอุตสาหกรรมมาบตาพุด ตำบลมาบตาพุด อำเภอเมืองระยอง จังหวัดระยอง เลขทะเบียนโรงงาน น. 49-1/2537-ญนพ. นั้น

เพื่อให้เป็นไปตามประกาศกระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม เรื่อง หลักเกณฑ์ และวิธีการจัดทำรายงานผลการปฏิบัติตามมาตรการที่กำหนดไว้ในรายงานการประเมินผลกระทบสิ่งแวดล้อม ซึ่งผู้ดำเนินการ หรือผู้ขออนุญาต จะต้องจัดทำเมื่อได้รับอนุญาตให้ดำเนินโครงการหรือกิจการแล้ว พ.ศ.2561 ทางบริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) จึงได้ขอนำส่งรายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม โครงการทำเหมืองแร่ ครั้งที่ 2/2565 ระหว่างเดือนกรกฎาคม ถึงธันวาคม พ.ศ. 2565 ดังรายละเอียดตามสิ่งที่ส่งมาด้วย เพื่อให้หน่วยงานของท่านพิจารณาและดำเนินการตามขั้นตอนต่อไป

หากท่านมีข้อเสนอแนะหรือต้องการข้อมูลเพิ่มเติมประการใด ขอความกรุณาติดต่อนางนิภา นิยมานเศรษฐกุล ผู้เชี่ยวชาญด้านสิ่งแวดล้อม หมายเลขโทรศัพท์ 038-699-313

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

ผู้จัดการฝ่ายบริหารระบบความปลอดภัย
คุณภาพสิ่งแวดล้อม และอาชีวอนามัย

ภาคผนวก ข.5

ระเบียบปฏิบัติ เรื่อง การตรวจสอบเครื่องจักรและอุปกรณ์ประจำเดือน
และตัวอย่างบันทึกการตรวจสอบเครื่องจักรและอุปกรณ์

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1. Plant 67 Check List

1.1 Purpose

This Check List is to be completed monthly by the designated shift to ensure that the General Condition of Plant 67 are maintained in good condition.

1.2 Summary

This General Condition Monthly Check List for the Plant 67 must be completed each month, all items on the list must be checked and the appropriate Yes/No column completed. Any responses in the 'No' column must be supported by entering findings in the 'Comments' column and by entering the Work Request MR number to indicate that any actions required to correct deficiencies have been initiated.

It is the Senior Operator responsibility to ensure that the Shift Check List is completed as scheduled.

The check list must be signed by the Area Operator(s) carrying out the checks, Senior Operator must then sign to indicate that he has reviewed the check list and taken any necessary actions required i.e. Senior Operator informed, work request entered, recorded in turnover, appropriate people informed of deficiencies etc.

**2. Plant 67 General Condition Monthly Checklist****Plant 67 SUPPORT FACILITY**

Month: _____

Year: _____

Location	Description	Yes	No	Comments	MR No.
Sanitary System	Hypochlorite tank level OK				
	Acid feed pump OK				
	Air blower working				
	Sludge level OK				
	Fire extinguisher in place				
	Enough Hypochlorite available				
	Empty Hypochlorite containers removed				
	Discharge pipe clear of debris				
	Discharge channel clean				
	Clean, safe & well maintained				
LPG Flare	Pressure Gauges OK				
	Meter sun shade in good condition				
	Warning signs in place				
	Lighting OK				
	Raw water supply OK				
	Utility air point in good condition				
	Block valves greased & exercised				
	Utility hose in place				
	Clean, safe & well maintained				
Nitrogen Meter Skid	Pressure gauges OK				
	Cage locked				
	Clean, safe & well maintained				
Sub Station	Lighting OK				
	CO2 Extinguisher				
	Air conditioning OK				
	Doors closed				
	Clean, safe & well maintained				



Location	Description	Yes	No	Comments	MR No.
Emergency Generator House	Engine control switch in auto				
	Alarm panel clear				
	Lamp test OK				
	Fuel tank level OK				
	Lighting OK				
	Sprinkler inlet valve open				
	Fire hose connection covers on				
	Clean, safe & well maintained				
Mini Lab	Air conditioning working				
	Vent fan working				
	Water supply OK				
	Drainage OK				
	Testing equipment clean & stored				
	Fire extinguishers in place				
	Clean, safe & well maintained				
MCB Lift Station	Inspection hatch cover in place				
	Pumps run OK				
	Pumps in auto				
	Clean, safe & well maintained				
48" Crude Line	Sample points clean				
	Pressure gauges OK				
	Drain plugs in place				
	Block valves greased & exercised				
	Access platform clear				
	Clean, safe & well maintained				
Shoreline Valve Area	Line identification OK				
	Deck drain clean				
	Firemain block valve open				
	Block valves greased & exercised				
	MOV fire protection covers in place				
	Drain plugs in place				
	Walkways clear				
	Clean, safe & well maintained				



Location	Description	Yes	No	Comments	MR No.
Oil Spill Boom Area	Oil spill boom covered				
	Deployment gate unobstructed				
	Oil spill container access OK				
	Full Lube oil drums on pallets.				
	Full dye drums on pallets				
	Empty drums removed				
	Nitrogen bottles secure in stand				
	Safety shower & eye wash OK				
	Clean, safe & well maintained				

Hose Maintenance Area & Sump	Adjustable slide gate closed				
	Pump run OK				
	Pump in auto				
	Pressure gauge OK				
	Outfall valve closed				
	Sump level OK				
	Sump contents clean & free of debris				
	Hose roller channel clean				
	Raw water supply OK				
	Utility air point in good condition				
	Block valves greased & exercised				
	Clean, safe & well maintained				

Excise Lift & Utility Station	Inspection hatch cover in place				
	Pump run OK				
	Discharge valve open				
	Pump in auto control				
	Raw water supply OK				
	Utility air point in good condition				
	Block valves greased & exercised				
	Clean, safe & well maintained				

Inspected by Operator: _____ Date: _____

Checked by Senior Operator: _____ Date: _____

[illegible]

[illegible]

Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By	Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-22 13:02:51.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-22 02:38:35.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-23 14:42:23.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-19 01:27:25.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-21 20:48:34.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-20 01:33:53.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-22 21:42:16.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-22 21:56:49.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-20 09:17:15.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-20 20:54:51.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-27 13:30:23.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-21 14:24:24.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-24 03:31:08.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-22 14:35:54.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-24 14:56:29.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-23 21:39:00.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-24 23:35:42.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-24 10:07:45.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-26 11:32:18.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-23 15:32:09.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-25 12:15:38.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-25 14:40:55.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-26 23:12:58.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-27 02:44:17.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-25 21:15:31.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-27 14:30:11.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-28 00:21:48.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-26 08:05:52.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-28 07:47:26.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-27 23:32:24.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-29 00:54:55.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-28 13:20:38.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-29 13:41:00.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-25 01:08:33.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-29 23:01:32.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-26 00:06:56.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-04-30 12:11:01.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-29 22:34:33.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-01 01:14:59.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-30 23:27:47.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-02 04:10:52.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-30 14:21:12.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-01 12:34:15.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-31 14:56:35.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-02 23:48:19.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-29 13:27:58.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-02 12:20:11.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-31 21:25:07.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-05 11:14:57.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-01 09:07:53.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-06 22:58:00.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-01 19:48:56.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-06 08:42:10.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-02 08:51:06.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-03 13:51:06.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-03 11:20:39.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-04 00:38:05.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-29 02:46:20.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-04 10:16:27.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-04 23:57:02.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-04 20:40:44.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-03 02:24:35.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-06 00:20:24.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-04 13:04:50.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-07 11:56:03.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-05 11:37:45.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-07 21:34:08.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-07 14:27:21.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-08 22:49:13.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-08 20:44:42.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-09 11:15:12.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-05 21:28:19.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-08 10:18:36.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-06 21:49:32.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-09 23:10:04.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-08 01:49:25.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-10 13:31:34.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-06 13:36:18.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-11 00:01:04.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-04 02:13:55.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-11 14:04:53.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-08 13:15:27.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-12 00:19:07.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-09 14:35:30.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-12 19:38:18.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-09 23:48:26.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-13 10:51:50.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-11 00:28:24.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-12 13:26:37.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-11 12:46:39.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-16 01:24:05.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-10 11:48:34.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-14 15:55:49.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-16 11:54:55.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-16 12:43:17.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-11 22:24:42.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-13 22:49:36.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-13 01:52:18.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-15 13:21:28.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-12 14:24:16.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-14 20:19:12.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-13 16:12:44.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-17 08:36:44.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-16 11:54:55.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-17 00:28:30.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-15 23:11:52.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-17 22:47:22.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-17 00:22:56.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-18 12:03:18.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-17 11:53:09.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-20 10:13:41.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-19 15:30:23.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-05-19 12:32:01.000	pichiani	LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-18 20:28:11.000	pichiani

Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By	Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-17 20:35:00.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-25 21:51:47.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-14 23:41:26.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-24 15:08:55.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-14 10:00:24.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-25 10:17:54.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-15 10:35:41.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-28 02:10:36.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-18 13:33:36.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-29 00:51:13.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-19 20:47:30.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-26 10:25:24.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-21 11:20:22.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-27 00:30:29.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-20 23:07:33.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-01 04:15:11.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-20 11:56:55.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-01 12:08:48.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-13 23:58:10.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-28 13:53:37.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-21 11:25:16.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-27 11:41:36.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-22 22:55:49.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-29 23:59:15.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-23 13:45:51.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-30 12:31:02.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-21 23:01:23.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-31 01:35:27.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-22 10:43:36.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-02 12:32:57.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-26 00:26:16.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-31 09:30:40.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-24 00:50:43.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-29 13:18:34.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-25 10:52:33.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-03 14:08:39.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-26 12:39:27.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-04 00:53:21.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-30 09:48:31.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-01 22:11:21.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-30 23:27:32.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-02 10:07:54.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-29 21:15:05.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-08 00:13:20.000	pichiani
LPG Flare	Alarm Status	No Alarm In Control Panel?	No Alarm	Single Selection	2023-06-29 16:09:24.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-08 09:38:08.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-21 11:20:22.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-02 20:29:12.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-27 13:06:19.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-06 10:35:48.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-29 16:09:25.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-06 21:35:18.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-20 11:56:56.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-10 13:44:42.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-29 21:15:05.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-04 22:15:35.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-30 23:27:33.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-20 13:09:59.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-21 23:01:24.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-20 00:36:48.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-26 00:26:17.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-24 12:02:01.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-22 10:43:36.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-14 22:39:37.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-13 11:56:09.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-20 22:31:22.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-08 23:24:10.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-21 08:51:41.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-09 17:08:12.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-26 12:08:11.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-14 09:09:37.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-23 15:38:14.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-14 22:36:39.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-27 16:15:07.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-13 22:50:43.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-22 08:04:44.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-18 00:36:51.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-28 11:16:19.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-16 13:41:36.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-26 01:20:41.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-16 23:29:40.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-29 12:05:53.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-06-30 09:48:33.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-24 00:41:46.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-11 14:20:15.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-25 11:54:04.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-11 22:41:32.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-27 00:40:00.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-05 14:54:46.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-28 02:16:17.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-12 22:46:35.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-29 23:24:36.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-06 00:01:02.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-28 20:46:00.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-10 00:54:55.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-02-02 00:58:12.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-11 03:51:08.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-02-02 13:23:43.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-07 13:43:19.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-24 23:35:06.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-12 16:07:12.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-18 12:51:13.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-04-15 08:32:06.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-31 10:32:59.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-24 04:10:39.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-02-04 16:07:47.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-21 09:43:49.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-31 21:15:28.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-27 11:13:16.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-02-05 09:34:03.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-22 10:09:59.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-02-05 21:13:13.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-03-22 10:09:59.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal	Single Selection	2023-01-20 11:43:00.000	pichiani

Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By	Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-27 14:30:12.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-24 03:31:10.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-31 14:56:35.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-24 14:56:30.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-23 21:39:01.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-25 12:15:39.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-29 13:27:59.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-21 20:48:36.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-25 01:08:34.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-22 13:02:52.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-30 14:21:13.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-20 09:17:16.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-26 08:05:54.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-23 14:42:24.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-30 23:27:48.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-20 21:09:36.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-31 21:25:08.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-21 11:53:49.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-29 02:46:21.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-25 21:15:32.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-01 19:48:56.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-29 00:54:56.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-05 11:37:45.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-26 11:32:19.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-03-19 00:33:07.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-26 23:12:59.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-03-24 23:50:23.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-27 13:30:24.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-03-22 23:54:23.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-29 13:41:01.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-03-23 09:45:35.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-29 23:01:34.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-13 22:49:37.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-02 04:10:53.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-16 01:24:05.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-30 12:11:02.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-11 14:04:54.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-28 00:21:49.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-12 00:19:08.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-28 07:47:27.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-14 20:19:13.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-02 12:20:12.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-12 13:26:38.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-04 00:38:06.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-17 22:47:23.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-24 23:35:42.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-12 19:38:18.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-02 23:48:20.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-13 10:51:51.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-05 11:14:58.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-11 00:01:05.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-01 01:14:59.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-20 01:33:55.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-04 20:40:45.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-17 00:28:31.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-07 11:56:04.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-17 08:36:46.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-04 10:16:28.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-18 12:03:31.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-03 13:51:07.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-21 14:24:25.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-01 12:34:17.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-19 01:27:26.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-08 22:49:14.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-22 14:35:55.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-10 13:31:35.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-22 21:56:50.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-07 21:34:09.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-15 13:21:30.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-08 10:18:37.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-20 20:54:57.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-06 00:20:25.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-16 12:43:18.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-06 08:42:11.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-25 14:40:55.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-06 22:58:01.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-22 02:38:36.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-09 11:15:12.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-19 12:32:18.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-09 23:10:05.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-27 02:44:18.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-14 15:55:50.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-20 13:41:40.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-08 12:57:54.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-27 22:32:25.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-02 21:13:57.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-28 13:20:39.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-09 10:27:10.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-24 10:07:46.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-04 00:59:35.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-26 00:06:57.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-07 11:29:48.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-29 22:34:34.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-05 23:57:17.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-05-23 15:32:10.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-07 21:25:18.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-12 08:44:08.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-11 23:02:10.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-13 07:48:43.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-12 10:22:31.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-15 21:23:32.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-09 02:24:14.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-19 00:06:00.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-03 16:48:33.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-19 09:30:15.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-06 23:58:13.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-20 00:17:50.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-14 13:36:26.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-17 13:49:01.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-10 22:58:21.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-22 21:42:18.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-11 10:28:04.000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-04-18 13:27:45.000	pichiani	LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-09 23:12:37.000	pichiani

Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By	Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-14 23:22:56,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-06 21:49:35,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-14 08:56:53,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-06 13:36:19,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-13 22:10:22,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-05 21:28:21,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-18 01:00:19,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-13 22:10:23,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-17 16:20:00,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-14 08:56:54,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-16 22:17:21,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-14 23:22:57,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-12 23:55:47,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-27 21:55:32,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-21 01:03:35,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-27 12:02:42,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-21 10:55:00,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-27 01:23:22,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-16 12:42:16,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-26 15:49:48,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-18 07:48:31,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-25 23:51:05,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-20 15:39:39,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-25 08:57:08,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-18 21:51:03,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-24 23:59:08,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-24 10:29:24,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-24 10:29:25,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-19 10:41:37,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-23 23:14:55,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-19 21:42:08,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-23 10:39:58,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-23 10:39:58,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-22 09:00:18,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-23 23:14:54,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-19 21:42:09,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-27 01:23:12,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-23 01:28:19,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-27 12:02:41,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-22 01:03:13,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-22 01:09:12,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-21 10:55:01,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-03 11:20:40,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-21 01:03:36,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-04 02:13:57,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-19 10:41:38,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-01 09:07:54,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-20 15:39:40,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-02 08:51:07,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-18 21:51:05,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-03 02:24:36,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-18 07:48:32,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-08 13:15:28,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-18 01:00:20,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-08 20:44:43,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-15 13:40:03,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-04 13:04:51,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-15 21:54:55,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-09 23:48:26,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-16 12:42:17,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-10 11:48:34,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-16 12:17:22,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-04 23:57:03,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-02-17 16:20:01,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-05 21:28:20,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-11 22:24:44,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-06-12 14:24:18,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-11 22:27:30,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-01-31 01:21:48,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-16 11:27:04,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-03 22:25:51,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-15 12:07:59,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-04 22:51:27,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-15 00:00:14,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-06 15:18:10,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-14 11:19:52,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-03 00:40:11,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-13 21:56:33,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-03 13:53:35,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-13 11:30:26,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-01 10:51:01,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-12 22:59:44,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-07 23:12:27,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-12 15:27:31,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-06 23:13:29,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-10 23:07:15,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-11 14:01:10,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-11 13:24:23,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-08 14:12:33,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-08 00:33:29,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-09 22:03:58,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-11 22:42:02,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-09 01:53:21,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-10 11:24:15,000	pichiani
LPG Flare	All Instrument	Condition Check	Normal.	Single Selection	2023-02-09 11:29:22,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-09 23:28:32,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-11 12:46:40,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-06 14:01:22,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-11 00:28:25,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-08 21:46:36,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-10 11:48:35,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-09 11:54:41,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-09 23:48:28,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-04 22:33:42,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-09 14:35:32,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-05 08:34:08,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-08 20:44:44,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-08 15:14:25,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-08 13:15:29,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-07 07:27:16,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-08 01:49:26,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-04 09:36:17,000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-07 14:27:23,000	pichiani	LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-06 23:37:48,000	pichiani

Equipment Tag	Check List	Check List Description	Inspection result	Unit	Date/Time	Report By
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-01 22:11:22.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-01 12:08:49.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-01 04:15:12.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-31 09:30:41.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-30 12:31:02.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-26 10:25:26.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-29 00:51:14.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-29 13:18:35.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-28 02:10:37.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-29 23:59:16.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-28 13:53:38.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-27 11:41:40.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-27 11:13:18.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-21 09:43:50.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-03-27 00:30:30.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-19 09:30:16.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-15 08:32:07.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-10 20:07:17.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-13 01:52:20.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-13 16:12:47.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-13 23:58:13.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-14 10:00:27.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-14 23:41:28.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-15 10:35:43.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-15 23:11:54.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-16 11:54:58.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-17 00:22:58.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-17 11:53:11.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-17 20:35:01.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-18 13:33:39.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-18 20:28:16.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-19 15:30:24.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-19 20:47:31.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-14 22:36:40.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-13 11:56:10.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-14 09:09:38.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-12 22:46:38.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-12 16:07:14.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-11 22:41:33.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-11 14:20:16.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-20 11:56:58.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-20 23:07:34.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-19 00:06:01.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-18 13:27:46.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-18 00:36:52.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-16 23:29:42.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-13 22:50:44.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-17 13:49:02.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-04-16 13:41:37.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-22 10:43:37.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-22 22:55:51.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-23 13:45:52.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-24 00:50:44.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-24 13:05:22.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-24 23:33:29.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-25 10:52:35.000	pichiani
LPG Flare	Overall Area	Clean&Tidy?	Clean	Single Selection	2023-06-26 00:26:19.000	pichiani

Notification	Order	Order Type	Bas. start date	Basic fin. date	Equipment	Functional Loc.	Description	User status	Priority	Main WorkCtr	LotSum (actual)	Changed by	System status	Actual start	Planner group	Actual Finish	Actual Finish
10398299	60176958	PMO	30-05-23	29-06-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	02-06-23	IQM	11:00:00	02-06-23
10397341	60176189	PMO	16-05-23	15-06-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	02-05-23	IQM	11:00:00	02-05-23
10397132	60176025	PMO	15-05-23	14-06-23	36AT304	1001-36AT304	PM OXYGEN ANALYSER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	15-05-23	IQM	11:00:00	15-05-23
10397139	60175969	PMO	20-05-23	19-06-23	36AT301	1001-36AT301	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	22-05-23	IQM	11:00:00	22-05-23
	60175946	PMO	28-04-23	28-05-23	27K107	1001-27K107	OIL MIST MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	28-04-23	MPU	14:07:36	31-05-23
	60175939	PMO	28-04-23	28-05-23	27K106	1001-27K106	OIL MIST MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	28-04-23	MPU	14:06:53	31-05-23
10397045	60175931	PMO	19-05-23	18-06-23	36AT001	1001-36AT001	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	6,049.79	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	19-05-23	IQM	12:00:00	19-05-23
10396882	60175915	PMO	10-05-23	09-06-23	34AT001	1001-34AT001	PM H2S/SO2 RATIO ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	24-05-23	IQM	12:00:00	24-05-23
10396880	60175827	PMO	09-05-23	08-06-23	33AT001	1001-33AT001	PM H2S/SO2 RATIO ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	24-05-23	IQM	12:00:00	24-05-23
10396871	60175826	PMO	02-05-23	01-06-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	15-05-23	IQM	11:00:00	15-05-23
	60175792	PMO	28-04-23	28-05-23	27K501	1001-27K501	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	28-04-23	MPU	14:08:04	31-05-23
10396730	60175786	PMO	07-05-23	06-06-23	36AT302	1001-36AT302	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	17-05-23	IQM	12:00:00	17-05-23
10396105	60175172	PMO	18-04-23	18-05-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	1,216.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	20-04-23	IQM	11:00:00	20-04-23
10395821	60174992	PMO	17-04-23	17-05-23	36AT304	1001-36AT304	PM OXYGEN ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	10-05-23	IQM	11:00:00	10-05-23
10395500	60174825	PMO	12-04-23	12-05-23	34AT001	1001-34AT001	PM H2S/SO2 RATIO ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	11-05-23	IQM	12:00:00	11-05-23
	60174818	PMO	01-05-23	31-05-23	28GM101B	1001-28GM101B	Electrical PM of 3.3 Kv motor	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	07-04-23	EPU	16:00:00	07-04-23
	60174817	PMO	01-05-23	31-05-23	33KM102	1001-33KM102	Electrical PM of 3.3 Kv motor	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	07-04-23	EPU	16:00:00	07-04-23
	60174784	PMO	28-03-23	27-04-23	27K107	1001-27K107	OIL MIST MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	14:14:08	21-04-23
	60174781	PMO	28-03-23	27-04-23	44K101	1001-44K101	OIL MIST MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	09:05:48	28-03-23
	60174777	PMO	28-03-23	27-04-23	27K106	1001-27K106	OIL MIST MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	14:13:12	21-04-23
10395533	60174770	PMO	11-04-23	11-05-23	33AT001	1001-33AT001	PM H2S/SO2 RATIO ANALYSER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	17-04-23	IQM	13:00:00	17-04-23
10395526	60174769	PMO	04-04-23	04-05-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	10-04-23	IQM	11:00:00	10-04-23
10395490	60174734	PMO	09-04-23	09-05-23	36AT302	1001-36AT302	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	18-04-23	IQM	12:00:00	18-04-23
	60174640	PMO	28-03-23	27-04-23	27K501	1001-27K501	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	14:14:55	21-04-23
10395222	60174495	PMO	08-04-23	08-05-23	36AT301	1001-36AT301	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	12-04-23	IQM	12:00:00	12-04-23
10395221	60174492	PMO	07-04-23	07-05-23	36AT001	1001-36AT001	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	2,432.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	07-04-23	IQM	12:00:00	07-04-23
10394893	60174069	PMO	21-03-23	20-04-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	1,216.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	23-03-23	IQM	11:00:00	23-03-23
10394496	60173929	PMO	20-03-23	19-04-23	36AT304	1001-36AT304	PM OXYGEN ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	20-03-23	IQM	11:00:00	20-03-23
10396297	60173766	PMO	01-04-23	01-05-23	36B302	1001-36B302	PERFORMANCE TEST UV FLAM SCANNER	COMP	8	PUI-TEC1	1,932.00	TURONGJ	TECO CNF GMPS NMAT PRC SETC	04-04-23	IPU	13:55:35	04-04-23
10396296	60173765	PMO	01-04-23	01-05-23	36B301	1001-36B301	PERFORMANCE TEST UV FLAM SCANNER	COMP	8	PUI-TEC1	1,932.00	TURONGJ	TECO CNF GMPS NMAT PRC SETC	04-04-23	IPU	13:55:07	04-04-23
	60173739	PMO	28-02-23	30-03-23	27K107	1001-27K107	OIL MIST MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	15-03-23	MPU	14:42:34	15-03-23
	60173727	PMO	28-02-23	30-03-23	27K106	1001-27K106	OIL MIST MAINTENANCE PLAN	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	15-03-23	MPU	14:41:28	15-03-23
10396439	60173719	PMO	02-04-23	02-05-23	34PT001	1001-34K101	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	18-04-23	IPU	09:41:04	18-04-23
10397198	60173718	PMO	02-04-23	02-05-23	34LT014	1001-34S101	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	21-04-23	IPU	15:15:14	21-04-23
10397197	60173717	PMO	02-04-23	02-05-23	34LT013	1001-34E105	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-04-23	IPU	15:14:08	27-04-23
10397196	60173716	PMO	02-04-23	02-05-23	34LT012	1001-34C107	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-04-23	IPU	15:13:44	27-04-23
10397195	60173715	PMO	02-04-23	02-05-23	34LT011	1001-34E104	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-04-23	IPU	15:13:09	27-04-23
10397193	60173714	PMO	02-04-23	02-05-23	34LT010	1001-34C106	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	24-04-23	IPU	15:12:35	24-04-23
10397172	60173713	PMO	02-04-23	02-05-23	34LT007	1001-34E102	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	17-04-23	IPU	14:26:17	17-04-23
10396295	60173711	PMO	02-04-23	02-05-23	33TT033	1001-33TT033	INSPECTION AND CALIBRATE TT	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	11-04-23	IPU	13:54:29	11-04-23
10396294	60173710	PMO	02-04-23	02-05-23	33TT020	1001-33TT020	INSPECTION AND CALIBRATE TT	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	11-04-23	IPU	13:54:04	11-04-23
10396293	60173709	PMO	02-04-23	02-05-23	33TT007	1001-33TT007	INSPECTION AND CALIBRATE TT	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	11-04-23	IPU	13:53:41	11-04-23
10397179	60173708	PMO	02-04-23	02-05-23	33PT029	1001-33PT029	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	25-04-23	IPU	14:31:10	25-04-23
10397176	60173707	PMO	02-04-23	02-05-23	33PT006	1001-33F101	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	25-04-23	IPU	14:30:04	25-04-23
10397173	60173706	PMO	02-04-23	02-05-23	33PT001	1001-33PT001	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	301,720.00	TURONGJ	TECO CNF GMPS NMAT PRC SETC	25-04-23	IPU	14:28:21	25-04-23
10396438	60173705	PMO	02-04-23	02-05-23	33LT018	1001-33C109	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	18-04-23	IPU	09:39:50	18-04-23
10396437	60173704	PMO	02-04-23	02-05-23	33LT016	1001-33C108	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	18-04-23	IPU	09:39:25	18-04-23
10396436	60173703	PMO	02-04-23	02-05-23	33LT013	1001-33E105	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	18-04-23	IPU	09:38:45	18-04-23
10396435	60173702	PMO	02-04-23	02-05-23	33LT012	1001-33C107	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	18-04-23	IPU	09:37:39	18-04-23
10396432	60173701	PMO	02-04-23	02-05-23	33LT009	1001-33E103	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	17-04-23	IPU	09:35:37	17-04-23
10396409	60173700	PMO	02-04-23	02-05-23	33LT006	1001-33C103	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	17-04-23	IPU	09:33:41	17-04-23
10396283	60173699	PMO	02-04-23	02-05-23	31TT001	1001-31E103	INSPECTION AND CALIBRATE TT	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	07-04-23	IPU	13:29:49	07-04-23
10396282	60173698	PMO	02-04-23	02-05-23	31PT004	1001-31C101	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	04-04-23	IPU	13:29:24	04-04-23
10396281	60173697	PMO	02-04-23	02-05-23	31LT004	1001-31E104	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	04-04-23	IPU	13:28:39	04-04-23
10396240	60173696	PMO	02-04-23	02-05-23	31LT003	1001-31C101	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	07-04-23	IPU	13:28:00	07-04-23
10396219	60173695	PMO	02-04-23	02-05-23	30TT006	1001-30C101	INSPECTION AND CALIBRATE TT	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	07-04-23	IPU	09:14:18	07-04-23
10396216	60173694	PMO	02-04-23	02-05-23	30PT004	1001-30C101	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	05-04-23	IPU	09:12:09	05-04-23
10396215	60173693	PMO	02-04-23	02-05-23	30LT004	1001-30E104	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	05-04-23	IPU	09:11:12	05-04-23
10396214	60173692	PMO	02-04-23	02-05-23	30LT003	1001-30C101	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	05-04-23	IPU	09:10:37	05-04-23
10397168	60173690	PMO	02-04-23	02-05-23	30LT001	1001-30C102</											

Notification	Order	Order Type	Bas. start date	Basic fin. date	Equipment	Functional Loc.	Description	User status	Priority	Main WorkCtr	otSum (actual)	Changed by	System status	Actual start	Planner group	Actual Finish	Actual Finish
10397178	60173663	PMO	02-04-23	02-05-23	33PT028	1001-33PT028	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	25-04-23	IPU	14:30:49	25-04-23
10397175	60173662	PMO	02-04-23	02-05-23	33PT005	1001-33PT005	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	25-04-23	IPU	14:29:31	25-04-23
10396434	60173661	PMO	02-04-23	02-05-23	33LT011	1001-33LT011	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	17-04-23	IPU	09:36:28	17-04-23
10396431	60173660	PMO	02-04-23	02-05-23	33LT006	1001-33LT006	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	17-04-23	IPU	09:35:15	17-04-23
10397171	60173659	PMO	02-04-23	02-05-23	31LT002	1001-31LT002	RECALIBRATE AND INSPECTION high H2S	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	21-04-23	IPU	14:24:30	21-04-23
10396218	60173658	PMO	02-04-23	02-05-23	30TT001	1001-30TT001	INSPECTION AND CALIBRATE TT	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	07-04-23	IPU	09:12:21	07-04-23
10396209	60173657	PMO	02-04-23	02-05-23	28PT002	1001-28PT002	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	04-04-23	IPU	09:07:41	04-04-23
10396203	60173656	PMO	02-04-23	02-05-23	27PT818	1001-27PT818	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	03-04-23	IPU	09:03:10	03-04-23
10396200	60173655	PMO	02-04-23	02-05-23	27PT001	1001-27PT001	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	04-04-23	IPU	09:01:47	03-04-23
10397184	60173654	PMO	02-04-23	02-05-23	34FT009	1001-34FT009	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	19-04-23	IPU	15:04:25	19-04-23
10397180	60173653	PMO	02-04-23	02-05-23	34FT003	1001-34FT003	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	19-04-23	IPU	14:32:02	19-04-23
10396286	60173652	PMO	02-04-23	02-05-23	33FT006	1001-33FT006	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	10-04-23	IPU	13:31:44	10-04-23
10397169	60173651	PMO	02-04-23	02-05-23	31FT006	1001-31FT006	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	03-04-23	IPU	14:21:40	03-04-23
10396205	60173650	PMO	02-04-23	02-05-23	28FT001	1001-28FT001	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	04-04-23	IPU	09:05:00	04-04-23
10394326	60173649	PMO	14-03-23	13-04-23	33AT001	1001-33AT001	PM H2S/SO2 RATIO ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	30-03-23	IQM	11:00:00	30-03-23
10394318	60173648	PMO	07-03-23	06-04-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	13-03-23	IQM	11:00:00	13-03-23
10394323	60173645	PMO	14-03-23	13-04-23	42AT004	1001-42AT004	PM PH ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	20-03-23	IQM	11:00:00	20-03-23
10396208	60173627	PMO	02-04-23	02-05-23	28PT001	1001-28PT001	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	04-04-23	IPU	09:07:07	04-04-23
10396202	60173626	PMO	02-04-23	02-05-23	27PT010	1001-27PT010	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	03-04-23	IPU	09:02:39	03-04-23
10397183	60173624	PMO	02-04-23	02-05-23	34FT008	1001-34FT008	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	19-04-23	IPU	15:03:22	19-04-23
10396292	60173623	PMO	02-04-23	02-05-23	33FT021	1001-33FT021	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	11-04-23	IPU	13:52:19	11-04-23
10396285	60173622	PMO	02-04-23	02-05-23	33FT004	1001-33FT004	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	10-04-23	IPU	13:31:09	10-04-23
10396221	60173621	PMO	02-04-23	02-05-23	31FT005	1001-31FT005	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	04-04-23	IPU	09:20:13	04-04-23
10395832	60173620	PMO	02-04-23	02-05-23	27FT004	1001-27FT004	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	29-03-23	IPU	08:49:27	29-03-23
10396440	60173619	PMO	02-04-23	02-05-23	34PT002	1001-34PT002	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	18-04-23	IPU	09:41:30	18-04-23
10397199	60173618	PMO	02-04-23	02-05-23	34LT015	1001-34LT015	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-04-23	IPU	15:16:14	27-04-23
10397191	60173617	PMO	02-04-23	02-05-23	34LT008	1001-34LT008	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	24-04-23	IPU	15:10:48	24-04-23
10397177	60173615	PMO	02-04-23	02-05-23	33PT020	1001-33PT020	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	25-04-23	IPU	14:30:29	25-04-23
10397174	60173614	PMO	02-04-23	02-05-23	33PT002	1001-33PT002	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	25-04-23	IPU	14:29:04	25-04-23
10396433	60173613	PMO	02-04-23	02-05-23	33LT010	1001-33LT010	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	17-04-23	IPU	09:36:05	17-04-23
10396410	60173612	PMO	02-04-23	02-05-23	33LT007	1001-33LT007	RECALIBRATE AND INSPECTION	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	17-04-23	IPU	09:34:50	17-04-23
10397170	60173611	PMO	02-04-23	02-05-23	31LT001	1001-31LT001	RECALIBRATE AND INSPECTION high H2S	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	21-04-23	IPU	14:23:07	21-04-23
10396217	60173610	PMO	02-04-23	02-05-23	30PT010	1001-30PT010	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	05-04-23	IPU	09:12:41	05-04-23
10394159	60173498	PMO	08-03-23	11-04-23	36AT302	1001-36AT302	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	9,953.26	KIATTIKHUNY	TECO CNF NMAT PRC SETC	20-03-23	IQM	12:00:00	20-03-23
10394277	60173494	PMO	28-03-23	27-04-23	27AT701	1001-27AT701	GAS DETECTOR PREVENTIVE MAINTENANCE	COMP	8	QMI-TEC1	6,144.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	14-04-23	IQM	17:00:00	14-04-23
10397389	60173389	PMO	28-03-23	30-03-23	27K501	1001-27K501	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPU1	0.00	MANAN	TECO CNF NMAT PRC SETC	15-03-23	MPU	14:43:28	15-03-23
10397340	60173340	PMO	24-03-23	23-04-23	36GM104	1001-36GM104	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23
10397339	60173339	PMO	24-03-23	23-04-23	28GM103	1001-28GM103	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23
10397338	60173338	PMO	24-03-23	23-04-23	27GM103	1001-27GM103	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23
10397335	60173335	PMO	24-03-23	23-04-23	36GM305	1001-36GM305	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23
10393846	60172798	PMO	21-02-23	23-03-23	36AT083	1001-36AT083	PM PH ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	13-03-23	IQM	11:00:00	13-03-23
10397290	60172696	PMO	14-03-23	13-04-23	34AT001	1001-34AT001	Replace Mg And Cd lamp source	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	14-03-23	IQM	11:00:00	14-03-23
10397289	60172689	PMO	14-03-23	13-04-23	33AT001	1001-33AT001	Replace Mg And Cd lamp source	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	14-03-23	IQM	11:00:00	14-03-23
10397264	60172644	PMO	11-05-23	10-06-23	34SV601	1001-34KT101	PM FOR GOVERNOR VALVE (34KT-101)	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	09-06-23	IPU	09:45:04	09-06-23
10393610	60172536	PMO	25-02-23	27-03-23	36AT301	1001-36AT301	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	03-03-23	IQM	11:00:00	03-03-23
10393515	60172514	PMO	24-02-23	26-03-23	36AT001	1001-36AT001	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	28-02-23	IQM	11:00:00	28-02-23
10393417	60172482	PMO	15-02-23	17-03-23	34AT001	1001-34AT001	PM H2S/SO2 RATIO ANALYSER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	16-02-23	IQM	11:00:00	16-02-23
10393334	60172457	PMO	14-02-23	16-03-23	33AT001	1001-33AT001	PM H2S/SO2 RATIO ANALYSER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	14-02-23	IQM	11:00:00	14-02-23
10393323	60172456	PMO	07-02-23	09-03-23	36AT003	1001-36AT003	PM PH ANALYSER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	13-02-23	IQM	11:00:00	13-02-23
10397242	60172422	PMO	01-05-23	31-05-23	33G201C	1001-33G201C	12M CHANGE GEAR OIL wk17	COMP	8	MECPU3	1,320.00	SOMROEKW	TECO CNF NMAT PRC SETC	26-04-23	MPU	16:24:02	26-04-23
10397241	60172421	PMO	01-05-23	31-05-23	33G201B	1001-33G201B	12M CHANGE GEAR OIL wk17	COMP	8	MECPU3	1,320.00	SOMROEKW	TECO CNF NMAT PRC SETC	26-04-23	MPU	16:22:48	26-04-23
10397240	60172420	PMO	01-05-23	31-05-23	33G201A	1001-33G201A	12M CHANGE GEAR OIL wk17	COMP	8	MECPU3	1,320.00	SOMROEKW	TECO CNF NMAT PRC SETC	26-04-23	MPU	16:21:27	26-04-23
10397238	60172388	PMO	12-02-23	14-03-23	36AT302	1001-36AT302	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	11,748.62	KIATTIKHUNY	TECO CNF NMAT PRC SETC	21-02-23	IQM	11:00:00	21-02-23
10397289	60172289	PMO	28-01-23	27-02-23	27K107	1001-27K107	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU3	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	07-02-23	MPU	10:59:55	07-02-23
10397278	60172278	PMO	28-01-23	27-02-23	27K106	1001-27K106	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU3	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	07-02-23	MPU	10:58:50	07-02-23
10397272	60172272	PMO	28-01-23	27-02-23	52K101	1001-52K101	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU3	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	08-02-23	MPU	11:02:11	08-02-23
10397274	60172274	PMO	01-03-23	31-03-23	36EM301B2	1001-36EM301B2	ELECTRICAL PM OF FINFAN MEDIUM CRITICAL	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF NMAT PRC SETC	13-02-23	EPU	16:00:00	13-02-23
10397273	60172273	PMO	01-03-23	31-03-23	36EM301A1	1001-36EM301A1	ELECTRICAL PM OF FINFAN MEDIUM CRITICAL	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF NMAT PRC SETC	13-02-23	EPU	16:00:00	13-02-23
10397272	60172272	PMO	01-03-23	31-03-23	34EM109	1001-34EM109	ELECTRICAL PM OF FINFAN MEDIUM CRITICAL	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF NMAT PRC SETC	13-02-23	EPU	16:00:00	13-02-23

Notification	Order	Order Type	Bas. start date	Basic fin. date	Equipment	Functional Loc.	Description	User status	Priority	Main WorkCtr	etSum (actual)	Changed by	System status	Actual start	Planner group	Actual Finish	Actual Finish
10391080	60170612	PMO	14-01-23	13-02-23	36AT301	1001-36AT301	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	9,459.58	KULLAPHATN	TECO GMPS MACM PRC SETC		IQM	00:00:00	
10391021	60170601	PMO	13-01-23	12-02-23	36AT001	1001-36AT001	PM GAS CHROMATOGRAPH	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	16-01-23	IQM	12:00:00	16-01-23
	60169986	PMO	19-03-23	18-04-23	28EK101B	1001-28EK101B	2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	1,720.00	MANAN	TECO CNF GMPS NMAT PRC SETC	11-04-23	MPU	10:31:15	11-04-23
	60169985	PMO	19-03-23	18-04-23	28EK101A	1001-28EK101A	2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	890.00	MANAN	TECO CNF GMPS NMAT PRC SETC	10-03-23	MPU	10:12:11	10-04-23
	60169984	PMO	19-03-23	18-04-23	27EK102A2	1001-27EK102A2	2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	1,980.00	MANAN	TECO CNF GMPS NMAT PRC SETC	07-04-23	MPU	17:32:25	07-04-23
	60169983	PMO	19-03-23	18-04-23	27EK102A1	1001-27EK102A1	2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	1,980.00	MANAN	TECO CNF GMPS NMAT PRC SETC	07-03-23	MPU	17:31:31	07-03-23
	60169968	PMO	15-03-23	14-04-23	36KT101	1001-36KT101	CHECK OIL CONTAMINATED	COMP	8	MECPJ3	0.00	MANAN	TECO CNF NMAT PRC SETC	24-02-23	MPU	13:40:59	24-03-23
10395566	60169967	PMO	15-03-23	14-04-23	36SV601	1001-36KT101	PM FOR GOVERNOR VALVE (STROKE CHECK)	COMP	8	PUI-TEC1	644.00	TURONGJ	TECO CNF GMPS NMAT PRC SETC	22-03-23	IPU	14:14:51	22-03-23
	60169966	PMO	15-03-23	14-04-23	36KT101	1001-36KT101	OVER SPEED TRIP TEST	COMP	8	MECPJ3	5,280.00	MANAN	TECO CNF GMPS NMAT PRC SETC	24-03-23	MPU	13:42:35	24-03-23
	60169910	PMO	15-01-23	14-02-23	06TR2-2	1001-06TR2-2	Electrical PM of Transformer	COMP	8	PUE-TEC1	0.00	PRASERTN	TECO CNF NMAT PRC SETC	15-01-23	EPU	15:42:03	28-02-23
	60169909	PMO	15-01-23	14-02-23	06TR1-1	1001-06TR1-1	Electrical PM of Transformer	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	12-01-23	EPU	16:00:00	12-01-23
	60169903	PMO	15-01-23	14-02-23	06TR1-2	1001-06TR1-2	Electrical PM of Transformer	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	12-01-23	EPU	16:00:00	12-01-23
	60169878	PMO	17-03-23	16-04-23	30EK101B	1001-30EK101B	2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	1,218.00	MANAN	TECO CNF GMPS NMAT PRC SETC	22-03-23	MPU	13:39:01	22-03-23
	60169877	PMO	17-03-23	16-04-23	30EK101A	1001-30EK101A	2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	1,218.00	MANAN	TECO CNF GMPS NMAT PRC SETC	22-03-23	MPU	13:37:53	22-03-23
	60168765	PMO	17-02-23	19-03-23	27EK102B2	1001-27EK102B2	wk8 2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	26,569.69	MANAN	TECO CNF GMPS MACM PRC SETC	23-02-23	MPU	15:52:53	23-02-23
	60168764	PMO	17-02-23	19-03-23	27EK102B1	1001-27EK102B1	wk8 2Y PM FIN FAN BELT INSPECTION	COMP	8	MECPJ3	12,484.92	MANAN	TECO CNF GMPS MACM PRC SETC	23-02-23	MPU	09:50:59	23-02-23
	60160321	PMO	01-04-23	01-05-23	SUB6	1001-SUBSTATION	BLD INSP-ELECTRICAL SUB-STATION#6	COMP	8	CIVILTEC	0.00	SURJINT	TECO NMAT PRC SETC		ECV	00:00:00	
10397438	40038198	FBO	15-04-23	15-05-23	7R201-AHU-0	1001-27R201-AHU	Air Handling Unit PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397437	40038197	FBO	15-04-23	15-05-23	7R201-AHU-0	1001-27R201-AHU	Air Handling Unit PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397443	40038196	FBO	15-04-23	15-05-23	7R201-CDU-0	1001-27R201-CDU	Condensing Unit PM2	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397440	40038195	FBO	15-04-23	15-05-23	7R201-CDU-0	1001-27R201-CDU	Condensing Unit PM2	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397447	40038189	FBO	15-04-23	15-05-23	27R202EF03	1001-27R202EF03	Exhaust Fan PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397446	40038188	FBO	15-04-23	15-05-23	27R202EF02	1001-27R202EF02	Exhaust Fan PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397445	40038187	FBO	15-04-23	15-05-23	27R202EF01	1001-27R202EF01	Exhaust Fan PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397448	40038177	FBO	15-04-23	15-05-23	27R202EF04	1001-27R202EF04	Exhaust Fan PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397444	40038171	FBO	15-04-23	15-05-23	27R201EF01	1001-27R201EF01	Exhaust Fan PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397439	40038126	FBO	15-04-23	15-05-23	7R201-AHU-0	1001-27R201-AHU	Air Handling Unit PM1 Yearly	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397435	40038125	FBO	15-04-23	15-05-23	7R201-AHU-0	1001-27R201-AHU	Air Handling Unit PM1 Yearly	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397442	40038124	FBO	15-04-23	15-05-23	7R201-CDU-0	1001-27R201-CDU	Condensing Unit PM2 Yearly	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10397441	40038123	FBO	15-04-23	15-05-23	7R201-CDU-0	1001-27R201-CDU	Condensing Unit PM2 Yearly	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10395677	40038096	FBO	02-05-23	31-05-23	27FAP01	1001-27FAP01	Fire Alarm Panel PM	COMP	8	FIE-CON1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10396124	40038058	FBO	15-03-23	14-04-23	36AH1CH1	1001-36AH1CH1	Chiller PM2 Three Monthly	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10392252	40037839	FBO	15-02-23	17-03-23	27R201SF02	1001-27R201SF02	Exhaust Fan PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10392251	40037838	FBO	15-02-23	17-03-23	27R201SF01	1001-27R201SF01	Exhaust Fan PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10392246	40037761	FBO	01-02-23	03-03-23	27CAM23	1001-27CAM	CCTV CAMERA SRU	COMP	8	FIE-CON1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10392248	40037638	FBO	15-01-23	14-02-23	7R201-AHU-0	1001-27R201-AHU	Air Handling Unit PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10392247	40037637	FBO	15-01-23	14-02-23	7R201-AHU-0	1001-27R201-AHU	Air Handling Unit PM1	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10392250	40037636	FBO	15-01-23	14-02-23	7R201-CDU-0	1001-27R201-CDU	Condensing Unit PM2	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10392249	40037635	FBO	15-01-23	14-02-23	7R201-CDU-0	1001-27R201-CDU	Condensing Unit PM2	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10390680	40037608	FBO	15-01-23	14-02-23	7R201-SAC-0	1001-27R201-SAC	Condensing Unit PM2	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	
10390679	40037607	FBO	15-01-23	14-02-23	7R201-SAC-0	1001-27R201-SAC	Condensing Unit PM2	COMP	8	FIE-TEC1	0.00	BANCHAJ	TECO NMAT PRC SETC		EGF	00:00:00	

Notification	Order	Order Type	Bas. start date	Basic fin. date	Equipment	Functional Loc.	Description	User status	Priority	Main WorkCtr	TotSum (actual)	Changed by	System status	Actual start	Planner group	Actual Finish	Actual Finish
10397827	60176255	PMO	20-05-23	29-06-23	10AT071	1001-10AT071	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	07-06-23	IQM	11:00:00	07-06-23
10397796	60176245	PMO	29-05-23	28-06-23	11AT168	1001-11AT168	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	08-06-23	IQM	11:00:00	08-06-23
10397795	60176240	PMO	28-05-23	27-06-23	10AT073	1001-10AT073	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	07-06-23	IQM	11:00:00	07-06-23
10397315	60176179	PMO	22-05-23	21-06-23	10AT646	1001-10AT646	PM DISTILLATION MONITOR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	22-05-23	IQM	12:00:00	22-05-23
10397314	60176178	PMO	22-05-23	21-06-23	10AT647	1001-10AT647	PM SULPHUR IN OIL ANALYZER	COMP	8	QMI-TEC1	2,432.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	23-05-23	IQM	11:00:00	23-05-23
10397313	60176177	PMO	22-05-23	21-06-23	10AT648	1001-10AT648	PM LIQUID DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	25-05-23	IQM	11:00:00	25-05-23
10397312	60176176	PMO	22-05-23	21-06-23	10AT645	1001-10AT645	PM FLASHPOINT ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	24-05-23	IQM	11:00:00	24-05-23
	60175944	PMO	28-04-23	28-05-23	15K401	1001-15K401	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	28-04-23	MPU	14:04:19	31-05-23
	60175940	PMO	28-04-23	28-05-23	10K102	1001-10K102	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	28-04-23	MPU	14:02:34	31-05-23
10396875	60175822	PMO	09-05-23	08-06-23	11AT166	1001-11AT166	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	11-05-23	IQM	11:00:00	11-05-23
10396874	60175821	PMO	09-05-23	08-06-23	15AT002	1001-15AT002	PM MCN SULFUR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	09-05-23	IQM	12:00:00	09-05-23
10396873	60175820	PMO	09-05-23	08-06-23	15AT001	1001-15AT001	PM LCN SULFUR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	09-05-23	IQM	12:00:00	09-05-23
	60175806	PMO	25-05-23	24-06-23	10GM931B	1001-10GM931B	Refill Grease(BPM Grease SR12) Of Motor	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	08-05-23	EPU	14:24:43	08-05-23
	60175793	PMO	28-04-23	28-05-23	10K601	1001-10K601	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPU1	0.00	MANAN	TECO CNF NMAT PRC SETC	28-04-23	MPU	14:03:32	31-05-23
	60175787	PMO	28-04-23	28-05-23	15K402	1001-15K402	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	28-04-23	MPU	14:04:51	31-05-23
10396357	60175672	PMO	02-05-23	01-06-23	10AT071	1001-10AT071	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	10-05-23	IQM	11:00:00	10-05-23
10396280	60175656	PMO	01-05-23	31-05-23	11AT168	1001-11AT168	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	11-05-23	IQM	11:00:00	11-05-23
10396279	60175646	PMO	30-04-23	30-05-23	10AT073	1001-10AT073	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	10-05-23	IQM	11:00:00	10-05-23
10396075	60175166	PMO	24-04-23	24-05-23	10AT646	1001-10AT646	PM DISTILLATION MONITOR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	28-04-23	IQM	17:00:00	28-04-23
10396074	60175165	PMO	24-04-23	24-05-23	10AT647	1001-10AT647	PM SULPHUR IN OIL ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	27-04-23	IQM	12:00:00	27-04-23
10396073	60175164	PMO	24-04-23	24-05-23	10AT648	1001-10AT648	PM LIQUID DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	25-04-23	IQM	11:00:00	25-04-23
10396072	60175163	PMO	24-04-23	24-05-23	10AT645	1001-10AT645	PM FLASHPOINT ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	28-04-23	IQM	12:00:00	28-04-23
10396095	60175161	PMO	01-05-23	31-05-23	11AT005	1001-11AT005	PM OXYGEN ANALYZER (ZIRCONIUM OXIDE)	COMP	8	QMI-TEC1	1,216.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	11-05-23	IQM	11:00:00	11-05-23
10396094	60175160	PMO	01-05-23	31-05-23	10AT145	1001-10AT145	PM OXYGEN ANALYZER (ZIRCONIUM OXIDE)	COMP	8	QMI-TEC1	1,216.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	11-05-23	IQM	11:00:00	11-05-23
10396076	60175140	PMO	01-05-23	31-05-23	15AT007	1001-15AT007	PM OXYGEN ANALYZER (ZIRCONIUM OXIDE)	COMP	8	QMI-TEC1	2,432.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	11-05-23	IQM	11:00:00	11-05-23
	60175134	PMO	12-05-23	11-06-23	15GM902	1001-15GM902	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	28-04-23	EPU	16:00:00	28-04-23
	60175130	PMO	12-05-23	11-06-23	15GM912	1001-15GM912	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	28-04-23	EPU	16:00:00	28-04-23
10398452	60174984	PMO	05-05-23	04-06-23	11FT006	1001-11FT006	CTQ Flow calibration	COMP	8	PUI-TEC1	41,520.00	TURONGJ	TECO CNF GMPS MACM PRC SETC	03-05-23	IPU	14:51:47	03-05-23
	60174942	PMO	05-05-23	04-06-23	15GM403	1001-15GM403	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	11-04-23	EPU	16:00:00	11-04-23
	60174941	PMO	05-05-23	04-06-23	15GM404	1001-15GM404	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	11-04-23	EPU	16:00:00	11-04-23
	60174782	PMO	28-03-23	27-04-23	15K401	1001-15K401	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	14:08:19	21-04-23
	60174778	PMO	28-03-23	27-04-23	10K102	1001-10K102	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	14:06:53	21-04-23
10395529	60174765	PMO	11-04-23	11-05-23	11AT166	1001-11AT166	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	11-04-23	IQM	11:00:00	11-04-23
10395528	60174761	PMO	11-04-23	11-05-23	15AT002	1001-15AT002	PM MCN SULFUR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	17-04-23	IQM	11:00:00	17-04-23
10395527	60174760	PMO	11-04-23	11-05-23	15AT001	1001-15AT001	PM LCN SULFUR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	17-04-23	IQM	11:00:00	17-04-23
	60174692	PMO	01-05-23	31-05-23	10EM304C2	1001-10EM304C2	ELECTRICAL PM OF FINFAN LOW CRITICAL	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	04-04-23	EPU	16:00:00	04-04-23
	60174691	PMO	01-05-23	31-05-23	10EM304B1	1001-10EM304B1	ELECTRICAL PM OF FINFAN LOW CRITICAL	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	04-04-23	EPU	16:00:00	04-04-23
	60174690	PMO	01-05-23	31-05-23	10EM304A2	1001-10EM304A2	ELECTRICAL PM OF FINFAN LOW CRITICAL	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	04-04-23	EPU	16:00:00	04-04-23
	60174689	PMO	01-05-23	31-05-23	10EM304A1	1001-10EM304A1	ELECTRICAL PM OF FINFAN LOW CRITICAL	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	04-04-23	EPU	16:00:00	04-04-23
	60174683	PMO	01-05-23	31-05-23	10EM304C1	1001-10EM304C1	ELECTRICAL PM OF FINFAN LOW CRITICAL	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	05-04-23	EPU	16:00:00	05-04-23
	60174677	PMO	01-05-23	31-05-23	11GM913B	1001-11GM913B	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-04-23	EPU	16:00:00	10-04-23
	60174676	PMO	01-05-23	31-05-23	11GM911B	1001-11GM911B	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-04-23	EPU	16:00:00	10-04-23
	60174662	PMO	01-05-23	31-05-23	10GM501	1001-10GM501	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	11-04-23	EPU	16:00:00	11-04-23
	60174660	PMO	01-05-23	31-05-23	10EM304B2	1001-10EM304B2	ELECTRICAL PM OF FINFAN LOW CRITICAL	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	11-04-23	EPU	16:00:00	11-04-23
	60174641	PMO	28-03-23	27-04-23	10K601	1001-10K601	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPU1	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	14:07:32	21-04-23
	60174635	PMO	28-03-23	27-04-23	15K402	1001-15K402	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	28-03-23	MPU	14:10:44	21-04-23
	60174592	PMO	05-04-23	05-05-23	57K108	1001-57K108	Electrical PM of LV Generator	COMP	8	PUE-TEC1	1,324.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-04-23	EPU	16:00:00	21-04-23
10395275	60174590	PMO	04-04-23	04-05-23	10AT071	1001-10AT071	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	10-04-23	IQM	11:00:00	10-04-23
10395217	60174562	PMO	03-04-23	03-05-23	11AT168	1001-11AT168	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	11-04-23	IQM	11:00:00	11-04-23
10395216	60174502	PMO	02-04-23	02-05-23	10AT073	1001-10AT073	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	10-04-23	IQM	11:00:00	10-04-23
10394890	60174032	PMO	27-03-23	26-04-23	10AT646	1001-10AT646	PM DISTILLATION MONITOR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	28-03-23	IQM	12:00:00	28-03-23
10394889	60174031	PMO	27-03-23	26-04-23	10AT647	1001-10AT647	PM SULPHUR IN OIL ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	29-03-23	IQM	12:00:00	29-03-23
10394888	60174030	PMO	27-03-23	26-04-23	10AT648	1001-10AT648	PM LIQUID DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	27-03-23	IQM	11:00:00	27-03-23
10394887	60174029	PMO	27-03-23	26-04-23	10AT645	1001-10AT645	PM FLASHPOINT ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	27-03-23	IQM	11:00:00	27-03-23
	60173737	PMO	28-02-23	30-03-23	15K401	1001-15K401	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	13-03-23	MPU	14:21:36	13-03-23
	60173733	PMO	28-02-23	30-03-23	10K102	1001-10K102	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	MANAN	TECO CNF NMAT PRC SETC	22-03-23	MPU	14:13:58	22-03-23
10394322	60173644	PMO	14-03-23	13-04-23	11AT166	1001-11AT166	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	14-03-23	IQM	11:00:00	14-03-23
10394321	60173640	PMO	14-03-23	13-04-23	15AT002	1001-15AT002	PM MCN SULFUR ANALYZER	COMP	8	QMI-TEC1	1,728.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	21-03-23	IQM	11:00:00	21-03-23
10394320	60173639	PMO	14-03-23	13-04-23	15AT001	1001-15AT001	PM LCN SULFUR ANALYZER	COMP	8	QMI-TEC1	1,728.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	21-03-23	IQM	11:00:00	21-03-23
10394272	60173603	PMO	20-03-23	19-04-23													

Notification	Order	Order Type	Bas. start date	Basic fin. date	Equipment	Functional Loc.	Description	User status	Priority	Main WorkCtr	TotSum (actual)	Changed by	System status	Actual start	Planner group	Actual Finish	Actual Finish
10395755	60173266	PMO	01-05-23	31-05-23	10TT263	1001-10TT263	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	31-03-23	IPU	15:30:56	31-03-23
10395770	60173265	PMO	01-05-23	31-05-23	10TT195	1001-10TT195	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	31-03-23	IPU	15:38:32	31-03-23
10395769	60173264	PMO	01-05-23	31-05-23	10TT148	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:37:58	28-03-23
10395768	60173263	PMO	01-05-23	31-05-23	10TT147	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:37:36	28-03-23
10395767	60173262	PMO	01-05-23	31-05-23	10TT140	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:37:04	28-03-23
10395766	60173261	PMO	01-05-23	31-05-23	10TT138	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:36:42	28-03-23
10395765	60173260	PMO	01-05-23	31-05-23	10TT137	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:36:05	28-03-23
10395764	60173259	PMO	01-05-23	31-05-23	10TT136	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:35:34	28-03-23
10395763	60173258	PMO	01-05-23	31-05-23	10TT135	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:35:03	28-03-23
10395762	60173257	PMO	01-05-23	31-05-23	10TT132	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:34:37	28-03-23
10395761	60173256	PMO	01-05-23	31-05-23	10TT082	1001-10TT082	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	31-03-23	IPU	15:34:06	31-03-23
10395760	60173255	PMO	01-05-23	31-05-23	10TT051	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:33:33	28-03-23
10395759	60173254	PMO	01-05-23	31-05-23	10TT050	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	28-03-23	IPU	15:32:51	28-03-23
10395758	60173253	PMO	01-05-23	31-05-23	10TT047	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:32:23	27-03-23
10395757	60173252	PMO	01-05-23	31-05-23	10TT046	1001-10F201	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:31:56	27-03-23
10395756	60173251	PMO	01-05-23	31-05-23	10TT034	1001-10TT034	INSPECT AND CALIBRATE TEMPERATURE TX	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:31:32	27-03-23
10395754	60173250	PMO	01-05-23	31-05-23	10PT301	1001-10PT301	INSPECTION AND RECALIBRATE	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:30:05	27-03-23
10395752	60173249	PMO	01-05-23	31-05-23	10FT262	1001-10K201	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:16:39	27-03-23
10395751	60173248	PMO	01-05-23	31-05-23	10FT229	1001-10C203	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:16:13	27-03-23
10395750	60173247	PMO	01-05-23	31-05-23	10FT173	1001-10FT173	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:15:45	27-03-23
10395749	60173246	PMO	01-05-23	31-05-23	10FT091	1001-10FT091	INSPECT/CALIBRATE DP FLOW TRANSMITTER	COMP	8	PUI-TEC1	0.00	TURONGJ	TECO CNF NMAT PRC SETC	27-03-23	IPU	15:15:16	27-03-23
10393906	60173181	PMO	18-03-23	17-04-23	10AT701	1001-10AT701	GAS DETECTOR PREVENTIVE MAINTENANCE	COMP	8	QMI-TEC1	3,072.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	13-04-23	IQM	17:00:00	13-04-23
10393794	60172785	PMO	27-02-23	29-03-23	10AT646	1001-10AH02	PM DISTILLATION MONITOR ANALYZER	COMP	8	QMI-TEC1	2,496.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	09-03-23	IQM	11:00:00	09-03-23
10393793	60172784	PMO	27-02-23	29-03-23	10AT647	1001-10AH02	PM SULPHUR IN OIL ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	08-03-23	IQM	11:00:00	08-03-23
10393792	60172782	PMO	27-02-23	29-03-23	10AT648	1001-10AH02	PM LIQUID DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	10-03-23	IQM	11:00:00	10-03-23
10393791	60172781	PMO	27-02-23	29-03-23	10AT645	1001-10AH02	PM FLASHPOINT ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	07-03-23	IQM	11:00:00	07-03-23
60172761	PMO	17-03-23	16-04-23	15GM206A	1001-15GM206	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	17-03-23	EPU	14:18:58	20-04-23	
60172760	PMO	17-03-23	16-04-23	15GM203A	1001-15G203A	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23	
60172681	PMO	15-03-23	14-04-23	10KM101B	1001-10K101B	Electrical PM of 3.3 Kv motor	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23	
60172661	PMO	15-03-23	14-04-23	10GM203B	1001-10GM203B	Electrical PM of 3.3 Kv motor	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23	
60172610	PMO	10-03-23	09-04-23	11GM942B	1001-11G202B	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	1,324.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172609	PMO	10-03-23	09-04-23	11GM941B	1001-11G202A	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172608	PMO	10-03-23	09-04-23	11GM931B	1001-11G101A	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172607	PMO	10-03-23	09-04-23	10GM502	1001-10GM502	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	1,324.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172606	PMO	10-03-23	09-04-23	10GM501	1001-10GM501	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	1,324.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172603	PMO	10-03-23	09-04-23	11GM932B	1001-11G101B	Refill Grease Of Motor Bearing	COMP	8	PUE-TEC1	1,324.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
10393611	60172584	PMO	01-05-23	31-05-23	10AT646	1001-10AH02	Overhaul 10AT646	COMP	8	QMI-TEC1	52,500.00	KIATTIKHUNY	TECO CNF GMPS MACM PRC SETC	30-05-23	IQM	17:00:00	30-05-23
10395653	60172577	PMO	08-03-23	07-04-23	11CCCD1	1001-11K201	CCC PM	COMP	8	DCS-TEC2	0.00	PAVITREEL	TECO CNF NMAT PRC SETC	08-03-23	ICS	08:52:59	31-03-23
10395654	60172576	PMO	08-03-23	07-04-23	10CCCD1	1001-10K201	CCC PM	COMP	8	DCS-TEC2	0.00	PAVITREEL	TECO CNF NMAT PRC SETC	08-03-23	ICS	08:52:52	31-03-23
60172543	PMO	10-03-23	09-04-23	15GM103A	1001-15G103A	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-03-23	EPU	09:23:47	14-03-23	
60172542	PMO	10-03-23	09-04-23	15GM202A	1001-15G202A	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23	
60172528	PMO	06-05-23	05-06-23	10G201	1001-10G201	6M VISUAL LUBE OIL CONDITON	COMP	8	MECPU2	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	13-04-23	MPU	10:05:33	13-04-23	
10393330	60172450	PMO	14-02-23	16-03-23	11AT166	1001-11AT166	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	16-02-23	IQM	11:00:00	16-02-23
10393329	60172447	PMO	14-02-23	16-03-23	15AT002	1001-15AT002	PM MCN SULFUR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	23-02-23	IQM	11:00:00	23-02-23
10393328	60172446	PMO	14-02-23	16-03-23	15AT001	1001-15AT001	PM LCN SULFUR ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	22-02-23	IQM	11:00:00	22-02-23
60172312	PMO	03-03-23	02-04-23	15GM102A	1001-15G102A	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23	
60172311	PMO	03-03-23	02-04-23	15EM206-1	1001-15EM206	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	02-03-23	EPU	16:00:00	02-03-23	
60172287	PMO	28-01-23	27-02-23	15K401	1001-15K401	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	06-02-23	MPU	10:55:49	06-02-23	
60172280	PMO	28-01-23	27-02-23	10K102	1001-10K102	OIL MIST MAINTENANCE PLAN	COMP	8	MECPU2	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	03-02-23	MPU	10:38:04	03-02-23	
60172155	PMO	01-03-23	31-03-23	11GM901B	1001-11K201	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172128	PMO	30-01-23	01-03-23	15K402	1001-15K402	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPU2	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	09-02-23	MPU	14:59:12	09-02-23	
10395678	60172100	PMO	02-03-23	01-04-23	10TT161	1001-10TT161	CTO Temperature calibration	COMP	8	PUI-TEC2	0.00	TURONGJ	TECO CNF NMAT PRC SETC	31-03-23	IPU	13:53:00	31-03-23
10392993	60172077	PMO	07-02-23	09-03-23	10AT071	1001-10AT071	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	15-02-23	IQM	11:00:00	15-02-23
60172027	PMO	01-03-23	31-03-23	10GM401	1001-10GM401	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172024	PMO	01-03-23	31-03-23	11GM302B	1001-11GM302B	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60172023	PMO	01-03-23	31-03-23	11GM201	1001-11GM201	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	331.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	21-02-23	EPU	16:00:00	21-02-23	
60171993	PMO	28-01-23	27-02-23	10K601	1001-10K601	CENTRALIZED GREASE MAINTENANCE PLAN	COMP	8	MECPU1	0.00	SOMROEKW	TECO CNF NMAT PRC SETC	03-02-23	MPU	10:45:58	03-02-23	
10392969	60171988	PMO	06-02-23	08-03-23	11AT168	1001-11AT168	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	16-02-23	IQM	11:00:00	16-02-23
10392968	60171973	PMO	05-02-23	07-03-23	10AT073	1001-10AT073	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	15-02-23	IQM	11:00:00	15-02-23
60171970	PMO	24-02-23	26-03-23	15GM401	1001-15G401	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	15-02-23	EPU	16:00:00	15-02-23	
60171969	PMO	24-02-															

Notification	Order	Order Type	Bas. start date	Basic fin. date	Equipment	Functional Loc.	Description	User status	Priority	Main WorkCtr	TotSum (actual)	Changed by	System status	Actual start	Planner group	Actual Finish	Actual Finish
10394343	60171038	PMO	01-02-23	03-03-23	11LT016	1001-11C105	CHECK TAPPING LINE OF TRANSMITTER HAVE N	COMP	8	PUE-TEC1	3,864.00	TURONGI	TECO CNF GMPS NMAT PRC SETC	23-02-23	IPU	09:58:18	23-02-23
	60170999	PMO	03-02-23	05-03-23	15EM105A1	1001-15EM105A1	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	18-01-23	EPU	16:00:00	18-01-23
	60170997	PMO	03-02-23	05-03-23	15EM105B1	1001-15EM105B1	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	18-01-23	EPU	16:00:00	18-01-23
	60170880	PMO	01-02-23	03-03-23	10GM901B	1001-10K201	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	18-01-23	EPU	16:00:00	18-01-23
	60170821	PMO	01-02-23	03-03-23	24GM101A	1001-24GM101A	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	0.00	PRASERTN	TECO CNF NMAT PRC SETC	20-01-23	EPU	16:00:00	20-01-23
10391138	60170767	PMO	10-01-23	09-02-23	10AT071	1001-10AT071	PM HYDROGEN ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	24-01-23	IQM	11:00:00	24-01-23
	60170715	PMO	01-02-23	03-03-23	11GM301B	1001-11GM301B	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	18-01-23	EPU	16:00:00	18-01-23
	60170706	PMO	01-02-23	03-03-23	10GM206	1001-10GM206	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	18-01-23	EPU	16:00:00	18-01-23
	60170695	PMO	01-02-23	03-03-23	10GM911B	1001-10K101A	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	993.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	18-01-23	EPU	16:00:00	18-01-23
10391078	60170691	PMO	09-01-23	08-02-23	11AT168	1001-11AT168	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	25-01-23	IQM	11:00:00	25-01-23
10391071	60170674	PMO	08-01-23	07-02-23	10AT073	1001-10AT073	PM GAS DENSITY ANALYZER	COMP	8	QMI-TEC1	594.71	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	24-01-23	IQM	11:00:00	24-01-23
	60170623	PMO	27-01-23	26-02-23	10EM312B	1001-10EM312B	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-01-23	EPU	16:00:00	10-01-23
	60170621	PMO	27-01-23	26-02-23	10GM916A	1001-10GM916A	Electrical PM of 400V motor criticality	COMP	8	PUE-TEC1	1,986.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-01-23	EPU	16:00:00	10-01-23
10394369	60170607	PMO	01-01-23	31-01-23	15LT062	1001-15LT062	FLASHING CHAMBER & NOZZLE(ESD)	COMP	8	PUI-TEC1	0.00	TURONGI	TECO NMAT PRC SETC		IPU	00:00:00	
10393393	60170578	PMO	22-01-23	21-02-23	11LP110	1001-11LP110	SSN Panel PM	COMP	8	DCS-TEC1	0.00	PAVITREEL	TECO CNF NMAT PRC SETC	22-01-23	ICS	09:27:16	01-02-23
	60170576	PMO	05-01-23	04-02-23	57K108	1001-15R201	Electrical PM of LV Generator	COMP	8	PUE-TEC1	1,489.50	PRASERTN	TECO CNF GMPS NMAT PRC SETC	13-01-23	EPU	16:00:00	13-01-23
10390795	60170522	PMO	02-01-23	01-02-23	10AT646	1001-10A402	PM DISTILLATION MONITOR ANALYZER	COMP	8	QMI-TEC1	55,572.00	KIATTIKHUNY	TECO CNF GMPS MSPT PRC SETC	04-01-23	IQM	12:00:00	04-01-23
10390794	60170521	PMO	02-01-23	01-02-23	10AT647	1001-10A402	PM SULPHUR IN OIL ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	05-01-23	IQM	12:00:00	05-01-23
10390793	60170520	PMO	02-01-23	01-02-23	10AT648	1001-10A402	PM LIQUID DENSITY ANALYZER	COMP	8	QMI-TEC1	608.00	KIATTIKHUNY	TECO CNF GMPS NMAT PRC SETC	06-01-23	IQM	11:00:00	06-01-23
10390792	60170519	PMO	02-01-23	01-02-23	10AT645	1001-10A402	PM FLASHPOINT ANALYZER	COMP	8	QMI-TEC1	0.00	KIATTIKHUNY	TECO CNF NMAT PRC SETC	03-01-23	IQM	12:00:00	03-01-23
	60169963	PMO	15-01-23	14-02-23	18TR2-2	1001-15R201	Electrical PM of Transformer	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-01-23	EPU	16:00:00	10-01-23
	60169962	PMO	15-01-23	14-02-23	18TR1-2	1001-15R201	Electrical PM of Transformer	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-01-23	EPU	16:00:00	10-01-23
	60169961	PMO	15-01-23	14-02-23	18TR1-2	1001-15R201	Electrical PM of Transformer	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	10-01-23	EPU	16:00:00	10-01-23
	60169960	PMO	15-01-23	14-02-23	18TR1-1	1001-15R201	Electrical PM of Transformer	COMP	8	PUE-TEC1	662.00	PRASERTN	TECO CNF GMPS NMAT PRC SETC	15-01-23	EPU	15:47:25	21-02-23
	60169727	PMO	06-01-23	05-02-23	15AT007	1001-15AT007	RE-ORDER STANDARD GAS	COMP	8	QMI-TEC1	14,635.00	KIATTIKHUNY	TECO GMPS MACM PRC SETC		IQM	00:00:00	
	60169726	PMO	06-01-23	05-02-23	11AT005	1001-11AT005	RE-ORDER STANDARD GAS	COMP	8	QMI-TEC1	14,635.00	KIATTIKHUNY	TECO GMPS MACM PRC SETC		IQM	00:00:00	
10390703	60169725	PMO	06-01-23	05-02-23	10AT145	1001-10AT145	RE-ORDER STANDARD GAS	COMP	8	QMI-TEC1	14,635.00	KIATTIKHUNY	TECO GMPS MACM PRC SETC		IQM	00:00:00	
	60169351	PMO	01-01-23	31-01-23	10GM201	1001-10GM201	Electrical PM of 400V motor non-critical	COMP	8	PUE-TEC1	662.00	BTCCAD	CLSD CNF GMPS NMAT PRC SETC	03-01-23	EPU	16:00:00	03-01-23
	60168724	PMO	11-02-23	13-03-23	0011-X018-010	1001-0011-X018-010	OSI non-intrusive(CUI Ext VI+Dummy leg)	COMP	8	MECCEN4	146,775.41	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60168675	PMO	10-02-23	12-03-23	10EK312B	1001-10EK312B	wk6 2Y PM FIN FAN BELT INSPECTION	COMP	8	MECCU2	2,500.00	SOMROEKW	TECO CNF GMPS NMAT PRC SETC	07-02-23	MPU	15:57:24	07-02-23
	60168674	PMO	10-02-23	12-03-23	10EK312A	1001-10EK312A	wk6 2Y PM FIN FAN BELT INSPECTION	COMP	8	MECCU2	4,936.00	SOMROEKW	TECO CNF GMPS NMAT PRC SETC	07-02-23	MPU	14:54:39	07-02-23
	60168673	PMO	10-02-23	12-03-23	10EK304A1	1001-10EK304A1	2Y PM FIN FAN BELT INSPECTION	COMP	8	MECCU2	4,840.00	MANAN	TECO CNF GMPS NMAT PRC SETC	25-03-22	MPU	14:27:15	30-03-22
10393340	60168629	PMO	05-02-23	07-03-23	15G206B	1001-15G206B	wk4 12M Replace gear oil Meropa 220	COMP	8	MECCU2	1,218.00	SOMROEKW	TECO CNF GMPS NMAT PRC SETC	27-01-23	MPU	10:08:34	27-01-23
	60168568	PMO	14-01-23	13-02-23	0011-X003-031	1001-0011-X003-031	OSI non-intrusive(CUI Ext VI+Dummy leg)	COMP	8	MECCEN4	156,384.75	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60168567	PMO	14-01-23	13-02-23	0011-X003-030	1001-0011-X003-030	OSI non-intrusive(CUI Ext VI+Dummy leg)	COMP	8	MECCEN4	122,662.10	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60168566	PMO	14-01-23	13-02-23	0011-X003-020	1001-0011-X003-020	OSI non-intrusive(CUI Ext VI+Dummy leg)	COMP	8	MECCEN4	114,369.27	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60168504	PMO	28-02-23	30-03-23	15KM201B	1001-15KM201B	Bearing lube oil replacement (Regal R&O)	COMP	8	MECCU2	0.00	MANAN	TECO CNF NMAT PRC SETC	17-03-23	MPU	10:20:59	17-03-23
10390098	60168503	PMO	28-02-23	30-03-23	11KM101B	1001-11KM101B	Bearing lube oil replacement (Regal R&O)	COMP	8	MECCU2	2,236.72	MANAN	TECO CNF GMPS NMAT PRC SETC	07-12-22	MPU	16:27:38	07-12-22
	60168127	PMO	18-01-23	17-02-23	0011-X015-060	1001-0011-X015-060	OSI non-intrusive(CUI Ext VI)	COMP	8	MECCEN4	54,349.20	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60168118	PMO	17-01-23	16-02-23	0011-X003-010	1001-0011-X003-010	OSI non-intrusive(CUI Ext VI)	COMP	8	MECCEN4	75,995.10	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60168116	PMO	17-01-23	16-02-23	0011-X015-070	1001-0011-X015-070	OSI non-intrusive(CUI Ext VI+Dummy leg)	COMP	8	MECCEN4	301,087.60	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60168115	PMO	15-02-23	17-03-23	10KM103B	1001-10KM103B	Bearing lube oil replacement (Regal R&O)	COMP	8	MECCU2	1,516.00	MANAN	TECO CNF GMPS NMAT PRC SETC	17-03-23	MPU	10:05:13	17-03-23
	60168114	PMO	15-02-23	17-03-23	10KM101B	1001-10KM101B	Bearing lube oil replacement (Regal R&O)	COMP	8	MECCU2	1,516.00	MANAN	TECO CNF GMPS NMAT PRC SETC	17-03-23	MPU	10:03:00	17-03-23
	60167694	PMO	14-01-23	13-02-23	0011-X003-M03	1001-0011-X003-M03	OSI non-intrusive(CUI Ext VI)	COMP	8	MECCEN4	40,325.80	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60167693	PMO	14-01-23	13-02-23	0011-X003-011	1001-0011-X003-011	OSI non-intrusive(CUI Ext VI)	COMP	8	MECCEN4	25,249.20	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60167692	PMO	14-01-23	13-02-23	0011-X001-010	1001-0011-X001-010	OSI non-intrusive(CUI Ext VI+Dummy leg)	COMP	8	MECCEN4	141,619.70	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
10393339	60167514	PMO	05-01-23	04-02-23	15G206A	1001-15G206A	wk1 12M Replace gear oil Meropa 220	COMP	8	MECCU2	1,642.88	SOMROEKW	TECO CNF GMPS NMAT PRC SETC	04-01-23	MPU	12:04:18	04-01-23
10394361	60166148	PMO	28-02-23	30-03-23	89ESD25	1001-89ESD25	ESD Panel PM	COMP	8	DCS-TEC1	0.00	PAVITREEL	TECO CNF NMAT PRC SETC	28-02-23	ICS	09:15:45	01-03-23
10394363	60166146	PMO	28-02-23	30-03-23	89ESD27	1001-89ESD27	ESD Panel PM	COMP	8	DCS-TEC1	0.00	PAVITREEL	TECO CNF NMAT PRC SETC	28-02-23	ICS	09:16:03	01-03-23
10394364	60166145	PMO	28-02-23	30-03-23	89ESD26	1001-89ESD26	ESD Panel PM	COMP	8	DCS-TEC1	0.00	PAVITREEL	TECO CNF NMAT PRC SETC	28-02-23	ICS	09:15:53	01-03-23
10394366	60166134	PMO	28-02-23	30-03-23	89ESD28	1001-89ESD28	ESD Panel PM	COMP	8	DCS-TEC1	0.00	PAVITREEL	TECO CNF NMAT PRC SETC	28-02-23	ICS	09:16:12	01-03-23
	60165207	PMO	15-02-23	17-03-23	10E202	1001-10E202	OSI Non-Int.(CUI Ext VI+pit gage+UT,SH)	COMP	8	MECCEN4	30,032.60	PUWADOLN	TECO GMPS NMAT PRC SETC		MSP	00:00:00	
	60164027	PMO	15-01-23	14-02-23	10C101B	1001-10C101B	OSI Non-Int.(CUI Ext VI+pit gage+UT,SH)	COMP	8	MECCEN4	32,925.60	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60164026	PMO	15-01-23	14-02-23	10C101A	1001-10C101A	OSI Non-Int.(CUI Ext VI+pit gage+UT,SH)	COMP	8	MECCEN4	21,354.40	PUWADOLN	TECO ESTC GMPS NMAT PRC SETC		MSP	00:00:00	
	60132115	PMO	15-01-23	15-02-23	10K103A	1001-10K103A	wk9OVERHAUL LEVEL B	COMP	8	MECCU2	1,036,139.69	MANAN	TECO CNF GMPS NMAT PRC SETC	15-01-23	MPU	10:28:51	08-03-23

PD Maintenan Final Plan 05 -10 Mar 2023																																		
Sunday 05					Monday 06					Tuesday 07					Wednesday 08					Thursday 09					Friday 10									
TTLT					Tank Farm					Tank Farm					Tank Farm					Tank Farm					Tank Farm									
W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit					
50080116		72D108	Tanks internal cleaning - Prepare EIC LO/TO Isolate tank to support work by Ops. - Connect diaphragm pump to valve 1" bottom tank and empty to drum.(spare 8 Drums) - Use mogas soak tank 72D108 for cleaning. - 72G108A/B pumping for circulate loop around 30 min. - Open valves drain at bottom point. - Empty mogas contaminate by vacuum truck. - Clean suction Stainer pump. - vacuum truck required - Scaffold required - Support OPS	YES						xxx		60G10x	Clean suction strainer crude pump. - System stop and lock out /tag out - Clean suction strainer - New gasket apply - Concerning reliability	YES	50072323	YES	76G126B	Pump sound abnormal and Vibration - Crane 10 Ton / Boom truck - IE support Disconnect eletrical wire - Lifting pump to clean strainer and remove pump to overhaul - Clean flushing line - Sent pump to w/s for overhaul - Concerning reliability	YES	50080598		60 Unit	Replace 3"ball valve of SM172 - Spare valve keep at Fire station		xxx		60G10x	Clean suction strainer crude pump. - System stop and lock out /tag out - Clean suction strainer - New gasket apply - Concerning reliability	YES					
										50080390		60D302	Replace deadman valve - Replace deadman valve by spare - Concerning reliability	YES	60169302	Yes	60K373	6M PM MIXER VISUAL INSPECTION - Open cover to check condition of belt - Replace or tension if require - Check condition bearings and mech seal - Retigthen all bolt of mixer - Test run - Concerning equipment overdue		60163950		60PSV445	PSV Inspection and Overhaul - Location - Discharge line 60C331A2 (Area jet A-1) - 3/4"x1" 150# - Remove valve to overhaul and reinstall - Concerning equipment overdue - Valve Shop require	Yes	50080797		72S1011	Replacement DCO filter at day tank - Vacuum truck require - 200 liters empty drums - Empty by vacuum truck - Replace filter 12 ea. - Concerning reliability						
50079221	YES	72G108B	Pump cannot build up pressure. - Check and fix pump - Test run pump - Concerning reliability							60169304	YES	60K371	6M PM MIXER VISUAL INSPECTION - Open cover to check condition of belt - Replace or tension if require - Check condition bearings and mech seal - Retigthen all bolt of mixer - Test run - Concerning equipment overdue		60169303	YES	60K372	6M PM MIXER VISUAL INSPECTION - Open cover to check condition of belt - Replace or tension if require - Check condition bearings and mech seal - Retigthen all bolt of mixer - Test run - Concerning equipment overdue		60169613		60G306AX	6M VISUAL LUBE OIL CONDITION -REMOVE BREATHER PLUG AND DRAIN PLUG OUT -DRAIN OIL IN GEAR CASE OUT AND CHECK OIL 'S CONDITION -PUT THE DRAIN PLUG BACK TO THE SAME PLACE -FILL Regal R&O 32 UP TO THE PROPER LEVEL OR TILL COME OUT - Concerning equipment overdue		60173725		60K191	OIL MIST MAINTENANCE PLAN		60173723		72K191	OIL MIST MAINTENANCE PLAN	
										50080745		76PSV126	Remove PVV to calibration				60K391	OIL MIST MAINTENANCE PLAN		50080744		76PSV127	Remove PVV to calibration - Reinstall PVV after calibrate - Concerning reliability		60173744		60K391	OIL MIST MAINTENANCE PLAN		60173740		76K149	OIL MIST MAINTENANCE PLAN - Concerning equipment overdue	
										50080744		76PSV127	Remove PVV to calibration - Remove PVV sent to calibrate at valve shop - Mech /IR Investigate - Concerning reliability - Valve Shop require				60K491	OIL MIST MAINTENANCE PLAN									60K591	OIL MIST MAINTENANCE PLAN						
										xxxxx		76D109	Support Rigging and lifting - Mech PD/4 supportt team scaffolding				62K291	OIL MIST MAINTENANCE PLAN - Concerning equipment overdue		50080745		76PSV126	Remove PVV to calibration											
Manpower Supervisor		Pornthep , Udomsak, Prachan, Nirut,Nanthawat, Thuwanan								Manpower Supervisor		K. Watchara K,Pornthep K.Thuwanan, Nirut K. Udomsak K Prachan, Nutthapong			Manpower Supervisor		GM K. Narong T. visit our team on Meeting 07:30-08:30 K. Watchara K,Pornthep K.Thuwanan, Nirut K. Udomsak K Prachan, Nutthapong		Manpower Supervisor		K. Watchara K,Pornthep K.Thuwanan, Nirut K. Udomsak , Nutthapong, Nanntawat					Manpower Supervisor		K. Watchara K,Pornthep K.Thuwanan, Nirut K. Udomsak , Nutthapong, Nanntawat						
TTLT					TTLT					TTLT					TTLT					TTLT					TTLT									
W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit
															60171976		72HVG700	E100 loading arm		50080672		72G202A	Mechanical seal seeping - Exercise mech seal - Test runo pump - Clean base plate - Concerning reliability											
															60171977		72HVG800	B100 loading arm - Inspection loading arm - Replace part as require - Concerning equipment overdue																
Marine					Marine					Marine					Marine					Marine					Marine									
W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit
										50080091		67 Unit	Remove activitae carbon -Require remove scaffold - Mobilize tools from W/H and OMB to MCB - Mobilize activate carbon to Tank farm 1 tank - Boom truck นำถังลง - Morning		50080471		66K602	Replace all Hydraulic hose - Scaffolding - Replace hose		60172114		66G701	Clean suction strainer		50080124		66HV204	The mov valve has leaked 10"150# - Scaffolding require - IE require - Replace Twin seal 10"150# Request window 8 Hrs.						
										60171925	0066	66K601	Yearly Inspection bolts of pinion gear - Scaffolding - Check all the old bolts off and replace if require - Check and adjust condition of pipion gear. - Test run after completed by remove scaffolding before. - Concerning equipment overdue		60171972		66K602	Yearly Inspection bolts of pinion gear - Check all the old bolts off and replace if require - Check and adjust condition of pipion gear. - Test run after completed by remove scaffolding before. - Concerning equipment overdue		60172115		66G702	Clean suction strainer OWA support work diving replace strainer - Scaffolding require inspection before work - Replace both strainer fire pump - Concerning equipment overdue											
										Manpower		K. Udomsak, Prachan, Preerapol, K. Jakarin Training IIF Supervisor Skill Training @ REB 08.00-12.00		Manpower		K. Jakkarin , Prachan, Preerapon		Manpower		K. Jakkarin , Prachan, Preerapon		Manpower		K. Jakkarin , Prachan, Preerapon										

PD Maintenান Final Plan 17-22 Apr 2023																														
Monday 17					Tuesday 18					Wednesday 19					Thursday20					Friday 21					Friday 22					
Tank Farm					Tank Farm					Tank Farm					Tank Farm					Tank Farm					Tank Farm					
W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	W/O	E-Record require	Tag Equipment	Description	First Break & Job Joint site visit	
xxxxxx		60G10x	Clean suction strainer crude pump.	YES	60163669		60PSV141	Statutory inspection and Overhaul LPG-SP 60D304	YES	xxx		60G10x	Clean suction strainer crude pump.	YES	50080509	YES	60G371A	Reinstall pump	YES	xxx		60G10x	Clean suction strainer crude pump.	YES						
			- System stop and lock out /tag out		60164013		60PSV137	Statutory inspection and Overhaul LPG-SP 60D302	YES				- System stop and lock out /tag out				- Boom truck ឃ្មុំ						- System stop and lock out /tag out							
			- Clean suction strainer		60164508		60PSV147	Statutory inspection and Overhaul LPG-SP 60D307	YES				- Clean suction strainer				- Mobilize pump fromwork shop						- Clean suction strainer							
			- New gasket apply					Scaffolding require modify before work					- New gasket apply				- Reinstall end flange suction and discharge						- New gasket apply							
			- Concerning reliability					- JSA require / barricade and install green net on top tank					- Concerning reliability				- Reinsattl pump						- Concerning reliability							
								- Lifting plan ៖ Crane 50 ton		60163669		60PSV141	Statutory inspection and Overhaul LPG-SP 60D304	YES				- Reconnect suction and discharge line												
								- Remove valve sent to valve shop		60164013		60PSV137	Statutory inspection and Overhaul LPG-SP 60D302	YES				- Reconnect steam line												
								- Require Sr. OPS for Isolate selector valve		60164508		60PSV147	Statutory inspection and Overhaul LPG-SP 60D307	YES				-Reconnect coupling gear to pump												
								- Housekeeping					Scaffolding require modify before work					- Reconnect oil mist												
								- Concerning equipment overdue					- JSA require / barricade and install green net on top tank					- Coupling aling ment												
													- Lifting plan					- Concerning reliability												
													Reinstall valve back to place					- LSC support												
													- Require Sr. OPS for Isolate selector valve					60PSV274 PSV Inspection and Overhaul	YES											
													- Housekeeping					On platformIn front of 60D222 (Area feed)												
													- Concerning equipment overdue					- 3/4"x1" 150#												
																		- Remove valve to overhaul and reinstall												
																		- Concerning equipment overdue												

ภาคผนวก ข.6

ระเบียบปฏิบัติ เรื่อง การขนถ่ายวัตถุดิบและผลิตภัณฑ์

Movement/Dispatches		
SPRC Plant 66 Ship Loading		
Prepared by: Natthasak Mahachanawong	Number: HC-WI-PD-6020	
Approved by: Opas Waiyasatja	Revision: 2.	
Low	Medium	High

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Movement/Dispatches		
SPRC Plant 66 Crude Oil Import via Terminal Berth3		
Prepared by: Wichian Khumtor	Number: HC-WI-PD-6014	
Approved by: Opas Waiyasatja	Revision: 2.	
Low	Medium	High

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Movement/Dispatches		
 Plant 66 Asphalt Ship Loading		
Prepared by: Wichian Khumtor	Number: HC-WI-PD-6016	
Approved by: Opas Waiyasatja	Revision: 2.	
Low	Medium	High

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Movement/Dispatches		
 Plant 66 High Speed Diesel Ship Loading		
Prepared by: Sawai Paena	Number: HC-WI-PD-6050	
Approved by: Opas Waiyasatja	Revision: 4.	
Low	Medium	High

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Movement/Dispatches			
 Plant 66 LPG and Mixed C4 Ship Loading.			
Prepared by:	Wichian Khumtor	Number:	HC-WI-PD-6051
Approved by:	Opas Waiyasatja	Revision:	3.4
Low		Medium	
		High	

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Movement/Dispatches			
 Plant 66 Fuel Oil Ship Loading			
Prepared by:	Natthasak Mahachanawong	Number:	HC-WI-PD-6052
Approved by:	Opas Waiyasatja	Revision:	3.
Low		Medium	
		High	

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Movement/Dispatches		
 Plant 66 Mogas Ship Loading		
Prepared by: Sawai Paena	Number: HC-WI-PD-6055	
Approved by: Opas Waiyasatja	Revision: 3.	
Low	Medium	High

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Movement/Dispatches		
 Plant 66 Jet A-1 and Kerosene Ship Loading		
Prepared by: Natthasak Mahachanawong	Number: HC-WI-PD-6082	
Approved by: Opas Waiyasatja	Revision: 5.	
Low	Medium	High

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ภาคผนวก ข.7

แบบรายงานปริมาณสารอินทรีย์ระเหยง่ายจากแหล่งกำเนิด (รว.๓/๑)

แบบรายงานผลการตรวจวัดการรั่วซึมของสารอินทรีย์ระเหยจากอุปกรณ์
และการซ่อมแซมอุปกรณ์ในโรงงานอุตสาหกรรม
(๑ แบบรายงานต่อ ๑ โรงงาน)

ประจำปี พ.ศ. 2566..... ครั้งที่ 1.....

ประจำช่วงเดือน มกราคม..... พ.ศ. 2566..... ถึง มิถุนายน..... พ.ศ. 2566.....

รายละเอียดเกี่ยวกับโรงงาน

ชื่อโรงงาน ทำเทียมเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) ทะเบียนโรงงานเลขที่ น.49-1/2537-อนุพ.

สถานที่ตั้งโรงงาน เลขที่ 1 ถนน โอ-3 บี นครอุตสาหกรรมมาบตาพุด ตำบลมาบตาพุด อำเภอเมือง จังหวัดระยอง

ปริมาณสารอินทรีย์ระเหยรวมที่มีหรือใช้ในกระบวนการผลิต 6,627,170.....ตันต่อปี

ประเภทอุปกรณ์	สถานะ สารอินทรีย์ ระเหย	จำนวนอุปกรณ์ ทั้งหมดของโรงงาน		จำนวนอุปกรณ์ ที่ต้องตรวจวัดการรั่วซึม ในรอบการรายงานครั้งนี้			ปริมาณสารอินทรีย์ ระเหยรวมในรูป มีเทนที่รั่วซึม จากอุปกรณ์ ที่ตรวจวัด การรั่วซึมทั้งหมด ในรอบการรายงาน ครั้งนี้ (กิโลกรัม)
		จำนวนอุปกรณ์ ที่ต้องตรวจวัด การรั่วซึม (จุด)	จำนวนอุปกรณ์ ที่ได้รับ การยกเว้น ไม่ต้องตรวจวัด การรั่วซึม (จุด)	จำนวนอุปกรณ์ ที่ตรวจวัด การรั่วซึม ทั้งหมด (จุด)	จำนวนอุปกรณ์ ที่มีผลการ ตรวจวัดเกิน จากเกณฑ์ การควบคุม การรั่วซึม (จุด)	จำนวนอุปกรณ์ ที่ได้รับการ ซ่อมแซมให้ อยู่ในเกณฑ์ การควบคุม การรั่วซึม (จุด)	
วาล์ว (Valves)	แก๊ส	93	176	23	0	0	0.78
	ของเหลว	451	870	78	0	0	2.64
ปั๊ม (Pumps)	ของเหลว	12	0	5	0	0	0.52
อุปกรณ์ลดความดัน (Pressure Relief Devices)	แก๊ส	0	0	0	0	0	0
	ของเหลว	0	0	0	0	0	0
เครื่องอัดอากาศ (Compressors)	ทั้งหมด	0	0	0	0	0	0
ข้อต่อหรือหน้าแปลน (Connectors or Flanges)	ทั้งหมด	1,949	519	317	0	0	0.43
ท่อส่งปลายเปิด (Open-Ended Lines)	ทั้งหมด	4	5	0	0	0	0
จุดเก็บตัวอย่าง สารเคมี (Sampling Connections)	ทั้งหมด	7	0	0	0	0	0
อุปกรณ์ที่ใช้กวน หรือผสมของเหลว (Agitators or Mixers)	ทั้งหมด	0	0	0	0	0	0

(ลงชื่อ)

ผู้จัดการสิ่งแวดล้อมหรือผู้ได้รับอนุญาตประกอบกิจการโรงงาน

SPRC Marine Terminal VOC Inventory

									Calculation Method
		2016	2017	2018	2019	2020	2021	2022	
1	Fugitive Emission	0.041	0.008	0.008	0.04	0.048	0.039	0.053	Protocol for Equipment Leak Estimates, 1995, EPA-453/R-95-017, EPA Correlation Approach
2	Combustion	0	0	0	0	0	0	0	No combustion sources
3	Flare	0.01	0.01	0.005	0.005	0.005	0.005	0.005	Calculation by applying Emission Factor EPA AP-42
4	Ship Loading/Unloading	299	270	268.56	252.57	258.02	250.73	263.02	Calculation by applying Emission Factor EPA AP-42
5	Storage Tank	0	0	0	0	0	0	0	No storage tank
6	Wastewater Treatment	0	0	0	0	0	0	0	No Wastewater Treatment Plant
7	Others i.e., shutdown, T&I, spill	0	0	0	0	0	0	0	
	Total (T/Y)	299	269.5	269	252.6	258.1	250.8	263.1	

ภาคผนวก ข.8

แผนการตรวจสอบ/บำรุงรักษา และการเปลี่ยนแผ่นกรอง
ของระบบควบคุมไอระเหยจากท่อระบายของถังเก็บก๊าซยางมะตอย

Equipment Tag	Check List	Alarm Status	Inspection result	Unit	Notes (Task Carry Over)	Date/Time	Report By
67C203	Overall Condition -		Normal.	Single Selection	System shut down due to changing Activated carbon	2023-03-18 11:28:06.000	pichiani
67C203	Overall Condition -		Normal.	Single Selection	System shut down due to changing Activated carbon	2023-06-16 13:00:55.000	pichiani
67C203	Overall Condition Alert		Abnormal(Note)	Single Selection	System shut down due to changing Activated carbon	2023-02-13 23:18:49.000	pichiani
67C203	Drain valve -		Close	Single Selection		2023-02-13 23:18:17.000	pichiani
67C203	Drain valve -		Close	Single Selection		2023-03-18 11:28:04.000	pichiani
67C203	Drain valve -		Close	Single Selection		2023-06-16 13:00:52.000	pichiani
67C204	Overall Condition -		Normal.	Single Selection	System under shut down due to under changing cabin filte	2023-03-18 11:28:08.000	pichiani
67C204	Overall Condition -		Normal.	Single Selection	System under shut down due to under changing cabin filte	2023-06-16 13:00:58.000	pichiani
67C204	Overall Condition Alert		Abnormal(Note)	Single Selection	System under shut down due to under changing cabin filte	2023-02-13 23:21:23.000	pichiani
67C204	Drain valve -		Close	Single Selection		2023-02-13 23:18:27.000	pichiani
67C204	Drain valve -		Close	Single Selection		2023-03-18 11:28:07.000	pichiani
67C204	Drain valve -		Close	Single Selection		2023-06-16 13:00:56.000	pichiani
67C205	Overall Condition -		Normal.	Single Selection	System under shut down changing cabin filters	2023-03-18 11:28:10.000	pichiani
67C205	Overall Condition -		Normal.	Single Selection	System under shut down changing cabin filters	2023-06-16 13:00:59.000	pichiani
67C205	Overall Condition Alert		Abnormal(Note)	Single Selection	System under shut down changing cabin filters	2023-02-13 23:25:01.000	pichiani
67AI100	Overall Condition -		Normal.	Single Selection	System under shut down	2023-03-18 11:28:10.000	pichiani
67AI100	Overall Condition -		Normal.	Single Selection	System under shut down	2023-06-16 13:01:01.000	pichiani
67AI100	Overall Condition Alert		Out of Service.	Single Selection	System under shut down	2023-02-13 23:25:57.000	pichiani
67AI101	Overall Condition -		Normal.	Single Selection	System under shut down	2023-03-18 11:28:11.000	pichiani
67AI101	Overall Condition -		Normal.	Single Selection	System under shut down	2023-06-16 13:01:03.000	pichiani
67AI101	Overall Condition Alert		Out of Service.	Single Selection	System under shut down	2023-02-13 23:26:22.000	pichiani
67S104	Drain valve -		Open	Single Selection		2023-02-13 23:26:45.000	pichiani
67S104	Drain valve -		Open	Single Selection		2023-03-18 11:28:12.000	pichiani
67S104	Drain valve -		Open	Single Selection		2023-06-16 13:01:27.000	pichiani
67S104	Overall Condition -		Normal.	Single Selection		2023-02-13 23:26:52.000	pichiani
67S104	Overall Condition -		Normal.	Single Selection		2023-03-18 11:28:13.000	pichiani
67S104	Overall Condition -		Normal.	Single Selection		2023-06-16 13:01:29.000	pichiani







Universal Process Chemical and Equipment Services Co., Ltd

RECEIPT INSPECTION REPORT (RIR)

Page 1 of 1

Project Name : Asphalt Tank odor Control System
 Client : Star Petroleum Refining Pub Co., Ltd.
 Date : 27/6/23


Report No. : RIR-SPRC-001
 Supplier Name : U-ProChem

Item No.	Q'ty inspected	Material Description (type & size)	Picture	(Please tick) ✓ = Acc., X = Rej.			Inspection Result		Remarks
				Visual	Dim. *	Thk. **	Acc.	Rej.	
1	1500 kg	UW-1355-ACSM4000 - Filter Media for 67C205					✓		
2	6	UPC-OME-2000-01 - 1st for 67C204		✓	✓	✓	✓		
3	6	UPC-OME-2000-01 - 2nd for 67C204		✓	✓	✓	✓		
4	6	UPC-OME-2000-01 - 3rd for 67C204		✓	✓	✓	✓		
5	6	UPC-OME-2000-02 - 4th for 67C204		✓	✓	✓	✓		
6	6	UPC-OME-2000-03 - 5th for 67C204		✓	✓	✓	✓		

Notes :

Inspected / Prepared by : Material Controller

Inspected / Accepted : QC Inspector

Signature : 
 Name : _____
 Date : 27/Jun/23

Signature : _____
 Name : _____
 Date : _____

ภาคผนวก ข.9

การตรวจสอบระบบท่อส่งน้ำเสียจากท่าเทียบเรือ

OFF - PLOT PIPING MODULE REPORT

SECTION A

Equipment: OPM96 – 014: OFFPLOT, BALLAST PIPELINE INSPECTION

Inspector Name: Pansak K./Attanon P.

Date of Inspection: 02 June 2023

Type: Scheduled OSI 2023

Reason for Inspection: External inspection.

SUMMARY:

General condition of 12" ballast water line (96 BW -10501-B15) route from Marine Product Pier running thru IEAT I-8 road were visual inspected, found in good condition. Pipeline external minor chalk of paint. No repair work requires at this period. Pipe welds, vent/drain nozzles appeared in good condition observed. Overall pipeline still fit for service at the design condition.

COMPONENTS:

Pipe: Pipeline external minor chalk of paint. No repair work requires at this period. Pipe welds, vent/drain nozzles appeared in good condition observed. Overall pipeline still fit for service at the design condition.

Supports: Sound condition

Paint: Minor chalking of paint. No repair work requires at this period.

Insulation: N/A

RECOMMENDATION:

ACTION PARTY

Nil

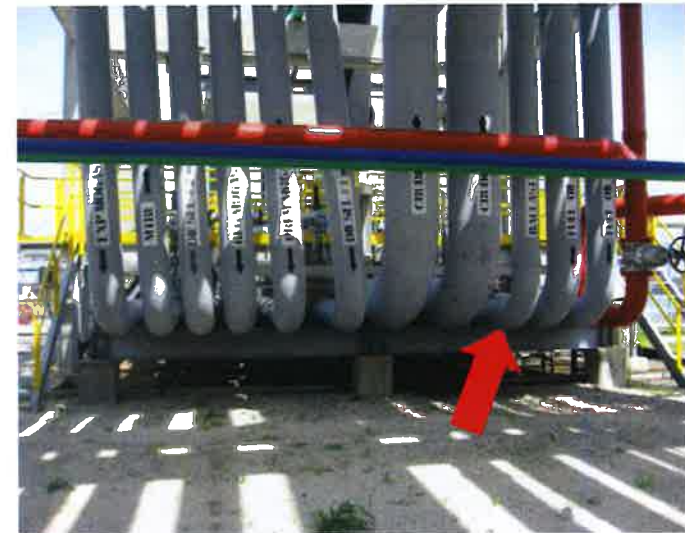


Photo1: 12" Ballast line from Marine Product Pier to shoreline.



Photo2: Ballast line still in good condition observed.



Photo3: 66PSV102 still in good condition observed.



Photo4: 66D102 to ballast line still in good condition observed.



Photo5: Ballast line to 66HV130 still in good condition observed.



Photo6: 66D202 to ballast line still in good condition observed.



Photo7: 66K203 to ballast line still in good condition observed.



Photo8: 66D302 to ballast line still in good condition observed.



Photo9: 66K302 to ballast line still in good condition observed.



Photo10: 66D301 to ballast line still in good condition observed.



Photo11: 66D402 to ballast line still in good condition observed.



Photo12: 66D401 to ballast line still in good condition observed.



Photo13: 66D502 to ballast line still in good condition observed.



Photo14: 66HV519 to ballast line still in good condition observed.





Photo15: 66D501 to ballast line still in good condition observed.



ภาคผนวก ข.10




รายการอุปกรณ์กำจัดน้ำมันหกรั่วไหล และการตรวจสอบสภาพอุปกรณ์

Codes: R = under repair, aw. spare parts A = abnormal condition observed, cannot do BEC L = equipment relocation, not available for BEC O = other reasons

BEC OSR Equipment year: 2023			Fill in the date on which the actual BEC is carried out. If not done specify the reason Code as shown on the header.											
Respond for monthly check		Shift	A	B	C	D	A	B	C	D	A	B	C	D
Equipment	Description		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
55 kw Powerpack	check/refill diesel fuel, lub oil,	planned	X	X	X	X	X	X	X	X	X	X	X	X
	hydraulic oil, cooling water	65K116 A				Relocation	L	10 Jun 23						
	run engine 5 minutes	65K116 B				27 Apr 23	25 May 23	10 Jun 23						
58 kw Powerpack	check for abnormality, leakage,	65K116 C				27 Apr 23	25 May 23	10 Jun 23						
	no air blowing, etc.													
4.5 kw Powerpack	check/refill diesel fuel, lub oil,	planned	X	X	X	X	X	X	X	X	X	X	X	X
	hydraulic oil	65K117A				27 Apr 23	25 May 23	10 Jun 23						
	run engine 5 minutes	65K117B				27 Apr 23	25 May 23	10 Jun 23						
7.3 kw Powerpack LAMOR	check/refill diesel fuel, lub oil,	planned	X	X	X	X	X	X	X	X	X	X	X	X
	hydraulic oil	65K122				Can't start	Check only	Check only						
	run engine 5 minutes					27 Apr 23	25 May 23	10 Jun 23						
RO Boom 1300 Inflatable Boom	check for abnormality, leakage, etc.													
	roll out/in 10-15 meter using	planned											X	
	55 kw Powerpack	65K101												
RO Boom 1000 Inflatable Boom	check for any abnormality,	65K102												
	non-smooth reel/motor running	65K103												
	55 kw Powerpack	65K104												
Komora 30K Disc Skimmer	check for any abnormality,	65K105												
	non-smooth reel/motor running													
	run 5 minutes using	planned			X									
Komora 12K Disc Skimmer	4.5 kw Powerpack	65K111												
	check for abnormality, damage													
	run 5 minutes using	planned				X								
Minimax 25 Disc/ Brush Skimmer	4.5 kw Powerpack	65K113				27 Apr 23								
	check for abnormality, damage													
	run 5 minutes using	planned					X							
RO Mop 260H Rope Mop Skimmer	4.5 kw Powerpack	65K120					25 May 23							
	check for abnormality, damage													
	run 5 minutes using	planned						X						
RO Mop 140H Rope Mop Skimmer	4.5 kw Powerpack	65K112B						10 Jun 23						
	check for abnormality, damage													
	run 5 minutes using	planned							X					
Beach Boom 800 Air Blower	4.5 kw Powerpack	65K112A												
	check for abnormality, damage													
	check/refill mixed ULG fuel	planned	X	X	X	X	X	X	X	X	X	X	X	X
Water Pump box 7,8	run engine 3 minutes	65K106A				27 Apr 23	25 May 23	10 Jun 23						
	check for abnormality	65K106B				27 Apr 23	25 May 23	10 Jun 23						
		65K106C				27 Apr 23	25 May 23	10 Jun 23						
Beach Boom 800 Boom	check/refill ULG fuel, lub oil	planned	X	X	X	X	X	X	X	X	X	X	X	X
	run engine 3 minutes	65K106A				27 Apr 23	25 May 23	10 Jun 23						
	check for abnormality	65K106B				Not applicable		10 Jun 23						
Spate Pump multi purpose diaphragm pump	randomly select one boom	planned								X				
	section. fill all chambers with air													
	check for abnormality, puncture													
Vikospray Diesel Engine	randomly select one pump	planned	X								X			
	water run using 4.5 kw Powerpack													
	check for abnormality, suction													
Vikospray Whole Unit	check/refill diesel fuel, lub oil	planned	X	X	X	X	X	X	X	X	X	X	X	X
	run engine 3 minutes	65K114	SPM	SPM	SPM	RS-38	RS-38	RS-38	RS-38	RS-38	RS-38	RS-38	RS-38	RS38
	check for abnormality													
AFEDO Whole Unit	assemble all parts of unit	planned										X		
	water spray test 15 minutes	65K121										RS-38		
	check for abnormality, leakage													
Nite Lite Flood Light/Diesel Generator Trailer	check/refill diesel fuel, lub oil	planned	X	X	X	X	X	X	X	X	X	X	X	X
	run engine 5 minutes	94B169				27 Apr 23	25 May 23	10 Jun 23						
	check for abnormality, lighting, winch													
Fast Tank Temporary Oil Storage	randomly select one Fast Tank	planned											X	
	assemble the tank													
	check for any damage, puncture													
BACKPACK SPRAYER for Dispersant	visual check for damage	planned												X
	replace as necessary													
DISPERSANT	check stock item	planned	X	X	X	X	X	X	X	X	X	X	X	X
	Quantity (Liters)					318 drum	318 drum	318 drum						
						27 Apr 23	25 May 23	10 Jun 23						



Description	Quantity	Types
1) Boats	1 Unit 1 Unit 2 Unit 2 Unit	SPM Boat Offshore Boom Deployment with Dispersant Spray System OSR Boat Offshore Boom Deployment with Dispersant Spray System Small Tugs. Assist harbour booming/spraying Utility Boat (Line Boat). Assist harbour booming. 
2) Booms	1000 M	Ro-Boom 1300, Offshore (in 4 containers) 




Description	Quantity	Types
	1,200M	SK Foam Filled Harbor Boom 
	250M	Ro-Boom 800, Beach Boom (in various length sections) 

Description	Quantity	Types
3) Skimmers	1 Set	Desmi 250 Terminator (Offshore Weir Skimmer) 
	1 Set	Desru Brush-Weir DOP 250 Terminator (Offshore Weir Skimmer) 
	1 Set	Komara 30K (Inshore Weir Skimmer)
	1 Set	Komara 12K (Calm Water Weir Skimmer)
	1 Set	Desmi Mini-Max (Inshore Weir Skimmer) 

Description	Quantity	Types
	1 Set	Ro-Mop OM 260 (Inshore Mop Skimmer) 
	1 Set	Ro-Mop OM 140 (Calm Water Mop Skimmer) 

Description	Quantity	Types
4) Power Packs	3 Set	55 kw Multi-Purpose Diesel/Hydraulic Power Pack with Air Blower 
	1 Set	52 kw Multi-Purpose Diesel/Hydraulic Power Pack with Air Blower
	1 Set	50 kw DESMI Diesel/Hydraulic Power Pack 
	3 Set	7 kw DESMI Hydraulic Power Pack with Air Blower 

Description	Quantity	Types
	2 Set	4.5 kw Diesel/Hydraulic Power Pack with built-in Spate Pump 
5) Temporary Oil Storage	1 Set	SPM Boat Slop Tank – appr. 120 m3
	2 Unit	Fast Tank 10 m3 (collapsible shore tank) 
	1 Unit	ISO Tank 20 m3 (20-ft steel decanting tank)
	1 Set	RO- Tank 25 m3 (towed rubber tank)

Description	Quantity	Types
6) Dispersant Spray System	3 Set	3 x ALFEDO dispersant sprayer 
	1 Set	3 x Small Tugs Spray Boom Portable Dispersant Spray System (Vikospray)
7) Dispersant	4430 Liter 6000 Liter	DASIC Slickgone NS – SPM Boat DASIC Slickgone NS – Stand-by Boat 
	40,000 Liter	DASIC Slickgone NS – Marine warehouse 

Description	Quantity	Types
8) Sorbent	60 bags 80 bags	Sorbent Boom A2 Sorbent Boom A3 
	145 bags	Sorbent sheet SEL 100 
	275 bags	Sorbent roll SEL R19 

Description	Quantity	Types
9) Lighting equipment	1 Set	Nite Lite Flood Light

Inspection : Monthly
 Client : Star Petroleum Refining Public Company Limited
 Month : March 2023
 Inspection by : Ckristatam H.,Tunyasi U.,Nophdol H.,Sittiphatchai N.
 Equipment Type : Fire Hose Reel

Item	Area	QR or BarCode	Serial Number	Location	Hose in coll Condition	Nozzle Condition	Valve Condition	No Leakage	Canvas Condition	Inspection method			Inspection Date	Remark
										PM (1M)	PM (3M)	PM (12M)		
1	Marine	66SR001	No.01	Berth 1	S	S	S	S	S	V	-	-	20-Mar-23	
2	Marine	66SR002	No.02	Berth 2	S	S	S	S	S	V	-	-	20-Mar-23	
3	Marine	66SR003	No.03	Berth 2	S	S	S	S	S	V	-	-	20-Mar-23	
4	Marine	66SR004	No.04	Berth 3	S	S	S	S	S	V	-	-	20-Mar-23	
5	Marine	66SR005	No.05	Berth 3	S	S	S	S	S	V	-	-	20-Mar-23	
6	Marine	66SR006	No.06	Berth 4	S	S	S	S	S	V	-	-	20-Mar-23	
7	Marine	66SR007	No.07	Berth 4	S	S	S	S	S	V	-	-	20-Mar-23	
8	Marine	66SR008	No.08	Berth 5	S	S	S	S	S	V	-	-	20-Mar-23	
9	Marine	66SR009	No.09	LPG Berth South	S	S	S	S	S	V	-	-	20-Mar-23	
10	Marine	66SR010	No.10	LPG Berth North	S	S	S	S	S	V	-	-	20-Mar-23	

Remarks :

Comment :

Definition: S = Satisfactory US = Un Satisfactory N/A = Not Applicable

V = Visual M = Monthly Q = Quarterly S = Semi-Annually A = Annually

Monthly Hose is present and coiled properly.
 Check there are no obstructions of the fire hoses reel.
 The nozzle is present and operated correctly.
 Ensure all moving parts are freely.
 Ensure that inspection tag is in place.
 Record on check sheet for the monthly inspection and punch the inspection tag.
 Quarterly Uncoil Hose check for damage.
 Check nozzle is working correctly.
 Open valve check for leaking
 Record on check sheet for the monthly inspection and punch the inspection tag.

Page 1 of 1

Inspection : Monthly
 Client : Star Petroleum Refining Public Company Limited
 Month : March 2023
 Inspection by : Ckristatam H.,Tunyasi U.,Nophdol H.,Sittiphatchai N.
 Equipment Type : Foam Cart

Item	Area	QR or BarCode	Serial Number	Location	Foam Nozzle	Hose	Inductors	Foam hose	Wheel	Foam no leak	Canvas	Inspection method			Inspection Date	Remark
												PM (1M)	PM (3M)	PM (12M)		
1	MARINE	FOAM CART-MCB-01	36MH5	Shelter1 / Berth 2	S	S	S	S	S	S	S	V	-	-	20-Mar-23	
2		FOAM CART-MCB-02	36MH4	Berth 3	S	S	S	S	S	S	S	V	-	-		
3		FOAM CART-MCB-03	36MH3	Berth 4	S	S	S	S	S	S	S	V	-	-		
4		FOAM CART-MCB-04	36MH2	Berth 4	S	S	S	S	S	S	S	V	-	-		
5		FOAM CART-MCB-05	36MH1	Berth 5	S	S	S	S	S	S	S	V	-	-		

Remarks :

Comment :

Definition: S = Satisfactory US = Un Satisfactory N/A = Not Applicable

V = Visual M = Monthly Q = Quarterly S = Semi-Annually A = Annually

Page 1 of 1

Inspection : Monthly

Client : Star Petroleum Refining Public Company Limited

Month : March 2023

Inspection by : Ckristatam H.,Tunyasi U.,Nophdol H.,Sittiphatchai N.

Equipment Type : Wheel Dry Chemical

Item	Area	QR or BarCode	Serial Number	Location	Nozzle	Hose	Valve	Cylinder seal	Cylinder Pressure	Wheel	Canvas	Pressure	Inspection method			Inspection Date	Remark
													PM (1M)	PM (3M)	PM (12M)		
1	MARINE	WHEEL DRY-MCB-01	NF-860069	Fire Pump House	S	S	S	S	S	S	S	2100 Psi	V	-	-	20-Mar-23	
2	MARINE	WHEEL DRY-MCB-02	NF-860071	Berth 3	S	S	S	S	S	S	S	2100 Psi	V	-	-	20-Mar-23	
3	MARINE	WHEEL DRY-MCB-03	NF-860064	Berth 2	S	S	S	S	S	S	S	2100 Psi	V	-	-	20-Mar-23	
4	MARINE	WHEEL DRY-MCB-04	NF-860080	Berth 3	S	S	S	S	S	S	S	2100 Psi	V	-	-	20-Mar-23	
5	MARINE	WHEEL DRY-MCB-05	NF-860066	Berth 5	S	S	S	S	S	S	S	2200 Psi	V	-	-	20-Mar-23	
6	MARINE	WHEEL DRY-MCB-06	NU-110005	Berth 5	S	S	S	S	S	S	S	2100 Psi	V	-	-	20-Mar-23	
7	MARINE	WHEEL DRY-MCB-07	NF-860087	LPG South Berth	S	S	S	S	S	S	S	2200 Psi	V	-	-	20-Mar-23	
8	MARINE	WHEEL DRY-MCB-08	NF-860074	LPG North Berth	S	S	S	S	S	S	S	2000 Psi	V	-	-	20-Mar-23	

Remark :

Definition: S = Satisfactory US = Un Satisfactory N/A = Not Applicable

V = Visual M = Monthly Q = Quarterly S = Semi-Annually A = Annually

Inspection details

Confirm that the extinguisher is in the proper place
Confirm access and visibility of the extinguisher is not obstructed.
Cover is in place
Confirm the operating instructions are legible.
Make sure any seals or tamper indicators are intact.
Confirm the red fill indicator is down position and cap is in place.
Examined for obvious physical damage, corrosion.

Monthly

Make sure the inspection tag is in place.
Check the wheels are in good condition.
Check the nitrogen cylinder pressure is in the proper pressure.
Check high-pressure hose is not severely cracked, cut or damaged.
Make sure the nozzle is in the closed position and nozzle valve is operated correctly.
Discharge hose is coiled correctly and on the hose holder.
Check seal of nitrogen cylinder is in place.

Quarterly

Record on check sheet for the monthly inspection and punch the inspection tag.
Exercise by lift up and down slightly to make sure dry chemical powder is not become to the cake inside.
Record on check sheet for the quarterly inspection and punch the inspection tag.

ภาคผนวก ข.11

กฎความปลอดภัยในการทำงาน


EHS-MS		
 Environment, Health and Safety (EHS) Rules and Regulations		
Prepared by: Jeerapa Arunpathip	Number: EHS-OT-QS-0005	
Approved by: Timothy A Potter	Revision: 05	
Low	Medium	High

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Purpose

The purpose of this procedure is to outline our expected standards and safe work practices for all personnel who work in SPRC with the objective that no one get hurt either on or off the job.

System Information

Summary These EHS Rules and Regulations shall apply to all personnel who are working at SPRC.

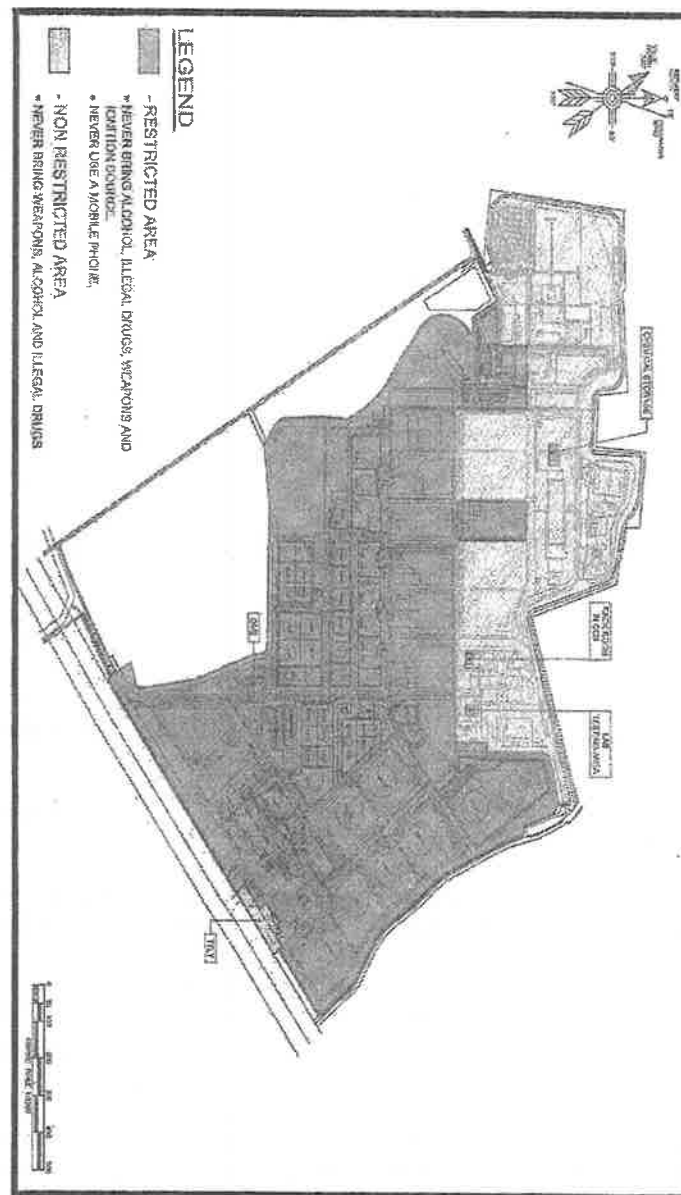
Roles and Responsibilities Everyone is responsible for their own safety and by following these Rules and Regulations will help ensure that everyone works safely both inside and outside of SPRC.

Precautions



Prerequisites

Detailed Activities

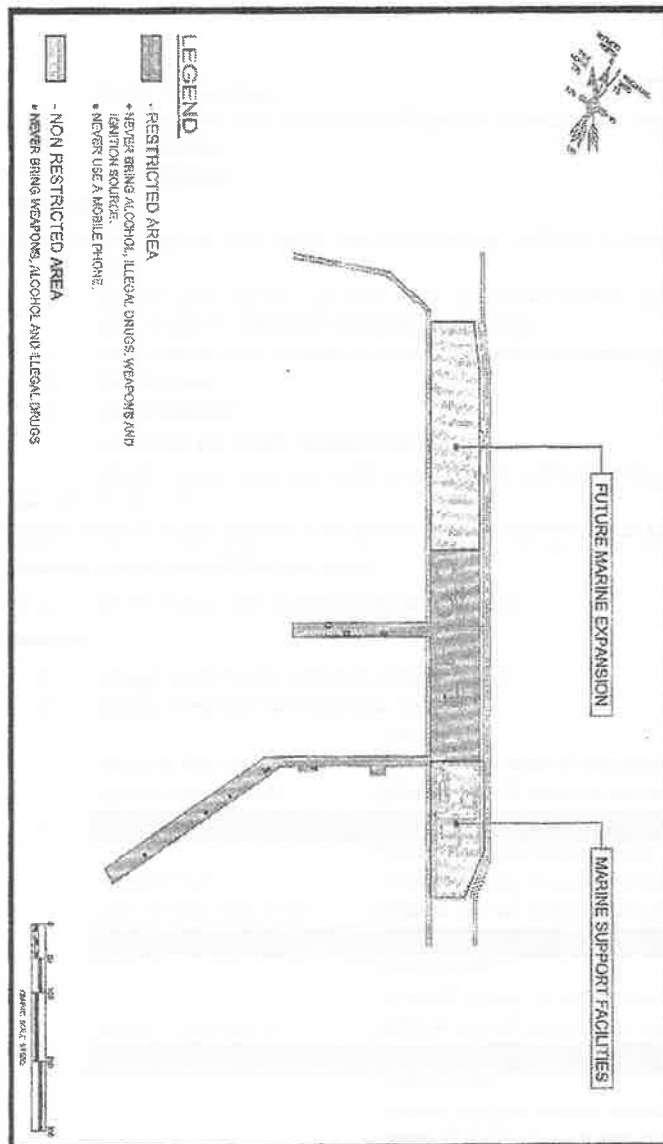
Who	Step	Action	Check
1. EHS Rules and Regulations			
1.1 The Golden Rules of Safety			
The Golden Rules of Safety has been developed to provide guidance to SPRC family to help avoid behaviors that can lead to incident or injury.			
There are 7 Golden Rules of Safety:			
ALL	1.	Never come to work when under the influence of alcohol or drugs (0% mg alcohol or negative test for illegal drugs).	
ALL	2.	Never bring alcohol, illegal drugs, weapons or ignition sources to the site	
ALL	3.	Never use a mobile phone in restricted areas.	
ALL	4.	Never smoke outside designated smoking areas.	
ALL	5.	Never engage in fighting or threatening behavior.	
ALL	6.	Never steal property from SPRC premises.	
ALL	7.	Never remove a scaffold board, handrail, or move or modify any scaffolding components.	
<p>Any person found not complying with the Golden Rules of Safety will be subject to disciplinary action, which may include:</p> <ul style="list-style-type: none"> • Unpaid suspension from work. • No longer being allowed to work on SPRC premises. • Termination of employment or contract. 			



Area classification for the golden rules of Safety: Refinery

Who	Step	Action	Check				
1.2 General EHS Rules and Regulations							
1.2.1 Access to Office Complex							
VST	1.2.1.1	Contact Security Guard at the Main Gate.					
VST	1.2.1.2	Contact Receptionist at main lobby, Administration Building.					
RCT	1.2.1.3	Contact the host of visitor.					
SPS	1.2.1.4	Escort the visitor at all times.					
1.2.2 Access to the Refinery / Marine Areas							
 NOTE		A safety briefing shall be conducted for the visitor by the SPRC personnel who is the host of the visit before conducting any business.					
SPS	1.2.2.1	SPRC personnel who are the host of visitor shall:					
SPS	1.	Escort the visitor to register at the Refinery Entrance Building (REB), Tank Truck Loading Terminal (TTLT) gate or Marine gate to receive an access card.					
VST	2.	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Plan to visit process areas</td><td>Sign in the log book at the Central Control Building (CCB), to receive permission from Area Owner.</td></tr></table>	IF	THEN	Plan to visit process areas	Sign in the log book at the Central Control Building (CCB), to receive permission from Area Owner.	
IF	THEN						
Plan to visit process areas	Sign in the log book at the Central Control Building (CCB), to receive permission from Area Owner.						
VST	3.	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Plan to visit tank farm area</td><td>Sign in the log book at the Oil Movement Building (OMB), to receive permission from Area Owner.</td></tr></table>	IF	THEN	Plan to visit tank farm area	Sign in the log book at the Oil Movement Building (OMB), to receive permission from Area Owner.	
IF	THEN						
Plan to visit tank farm area	Sign in the log book at the Oil Movement Building (OMB), to receive permission from Area Owner.						
VST	4.	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Plan to visit tank truck loading area</td><td>Sign in the log book at the Tank Truck Loading Terminal (TTLT) Building, to receive permission from Area Owner.</td></tr></table>	IF	THEN	Plan to visit tank truck loading area	Sign in the log book at the Tank Truck Loading Terminal (TTLT) Building, to receive permission from Area Owner.	
IF	THEN						
Plan to visit tank truck loading area	Sign in the log book at the Tank Truck Loading Terminal (TTLT) Building, to receive permission from Area Owner.						
VST	5.	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Plan to visit marine terminal pier area</td><td>Sign in the log book at the marine terminal pier gate, to receive permission from Area Owner.</td></tr></table>	IF	THEN	Plan to visit marine terminal pier area	Sign in the log book at the marine terminal pier gate, to receive permission from Area Owner.	
IF	THEN						
Plan to visit marine terminal pier area	Sign in the log book at the marine terminal pier gate, to receive permission from Area Owner.						
VST	6.	Return and sign out after the visit.					
SPS	7.	Notify Area Owner that you have returned.					
VST	8.	Return to the REB, TTLT or Marine gate and return access card.					
NAP	1.2.2.2	SPRC personnel and contractors who are not authorized to enter the Process, Tank Farm, TTLT and Marine Terminal Pier Areas shall:					
 NOTE		Authorized person mean Production Unit staff (indicator start with PN and PD) and other SPRC personnel or contractors who get approval permit to work from the area owner.					

Area classification for the golden rules of Safety: Marine



Who	Step	Action	Check
NAP	1.	IF	THEN
		Plan to visit process areas	Sign in the log book at the Central Control Building (CCB) or Centralized Operation Shelter (COS) to receive permission from Area Owner.
NAP	2.	IF	THEN
		Plan to visit tank farm area	Sign in the log book at the Oil Movement Building (OMB), to receive permission from Area Owner.
NAP	3.	IF	THEN
		Plan to visit tank truck loading area	Sign in the log book at the Tank Truck Loading Terminal (TTLT) Building, to receive permission from Area Owner.
NAP	4.	IF	THEN
		Plan to visit marine terminal pier area	Sign in the log book at the marine terminal pier gate, to receive permission from Area Owner.
NAP	5.	Return and sign out after the visit.	
NAP	6.	Notify Area Owner that you have returned.	

1.2.3 Security








ALL 1.2.3.1 **Carry** a SPRC identification badge at all time.

1.2.4 Personal Protective Equipment (PPE)




ALL	When working in the Refinery and Marine Terminal, the minimum PPE required to be worn at all times is:	
ALL	1	Safety helmet with chin strap. (Chin strap is required to be in use whenever the safety helmet is worn.)
ALL	2	Safety glasses
ALL	3	Safety shoes
ALL	4	Long sleeve shirt, trousers or coveralls using Fire Retardant Cloth (i.e., NOMEX). See areas required in Appendix: 1
ALL	5	Gloves. Wear gloves whenever entering process area or tank bund wall area.
ALL	When working in the Laboratory, the minimum PPE required to be worn at all times is:	
ALL	1	Safety glasses
ALL	2	Safety shoes
ALL	3	Long sleeves gown suit and long sleeves trousers using Fire Retardant Cloth (i.e., NOMEX)



Who	Step	Action	Check
ALL	When working in the Maintenance Workshop, the minimum PPE required to be worn at all times is:		
ALL	1	Safety glasses	
ALL	2	Safety shoes	
ALL	3	Long sleeves gown suit and long sleeves trousers using Fire Retardant Cloth (i.e., NOMEX)	
ALL	4	Gloves. The type of gloves shall be suitable for protection against relevant hazards (i.e. cutting protection gloves, chemical protection gloves, electrical protection gloves, heat resistance gloves etc.)	
ALL	PPE to be worn or used in specific working conditions and environment is:		
ALL	1	Hearing protection (ear plugs or ear muffs) are required when entering or working in: <ul style="list-style-type: none">• Process areas (i.e., hearing protection areas usually defined by warning signs),• A noise generating environment e.g. grinding, fiber metal cutting, jack hammer, high pressure water,• Octane testing room.	
ALL	2	Respiratory Protection Equipment, goggles and face shield shall be used for specific jobs or in any work environment where such hazards are identified, or as specified in the Permit To Work.	
ALL	3	Safety helmet with chin strap when an overhead crane is in use at the workshop area.	
ALL	PPE to be worn in rest tent which installed restricted area is:		
ALL	1	Safety glasses	
ALL	2	Safety shoes	
ALL	3	Long sleeves gown suit and long sleeves trousers using Fire Retardant Cloth (i.e., NOMEX)	

Who	Step	Action	Check
1.2.5 Safe Work Practice			
ALL	1.2.5.1	Follow the instruction of Safe Work Practices such as <u>Permit to Work</u> , <u>Confined Space Entry</u> , <u>Isolation of Equipment</u> , <u>Work at Height</u> , <u>Excavation</u> , <u>Electrical</u> , <u>Crane and Lifting Works</u> .	
1.2.6 Carry Personal Gas Monitor			
ALL	When entering Process areas, Tank Farms and Marine Terminal Piers:		
OPS	1.2.6.1	Carry a personal 4 gas monitor for all Operation Personnel (i.e. Operators, Shift Supervisors, Operation Coordinators) - one monitor <u>per person</u> .	
NOP	1.2.6.2	Carry a personal 4 gas monitor by at least one person in a group that is working at the same job/ equipment/ area. The workers must be adjacent in a manner that clear communications can be done.	
1.2.7 Use of Portable Radio			
ALL	1.2.7.1	Carry radios in the approved leather pouch.	
ALL	1.2.7.2	Use approved belt or strap.	
ALL	1.2.7.3	Use remote speaker.	

Who	Step	Action	Check
1.2.8 Motor Vehicle Safety			
 CAUTION		Do not allow any vehicle to enter restricted areas without an access pass issued by Security	
 CAUTION		Do not allow any person to ride on the bed of a truck without a proper seat, guard and roof.	
 CAUTION		Do not allow gasoline driven vehicles / engine to enter the restricted areas	
 NOTE		A gasoline engine used for grass cutting is allowed in the PD operating area	
ALL	1.	Wear seatbelts.	
ALL	2.	Follow the traffic signs.	
ALL	3.	Follow the speed limit for the following areas: <ul style="list-style-type: none"> Refinery Not Exceed 30 km/hr Administration complex Not Exceed 40 km/hr 	
ALL	4.	IF Diesel driven vehicles/engine is required to enter an Operating Unit or Hazardous Areas.	THEN Request and get permit from the unit operation personnel prior to entering the unit.
ALL	5.	IF In case of an emergency.	THEN 1. Stop the vehicle 2. Switch off the engine 3. Evacuate to assembly point
 CAUTION		Do not use a mobile phone while driving. In case of an important call e.g. duty call, the driver must park the vehicle in a safe manner before using the phone.	
ALL	6.	IF Driving company vehicle or personal vehicle for company business.	THEN Switch off the mobile phone.
ALL	7.	Switch off the company-issued mobile phone before driving any vehicle. The on-call duty team members and emergency response personnel attending to an emergency situation are allowed to leave the mobile phone on while driving company vehicles or personal vehicle for company business.	
 NOTE			
 CAUTION		Use of radio while driving must for listening only.	
ALL	8.	IF Need to have a conversation via radio while driving.	THEN Park the vehicle at safe location first.

Who	Step	Action	Check
1.2.9 Parking of Vehicles in the Refinery			
CAUTION Do not park vehicles in a way that obstructs the flow of traffic.			
ALL	1.2.9.1	Park at a minimum distance of 5 meters from the following: <ul style="list-style-type: none"> • Fire hydrants • Emergency showers • Emergency equipment painted red 	
ALL	1.2.9.2	Parking vehicles in a restricted area must follow the steps below:	
ALL	1.	Turn off the engine.	
ALL	2.	Leave the key in the ignition.	
ALL	3.	Leave the driver's door unlocked.	
1.2.10 Bicycles / Tricycle Safety			
CAUTION Do not use air instruments to inflate bicycle / tricycle tires.			
ALL	1.2.10.1	Verify that bicycles and tricycles are equipped with chain guards and brakes.	
ALL	1.2.10.2	Verify that chain guards and brakes are inspected and maintained in good and safe condition.	
ALL	1.2.10.3	Ride Bicycle/Tricycle under the main pipe rack in process areas.	
ALL	1.2.10.4	Park bicycle at the designated parking racks/area.	
ALL	1.2.10.5	Park bicycle/tricycle in any area: <ul style="list-style-type: none"> • At least 5 meters away from Fire Fighting Equipment • 2 meters away from any equipment • Do not cause any obstruction to operations 	
1.2.11 Photography Control			
CAUTION Do not take photos or videos at SPRC facilities unless authorized.			
ALL	1.2.11.1	Taking photos or videos in restricted areas:	
ALL	a.	Apply for a Photography Permit to get approval from SPRC Management for a Photography Badge.	
ALL	b.	Apply for a Hot Work Permit to get approval from authorized area personnel to take photos or videos.	
NSE	1.2.11.2	Taking photos or video in non-restricted area	
NSE	a.	Request and get approval from SPRC sponsor.	
NOTE Shift operator area owners do not require a permit to work for taking photos or videos if the area is confirmed as hydrocarbon free by gas testing.			
NOTE Refer to areas required for photography in Appendix 2.			

Who	Step	Action	Check
1.2.12 Equipment Operation			
 WARNING		Do not operate any equipment, valves or switches without authorization or permission from the area owner.	
1.2.13 Personnel Safety During Process Unit Commissioning, Shutdown and Start-up			
 WARNING		Do not allow all non-essential personnel access to process unit during Commissioning, Shutdown or Start-up period.	
1.2.14 Repetitive Stress Injury (RSI) Prevention			
ALL	1.2.14.1	Stop working with computer when RSI break program pop up on screen	
ALL	1.2.14.2	Follow RSI break program exercise as pop up on screen	
1.2.15 Short Service Employee (SSE)			
SSE	1.2.15.1	Identify SSE with the green SSE sticker during SSE period (6 months)	
SPS	1.2.15.2	Assign mentor for each SSE	
SPS	1.2.15.3	Look after and share work knowledge, skill, experience and safe work practice with SSE	
1.2.16 Incident/Near Miss Reporting			
ALL	1.2.16.1	Report all incidents or near misses to the relevant Supervisor or Manager immediately.	
1.2.17 Oil/Chemical Spill Handling			
 WARNING		Do not drain any kind of oils, chemicals or paints into a drain or sewer. If in doubt, consult a SPRC operator or a SPRC Environmental Specialist.	
ALL	1.2.15.2	IF Oil or chemicals spills	THEN 1. Notify area owner immediately 2. Stop leak (if safe to handle) 3. Clean the area
1.2.18 Housekeeping			
ALL	1.2.15.1	Maintain good housekeeping throughout the workplace and relevant facilities.	

Who	Step	Action	Check
Disciplinary Action for General EHS Rules and Regulations			
When any person sees a deviation from these EHS Rules and Regulations, they should immediately:			
 CAUTION	<ul style="list-style-type: none"> Tell – Specify what their concern for their safety is. Ask – If they see this concern and what they would do differently to be safe. Tell – Thank you and get their commitment to correct the unsafe behavior or condition. 		
	 WARNING In case the person who violated the EHS Rules and Regulations disagrees to correct their behavior, report to their supervisor. The supervisor may take appropriate coaching and other actions, including using the SPRC Employee Accountability Assessment (EAA) process.		

Revision No: 05
Date: 20 Mar 2019

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Appendix

1. Fire Retardant Cloth Identified Areas

Locations	Required Area	Not Required Area
Refinery	1. Process Areas 2. Tank Farm 3. Cleaning Yards 4. Sulphur Palletized Area 5. Waste Areas 6. Laboratory Operating Room 7. Metering Skids H2 / N2 8. Workshop 9. Chemical Warehouse 10. JGC Warehouse 11. Tank Truck Loading Terminal (TTLT)	1. Administration Building Complex 2. Refinery Main Road (Inside Car) 3. Central Control Building (CCB) 4. Clinics 5. Refinery Entrance Building (REB) 6. Workshop / Warehouse Offices 7. Contractor Office Cabin 8. Contractor Yard 9. Oil Movement Building (OMB) 10. Tank Truck Loading Terminal (TTLT) Building 11. Fire Station Building 12. Centralized Operation Shelter (COS) 13. Construction Buildings
Marine	1. Marine Terminal Pier* 2. Single Port Mooring (SPM)	1. Marine Control Building (MCB) 2. Excise Building



NOTE

*: Ship Crew, Ship Visitors who walk along the pier to ship are not required to wear Fire Retardant Cloth.

2. Photography Control Areas

Locations	Restricted Area	Non Restricted Area
Refinery	1. Process Areas 2. Tank Farm Areas 3. Central Control Room at CCB 4. Laboratory Room 5. Tank Truck Loading Terminal (TTLT) 6. Security Control Room at REB 7. Server Room at Administration Building 8. Technical Department Central File Rooms at Administration Building	1. Administration Building Area 2. Warehouse & Workshop Area 3. Employee Recreation Center (ERC) Area 4. Tank Truck Loading Terminal (TTLT) Building
Marine	1. Marine Terminal Pier 2. Single Port Mooring (SPM)	1. Marine Control Building (MCB) 2. Excise Building

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Definitions

Abbreviations

ALL	All SPRC personnel including SPRC employees, contractors, visitors, vendors and other parties who are doing business in SPRC premises.
VST	Visitor
RCT	Receptionist at Administration Building
SPS	SPRC Sponsor
NAP	SPRC Personnel and Contractors who are non-authorized persons to enter the restricted areas
OPS	Operations Personnel
NOP	Non-Operations Personnel
NSE	Non-SPRC Employee
SSE	Short Service Employee



References

Amendment List

Below is a list of changes between the previous and the current revision of this document.

Step/Section	Reason for change
Step 3/Section 1.2	Update minimum PPE in rest tent which located inside restricted area

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedure

ภาคผนวก ข.12

การจัดการกากของเสีย


Environment		
 Soild Waste Handling and Disposal Guideline		
Prepared by: Varoonnapa Chaingam	Number: EHS-WI-QS-1006	
Approved by: Pongkorn Chochuwong	Revision: 1.	
Low	Medium	High

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Purpose

The purpose of this work instruction is to define process and responsibilities associated with maintaining a waste management system and to ensure that alltypes of wastes generated from SPRC sites are properly classified, handled and safely disposed of in compliance with Thai legislation, Shareholders and International agreements, together with monitoring according to regulation of the waste management process.

SPRC waste management focus to contribute for sustainable development by avoidance of disposal of waste to landfill and minimize the amount of waste generated to recover/recycle/reuse wastes where possible, disposing the remainder in a safe and environmentally responsible and acceptable manner.

This document is classified as an information use/adherence category (IU), the review frequency is 5 years cycle. Next review is October 2025.

System Information

Summary

This procedure covers solid waste management and disposal guideline for all types of wastes, except radiation waste, untreated wastewater to ETP unit, from generation on SPRC premises (including Refinery Areas, Marine Terminal, Tank Truck Loading terminal (TTLT), Administration Building and Other support facilities to its final disposal, either internally or externally.) Solid waste covers liquid, slurry, powder and solid phase. The physical characteristics are as follows:

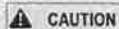
- Mass or Pieces e.g., metal scrap, unused material, GT filter, amine filter, etc.
- Dry Friable Granular e.g., spent catalyst, spent absorbent, sulfur, bio sludge, coke, etc.
- Powder e.g., incinerator ash, spent RFCCU catalyst, etc.
- Wet Non Pumpable e.g., asphalt, bottom tank sludge, etc.
- Liquid Pumpable e.g., oily sludge, contaminated chemical, obsolete chemical, etc.

This procedure is applicable to all activities and all personnel working in and for SPRC, whether they are directly employed by SPRC or indirectly via approved contractors.

Roles and Responsibility

Deviation from the procedure must be stopped and informed a line supervisor or line manager, concerned people for a solution prior to executing this procedure.

1. **Waste generator owns the waste (Production Units, Maintenance, Contractor, etc.):**
 - Segregate and Classify characteristic of waste
 - Provide MSDS and containment of waste such as steel drum 200 L, ensure good condition containment and ready moving. Complete a Hazardous Waste Disposal permit (HWDPP) and Waste Disposal permit and attach MSDS (If require) via the Electronic request form
 - Put the waste in designated container and affix a label on the container(s) or group of small containers.
 - Coordinate with Maintenance Support Services Team regarding the number and placement of the waste containers.
 - Notify Environmental Specialist or Maintenance Support Service team about the waste and getting approval for disposing of the waste
 - Control budget and expense on waste disposal.
2. **Environmental Specialist:**
 - Request permission for offsite waste transportation & disposal and export permit from authority.
 - Approve the method of waste disposal & waste disposal request (E-form).
 - Verify Off site waste disposal contractor compliance.
 - Verify accounting invoices before approval.
 - Maintain the list of the approved contractors.
 - Submit monthly and annually waste management reports to regulatory agencies.
 - Give a technical advice on waste handling and disposal.
 - Track waste documentations.
 - Coordinate with Waste disposal Contractor to provide waste containers e.g., Luggage box, Roll off box, truck and tanker truck.
 - Be the registered Waste Management System Controller refer to notification of MOI.



All waste disposal permits shall be approved by DIW before transport waste to offsite disposal facilities.

3. **Maintenance Support Services:**
 - Provide On-site waste transportation.
 - Consolidate waste manifests from contractor and send to Environmental specialist.
 - Arrange the Central Waste Storage Area and check waste inventory for every month, to ensure no waste has been stored **longer than 90 days**.
 - Perform a monthly audit at central waste area to ensure waste containers are in good condition and safe.
 - Provide a Material Gate Pass in the case waste is sent for offsite disposal.
 - Move waste from the location of **waste generator within 10 days** after the waste disposal request (E-form) has been approved by the Environmental Specialist.
 - Be a registered Waste Management system Operator refer to Notification of MOI.
4. **Process Engineer:**
 - Coordinate with procurement and contractor for reclamation spent catalyst e.g. spent Platformer catalyst, spent Hydro treating catalyst.
 - Coordinate with **the Environmental Specialist to obtain relevant permits for spent catalyst exporting.**
 - Label the spent catalyst container and coordinate with Procurement for storage and Shipping.
 - Coordinate with Environmental specialist to manage solid waste from plan shutdown production unit.
 - Provide waste containers steel drum (200 liters) for storing waste such as spent catalyst waste contained some pyrophoric material



All kind of spent catalysts (include spent catalyst sample but exclude active catalyst sample from RFCCU and Platformer) shall apply an export permit to comply with relevant regulations and other requirement e.g. Basel protocol, Hazardous Material act B.E. 2535 and Factory Act B.E. 2535.

5. **SPRC contractor sponsor:**
 - Complete **the Material Gate Pass for Materials**, which is used for waste (including waste water to be disposed offsite) tracking and inventory. A copy of waste manifest must be submitted to Environmental Specialist.
 - Supervise contractors for waste handling, tracking and inventory.
 - Ensure contractor responsible for any waste they generate at the refinery as contract agreement under Environmental Specialist's supervision.

6. Contractors:

- Segregate and classify wastes from routine waste, provide the specific waste area for temporary storing and have a notice board for communication.
- Keep waste in storage area tidy.
- Consult with SPRC sponsor and Environmental Specialist on offsite waste transportation and report a quantity of disposal waste.
- Ensure waste disposal permit in place before offsite transportation.

7. Administration Assistants:

- Collect used dry-cell batteries then coordinate with the Environmental specialist or Maintenance Support Services for disposal

8. Procurement Support: for export waste


- Ensure waste permit compliance before exporting.
- Provide export information, copy of Bill of Loading (B/L) and related document to Environment Specialist for stock cutting of exporting waste process.

Precautions [List any applicable precautions which must be observed while executing this procedure]

Prerequisites [List any applicable prerequisites which must be met before executing this procedure]

Detailed Activities

Who	Step	Action
1. Solid Waste Classification and Characterization		
		<p>Environmental Specialist maintains a waste list of common and recurring refinery waste including their recommended disposal method. (EHS-OT-QS-1004 Hazardous and Non Hazardous Waste List.doc Physical separation of the waste and well-segregating hazardous and non-hazardous waste will help to properly control cost of disposal and encourage of avoiding disposal to landfill.</p> <p>The main waste classifications are:</p> <ol style="list-style-type: none"> 1. Hazardous waste for offsite disposal <ul style="list-style-type: none"> • Spent catalyst e.g. Hydro treating spent catalyst, spent RFCCU. • General Hazardous waste e.g. bio sludge, asphalt, bottom tank sludge, contaminated chemical. • Infectious waste. 2. Non-hazardous waste for offsite disposal <ul style="list-style-type: none"> • General Non Hazardous waste e.g. GT filter, RO membrane Garbage and trash. • Recyclable waste e.g. metal scrap, paper scrap , wood scrap
1.1 Hazardous Waste for Offsite Disposal		
	1.1.1	<p>Spent Catalysts</p> <p>Spent catalysts, regeneration catalyst or reclamation spent catalysts, shall be disposed of by the MOI accredited treatment facility.</p> <p>Spent catalysts have generally generated during system shutdowns, except RFCCU spent catalyst generate during normal operation. Most of catalysts are in solid form.</p>
	1.1.2	<p>General Hazardous waste</p> <p>A hazardous waste and is defined by the Appendix 2 of the Notification of Ministry of industry on waste disposal B.E. 2548</p> <p>Waste generator should consult with Environmental Specialist for specific hazardous waste characteristics. Generally, hazardous wastes are characterized by the following properties:</p> <ul style="list-style-type: none"> • Ignitable (liquid; flash point < 60 ≥°C, flammable and compressed gas) • Corrosive (pH≤2 or pH ≥12.5) • Reactive (pyrophoric / burns in air) • Toxic (human health hazard) • Leachate <p>Example of hazardous wastes e.g. bio-sludge, oily sludge, Laboratory waste, oil contaminated wastes, insulation and refractory waste. They are sent to accredited offsite disposal / treatment facility.</p>

Who	Step	Action
	1.1.3	Infectious waste Infectious waste defined by the Public Health Ministry, Regulation of Infectious waste disposal B.E. 2545. These waste is generated from Site Clinic. They have been disposal by infection waste incineration at hospital incineration.
1.2 Non- hazardous Waste for Offsite Disposal		
		Non-hazardous wastes are defined by the notification of MOI on waste disposal B.E.2548. These wastes are mainly non-contaminated civil waste and used copper slag that uncontaminated a hazardous chemical. They shall send to accredited offsite disposal / treatment facility.
	1.2.1	Garbage and Trash Garbage and trash from offices, kitchens and cafeteria are collected separately in bins placed in convenient locations throughout the refinery. Bins are to be clearly labeled "Garbage and Trash" in English and in Thai. This waste is removed by the Map Ta Phut Municipality or other government approved waste disposal service.
	1.2.2	Recyclable Waste Recyclable waste is paper, scrap metals, scrap plastics, used equipment, excess construction materials, wood, clean empty drums and containers, and other similar materials. These materials are sent to the Central Waste Storage Area for further management and proper cleaning, then will be sold out or donated to local communities/agencies. Procurement, Process Engineering and Operations shall ensure waste containers minimization by using alternative containers such as semi-bulk or Iso-container. Waste generator shall ensure chemical in drums is empty.
 NOTE Refer Notification of Department of Industrial Work B.E. 2561, Exception to submit permission for Non- Hazardous waste e.g recyclable waste, construction waste		
END OF TASK		

Who	Step	Action				
2. Solid Waste Containers, Storage and Disposal Methods						
2.1 For Routine Wastes						
	2.1.1	Office waste, Recyclable waste and General Hazardous waste				
		Waste Type	Type of Waste Container	Frequency of Waste Collection	Storage Location	Disposal Methods
		Oily contaminate d materials(Co ntaminated rag, PPE, Cartridge filer	Red bin	Daily from Monday to Friday	Central Waste Storage Area	Recycling in the cement Factory
		Garbage and trash	Blue bin	Daily from Monday to Friday	Behind Canteen	Sanitary Landfill
		Waste Paper, Plastic bottle, Glass bottle, Can	Yellow bin	Daily from Monday to Friday	Central Waste Storage Area	Recycling
		Scrap Metal waste, Stainless steel ,Cable wire	N/A	As request or move to central waste area directly	Central Waste Storage Area	Recycling

Who	Step	Action				
	2.1.2	Hazardous waste from process				
		Waste Type	Type of Waste Container	Frequency of Waste Collection	Storage Location	Disposal Methods
		Spent FCC Catalyst	Contractor container	Once a week or as request	RFCCU direct to offsite waste disposal	Recycling in the Cement Factory
		Bio-sludge	Contractor container	As request	ETP direct to offsite waste disposal	Recycling in the Cement Factory
		Empty Contaminated Container	Contractor container	As request	Central Waste Storage Area (Shall have covers to prevent spill of residue and smell generated.	Recycling
		Insulation	Contractor container	As request	Central Waste Storage Area (Shall keep in plastic bag and tie it tight to prevent spill)	Recycling in the Cement Factory
		Infectious Waste	Special bin	As request	Clinic	Incineration at Hospital

Who	Step	Action				
	2.2	For Non Routine Wastes				
		Waste Type	Type of Waste Container	Frequency of Waste Collection	Storage	Waste Disposal Methods
		Hazardous waste	Drum 200 Liter or Contractor container	As per request	Central Waste Storage Area	Hazardous Waste Landfill or Cement Factory
		Non-hazardous waste	Drum 200 Liter or Contractor container	As per request	Central Waste Storage Area	Non Hazardous Waste Landfill or Cement Factory
		Spent Catalyst	Drum 200 Liter or Contractor container	As per request	Central Waste Storage Area	Hazardous Waste Landfill or Recycling at the reclaim metal facility at oversea
		Construction waste	Contractor container	As per request	Segregate and prevent mixing with routine waste	Offsite waste disposal/ sale to recycle factory
<p>All waste containers (bin) shall have covers and fully close to protect from rain water, animal and insect for odor and hygiene control.</p> <p>CAUTION Waste containers (bin) conditions shall be water proof containers, no leak and no severe corrosion on surface.</p> <p>Ensure no wastes stored in Central Waste Storage Area longer than 90 days.</p>						

Who	Step	Action
2.3 Special Waste Handling and Caution		
	2.3.1	General Caution The collected container is required a segregation and warning sign. Storage must not create to secondary environmental problem such as odor nuisance or groundwater contamination. Any run off from the storage yard must be treated as contaminated water. Store liquid waste in closed containers on a site surrounded by a bund wall, with drainage to a sewage system.
	2.3.2	Pyrophoric materials and other combustible materials handling When storing waste is unavoidable, special precautions (such as wetting) should be applied for pyrophoric materials and other combustible materials. Waste waiting for disposal must be stored in a dedicated area enclosed in an environmentally safe manner.
	2.3.3	Asbestos Waste handling All asbestos disposal containers must be labeled accordingly and keep wet it the double layer of plastic bag. The asbestos will be disposed as a Hazardous waste. It will be disposed by offsite waste disposal contractor
		Keep the asbestos waste in wet condition and wear respirator mask when handling with them to prevent harm with respiration system. WARNING Waste containers (bin) conditions shall be water proof containers, no leak and no severe corrosion on surface.
	2.3.4	Hazardous (used battery and used dragger tube) Waste storing Used battery, light and used dragger tube which contains toxic heavy metal shall be stored in separate bins. These wastes are sent to accredited offsite disposal / treatment facility.

Who	Step	Action				
	2.3.5	Mercury (Hg) Contaminated waste Handling and Disposal The wastes contained Hg ≥ 20 mg/kg are classified as Hazardous Waste, list is as follows: <ul style="list-style-type: none">Spent MRU absorbentHg Contaminated materials e.g., tray, tube bundle, pipeline, etc. Spent MRU absorbent waste shall be kept in leak proof containers with plastic liner, sealed cover and labeling. It shall be sent to recycle and dispose in authorized facilities in Thailand or oversea. If oversea disposal, the Maritime Transportation of Dangerous Goods and Basel Permit shall be complied with. For handling and disposal of Hg contaminated materials e.g., tray, tube bundle, pipeline, etc., please see the workflow. MRU filter, PPE, oily sludge, bio-sludge, chemical or wastewater from cleaning contaminated materials, etc. is potentially hazardous wastes. They are analyzed and sent to dispose in authorized facilities in Thailand.				
Hg Contaminated Materials Disposal Workflow						
WG	2.3.5.1	Seal with Plastic sheets until no mercury(Hg)vapor detected				
WG	2.3.5.2	Affix tracking Number of Equipment				
WG	2.3.5.3	Apply Asset Disposal Request				
WP	2.3.5.4	Verify Hg in Surfaced Material				
ES WP WP ES	2.3.5.5	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Is it Hazardous? (Hg on surfaced ≥ 20 mg/kg)</td><td>Request DIW waste Disposal Permit Clean until Hg< 20 mg/kg Sell as scrap Proceed Record & Peport to DIW DIW Industrial Waste Manifest&Disposal Report</td></tr></table>	IF	THEN	Is it Hazardous? (Hg on surfaced ≥ 20 mg/kg)	Request DIW waste Disposal Permit Clean until Hg< 20 mg/kg Sell as scrap Proceed Record & Peport to DIW DIW Industrial Waste Manifest&Disposal Report
IF	THEN					
Is it Hazardous? (Hg on surfaced ≥ 20 mg/kg)	Request DIW waste Disposal Permit Clean until Hg< 20 mg/kg Sell as scrap Proceed Record & Peport to DIW DIW Industrial Waste Manifest&Disposal Report					
WP ES	2.3.5.6	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Is it Hazardous? (Hg on surfaced ≤ 20 mg/kg)</td><td>Sell as scrap Proceed Record&Report to DIW DIW Industrial Waste Manifest&Disposal Report</td></tr></table>	IF	THEN	Is it Hazardous? (Hg on surfaced ≤ 20 mg/kg)	Sell as scrap Proceed Record&Report to DIW DIW Industrial Waste Manifest&Disposal Report
IF	THEN					
Is it Hazardous? (Hg on surfaced ≤ 20 mg/kg)	Sell as scrap Proceed Record&Report to DIW DIW Industrial Waste Manifest&Disposal Report					
END OF TASK						

Who	Step	Action
3. Solid Waste handling Procedure		
	3.1	Solid Waste Handling for Routine Wastes Workflow
WG	3.1.1	Segregate and store waste in Bin
MSST	3.1.2	Collect waste from full container and move to dedicated waste storage area
MSST	3.1.3	Coordinate with offsite waste disposal contractor and municipality officer
MSST	3.1.4	Complete the material gate pass for waste moving out
MSST	3.1.5	Collect waste manifest from the contractor and send to Envi. Specialist.
MSST	3.1.6	Move out waste from site
ES	3.1.7	Record waste tracking manifest and quantity

Who	Step	Action
	3.2	Solid Waste handling For Non Routine Waste Workflow
WG	3.2.1	Request waste container and waste lable (Steel drum 200 L) EHS-FO-QS-1006 Hazardous waste label EHS-FO-QS-1008 Waste label
WG	3.2.2	Affix waste lable on all containers and fill information e.g. waste type, property and plan name.
WG	3.2.3	Segregate and store waste in proper container
WG	3.2.4	Ensure all waste will be stored only in leak proof and sealed container.
WG	3.2.5	Create HWDP/WDP workflow via E-form EHS-FO-QS-1005 Hazardous& Non- Hazardous waste disposal permit form
ES	3.2.6	Review and approve waste disposal method
WG	3.2.7	Fill waste permit number on lable
WG	3.2.8	Coordinate with maintenance support team to move waste from area
WG	3.2.9	Coordinate with offsite waste disposal contractor
MSST	3.2.10	Prepare material gate pass for waste moving out
MSST	3.2.11	Move out waste form site
MSST	3.2.12	Collect waste manifest and send to Envi. specialist.
ES	3.2.13	Record waste type, Manifest and quantity
END OF TASK		


Who	Step	Action
4. Waste Tracking and Inventory System		
		<p>The following information is needed for the solid waste tracking and inventory:</p> <ul style="list-style-type: none"> • Waste generator plant names • Waste characterizations • Waste classifications • Waste quantities • Waste disposal methods • Names of disposal contractors refer to AVL process • SPRC Waste disposal permit from authorities • Waste Manifest • Waste Transportation and Disposal Cost. • Waste disposal Inventory • Waste inventory at the Central Waste area
END OF TASK		

Who	Step	Action
5. Write Off or Asset disposal		
		<p>Materials or asset cannot be disposed of unless asset disposal was approved by relevant manager. Approval authorities for asset disposal or write off are specified under the Manual of Delegated Authority (MODA).</p> <p>The approval process is initiated by the department in charge of the asset completing the following fields on the Asset Disposal Request form (Refer to Asset Disposal Procedure), and sending a signed hard copy to the Approver via the Corporate Services Department:</p> <p>For more details, please refer to Asset Disposal Procedure of the Corporate Services Department.</p>
END OF TASK		

Who	Step	Action
6. Offsite Solid Waste Disposal Contractor Selection		
		<p>Environmental Specialist qualifies offsite contractors, and maintains the list of the approved contractors. The following criteria are used to evaluate each contractor:</p> <ul style="list-style-type: none"> • Contractor disposal method • Contractor financial and insurance reports • Contractor transportation equipment • Contractor facilities • Contractor training, quality and safety program, and record • Contractor experience • Periodic re-evaluation • Contractor obtains all necessary permits and licenses from the Thai authorities for the work. <p>Actual guidelines for approving contractors are given in the Environmental Contractors Evaluation Checklist.</p> <p>Off Site Solid Waste Disposal Contractor Audit</p> <p>In order to track SPRC Waste and minimize the potential problems associated with using offsite contractors to handle and dispose of SPRC waste at an offsite (non-SPRC controlled) facility, the approved offsite waste disposal facilities are scheduled to be audit by Environmental Specialist at least once a year or review an environmental performance report e.g. Sustainable report, in case the disposal facility has been certified by ISO 14000 instead of actual site auditing.</p>
END OF TASK		

Who	Step	Action
7. Emergency Response Plan		
		<p>In case of spill / release from primary containment, please refer to Hazardous Material Release, Emergency Response plan and Pre-Fire plan.</p> <ul style="list-style-type: none"> • EHS-OT-QS-3117 Pre-Incident Plan Central Waste Area (Spill) • EHS-OT-QS-3118 Pre-Incident Plan PN Central Waste Area (Fire)
END OF TASK		

Who	Step	Action	
8. Spent Catalyst & Chemical Wastes Export.			
	Export Workflow		
WG	8.1	Fill in the Export Request Form Section I and submit form with Required documents to Enviromental specialist. AM-FO-AS-309:Export Request Form	
ES	8.2	IF	THEN
ES		Require Basel Permit	8.2.1 Submit for Basel Permit from DIW Basel Convention
ES			8.2.2 Submit for Export Permit from DIW Exprot Hazardous Substance Request Form/Hazardous Substanxe Export Permit
ES			8.2.3 Request for offsite waste dispsal permit from DIW (Sor-Kor 2)
ES			8.2.4 Send relevant permits to Procurement for further process
PMST			8.2.5 Provide waste exporting plan and quantity and related document to Environmental specilaist 5 working days in advance for notifying DIW.
ES			8.2.6 Notify DIW on waste delivering plan and quantity for cutting stock process before delivering.
PMST			8.2.7 Provide copy Bill of loading(B/L)and related document to Environmental specilist for final reprot of stock cutting.

Who	Step	Action	
		IF	THEN
ES	8.3	Not Require Basel Permit	8.3.1 Submit for Export Permit from DIW Export Hazardous Substance Request Form/Hazardous Substance Export Permit 8.3.2 Request for offsite waste disposal permit from DIW (Sor-Kor 2) 8.3.3 Send relevant permits to Procurement for further process 8.3.4 Provide waste exporting plan and quantity and related document to Environmental specialist 5 working days in advance for notifying DIW. 8.3.5 Notify DIW on waste delivering plan and quantity for cutting stock process before delivering. 8.3.6 Provide copy Bill of loading(B/L)and related document to Environmental specialist for final report of stock cutting.
ES			
ES			
PMST			
ES			
PMST			
<div>  NOTE </div> All kind of spent catalysts (include spent catalyst sample but exclude active catalyst sample from RFCCU and Platformer) shall apply an export permit to comply with relevant regulations and other requirement e.g. Basel protocol, Hazardous Material act B.E. 2535 and Factory Act B.E. 2535.			
END OF TASK			

Who	Step	Action
9. Measurement and Verification		
	The following leading and lagging indicators will be measured and tracked to determine the effectiveness of Waste Management Process.	
	9.1	Leading Indicator <ul style="list-style-type: none"> Number of SAA or V&V and 100% closed out finding from improper waste handling. Waste contractor audit once a year and 100% closed out finding.
	9.2	Lagging Indicator <ul style="list-style-type: none"> Number of incidents related to spill or smell complaint from waste handling. Number of Non-Compliance from waste management.
END OF TASK		

Who	Step	Action
10. Continual Improvement		
	Waste management can improve efficiencies in reducing waste and improving recycling with well segregated to minimize waste generation and identifying markets of waste processor for waste recycling and reuse.	
END OF TASK		

Appendix

Definitions

[List any applicable definitions associated with this procedure]

References

The following sources were used for this document:

- Caltex Petroleum Corporation, Environment Health & Safety Principles, EHS 0191, June 1993
- Notification of MOI on. Waste disposal B.E. 2548 , date 27 December 2005
- MOI Ministerial Proclamation no. 1/2541 dated May 1998
- Asset Disposal Procedures in Corporate Services Department
- Public Health Ministry, Regulation of Infectious waste disposal B.E. 2545
- Evaluation Guidelines for Environmental Contractors procedure.
- Notification of Ministry of industry on Identified size and type of factory method to control waste emission or etc that impact with environmental identified qualification of pollution controller B.E. 2545
- Notification of Ministry of industry, date 27 December B.E. 2547 on Manifest of Hazardous Waste system.
- Notification of Ministry of industry ,date 17 December B.E. 2547 on criteria and method of waste report by using Intranet system
- Ministerial regulation of MOI B.E. 2437,Refer to Hazardous Material Act B.E. 2535, effective date 17 November 2537
- Notification of Ministry of industrial on " inform information of producer ,exporter importer and hazardous material holder", effective date on 9 May B.E. 2543
- Notification of the MOI No. 2 dated 1st February B.E. 2555 (2012) on Identification of Factories Types, Size, Pollution Control System and Qualification of Pollution Control Facilities Supervisor/Operator Certification
- BASEL Convention of the Control of trans boundary movement of Hazardous waste and their waste under the Department of Industrial work (DIW) control

Amendment List

Below is a list of changes between the previous and the current revision of this document.

Amendment List before transfer to Smart Procedure.

Revision	Date	Page/Section	Reason	By
0	06-Oct-08	All	First release	QS/1
1	1-Jun-09	All	Review and delete terms that mention PUS	QS/22
		P.3/3	Waste management responsibility.	
			revise and add the responsibility of construction project contractor	
		P.8-9,10/5	Solid waste Container, storage and Disposal Methods.	
			5.1 correct a frequency of waste collection of spent FCCU and Bio-sludge	
			5.2 add waste type for construction waste Items	
			5.3 waste storage handling and special caution	
			5.3.4 Add mercury (Hg) absorbent waste disposal and handling	
		P.12-13/6	Solid Waste Handling Guideline	
			5.1 add additional record	
			5.2 update the request waste disposal via E-form	
2	15-Mar-12	P.3-4/3	Add a responsibility of Environmental specialist and maintenance support team. They shall move waste within 10 days after get an approval waste disposal permit (e-form) Refer to Car -EHS-11-008.	QS/22
		P.4-5/3	Revise a responsibility of process Engineer and add responsibility of Administration assistant	QS/22
		P.11/5.3	Review the asbestos handling	QS/22
		P.17/9	Add the alternative of Waste contractor performance auditing method "Environmental report reviewing, (e.g. SD report)" to instead of yearly site visit and auditing for the facility has been certified ISO14000.	QS/22
		P.21/12	Update list of refer documents.	QS/22
3	17-Oct-12	P.2/2	Revise Scope by adding physical characteristics of solid waste	QS/21
		P.4/3	Revised responsibility of Process Engineer caution on active catalyst sample from RFCCU and Platformer and add Procurement Responsibility for exporting waste.	
		P.19/11	Revise Chemical and catalyst export process refer to the spent catalyst incident investigation.	

4	22-Dec-14	All	Change SPRC logo	Varoonnapa C. (QS/22)
5	5-Feb-15	P.3-4/3	Revise responsibilities of Waste generator, Environmental Specialist and Maintenance Support Services. 1. Adding type of containment of Waste generator responsibilities. 2. Change responsibility between Environmental Specialist and Maintenance Support Services by adding to be coordinator with Waste Disposal Contractor to provide containment in scope of Environmental specialist	Varoonnapa C. (QS/22)
		P.13/9	Add new permit form in non-routine wastes workflow.	
6	20-Apr-16	P.11/5.3	Revised Mercury (Hg) Contaminated waste Handling and Disposal	Nipa N. (QS/21)
7	7-Oct-20	All	Reviewed and embed 3Rs concept to be guideline.	Varoonnap C.(QS/22)

Amendment List Smart Procedure

Version	Date	Page/Section	Description	By
01	16-Nov-20	All	Transforming to the smart Procedure	Varoonnapa C.

No changes specified in the current Revision of this Procedure.

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedures

**หนังสือแจ้งผลการพิจารณาขออนุญาต
ให้นำสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้วออกนอกบริเวณโรงงาน (สก.2)**



**หนังสือแจ้งผลการพิจารณา
การขออนุญาตให้นำสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้วออกนอกบริเวณโรงงาน
กรมโรงงานอุตสาหกรรม**

เลขที่ อก.6501-13126

หนังสือฉบับนี้ออกให้เพื่อแจ้งผลการพิจารณาของ
บริษัท สตาฟ ปีโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)
ทะเบียนโรงงานเลขที่ น.49-1/2537-ญนพ.
โดยมีรายละเอียดผลการพิจารณาดังนี้

ลำดับที่	รหัสวัสดุที่ไม่ใช่แล้ว	ชื่อวัสดุที่ไม่ใช่แล้ว	ปริมาณ (ตัน)	วิธีการกำจัด	ทะเบียนโรงงานผู้รับดำเนินการ	ผลการพิจารณา	เหตุผล
1	05 01 06	oily sludge	500	041	3-101-2/44สบ	อนุญาต	
2	05 01 06	oily sludge	500	041	3-101-3/44สบ	อนุญาต	
			500	042	3-106-71/53สบ	อนุญาต	
3	15 02 02	Industrial Oily Debris	100	042	3-106-71/53สบ	อนุญาต	
4	15 02 02	Activated Carbon	100	042	3-106-71/53สบ	อนุญาต	
5	15 02 02	Activated carbon	50	041	3-101-3/44สบ	อนุญาต	
6	16 07 08	Oily tank cleaning	200	042	3-106-71/53สบ	อนุญาต	
7	16 07 08	Oily Sludge	2000	042	น.105-1/2545-ญนพ.	อนุญาต	

รายการที่ได้รับอนุญาตมีผลบังคับใช้ตั้งแต่วันที่ 17 ตุลาคม 2565 ถึงวันที่ 16 ตุลาคม 2566

ออกให้ ณ วันที่ 8 กันยายน 2565

โดยกรมโรงงานอุตสาหกรรม

หนังสือแจ้งผลการพิจารณาฉบับนี้อินพุตโดยใช้ระบบอิเล็กทรอนิกส์



**บันทึกการเปลี่ยนแปลง แก้ไข และยกเลิก รายละเอียดในหนังสือแจ้งผลการพิจารณา
การขออนุญาตให้นำสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้วออกนอกบริเวณโรงงาน**

เลขที่ อก.6501-13126

ของ บริษัท สตาฟ ปีโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)
ทะเบียนโรงงานเลขที่ น.49-1/2537-ญนพ.

เลขรับที่	วัน/เดือน/ปี	สาระสำคัญของการเปลี่ยนแปลงในหนังสือแจ้งผลการพิจารณา	ผลการพิจารณา	เหตุผล
53807/2565	27/9/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 08 04 Spent RFCCU Catalyst(Non) โดยมีผู้รับดำเนินการคือ 3-101-2/44สบ ปริมาณ 2000 ตัน วิธีการกำจัด 044	อนุญาต	
53807/2565	27/9/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 08 04 Spent RFCCU Catalyst(Non) โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 500 ตัน วิธีการกำจัด 044	อนุญาต	
53234/2565	29/9/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 02 02 oily sand โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 200 ตัน วิธีการกำจัด 044	ไม่อนุญาต	04
53234/2565	29/9/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 02 02 Oily Sand โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 500 ตัน วิธีการกำจัด 044	อนุญาต	
53234/2565	29/9/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 02 02 Oily Sand โดยมีผู้รับดำเนินการคือ 3-101-2/44สบ ปริมาณ 500 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 08 07 Spent Catalyst โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 100 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 08 07 Spent Catalyst โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 300 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 12 01 16 Copper slag โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 800 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 12 01 16 Copper slag โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 500 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 07 01 10 Coke โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 100 ตัน วิธีการกำจัด 041	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 17 06 03 Insulation โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 100 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 12 01 16 Copper slag โดยมีผู้รับดำเนินการคือ 3-101-2/44สบ ปริมาณ 500 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 08 07 Spent Catalyst โดยมีผู้รับดำเนินการคือ 3-101-2/44สบ ปริมาณ 300 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 09 Dry Basin Sludge โดยมีผู้รับดำเนินการคือ 3-101-2/44สบ ปริมาณ 500 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 09 Dry Basin Sludge โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 500 ตัน วิธีการกำจัด 044	อนุญาต	
54351/2565	7/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 09 Dry Basin Sludge โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 500 ตัน วิธีการกำจัด 076	อนุญาต	
61712/2565	21/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 17 02 03 Rubber hose โดยมีผู้รับดำเนินการคือ 3-101-2/40สบ ปริมาณ 20 ตัน วิธีการกำจัด 071	อนุญาต	
61722/2565	21/10/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 06 Waste oily Sludge โดยมีผู้รับดำเนินการคือ 3-106-8/49สบ ปริมาณ 500 ตัน วิธีการกำจัด 042	อนุญาต	
63134/2565	1/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 02 02 Oily Sand โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 200 ตัน วิธีการกำจัด 044	อนุญาต	
63084/2565	4/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 02 03 Air Filter Form Gas Turbine โดยมีผู้รับดำเนินการคือ 3-101-2/40สบ ปริมาณ 30 ตัน วิธีการกำจัด 071	อนุญาต	
63090/2565	6/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 02 03 RO Membrane โดยมีผู้รับดำเนินการคือ 3-101-2/40สบ ปริมาณ 30 ตัน วิธีการกำจัด 071	อนุญาต	
63090/2565	6/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 16 Sulfur Waste โดยมีผู้รับดำเนินการคือ 3-101-2/40สบ ปริมาณ 100 ตัน วิธีการกำจัด 071	อนุญาต	

61923/2565	8/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 01 10 Contaminated Container โดยมีผู้รับดำเนินการคือ น.105-1/2545-ญพช. ปริมาณ 100 ตัน วิธีการกำจัด 049	อนุญาต	
61923/2565	8/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 02 15 Electronic Waste โดยมีผู้รับดำเนินการคือ น.105-1/2545-ญพช. ปริมาณ 100 ตัน วิธีการกำจัด 049	เอกสารไม่เพียงพอ	99(1)
61923/2565	8/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 02 15 Fluorescent Lamp โดยมีผู้รับดำเนินการคือ น.105-1/2545-ญพช. ปริมาณ 20 ตัน วิธีการกำจัด 049	อนุญาต	99(2)
61923/2565	8/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 06 01 Used Battery โดยมีผู้รับดำเนินการคือ 3-106-46/62รย ปริมาณ 35 ตัน วิธีการกำจัด 021	อนุญาต	
67345/2565	27/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 15 01 10 Empty Contaminated Lab Bottle โดยมีผู้รับดำเนินการคือ จ3-101-2/40สบ ปริมาณ 100 ตัน วิธีการกำจัด 073	อนุญาต	
67345/2565	27/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 05 06 Chemical Expired โดยมีผู้รับดำเนินการคือ 3-106-8/49สบ ปริมาณ 50 ตัน วิธีการกำจัด 042	ไม่อนุญาต	04
67345/2565	27/11/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 05 08 Asphalt โดยมีผู้รับดำเนินการคือ 3-106-8/49สบ ปริมาณ 50 ตัน วิธีการกำจัด 042	อนุญาต	
66808/2565	1/12/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 02 13 Electronic waste โดยมีผู้รับดำเนินการคือ น.105-1/2545-ญพช. ปริมาณ 100 ตัน วิธีการกำจัด 049	อนุญาต	
67784/2565	9/12/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 05 08 Chemical Expired โดยมีผู้รับดำเนินการคือ 3-106-8/49สบ ปริมาณ 30 ตัน วิธีการกำจัด 042	เอกสารไม่เพียงพอ	99
68624/2565	11/12/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 11 05 Refractory Brick โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 200 ตัน วิธีการกำจัด 044	อนุญาต	
68624/2565	11/12/65	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 11 05 Refractory Brick โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 200 ตัน วิธีการกำจัด 044	อนุญาต	
16292/2566	8/3/66	ขอเพิ่มปริมาณวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 07 08 Oily tank cleaning โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 2000 ตัน วิธีการกำจัด 042	อนุญาต	
16337/2566	8/3/66	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 07 08 Oily Tank Cleaning โดยมีผู้รับดำเนินการคือ 3-106-16/56สบ ปริมาณ 2000 ตัน วิธีการกำจัด 042	อนุญาต	
16896/2566	19/3/66	ขอเพิ่มรายการวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 16 07 08 Oily Tank Cleaning โดยมีผู้รับดำเนินการคือ 3-101-3/44สบ ปริมาณ 1000 ตัน วิธีการกำจัด 076	อนุญาต	
39843/2566	19/6/66	ขอเพิ่มปริมาณวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 06 oily sludge โดยมีผู้รับดำเนินการคือ 3-106-71/53สบ ปริมาณ 500 ตัน วิธีการกำจัด 042	อนุญาต	
41289/2566	23/6/66	ขอเพิ่มปริมาณวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 06 oily sludge โดยมีผู้รับดำเนินการคือ 3-101-2/44สบ ปริมาณ 500 ตัน วิธีการกำจัด 041	อนุญาต	
39888/2566	26/6/66	ขอเพิ่มปริมาณวัสดุที่ไม่ใช่แล้ว รหัสวัสดุที่ไม่ใช่แล้ว 05 01 16 Sulfur Waste โดยมีผู้รับดำเนินการคือ จ3-101-2/40สบ ปริมาณ 100 ตัน วิธีการกำจัด 071	อนุญาต	

วิธีการกำจัด

- 011 คัดแยกประเภทเพื่อจำหน่ายต่อ
- 021 กักเก็บในขณะบรรจุ
- 031 เป็นวัตถุอันตราย
- 032 ส่งกลับผู้ขายเพื่อกำจัด
- 033 ส่งกลับผู้ขายเพื่อนำกลับไปบรรจุใหม่หรือใช้ซ้ำ
- 039 นำกลับมาใช้ซ้ำด้วยวิธีอื่นๆ
- 041 เป็นเชื้อเพลิงทดแทน
- 042 ทำเชื้อเพลิงผสม
- 043 เผาเพื่อเอาพลังงาน
- 044 เป็นวัตถุดิบทดแทนในเคาเมทาปูซิเมนต์
- 049 นำกลับมาใช้ประโยชน์อีกด้วยวิธีอื่นๆ
- 051 เข้ากระบวนการบำบัดที่จะกลั่นออกมาใหม่
- 052 เข้ากระบวนการนำโลหะกลับมาใหม่
- 053 เข้ากระบวนการคืนสภาพกรด/ด่าง
- 054 เข้ากระบวนการคืนสภาพพลังงานปฏิกิริยา
- 059 บำบัดหรือวัสดุที่ไม่ใช่แล้วอื่น ๆ กลับกลับมาใหม่
- 061 บำบัดด้วยวิธีชีวภาพ
- 062 บำบัดด้วยวิธีทางเคมี
- 063 บำบัดด้วยวิธีทางกายภาพ
- 064 บำบัดด้วยวิธีทางเคมีและฟิสิกส์
- 065 บำบัดน้ำเสียด้วยวิธีทางเคมีกายภาพ
- 066 เซาะขุดบ่อบำบัดน้ำเสียรวม
- 067 ปรับเสถียรด้วยวิธีทางเคมี
- 068 ปรับเสถียร/ ครึ่งทางเคมีโดยใช้แผ่นค้ำหรือวัสดุ pozzolanic
- 069 วิธีบำบัดอื่นๆ เพื่อลดค่าความเป็นอันตราย
- 071 ผังกลบดินหรือขุดจากบ่อ เฉพาะของเสียไม่อันตรายเท่านั้น
- 072 ผังกลบอย่างปลอดภัย
- 073 ผังกลบอย่างปลอดภัย เมื่อทำการปรับเสถียรหรือทำให้เป็นก้อนแข็งแล้ว
- 074 เมทาวัลชในเคาเมทาปูซิเมนต์ทั่วไป
- 075 เมทาวัลชในเคาเมทาปูซิเมนต์สำหรับของเสียอันตราย
- 076 เมทาวัลชรวมในเคาเมทาปูซิเมนต์
- 077 อัตราการบำบัด ได้ดิน หรือขี้ดินได้ผล แบบเอกสารอนุญาตจากหน่วยงานอื่น
- 079 กำจัดด้วยวิธีอื่นๆ
- 081 รวบรวมและส่งออกนอกประเทศ
- 082 ฉนวนหรือที่คลุม เฉพาะของเสียไม่อันตรายเท่านั้น
- 083 หมักทำปุ๋ยหรือเป็นสารปรับปรุงคุณภาพดิน เฉพาะของเสียไม่อันตรายเท่านั้น
- 084 ทำอาหารสัตว์ เฉพาะของเสียไม่อันตรายเท่านั้น

เหตุผลการไม่อนุญาต

- 01 ผู้รับดำเนินการไม่ได้ใบอนุญาตให้ บำบัด/ กำจัดนำกลับ/ไปใช้ประโยชน์ใหม่
- 02 วิธีการบำบัด/กำจัด/นำกลับ/ไปใช้ประโยชน์ใหม่ ไม่เหมาะสม
- 03 ผู้รับดำเนินการได้รับคำสั่งปรับปรุงตามมาตรา 37 หรือหยุดประกอบกิจการ ตามมาตรา 39 ตามพระราชบัญญัติโรงงาน
- 04 ผู้รับดำเนินการไม่ยินยอมรับบำบัด/กำจัด/นำกลับ/ไปใช้ประโยชน์ใหม่
- 05 ไม่สามารถยื่นขออนุญาตฯ ผ่านสื่ออิเล็กทรอนิกส์ได้
- 06 ผู้ให้บริการยังไม่ได้แจ้งประกอบกิจการโรงงาน หรือไม่ได้แจ้งประกอบในส่วนขยาย
- 07 ไม่เข้าข่ายต้องขออนุญาตตามประกาศกระทรวงอุตสาหกรรม เรื่อง การกำจัดสิ่งปฏิกูลหรือวัสดุที่ไม่ใช่แล้ว พ.ศ. 2548

เหตุผลกรณีอื่นๆ

- 99 อื่นๆ ระบุ _NALCO® EC3031A ให้แบบผลวิเคราะห์ค่าความร้อน Thermal ให้พบหน่วยรหัสของเสีย และแยกการของเสียตามรหัสของเสีย...

เหตุผลที่ไม่สามารถพิจารณาได้ เนื่องจากขาดเอกสาร หรือเอกสารไม่

สมบูรณ์ ดังนี้

- 11 ส่วนใบอนุญาตประกอบกิจการโรงงานของผู้รับดำเนินการ และหรือ ผู้ก่อการผิดวัตถุประสงค์ที่ไม่ใช่แล้ว
- 12 ส่วนหนังสือรับรองจดทะเบียนนิติบุคคลของผู้รับดำเนินการ และหรือ ผู้ก่อการผิดวัตถุประสงค์ที่ไม่ใช่แล้ว
- 13 สัญญาหรือหนังสือยินยอมการบริการระหว่างผู้รับดำเนินการและผู้ก่อการผิดวัตถุประสงค์ที่ไม่ใช่แล้ว
- 14 หนังสือการประกันความรับผิด (Liability) ระหว่างผู้รับดำเนินการและผู้ก่อการผิดวัตถุประสงค์ที่ไม่ใช่แล้ว
- 15 หนังสือมอบอำนาจให้ผู้หนึ่งผู้ใดกระทำการใดๆ แทนกรรมการผู้มีอำนาจ พร้อมติดอากรแสตมป์ของผู้รับดำเนินการ และหรือ ผู้ก่อการผิดวัตถุประสงค์ที่ไม่ใช่แล้ว
- 16 ผลวิเคราะห์ค่าความเข้มข้นทั้งหมดของสิ่งเจือปน (total concentration : mg/kg)
- 17 ผลวิเคราะห์ด้วยวิธีการสกัดสาร (waste extraction test : mg/l)
- 18 รายละเอียดกระบวนการผลิตพร้อมแสดงจุดที่เกิดของเสีย
- 19 รายละเอียดกระบวนการของเสียเมื่อกำจัด/นำกลับ/นำกลับมาใช้ประโยชน์ใหม่
- 20 ส่วนใบอนุญาตส่งของกากอุตสาหกรรม (ว.อ.อ.)
- 21 หนังสือรับรองจากกรมวิชาการเกษตรในการทำปุ๋ยหรือสารปรับปรุงคุณภาพดิน
- 22 รหัสของสิ่งปฏิกูลหรือวัสดุที่ไม่ใช่แล้วไม่ถูกต้อง
- 23 รหัสของวิธีการกำจัดไม่ถูกต้อง
- 24 การลงนามของกรรมการผู้มีอำนาจในคำขอ/สัญญา/ขอ... ไม่ครบถ้วนตามเงื่อนไขในหนังสือรับรองการจดทะเบียนนิติบุคคล
- 25 เอกสารข้อมูลความปลอดภัย

หมายเหตุ กรณีไม่อนุญาต หากท่านไม่เห็นด้วย สามารถแจ้งเป็นหนังสือพร้อมเหตุผลไปยังอธิบดีกรมโรงงานอุตสาหกรรม ภายใน 15 วัน นับตั้งแต่วันที่ได้รับความแจ้งคำสั่งทางการปกครองนี้

สรุปรายการประเภทกากของเสียตามหนังสืออนุญาตให้นำสิ่งปฏิกูลหรือวัสดุที่ไม่ใช่แล้วออกนอกบริเวณโรงงาน (สก.2)
 ประกอบการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม ด้านการจัดการกากของเสีย ระหว่างเดือนมกราคม -

No.	รายการประเภทกากของเสีย ที่ได้ขออนุญาตให้นำสิ่งปฏิกูล ออกนอกบริเวณโรงงาน	เหตุผลการไม่อนุญาต	หมายเหตุ
1	Oily Sand	ผู้รับดำเนินการไม่ยินยอมรับไปบำบัด/ กำจัดหรือนำไปใช้ใหม่	ดำเนินการยื่นขออนุญาตใหม่ และได้รับการอนุญาตแล้ว
2	Electronic Waste	เอกสารไม่เพียงพอ	ดำเนินการยื่นขออนุญาตใหม่ และได้รับการอนุญาตแล้ว
3	Chemical Expried	เอกสารไม่เพียงพอ	ดำเนินการยื่นขออนุญาตใหม่ และอยู่ในช่วงรอการพิจารณา

ใบแจ้งเกี่ยวกับรายละเอียดสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว
สำหรับผู้ก่อกำเริบสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว (สก.3)

แบบ สก.3

ใบแจ้งเกี่ยวกับรายละเอียดสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว
สำหรับผู้ก่อกำเนิดสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว

วันที่ 24 เดือน กุมภาพันธ์ ปี พ.ศ.2566

ข้าพเจ้า นายพงษ์ภรณ์ ช่อข่วงศ์ ผู้ประกอบกิจการโรงงาน บริษัท สคาร์ ปีโคเรียม รีไฟน์นิง จำกัด (มหาชน)

สำนักงานเลขที่ 1 ถนนไอ-สามบี ตำบลบางคาพุด อำเภอเมืองระยอง จังหวัดระยอง

โทรศัพท์ 038-699000 โทรสาร 038-699999 ทะเบียนโรงงานเลขที่ น.49-1/2537-อุยพ.

โรงงานตั้งอยู่เลขที่ 1 ถนนไอ-สามบี ตำบลบางคาพุด อำเภอเมืองระยอง จังหวัดระยอง

โทรศัพท์ 038-699000 โทรสาร 038-699999

หมายเลขประจำตัว DTWG054800073

ขอแจ้งรายละเอียดเกี่ยวกับสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้วดังรายการต่อไปนี้

- ข้อ 1 รายละเอียดเกี่ยวกับสิ่งปฏิกูล หรือ วัสดุที่ไม่ใช้แล้วและวิธีการกำจัด

แสดงไว้ในเอกสารลำดับที่ 1
- ข้อ 2 แผนผังการไหลของกระบวนการผลิตและแหล่งที่มาของสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว

แสดงไว้ในเอกสารลำดับที่ 2
- ข้อ 3 แผนผังแสดงสถานที่เก็บ คัดแยก และจัดการภายในโรงงาน

แสดงไว้ในเอกสารลำดับที่ 3
- ข้อ 4 ความเปลี่ยนแปลงในปริมาณและความเป็นพิษของสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว ที่เกิดขึ้นเปรียบเทียบกับข้อมูลของปีที่ผ่านมา

แสดงไว้ในเอกสารลำดับที่ 4
- ข้อ 5 รายละเอียดของผู้ดำเนินการรวบรวม ขนส่ง บำบัดและกำจัดสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว

แสดงไว้ในเอกสารลำดับที่ 5
- ข้อ 6 แผนการป้องกันอุบัติเหตุเพื่อตอบสนององเหตุฉุกเฉินในกรณีเกิดเหตุรั่วไหล อคติภัย การระเบิดของสิ่งปฏิกูล หรือ วัสดุที่ไม่ใช้แล้ว หรือเหตุที่คาดไม่ถึง

แสดงไว้ในเอกสารลำดับที่ 6
- ข้อ 7 รายงานการตอบสนองและการประเมินผลกระทบต่อสิ่งแวดล้อมจากเหตุฉุกเฉินที่เกิดขึ้น

แสดงไว้ในเอกสารลำดับที่ 7

เอกสารลำดับที่ 1

รายละเอียดเกี่ยวกับสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้วและวิธีการกำจัด ประจำปี

ลำดับที่	รหัส	ชื่อและคำบรรยาย	ปริมาณ(ระบุหน่วย)	วิธีการกำจัด	ผู้ขนส่ง/จัดการ
1	150202	Industrial Oily Debris	84.310 ตัน	042	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
2	150202	oily sand	45.210 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
3	160807	Spent Catalyst	28.620 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
4	160807	Spent RFCCU Catalyst	23.320 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
5	161105	Refractory Brick	5.800 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
6	050106	Oily Sludge	141.900 ตัน	043	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท เอสซีจี ซิเมนต์ จำกัด
7	150202	Contaminated Garbage	3.830 ตัน	043	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท เอสซีจี ซิเมนต์ จำกัด
8	160601	Used Battery	24.426 ตัน	021	บริษัท นกัทรุ่งเรือง จำกัด/บริษัท นกัทรุ่งเรือง จำกัด
9	050106	oily sludge	24.610 ตัน	041	ห้างหุ้นส่วนจำกัด ซี.พี.พี.พรานสปอร์ด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2
10	050106	oily sludge	158.970 ตัน	041	ห้างหุ้นส่วนจำกัด ซี.พี.พี.พรานสปอร์ด/บริษัท ทีเออาร์เอฟ จำกัด
11	050106	oily sludge	235.000 ตัน	042	ห้างหุ้นส่วนจำกัด ซี.พี.พี.พรานสปอร์ด/บริษัท ทีเออาร์เอฟ จำกัด
12	130208	Used Lube Oil	10.490 ตัน	042	ห้างหุ้นส่วนจำกัด ซี.พี.พี.พรานสปอร์ด/บริษัท ทีเออาร์เอฟ จำกัด
13	150202	Activated Carbon	4.740 ตัน	042	ห้างหุ้นส่วนจำกัด ซี.พี.พี.พรานสปอร์ด/บริษัท ทีเออาร์เอฟ จำกัด
14	161105	Refractory Brick	22.340 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
15	170603	Insulation	68.050 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
16	050106	Waste oily sludge	339.310 ตัน	042	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท เบตเคอร์ เวลด์ กรีน จำกัด (มหาชน)
17	050106	oily sludge	82.670 ตัน	041	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
18	050106	oily sludge	103.580 ตัน	042	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
19	150202	Activated Carbon	37.860 ตัน	042	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
20	050116	Sulfur Waste	85.280 ตัน	071	จ3-101-2/40สบ
21	050106	oily sludge	719.840 ตัน	041	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2
22	050109	Dry Basin Sludge	16.900 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2
23	150203	Air Filter Form Gas Turbine	13.620 ตัน	071	จ3-101-2/40สบ
24	160804	Spent RFCCU Catalyst(Non)	2,302.640 ตัน	044	3-101-2/44สบ
25	160804	Spent RFCCU Catalyst(Non)	597.040 ตัน	044	3-106-71/53สบ
26	150110	Contaminated Container	42.910 ตัน	049	บริษัท เวสต์ แมเนจเม้นท์ สยาม จำกัด/บริษัท อีทีเอ็น อีโบลด์ เอนไวรอนเม้นทอล คอมเพล็กซ์ จำกัด

27	160708	Only Sludge	1,513,112 ตัน	042	บริษัท เวสต์ แมนจเม้นท์ สยาม จำกัด/บริษัท อีสเทิร์น ซิเบอร์ เอ็นไวรอนเม้นทอล คอมเพ็กซ์ จำกัด
28	170603	Insulation	2,400 ตัน	044	บริษัท เบดเดอร์ เวิลด์ ทรานสปอร์ต จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
29	050106	Waste oily sludge	164,110 ตัน	042	บริษัท เบดเดอร์ เวิลด์ ทรานสปอร์ต จำกัด/บริษัท เบดเดอร์ เวิลด์ กรีน จำกัด (มหาชน)
30	050106	oily sludge	6,830 ตัน	042	นาอรุ่งศักดิ์ วีระพันธ์/บริษัท ทีเออาร์เอฟ จำกัด
31	150202	Activated Carbon	7,980 ตัน	042	นาอรุ่งศักดิ์ วีระพันธ์/บริษัท ทีเออาร์เอฟ จำกัด
32	150202	Industrial Oily Debris	4,720 ตัน	042	นาอรุ่งศักดิ์ วีระพันธ์/บริษัท ทีเออาร์เอฟ จำกัด
33	150202	Oily Sand	10,940 ตัน	044	นาอรุ่งศักดิ์ วีระพันธ์/บริษัท ทีเออาร์เอฟ จำกัด
34	160708	Oily tank cleaning	4,320 ตัน	042	นาอรุ่งศักดิ์ วีระพันธ์/บริษัท ทีเออาร์เอฟ จำกัด
35	120116	Copper slag	39,900 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2
36	160807	Spent RFCCU Catalyst	22,640 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2
37	050106	oily sludge	75,730 ตัน	041	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
38	120116	Copper slag	727,780 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
39	150202	Oily Sand	289,260 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
40	160807	Spent Catalyst	62,850 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
41	160807	Spent RFCCU Catalyst	42,480 ตัน	044	บริษัท ทีเออาร์เอฟ จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
42	160807	Spent Catalyst	11,490 ตัน	044	นาอรุ่งศักดิ์ วีระพันธ์/บริษัท ทีเออาร์เอฟ จำกัด
43	150202	Industrial Oily Debris	4,800 ตัน	042	บริษัท วีระพันธ์ พี.เอ็ม. ทรานสปอร์ต จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
44	161105	Refractory Brick	3,820 ตัน	044	บริษัท วีระพันธ์ พี.เอ็ม. ทรานสปอร์ต จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
45	160807	Spent Catalyst (Mercury Absorbent)	41,460 ตัน	052	ห้างหุ้นส่วนจำกัด สักทอง ทรานสปอร์ต/บริษัท นิเอมที เอเซีย จำกัด
46	160708	Chemical Cleaning Wastewater	25,640 ตัน	042	บริษัท เอ็ม เค ซี ทรานสปอร์ต 2010 จำกัด/บริษัท เบดเดอร์ เวิลด์ กรีน จำกัด (มหาชน)
47	050106	oily sludge	84,540 ตัน	041	บริษัท เอ็ม เค ซี ทรานสปอร์ต 2010 จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
48	160708	Oily tank cleaning	9,240 ตัน	042	บริษัท เอ็ม เค ซี ทรานสปอร์ต 2010 จำกัด/บริษัท ทีเออาร์เอฟ จำกัด
49	150202	Oily Sand	9,330 ตัน	044	บริษัท วีระพันธ์ พี.เอ็ม. ทรานสปอร์ต จำกัด/บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3
50	050106	oily sludge	17,780 ตัน	041	บริษัท วีระพันธ์ พี.เอ็ม. ทรานสปอร์ต จำกัด/บริษัท ทีเออาร์เอฟ จำกัด

ลงชื่อ

ผู้จัดเตรียมเอกสาร

ลงชื่อ

ผู้ประกอบกิจการโรงงาน

(นางสาววรุณภา ชัยงาม)

(นายพงษ์กรณ ช่อสูงศักดิ์)

ตำแหน่ง ผู้เชี่ยวชาญด้านสิ่งแวดล้อม

วันที่ 24 เดือน กุมภาพันธ์ ปี พ.ศ. 2566

เอกสารลำดับที่ 2

แผนผังการไหลของกระบวนการผลิตและแหล่งที่มาของสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว

เอกสารลำดับที่ 3

แผนผังสถานที่เก็บ คัดแยก และจัดการภายในโรงงาน

เอกสารลำดับที่ 4

รายงานการเปลี่ยนแปลงในปริมาณและความเป็นพิษของสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้วที่เกิดขึ้นเปรียบเทียบกับข้อมูลของปีที่ผ่านมา

ลำดับที่	รหัส	ชื่อและคำบรรยาย	ปี/ช่วงเวลา 2562		ปี/ช่วงเวลา 2563		ปี/ช่วงเวลา 2564		ปี/ช่วงเวลา 2565	
			ปริมาณ	ความเข้มข้น	ปริมาณ	ความเข้มข้น	ปริมาณ	ความเข้มข้น	ปริมาณ	ความเข้มข้น
1	150110	Empty contaminated container	13,805 ตัน						0	
2	050106	oily sludge	3805.14 ตัน						1651.45 ตัน	
3	050106	Waste oily sludge	1276.285 ตัน						703.42 ตัน	
4	050109	Dry Basin Sludge	159.86 ตัน						16.9 ตัน	
5	050116	Sulfur Waste	46.3 ตัน						85.28 ตัน	
6	120116	Copper slag	561.51 ตัน						767.68 ตัน	
7	130208	Used Lube Oil	1.89 ตัน						10.49 ตัน	
8	150110	Contaminated Container	27.09 ตัน						42.91 ตัน	
9	150202	Activated Carbon	56.06 ตัน						50.58 ตัน	
10	150202	Contaminated Garbage							3.83 ตัน	
11	150202	Industrial Oily Debris	40.87 ตัน						93.83 ตัน	
12	150202	Oily Sand	302.09 ตัน						354.74 ตัน	
13	150203	Air Filter Form Gas Turbine							13.62 ตัน	
14	160601	Used Battery	28.247 ตัน						24.426 ตัน	
15	160708	Chemical Cleaning Wastewater	1647.46 ตัน						25.64 ตัน	
16	160708	Oily Sludge	2974.481 ตัน						1513.112 ตัน	
17	160708	Oily tank cleaning	398.17 ตัน						13.56 ตัน	

18	160804	Spent RFCCU Catalyst(Non)							2899.68 ตัน	
19	160807	Spent Catalyst	125.39 ตัน						102.96 ตัน	
20	160807	Spent Catalyst (Mercury Absorbent)	93.28 ตัน						41.46 ตัน	
21	160807	Spent RFCCU Catalyst	1430.39 ตัน						88.44 ตัน	
22	161105	Refractory Brick							31.96 ตัน	
23	170603	Insulation	152.14 ตัน						70.45 ตัน	
24	150203	Air Filter From GT	7.8 ตัน						0	
25	070110	Coke	38.57 ตัน						0	
26	170901	Construction and demolition waste containing mercury	16.93 ตัน						0	
27	150202	Contaminated Material	124.41 ตัน						0	
28	050109	Dry Basin Sludge(Wei)	420.07 ตัน						0	
29	150110	Empty contaminated lab bottles	6.57 ตัน						0	
30	160506	Expired Chemical	10.45 ตัน						0	
31	170203	Fill pack cooling	67.09 ตัน						0	
32	161001	Oily tank cleaning	958.34 ตัน						0	
33	161105	Refractory Brick	101.58 ตัน						0	
34	170203	Rubber hose	23.73 ตัน						0	
35	150202	Salt Waste	233.05 ตัน						0	
36	050109	Sludge(Polishing Pond)	691.72 ตัน						0	
37	170904	วัสดุจากเรือถอน	135.42 ตัน						0	

38	150103	เศษไม้	110.89 ตัน						0	
39	170405	เศษเหล็ก	188.34 ตัน						0	
40	160213	Electronic waste	32.99 ตัน						0	
41	160215	Electronic Waste	7.1 ตัน						0	

หมายเหตุ ถ้ามี ให้แนบผลการตรวจวิเคราะห์สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้วมาด้วย

ลงชื่อ _____ ผู้จัดเตรียมเอกสาร ลงชื่อ _____ ผู้ประกอบการโรงงาน

(นางสาวรุณนภา ชัยงาม)

(นายพงษ์กรณ ช่อสูงวงศ์)

ตำแหน่ง ผู้เชี่ยวชาญด้านสิ่งแวดล้อม

ตำแหน่ง ผู้จัดการฝ่ายบริหารระบบความปลอดภัย คุณภาพสิ่งแวดล้อม และอาชีวอนามัย

เอกสารลำดับที่ 5

รายละเอียดของผู้ดำเนินการรวบรวม ขนส่ง บำบัดและกำจัดสิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว

ชื่อผู้ประกอบการรายที่ 1 : บริษัท อีสเทิร์น ซิเบอร์คเอนไวรอนเมนทอล คอมเพล็กซ์ จำกัด

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWD050900091

☐ ผู้รวบรวมและขนส่ง

ที่อยู่ : 88 ม.8 ถ.ทางหลวงหมายเลข 331 ตำบล บ่อวิน อำเภอ ศรีราชา จังหวัด ชลบุรี

☒ ผู้บำบัดและกำจัด

โทรศัพท์ : 0 3834 6364

โทรสาร :

วิธีการ/ขนส่ง :

ชื่อผู้ประกอบการรายที่ 2 : บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWD056200090

☐ ผู้รวบรวมและขนส่ง

ที่อยู่ : 219 ม.5 ถ.มิตรภาพ ตำบล ทับทวน อำเภอ แกลง จังหวัด สระบุรี

☒ ผู้บำบัดและกำจัด

โทรศัพท์ : 036-240930

โทรสาร :

วิธีการ/ขนส่ง :

ชื่อผู้ประกอบการรายที่ 3 : บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWD056200090

☐ ผู้รวบรวมและขนส่ง

ที่อยู่ : 219 ม.5 ถ.มิตรภาพ ตำบล ทับทวน อำเภอ แกลง จังหวัด สระบุรี

☒ ผู้บำบัดและกำจัด

โทรศัพท์ : 036-240930

โทรสาร :

วิธีการ/ขนส่ง :

ชื่อผู้ประกอบการรายที่ 4 : บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWD056200108

☐ ผู้รวบรวมและขนส่ง

ที่อยู่ : 99 ม.9 ถ.มิตรภาพ ตำบล ทับทวน อำเภอ แกลง จังหวัด สระบุรี

☒ ผู้บำบัดและกำจัด

โทรศัพท์ : 036-240930

โทรสาร :

วิธีการ/ขนส่ง :

ชื่อผู้ประกอบการรายที่ 5 : บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWD056200108

☐ ผู้รวบรวมและขนส่ง

ที่อยู่ : 99 ม.9 ถ.มิตรภาพ ตำบล ทับทวน อำเภอ แกลง จังหวัด สระบุรี

☒ ผู้บำบัดและกำจัด

โทรศัพท์ : 036-240930

โทรสาร :

วิธีการ/ขนส่ง :

ชื่อผู้ประกอบการรายที่ 6 : บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 3

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWD056200108

☐ ผู้รวบรวมและขนส่ง

ที่อยู่ : 99 ม.9 ด.มิตรภาพ ตำบล หันกว้าง อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 036-240930

โทรสาร :

วิธีการ/ขนส่ง :

☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 7 : บริษัท เบตเตอร์ เวลด์ กรีน จำกัด (มหาชน)

หมายเลขประจำตัว : DIWD066200031

ที่อยู่ : โฉนดที่ 37 เล่ม 1 ก หน้า 37 ม.8 ด. - ตำบล ห้วยแห้ง อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 027310080

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 8 : บริษัท เบตเตอร์ เวลด์ กรีน จำกัด (มหาชน)

หมายเลขประจำตัว : DIWD066200031

ที่อยู่ : โฉนดที่ 37 เล่ม 1 ก หน้า 37 ม.8 ด. - ตำบล ห้วยแห้ง อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 027310080

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 9 : บริษัท เบตเตอร์ เวลด์ กรีน จำกัด (มหาชน)

หมายเลขประจำตัว : DIWD066200031

ที่อยู่ : โฉนดที่ 37 เล่ม 1 ก หน้า 37 ม.8 ด. - ตำบล ห้วยแห้ง อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 027310080

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 10 : บริษัท บีเอ็มที เอเชีย จำกัด

หมายเลขประจำตัว : DIWD125800011

ที่อยู่ : 967 หมู่ที่ 4 นิคมอุตสาหกรรมบางปู ถนนสุขุมวิทสายเก่า ตำบล แพรกษา อำเภอ เมืองสมุทรปราการ จังหวัด สมุทรปราการ

โทรศัพท์ : 0 2709 6725

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 11 : บริษัท ทีเออาร์เอฟ จำกัด

หมายเลขประจำตัว : DIWD126200013

ที่อยู่ : 83/1 หมู่ที่ 7 ถนนแม่จอย-บ้านนา (3222) ตำบล ชำผักแพว อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 0 2935 6848

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 12 : บริษัท ทีเออาร์เอฟ จำกัด

หมายเลขประจำตัว : DIWD126200013

ที่อยู่ : 83/1 หมู่ที่ 7 ถนนแม่จอย-บ้านนา (3222) ตำบล ชำผักแพว อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 0 2935 6848

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 13 : บริษัท ทีเออาร์เอฟ จำกัด

หมายเลขประจำตัว : DIWD126200013

ที่อยู่ : 83/1 หมู่ที่ 7 ถนนแม่จอย-บ้านนา (3222) ตำบล ชำผักแพว อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 0 2935 6848

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 14 : บริษัท ทีเออาร์เอฟ จำกัด

หมายเลขประจำตัว : DIWD126200013

ที่อยู่ : 83/1 หมู่ที่ 7 ถนนแม่จอย-บ้านนา (3222) ตำบล ชำผักแพว อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 0 2935 6848

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 15 : บริษัท ทีเออาร์เอฟ จำกัด

หมายเลขประจำตัว : DIWD126200013

ที่อยู่ : 83/1 หมู่ที่ 7 ถนนแม่จอย-บ้านนา (3222) ตำบล ชำผักแพว อำเภอ แม่จอย จังหวัด สระบุรี

โทรศัพท์ : 0 2935 6848

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 16 : บริษัท เอสซีจี ซิเมนต์ จำกัด

หมายเลขประจำตัว : DIWD194800017

ที่อยู่ : แปลงที่ดิน I-28 ตำบล มาบตาพุด อำเภอ เมืองระยอง จังหวัด ระยอง

โทรศัพท์ : 025263163

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 17 : บริษัท นกักรุ่งเรือง จำกัด

หมายเลขประจำตัว : DIWD204800015

ที่อยู่ : 93/2 ถนนชากกลาง-มิตรประชา ตำบล ห้วยโป่ง อำเภอ เมืองระยอง จังหวัด ระยอง

โทรศัพท์ : 081-6391878

โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด
☐ ผู้รวบรวมและขนส่ง
☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 18 : บริษัท เวสท์ แมเนจเม้นท์ สยาม จำกัด

หมายเลขประจำตัว : DIWT050200708

ที่อยู่ : 591 อาคารยูบีซี 2 ชั้น 22 ถ.สุขุมวิท 33 ตำบล คลองตันเหนือ อำเภอ วัฒนา จังหวัด กรุงเทพมหานคร

โทรศัพท์ : 0 2261 0264 7 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 19 : บริษัท เบคเตอร์ เวิลด์ ทรานสปอร์ต จำกัด

หมายเลขประจำตัว : DIWT050200740

ที่อยู่ : 488 ซอยลาดพร้าว 130 (มหาดไทย 2) ถนนลาดพร้าว ตำบล คลองจั่น อำเภอ บางกะปิ จังหวัด กรุงเทพมหานคร

โทรศัพท์ : 0 2731 1815 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 20 : นายรุ่งศักดิ์ วีระพันธ์

หมายเลขประจำตัว : DIWT054800099

ที่อยู่ : 383 ถ.สุขุมวิท ตำบล ห้วยโป่ง อำเภอ เมืองระยอง จังหวัด ระยอง

โทรศัพท์ : 0 162 6561 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 21 : บริษัท ทีเออาร์เอฟ จำกัด

หมายเลขประจำตัว : DIWT060200656

ที่อยู่ : 636/4 ซ.รามคำแหง 39 (เทพธิดา1) ถ.ประชาธิปไตย ตำบล วังทองหลาง อำเภอ วังทองหลาง จังหวัด กรุงเทพมหานคร

โทรศัพท์ : 0 2935 6846 8 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 22 : บริษัท นกัทรุ่งเรือง จำกัด

หมายเลขประจำตัว : DIWT094800026

ที่อยู่ : 102/1 ถ.ทองหลางระยองสาย 3191 ตำบล มาบข่า อำเภอ นิคมพัฒนา จังหวัด ระยอง

โทรศัพท์ : 0 3891 5028 9 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 23 : ห้างหุ้นส่วนจำกัด ซี.พี.พี.ทรานสปอร์ต

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWT126200047

ที่อยู่ : 70/6 หมู่ที่ 3 ตำบล หอนงปลาไหล อำเภอ เมืองสระบุรี จังหวัด สระบุรี

โทรศัพท์ : 08 6975 0186,08 6846 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 24 : ห้างหุ้นส่วนจำกัด สักทอง ทราน สปอร์ต

หมายเลขประจำตัว : DIWT135600013

ที่อยู่ : 252/3 หมู่ที่ 2 ตำบล พะวง อำเภอ เมืองสงขลา จังหวัด สงขลา

โทรศัพท์ : 0 744 7245 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 25 : บริษัท เอ็ม เล ซี ทรานสปอร์ต 2010 จำกัด

หมายเลขประจำตัว : DIWT196200018

ที่อยู่ : 153/1 หมู่ที่ 4 ตำบล ท่ามะปราง อำเภอ แก่งคอย จังหวัด สระบุรี

โทรศัพท์ : 06 4302 1907 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 26 : บริษัท วีระพันธ์ พี.เอ็ม. ทรานสปอร์ต จำกัด

หมายเลขประจำตัว : DIWT214800021

ที่อยู่ : 3/15 ถนนหนองหัว ตำบล ห้วยโป่ง อำเภอ เมืองระยอง จังหวัด ระยอง

โทรศัพท์ : 08 1987 7414 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☐ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 27 : บริษัท ปูนซิเมนต์นครหลวง จำกัด (มหาชน) โรงงาน 2

หมายเลขประจำตัว : DIWD056200090

ที่อยู่ : 219 ม.5 ถ.มิตรภาพ ตำบล ทับทวน อำเภอ แก่งคอย จังหวัด สระบุรี

โทรศัพท์ : 036-240930 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 28 : บริษัท ทีเออาร์เอฟ จำกัด

หมายเลขประจำตัว : DIWD126200013

ที่อยู่ : 83/1 ตำบล ชำผักแพว อำเภอ แก่งคอย จังหวัด สระบุรี

โทรศัพท์ : 025309082 โทรสาร :

วิธีการ/ขนส่ง :

☐ ผู้ก่อกำเนิด

☒ ผู้รวบรวมและขนส่ง

☒ ผู้บำบัดและกำจัด

ชื่อผู้ประกอบการรายที่ 29 : บริษัท เบคเตอร์ เวิลด์ กรีน จำกัด (มหาชน)

☐ ผู้ก่อกำเนิด

หมายเลขประจำตัว : DIWD056200025

☐ ผู้รวบรวมและขนส่ง

ที่อยู่ : ตำบล ห้วยแห้ง อำเภอ แก่งคอย จังหวัด สระบุรี

☒ ผู้นำบังคับและกำจัด

โทรศัพท์ : 027310080

โทรสาร :

วิธีการขนส่ง :

หมายเหตุ ระบุประเภทผู้ประกอบการตามที่ได้รับดำเนินการจัดการกับสิ่งปฏิกูลหรือวัสดุที่ไม่ได้เสียจากสถานประกอบการของท่าน หากผู้รับจัดการนำสิ่งปฏิกูลหรือวัสดุที่ไม่ได้เสียไปใช้เพื่อเป็นวัตถุดิบเพื่อก่อให้เกิดผลิตภัณฑ์อื่น ให้ระบุผู้ก่อกำเนิด และให้ระบุกระบวนการที่ใช้ หากผู้รับจัดการเป็นบุคคลธรรมดาที่ไม่ได้ขึ้นทะเบียนและไม่ได้นำไปประกอบกิจการ ให้ระบุวิธีการขนส่ง และการนำสิ่งปฏิกูลหรือวัสดุที่ไม่ได้เสียนั้นไปใช้

เอกสารลำดับที่ 6

แผนการป้องกันอุบัติเหตุเพื่อตอบสนองเหตุฉุกเฉิน


ลงชื่อ _____ ผู้ประกอบการ โรงงาน

(นายพงษ์กรณ์ ช่อวงวงศ์)

วันที่ 24 เดือน กุมภาพันธ์ ปี พ.ศ.2566

รายงานตอบสนองและการประเมินผลกระทบต่องานด้านเงินที่เกิดขึ้น

 เกิดเหตุฉุกเฉินระหว่าง 1 ม.ค. - 31 ธ.ค. ของปีที่ผ่านมา

 ไม่มีเหตุฉุกเฉินระหว่าง 1 ม.ค. - 31 ธ.ค. ของปีที่ผ่านมา

ระบุเหตุฉุกเฉินที่เกิดขึ้นและการตอบสนองต่อเหตุการณ์นั้น

ลงชื่อ _____ ผู้ประกอบกิจการโรงงาน

(นายพงษ์กรณ์ ช่อชูวงศ์)

วันที่ 24 เดือน กุมภาพันธ์ ปี พ.ศ.2566

**สรุปปริมาณกากของเสีย
ระหว่างเดือนมกราคม ถึงมิถุนายน พ.ศ.2566**

**บันทึกปริมาณกากของเสีย ที่เกิดจากการดำเนินการโครงการทำเทียมเรือ บริษัท สดาร์ ปีโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)
ระหว่างเดือนมกราคม - มิถุนายน พ.ศ. 2566**

ขยะมูลฝอย

ลำดับที่	ชื่อสิ่งปฏิกูลและขยะมูลฝอย	Jan	Feb	Mar	Apr	May	Jun	Total	วิธีการกำจัด	ผู้รับดำเนินการ
1	ขยะมูลฝอย (Kg)	200	200	200	200	200	200	1,200	ฝังกลบ	เทศบาลเมืองมาบตาพุด

ขยะอันตราย

ลำดับที่	ชื่อสิ่งปฏิกูลและขยะมูลฝอย	Jan	Feb	Mar	Apr	May	Jun	Total	วิธีการกำจัด	ผู้รับดำเนินการ
1	ผ้าปนเบือนน้ำมัน (Kg)	200	200	300	200	400	300	1,600	ทำเป็นเชื้อเพลิงผสม (Fuel Blending)	บริษัทปูนซีเมนต์ นครหลวง
2	ถังเปล่าปนเบือน (Kg)	1,000	0	0	1,500	2,000	0	4,500	นำผ่านกระบวนการนำกลับมาใช้ใหม่	บริษัท เวสต์แมนเนจเมนต์ สยาม จำกัด
	รวมทั้งสิ้น	1,200	200	300	1,700	2,400	300	6,100		

ตัวอย่างใบกำกับการขนส่งของเสีย

หมายเลขใบกำกับการณ์ขนส่งของเสีย : Manifest No.
ใบกำกับการณ์ขนส่งของเสีย (Uniform Waste Manifest)

605206

1. ส่วนของผู้ก่อการณ์ของเสีย : This section must be completed by the Generator

1) ชื่อ : Name 2) เลขประจำตัวผู้ก่อการณ์ของเสีย : Generator's ID
สถานที่ตั้ง : Generator's address โทรศัพท์ : Phone โทรสาร : Fax กรณีฉุกเฉิน : Emergency

3) ผู้ขนส่งของเสีย : Transporter

รายชื่อ 1 ชื่อบริษัท : The first company name เลขประจำตัวผู้ขนส่งของเสีย รายที่ 1 : Transporter's ID

รายชื่อ 2 ชื่อบริษัท : The second company name เลขประจำตัวผู้ขนส่งของเสีย รายที่ 2 : Transporter's ID

4) ผู้เก็บรวบรวม บำบัด และกำจัดของเสีย : Treatment Storage Disposal Facilities (TSDF's)

รายชื่อ 1 ชื่อบริษัท : First TSDF's company name เลขประจำตัวผู้เก็บรวบรวม บำบัด และกำจัดของเสีย รายที่ 1 : Disposer's ID

รายชื่อ 2 ชื่อบริษัท : Second TSDF's company name เลขประจำตัวผู้เก็บรวบรวม บำบัด และกำจัดของเสีย รายที่ 2 : Disposer's ID

5) รายละเอียดของเสียที่ขนส่งเคลื่อนย้าย

ลำดับ No.	รายละเอียด Description	รหัสข้อมูลของเสีย : Waste profile no.	รหัสวัสดุที่ไม่ใช่แล้ว Waste ID	อันตราย Hazardous	ไม่อันตราย Nonhazardous	ภาชนะบรรจุ : Containers จำนวน : No.	ชนิด : Type	ปริมาตรสุทธิ : Quantity	หน่วยน้ำหนัก : Unit Wt / Vol	รายละเอียดเพิ่มเติม : Additional Information
	Contaminated Co	H06749	150110	X		1	11 ลิ			

รวมปริมาณของเสียทั้งหมด : Total Quantity ของเหลว : Liquid ☐ ลิตร : Liters ☐ ลูกบาศก์เมตร : cu.m ของแข็ง : Solid ☐ กิโลกรัม : Kgs. ☐ ตัน : Tons

6) การปฏิบัติที่มีลักษณะพิเศษและข้อมูลเพิ่มเติม

Special Handling Instructions and additional information

7) คำรับรอง : ข้าพเจ้าขอรับรองว่าได้ส่งมอบของเสียแล้วตามที่ระบุข้างต้น และมีการบรรจุติดป้ายหรือฉลากอย่างเหมาะสมตรงตามข้อกำหนดของกฎหมายทุกประการ :

Generator Certification : I hereby declare that the contents of this consignment are accurately described above and have been packed and labeled and are in the proper condition for transport according to regulations

ลงชื่อ : Generator's name ลายเซ็น : Signature วันที่ : Date เดือน : Month พ.ศ. : Year

2. ส่วนของผู้ขนส่งของเสีย : This section must be completed by the Transporter

1) ชื่อผู้ขนส่งของเสีย รายที่ 1 : The first Transporter's name 2) พาหนะที่ใช้ ☒ รถบรรทุก ☐ รถไฟ ☐ เรือ ☐ เครื่องบิน

เลขประจำตัวผู้ขนส่ง : Transporter's ID Vehicle ☐ Truck ☐ Train ☐ Ship ☐ Plane

โทรศัพท์ : Phone โทรสาร : Fax กรณีฉุกเฉิน : Emergency 3) เลขทะเบียนพาหนะ : Vehicle ID 51-4625 กก. 99-52050พ

4) คำรับรอง : ข้าพเจ้าขอรับรองว่าได้รับของเสียแล้วตามที่ระบุข้างต้น และการขนส่งเป็นไปตามข้อกำหนดของกฎหมายทุกประการ

Transporter Certification : I hereby declare that I have received the type and quantity of waste as described above by the generator and that waste has been transported according to regulations.

โดยขนส่งจากจังหวัด : From ไปยังจังหวัด : To ใช้ระยะเวลาประมาณ : Time spending ชม./วัน : Hours/Day

ลงชื่อผู้ขนส่งรายที่ 1 : Transporter's name ลายเซ็น : Signature วันที่ : Date เดือน : Month พ.ศ. : Year

5) ชื่อผู้ขนส่งของเสีย รายที่ 2 : The second transporter's name 6) พาหนะที่ใช้ ☐ รถบรรทุก ☐ รถไฟ ☐ เรือ ☐ เครื่องบิน

เลขประจำตัวผู้ขนส่ง : Transporter's ID Vehicle ☐ Truck ☐ Train ☐ Ship ☐ Plane

โทรศัพท์ : Phone โทรสาร : Fax กรณีฉุกเฉิน : Emergency 7) เลขทะเบียนพาหนะ : Vehicle ID

8) คำรับรอง : ข้าพเจ้าขอรับรองว่าได้รับของเสียแล้วตามที่ระบุข้างต้น และการขนส่งเป็นไปตามข้อกำหนดของกฎหมายทุกประการ

Transporter Certification : I hereby declare that I have received the type and quantity of waste as described by the generator and that waste has been transported according to regulations.

โดยขนส่งจากจังหวัด : From ไปยังจังหวัด : To ใช้ระยะเวลาประมาณ : Time Spending ชม./วัน : Hours/Day

ลงชื่อผู้ขนส่งรายที่ 2 : Transporter's Name ลายเซ็น : Signature วันที่ : Date เดือน : Month พ.ศ. : Year

3. ส่วนของผู้ประกอบการสถานที่เก็บรวบรวม บำบัด และกำจัดของเสีย : This section must be completed by TSDF's

1) ผู้เก็บรวบรวม TSDF's name สถานที่ขนถ่ายและเก็บรวบรวม : TSDF's address

ลงชื่อผู้เก็บรวบรวม : TSDF's name ลายเซ็น : Signature วันที่ : Date เดือน : Month พ.ศ. : Year

2) ผู้รับกำจัด : TSDF's name 3) เลขประจำตัวผู้รับกำจัด : TSDF's ID

สถานที่กำจัด : TSDF's address โทรศัพท์ : Phone โทรสาร : Fax กรณีฉุกเฉิน : Emergency

4) คำรับรอง : ข้าพเจ้าขอรับรองว่าได้รับของเสียแล้วตามที่ระบุข้างต้น TSDF certificate of arrival : I hereby declare that I have received the reference load.

และสามารถกำจัดของเสียที่รับมานี้ได้ภายในระยะเวลา : Treatment period ☐ วัน : Day ☐ เดือน : Month ☐ ปี : Year นับจากวันที่ได้รับของเสีย : Since the day that received waste

ลงชื่อผู้รับกำจัด : TSDF's name ลายเซ็น : Signature วันที่ : Date เดือน : Month พ.ศ. : Year

5) กรณีของเสียไม่ตรงตามที่แจ้ง : Discrepancy Notification

ประเภทของเสีย : Type of waste ปริมาณ : Quantity

การดำเนินการ : Action taken ☐ ส่งคืน : Returned ☐ จัดประเภทใหม่ : Reclassified / รหัส : Waste ID ☐ รับกำจัด : Accepted เหตุผล : Reason of action

วันที่ส่งคืน : Date returned / / (วัน/เดือน/ปี : dd / mm / yy) หมายเลขใบกำกับการณ์ขนส่งของเสียที่ส่งกลับ : Returned manifest no

ชื่อผู้ส่งคืน : TSDF's name ลายเซ็นผู้ส่งคืน : TSDF's Signature

หมายเลขใบกำกับการขนส่งของเสียอันตราย : Manifest No.

SPR230141

ใบกำกับการขนส่งของเสีย
(Uniform Waste Manifest)☐ อันตราย (Hazardous) ☐ ไม่อันตราย (Non Hazardous)

1. ส่วนของผู้ก่อกำเนิดของเสียอันตราย : This section must be completed by the Generator

1) ชื่อ : Name บริษัท สหวิริโครเอ็นวีพี จำกัด สถานที่กำเนิด : Generator address	2) เลขประจำตัวผู้ก่อกำเนิดของเสียอันตราย : Generator's ID DIW-G-054800073 โทรศัพท์ : Phone 038-699000 โทรสาร : Fax 038-699214 กรณีฉุกเฉิน : Emergency 038-699000
---	--

3) ผู้ขนส่งของเสียอันตราย : Transporter รายชื่อ 1 ชื่อบริษัท : Company name บริษัท ทีเออาร์เอฟ จำกัด (บริษัท ทีเออาร์เอฟ จำกัด) รายชื่อ 2 ชื่อบริษัท : Company name	เลขประจำตัวผู้ขนส่งของเสียอันตราย รายที่ 1 : Transporter's ID DIW-T-060200656 เลขประจำตัวผู้ขนส่งของเสียอันตราย รายที่ 2 : Transporter's ID
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4) ผู้เก็บรวบรวม บำบัด และกำจัดของเสียอันตราย : Treatment Storage Disposal Facilities (TSDFs) ชื่อบริษัท : TSDF's name บริษัท ทีเออาร์เอฟ จำกัด	เลขประจำตัวผู้เก็บรวบรวม บำบัด และกำจัดของเสียอันตราย : Disposer's ID DIW-D-126200013
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5) รายละเอียดของเสียอันตรายที่ขนส่งเคลื่อนย้าย							
ลำดับ No.	รายละเอียด (Description)	รหัสของเสียอันตราย : Waste ID	ภาชนะบรรจุ : Containers จำนวน : No. ชนิด : Type	ปริมาณสุทธิ Quantity	หน่วยน้ำหนัก Unit Wt/ Vol	รายละเอียดเพิ่มเติม Additional Information	
	Industrial Oily Debris						

รวมปริมาณของเสียอันตรายทั้งหมด : Total Quantity ของเหลว : Liquid 1502.02 HM ลิตร/ลูกบาศก์เมตร : Liters/cu.m	ของแข็ง : Solid..... กิโลกรัม/ตัน Kgs/tons
--	--

6) การปฏิบัติที่มีลักษณะพิเศษและข้อมูลเพิ่มเติม Special handling instructions and additional information

คำรับรอง : ข้าพเจ้าขอรับรองว่าได้ส่งมอบของเสียอันตรายแล้วตามที่ระบุข้างต้น และมีการบรรจุติดป้ายหรือฉลากอย่างเหมาะสมตรงตามข้อกำหนดของกฎหมายทุกประการ : Generator Certificate : I hereby declare that the contents of this consignment are accurately described above and have been packed and labeled and are in proper condition for transport according to regulation			
ลงชื่อ : Generator's name	ลายเซ็น : Signature	วันที่ : Date 14 เดือน : Month 03 พ.ศ. : Year 23	

2. ส่วนของผู้ขนส่งของเสียอันตราย : This section must be completed by the transporter

1) ชื่อผู้ขนส่งรายที่ 1 : Transporter's name บริษัท ทีเออาร์เอฟ จำกัด (บริษัท ทีเออาร์เอฟ จำกัด) เลขประจำตัวผู้ขนส่ง : Transporter's ID DIW-T-060200656 โทรศัพท์ : phone 038-699000 กรณีฉุกเฉิน : Emergency 038-699000	2) พาหนะที่ใช้ Vehicle <input checked="" type="checkbox"/> รถบรรทุก Truck <input type="checkbox"/> รถไฟ Train <input type="checkbox"/> เรือ Ship <input type="checkbox"/> เครื่องบิน Plane
3) เลขทะเบียนพาหนะ Vehicle ID 62-3296	

4) ข้าพเจ้าขอรับรองว่าได้รับของเสียอันตรายแล้วตามที่ระบุข้างต้น และ การขนส่งเป็นไปตามข้อกำหนดของกฎหมายทุกประการ Transporter Certifications : I hereby declare that I have received the type and quantity of waste as described above by the generator and that waste has been transported according to regulations.			
โดยขนส่งจากจังหวัด : From ระยอง	ไปยังจังหวัด : To สระบุรี	ใช้ระยะเวลาประมาณ : Time spending 7.0	ชม./วัน : hours/day

ลงชื่อผู้ขนส่งรายที่ 1 : Transporter's name	ลายเซ็น : Signature	วันที่ : Date 14 เดือน : Month 3 พ.ศ. : Year 66
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5) ชื่อผู้ขนส่งรายที่ 2 : Transporter's name	6) พาหนะที่ใช้ Vehicle <input type="checkbox"/> รถบรรทุก Truck <input type="checkbox"/> รถไฟ Train <input type="checkbox"/> เรือ Ship <input type="checkbox"/> เครื่องบิน Plane
เลขประจำตัวผู้ขนส่ง : Transporter's ID	7) เลขทะเบียนพาหนะ Vehicle ID
โทรศัพท์ : Phone	
กรณีฉุกเฉิน : Emergency	

8) ข้าพเจ้าขอรับรองว่าได้รับของเสียอันตรายแล้วตามที่ระบุข้างต้น และ การขนส่งเป็นไปตามข้อกำหนดของกฎหมายทุกประการ Transporter Certifications : I hereby declare that I have received the type and quantity of waste as described above by the generator and that waste has been transported according to regulations.			
โดยขนส่งจากจังหวัด : From	ไปยังจังหวัด : To	ใช้ระยะเวลาประมาณ : Time spending	ชม./วัน : hours/day

ลงชื่อผู้ขนส่งรายที่ 2 Transporter's name	ลายเซ็น : Signature	วันที่ : Date เดือน : Month พ.ศ. : Year
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3. ส่วนของผู้ประกอบการสถานเก็บรวบรวม บำบัด และกำจัดของเสียอันตราย : This section must be completed by TSDF's

1) ชื่อผู้รับกำจัด TSDF's name บริษัท ทีเออาร์เอฟ จำกัด สถานที่กำจัด : TSDF's address 83/1 ม.7 อ.แก่งคอย-บ้านนา(3222) ต.ช้างค้ำเพว อ.แก่งคอย จ.สระบุรี	2) เลขประจำตัวผู้รับกำจัด : TSDF's ID DIW-D-126200013 โทรศัพท์ : Phone 081-8060006 โทรสาร : Fax 02-9356849 กรณีฉุกเฉิน : Emergency 081-8060006
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3) คำรับรอง : ข้าพเจ้าขอรับรองว่าได้รับของเสียอันตรายแล้วตามปริมาณที่ระบุข้างต้น TSDF certificate of arrival : I hereby declare that I have received the reference load. และสามารถกำจัดของเสียได้ครบตามระยะเวลา : Treatment period..... <input type="checkbox"/> วัน : Day <input type="checkbox"/> เดือน : Month <input type="checkbox"/> ปี : Year นับจากวันที่ได้รับของเสีย : since the day that received waste
--

ลงชื่อผู้รับกำจัด : TSDF's name	ลายเซ็น : Signature	วันที่ : Date เดือน : Month พ.ศ. : Year
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4) กรณีของเสียอันตรายไม่ตรงตามที่แจ้ง : Discrepancy Notification	
ประเภทของเสียอันตราย : Type of waste	ปริมาณ : Quantity
การดำเนินการ : Action taken <input type="checkbox"/> ส่งคืน : Returned <input type="checkbox"/> จัดประเภทใหม่ : Reclassified / รหัส : Waste ID <input type="checkbox"/> รับกำจัด : Accepted เหตุผล : Reason of action	
วันที่ส่งคืน : Date returned...../...../..... (วัน/เดือน/ปี : dd/mm/yy) หมายเลขใบกำกับการขนส่งของเสียอันตรายที่ส่งกลับ : Returned manifest no.....	

ชื่อผู้ส่งคืน : TSDF's name	ลายเซ็นผู้ส่งคืน : TSDF's Signature
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การตรวจติดตามบริษัทผู้รับกำจัดกากของเสีย

การตรวจติดตาม (Audit) หน่วยงานรับกำจัดกากของเสีย ประจำปี 2566

Waste Management Siam Limited

บริษัท เวสต์ แมเนจเม้นท์ สยาม จำกัด
วันที่ 14 กรกฎาคม 2566



ภาคผนวก ข.13

รายงานการติดตามยานพาหนะ

เวลาเดินทางรวม	0 วัน 06 ชม 13 นาที
รวมค่าเดินทางรวม	0 วัน 03 ชม 51 นาที
รวมค่าโดยสาร	0 วัน 02 ชม 37 นาที
รวมค่าเช่ารถ	308.6

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เวลาเดินทางรวม	0 วัน 09 ชม 21 นาที
เวลาเดินทางโดยรถ	0 วัน 05 ชม 05 นาที
เวลาเดินทางโดยเรือ	0 วัน 19 ชม 35 นาที
ค่าเช่ารถรวม	366.5

ภาคผนวก ข.14

สถิติอุบัติเหตุ

สรุปชั่วโมงการทำงาน และบันทึกอุบัติเหตุ ระหว่างเดือนมกราคม – มิถุนายน 2566
โครงการทำเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

รายละเอียด	ระหว่างเดือนมกราคม ถึงมิถุนายน พ.ศ.2566
ชั่วโมงการทำงาน (พนักงาน)	444,960
ชั่วโมงการทำงาน (ผู้รับเหมา)	852,846
ชั่วโมงการทำงานรวม	1,297,806
- การบาดเจ็บขั้นปฐมพยาบาล (First Aid Case)	0
- การบาดเจ็บบันทึก (Recordable Case)	0
• การบาดเจ็บ (Medical Treatment Case)	0
• การบาดเจ็บ (Restricted Work Case)	0
• การบาดเจ็บ (Lost Time Injury)	0
- การจลาจล (Motor Vehicles Crash)	0
- เหตุการณ์จากไฟ ชั่วไม่บันทึก (Non-Recordable Fire Cases)	0

หมายเหตุ : ชั่วโมงการทำงานรวมของโรงกลั่นน้ำมันและทำเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

Type of Injury	First Aid Case	Recordable Case	Total
Sprain & Strain	-	-	-
Burn	-	-	-
Eye Irritation	-	-	-
Dizziness from chemical	-	-	-
Cut/Laceration	-	-	-
Abrasion	-	-	-
Inflammation	-	-	-
Fracture/Dislocation	-	-	-
Avulsion	-	-	-
Insect Stung	-	-	-
Other ;	-	-	-
Total Number of Injuries	No First Aid Case / No Recordable Case		

ภาคผนวก ข.15

ระเบียบปฏิบัติ เรื่อง การนำเรือเข้าเทียบท่า

Movement/Dispatches		
<div style="display: flex; align-items: center;"> <div> <h2 style="margin: 0;">Plant 66 Mooring Arrangements</h2> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <p>Prepared by: Sawai Paena</p> <p>Approved by: Opas Waiyasatja</p> </div> <div> <p>Number: HC-WI-PD-6018</p> <p>Revision: 5.</p> </div> </div>		
Low	Medium	High

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Purpose

The purpose of this procedure is to outline the steps to be taken to achieve, and maintain a safe and efficient mooring arrangement. This will include the ship berthing and sailing activities.



WARNING

The mooring and unmooring of vessels is potentially a hazardous operation. It is also an operation, which demands a high degree of teamwork. To be both efficient and safe, all involved must be properly trained and equipped, and must have a clear understanding of the contribution made by others, as well as their own role and responsibilities.

System Information

Summary Mooring equipment is provided at the Marine Terminal for the safe and efficient mooring of ships alongside the Products Pier and LPG Pier. The Products Pier can accommodate ships up to 104,500 Long Ton Displacement, the LPG Pier can accommodate up to 14,000 Long Ton Displacement respectively.

The general mooring requirements for vessels visiting the Star Petroleum Refining Public Co., Ltd. Marine Terminal are contained in section 6 of the Marine Terminal Regulations.

Roles and Responsibility Any deviation to this procedure shall require use of the Stop Work Authority. User shall inform PD Shift Supervisor and Water Front Coordinator for assistance.

Marine DCS (DCS)

- To coordinate with Marine operator, Loading Master, SC Foreman and Ship's Master to berth/ un-berth at Product/ LPG pier with safely, efficiently and meet the standard operation practice.

Marine Operator (OP)

- To coordinate with Marine DCS, Loading Master, SC Foreman and Ship's Master to berth/ un-berth at Product/ LPG pier with safely, efficiently and meet the standard operation practice.

Loading Master (LM)

- To coordinate with Marine DCS, Marine Operator, SC Foreman and Ship's Master to berth/ un-berth at Product/ LPG pier with safely, efficiently and meet the standard operation practice.
- The Loading Master must ensure that the intended berth is safe and in all respects, suitable for the vessel to be moored there. This should include ensuring that the berth is of suitable size to accommodate the vessel. All hazards and obstructions should be cleared, including: Loading Arm, Ladder or any other equipment. There should be no activity that could present a hazard to the vessel, such as hot work or other maintenance/repair work.
- Loading Master Shall be present to provide oversight to the SC Jetty gang for all berthing and un-berthing operations. Any non-conformances with berthing shall be noted on the Ship-Shore safety checklist.

SC Foreman

- The SC Foreman is responsible for mooring supervisor who is supervised and safety of his crew. This also includes co-operating with the Master & crew of the vessel and those engaged in other adjacent port operations.

The Master of vessel

- The master has the overall responsibility for the safe mooring of his ship, safety of his crew and a duty of care towards shore-side workers.

**Product Pier
Mooring
Equipment****Mooring Bollards**

Bollards are strategically placed along the Piers and each has a design holding capacity of 91 tonnes.

Mooring Capstans

Mooring capstans are strategically placed along the Piers to assist mooring personnel when handling ship's mooring lines. All capstans have a spring loaded, foot pedal switch control and emergency stop button for safe operation.

Mooring Messengers

Mooring messengers are provided at each berth to assist the mooring personnel in the securing of the ship's mooring lines to the bollards.

Mooring Ropes and Wires

Ship's mooring lines will be used to secure the ship alongside. All mooring lines must be in good condition.

Rope Tails

Natural fibre rope tails are preferred by the linesmen as they are far easier to grip when pulling the mooring line ashore.

Nylon rope shall not be used at the end of the eye as this is difficult to maintain a secure hand grip of the rope.



No shore mooring lines are provided.

Reference: For Item 1, Ship Berthing Operation

The minimum number of mooring lines to be used for each ship, except at the Tug Berth, is 10, comprising two headlines, two sternlines, two breastlines forward and two aft, and one springline forward and one aft. Additional lines may be used in the event of inclement weather or when the Loading Master decides it is necessary. Due to the smaller size of ships using the Tug berth, the mooring arrangement here will be at the discretion of the Marine Panel Man.

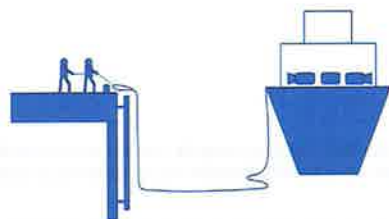
Precautions

A step that, if done incorrectly, could cause a serious safety hazard leading to death, serious personal injury, major equipment damage, fire or a large environmental release.

Reference: For action step 1.5

For example of the rope slack in the water at least 1 meter and upright with the water.

CAUTION

**Reference: Before action step 1.6**

Do not operate mooring winch until all heaving lines and/or messenger ropes have been removed from the main mooring lines, and personnel are standing clear from the line of pull.

WARNING

**Reference: Before action step 1.9**

When two eyes or an eye and a bight are placed on the same bollard, the second eye should be lead up and through (dipped) the eye of the first before being placed over the bollard.

CAUTION



NOTE

A Portable Gangway is available for each berth on the Product Pier and LPG Pier, if required.

Reference: For action step 3.4

CAUTION

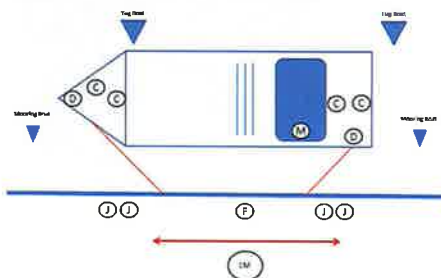
When the Master order to let go the mooring line then SC foreman should ensure each mooring rope enough slack (line in the sea) and mooring winch stop before order jetty gang let go the mooring line one by one.

Prerequisites**Mooring Team Compositions**

1. Loading Master (LM)
2. SCM Foreman (F)
3. SCM Mooring crew (J)

There shall always be sufficient line handlers that will be available for a mooring operation. The team shall be divided into 2 equal groups (Forward and Aft). The SCM foreman designated as the Team Leader. Team Leader shall be responsible for communicating with the line boats and the Pilots as required on agreed working channel. The Loading Master designated as site supervisor to take care mooring operation.

NOTE



The activities described in this procedure are under the control of the Marine DCS (DCS). It is his responsibility to ensure that each step is complied with, and carried out correctly. include: Communication and direction as required with the Marine Operator (OP).

1. **Coordinate** with the Berth Operator or Loading Master to perform "Pre Berth Check " by follow steps in check form "HC-FO-PD-6022"
2. **Notify** SCM. Foreman, mooring team, tug boats and mooring boats on station prior the ship approach to Maptaphud Harbour.
3. **Perform** test communication via VHF with the line boats and the Pilot.
4. **Verify** all personnel involved in the mooring operation are wearing SPRC approved lifejackets/work vests in addition to SPRC standard P.P.E.

Detailed Activities

Who	Step	Action	Check
1. Ship Berthing Operation			
SHIP:.....BERTH:.....			
BERTHING DATE/TIME:.....			
UNBERTHING DATE/TIME:.....			
DCS	1.1	Notify all concerns that ship coming to alongside. <ul style="list-style-type: none"> • Berth operator • Loading master • SCM Foreman 	<input type="checkbox"/>
OP LM	1.2	Contact the Master or Pilot on the ship's bridge and must keep in close communication with the line boats.	<input type="checkbox"/>
OP LM	1.3	Coordinate with the Master to mark up ship's manifold is to be use.	<input type="checkbox"/>
OP LM	1.4	Verify that wire or rope mooring lines are handled one at a time.	<input type="checkbox"/>
OP LM	1.5	Verify the rope slack in the water at least 1 meter and upright with the water. (See precaution)	<input type="checkbox"/>
OP LM	1.6	Verify spring mooring lines. (See precaution) <ul style="list-style-type: none"> • Lead as near to horizontal as possible. • Sufficient length to maintain this attitude under all freeboard conditions. 	<input type="checkbox"/>
LM	1.7	Verify that breast lines lead as near to right angles to the ship's centerline as possible.	<input type="checkbox"/>
LM	1.8	Verify the head and stern lines lead suitable angles to the ship, and no cross lines on the others ship for mooring.	<input type="checkbox"/>
LM	1.9	Coordinate the Master/Pilot for the ship's manifold position relate to the loading arm, Interval one meter count communicate with ship for the last 10 meters until ship is in position and shall be made "all fast" for maintain in this position. (See precaution)	<input type="checkbox"/>
OP	1.10	Verify the mooring are secure and correct position for berthing.	<input type="checkbox"/>
OP	1.11	Verify ship/shore gangway is safe for access.	<input type="checkbox"/>
END OF TASK			

Who	Step	Action		Check
2. Mooring Requirements				
2.1 Self Tensioning Winches				
LM	2.1.1	Notify the master that once secure alongside, the use of self-tensioning mooring winches, in the automatic mode, is prohibited.		<input type="checkbox"/>
2.2 Tending Of Moorings				
LM	2.2.1	Monitor the moorings throughout the ship's stay alongside.		<input type="checkbox"/>
LM	2.2.2	Verify the ship's crew tends the moorings at frequent intervals.		<input type="checkbox"/>
DCS LM	2.2.3	WHEN	THEN	<input type="checkbox"/>
		Ship fails to maintain secure mooring.	Notify Marine DCS to suspend all cargo operations until moorings are adequately adjust.	
2.3 Emergency Towing Wires				
LM	2.3.1	Verify that emergency towing wires, adequate size for the ship, are rigged at the off-shore bow and quarter.		<input type="checkbox"/>
LM	2.3.2	Verify frequent intervals, that the towing eyes are maintained 1 meter above water level.		<input type="checkbox"/>
2.4 Product Pier Gangways				
LM	2.4.1	Notify the Master for the ship's responsibility to provide a suitable gangway for safe access between ship and shore.		<input type="checkbox"/>
LM SHP	2.4.2	Verify the Gangway. <ul style="list-style-type: none">Properly rig with side railsProvide safety netStand by lifebuoySufficient lighting at night		<input type="checkbox"/>
2.5 Controlling Depths				
LM SHP	2.5.1	Verify the Master is aware of the individual berth water depths and tidal information.		<input type="checkbox"/>
LM SHP	2.5.2	Notify the Master to ensure sufficient under keel clearance, at all stages of the tide.		<input type="checkbox"/>
END OF TASK				

Who	Step	Action	Check
3. SHIP SAILING OPERATION			
LM SHP	3.1	Perform tool box talk with Master and SC foreman on sequence of unmooring when complete the shipping document.	<input type="checkbox"/>
LM	3.2	Verify the S.C. Management mooring personnel will be on station prior to the agreed sailing time.	<input type="checkbox"/>
LM	3.3	Verify all personnel involved in the sailing operation wear lifejackets/work vests as required for SPRC personal protective equipment.	<input type="checkbox"/>
LM	3.4	Instruct the mooring personnel that no mooring lines are released until: (See precaution) <ul style="list-style-type: none"> Ship's crew provide enough slack (line the water) to remove the eye safely from the bollard Master gives instruction to Foreman, either by signal or verbally, to release the slackened mooring line. 	<input type="checkbox"/>
END OF TASK			

Who	Step	Action		Check
4. POST SAILING CHECKS				
OP LM	4.1	Check the berth fenders and terminal fix gangway for any damage.		<input type="checkbox"/>
LM	4.2	IF	THEN	<input type="checkbox"/>
DCS		Found any damage of fenders or Fix Gangway	Inform Marine DCS to record in Log book. Notice to ship.	
END OF TASK				

Definitions

- N/A

References

- Port Information and Marine Terminal Regulations Book.
- ISGOTT
- SPRC Training Manual
- Mooring Equipment Guideline

Amendment List

Below is a list of changes between the previous and the current revision of this document.

Step/Section	Reason for Change
	(Changed) - Review criticality and risk ranking $2+1+1 = 4$ (For reference use), changed the criticality from Medium to Low

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedures

ภาคผนวก ข.16

โครงการรับผิดชอบต่อสังคม
ของบริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)



การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ประจำปี 2566 (มกราคม - มิถุนายน)



"One family ...
fueling the future
of Thailand"

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

SPRC ดำเนินงานด้านความรับผิดชอบต่อสังคม โดยมุ่งเน้นสนับสนุนการเติบโตขององค์กร สร้างคุณค่าให้แก่สังคมและชุมชน สร้างความเชื่อมั่นและการยอมรับจากชุมชน รวมถึงผู้มีส่วนได้เสียที่เกี่ยวข้องตามนโยบายความรับผิดชอบต่อสังคม โดยใช้แนวทางการมีส่วนร่วมและสื่อสารกับผู้มีส่วนได้เสียทุกระดับผ่านโครงการและกิจกรรมความรับผิดชอบต่อสังคม เพื่อตอบสนองความต้องการของชุมชน โดยครอบคลุม 4 ด้านหลักคือ

- ด้านการศึกษาและเยาวชน
- ด้านคุณภาพชีวิต
- ด้านสิ่งแวดล้อม และ
- ด้านสร้างความสัมพันธ์ในระยะยาวร่วมกับชุมชนโดยรอบ

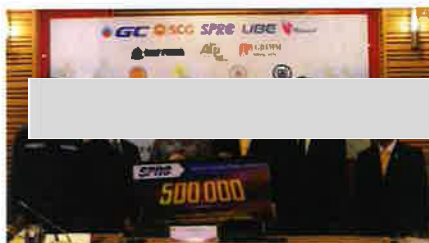
โดยได้ดำเนินการผ่านกิจกรรมต่าง ๆ ดังนี้



2

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านการศึกษา และเยาวชน



สนับสนุนโครงการพัฒนาช่างเทคนิควิศวกรรมเคมี วิทยาลัย เทคนิคมบตาพุด (V-ChEPC) จำนวน 500,000 บาท ต่อเนื่องเป็นปีที่ 15 รวมกว่า 14 ล้านบาท โดยนับตั้งแต่ปี พ.ศ. 2551 เพื่อสนับสนุนการจัดการเรียนการสอนด้านวิศวกรรมปิโตรเคมี ภายใต้โครงการพัฒนาช่างเทคนิควิศวกรรมเคมี (V-ChEPC) ในระยะที่ 6 (พ.ศ. 2566 – 2568)

มอบทุนการศึกษาให้กับชุมชน จำนวน 38 ชุมชน
และ 10 กลุ่มประมง
รวมเป็นจำนวนเงิน 440,000 บาท



3

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านการศึกษา และเยาวชน



SPRC ร่วมกับเทศบาลเมืองมาบตาพุดจัดบุรุษกิจกรมสร้างสืบ
"วันเด็กแห่งชาติประจำปี 2566"



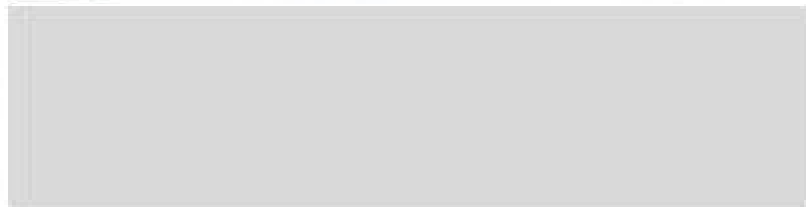
ร่วมสนับสนุนกิจกรรมวันเด็ก ให้แก่ ชุมชนต่าง ๆ
และ กนอ. (37 ชุมชน, 17 หน่วยงาน และ 4 กลุ่มประมง)



4

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านการศึกษา และเยาวชน



ร่วมสนับสนุนการศึกษา แก่นักเรียน โรงเรียนต่างๆ
โรงเรียนแม่ตาพุฒพันพิทยาคาร, โรงเรียนระยองวิทยาคม ปากน้ำ, โรงเรียนสุนทรภู่



ร่วมสนับสนุนอุปกรณ์ และเครื่องมือ เพื่อใช้ในการเรียนการสอน แก่ วิทยาลัยเทคนิคมาตาพุฒ



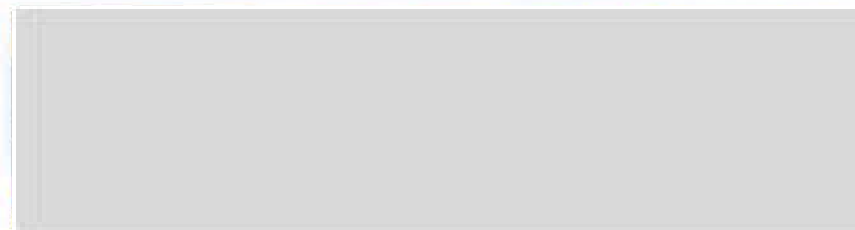
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การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านการศึกษา และเยาวชน



ร่วมกิจกรรมบรรพชาสามเณร เพื่อเฉลิมพระเกียรติ สมเด็จพระกนิษฐาธิราชเจ้า กรมสมเด็จพระเทพรัตนราชสุดาฯ
สยามบรมราชกุมารี



สนับสนุนงบประมาณ / นำทีม เพื่อใช้ในการจัดกิจกรรมของสถานศึกษา เพื่อการศึกษา และ เยาวชน



6

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านการศึกษา และเยาวชน



ร่วมสนับสนุนนำทีม
ในพาหนะรถผ้าป่าการศึกษา
โรงเรียนเข้าผ้อ จ.ระยอง

ร่วมสนับสนุนโครงการค่ายคุณธรรมจริยธรรม
ของเทศบาลเมืองมาตาพุฒ

ร่วมเป็นเจ้าของภาพทอดผ้าป่าเพื่อการศึกษา
เนื่องในวาระครบรอบ 45 ปี
โรงเรียนเพ็ญมาตา จ.ระยอง



7

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านการศึกษา และเยาวชน



SPRC ร่วมกับสำนักงานนิคมอุตสาหกรรมมาตาพุฒ และกองการศึกษา เทศบาลเมืองมาตาพุฒ จัดกิจกรรม
"รวมพลังคนเก่ง ดี มีจิตอาสาต้านภัยยาเสพติด" ในโครงการ "เครือข่ายแกนนำเยาวชนจิตอาสาต้านภัยสาร" ให้แก่ นักเรียนมัธยมศึกษาตอนต้นในจังหวัดระยอง



8

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านการศึกษา และเยาวชน

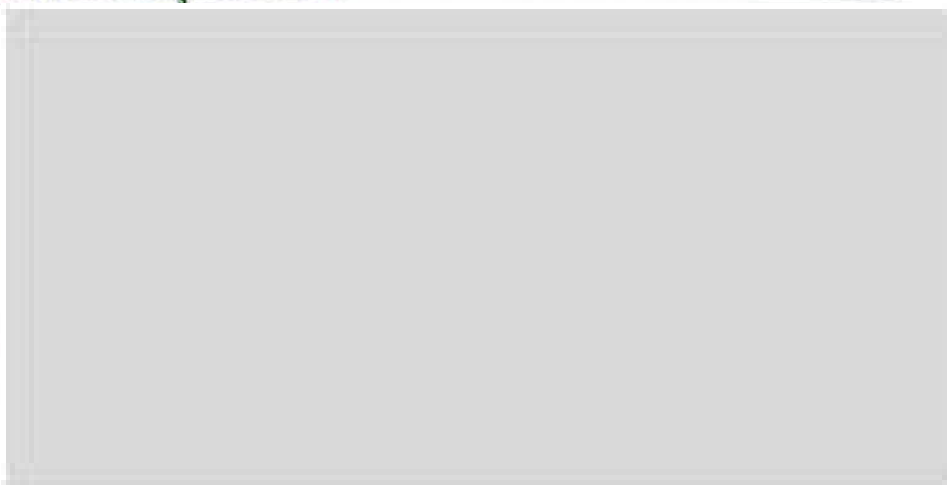


ร่วมสนับสนุนกิจกรรมทอดผ้าสามัคคีฯโรงเรียน
"เปลี่ยนขยะเป็นทองบุญ" เพื่อเป็นทุนการศึกษาให้แก่เยาวชน
ณ วิทยาลัยเทคนิคฉะเชิงเทรา

ร่วมสนับสนุนเพื่อปรับปรุงสนามเด็กเล่น และทาสีอาคาร ให้แก่
ศูนย์พัฒนาเด็กเล็กฯ ตะพง เสริมสร้างสุขภาพเยาวชน

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

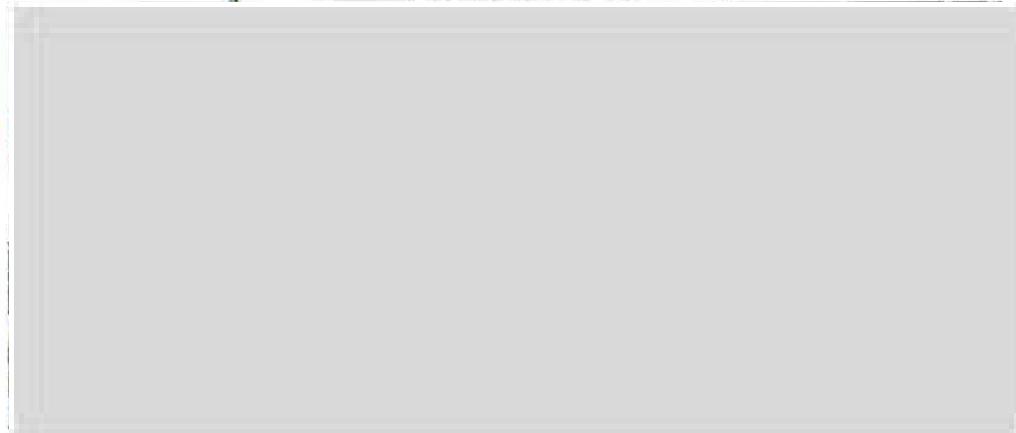
ส่งเสริมด้านคุณภาพชีวิต



กิจกรรมเฝ้าระวังภัยสุขภาพในพื้นที่ หมู่บ้านตาพูด เขต 3 เพื่อเสริมสร้างสุขภาพที่ดี และร่วมส่งเสริมคุณภาพชีวิตของชุมชนอีกด้วย

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

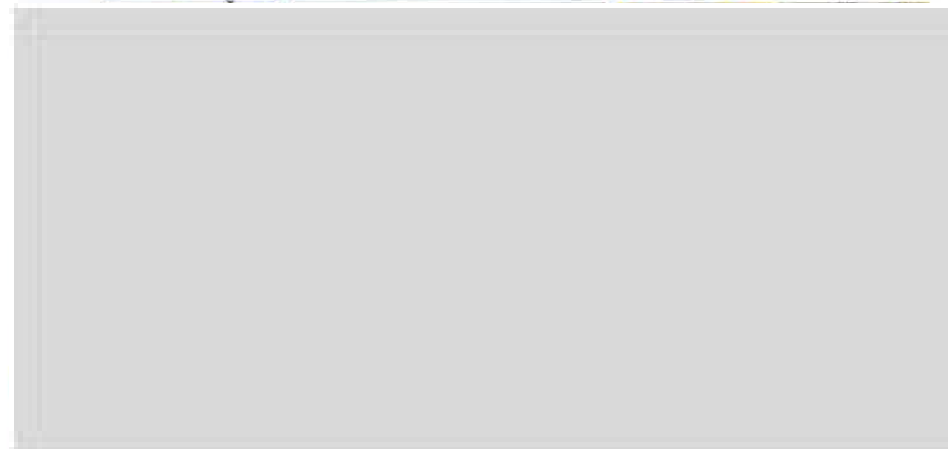
ส่งเสริมด้านคุณภาพชีวิต



ร่วมขับเคลื่อนกลุ่มวิสาหกิจชุมชน โดยจัดอบรมให้แก่ กลุ่มวิสาหกิจชุมชน 2 กลุ่ม ได้แก่ วิสาหกิจชุมชนพัฒนาอาชีพการเกษตร
ชุมชนวัดมาบตาพุด และวิสาหกิจชุมชนพัฒนาอาชีพ ชุมชนวัดมาบตาพุด เพื่อเป็นการพัฒนาศักยภาพกลุ่ม, ส่งเสริมการขาย
ผลิตภัณฑ์กลุ่มวิสาหกิจ เป็นต้น

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมสนับสนุนการจัดอบรม อสม.รุ่นใหม่
และส่งเสริมอุปกรณ์ เครื่องใช้ ข้าวสาร อาหารแห้ง แก่ผู้สูงอายุ และผู้ป่วยติดเตียงในชุมชน

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



จัดกิจกรรมทำบุญเดือนเกิดกับน้องสตาร์ ะดมเงินและสิ่งของนำเข้าบริจาคกองทุนสนับสนุนการจัดการบริการศูนย์พัฒนาคุณภาพชีวิตผู้สูงอายุและผู้พิการเมืองมาตาทุต เพื่อนำไปช่วยเหลือผู้สูงอายุและผู้ด้อยโอกาสในชุมชนต่อไป



13

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



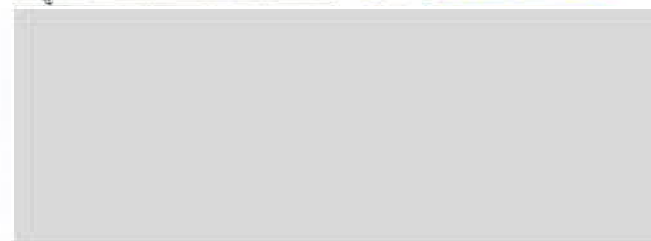
ร่วมกับสำนักงานเทศบาลตำบลบ้านเพ จัดกิจกรรม "PHE RUN LOVE" ชวนคนหัวใจสีชมพู รังเลียบชายหาดฉลองวันแห่งความรัก



15

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมสนับสนุนกิจกรรมชมรมผู้สูงอายุ ณ ศูนย์บริการสุขภาพชุมชนเกาะกอก

ร่วมสนับสนุนการจัดงาน "โอท็อปก้าวใหม่ สัญจรครั้งที่ 3"



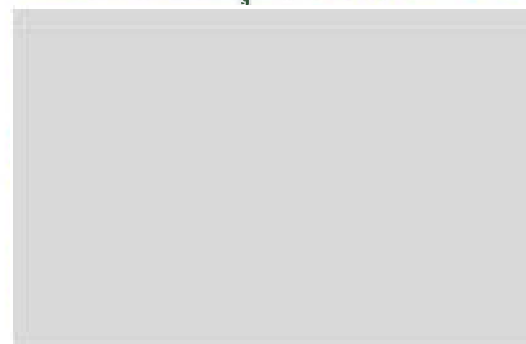
ร่วมสนับสนุนการจัดงาน "Rayong In Love"



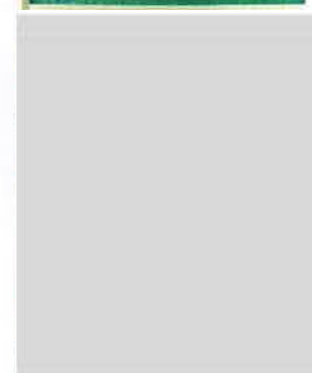
14

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมสนับสนุนโครงการเปิดโลกทัศน์เด็กน้อย จาก ดอย สู่ ทะเล นักเรียนโรงเรียนบ้านขุนแม่ตึ้นน้อย อ.อมก๋อย จ.เชียงใหม่



เป็นตัวแทนกลุ่มอุตสาหกรรมโรงกลั่นน้ำมันบี.บี.อี. สภาอุตสาหกรรมแห่งประเทศไทย (ส.อ.ท.) ร่วมมอบเครื่องฟอกอากาศให้แก่ศูนย์บริการสาธารณสุขวัดโสภณ จ.ระยอง จำนวน 1 เครื่อง และศูนย์บริการสาธารณสุขตากวน จ.ระยอง จำนวน 1 เครื่อง เพื่อช่วยลดมลพิษและเชื้อโรคในอากาศในพื้นที่ของศูนย์บริการสาธารณสุขและส่งเสริมคุณภาพชีวิตของประชาชนผู้เข้าใช้บริการและเจ้าหน้าที่ปฏิบัติงานให้ดียิ่งขึ้น



16

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมพัฒนาคุณภาพชีวิต ให้แก่ กลุ่มประมง

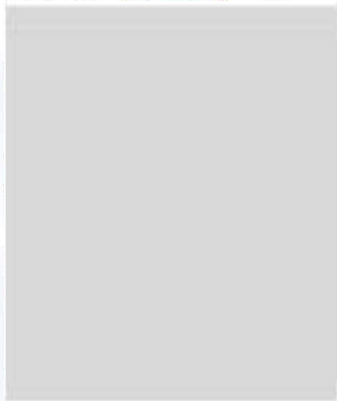
- ติดตั้งโซล่าเซลล์สูบน้ำคารูป แก่ กลุ่มประมงพลา-อุตะเภาสามัคคี, กลุ่มอนุรักษ์สามัคคีบ้านพลา, กลุ่มฯ สวนสน อบต.แกลง 1
- สนับสนุนเครื่องมือหาประมงและส่งเสริมอาชีพประมง ให้แก่ กลุ่มคอกหมอมเหียน กลุ่มแหลมยาพัฒนา



17

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมมอบน้ำดื่มสนับสนุนงาน
"บริจาคอาหารแห้งแก่คนยากไร้"
ณ วัดปอทอง อ.แกลง จ.ระยอง



ร่วมสนับสนุนกิจกรรมเดิน-วิ่ง
เฉลิมพระเกียรติเนื่องในวันฉัตรมงคลปี 2566



19

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมสนับสนุนงบประมาณการท่องเที่ยว ในการกระตุ้นการ
ท่องเที่ยว ในการจัดงานเทศกาลผลไม้และของดีจังหวัดระยอง
ประจำปี 2566



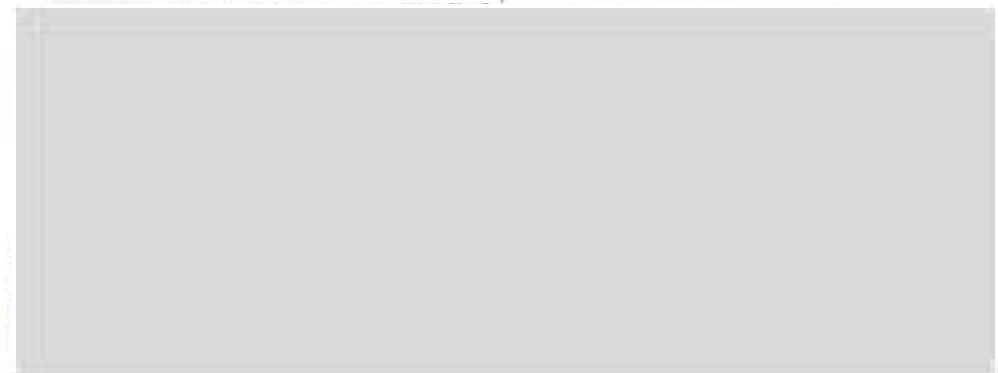
ร่วมสนับสนุนผ้ากันเปื้อนแก่
ผู้ประกอบการ
ในงาน "เดิน ชิม ริมเล 2566"



18

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมสนับสนุนกิจกรรมโครงการอนุรักษ์การหาประมง
ปลอดภัยของสำนักงานท่าเรืออุตสาหกรรมมาบตาพุด
ณ กลุ่มประมงเรือเล็กแสงเงิน

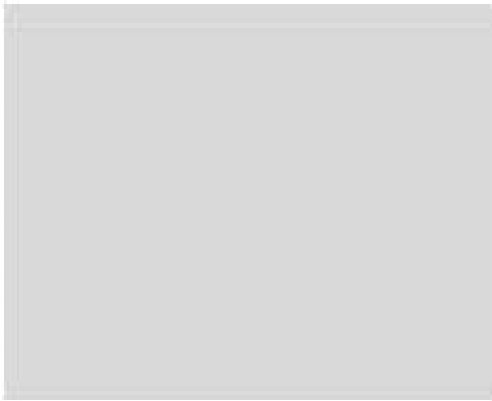
สนับสนุนการจัดกิจกรรมแข่งขันบาสเกตบอล 3X3
ระดับประเทศ เพื่อส่งเสริมสุขภาพ ให้กลุ่มนักกีฬาและ
เยาวชนทั่วไป ณ ลานบาสเกตบอล บ้านเพ



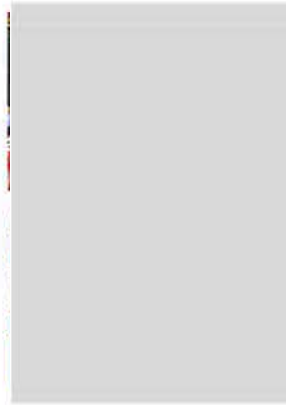
20

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต



ร่วมสนับสนุนกิจกรรม MPR สานสัมพันธ์ชุมชน
(ชม.มาบตาพุด , ทต.บ้านฉาง , กลุ่มประมงฯ)



ร่วมสนับสนุนกิจกรรมผู้สูงอายุ
ชุมชนมาบตาพุด-สำนักอัยยงอน

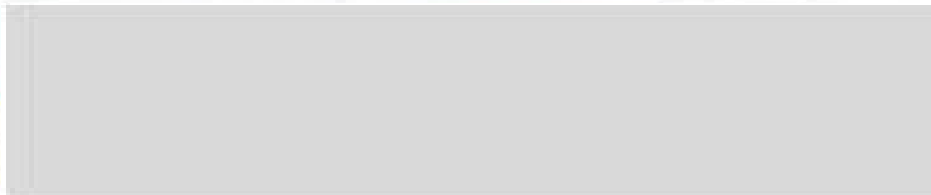


21

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต

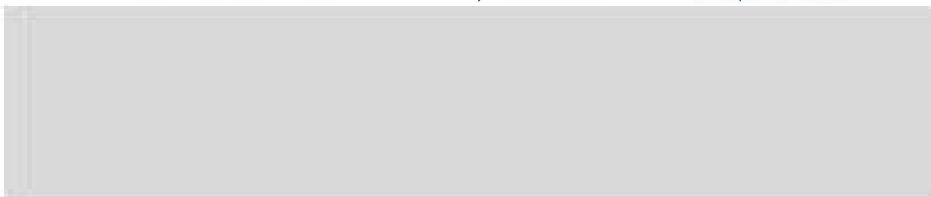
ด้านโครงการฟื้นฟู



กลุ่มประมงพื้นบ้านสวนสน อบต.คลอง 3

มอบน้ำดื่มกิจกรรมทั้งซึ่งกลุ่มประมงเรือเล็กหัวรถชน

กลุ่มประมงเรือเล็กท้ายอด



กลุ่มประมงพื้นบ้านแหลมหญ้าพัฒนา New

กลุ่มประมงเรือเล็กบ้านพัฒนา

กลุ่มประมงบ้านปากคลองตากวน

มอบอุปกรณ์และเครื่องมือทำประมงแก่กลุ่มประมงพื้นบ้าน
ในโครงการส่งเสริมพัฒนาคุณภาพชีวิตประมงและอาชีพแก่กลุ่มประมง



23

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านคุณภาพชีวิต

โครงการกระตุ้นการท่องเที่ยว



SPRC สนับสนุนจัดกิจกรรม " Rayong Fruit Farm Run 2023 " งานวิ่งหนึ่งเดียวในไทย ให้ชมสวนผลไม้-ลุยนา-
ดูฟาร์ม สัมผัสธรรมชาติ เส้นทางตะพง-เขาบายดา จ.ระยอง ร่วมกับ ททท ในการมุ่งส่งเสริมสุขภาพ หนุนเศรษฐกิจ และ
กระตุ้นการท่องเที่ยว



22

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านสิ่งแวดล้อม



SPRC จับมือสำนักงานทรัพยากรทางทะเลและชายฝั่งที่ 1 จัดกิจกรรม "สองเรือหารักษ์" แข่งขันพายเรือพร้อมเก็บขยะ
ปลูกสำนึกรักษาสิ่งแวดล้อม ส่งเสริมการท่องเที่ยวเชิงนิเวศป่าชายเลน



24

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

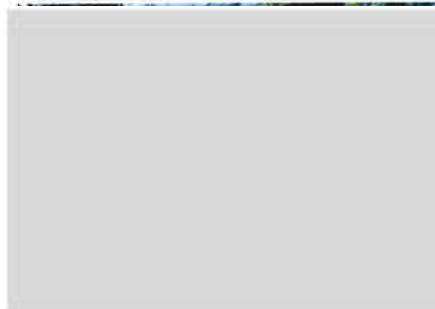
ส่งเสริมด้านสิ่งแวดล้อม



กิจกรรมปล่อยเรือเก็บขยะ แม่น้ำระยอง เพื่อปฏิบัติ
การเก็บขยะในครั้งนี้ ได้กว่า 700 กิโลกรัม เพื่อทำ
ความสะอาดแหล่งน้ำ ลดปริมาณขยะที่ไหลลงสู่ทะเล
และปลูกฝังจิตสำนึกเรื่องการอนุรักษ์ธรรมชาติ
ให้กับผู้เข้าร่วมกิจกรรม

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านสิ่งแวดล้อม

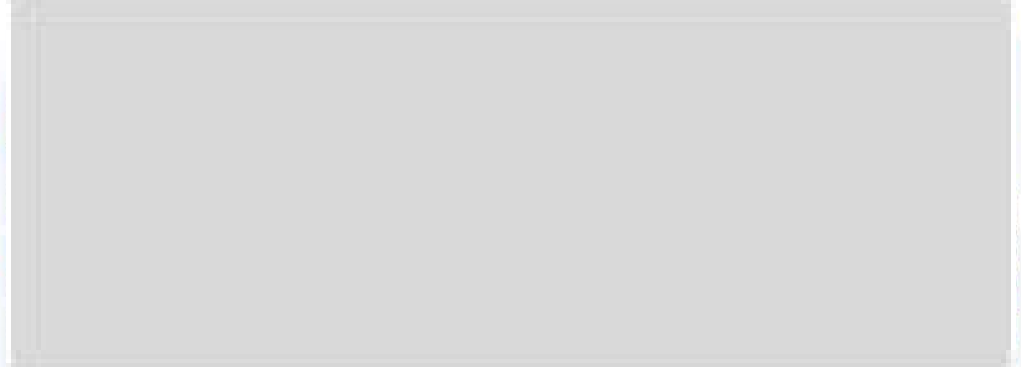


ร่วมกิจกรรมกับ สนง. ศูนย์วิจัยและพัฒนาประมงทะเล
ระยอง ในการมอบทุนแนวอนุรักษ์พันธุ์หอยหวาน
กลุ่มประมงพื้นบ้านปลาอุตะเภาสามัคคี

ร่วมกิจกรรมปล่อยพันธุ์สัตว์น้ำ ปีที่ 21 เพื่อเพิ่มจำนวนสัตว์
น้ำคืนสู่ท้องทะเล ณ กลุ่มประมงพื้นบ้านเรือเล็กเก้ายอด

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านสิ่งแวดล้อม

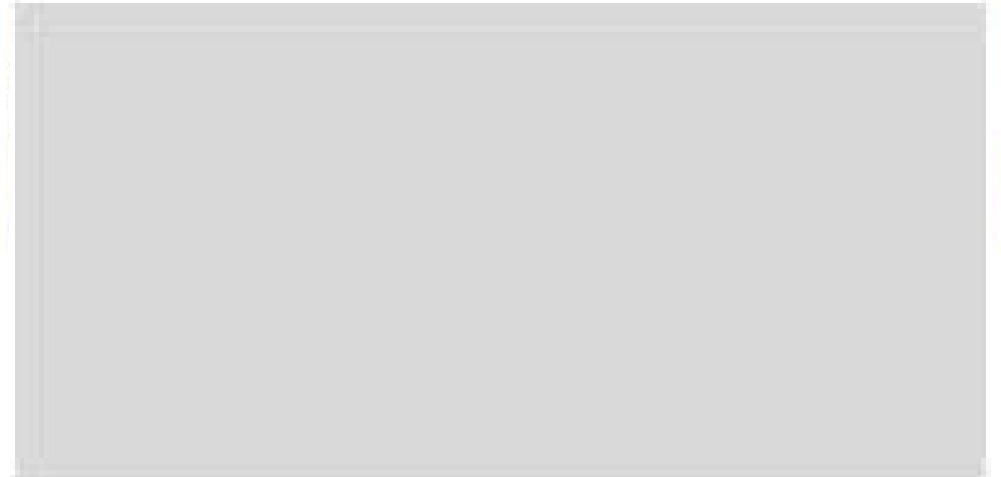


สนับสนุน และร่วมกิจกรรมปล่อยพันธุ์สัตว์น้ำ

20 ม.ค. ณ สวนสน, 11 ก.พ. ณ พิพิธภัณฑ์สัตว์น้ำ ระยอง, 4 เม.ย. ณ ศูนย์วิจัยและพัฒนาการเพาะเลี้ยงสัตว์น้ำชายฝั่ง
ระยอง, และ 19 เม.ย. ณ อ่าวมะขามป้อม

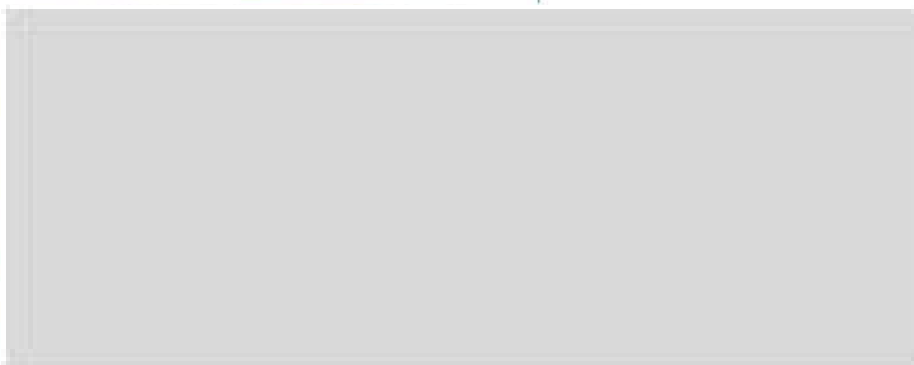
การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านสิ่งแวดล้อม



ร่วมกิจกรรมพัฒนาชายหาดพลา โดย SPRC เข้าร่วมกิจกรรมพัฒนาชายหาดร่วมกับหน่วยงานต่าง ๆ อย่างต่อเนื่อง

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม ส่งเสริมด้านสิ่งแวดล้อม



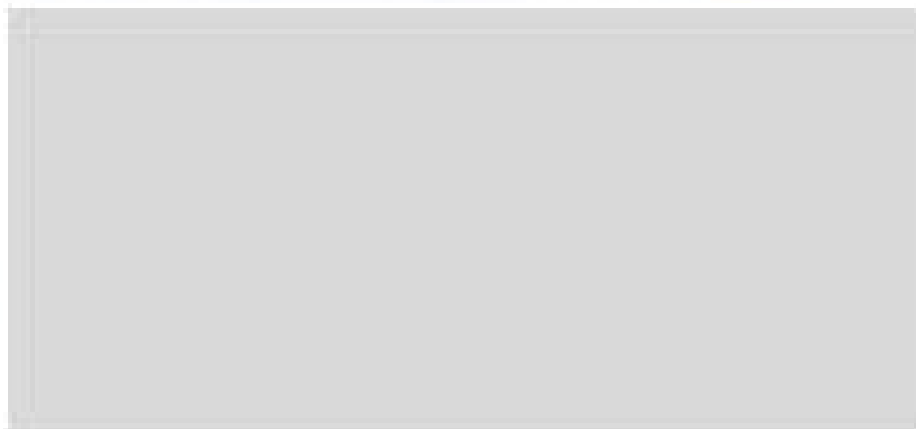
ร่วมสนับสนุนพันธุ์สัตว์น้ำ
เฉลิมพระเกียรติสมเด็จพระนางเจ้าฯ พระบรมราชินี
ณ กลุ่มประมงเรือเล็กพลา-อู่ตะเภาสามัคคี

ร่วมการปล่อยพันธุ์สัตว์น้ำ เพื่อเพิ่มปริมาณสัตว์น้ำ
ณ กลุ่มประมงพื้นบ้านบ้านพลา



29

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม ส่งเสริมด้านสิ่งแวดล้อม

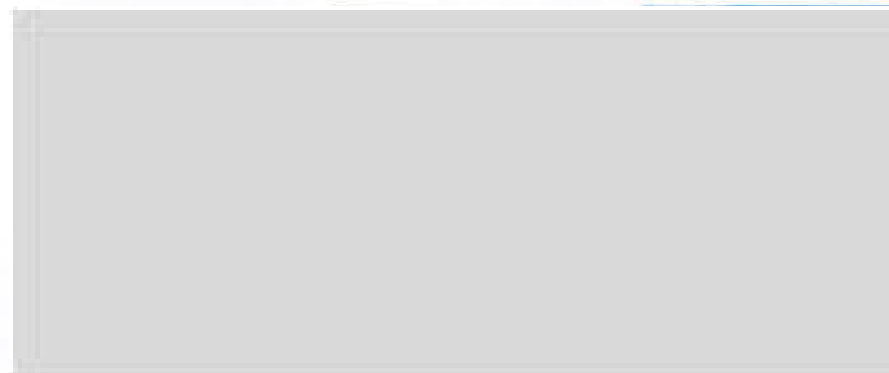


ร่วมกับ อบจ. และ สทช. ที่ 1 จัดกิจกรรม Workshop โครงการพัฒนาเพื่อฟื้นฟูและอนุรักษ์ป่าชายเลน
"ป่าในเมือง พระเจดีย์กลางน้ำ" ณ องค์การบริหารส่วนจังหวัดระยอง



31

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม ส่งเสริมด้านสิ่งแวดล้อม



จิตอาสาทำกิจกรรมเก็บขยะชายหาดและปล่อยพันธุ์สัตว์น้ำ เพื่อพัฒนาทัศนียภาพและเพิ่มปริมาณสัตว์น้ำ
เนื่องในวันทะเลโลกโดยกรมทรัพยากรทางทะเลและชายฝั่ง ณ ลานหินขาว จ.ระยอง



30

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม ส่งเสริมด้านประเพณี วัฒนธรรม



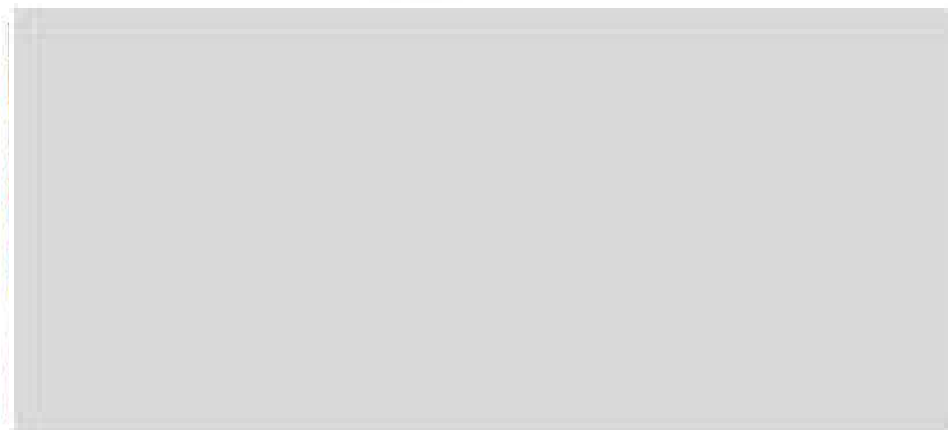
ร่วมทำบุญเดือนสาม / บุญข้าวหลามในพื้นที่
ร่วมกับชุมชน ประมง รวม 28 พื้นที่



32

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านประเพณี วัฒนธรรม



ร่วมทำบุญ
เพื่อท่านพระพุทธศาสนา และสืบสานวัฒนธรรมประเพณี
ร่วมกับ วัดต่างๆ ในพื้นที่

ร่วมกิจกรรมปลงหม่นหาลูกชายประธานชุมชนตลาดห้วยโป่ง



33

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านประเพณี วัฒนธรรม



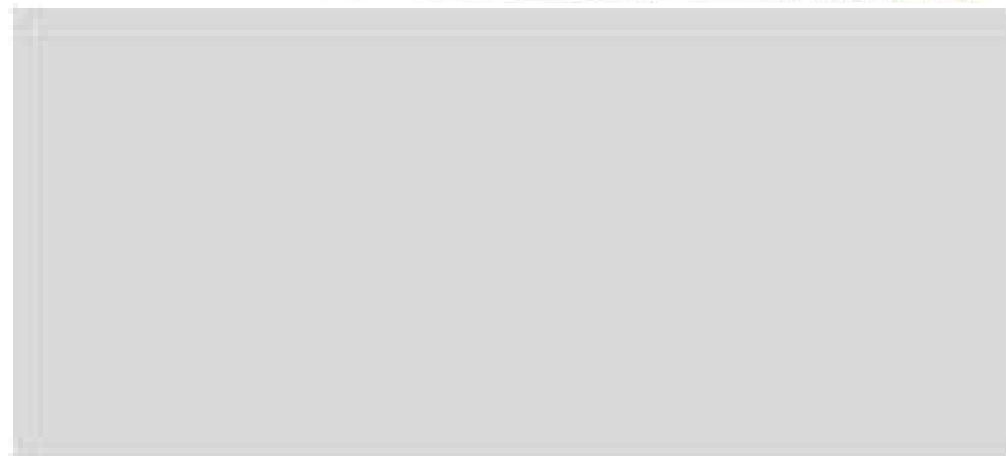
ร่วมสนับสนุนงานวันสุนทรภู่จังหวัดระยอง ประจำปี 2566



35

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

ส่งเสริมด้านประเพณี วัฒนธรรม



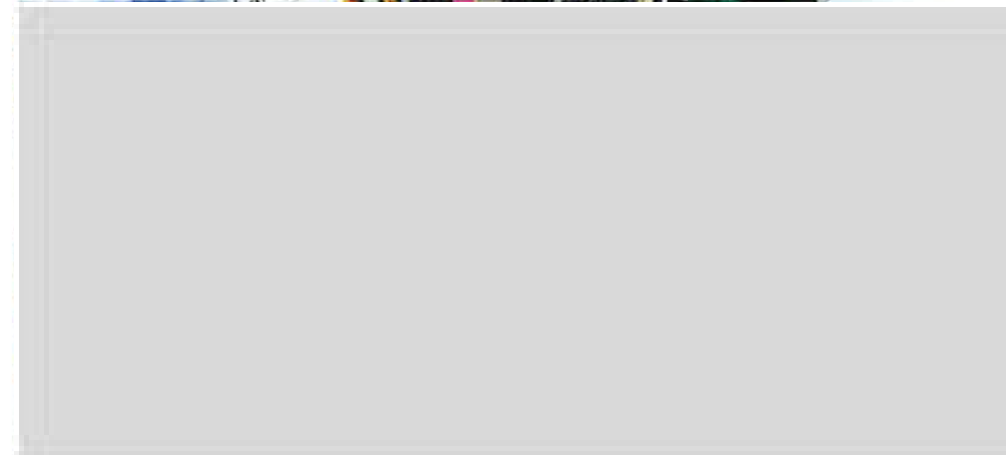
ร่วมทำบุญประเพณีสงกรานต์ ประจำปี 2566 ตามชุมชนและกลุ่มประมงต่าง ๆ



34

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

กิจกรรมเชื่อมความสัมพันธ์ และสนับสนุนกิจกรรมอื่นๆ



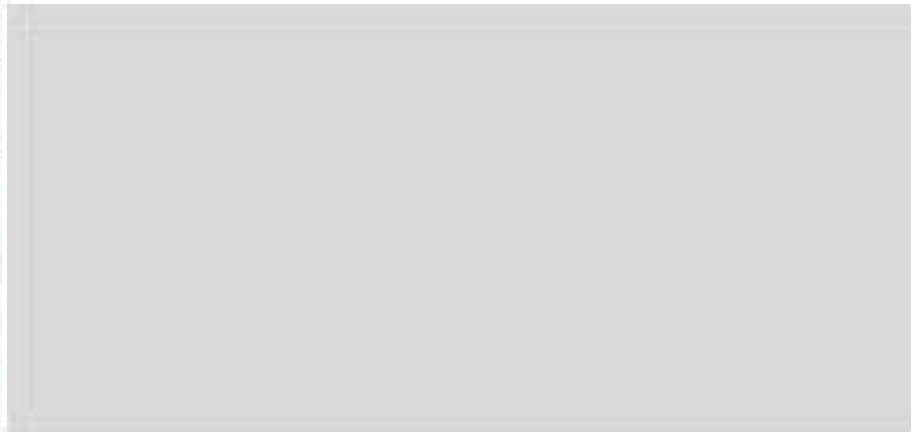
ร่วมทำบุญประจำปี งานมงคล และอวมงคลของชุมชนต่าง ๆ



35

การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

กิจกรรมเชื่อมความสัมพันธ์ และสนับสนุนกิจกรรมอื่น ๆ



จัดประชุมชมรมโดยมีทีมงานชุมชนสัมพันธ์ ผู้บริหาร และพนักงานจิตอาสาจากฝ่ายต่างๆ ร่วมประชุมชมรมด้วย



37

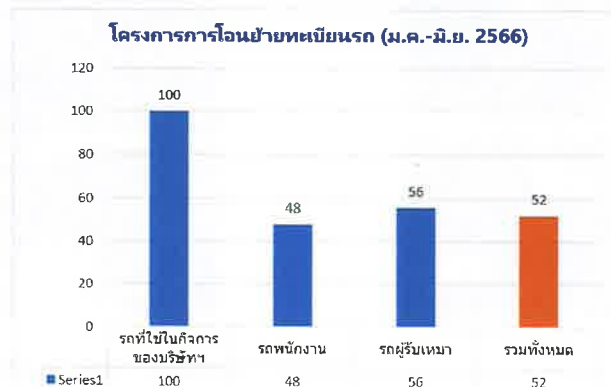
การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

โครงการรณรงค์ การโอนย้ายทะเบียนรถ

- รถที่ใช้ในกิจการของบริษัทฯ จำนวนทั้งหมด 40 คัน จดทะเบียน จ.ระยอง จำนวน 40 คัน คิดเป็น 100%
- รถพนักงาน จำนวนทั้งหมด 935 คัน จดทะเบียน จ.ระยอง จำนวน 445 คัน คิดเป็น 47.59%
- รถผู้รับเหมา จำนวนทั้งหมด 727 คัน จดทะเบียน จ.ระยอง จำนวน 404 คัน คิดเป็น 55.57%

รวมคิดเป็น 52%

(ข้อมูล ณ วันที่ 14 ก.ค. 2566)



39

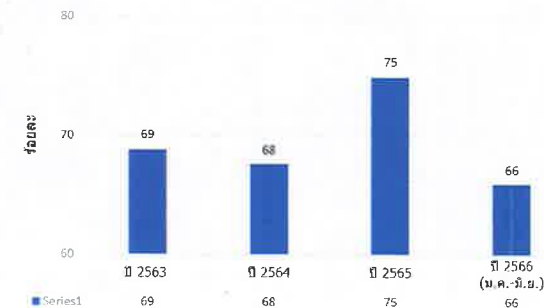
การสนับสนุนส่งเสริมชุมชนและการมีส่วนร่วมกับภาคสังคม

โครงการรณรงค์ การย้ายทะเบียนบ้าน

- พนักงานมีทะเบียนบ้านอยู่ในจังหวัดระยอง จำนวน 360 คน จากพนักงานทั้งหมด 546 คน คิดเป็น 66%

บริษัทฯ มีนโยบาย ถ้าพนักงานซื้อบ้านที่จังหวัดระยอง จะช่วยค่าดอกเบี้ยบ้านครึ่งหนึ่ง ซึ่งทางผู้บริหารของบริษัทฯ ได้เน้นย้ำ และไม่ให้มีการเปลี่ยนแปลงนโยบายนี้ ถึงแม้ว่าจะมีการร้องขอให้ขยายขอบเขตไปที่กรุงเทพฯหรือจังหวัดอื่น

โครงการรณรงค์การย้ายทะเบียนบ้าน
ปี 2563 - ปี 2566 (ปี.ย.)



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รางวัลแห่งความภาคภูมิใจ



40

รางวัลแห่งความภาคภูมิใจ



รางวัลและประกาศเกียรติคุณ “โรงงานอุตสาหกรรม 4.0”
ด้าน Smart Safety / Emergency



รางวัล CSR Excellence Recognition ประจำปี 2565
ด้านความรับผิดชอบต่อสังคมและสิ่งแวดล้อมดีเด่น
จาก หอการค้าอเมริกันในประเทศไทย



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รางวัลแห่งความภาคภูมิใจ



ISO 9001:2015 มาตรฐานระบบการบริหารด้านคุณภาพ
ISO 14001:2015 มาตรฐานระบบการบริหารสิ่งแวดล้อม
ISO/IEC 17025:2005 มาตรฐานความสามารถห้องปฏิบัติการ
ในการวิเคราะห์ และสอบเทียบ
ISO 45001:2018 มาตรฐานระบบการบริหารด้านอาชีวอนามัย
และความปลอดภัย



ได้รับการรับรองการเป็นสมาชิกแนวร่วมปฏิบัติของ
ภาคเอกชนไทย ในการต่อต้านการทุจริต (The
Thailand's Private Sector Collective Action
Coalition Against Corruption หรือ CAC)



43

รางวัลแห่งความภาคภูมิใจ



รางวัลอุตสาหกรรมสีเขียว ระดับที่ 3: ระบบสีเขียว
อันเป็นผลจากการที่บริษัทฯ มีการบริหารจัดการสิ่งแวดล้อมอย่างเป็นระบบ มีการติดตามประเมินผล และทบทวนเพื่อการพัฒนาอย่างต่อเนื่อง (ปี 2562-2565) โดยกระทรวงอุตสาหกรรม



รางวัล ASEAN Corporate Governance Scorecard Virtual ปี 2565
จากผลการประเมินการกำกับดูแลกิจการที่ดีของบริษัทจดทะเบียนในอาเซียน (ASEAN CG Scorecard) สำหรับปี 2564 โดย Institute of Corporate Directors ประเทศฟิลิปปินส์



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รางวัลแห่งความภาคภูมิใจ



รางวัล CG Award ระดับดีเลิศ 5 ดาว ประจำปี 2564 ต่อเนื่องเป็นปีที่ 5
โดย สถาบันกรรมการบริษัทไทย (IOD) ร่วมกับ ตลาดหลักทรัพย์แห่งประเทศไทย (ตลท.)



บริษัทได้รับรางวัลคัดเลือกเข้าอยู่ในกลุ่มดัชนี MSCI Global Small Cap Indexes, 2563



SPRC ได้รับใบรับรองติดแสดง
THAI STOP COVID-19 จาก กรมอนามัย



44

ขอขอบพระคุณ



ภาคผนวก ข.17

ระเบียบปฏิบัติ เรื่อง การสื่อสารและการร้องเรียน
ด้านสิ่งแวดล้อม อาชีวอนามัย และความปลอดภัย


Common		
 EHS Communications & Complaints		
Prepared by:	Nipa Nimmansethakul	Number: EHS-SP-QS-0003
Approved by:	Angkana Panyaopart	Revision: 1.
Low	Medium	High

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Purpose

The purpose of this procedure is to provide guidelines to ensure proper internal communications between the various levels and functions of the organization, and to handle external communications; in terms of receiving, documenting and responding regarding Environment, Health and Safety including environmental complaints.

System Information

Summary	The Environmental Complaints or Community Disturbance includes: <ul style="list-style-type: none"> • Smell • Noise & vibration • Smoke • Particulates matters • Unauthorized discharge of wastewater, solid waste to the public • Others that has environmental impact to stakeholders e.g., products / by products spilled outside plant, Falling of material during transportation e.g., soil and make public road dirty and nuisance to public, etc.
Roles and Responsibility	Deviation from the procedure must be stopped and informed a line supervisor or line manager, concerned people for a solution prior to executing this procedure.
Precautions	N/A
Prerequisites	N/A

Detailed Activities

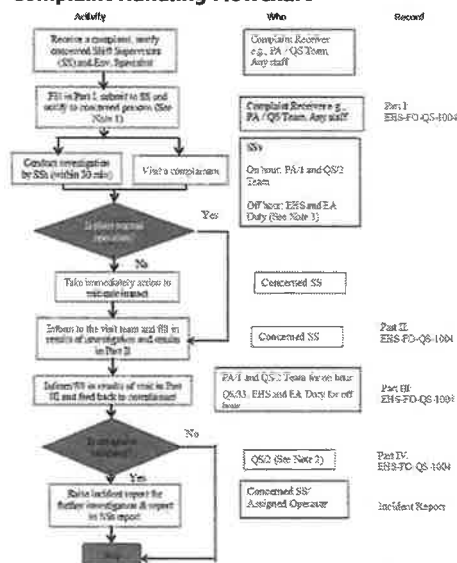
1. External Communications

1.1 Dealing with External Complaints

There are 2 levels of External Complaint or Community Disturbance as follows:

- Recordable Community Disturbance is a complaint that
 - Cause health impact to any neighbor or
 - Widely nuisance to communities (> 1 household/ company or 1 sensitive group (i.e., school, hospital, temple)
 - Unauthorized discharge of wastewater, solid waste to the public
 - Falling of material during transportation (e.g., sulfur, soil) and make public road dirty and nuisance to public
- Non Recordable Community Disturbance is a complaint other than Recordable Community Disturbance.

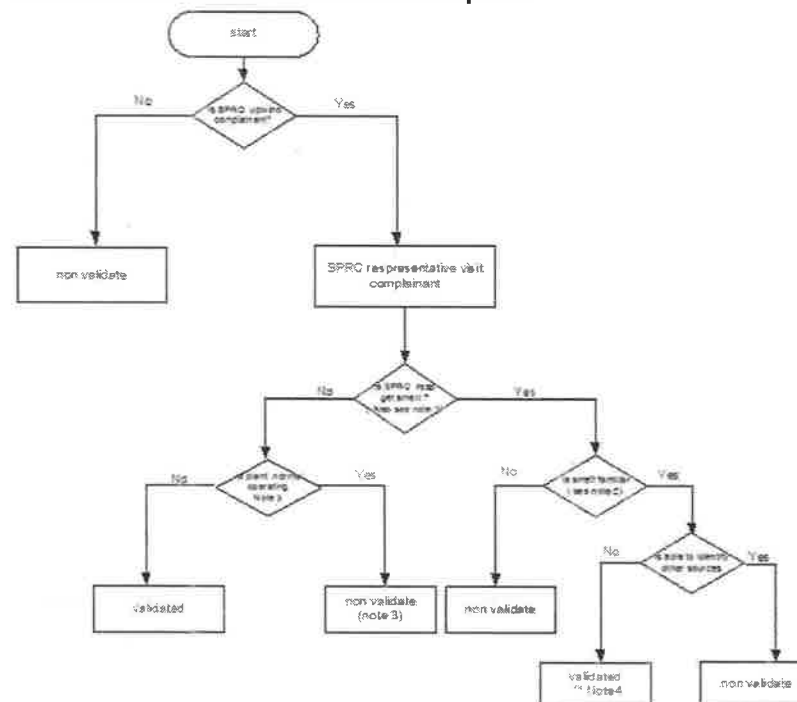
Complaint Handling Flowchart



Note:

- The concerned persons included CE, DO, PN, PD, PA, QS, PN/7 PD/7, Operation Coordinators, EHS duty, and External Affairs duty.
- QS/2 uses the Guideline for Determination of Validated Complaints. If the guideline cannot be applied, Evaluation Team should be set. Evaluation Team comprised of PUs representative, QS representative, PA representative and complainant.
- Security Team/Ops will be the 1st visit the complainant during waiting for Duty Team arrival.

Guideline for Determination of Validated Complaints



Note:

- If the guideline cannot be applied (such as representative does not visit within 1 hour or late report of the smell), Evaluation Team should be set to determine that:
 - Validate / Not Validate
 - Investigate root cause why guideline cannot be followed and improve process.
- Familiar and used to be our sources of smell include burning matches, burning gas, sour hydrocarbon, hydrogen sulfide, sulfur, hydrocarbon and LPG (like mercaptan).
- Normal operation covers:
 - No shutdown or maintenance activity which cause potential smell impact.
 - Shutdown or maintenance activity which has proper smell control.
 - Environmental Control System (for examples: vapor collection and scrubber, ETP Ground Flare, Vapor Recovery Unit, etc.) work properly and efficiently.
- Exemption for the burning match smell due to high level of sources.

Validated Complaints, KPI and Team Reward

All complaints shall be documented, investigated and determined whether they are validated.

If validated complaints occur from the same source during a particular period of time (e.g., plant upset, shut down or smell control system failure), only the initial validated complaint is taken into account in the KPI and Team Reward. However, the repeat complaints, which result from not taking the corrective actions as agreed, will be added in the KPI and Team Reward,

Example: API Separator out of service

Case 1: There are 3 complaints and determined validated complaints. In the record, there will be 3 validated complaints. However, only 1 validated complaint (initial complaint) will be taking into account in KPI and Team Reward.

Case 2: Assume QS recommended a mitigation measure which accepted by PUs Manager due to API's not in service but no action was taken resulting in a repeat complaint. This would result in an additional complaint against KPI and Team Reward.

1.2 Handling of Incoming Communications from Outside

Proper communications guidelines with external contacts which include Regulatory Authorities, Community Leaders and other Environmental Groups are established to ensure sound cooperation/coordination in environment related affairs.

Receiving External Communications

Incoming letters from outside especially regulatory authorities normally addresses to the company Chief Executive Officer (CEO). If the letters express environmental requirements, interests or concern, the Chief Executive Officer (CEO) office will forward the letter to QS for handling.

If incoming EHS communications is via phone call, the company telephone operator will route the line to QS for receiving the requirements.

Documenting and Responding to External Communications

Upon receiving an environmental letter, QS by the EHS Specialist is responsible for preparing correspondence for Manager QS's review and sign.

Incoming letter is registered in the Intranet Web\Incoming Document Registration System while a copy of responding letter is kept in Intranet Web\Outgoing Document Registration System.

In case of communication by phone, EHS Specialist can answer/talk to the callers about his or her area of knowledge. If he or she is not technically qualified to answer the question, the callers will be advised for a call back as soon as practicable.

1.3 Outgoing Communications to the Public

For external communications, refer to the AM-SP-PA-003 Corporate Communication.doc which provide guidelines for developing and implementing activities and various channels to communicate with concerned external stakeholders i.e. Map Ta Phut community people, local government authorities concerned, neighboring plants in Map Ta Phut Industrial Complex, Rayong people and general public.

The external communications arranged with objectives to enhance the company image and reputation amongst the stakeholders in the long term, including prevent misunderstanding on the refineries' operations.

In case of abnormal incident required clarification letter, the letter will be jointly drafted by PA and QS, reviewed by Duty Manager, LT of concerned area, QS and PA and then signed by Duty Manager.

1.4 Informing External Contacts

1.4. Emergency Response Drill / Exercise

1 When SPRC has plan to conduct emergency response drill/exercise including emergency alerting system in the Refinery which may cause concern to the neighbors, or plan for operations that may cause external impact (e.g., start up of the process unit), the company by Public Affairs with coordination with QS shall inform the following external contacts and neighbors in advance:

- Industrial Estate Map Ta Phut Office
- Map Ta Phut Municipality
- Map Ta Phut Police Station
- Huay Pong Police Station
- Nearby Schools and Temple
- Nearby Industrial Plants
- Rayong Provincial Industrial Work Office
- Communities

PA is responsible for notification to concern communities, local authorities and industries. For details, refer to the AM-WI-PA-006 Notification on Refinery's Operation Emergency Response Exercise.doc

1.4. Reporting Requirements

2 EHS related reports are required to submit as detailed in the permit / license / report document in EHS-OT-QS-0006_Reporting_Requirements.xls. Document Reminder System is a tool for reminding government document due date controlled by LS Department.

For other EHS related incidents reporting, refer to RMS-SP-SPRC-007 Incident Investigation and Analysis.docx.

- Shutdown Procedure include preparing equipment, draining, opening, maintenance • Air emission, wastewater and solid waste management
- Flare management; noise, black smoke, heat, light, smell • Safety control on high risk working • Contingency Response Plan
- Contact persons & Communication plan
- Contractor Management; number, Selection criteria/competency, training & Evaluation, Safety promotion, Safety Officer, dedicated temporary area for canteen, toilet, rest area, parking lot, etc.
- Conduct pre startup safety review

For other planned shutdown, Operation Coordinator is to notify Manager Public Government Affairs and Manager QEHS&LAB at least 5 days in advance. The notifications should at least consist of the followings:

- Purpose of planned activities
- Shutdown period and its impact period
- Types and level of impact
- Mitigation Measures of impact e.g., keep low inventory, refine low sulfur feed, install temporary control equipment, etc.

The above notifications shall be completed in the form EHS-FO-QS-1010 Plant Shutdown Startup Notification.doc. PA is responsible for notification to concerned communities, local authorities and industries. For details, refer to the AM-WI-PA-006 Notification on Refinery's Operation Emergency Response Exercise.doc

2.5 Environment, Health and Safety Performance Communications

Environment, Health and Safety Performance Communications

Monthly Environment, Health and Safety Performance reports are communicated to all staff via company Web and the boards located at the Refinery Main Gates and Marine Terminal Control Building.

2.6 Environment Health and Safety Handbook

Environment Health and Safety Handbook

Environment Health and Safety Handbook will be provided to new comer both staff and contactor after finish EHS induction and IIF orientation. Brief EHS policy is also available in this handbook.

2.7 Other Communications via e: mail

Other Communications via e: mail

Electronic mail called e: mail is widely used for internal communications. Messages are usually communicated to concerned persons/divisions/ departments or all staff in a form of EHS Alert / Instructions (e.g., Safety Flash).

2.8 Emergency Response Drill by External Organization

Emergency Response Drill by External Organization

Emergency response drill and alarm testing conducted by neighboring plants are communicated to concerned area by SPRC Emergency Response Coordinator group by e-mail or telephone and morning operation meeting.

For other internal communications, refer to the AM-SP-PA-002 Internal Communication.doc covers various communication channels, printing materials for staff, and internal communication survey.

Appendix**Definitions**

N/A

References

- RMS-SP-SPRC-007 Incident Investigation and Analysis.docx
- EHS-SP-QS-0008 EHS Supporting Committee.doc
- EHS-WI-QS-0002 EHS Meetings.doc
- AM-SP-PA-002 Internal Communication.doc
- AM-SP-PA-003 Corporate Communication.doc
- AM-WI-PA-006 Notification on Refinery's Operation Emergency Response Exercise.doc
- IEAT Notification No. 67/2014, Shutdown/Turnaround for Industries in IEAT and MTP Port

Amendment List

Below is a list of changes between the previous and the current revision of this document.

Revision	Date	Page/Section	Reason	By
0	06-Oct-08	All	First release	QS/1
1	21-Sep-09	P.2/2.1.1	Update Dealing with external complaints work flow and hyperlink	QS21
		P.4/2.1.2	Guidelines for Determination of Validated Complaints	
2	15-Oct-12	P.1,2/1, 2.1	1. Add Community Disturbance and revised scope	QS/21
		P.5/2.2.2	2. Updated Documenting and Responding to External Communications	
		P.7/2.4.2	3. Updated Reporting Requirements.	
		P.8/3.1	4. Updated Internal Environmental Complaint Report Guideline	
3	15-Oct-14	P.9 /3.4	Revise Planning for Operation that may cause external impact to comply with the IEAT Notification 67/2014	QS/21
4	22-Dec-14	All	Change SPRC logo	Nipa N. (QS/21)
		P.6/2.3	Add work process for abnormal incident required clarification letter.	
5	12-Apr-16	P.3/2.1	Revised Complaint handling flowchart	Nipa N. (QS/21)
6	4-Jun-18	P.1/ 1	Revised by adding Environment, Health and Safety	Nipa N. (QS/21)
		P.3/2.1	Add Assigned Operator in Complaint handling flowchart	
		P.6/2.2	Revised from Environmental Specialist to EHS Specialist	
7	16-Oct-18	P. 5 / 2.1.2	Revised normal operation scope in Guidelines for Determination of Validated Complaints	Nipa N. (QS/21)
		P.8 /3.1	Revised Internal Environmental Complaint Guideline	
1	28-Feb-19	All	1. Convert from EDMS Procedure Number: EHS-SP-QS-0003 2. Start Revision 1 at SmartProcedures	Nipa N. (QS/21)

No changes specified in the current Revision of this Procedure.

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedures

ภาคผนวก ข.18

การตรวจสอบระบบท่อขนส่งน้ำมัน และท่อน้ำมันดิบกลางทะเล


Common		
 EHS Communications & Complaints		
Prepared by:	Nipa Nimmansethakul	Number: EHS-SP-QS-0003
Approved by:	Angkana Panyaopart	Revision: 1.
Low	Medium	High

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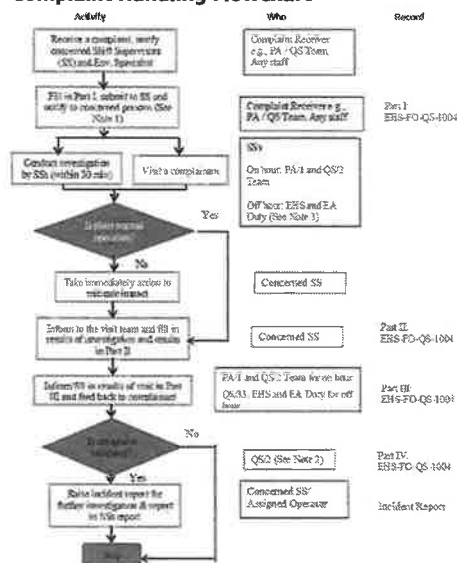
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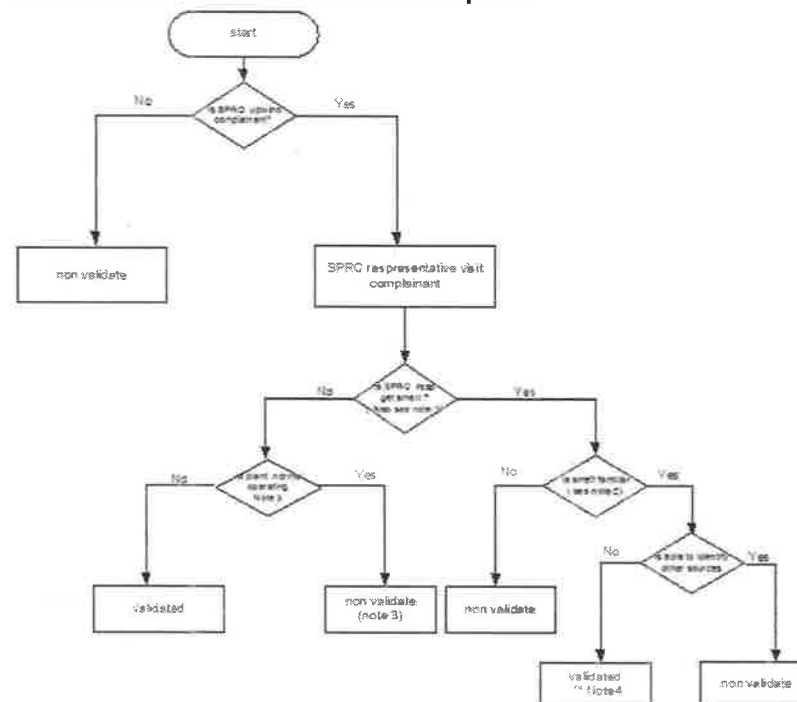
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Revision No.: 1.

EHS-SP-QS-0003

Date: 28 February 2019

Page 4 of 15

This is a controlled document and must be used within 7 days of printing 14 July, 2022

Revision No.: 1.

EHS-SP-QS-0003

Date: 28 February 2019

Page 3 of 15

This is a controlled document and must be used within 7 days of printing 14 July, 2022

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1.4 Informing External Contacts

1.4. Emergency Response Drill / Exercise

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- Rayong Provincial Industrial Work Office
- Communities

PA is responsible for notification to concern communities, local authorities and industries. For details, refer to the AM-WI-PA-006 Notification on Refinery's Operation Emergency Response Exercise.doc

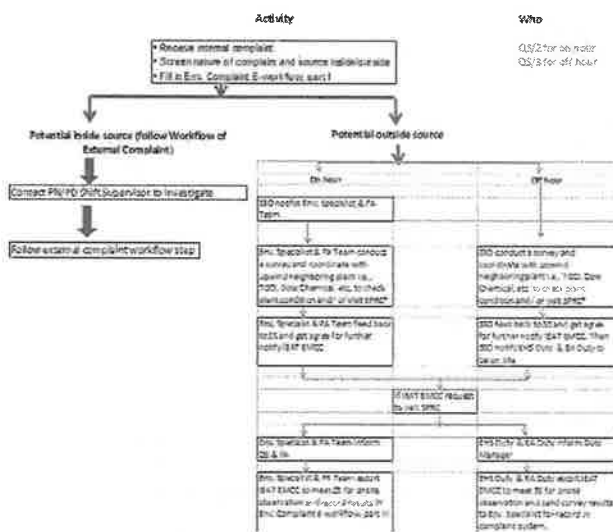
1.4. Reporting Requirements

2 EHS related reports are required to submit as detailed in the permit / license / report document in EHS-OT-QS-0006_Reporting_Requirements.xls. Document Reminder System is a tool for reminding government document due date controlled by LS Department.

For other EHS related incidents reporting, refer to RMS-SP-SPRC-007 Incident Investigation and Analysis.docx.

2. Internal Communications

2.1 Internal Environmental Complaint Guideline



Note * SS can allow neighboring plant to visit SPRC if needed. For Operation complaint, SS communicates action taken to Operators.

2.2 Shift Supervisor Report

Shift Supervisor report is prepared by Shift Supervisor and communicated in the Shift Supervisor Report via e-mail to Top Management, Manager PUs, Manager QEHS&LAB, Environmental Specialist, Public Affairs Personnel twice a day (i.e., for Day and Night Shifts). Information in this report includes the followings:

- EHS incidents including complaints incident
- PUN and PUD Operations Status

The Shift Supervisor is responsible for reporting information on nuisance from outside sources. If the smell is sufficiently strong that it could affect health i.e., irritate nose, produce nausea or dizziness, the Shift Supervisor or affected person shall notify the QS and Public Affairs or External affair duty person if outside office hours immediately.

2.3 EHS Related Meetings

There are 3 main meetings in which EHS issues are routinely informed, reported and discussed i.e., Operations Meeting, Management (Leadership Team) Meeting and EHS Supporting Meetings.

- Operations Meeting** The purpose of this meeting is to ensure sound communications and coordination between Operations and other related departments. The meeting is routinely conducted in the morning. Planned EHS and other field activities are normally informed in the meeting.
- Management (Leadership Team) Meeting** The weekly meeting is normally conducted on Wednesday. The Chief Executive Officer (CEO) chairs the meeting with senior department managers. In the meeting each manager report his or her department related issues. This meeting is a tool for communicating environment, health and safety related issues to top management and senior managers. The Chief Executive Officer (CEO) usually emphasizes the importance of environmental affairs on company business and requests full support / cooperation from each department. The minutes of management meeting is communicated to all staff for information after each meeting.
- EHS Supporting Committees Meeting** There are 4 EHS Supporting Committees (i.e., EHS Main Committee, PN EHS Committee, PD EHS Committee and Maintenance & Contractor EHS Committee) The meetings of the EHS Supporting Committees are conducted on a monthly basis. (For more detail, refer to EHS-SP-QS-0008 EHS Supporting Committee.doc) For other EHS related meetings refer to EHS-WI-QS-0002 EHS Meetings.doc

2.4 Planning for Operations that May Cause External Impact

Reference with the IEAT Notification 67/2014, type of shutdown and notification timeline is specified as below table:

Item	Type of shutdown	Notification Timeline	SPRC Actions
1	Turnaround/Annual Shutdown	≥15 days in advance	<ul style="list-style-type: none"> Required Operation to notify 17 days in advance (PA prepare document 2 days). If changes, required to re-notify
2	Commercial Shutdown	≥7 days in advance	Not Applicable
3	Emergency Shutdown	<ul style="list-style-type: none"> Within 15 minutes after incident by phone Notify plan within 3 days 	Required Operation to immediately notify REB, then REB further notify Environmental Specialist and PA/1

When planning to perform any job (for example unit start up or shut down) which may temporarily release odors or high noise levels, the Operation Coordinator is to notify Manager Public Government Affairs and Manager QEHS&LAB at least 17 days in advance for Turnaround/Annual Shutdown. Required Information for Turnaround/Annual Shutdown is as follows:

- Main equipment package list
- Chemical list remain in equipment /cleaning chemical which may result in significant impact to environment and control measures
- Equipment Isolation list ready for IEAT inspection

- Shutdown Procedure include preparing equipment, draining, opening, maintenance • Air emission, wastewater and solid waste management
- Flare management; noise, black smoke, heat, light, smell • Safety control on high risk working • Contingency Response Plan
- Contact persons & Communication plan
- Contractor Management; number, Selection criteria/competency, training & Evaluation, Safety promotion, Safety Officer, dedicated temporary area for canteen, toilet, rest area, parking lot, etc.
- Conduct pre startup safety review

For other planned shutdown, Operation Coordinator is to notify Manager Public Government Affairs and Manager QEHS&LAB at least 5 days in advance. The notifications should at least consist of the followings:

- Purpose of planned activities
- Shutdown period and its impact period
- Types and level of impact
- Mitigation Measures of impact e.g., keep low inventory, refine low sulfur feed, install temporary control equipment, etc.

The above notifications shall be completed in the form EHS-FO-QS-1010 Plant Shutdown Startup Notification.doc. PA is responsible for notification to concerned communities, local authorities and industries. For details, refer to the AM-WI-PA-006 Notification on Refinery's Operation Emergency Response Exercise.doc

2.5 Environment, Health and Safety Performance Communications

Environment, Health and Safety Performance Communications

Monthly Environment, Health and Safety Performance reports are communicated to all staff via company Web and the boards located at the Refinery Main Gates and Marine Terminal Control Building.

2.6 Environment Health and Safety Handbook

Environment Health and Safety Handbook

Environment Health and Safety Handbook will be provided to new comer both staff and contactor after finish EHS induction and IIF orientation. Brief EHS policy is also available in this handbook.

2.7 Other Communications via e: mail

Other Communications via e: mail

Electronic mail called e: mail is widely used for internal communications. Messages are usually communicated to concerned persons/divisions/ departments or all staff in a form of EHS Alert / Instructions (e.g., Safety Flash).

2.8 Emergency Response Drill by External Organization

Emergency Response Drill by External Organization

Emergency response drill and alarm testing conducted by neighboring plants are communicated to concerned area by SPRC Emergency Response Coordinator group by e-mail or telephone and morning operation meeting.

For other internal communications, refer to the AM-SP-PA-002 Internal Communication.doc covers various communication channels, printing materials for staff, and internal communication survey.

Appendix**Definitions**

N/A

References

- RMS-SP-SPRC-007 Incident Investigation and Analysis.docx
- EHS-SP-QS-0008 EHS Supporting Committee.doc
- EHS-WI-QS-0002 EHS Meetings.doc
- AM-SP-PA-002 Internal Communication.doc
- AM-SP-PA-003 Corporate Communication.doc
- AM-WI-PA-006 Notification on Refinery's Operation Emergency Response Exercise.doc
- IEAT Notification No. 67/2014, Shutdown/Turnaround for Industries in IEAT and MTP Port

Amendment List

Below is a list of changes between the previous and the current revision of this document.

Revision	Date	Page/Section	Reason	By
0	06-Oct-08	All	First release	QS/1
1	21-Sep-09	P.2/2.1.1	Update Dealing with external complaints work flow and hyperlink	QS21
		P.4/2.1.2	Guidelines for Determination of Validated Complaints	
2	15-Oct-12	P.1,2/1, 2.1	1. Add Community Disturbance and revised scope	QS/21
		P.5/2.2.2	2. Updated Documenting and Responding to External Communications	
		P.7/2.4.2	3. Updated Reporting Requirements.	
		P.8/3.1	4. Updated Internal Environmental Complaint Report Guideline	
3	15-Oct-14	P.9 /3.4	Revise Planning for Operation that may cause external impact to comply with the IEAT Notification 67/2014	QS/21
4	22-Dec-14	All	Change SPRC logo	Nipa N. (QS/21)
		P.6/2.3	Add work process for abnormal incident required clarification letter.	
5	12-Apr-16	P.3/2.1	Revised Complaint handling flowchart	Nipa N. (QS/21)
6	4-Jun-18	P.1/ 1	Revised by adding Environment, Health and Safety	Nipa N. (QS/21)
		P.3/2.1	Add Assigned Operator in Complaint handling flowchart	
		P.6/2.2	Revised from Environmental Specialist to EHS Specialist	
7	16-Oct-18	P. 5 / 2.1.2	Revised normal operation scope in Guidelines for Determination of Validated Complaints	Nipa N. (QS/21)
		P.8 /3.1	Revised Internal Environmental Complaint Guideline	
1	28-Feb-19	All	1. Convert from EDMS Procedure Number: EHS-SP-QS-0003 2. Start Revision 1 at SmartProcedures	Nipa N. (QS/21)

No changes specified in the current Revision of this Procedure.

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedures

ภาคผนวก ข.18

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STAR PETROLEUM REFINING AND PTT GLOBAL CHEMICAL

MAP TA PHUT 48" SUBSEA CRUDE IMPORT PIPELINE

Ocean Works Asia (OWA)

ROV Inspection Report

STAR PETROLEUM REFINING AND PTT GLOBAL CHEMICAL MAP TA PHUT 48" SUBSEA CRUDE IMPORT PIPELINE	Page 2 of 18	
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1	26-Apr-2019	Initial Submission (Client Review)	LL	SV	MA
REV	DATE	Description	APRD	CHKD	PREP'D
Client Document No.		OWA Document No.			
N/A		49-66001-RP-05			

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Table 1. Document History

Revision	Date	Description of Change
1	26-Apr-2019	Initial submission for client review and comment

1.0 Introduction

Ocean Works Asia (Thailand) Co., Ltd. was requested by PTT Global Chemical and Star Petroleum Refining Company for the provision of ROV services, to carry out an inspection of the Map Ta Phut 48" Subsea Crude Import Pipeline. The inspection is part of the ongoing inspection, repair and maintenance (IRM) contract for the SPM off Map Ta Phut, Thailand.

The SPM is located approximately 19km Southeast of the Map Ta Phut Petrochemical Complex in Rayong, Thailand.

The extent of the inspection of the 48" Subsea Crude Import Pipeline was from the Map Ta Phut SPM PLEM flange connection to where the pipeline goes into burial South of the BLCP power station seawall, a distance of approximately 16km.

The inspection was carried out from the 4th to 10th of April 2019 using the TETSU-7 ROV deployed from the AHT SC Emerald.

The inspection consists of a single camera general visual inspection and selected anode CP survey of the pipeline which was overseen by an attending client representative from Star Petroleum Refining Company (SPRC).

2.0 Executive Summary

The extent of the ROV inspection for the 48" Subsea Crude Import Pipeline was from the PLEM to pipeline flange at KP0.004 to where the pipeline goes into full burial at KP16.141 outside the South sea wall of the BLCP Power Station.

The flange connection of the pipeline to the PLEM was noted to be in good condition, with no signs of product leak and no damage noted to the flange or the bolts. CP readings recorded on the flange were within limits.

There was a significant amount of debris scattered along the pipeline however there was no associated damage to the pipeline. The debris noted consisted mainly of fishing debris. Other items of debris consisted of an assortment of metallic and non-metallic debris.

The pipeline was noted to be sitting on the seabed with burial ranging from <25% to 90% until the pipeline goes into full burial at KP16.139. There was no significant damage noted to the weight coat. Field joints appear to have degraded bitumastic wrap at the crown of the pipeline however there was no bare metal noted. Anodes inspected were noted to be approximately 10% depleted and CP readings taken on selected anodes were found to be within a consistent range.

At the 3 areas of pipeline wall thinning designated for detail inspection, there were no signs of damage to the weight coat.

3.0 Scope of Work

The scope of work for this project is to carry out an ROV inspection of the 48" Subsea Crude Import Pipeline.

The extent of the inspection was from the Map Ta Phut SPM /PLEM flange connection to the burial point outside the South sea wall of BLCP Power Station.

The ROV inspection carried out included:

- General Visual Inspection (GVI) of the flange and pipeline using a single-color CCTV camera.
- Assessment of the condition of the pipeline coating.
- Identify any damage to the field joints.
- Assessment of the condition and depletion of the pipeline anodes.
- Cathodic potential reading at the flange and at selected locations along the survey route.
- Identify any debris in contact with the pipeline.
- Free span & scour assessment at selected locations along the survey route.

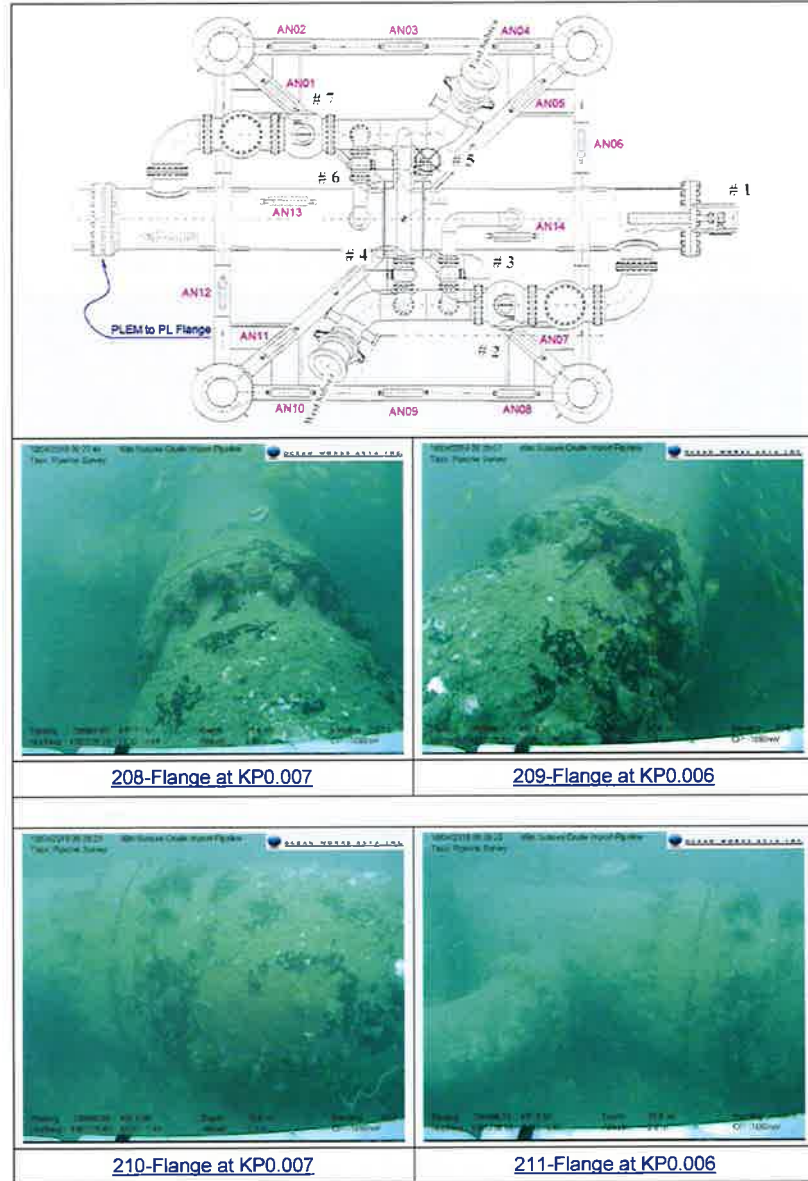
Addition to the work scope:

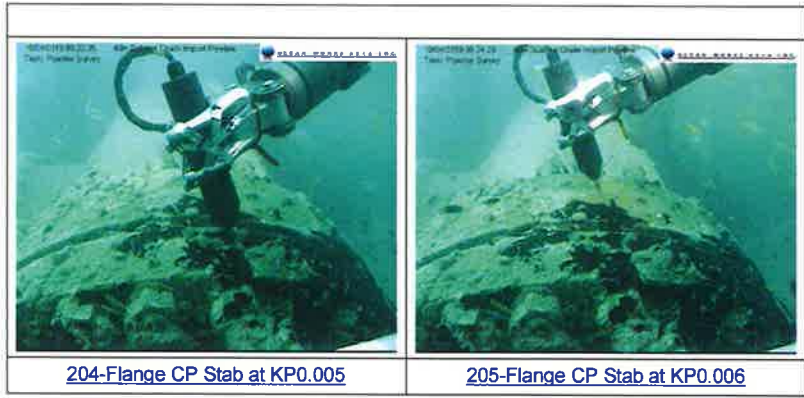
- Investigation of 3 previously reported areas of pipeline external wall thinning.

4.0 PLEM Flange General Visual Inspection

A General Visual Inspection was carried out on the PLEM to Pipeline Flange connection. During the inspection the following was noted:

- There was no signs of product leak and the flange appeared to be secure.
- All the bolts appeared to be secure with no damage or distortion.
- Flange gap appeared to be even all the way round.
- There were no signs of damage to the flange.
- Cathodic potential readings were taken at the flange connection between the PLEM and the pipeline. Readings recorded ranged between -1063mV and -1118mV.
- There was no debris on the flange.
- There was approximately 90% overall marine growth coverage on the flange.





5.0 Pipeline Inspection

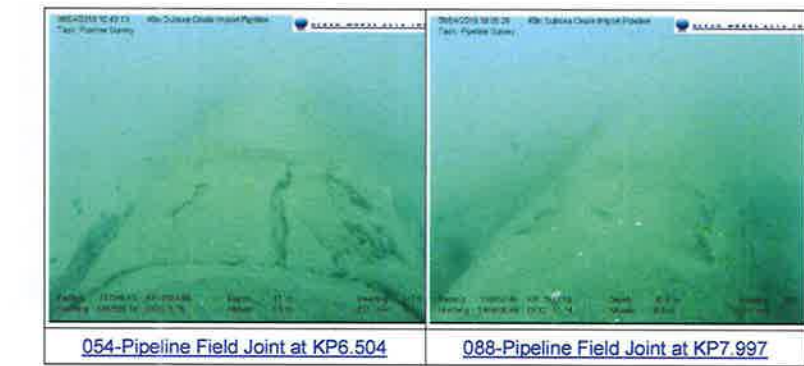
The ROV inspection of the 48" Subsea Crude Import Pipeline was carried out from the PLEM to pipeline flange at KP0.004 to where the pipeline goes into full burial at KP16.141 outside the South sea wall of the BLCP Power Station.

5.1 General Visual Inspection (GVI)

The pipeline was generally straight heading generally in a Northly direction. There were no sharp bends or any deviation of the pipeline from the as-laid route. Although there were numerous amounts of debris throughout the extent of the survey, there was no damage to the pipeline.

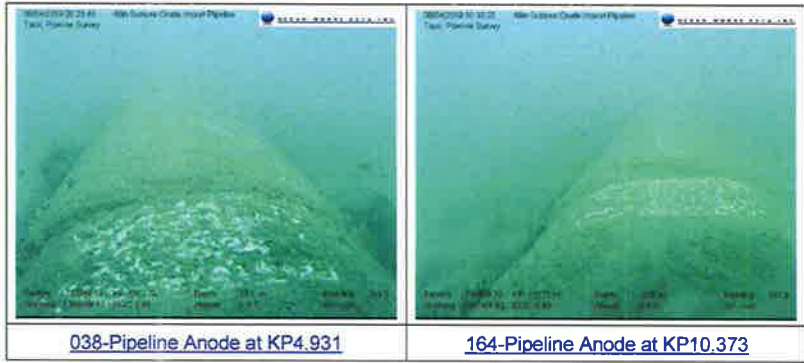
There were scattered sections of soft marine growth mainly along the sides of the pipeline and there was generally no marine growth on the crown of the pipeline. There was a layer of silt over the pipeline which could obscure any damage however no significant damage was noted.

The field joints on the pipeline appeared to have degraded bitumastic wrap/coating. This was noted as cracking or general degrading predominantly at the crown of the field joint. There was however no bare metal noted at the field joints.



5.2 Anode Condition Survey

A total of 78 anodes were found and inspected. Anodes appeared to be in good condition and secure to the pipeline. Depletion of the anodes was noted to be approximately 10%. Oxide deposits on the anode would suggest that the anodes were active.



5.3 Cathodic Potential Measurements (CP)

Cathodic potential readings were taken on selected anodes as a sampling of the performance of the anodes and a gauge of the cathodic protection offered to the pipeline. Cathodic potential readings recorded on a total of 61 selected anodes ranged between -1027mV and -1149mV.

There were no cathodic potential readings taken on the pipeline as there were no areas of bare metal noted.



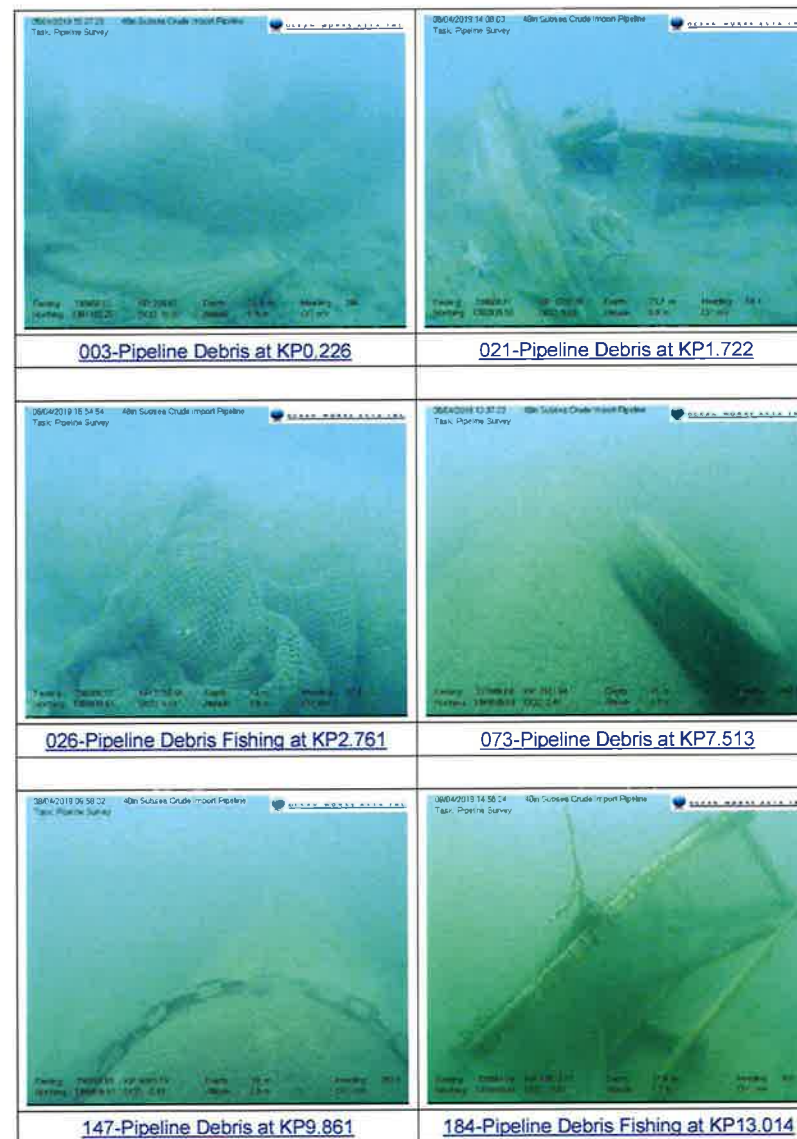
5.4 Burial & Span


The pipeline was exposed through the entire extent of the inspection. At the flange the pipeline was approximately <25% buried. From then on, the pipeline ranged in burial between 25% and 90% until the pipeline finally went into burial at KP 16.139.

5.5 Debris Survey

Debris was noted on the pipeline throughout the extent of the survey. This consisted mainly fishing nets scattered along the length on both sides and across the pipeline. There were also various items of metallic and nonmetallic debris scattered throughout the extent of the survey.

Although there was a significant amount of debris noted, there was no associated damage noted to the pipeline.



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6.0 Additional Inspection – Wall Thinning Areas

During an internal inspection of the pipeline in 2016, there were 3 areas of external metal loss detected on the pipeline. At these areas the ROV carried out a detail survey over the area and approximately 10m either side of the area. During the inspection the following was noted:

KP 3.990 – The ROV carried out multiple passes over the area and there were no signs of damage noted.

KP 4.923 – The ROV carried out multiple passes over the area and there were no signs of damage noted.

KP 15.538 – The ROV carried out a single pass over the area and there were no signs of damage noted.

7.0 Conclusion

Although there was a significant amount of debris along the length of the pipeline there was no damage noted. The pipeline was sitting on the seabed with no span sections. Anodes inspected appear to be active and secure. CP readings taken were found to be consistent.

7.1 Recommendations

Carry out further investigation by diver intervention to locate and confirm the size and extent of wall thinning at the 3 locations. Install preventative clamps at the areas of wall thinning.

8.0 Technical Appraisal

The inspections of the 48" Subsea Crude Import pipeline from the PLEM flange to where the pipeline goes into burial was carried out safely and successfully using the TETSU 7 ROV onboard the AHT SC Emerald.

8.1 Restrictions and Complications

Complications encountered during the course of the inspection campaign were:

- Debris along the pipeline causing a potential fouling hazard to the ROV.
- Limited visibility affecting the rate of travel and the ability of the ROV to spot hazards.



Chevron Energy Technology Company

**Review of pipeline integrity assessments
for 48" submarine crude pipeline
Star Petroleum Refining Public Company Limited
Map Ta Phut, Rayong Thailand**

Rev 1

Submitted to: Suchart B., Lead PD Inspector, Kovit R., PD/PM Inspection Engineer
SPRC Thailand

Prepared by: Alan Zakielarz
Pipeline Integrity Engineer
Chevron ETC / FE Department / MEQ Unit / Pipeline Integrity Team
Houston

1	June 2020	Final Report		AZCI	AZCI	TQHN		
A	June 2020	DRAFT for client comments		AZCI	AZCI	TQHN		
REV	DATE	DESCRIPTION		ORIG	CHK	APPR		
APPROVED BY: Satish Kulkarni				Distribution: Suchart B., Kovit R., Satish Kulkarni				
DATE: June 2020								
Document Control No.	Project	Area	Discipline	Type	Originator	Package	Sequence-Sht	Revision
	ETC-FED-MEQ	FEAI	PPL	RPT	CVX	PPIM	00039-0000	1

Review of pipeline integrity assessments for 48" submarine crude pipeline

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Review of pipeline integrity assessments for 48" submarine crude pipeline

1. Executive Summary

Star Petroleum Refining Public Company (SPRC) is considering deferral of the planned 2021 inline inspection of the 48" submarine crude pipeline until 2024. SPRC requested Chevron ETC conduct a review of the pipeline integrity assessments for determining the feasibility of ILI deferral. Based on the supplied pipeline integrity assessments and supplemental reports, Chevron ETC proposes a conditional recommendation to defer the inline inspection until 2024 provided the recommended action items are completed and the existing pipeline integrity controls are fully maintained during the deferral period. Chevron ETC has prepared the following report detailing the review of the assessments, discussion of pipeline hazards, and recommendations for SPRC to consider for deferral of ILI until 2024.

1. Chevron ETC recommended action items for ILI deferral:

- 1.1. SPRC consultation with Applus RTD to understand if differences in reported ovality measurements in all three inspection reports, 2009, 2011 & 2016, are due to effects of the sensor changes during each ILI run and tool tolerance or changes in actual measured pipeline ovality.
- 1.2. SPRC review the Onshore Cathodic Monitoring reports for recommendations to maintain adequate CP protection for the pipeline, including review of the 6-month inspection frequency. A higher frequency of inspection may be necessary to remedy the highlighted concerns in the reports and supplement deferral of the ILI inspection.
- 1.3. SPRC review the 5-year frequency of the subsea ROV inspection (general visual inspection and CP survey) based on the number of anomalies present. A higher frequency of inspection may be necessary to monitor existing anomalies and supplement deferral of the ILI inspection.
- 1.4. SPRC confirm an extended ILI interval is in accordance with Thailand's pipeline and pipeline integrity regulations.

2. Chevron ETC general integrity recommendations:

- 2.1. SPRC review with Applus the internal anomaly referred to as a "wheel" inside the pipeline and consider a plan for removal of this object during the next inspection
- 2.2. SPRC discuss with Applus to review the ILI data for external corrosion anomalies below the reporting threshold in the range of 5-10% n.w.t. The Applus data from 2016 could be reviewed with a lower reporting threshold to determine the volume of potential anomalies on the pipeline that may exist and be impacted if active corrosion is taking place.
- 2.3. SPRC review the threat of mechanical damage based on the understanding of the marine traffic and users of the sea in proximity of the pipeline. Measures may be required to monitor traffic in the area or increase the frequency of GVI to identify areas of mechanical damage.
- 2.4. SPRC consider the use of a field gradient survey, such as Direct Current Voltage Gradient (DCVG) for the offshore portion of the pipeline. This submarine CP survey can identify coating breakdown and provide potential readings for both exposed and burial pipe. Chevron ETC and Chevron Technology Ventures can provide additional information if required.
- 2.5. The PLEM and SPM inspections continue 3-monthly inspections per inspection strategy. It is also recommended to address the PLEM UT readings in the reports indicating wall thickness

Review of pipeline integrity assessments for 48" submarine crude pipeline

greater than nominal pipe. The report and measurements should correctly state design thickness and actual measured conditions.

2.6. SPRC consider the following factors in planning preparation for the next ILI:

- 2.6.1. Utilizing the same ILI technology and same ILI vendor to compare signal data with previous ILI results.
- 2.6.2. Additional assurance work by ILI vendor to demonstrate the full 19.3km pipeline length can be inspected.

3. **Immediate Integrity:** No immediate action is required. All reported wall loss anomalies, at the date of the inspection, pass the FFP assessment at the assessment pressure of 15.3 kgf/cm² (15 barg/ 217psig).
4. **Estimated Corrosion Growth Rate:** Chevron ETC has estimated a corrosion growth rate (CGR), for the time dependant assessment of reported anomalies. The estimated CGR is determined by calculating the wall thickness change from original nominal wall thickness to the 2016 ILI reported wall loss depths having occurred over a time period (2009-2016), much less than the actual pipeline operational period. This is a conservative corrosion estimate. Future re-inspections and ILI run comparisons will provide a more reliable estimate of current corrosion growth.
5. **Future integrity:**

Wall Loss Anomalies: The potential for future growth of all sub critical reported wall loss anomalies was conservatively modelled based on the selected estimated corrosion growth rate (CGR) for wall loss anomalies. Applying the estimated CGR, the analysis predicts that no wall loss reported by the 2016 ILI exceeds FFP limit state dimensions through 2024 at the at the assessment pressure of 15.3 kgf/cm² (15 barg/ 217psig).

Ovality: The potential for pipeline ovality to change is low based on Chevron ETC's understanding of the reported soil conditions and that the ovality would have occurred immediately after loading the pipeline due to the soil overburden. Provided the loading of the pipeline remains consistent, no changes are expected and the maximum reported ovality of 6.5% has been determined to be below the ovality limit state value of 8.7%.

6. **Re-inspection interval using ILI:** Based on the minimum predicted time for anomaly response (FFP Limit) and provided the operation regime maintains a low risk for internal corrosion, the cathodic protection (CP) system for this pipeline is fully operational, and appropriate monitoring and maintenance of the CP system is conducted Chevron ETC conditionally supports the deferral of the inline inspection to 2024.

Review of pipeline integrity assessments for 48" submarine crude pipeline

2. Background Information

The 48" crude submarine pipeline conveys crude oil from a shallow water offshore Single Point Mooring (SPM) buoy in Gulf of Thailand to the SPRC tank farm. The pipeline was commissioned in 1996 and utilized for crude service since commissioning. Following pipeline construction, a segment of the pipeline route from the refinery for approximately 2km offshore was covered by land reclamation and construction of a power plant. The pipeline has an additional overburden of approximately 12m and loading from power plant facilities and coal storage. The pipeline integrity is managed through various inspections including inline inspection in 2009, 2011, and 2016. Table 1 lists additional pipeline parameters.

Table 1- 48-inch crude pipeline parameters

Property	Details
Commissioning date	1996
Nominal pipeline size (NPS)	48" (OD = 1219.2mm)
Nominal wall thickness (n.w.t)	19.2 mm (0.756")
Pipeline length	19.3km (11.99miles)
Material grade	API 5L Grade X60 5AW
External Coating	4mm coal tar enamel with concrete weight coating (varies in thickness from 88.9 to 117.5 mm)
Maximum Operating Pressure (MOP)	10.35 barg (150 psig)



Figure 1- Overview Map of 48-inch crude pipeline

Review of pipeline integrity assessments for 48" submarine crude pipeline

3. Inline Inspections

Inline inspections provide full length, pipeline integrity assessments and are the preferred inspection methods for pipelines. The 48" crude pipeline has been inspected by ILI three times during the operational period with inspections in 2009, 2011, and 2016. All three inspections were completed by Applus RTD PIT tool, a UT wall thickness measurement tool with geometry measurement capability. The 2009 and 2016 inspection were made to inspect the full length of the pipeline, launching from the refinery to offshore, however limited by the ability of the crawler covering 14km and 17km, respectively, versus the full line length of 19.3km. The 2011 inspection focused on the first 4km from the refinery launch point heading offshore, under the reclaimed land area.

Throughout the inspection history, Applus RTD made changes to the PIT tool specifically to the rotating head and number of UT sensors. Changes to ILI tools may impact the survey results and should be captured in the ILI performance standard. The 2009 PIT tool inspection was run with an Inertial Measurement Unit (IMU) for pipeline mapping.

Chevron ETC was only provided the 2016 UT report [1], however some of the previous Applus inspection findings from 2009 and 2011 are captured in the 2016 report or in other documents provided to Chevron ETC for review.

3.1. ILI Results- Wall Loss

The 2016 ILI run used UT technology to measure pipe wall thickness along the pipeline length. The Applus report noted the ILI data collected is of high quality for assessment. No tool damage was reported and only limited signs of pipeline debris. No other concerns are identified which would affect the tool performance.

The 2016 inspection did not report any internal wall loss anomalies. Three external wall loss anomalies were reported with a maximum wall loss depth of 2.2mm or 12% of nominal wall thickness (n.w.t.). Applus RTD has indicated the deepest anomaly was also present in the 2009 inspection data, however, was below the reporting threshold. It is unclear if this is an impact of improved ILI performance or evidence of a wall thickness change due to corrosion.

Chevron ETC reviewed the remaining strength of the three reported anomalies. For this assessment Chevron ETC utilized the specified pressure of 15.3 kgf/cm² (15 barg/217psig). Note this assessment pressure is equal to the value utilized in 2012 by Keifner for assessment of the ovality and slightly above the current Maximum Operating Pressure (MOP) of 10.5 kgf/cm² (10.3 barg/150 psig). All three reported external anomalies have estimated failure pressures, per ASME B31G, in excess of the assessment pressure of 15.3kgf/cm². The anomalies do not affect pipeline integrity based on the reported depths at the time of the 2016 inspection.

Chevron ETC reviewed the future integrity of the reported wall loss anomalies. To determine the future integrity, Chevron ETC estimated a conservative corrosion growth. To estimate the growth rate, it was assumed all wall loss reported by the 2016 ILI occurred between the period 2009 and 2016, in other words the pipe wall thickness was nominal thickness in 2009 and corrosion growth occurred to the reported ILI depth in 2016.

Review of pipeline integrity assessments for 48" submarine crude pipeline

The equation for the estimated corrosion growth is presented below. The conservative assumption results in an estimated corrosion growth rate of 0.31mm/yr.

$$\text{Corrosion Growth Rate} = \frac{t_1 - t_0}{\text{Year}_1 - \text{Year}_0}$$

t_1 = wall thickness measured Year 1

t_0 = wall thickness measured Year 0

Year_1 = Inspection Date (2016)

Year_0 = Inspection Date (2009)

The reported anomalies are then calculated for remaining strength after a time period of corrosion growth. Applying the estimated corrosion growth rate linearly to the 2016 reported wall loss depths for the next period (2016 to 2024) results in a hypothetical growth of an additional 2.48mm of wall loss to a new total depth of ~25% n.w.t. Chevron ETC calculated a failure pressure for a 25% wall loss anomaly and again the result is greater than the 15.3 kgf/cm² assessment pressure and would not impact pipeline integrity.

Anomaly length impacts remaining strength calculations therefore Chevron ETC also determines failure pressures for a hypothetical long, deep defect. Failure pressure for a 25% n.w.t. defect with length of 900mm was calculated and again resulted in calculated failure pressure greater than the 15.3 kgf/cm² assessment pressure. All calculations for failure pressures assumed an additional ILI tool tolerance of 15% n.w.t, increasing the conservatism of the calculations.

Note, Chevron ETC's use of the 15.3 kgf/cm² assessment pressure greater than the current pipeline MOP does not indicate the pipeline is fit for service at an increased MOP. While the metal loss assessment has concluded the anomalies are not predicted to fail at the assessment pressure, Chevron ETC has not reviewed the entire system for operation at the higher pressure. Changes to a pipeline MOP must follow a Management of Change Process for full analysis and review of all system components.

Based on the 2016 ILI run results and Chevron ETCs review, no reported wall loss requires immediate action and the anomalies are not predicted to impact pipeline integrity (leak or burst) through 2024.

Note the 2009 and 2016 inspections only covered 14km and 17km respectively. The entire pipeline length has not been inspected by inline inspection. Chevron ETC is not aware of any additional hazards in the last 2km of the pipeline that would differ from the inspected portion. Therefore, Chevron ETC would expect the pipeline condition to be in similar condition as the inspected portion. Chevron ETC recommends SPRC make all attempts in future ILI runs to capture results for the entire 19.3km pipeline length.

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3.2. ILI Results- Geometry

The ovality of a pipeline is measured by a UT tool by measuring changes in the maximum and minimum internal diameter. Measuring the time from the UT signal initiation to return of the front wall echo from the pipe wall, a distance can be calculated and compared to the sensor standoff, building a geometric picture of the pipeline shape.

The 2016 ILI results included measurements of 157 points of pipeline ovality in the region of the reclaimed land. The 2016 report indicated a maximum ovality of 6.5% at log distance 73.19m. This measurement is greater than the previous maximum ovality of 6% reported in both 2009 and 2011 at log distance 338.46m. 45 of the ovality measurements in 2016 increased in ovality compared to 2011. This is similar in that 52 measurements in 2011 increased in ovality when compared to 2009.

The changes in measurement are also not addressed in the Applus Final Report and from Chevron ETC's observations, no clear patterns in the data are noted. Some areas show an always increasing ovality, others show an always decreasing ovality, and other areas have mixed results between the three inspections. For example, the ovality at log distance 73.19m was steady in 2009 and 2011 then increased almost 1% in 2016. Likewise, the ovality at log distance 338.46 was steady in 2009 and 2011, then decrease by 1%. Based on the inspections all performed on a depressurised pipeline, any change in measurement is expected be the result of pipeline loading or ILI measurement errors.

Due to the differences in report ovality and the modifications made to the PIT tool which differ in each of the three Applus PIT inspections, Chevron ETC recommends SPRC consult with Applus to understand if differences reported in the ovality measurements are due to effects of the sensor changes and tool tolerance or changes in actual measured pipeline ovality.

4. Additional Pipeline Inspections

The 48" crude pipeline is subject to other inspections including General Visual Inspection (GVI), offshore Ultrasonic Testing (UT) wall thickness readings and Cathodic Protection (CP) potential readings. Chevron ETC reviewed the provided sample of inspection strategy and inspection reports for these various inspections of the 48" pipeline, SPM buoy, and PLEM.

4.1.48" pipeline Onshore CP monitoring

Onshore monitoring of the 48" crude pipeline currently measures CP potential onshore on 6-month intervals. The 2018-2020 reports [2] highlight issues with the system equipment including rectifiers, cabling, and potential readings above the protective range of -850mV. The reports make recommendations for system corrections and indicates SPRC is currently considering some recommendations for system corrections. The CP reports illustrate a clear methodology for continued monitoring of the onshore CP system.

Chevron ETC recommends SPRC review the Onshore Cathodic Monitoring reports for recommendations to maintain adequate CP protection for the pipeline, including review of the inspection frequency. A higher frequency of inspection made be necessary to remedy the highlighted

Review of pipeline integrity assessments for 48" submarine crude pipeline

concerns in the reports and deferral of the ILI inspection. For example, rectifier readings may be required monthly to establish continued operation of the CP system.

4.2.48" Pipeline Offshore GVI and CP Monitoring

The offshore section of the 48" crude pipeline from the reclaimed land to the PLEM is inspected at 5-year frequency by GVI and CP monitoring conducted by a Remote Operated Vehicle (ROV). The most recent GVI and CP survey was completed in 2019. Chevron ETC reviewed the 2019 ROV GVI and CP inspection report [3]. Noted in the report were many anomalies for coating degradation, though no bare metal was noted. Coating breakdown increases the likelihood of external corrosion, especially in the shallow, highly oxygenated seawater. The GVI report also noted that the pipeline anodes are active, based on the presence of oxide. Anode wastage was noted on average 10%. For a pipeline near the end of design life, the low level of anode wastage is positive. However, if coating degradation is recent and increasing, it would be expected the anode wastage would increase as the system works harder to protect the pipeline. CP measurements were also reported in 2019. Stabs on the anodes indicate adequate potential measurements, greater than -850mV. The report did not mention any CP measurements on the pipeline or bare metal to measure the potential on the pipe. There is a possibility for CP shielding, inability of CP current from any source to reach and protect the surface of the pipeline, with the coating breakdown which limits the CP protection.

The 2019 GVI also surveyed the locations of external metal loss reported by the 2016 ILI report. At the three locations, the GVI did not report any noticeable external corrosion or damage of the concrete weight coating. These locations should also be reviewed in future inspections.

The 2019 GVI noted extensive areas of debris from fishing and other sources. Debris has the potential to damage the pipeline coatings as well limit the CP effectiveness when metal objects are in proximity to the pipeline. Debris also limits the ability for GVI to fully inspect the pipeline. SPRC could consider removal of metal debris touching the pipeline to increase the effectiveness of cathodic protection.

Chevron ETC recommends SPRC review the 5-year frequency of the GVI of the pipeline and CP surveys based on the number of anomalies present. Shorter intervals may be required to improve understanding of the pipeline, provide early indications of anomalies, and for alignment with future ILI results. SPRC may consider the use of field gradient survey for the offshore portion. This submarine CP survey can identify coating breakdown and provide potential readings for both exposed and burial pipe.

4.3. Offshore SPM and PLEM inspections

The 48" crude pipeline termination PLEM and SPM Buoy are on 3-monthly inspection frequency for GVI, UT and CP. Chevron ETC reviewed the reports shared from 2019 and 2020 [4]. Minor anomalies included missing anodes and CP readings slightly above the expected value of -850mV. Anodes were reported with oxide indicating activity and approximate wastage between 25% and 40%. UT thickness readings are also taken of the PLEM pipe and branches. No significant PLEM anomalies were noted in the reports though some UT readings were reported greater than the nominal pipe which should be

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addressed in future inspections. The PLEM and SPM inspection is robust and considering the 3-monthly frequency, would provide timely indications of integrity concerns.

Chevron ETC's recommendation for the PLEM and SPM inspections is to continue 3-monthly inspections per inspection strategy. It is also recommended to address the PLEM UT readings in the reports indicating wall thickness greater than nominal pipe. The report and measurements should correctly state design thickness and actual measured conditions.

5. Pipeline Hazard Review

The 48" submarine pipeline is subject to many hazards. Inline Inspection provides information about the pipeline condition and hazards of external loading, mechanical damage, and corrosion. This section of the report details Chevron ETC's assessment of the inspection results and pipeline hazards.

5.1. External Loading- Ovality

The hazard of external loading exists on the pipeline in the area of the reclaimed land as indicated by the ovality reports. Extensive Fitness for Service (FFS) assessments were performed following the identification of the ovality. Chevron ETC reviewed the FFS reports and conclusions. The Keifner and Associates report [5] following the 2011 ILI run provides a clear limit state for ovality of 8.7%. Based on the 2016, all ovality measured in the inspections is less than this limit state and is not predicted to impact pipeline integrity. Chevron ETC confirmed with SPRC that no additional loading or structures over the pipe occurred between 2009 and 2016.

Chevron ETC SMEs for pipeline integrity and civil/structural discussed the FFS reports [5] [6] and the Technip soils study report [7]. Chevron ETC takes no exception with the conclusions of the FFS reports or soil study.

It is believed that most of the effects of the overburden on the pipe and ovality would have occurred immediately following the loading. The reports indicate limited potential for settlement in the future due to the reported geotechnical conditions and not anticipated to change loading to the pipeline. While there are changes in the ovality readings between inspections, most readings do not indicate an increase in ovality as a result of continued settlement or loading.

Chevron ETC recommends the pipeline ovality is continued to be monitored using ILI. Chevron ETC agrees ovality inspection frequency can be aligned with the metal loss inspection frequency as concluded by the Keifner report. If similar ovality FFS analysis is conducted in the future, Chevron ETC recommends a consultation prior to the development of the computer models for enhancements to the accuracy of the FFS calculations.

5.2. Metal Loss- Internal Corrosion

Chevron ETC considered the threat of metal loss during the review of the ILI reports, FFS reports and other documentation. The threat of metal loss from both internal and external corrosion is likely for the 48" crude pipeline.

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ETC considered an assumption that crude deliveries to the refinery generally meet specifications for contaminants and in line with the pipeline design. It would be expected the likelihood of internal corrosion is low as crude would be stabilized and export quality. The provided crude assays do not indicate any contaminants not considered by the design basis [8]. Internal corrosion has not been reported from the inspections and the ILI report UT signal degradation from debris in the pipeline, potential for under deposit corrosion, indicating internal corrosion control is functioning.

Chevron ETC would expect the risk for internal corrosion to remain the same through 2024 provided SPRC continues operating the pipeline in the current manner with internal corrosion controls. Chevron ETC recommends SPRC review with Applus the internal anomaly referred to as a "wheel" in the pipeline and consider a plan for removal of this object during the next inspection.

5.3.Metal Loss- External Corrosion

External corrosion remains a hazard to the pipeline. While the reported anomalies from the 2016 ILI report are not anticipated to result in an integrity concern through 2024, as mentioned earlier, the overall pipeline threat of external corrosion does require continued monitoring and controls to maintain pipeline integrity.

The GVI and CP inspections reported anomalies related to the external coating and CP reading anomalies. Noted in the report were many anomalies for coating degradation though no bare metal was noted. Coating breakdown increases the likelihood of external corrosion, especially in the shallow, highly oxygenated seawater.

The 2019 GVI report also noted extensive areas of debris from fishing and other sources. Debris has the potential to damage the pipeline coatings as well limit the CP effectiveness when metal objects are in proximity to the pipeline.

The Onshore CP reports indicate CP potential anomalies with readings above -850mV. Chevron ETC's opinion is that the onshore section of pipe is also subject to increased coating damage and external corrosion. Based on the ovality measurements, it is likely the concrete and coal tar enamel coatings have been damaged. Damage coating can lead to CP shielding and allow external corrosion to initiate.

In addition to previously mentioned recommendations for CP system mitigation, Chevron ETC recommends further discussion with Applus concerning external corrosion anomalies below the reporting threshold. The Applus data from 2016 could be reviewed with a lower reporting threshold to determine the volume of potential anomalies on the pipeline that may exist and be impacted if active corrosion is taking place. Chevron ETC would not expect these shallow anomalies to impact pipeline integrity through 2024, however this exercise would provide SPRC an indication of the likelihood of future areas of external corrosion along the pipeline.

In summary, the potential for external corrosion continues for the pipeline with increased likelihood as the pipeline ages and noted coating anomalies continue degradation. Continued inline inspection of the pipeline entire length will provide the assessment method to confirm pipeline integrity.

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5.4.Mechanical Damage- Dents

The threat of mechanical damage from third parties remains for the 48" crude pipeline. The pipeline traverses through the reclaimed land where third party operations could impact the pipeline if additional structures are built. Offshore, the pipeline is exposed to marine traffic and other users of the sea. Mechanical damage can result in instantaneous pipeline integrity incidents, such as an anchor drag that causes rupture or can result in time dependant damage such as debris dropped on the pipeline resulting in a dent with metal loss that can fail from corrosion or fatigue.

The 2016 ILI report has not indicated any mechanical damage in the form of dents to the pipeline. The 2019 GVI report indicates lots of interaction with users of the sea based on the fishing and other debris. The GVI report indicates visibility and level of debris is limiting the inspection of the pipeline and a risk to the ROV.

Chevron ETC recommends SPRC review the threat of mechanical damage based on their understanding of the marine traffic and sea users in proximity of the pipeline. Measures may be required to monitor traffic in the area or increase the frequency of GVI to identify areas of mechanical damage.

6. Conclusions

1. Chevron ETC recommended action items for ILI deferral:

- 1.1. SPRC consultation with Applus RTD to understand if differences in reported ovality measurements in all three inspection reports, 2009, 2011 & 2016, are due to effects of the sensor changes during each ILI run and tool tolerance or changes in actual measured pipeline ovality.
- 1.2. SPRC review the Onshore Cathodic Monitoring reports for recommendations to maintain adequate CP protection for the pipeline, including review of the 6-month inspection frequency. A higher frequency of inspection may be necessary to remedy the highlighted concerns in the reports and supplement deferral of the ILI inspection.
- 1.3. SPRC review the 5-year frequency of the subsea ROV inspection (general visual inspection and CP survey) based on the number of anomalies present. A higher frequency of inspection may be necessary to monitor existing anomalies and supplement deferral of the ILI inspection.
- 1.4. SPRC confirm an extended ILI interval is in accordance with Thailand's pipeline and pipeline integrity regulations.

2. Chevron ETC general integrity recommendations:

- 2.1. SPRC review with Applus the internal anomaly referred to as a "wheel" inside the pipeline and consider a plan for removal of this object during the next inspection
- 2.2. SPRC discuss with Applus to review the ILI data for external corrosion anomalies below the reporting threshold in the range of 5-10% n.w.t. The Applus data from 2016 could be reviewed with a lower reporting threshold to determine the volume of potential anomalies on the pipeline that may exist and be impacted if active corrosion is taking place.
- 2.3. SPRC review the threat of mechanical damage based on the understanding of the marine traffic and users of the sea in proximity of the pipeline. Measures may be required to monitor traffic in the area or increase the frequency of GVI to identify areas of mechanical damage.
- 2.4. SPRC should consider the use of a field gradient survey, such as Direct Current Voltage Gradient (DCVG) for the offshore portion of the pipeline. This submarine CP survey can identify coating breakdown and provide potential readings for both exposed and burial pipe. Chevron ETC and Chevron Technology Ventures can provide additional information if required.
- 2.5. The PLEM and SPM inspections continue 3-monthly inspections per inspection strategy. It is also recommended to address the PLEM UT readings in the reports indicating wall thickness greater than nominal pipe. The report and measurements should correctly state design thickness and actual measured conditions.
- 2.6. SPRC consider the following factors in planning preparation for the next ILI:
 - 2.6.1. Utilizing the same ILI technology and same ILI vendor to compare signal data with previous ILI results.
 - 2.6.2. Additional assurance work by ILI vendor to demonstrate the full 19.3km pipeline length can be inspected.

3. **Immediate Integrity:** No immediate action is required. All reported wall loss anomalies, at the date of the inspection, pass the FFP assessment at the assessment pressure of 15.3 kgf/cm² (15 barg/ 217psig).
4. **Estimated Corrosion Growth Rate:** Chevron ETC has estimated a corrosion growth rate (CGR), for the time dependant assessment of reported anomalies. The estimated CGR is determined by calculating the wall thickness change from original nominal wall thickness to the 2016 ILI reported wall loss depths having occurred over a time period (2009-2016), much less than the actual pipeline operational period. This is a conservative corrosion estimate. Future re-inspections and ILI run comparisons will provide a more reliable estimate of current corrosion growth.
5. **Future integrity:**

Wall Loss Anomalies: The potential for future growth of all sub critical reported wall loss anomalies was conservatively modelled based on the selected estimated corrosion growth rate (CGR) for wall loss anomalies. Applying the estimated CGR, the analysis predicts that no wall loss reported by the 2016 ILI exceeds FFP limit state dimensions through 2024 at the at the assessment pressure of 15.3 kgf/cm² (15 barg/ 217psig).

Ovality: The potential for pipeline ovality to change is low based on Chevron ETC's understanding of the reported soil conditions and that the ovality would have occurred immediately after loading the pipeline due to the soil overburden. Provided the loading of the pipeline remains consistent, no changes are expected and the maximum reported ovality of 6.5% has been determined to be below the ovality limit state value of 8.7%.

6. **Re-inspection interval using ILI:** Based on the minimum predicted time for anomaly response (FFP Limit) and provided the operation regime maintains a low risk for internal corrosion, the cathodic protection (CP) system for this pipeline is fully operational, and appropriate monitoring and maintenance of the CP system is conducted Chevron ETC conditionally supports the deferral of the inline inspection to 2024.

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Appendix A: References

- [1] Applus RTD, "UT Intelligent Pigging Report Jun 2016," Applus, Netherlands, 2016.
- [2] "Ongoing Cathodic Protection (CP) Survey & Consultant Service TOR Test," aurecon, Thailand, 2020.
- [3] "ROV Inspection Report," Ocean Works Asia, Thailand, 2019.
- [4] "ABS SPS #5 and Quarterly Inspection Report," Ocean Works Asia, Thailand, 2019.
- [5] Keifner and Associates, "Fitness for Service Analysis of 48 inch Crude Pipeline, Rayong, Thailand," Keifner and Associates, Worthington, 2012.
- [6] Atkins Boreas, "Map Ta Phut Crude Oil Pipeline Fitness for Purpose Assessment of Reported Deformation," Atkins Boreas, Newcastle, 2010.
- [7] Technip Engineering, "Soil Settlement Analysis Report," Technip Engineering, Thailand, 2010.
- [8] Nippon Steel, "Design Report for Submarine Pipeline," Nippon Steel, 1995.
- [9] ASME, "B31G Manual for Determining the Remaining Strength of Corroded Pipelines," ASME, 2012.
- [10] American Petroleum Institute, *API RP 1160 Managing System Integrity for Hazardous Liquid Pipelines*, API, 2018.

Appendix B: Chevron ETC Fitness for Purpose Assessment Methodology

The ETC Fit-for Purpose (FFP) methodology is used for assessment of all reported wall loss anomalies. Under the conditions normally encountered in pipelines, the hoop stress due to internal pressure is the largest stress and governs the mode of failure. The ETC FFP methodology, using the Smart Facility Pipeline software first evaluates the depths and axial lengths for individual ILI anomalies against limit states (using ASME B31G Level 1; original B31G and Modified B31G) that represent the critical size required to withstand an internal pressure equal to or greater than the MOP consistent with the design safety factor. ASME B31G requires a safety factor for evaluating inspection results. The minimum requirement for factor of safety, 1.25, is equivalent to the original hydrostatic testing per ASME B31.4. The safety factor applied here is 1.39 for the entire pipeline, a more conservative assessment.

Extensive studies were conducted in previous ETC development projects. Different metal loss assessment models were evaluated – B31G, Modified B31G, DNV F-101, API/ASME 579, Shell, etc. The original B31G model was identified as the best probabilistic burst model for assessing metal loss damage. Leak model allows three leak thresholds to simulate the limits in B31G (80%), F-101 (85%) and through-wall breach of pressure boundary (100%). Following are the equations* used for calculating the limit states.

<u>Burst Limit State</u>	<u>Leak Limit State</u>
$S_b = P \times \left(\frac{1 - G \frac{d}{t}}{1 - G \frac{d}{t} \frac{1}{M}} \right) - P_{Design}$ $P = \frac{2 \times C \times SMTS \times t}{D} \quad \text{or} \quad P = \frac{2 \times C \times UTS \times t}{D}$ <p style="margin-left: 20px;"><i>where</i></p> $M = \sqrt{1 + A^2}$ $A = 0.893 \frac{L}{\sqrt{Dt}}$	$g_L = t - CR \times Time$

Material strength – SMTS or UTS

Pipe dimensions – diameter (D) and thickness (t)

Defect dimensions – depth (d) and length (L)

Corrosion rate (CR)

Model parameters – geometry factor (G) and strength factor (C)

**Extracts from Smart Facilities Pipelines – Risk-Based Pipeline Integrity Management, ETC

The B31G level 1 models predict the failure pressure for corroded pipe, based on the effect of hoop stress considering the maximum thru wall depth and longitudinal extent of wall loss areas within otherwise unaffected pipe wall. Each model assumes a different theoretical thru wall profile for a wall loss (rectangular for Original B31G or an elliptical profile of $0.85d \times L$ for Modified B31G) to account for

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the fact that actual corrosion profiles encountered in pipelines can vary. These models can provide different predictions of burst pressure for wall loss anomalies with the same depth and length, but both have been demonstrated to be conservative when compared with actual burst tests. The Smart Facility Pipeline tool analysis selects the criterion (original B31G or Modified B31G criteria) that can tolerate the most severe anomaly for use in classification of immediate, near term, scheduled or monitored condition for each ILI wall loss anomaly. All volumetric wall loss regardless of its classification as corrosion or non-corrosion related is evaluated for FFP using the B31G criteria.

The API FFP response criterion for immediate conditions identifies anomalies requiring immediate repair because they exhibit depth and length that could fail at MOP. The API FFP criterion for near term or scheduled conditions identifies anomalies that require repair in accordance with a time-based schedule because they exhibit a depth and length that cannot withstand a "safe" pressure consistent with the design safety factor commonly referred to as an FFP limit state. Failure pressure limit states for corroded pipe can be represented by a sentence plot or limit state line delineating the family of depth and length for individual anomalies that share the same failure pressure in a pipeline segment with consistent attributes, namely; diameter, nominal wall thickness and specified minimum yield strength (SMYS). Similar plots can be created for other limit states to illustrate the limits of anomaly depth and length expected to withstand an internal pressure associated with a hydrostatic test or consistent with application of design safety factors.

Corrosion Metal Loss

The ETC FFP methodology considers the immediate integrity of the pipeline due to leak and rupture limit states and future integrity considering time dependent threats to pipeline integrity. In both cases the expected measurement errors of the inspection technology are considered as corrections to the limit state or FFP criterion. There are four categories of response to in-line inspection predictions according to the pipeline integrity management guidance from API 1160 "Managing System Integrity of Hazardous Liquid Pipelines"

Immediate Conditions: Anomalies are predicted to have a burst pressure at or near MOP or minimum acceptable locally corroded wall thickness. This represents a nil safety factor condition with the prescribed response to promptly reduced pressure or shut down the pipeline.

Near Term Response Conditions: Anomalies that represent a threat to pipeline integrity if left unaddressed for a period in excess of 1 1/2 years, in considering growth mechanisms but not ILI tool tolerance. While Near Term Response conditions may not have adequate safety factor to remain in the pipeline indefinitely, they do have some remaining life before they would grow to a critical flaw size with nil safety factor thus offering a mechanism for scheduling and prioritizing repair.

Scheduled Conditions: These are anomalies that fail the Fit for purpose criteria for burst pressure or wall loss depth when evaluated for both growth and tool tolerance. Similarly, they have some remaining life before they would grow to a critical flaw sized allowing for response schedule to complete a verification and repair if necessary.

Monitored Conditions: Manufacturing or construction conditions that are deemed fit for purpose at the time of inspection in accordance with industry recognized engineering evaluation. This also

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includes anomalous conditions identified by integrity assessment that are not currently impairing pipeline integrity. These are reviewed during subsequent integrity assessments.

Corrosion Growth Rate Estimation

The growth rate of corrosion along a pipeline is neither constant over time nor spatially along the pipeline. The estimated rate for corrosion growth can be obtained from mechanistic models (e.g. environmental models) or comparison of wall measurements (discrete or severity distributions) over a time period. The selection of the most appropriate method is made by a Subject Matter Expert considering inspection tool errors and time intervals and expected corrosion growth mechanisms.

Inspection Interval

The following deterministic example of a response or inspection interval, based on the fit for purpose (FFP) or safety factor condition, illustrates how an interval is determined by the difference in metal loss depth for very long defects between the maximum reported or predicted metal loss depth and fit for purpose depth limit divided by the corrosion growth rate.

$$\text{Interval} = \frac{T_{nom} * (FFS \frac{d}{t} - \text{Max} \frac{d}{t})}{\text{Corrosion Growth Rate}}$$

T_{nom} = nominal wall thickness

$$FFS \frac{d}{t} = \text{limit state} \frac{d}{t} \text{ ratio (per assessment method)}$$

$$\text{Max} \frac{d}{t} = \text{maximum} \frac{d}{t} \text{ ratio measured (from inspection)}$$



STAR PETROLEUM REFINING COMPANY AND PTT GLOBAL CHEMICAL

MAP TA PHUT SPM

Ocean Works Asia (Thailand) Co., Ltd.

Quarterly Inspection Report

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MAP TA PHUT SPM	Page 2 of 12	
	13-Jan-23	
Quarterly Inspection Report	Rev. 1	

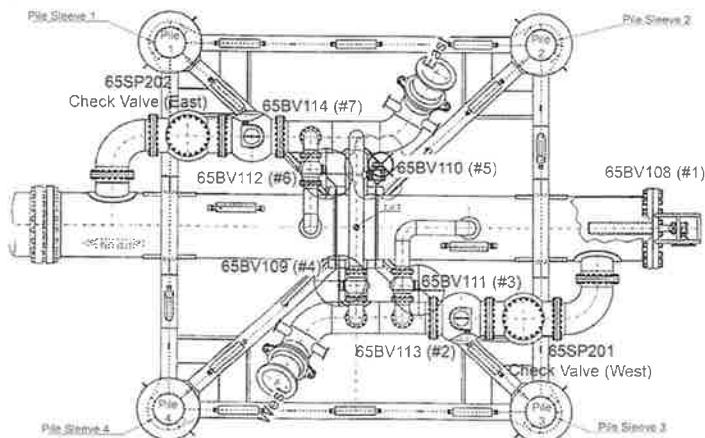
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3.0 General Visual Inspection (GVI) of the 7 x Steering Valves

As the two (2) subsea hoses had been removed, there was no requirement to cycle any of the valves. However, inspection of the valves was carried out to monitor general condition.



Note: Valve Tag Numbers revised (as at 29th April 2022) to come in line with SPRC Tag Numbering system

The valves were inspected and during the inspection the following was noted:

1. Valve #1 (65BV108) 4" BALL VALVE #1 - Fully Closed
2. Valve #2 (65BV113) 24" BALL VALVE #2 - Fully Closed
3. Valve #3 (65BV111) 10" BALL VALVE #3 - Fully Closed
4. Valve #4 (65BV109) 10" BALL VALVE #4 - Fully Closed
5. Valve #5 (65BV110) 4" VENT BALL VALVE #5 - Fully Closed
6. Valve #6 (65BV112) 10" BALL VALVE #6 - Fully Closed
7. Valve #7 (65BV114) 24" BALL VALVE #7 - 98% Closed

There were no signs of leaks from any of the valves inspected.

4.0 East and West Subsea Hose Inspection

There were no subsea hoses installed at the time as they had been removed for in preparation for future replacement.

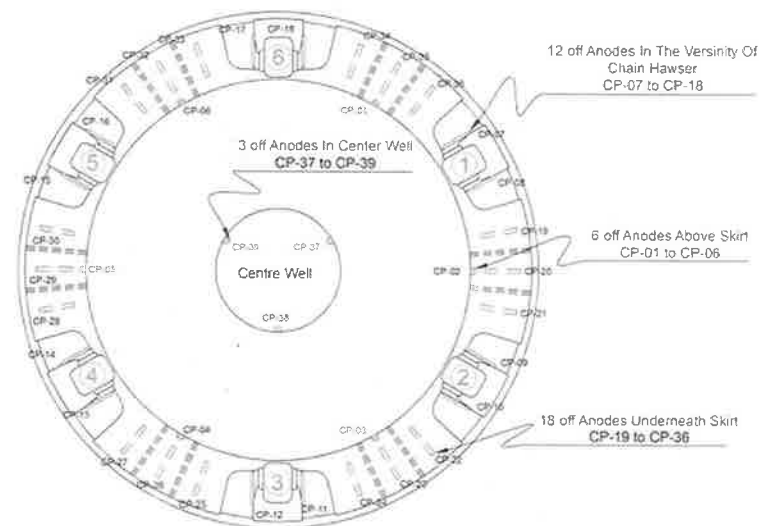
5.0 Cathodic Potential (CP) readings

Cathodic potential readings were carried out on the PLEM and Buoy. The results of which are included in the following sections.

5.1 Cathodic Potential (CP) Readings on Buoy

CP readings were taken on the buoy at the anode locations and in the moonpool area.

CP readings on the buoy structure ranged between (-)1012mV and (-)907mV.

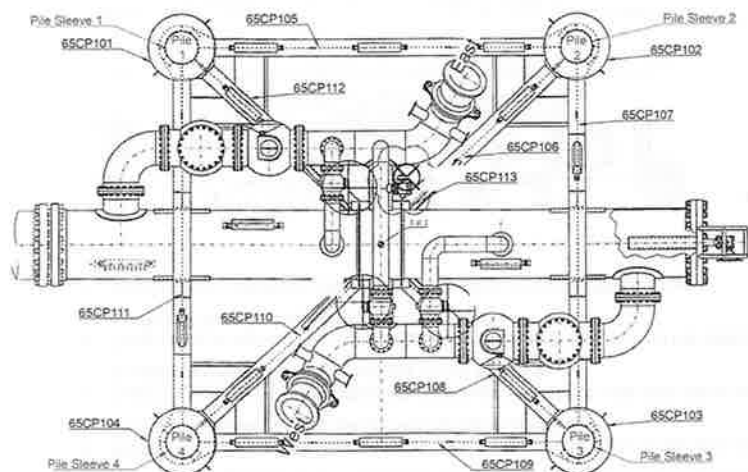


Location	Reading (-mV)	Location	Reading (-mV)	Location	Reading (-mV)
CP-01	962	CP-14	916	CP-27	911
CP-02	952	CP-15	921	CP-28	924
CP-03	950	CP-16	916	CP-29	924
CP-04	938	CP-17	917	CP-30	917
CP-05	958	CP-18	925	CP-31	919
CP-06	952	CP-19	913	CP-32	921
CP-07	912	CP-20	914	CP-33	919
CP-08	916	CP-21	916	CP-34	926
CP-09	914	CP-22	920	CP-35	924
CP-10	918	CP-23	916	CP-36	919
CP-11	907	CP-24	912	CP-37	1012
CP-12	908	CP-25	912	CP-38	995
CP-13	908	CP-26	909	CP-39	1009

5.2 Cathodic Potential (CP) Reading on the PLEM

CP readings were taken on the PLEM at selected locations. CP readings on the PLEM structure ranged between (-)1059mV and (-)1046mV.

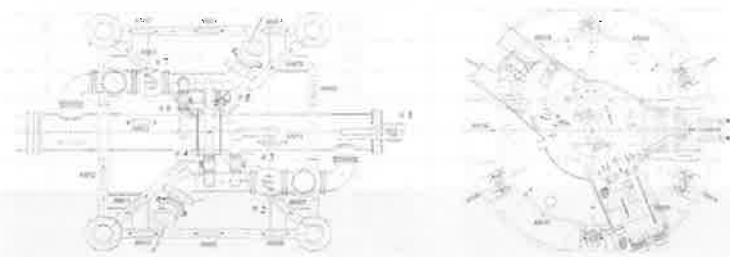
Location	Reading (-mV)	Location	Reading (-mV)
65CP101	1057	65CP108	1055
65CP102	1055	65CP109	1056
65CP103	1057	65CP110	1058
65CP104	1055	65CP111	1051
65CP105	1046	65CP112	1048
65CP106	1052	65CP113	1056
65CP107	1059		



6.0 General Visual Inspection on the Buoy and PLEM Anodes

A general inspection of the anodes was carried out on selected anodes. During the inspection the following was noted:

- On the PLEM Anode AN4, AN5 and AN10 were found with a broken stub at one end. This damage is historical and has previously been reported. All other anodes were found to be intact and secure.
- Anode depletion was approximately 50%.
- Oxide deposits on the anodes would suggest they were active.



Anode	Depletion %	Secure	Remarks
AN01	50	<u>Yes / No</u>	
AN02	50	<u>Yes / No</u>	
AN03	50	<u>Yes / No</u>	
AN04	50	<u>Yes / No</u>	1 stub broken, other secure
AN05	50	<u>Yes / No</u>	1 stub broken, other secure
AN06	50	<u>Yes / No</u>	
AN07	50	<u>Yes / No</u>	
AN08	50	<u>Yes / No</u>	
AN09	50	<u>Yes / No</u>	
AN10	50	<u>Yes / No</u>	1 stub broken, other secure
AN11	50	<u>Yes / No</u>	
AN12	50	<u>Yes / No</u>	
AN13	50	<u>Yes / No</u>	
AN14	50	<u>Yes / No</u>	
AN15	50	<u>Yes / No</u>	
AN16	50	<u>Yes / No</u>	Covered by marine growth
AN17	50	<u>Yes / No</u>	Covered by marine growth
AN18	50	<u>Yes / No</u>	Covered by marine growth
AN19	50	<u>Yes / No</u>	Covered by marine growth
AN20	50	<u>Yes / No</u>	Covered by marine growth

7.0 General Visual Inspection of the Buoy and PLEM

7.1 General visual inspection of the Buoy

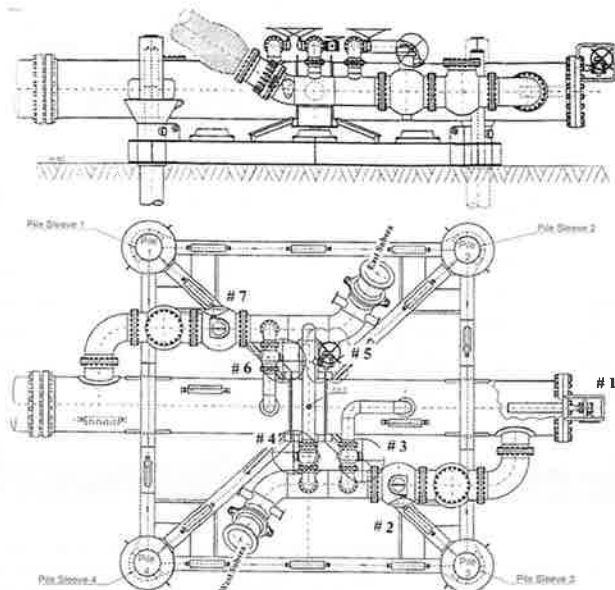
A general visual inspection of the underwater parts of the buoy was carried out and the following was noted:

- There was no damage or debris noted on the buoy and skirt
- Buoy position measurements relative to the PLEM were taken
- The Overall coating condition was good with scattered areas of paint coat flaking/peeling

7.2 General Visual Inspection of the PLEM

The general visual inspection of the PLEM was carried out and the following was noted:

- The Mainline & Flanges were inspected and there was no signs of damage and the flanges appeared to be secure with no signs of leaks.
- Apart from the three (3) anodes with detached brackets on one side there was no signs of damage on or around the PLEM structure.
- There were no signs of any scour or gap at the sand slit area around the base of the PLEM. Base frame partially buried in areas.
- There was no significant debris noted on or around the PLEM structure



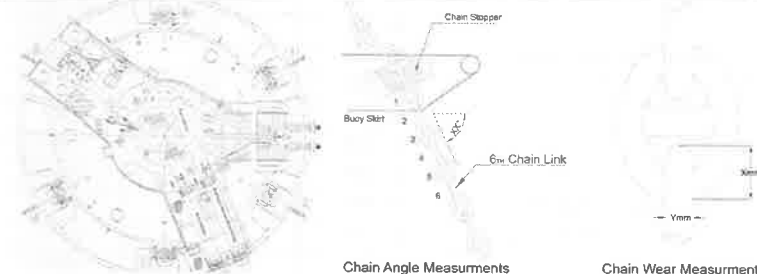
8.0 Inspection of the Six (6) Mooring Chains

8.1 Chain Angle Measurement.

Chain angle measurements were carried out on each of the 6 chains. The measurement was taken on the 6th link down from the chain stopper and the following was noted.

Chain No.	Chain Angle (XX-°)	Chain No.	Chain Angle (XX-°)	Chain No.	Chain Angle (XX-°)
Chain 1	45	Chain 3	46	Chain 5	45
Chain 2	46	Chain 4	46	Chain 6	42

Note: Angle measurements taken without subsea hoses installed at buoy.



8.2 Chain Wear Measurement

Chain wear measurements were carried out at the chain stopper area and at the touch down point of each chain. The results were as follows:


Chain No	Chain Wear (mm)			
	Chain Stopper Area		TDP	
	X	Y	X	Y
1	222	112	216	106
2	212	112	216	111
3	220	114	204	110
4	216	112	215	116
5	218	109	217	112
6	221	113	201	101

8.3 Chain Stoppers GVI

A GVI was conducted on all 6 chain stoppers and were found to be in a generally good condition with no signs of significant debris in the area.

9.0 Seal Cap Re-Tightening

PLEM Seal Cap Re-Tighten of PLEM Check-Valve was carried out. The two (2) x seal caps have been fully tightened. There were no signs of any leaks around seal cap.

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10.0 Conclusion

CP measurements carried out on the PLEM and Buoy were all found to be within acceptable limits. Anodes inspected on both the PLEM and Buoy appear to be active and secure. Six (6) valves were inspected. There were no signs of damage or significant debris on the Buoy or PLEM.

10.1 Recommendations


1. Anode AN4, AN5 and AN10 with the broken stub is not of any major concern, however should there be any open window for diving works, consideration should be given to the replacement/repair of the anodes.

11.0 Technical Appraisal

The Quarterly Inspection was carried safely and successfully by the Air Divers onboard MV Uniwise Rayong.

11.1 Restrictions and Complications

There were no restrictions or complications encountered during the inspection

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Appendix A: Inspection Forms / Reports

- 1) 53-66001-16-CP-01 CP Measurement - PLEM 23-01-03
- 2) 53-66001-16-CP-02 CP Measurement - Buoy 23-01-03
- 3) 53-66001-16-PL-01 Photo Log
- 4) 53-66001-16-VI-01 Visual Inspection - Valves 23-01-03
- 5) 53-66001-16-VI-02 Visual Inspection - Anodes 23-01-03
- 6) 53-66001-16-VI-03 Visual Inspection - PLEM 23-01-03
- 7) 53-66001-16-VI-04 Visual Inspection - Buoy 23-01-03
- 8) 53-66001-16-VI-05 Visual Inspection - Chains 23-01-03
- 9) 53-66001-16-VL-01 Video Log





Photo Log

Date	3 rd January 2023	OWA Group	Thailand	Report No	53-66001-16-PL-01
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Ref. to Dive Log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-16-VL-01



Anode 1

Anode 2

Anode 3



Anode 4

Anode 5

Anode 6



Anode 7

Anode 8

Anode 9



Anode 10

Anode 11

Anode 12



Photo Log



Anode 13

Anode 14

Anode 15



Anode 16

Anode 17

Anode 18



Anode 19

Anode 20

Pile Sleeve 1



Pile Sleeve 2

Pile Sleeve 3

Pile Sleeve 3-1



Photo Log



Pile Sleeve 4

PLEM Piping (1)

PLEM Piping (2)



PLEM Piping (3)

Sand Slit (1)

Sand Slit (2)



Sand Slit (3)

Sand Slit (4)

Sand Slit (5)



Sand Slit (6)

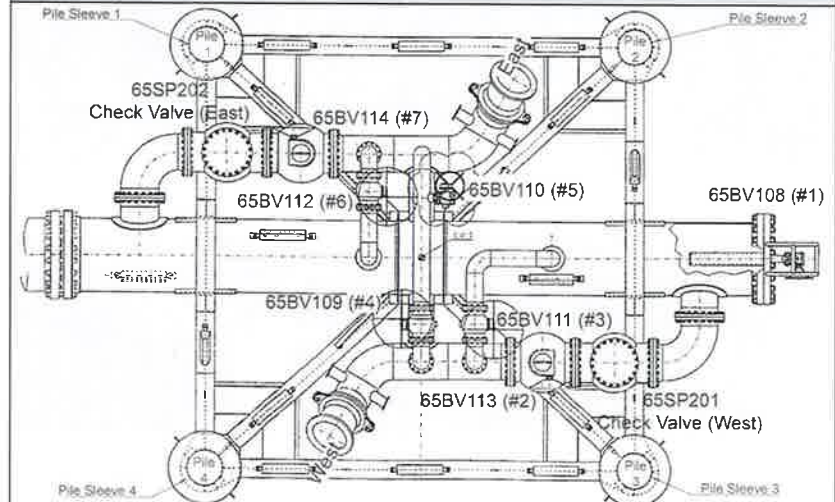
Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong



Visual Inspection

Date	3 rd January 2023	OWA Group	Thailand	Report No	53-66001-16-VI-01
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-16-VL-01

PLEM Valve Inspection and Cycling



Item No.	Tag No	Description	As Found	Task Performed / Inspection Findings	As Left
1	65BV108	4" BALL VALVE #1	Open / Closed	Condition Checked	Open / Closed
2	65BV113	24" BALL VALVE #2	Open / Closed	Condition Checked	Open / Closed
3	65BV111	10" BALL VALVE #3	Open / Closed	Condition Checked	Open / Closed
4	65BV109	10" BALL VALVE #4	Open / Closed	Condition Checked	Open / Closed
5	65BV110	4" VENT BALL Valve #5	Open / Closed	Condition Checked	Open / Closed
6	65BV112	10" BALL VALVE #6	Open / Closed	Condition Checked	Open / Closed
7	65BV114	24" BALL VALVE #7	Open / Closed	Condition Checked	Open / Closed

Comments

- No valve cycling carried out
- Subsea hoses from buoy to PLEM have been removed
- No signs of leaks noted on the valves or at any of the associated valve components

Note: Valve Tag Numbers revised (as at 29th April 2022) to come in line with SPRC Tag Numbering system

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

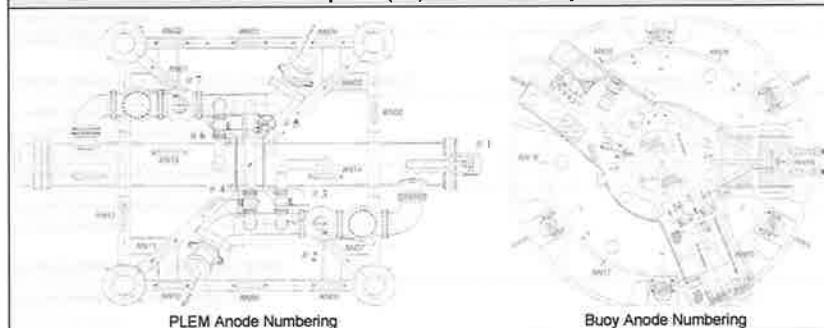


Visual Inspection

Date	3 rd January 2023	OWA Group	Thailand	Report No	53-66001-16-VI-02
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-16-VL-01

Type of Inspection	General (GVI)	✓	Close (CVI)		Detailed (DVI)	
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General Visual Inspection (GVI) on the PLEM & Buoy Anodes



Anode	% Depletion	Secure	Remarks	Anode	% Depletion	Secure	Remarks
AN01	50	Yes / No		AN11	50	Yes / No	
AN02	50	Yes / No		AN12	50	Yes / No	
AN03	50	Yes / No		AN13	50	Yes / No	
AN04	50	Yes / No	1 stub broken, other secure	AN14	50	Yes / No	
AN05	50	Yes / No	1 stub broken, other secure	AN15	50	Yes / No	
AN06	50	Yes / No		AN16	50	Yes / No	Covered by marine growth
AN07	50	Yes / No		AN17	50	Yes / No	Covered by marine growth
AN08	50	Yes / No		AN18	50	Yes / No	Covered by marine growth
AN09	50	Yes / No		AN19	50	Yes / No	Covered by marine growth
AN10	50	Yes / No	1 stub broken, other secure	AN20	50	Yes / No	Covered by marine growth

Comments

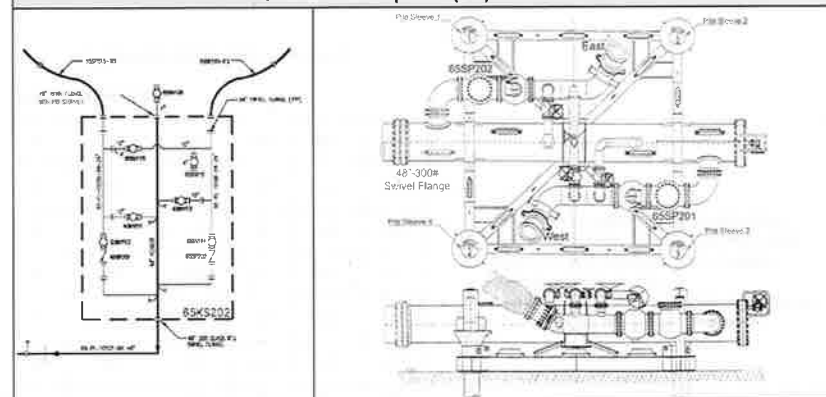
Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong



Visual Inspection

Date	3 rd January 2023	OWA Group	Thailand	Report No	53-66001-16-VI-03
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-16-VL-01

General Visual Inspection (GVI) on the PLEM



Mainline & Flanges (Including 48"-300# Swivel Flange)

All in Good Condition

Pipework & Flanges - East (Including 24" Check Valve 65SP-201)

All In Good Condition
Check valve tightening carried out

Pipework & Flanges - West (Including 24" Check Valve 65SP-202)

All In Good Condition
Check valve tightening carried out

Base Frame Structure

All In Good Condition PLEM Frame Sitting on Seabed
There were no signs of any scour or gap at the sand slit area around the base of the PLEM. Frame exposed.

Piles & Pile Sleeves (Four (4) pile columns visual inspection)

All In Good Condition
CP Reading on Pile E1 (-)608mV E2 (-)605mV W1 (-)603mV W2 (-)610mV

Additional Remarks

- There were no signs of any scour or gap at the sand slit area around the base of the PLEM. Base frame partially buried in areas.
- PLEM clear of significant debris

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

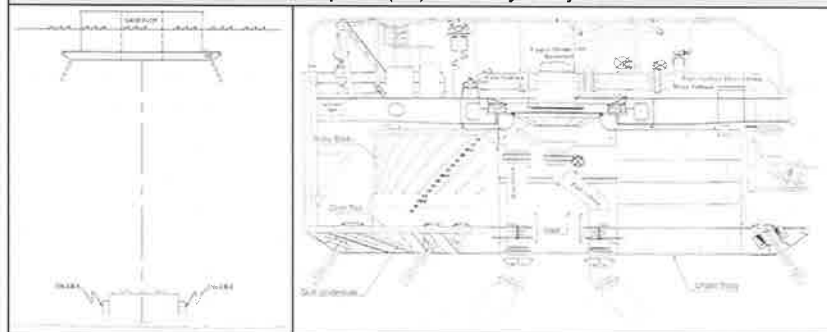


Visual Inspection

Date	3 rd January 2023	OWA Group	Thailand	Report No	53-66001-16-VI-04
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-16-VL-01

Type of Inspection	General (GVI)	✓	Close (CVI)		Detailed (DVI)	
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General Visual Inspection (GVI) on the Buoy & Buoy Position



Buoy Position Relative to PLEM

Distance DP1: 4.30m (E2) / 6.20m (E1) Distance DP2: 6.80m (W1) / 4.60m (W2)

General Condition of Skirt:

In good condition
Marine growth coverage overall 10%

General Condition of Buoy Side Shell:

In good condition
Marine growth coverage overall 25%

General Condition of Centre Well:

In good condition
Marine growth coverage overall 25%
Anodes 50% depleted and secure

Marine Growth Coverage (Prior to marine growth cleaning)

Overall: 35% Hard: 25% Soft: 10%

Overall Coating Condition

See remarks below

Additional Remarks

The Overall coating condition was good with scattered areas of paint coat flaking/peeling

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

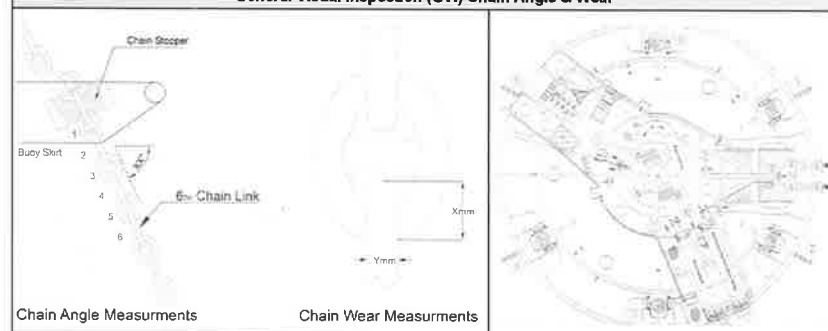


Visual Inspection

Date	3 rd January 2023	OWA Group	Thailand	Report No	53-66001-16-VI-05
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-16-VL-01

Type of Inspection	General (GVI)	✓	Close (CVI)		Detailed (DVI)	
--------------------	---------------	---	-------------	--	----------------	--

General Visual Inspection (GVI) Chain Angle & Wear



Chain No	Chain Angle (XX°)	Chain Wear (mm)				General Condition / Comments
		Chain Stopper Area		TDP		
		X	Y	X	Y	
1	45	222	112	216	106	1. Chain angle measurements taken on the 6 th link down at the chain stopper 2. Chain and chain stopper in good condition 3. Both subsea hoses had been removed. Angle measurements taken without subsea hoses installed at buoy.
2	46	212	112	216	111	
3	46	220	114	204	110	
4	46	216	112	215	116	
5	45	218	109	217	112	
6	42	221	113	201	101	

Additional Comments

No significant debris noted on the chains

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

**SPRC**

MAP TA PHUT SPM

Ocean Works Asia (Thailand) Co., Ltd.

Quarterly Inspection Report

1	19-Apr-2023	Initial Submission	KS	WK	MAD
REV	DATE	DESCRIPTION	APRD	CHKD	PREP'D
Client Document No.			OWA Document No.		
N/A			53-66001-26-FIR-01		

OCEAN WORKS ASIA (OWA)
<https://www.owa.com.sg>

OCEAN WORKS ASIA (THAILAND) Co., Ltd.

54 B.B Building 9th Floor, Room No. 3909 Sukhumvit 21 (Asoke) Klongtoey Nua, Wattana,
Bangkok 10110 Thailand

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

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	19-Apr-23	
	Rev. 1	
Quarterly Inspection Report		

1.0 General

1.1 Introduction

Ocean Works Asia (Thailand) Co., Ltd. has been requested by Star Petroleum Refining Company (SPRC) for the provision of surface supplied air diving services, to support the ongoing inspection, repair and maintenance (IRM) activities on the SPM (Single Point Mooring) off Map Ta Phut Thailand.

As part of the quarterly IRM work scope for the SPM, inspections on the buoy and PLEM, were carried out on the 23rd March and 9th April 2023. The inspections were carried out by air divers from onboard the MV Uniwise, Rayong, and was overseen by an attending Client's representative from Star Petroleum Refining Company (SPRC).

1.2 Executive Summary

The inspection on the SPM buoy and PLEM was carried out by divers and the following was noted;

- All seven (7) valves were inspected and noted to be in good condition. Valve cycling was not carried out as subsea hoses had been removed.
- CP readings recorded on the PLEM and buoy were within limits.
- With the exception of AN4, AN5 and AN10 which has the stub broken off on one side, anodes on the PLEM and buoy were secure and appeared active.
- Chain angle measurements were taken successfully and found to be consistent. Wear measurement on selected chain links under the buoy and at the TDP were taken and found to be consistent.
- Valve cap re-tightening check was carried out and successful
- No anomalies were noted on the Buoy and PLEM including sand silt.
- No significant debris was noted

2.0 Scope of Work

The scope of work comprises of the following:

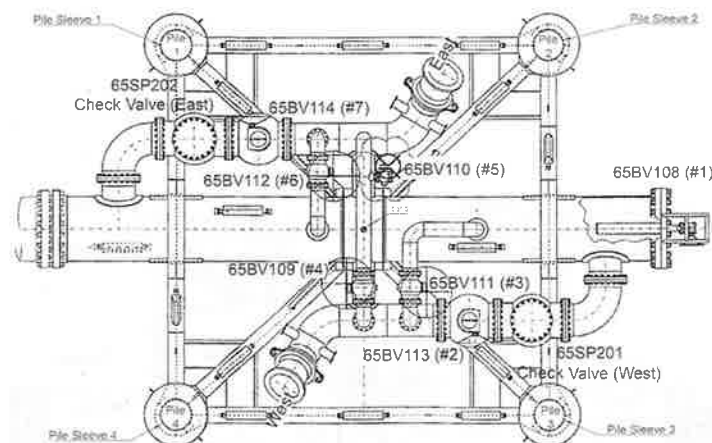
- General Visual Inspection (GVI) of the 7 x steering valves on the PLEM. No valve cycling carried out.
- Cathodic Potential (CP) reading on the PLEM and Buoy.
- General Visual Inspection (GVI) on the Buoy and PLEM including anodes, valves and sand silt
- Check the vertical center position of SPM over the PLEM
- Inspection of the six (6) mooring chains to include:
 - Chain stopper Inspection (GVI) and Chain angle measurement
 - Chain wear down measurement of chain section under buoy and touch down point (TDP).
- Confirm tightening of PLEM Check valve stem nuts
- Clear all fishing net on PLEM (if any)

Note: There was no inspections on the subsea hoses as the hoses had been removed.

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3.0 General Visual Inspection (GVI) of the 7 x Steering Valves

As the two (2) subsea hoses had been removed, there was no requirement to cycle any of the valves. Inspection of the valves was carried out to monitor general condition.



Note: Valve Tag Numbers revised (as at 29th April 2022) to come in line with SPRC Tag Numbering system

The valves were inspected and during the inspection the following was noted:

1. Valve #1 (65BV108) 4 BALL VALVE #1 - Fully Closed
2. Valve #2 (65BV113) 24BALL VALVE #2 - Fully Closed
3. Valve #3 (65BV111) 10 BALL VALVE #3 - Fully Closed
4. Valve #4 (65BV109) 10 BALL VALVE #4 - Fully Closed
5. Valve #5 (65BV110) 4 VENT BALL VALVE #5 - Fully Closed
6. Valve #6 (65BV112) 10 BALL VALVE #6 - Fully Closed
7. Valve #7 (65BV114) 24' BALL VALVE #7 - 98% Closed

There were no signs of leaks from any of the valves inspected.

4.0 East and West Subsea Hose Inspection

There were no subsea hoses installed at the time as they had been removed for in preparation for future replacement.

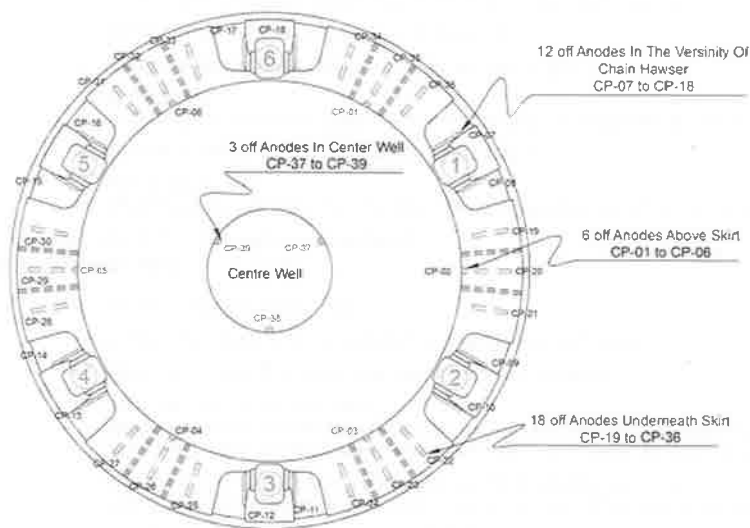
5.0 Cathodic Potential (CP) readings

Cathodic potential readings were carried out on the PLEM and Buoy. The results of which are included in the following sections.

5.1 Cathodic Potential (CP) Readings on Buoy

CP readings were taken on the buoy at the anode locations and in the moonpool area.

CP readings on the buoy structure ranged between (-)955mV and (-)902mV.

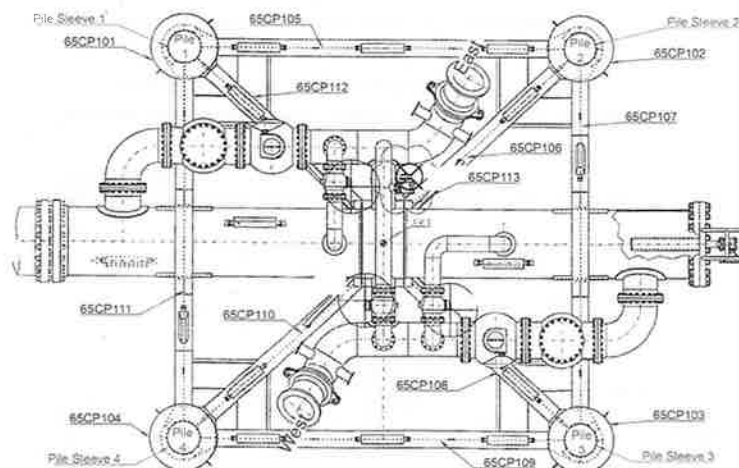


Location	Reading (-mV)	Location	Reading (-mV)	Location	Reading (-mV)
CP-01	945	CP-14	910	CP-27	926
CP-02	942	CP-15	914	CP-28	912
CP-03	947	CP-16	915	CP-29	918
CP-04	953	CP-17	921	CP-30	918
CP-05	926	CP-18	925	CP-31	918
CP-06	934	CP-19	932	CP-32	921
CP-07	925	CP-20	932	CP-33	925
CP-08	928	CP-21	932	CP-34	928
CP-09	931	CP-22	935	CP-35	929
CP-10	932	CP-23	933	CP-36	929
CP-11	928	CP-24	929	CP-37	937
CP-12	932	CP-25	932	CP-38	916
CP-13	902	CP-26	926	CP-39	955

5.2 Cathodic Potential (CP) Reading on the PLEM

CP readings were taken on the PLEM at selected locations. CP readings on the PLEM structure ranged between (-)1019mV and (-)1002mV.

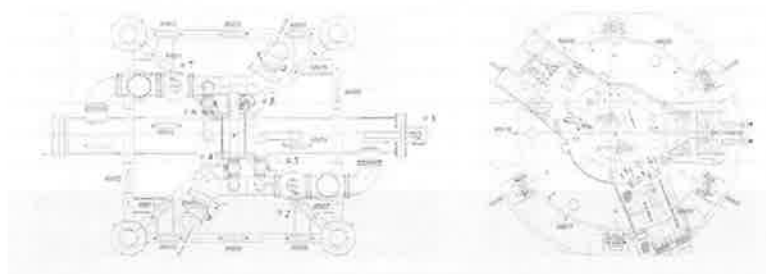
Location	Reading (-mV)	Location	Reading (-mV)
65CP101	1011	65CP108	1019
65CP102	1002	65CP109	1018
65CP103	1014	65CP110	1018
65CP104	1012	65CP111	1015
65CP105	1009	65CP112	1015
65CP106	1002	65CP113	1014
65CP107	1004		



6.0 General Visual Inspection on the Buoy and PLEM Anodes

A general inspection of the anodes was carried out on selected anodes. During the inspection the following was noted:

- On the PLEM Anode AN4, AN5 and AN10 were found with a broken stub at one end. This damage is historical and has previously been reported. All other anodes were found to be intact and secure.
- Anode depletion was approximately 50%.
- Oxide deposits on the anodes would suggest they were active.



Anode	Depletion %	Secure	Remarks
AN01	50	<u>Yes</u> / No	
AN02	50	<u>Yes</u> / No	
AN03	50	<u>Yes</u> / No	
AN04	50	<u>Yes</u> / No	1 stub broken, other secure
AN05	50	<u>Yes</u> / No	1 stub broken, other secure
AN06	50	<u>Yes</u> / No	
AN07	50	<u>Yes</u> / No	
AN08	50	<u>Yes</u> / No	
AN09	50	<u>Yes</u> / No	
AN10	50	<u>Yes</u> / No	1 stub broken, other secure
AN11	50	<u>Yes</u> / No	
AN12	50	<u>Yes</u> / No	
AN13	50	<u>Yes</u> / No	
AN14	50	<u>Yes</u> / No	
AN15	50	<u>Yes</u> / No	
AN16	50	<u>Yes</u> / No	
AN17	50	<u>Yes</u> / No	
AN18	50	<u>Yes</u> / No	
AN19	50	<u>Yes</u> / No	
AN20	50	<u>Yes</u> / No	

7.0 General Visual Inspection of the Buoy and PLEM

7.1 General visual inspection of the Buoy

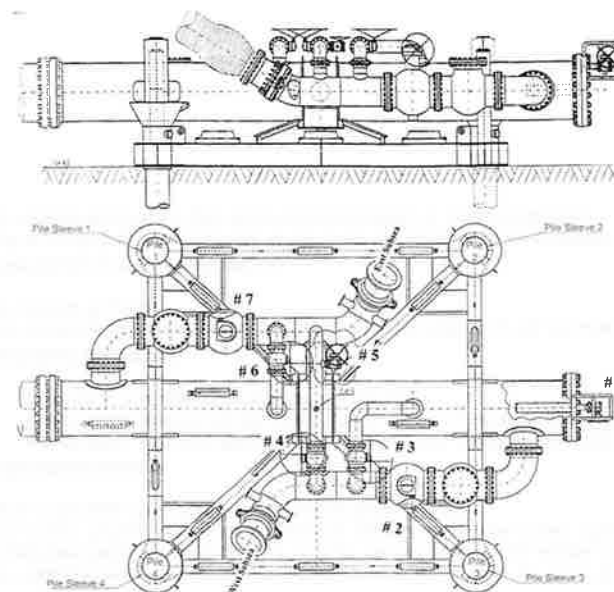
A general visual inspection of the underwater parts of the buoy was carried out and the following was noted:

- There was no damage or debris noted on the buoy and skirt
- Buoy position measurements relative to the PLEM were taken
- The Overall coating condition was good with scattered areas of paint coat flaking/peeling

7.2 General Visual Inspection of the PLEM

The general visual inspection of the PLEM was carried out and the following was noted:

- The Mainline & Flanges were inspected and there was no signs of damage and the flanges appeared to be secure with no signs of leaks.
- Apart from the three (3) anodes with detached brackets on one side there was no signs of damage on or around the PLEM structure.
- There were no signs of any scour or gap at the sand slit area around the base of the PLEM. Base frame partially buried in areas.
- There was no significant debris noted on or around the PLEM structure



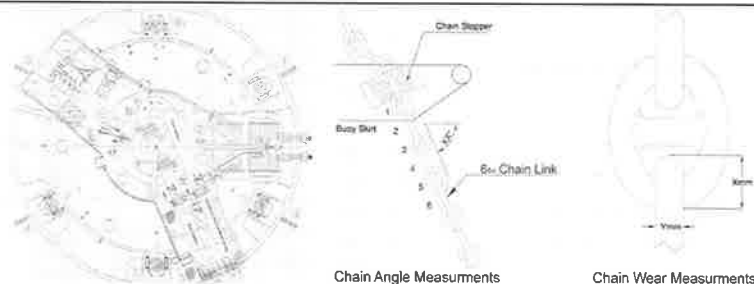
8.0 Inspection of the Six (6) Mooring Chains

8.1 Chain Angle Measurement.

Chain angle measurements were carried out on each of the 6 chains. The measurement was taken on the 6th link down from the chain stopper and the following was noted.

Chain No.	Chain Angle (XX°)	Chain No.	Chain Angle (XX°)	Chain No.	Chain Angle (XX°)
Chain 1	47	Chain 3	47	Chain 5	48
Chain 2	47	Chain 4	48	Chain 6	48

Note: Angle measurements taken without subsea hoses installed at buoy.



8.2 Chain Wear Measurement

Chain wear measurements were carried out at the chain stopper area and at the touch down point of each chain. The results were as follows:

Chain No	Chain Wear (mm)			
	Chain Stopper Area		TDP	
	X	Y	X	Y
1	217.1	112.0	217.0	111.0
2	212.2	112.0	214.0	111.0
3	220.0	114.0	215.0	110.0
4	214.0	111.0	216.0	110.0
5	215.0	111.0	217.0	112.0
6	218.0	111.0	217.0	112.0

8.3 Chain Stoppers GVI

A GVI was conducted on all 6 chain stoppers and were found to be in a generally good condition with no signs of significant debris in the area.

9.0 Seal Cap Re-Tightening

PLEM Seal Cap Re-Tighten of PLEM Check-Valve was carried out. The two (2) x seal caps have been fully tightened. There were no signs of any leaks around seal cap.

10.0 Conclusion

CP measurements carried out on the PLEM and Buoy were all found to be within acceptable limits. Anodes inspected on both the PLEM and Buoy appear to be active and secure. Valves were inspected and no signs of leaks were noted. There were no signs of damage or significant debris on the Buoy or PLEM.

10.1 Recommendations

1. Anode AN4, AN5 and AN10 with the broken stub is not of any major concern, however should there be any open window for diving works, consideration should be given to the replacement/repair of the anodes.

11.0 Technical Appraisal

The Quarterly Inspection was carried safely and successfully by the Air Divers onboard MV Uniwise Rayong.

11.1 Restrictions and Complications

Due to conflicting diving activities at the SPM, the inspections were carried out on two (2) separate days with a gap of approximately three (3) weeks in-between.

Appendix A: Inspection Forms / Reports

- 1) 53-66001-26-CP-01 CP Measurement - PLEM 23-04-09
- 2) 53-66001-26-CP-02 CP Measurement - Buoy 23-04-09
- 3) 53-66001-26-PL-01 Photo Log
- 4) 53-66001-26-VI-01 Visual Inspection - Valves 23-03-23
- 5) 53-66001-26-VI-02 Visual Inspection - Anodes 23-03-23
- 6) 53-66001-26-VI-03 Visual Inspection - PLEM 23-03-23
- 7) 53-66001-26-VI-04 Visual Inspection - Buoy 23-03-23
- 8) 53-66001-26-VI-05 Visual Inspection - Chains 23-03-23
- 9) 53-66001-26-VL-01 Video Log

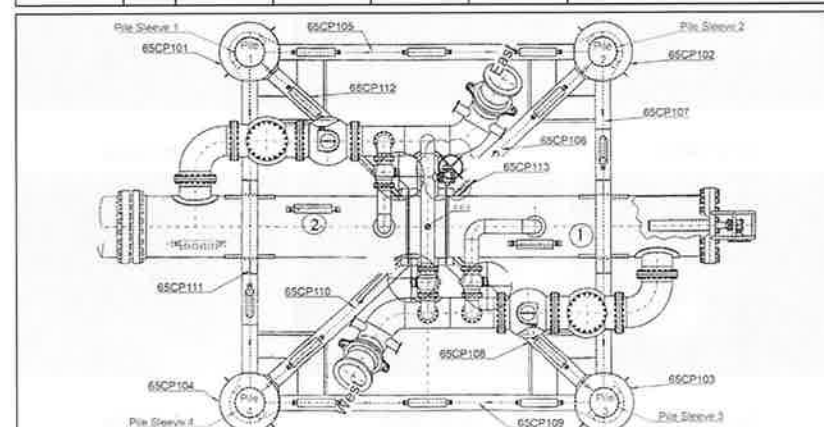


Cathodic Potential Measurement

Date	9 th April 2023	OWA Group	Thailand	Report No	53-66001-26-CP-01
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-26-VL-01

Equipment:	Make:	Serial No.	Calibration Date:	Remarks
Bathycorrometer	Roxy MK5	BU579	15 th November '22	Nil

Calibration and Function Check						
Dive		Pre-Dive		Post Dive		Remarks
Date	No	Steel (-mV)	Zinc (-mV)	Steel (-mV)	Zinc (-mV)	
09/04/2023	1	-	976	-	-	Nil



Location	Reading (-mV)	Location	Reading (-mV)
65CP101	1011	65CP108	1019
65CP102	1002	65CP109	1018
65CP103	1014	65CP110	1018
65CP104	1012	65CP111	1015
65CP105	1009	65CP112	1015
65CP106	1002	65CP113	1014
65CP107	1004		

Comments	
Horizontal 1: (-)1014mV Horizontal 2: (-)1017mV	

Representative	OWA Data Recorder	OWA Supervisor
Signature:	Electronic form no signature required	Electronic form no signature required
Name (Print):	N/A	Wattana Khomthong

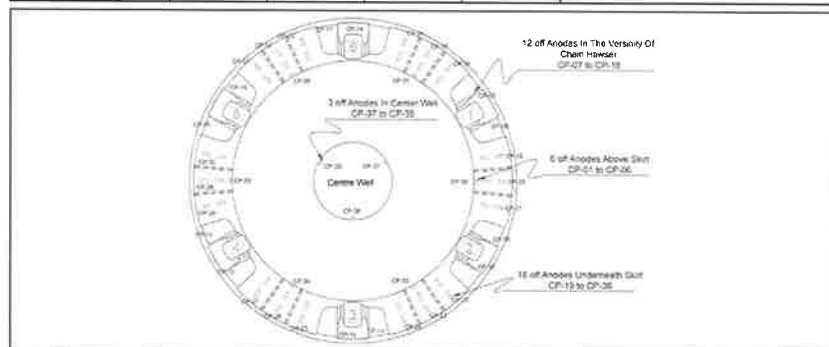


Cathodic Potential Measurement

Date	9 th April 2023	OWA Group	Thailand	Report No	53-66001-26-CP-02
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical				
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM		Video Ref.	53-66001-26-VL-01	

Equipment:	Make:	Serial No.	Calibration Date:	Remarks
Bathycorrometer	Roxy MK5	BU579	15 th November '22	Nil

Calibration and Function Check					
Dive		Pre-Dive		Post Dive	
Date	No	Steel (-mV)	Zinc (-mV)	Steel (-mV)	Zinc (-mV)
09/04/2023	2	-	948	-	-



Location	Reading (-mV)	Location	Reading (-mV)	Location	Reading (-mV)
CP-01	945	CP-14	910	CP-27	926
CP-02	942	CP-15	914	CP-28	912
CP-03	947	CP-16	915	CP-29	918
CP-04	953	CP-17	921	CP-30	918
CP-05	926	CP-18	925	CP-31	918
CP-06	934	CP-19	932	CP-32	921
CP-07	925	CP-20	932	CP-33	925
CP-08	928	CP-21	932	CP-34	928
CP-09	931	CP-22	935	CP-35	929
CP-10	932	CP-23	933	CP-36	929
CP-11	928	CP-24	929	CP-37	937
CP-12	932	CP-25	932	CP-38	916
CP-13	902	CP-26	926	CP-39	955

Representative	OWA Data Recorder	OWA Supervisor
Signature:	Electronic form no signature required	Electronic form no signature required
Name (Print):	N/A	Wattana Khomthong



Photo Log

Date	23 rd March 2023	OWA Group	Thailand	Report No	53-66001-26-PL-01
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Ref. to Dive Log
Client	Star Petroleum Refining and PTT Global Chemical				
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM		Video Ref.	53-66001-26-VL-01	



Anode_01 (1)

Anode_01 (2)

Anode_02 (1)



Anode_02 (2)

Anode_02 (3)

Anode_03 (1)



Anode_03 (2)

Anode_03 (3)

Anode_04 (1)



Anode_04 (2)

Anode_04 (3)

Anode_04 (4)



Photo Log



Anode_05 (1)



Anode_05 (2)



Anode_05 (3)



Anode_05 (4)



Anode_06 (1)



Anode_06 (2)



Anode_06 (3)



Anode_06 (4)



Anode_07 (1)



Anode_07 (2)



Anode_08 (1)



Anode_08 (2)



Photo Log



Anode_09 (1)



Anode_09 (2)



Anode_09 (3)



Anode_10 (1)



Anode_10 (2)



Anode_10 (3)



Anode_10 (4)



Anode_11 (1)



Anode_11 (2)



Anode_11 (3)



Anode_12 (1)



Anode_12 (2)



Photo Log



Anode_12 (3)

Anode_13 (1)

Anode_13 (2)



Anode_13 (3)

Anode_14 (1)

Anode_14 (2)



Anode_14 (3)

Buoy Anode_15

Buoy Anode_16



Buoy Anode_17

Buoy Anode_18

Buoy Anode_19



Photo Log



Buoy Anode_20

Buoy Anode_21

Buoy Anode_22



Buoy Anode_23

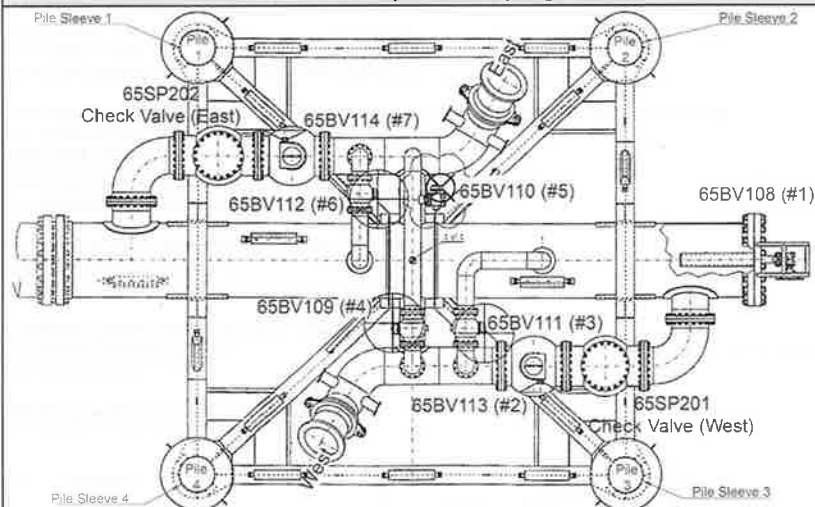
Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong



Visual Inspection

Date	23 rd March 2023	OWA Group	Thailand	Report No	53-66001-26-VI-01
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-26-VL-01

PLEM Valve Inspection and Cycling



Item No.	Tag No	Description	As Found	Task Performed / Inspection Findings	As Left
1	65BV108	4" BALL VALVE #1	Open / Closed	Condition Checked, see comments	Open / Closed
2	65BV113	24" BALL VALVE #2	Open / Closed	Condition Checked, see comments	Open / Closed
3	65BV111	10" BALL VALVE #3	Open / Closed	Condition Checked, see comments	Open / Closed
4	65BV109	10" BALL VALVE #4	Open / Closed	Condition Checked, see comments	Open / Closed
5	65BV110	4" VENT BALL Valve #5	Open / Closed	Condition Checked, see comments	Open / Closed
6	65BV112	10" BALL VALVE #6	Open / Closed	Condition Checked, see comments	Open / Closed
7	65BV114	24" BALL VALVE #7	Open / Closed	Condition Checked, see comments	Open / Closed

Comments

- No valve cycling carried out
- Subsea hoses from buoy to PLEM have been removed
- No signs of leaks noted on the valves or at any of the associated valve components

Note: Valve Tag Numbers revised (as at 29th April 2022) to come in line with SPRC Tag Numbering system

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

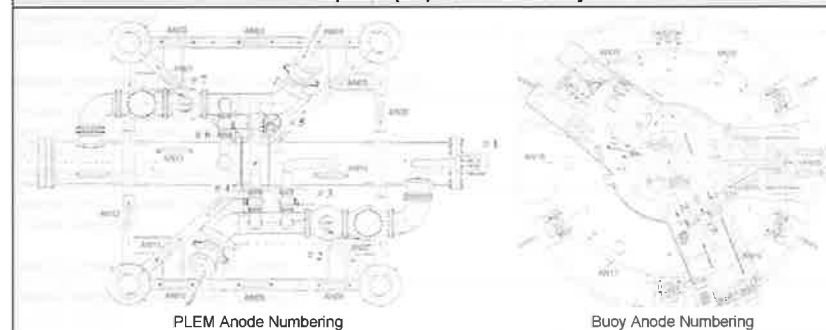


Visual Inspection

Date	23 rd March 2023	OWA Group	Thailand	Report No	53-66001-26-VI-02
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-26-VL-01

Type of Inspection	General (GVI)	✓	Close (CVI)		Detailed (DVI)	
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General Visual Inspection (GVI) on the PLEM & Buoy Anodes



Anode	% Depletion	Secure	Remarks	Anode	% Depletion	Secure	Remarks
AN01	50	Yes / No		AN11	50	Yes / No	
AN02	50	Yes / No		AN12	50	Yes / No	
AN03	50	Yes / No		AN13	50	Yes / No	
AN04	50	Yes / No	1 stub broken, other secure	AN14	50	Yes / No	
AN05	50	Yes / No	1 stub broken, other secure	AN15	50	Yes / No	
AN06	50	Yes / No		AN16	50	Yes / No	
AN07	50	Yes / No		AN17	50	Yes / No	
AN08	50	Yes / No		AN18	50	Yes / No	
AN09	50	Yes / No		AN19	50	Yes / No	
AN10	50	Yes / No	1 stub broken, other secure	AN20	50	Yes / No	

Comments

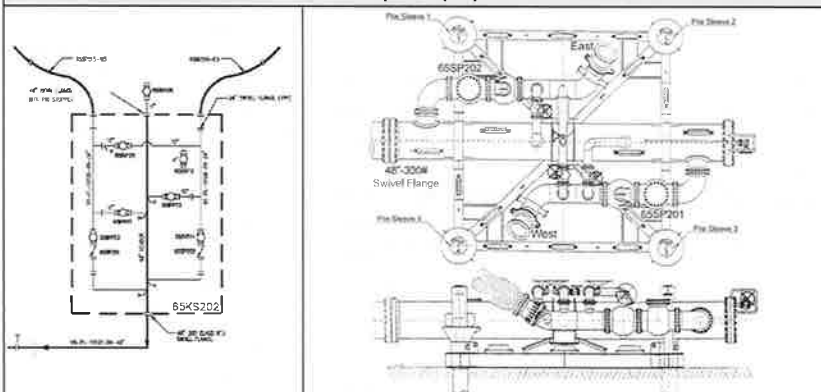
Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong



Visual Inspection

Date	23 rd March 2023	OWA Group	Thailand	Report No	53-66001-26-VI-03
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-26-VL-01

General Visual Inspection (GVI) on the PLEM



Mainline & Flanges (Including 48"-300# Swivel Flange)

All in Good Condition
Marine growth coverage 5%~10%

Pipework & Flanges – East (Including 24" Check Valve 65SP-201)

All In Good Condition. Blind flange covered and valve closed.
Check valve tightening carried out

Pipework & Flanges - West (Including 24" Check Valve 65SP-202)

All In Good Condition. Blind flange covered and valve closed.
Check valve tightening carried out

Base Frame Structure

All In Good Condition PLEM Frame Sitting on Seabed
There were no signs of any scour or gap at the sand slit area around the base of the PLEM. Frame exposed.

Piles & Pile Sleeves (Four (4) pile columns visual inspection)

All In Good Condition
CP Reading on Pile E1 (-)705mV E2 (-)703mV W1 (-)712mV W2 (-)717mV

Additional Remarks

- There were no signs of any scour or gap at the sand slit area around the base of the PLEM. Base frame partially buried in areas.
- PLEM clear of significant debris

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

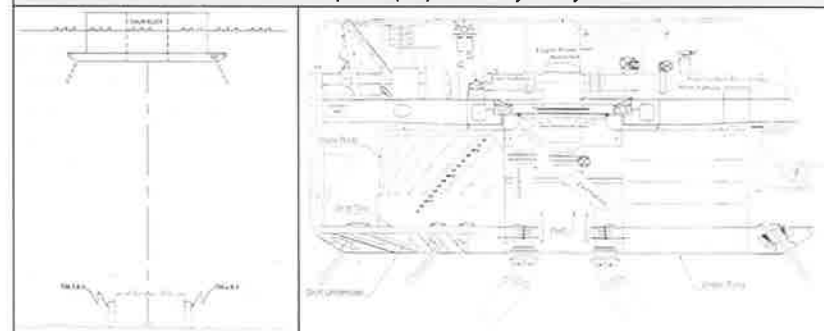


Visual Inspection

Date	23 rd March 2023	OWA Group	Thailand	Report No	53-66001-26-VI-04
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-26-VL-01

Type of Inspection	General (GVI)	✓	Close (CVI)		Detailed (DVI)	
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General Visual Inspection (GVI) on the Buoy & Buoy Position



Buoy Position Relative to PLEM

Distance DP1: 2.45m (E2) / 8.10m (E1) Distance DP2: 8.92m (W1) / 4.65m (W2)

General Condition of Skirt:

In good condition
Marine growth coverage overall 30%~40%

General Condition of Buoy Side Shell:

In good condition
Marine growth coverage overall 50%~60%

General Condition of Centre Well:

In good condition
Marine growth coverage overall 60%~70%
Anodes 50% depleted and secure

Marine Growth Coverage (Prior to marine growth cleaning)

Overall: 35% Hard: 25% Soft: 10%

Overall Coating Condition

See remarks below

Additional Remarks

The Overall coating condition was good with scattered areas of paint coat flaking/peeling

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

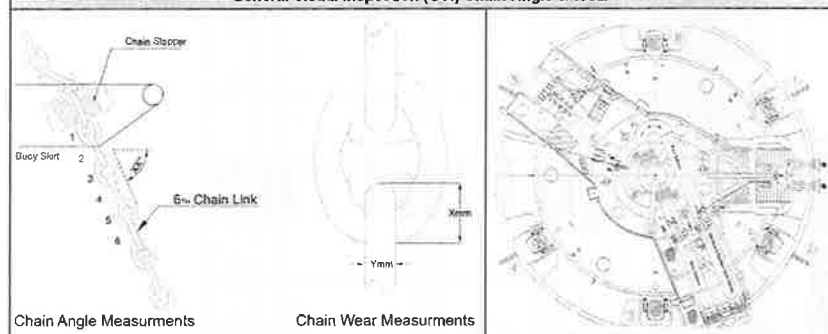


Visual Inspection

Date	23 rd March 2023	OWA Group	Thailand	Report No	53-66001-26-VI-05
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Refer to dive log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM			Video Ref.	53-66001-26-VL-01

Type of Inspection	General (GVI)	✓	Close (CVI)		Detailed (DVI)	
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General Visual Inspection (GVI) Chain Angle & Wear



Chain No	Chain Angle (XX°)	Chain Wear (mm)				General Condition / Comments
		Chain Stopper Area		TDP		
		X	Y	X	Y	
1	47	217.1	112.0	217.0	111.0	1. Chain angle measurements taken on the 6 th link down at the chain stopper 2. Chain and chain stopper in good condition 3. Both subsea hoses had been removed. Angle measurements taken without subsea hoses installed at buoy.
2	47	212.2	112.0	214.0	111.0	
3	47	220.0	114.0	215.0	110.0	
4	48	214.0	111.0	216.0	110.0	
5	48	215.0	111.0	217.0	112.0	
6	48	218.0	111.0	217.0	112.0	

Additional Comments

No significant debris noted on the chains

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong



Video Log

Date	23 rd March 2023	OWA Group	Thailand	Report No	53-66001-26-VL-01
Project No	53-66001	Dive/ROV Sys.	SSDS 2	Dive No	Ref. to Dive Log
Client	Star Petroleum Refining and PTT Global Chemical			Vessel	Uniwise Rayong
Project Name	PTTGC-SPRC SPM Diving Inspection and Maintenance				
Location	MAP TA PHUT SPM				

Start Time	Description	Video File Name
23 rd March 2023		
0:00:00	SPM Buoy Inspection	53-66001-26-DV-01
0:56:24	End of survey section	
0:00:00	Chain Angle & Ware Measurements – Chain #1	53-66001-26-DV-02
0:20:19	Chain Angle & Ware Measurements – Chain #2	
0:32:20	Chain Angle & Ware Measurements – Chain #3	
0:39:59	Chain Angle & Ware Measurements – Chain #4	
0:48:43	Chain Angle & Ware Measurements – Chain #5	
0:56:46	Chain Angle & Ware Measurements – Chain #6	
1:05:17	End of survey section	
0:00:00	Chain Ware Measurements At TDP – Chain #1	53-66001-26-DV-03
0:19:37	Chain Profile Survey and Chain Ware Measurements At TDP – Chain #2	
0:55:58	End of survey section	
0:00:00	Chain Ware Measurements At TDP – Chain #3	53-66001-26-DV-04
0:20:43	Chain Ware Measurements At TDP – Chain #4	
0:44:30	Chain Ware Measurements At TDP – Chain #5	
0:59:06	End of survey section	
0:00:00	Chain Ware Measurements At TDP – Chain #6	53-66001-26-DV-05
0:23:09	PLEM and Valve Inspection	
0:54:48	End of survey section	
	9 th April 2023	
0:00:00	CP reading on PLEM	53-66001-26-DV-06
0:21:29	Anode Survey on PLEM	
0:39:38	CP reading on Buoy	
1:06:36	End of survey section	
0:00:00	PLEM and Buoy Offset Measurements	53-66001-26-DV-07
0:07:56	Seal Cap Tightening	
0:20:34	End of survey section	
	----- Last Entry -----	

Representative	OWA Data Recorder		OWA Supervisor
Signature:	Electronic form no signature required		Electronic form no signature required
Name (Print):	N/A		Wattana Khomthong

SPM MONTHLY MAINTENANCE REPORT

		For the month of :		JANUARY 2023
REF	DESCRIPTIONS	Date	RESULTS	REMARKS
2.3.2	Check mooring equipment / ancillary :	NEW SYSTEM INSTALLED ON 28th NOV 2022		
2.3.2	* Inspect Mooring Equipment / accessories , Hawsers/ thimble / Jacket , Chain Support buoy , Chafe chain , Messenger for any damaged , connection , fouling			
2.3.2.2	Chafe chain Measurement for ware down			
2.3.3	Check Tanker rail Hose / ancillary :	13th	Normal	FROM WB ONLY
	-Hose , Hose lifting arrangement , Butterfly v/v	13th	Normal	FROM WB ONLY
	Triangle Plate Measurement	Stand by for SPM back in commission		
2.3.4	Check / Operated / Lubricate of all buoy valve	13th	Normal	
2.3.5	Check all electric system and wiring system	13th	Normal	
2.3.5.2	Check Solar Panel / system , Clean Solar panel , if required	13th	Normal	
2.3.5.1	Check Battery / electrolyte level : charging or change if required , Battery box and seals	13th	Normal	
2.3.6	SCUBA diving inspection to SPM, Anodes/clean :		Normal	Closed under buoy spool pieces
	- Visual inspection to SPM , MBC		Normal	
	- Visual inspection to 1st off , 2nd off buoy for any potential deformation / kinkage		Normal	
	- Visual inspection to tanker rail hose , butterfly Vv , Lifting equipment & accessories .		Normal	
2.3.7	Check bearing protection system and check water	13th	Normal	
2.3.8	*Open/Check water @bearing inspection plate	13th	Normal	
2.3.9	Inspect fluid swivel assembly ,leakge point	13th	Normal	
2.3.10	Sounding buoy compartments	13th	Normal	

SPM MONTHLY MAINTENANCE REPORT

		For the month of :		FEBRUARY 2023
REF	DESCRIPTIONS	Date	RESULTS	REMARKS
2.3.2	Check mooring equipment / ancillary :	NEW SYSTEM INSTALLED ON 28th NOV 2022		
2.3.2	* Inspect Mooring Equipment / accessories , Hawsers/ thimble / Jacket , Chain Support buoy , Chafe chain , Messenger for any damaged , connection , fouling			
2.3.2.2	Chafe chain Measurement for ware down			
2.3.3	Check Tanker rail Hose / ancillary :	3rd	Normal	FROM WB ONLY
	-Hose , Hose lifting arrangement , Butterfly v/v	3rd	Normal	FROM WB ONLY
	Triangle Plate Measurement	Stand by for SPM back in commission		
2.3.4	Check / Operated / Lubricate of all buoy valve	3rd	Normal	
2.3.5	Check all electric system and wiring system	3rd	Normal	
2.3.5.2	Check Solar Panel / system , Clean Solar panel , if required	3rd	Normal	
2.3.5.1	Check Battery / electrolyte level : charging or change if required , Battery box and seals	3rd	Normal	
2.3.6	SCUBA diving inspection to SPM, Anodes/clean :		Normal	Closed under buoy spool pieces
	- Visual inspection to SPM , MBC		Normal	
	- Visual inspection to 1st off , 2nd off buoy for any potential deformation / kinkage		Normal	
	- Visual inspection to tanker rail hose , butterfly Vv , Lifting equipment & accessories .		Normal	
2.3.7	Check bearing protection system and check water	3rd	Normal	
2.3.8	*Open/Check water @bearing inspection plate	3rd	Normal	
2.3.9	Inspect fluid swivel assembly ,leakge point	3rd	Normal	
2.3.10	Sounding buoy compartments	3rd	Normal	

SPM MONTHLY MAINTENANCE REPORT

For the month of :

MARCH 2023

REF	DESCRIPTIONS	Date	RESULTS	REMARKS
2.3.2	Check mooring equipment / ancillary :			
2.3.2	* Inspect Mooring Equipment / accessories , Hawsers/ thimble / Jacket , Chain Support buoy , Chafe chain , Messenger for any damaged , connection , fouling			NEW SYSTEM INSTALLED ON 28th NOV 2022
2.3.2.2	Chafe chain Measurement for ware down			
2.3.3	Check Tanker rail Hose / ancillary :	6th	Normal	FROM WB ONLY
	-Hose , Hose lifting arrangement , Butterfly v/v	6th	Normal	FROM WB ONLY
	Triangle Plate Measurement			Stand by for SPM back in commission
2.3.4	Check / Operated / Lubricate of all buoy valve	6th	Normal	
2.3.5	Check all electric system and wiring system	6th	Normal	
2.3.5.2	Check Solar Panel / system , Clean Solar panel , if required	6th	Normal	
2.3.5.1	Check Battery / electrolyte level : charging or change if required , Battery box and seals	6th	Normal	
2.3.6	SCUBA diving inspection to SPM, Anodes/clean :		Normal	
	- Visual inspection to SPM , MBC		Normal	
	- Visual inspection to 1st off , 2nd off buoy for any potential deformation / kinkage		Normal	Closed under buoy spool pieces
	- Visual inspection to tanker rail hose , butterfly Vv , Lifting equipment & accessories .		Normal	
2.3.7	Check bearing protection system and check water	6th	Normal	
2.3.8	*Open/Check water @bearing inspection plate	6th	Normal	
2.3.9	Inspect fluid swivel assembly ,leakge point	6th	Normal	
2.3.10	Sounding buoy compartments	6th	Normal	

SPM MONTHLY MAINTENANCE REPORT

For the month of :

APRIL 2023

REF	DESCRIPTIONS	Date	RESULTS	REMARKS
2.3.2	Check mooring equipment / ancillary :			
2.3.2	* Inspect Mooring Equipment / accessories , Hawsers/ thimble / Jacket , Chain Support buoy , Chafe chain , Messenger for any damaged , connection , fouling			NEW SYSTEM INSTALLED ON 28th NOV 2022
2.3.2.2	Chafe chain Measurement for ware down			
2.3.3	Check Tanker rail Hose / ancillary :	5th	Normal	FROM WB ONLY
	-Hose , Hose lifting arrangement , Butterfly v/v	5th	Normal	FROM WB ONLY
	Triangle Plate Measurement			Stand by for SPM back in commission
2.3.4	Check / Operated / Lubricate of all buoy valve	5th	Normal	
2.3.5	Check all electric system and wiring system	5th	Normal	
2.3.5.2	Check Solar Panel / system , Clean Solar panel , if required	5th	Normal	
2.3.5.1	Check Battery / electrolyte level : charging or change if required , Battery box and seals	5th	Normal	
2.3.6	SCUBA diving inspection to SPM, Anodes/clean :		Normal	
	- Visual inspection to SPM , MBC		Normal	
	- Visual inspection to 1st off , 2nd off buoy for any potential deformation / kinkage		Normal	Closed under buoy spool pieces
	- Visual inspection to tanker rail hose , butterfly Vv , Lifting equipment & accessories .		Normal	
2.3.7	Check bearing protection system and check water	5th	Normal	
2.3.8	*Open/Check water @bearing inspection plate	5th	Normal	
2.3.9	Inspect fluid swivel assembly ,leakge point	5th	Normal	
2.3.10	Sounding buoy compartments	5th	Normal	

SPM MONTHLY MAINTENANCE REPORT

		For the month of :		MAY 2023
REF	DESCRIPTIONS	Date	RESULTS	REMARKS
2.3.2	Check mooring equipment / ancillary :		NEW SYSTEM INSTALLED ON 28th NOV 2022	
2.3.2	* Inspect Mooring Equipment / accessories , Hawasers/ thimble / Jacket , Chain Support buoy , Chafe chain , Messenger for any damaged , connection , fouling			
2.3.2.2	Chafe chain Measurement for ware down			
2.3.3	Check Tanker rail Hose / ancillary :			
	-Hose , Hose lifting arrangement , Butterfly v/v	19th	REMOVED HOSE STRING FROM SYSYTEM	
	Triangle Plate Measurement		Stand by for SPM back in commission	
2.3.4	Check / Operated / Lubricate of all buoy valve		Normal	
2.3.5	Check all electric system and wiring system		Normal	
2.3.5.2	Check Solar Panel / system , Clean Solar panel , if required	19th	Normal	
2.3.5.1	Check Battery / electrolyte level : charging or change if required , Battery box and seals		Normal	
2.3.6	SCUBA diving inspection to SPM, Anodes/clean :		REMOVED HOSE STRING FROM SYSYTEM	
	- Visual inspection to SPM , MBC			
	- Visual inspection to 1st off , 2nd off buoy for any potential deformation / kinkage			
	- Visual inspection to tanker rail hose , butterfly Vv , Lifing equipment & accessories .			
2.3.7	Check bearing protection system and check water	19th	Normal	
2.3.8	*Open/Check water @bearing inspection plate		Normal	
2.3.9	Inspect fluid swivel assembly ,leakge point		Normal	
2.3.10	Sounding buoy compartments		Normal	

SPM MONTHLY MAINTENANCE REPORT

		For the month of :		JUNE 2023
REF	DESCRIPTIONS	Date	RESULTS	REMARKS
2.3.2	Check mooring equipment / ancillary :		REMOVED HOSE STRING FROM SYSYTEM	
2.3.2	* Inspect Mooring Equipment / accessories , Hawasers/ thimble / Jacket , Chain Support buoy , Chafe chain , Messenger for any damaged , connection , fouling			
2.3.2.2	Chafe chain Measurement for ware down			
2.3.3	Check Tanker rail Hose / ancillary :			
	-Hose , Hose lifting arrangement , Butterfly v/v	16th	REMOVED HOSE STRING FROM SYSYTEM	
	Triangle Plate Measurement		Stand by for SPM back in commission	
2.3.4	Check / Operated / Lubricate of all buoy valve		Normal	
2.3.5	Check all electric system and wiring system		Normal	
2.3.5.2	Check Solar Panel / system , Clean Solar panel , if required	16th	Normal	
2.3.5.1	Check Battery / electrolyte level : charging or change if required , Battery box and seals		Normal	
2.3.6	SCUBA diving inspection to SPM, Anodes/clean :		REMOVED HOSE STRING FROM SYSYTEM	
	- Visual inspection to SPM , MBC			
	- Visual inspection to 1st off , 2nd off buoy for any potential deformation / kinkage			
	- Visual inspection to tanker rail hose , butterfly Vv , Lifing equipment & accessories .			
2.3.7	Check bearing protection system and check water	16th	Normal	
2.3.8	*Open/Check water @bearing inspection plate		Normal	
2.3.9	Inspect fluid swivel assembly ,leakge point		Normal	
2.3.10	Sounding buoy compartments		Normal	

For the month of JANUARY 2023

REV 25 Feb 2021

SUMMARY SPM MAINTENANCE REPORT

For the month of FEBRUARY 2023

[illegible]

For the month of FEBRUARY 2023

REV 25 Feb 2021

For the month of MARCH 2023

AWAITS TANKER OPERATION

For the month of MARCH 2023

REV 25 Feb 2021

For the month of APRIL 2023

SUMMARY SPM MAINTENANCE REPORT																																	
For the month of APRIL 2023																																	
Ref.	DESCRIPTIONS																													RESULT	REMARK		
PRE BERTHING INSPECTION		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
2.1.2,3,6	Check SPM condition/surround ,freeboard & trim																																
2.1.13	Check turntable rotating																																
2.1.5,8,12	Check all security: hatch , pipe,vents,drain are closed / blanked																																
2.1.8,9	Check Product path in Moon Pool / Turntable ,Exp.joint for any leakage																																
2.1.10	Check v/v opeable & correct position.																																
2.1.11	Check Pressure gauge reading																																
2.1.14	Check All Nav Aids light are properly working																																
2.1.4,15	* Inspect Mooring Equipment / accessories ,Hawsers/ Jacket , Chain Suppoprt buoy , Chafe chain , Messenger for any damaged , connection , fouling																																
2.1.7,16	* Inspect Floating hose strings , MBC , Connection , Messenger for any leakage / damaged / fouling																																
2.1.16	Inspect Tanker rail hose , Pick up arrangement , messenger for connection ,any damaged / fouling																																
Check Load Monitoring system and accessories for properly working																																	
WEEKLY		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
2.2.2.2	*Grease surface fluid swivel assembly							X							X							X								X			
2.2.2.2	Lubricate Mooring & other auxiliary equipment							X							X							X								X			
2.2.3	Inspect buoy body/fender for any damaged							X							X							X								X			
2.2.4	*Check Center well drain for contamination							X							X							X								X			
	Check Central Pipe swivel (CPS) relief valve							X							X							X								X			
2.2.5	*Open bearing cavity drain plug check water							X							X							X								X			
	Check water barrage , gasket , means of Bearing protection							X							X							X								X			
	Inspect buoy turntable for freely rotating , Normal condition							X							X							X								X			
	Check Product path in Moon Pool / Turntable ,Exp.joint & Valves for any leakage							X							X							X								X			
	* Inspect Floating hose strings , MBC , Connection , Messenger for any leakage / damaged							X							X							X								X			
	* Inspect Mooring Equipment / accessories ,Hawsers/ Jacket , Chain Suppoprt buoy , Chafe chain , Messenger for any damaged , connection , fouling							X							X							X								X			
	Inspect Nav.aids, Solar panel , Wiring system & Winker Light							X							X							X								X			
MONTHLY		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
2.3.2	Check mooring equipment / ancillary :																																
2.3.2	* Inspect Mooring Equipment / accessories , Hawsers/ thimble / Jacket , Chain Suppoprt buoy , Chafe chain , Messenger for any damaged , connection , fouling																																
2.3.2.2	Chafe chain Measurement for ware down																																
2.3.3	Check Tanker rail Hose / ancillary : -Hose , Hose lifting arrangement , Butterfly v/v Triangle Plate Measurement																																
INSTALLED NEW SYSTEM ON 28th NOVEMBER 2022 (REMOVED FROM SPM)																																	
REMOVED FROM SPM																																	
FROM WB ONLY																																	
WAITING FOR SPM COME BACK IN SERVICE AND WITH TANKER OPERATION																																	
2.3.4	Check / Operated / Lubricate of all buoy valve & actuators																																
2.3.5	Check all electric system and wiring system																																
2.3.5.2	Check Solar Panel / system , Clean Solar panel , if required																																
2.3.5.1	Check Battery / electrolyte level : charging or change if required , Battery box and seals																																
2.3.6	SCUBA diving inspection to SPM, Anodes/clean : - Visual inspection to SPM , MBC - Visual inspection to 1st off , 2nd off buoy for any potential deformation / kinkage - Visual inspection to tanker rail hose , butterfly Vv , Lifting equipment & accessories .																																
2.3.7	Check bearing protection system and check water																																
2.3.8	*Open/Check water @bearing inspection plate																																
2.3.9	Inspect fluid swivel assembly ,leakge point																																
2.3.10	Sounding buoy compartments																																
QUATERLY		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
2.4.3	Inspep perimeter of PLEM for signs of scouring of seabed (D)								X																								
2.4.5	Check SPM underwater , SPM chain high stress area , Subsea hose /configuration / connection , PLEM including tighten to the seal compression nut of Check valves (D)								X																								
2.4.5	CP Measurement to SPM under water , pipe work , PLEM and anode consumption (X																								
2.4.4	Full cycle PLEM valves																																
2.4.6	Check Product path in Moon Pool / Turntable ,Exp.joint & Valves for any leakage																																
2.4.7	Take SPM grease sample for analysis																																
2.4.8	Check fluid swivel drive plate wear/down/distortion																																
Grease valve actuator in moon pool / turn table																																	
Inspect and check to SPM winch , wire , block , lifting equipment and accessories																																	
Inspect Nav.aids,Solar panel ,battery , Wiring system & Winker Light ::																																	
: Winker Light # 1																																	
: Winker Light # 2																																	
: Winker Light # 3																																	
: Winker Light # 4																																	
: Winker Light # 5																																	
HALF YEARLY		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
2.5.2	Repair damage paint area on SPM ,not limit to required once obseve																																
Running test to SPM air winch , Lifting equipment & accessories																																	
Lubricant to SPM winch , wire , blocks , Lifting equipment & parts																																	
: North Marker buoy pipeline																																	
: South Marker buoy pipeline																																	
: Iso danger buoy																																	
: Baccan																																	
ON GOING PROCESS																																	
LUBRICATED AND TEST RUN SPM WINCH ON 2nd DECEMBER 2022																																	
BOTTOM PARTS SERVICE ON 2nd DECEMBER 2022																																	
BOTTOM PARTS SERVICE ON 2nd DECEMBER 2022																																	
BOTTOM PARTS SERVICE ON 2nd DECEMBER 2022																																	
BOTTOM PARTS SERVICE ON 2nd DECEMBER 2022																																	
[TOP 3rd SPM] (Cleaning bottom by CNA 22 JUN 22)																																	
DUE JUNE 2023																																	
DUE MAR 2023																																	
DUE JUN 2023																																	
DUE JUN 2023																																	
DUE JUN 2023																																	
DUE JUN 2023																																	
DUE MAR 2023																																	

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REV 25 Feb 2021

SUMMARY SPM MAINTENANCE REPORT																																			
Ref.	DESCRIPTIONS	For the month of MAY 2023																															RESULT	REMARK	
	YEARLY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
2.6.2.8	Clean to SPM under water , PLEM (D)																																		
2.6.2	Remove Sand Silt from PLEM , if require (D)																																		DUE NOVEMBER 2023
2.6.3	Inspection for pitting at buoy hull (+ D)																																		
2.6.4	Inspection for pitting at Pipe work (+ D)																																		DUE OCTOBER 2023
2.6.5	Check Fluid Swivel oil seals																																		DUE OCTOBER 2023
2.6.6	Check Main Turn Table bearing																																		DUE OCTOBER 2023
2.6.7	Check and measurement at anchor chain (D)																																		DUE OCTOBER 2023
2.6.8	CP measurement SPM & PLEM (D)																																		
	Change SPM & PLEM Anode if consumption more than 75%																																		
	Change SPM air winch 's hydraulic oil																																		WILL CHANGE OUT ASAP DUE SEPT 2023

REV 25 Feb 2021

For the month of JUNE 2023

REV 25 Feb 2021

OFF - PLOT PIPING MODULE REPORT

SECTION A

Equipment: Crude pipeline, Line No.: 96-PL-10511, 96-PL-13201, 96-PL-13202

Inspector Name: Attanon P.

Date of inspection: 18 July 2023

Type: Scheduled OSI 2023

Reason for Inspection: External inspection.

SUMMARY:

General condition of Crude pipeline, Line No.: 96-PL-10511, 96-PL-13201, 96-PL-13202 route from Marine Product Pier running thru IEAT 1-8 road were visual inspected, found in good condition. Pipeline external minor chalk of paint. No repair work requires at this period. Pipe welds, vent/drain nozzles appeared in good condition observed. Overall pipeline still fit for service at the design condition.

COMPONENTS:

Pipe: Pipeline external minor chalk of paint. No repair work requires at this period. Pipe welds, vent/drain nozzles appeared in good condition observed. Overall pipeline still fit for service at the design condition.

Supports: Sound condition

Paint: Minor chalking of paint. No repair work requires at this period.

Insulation: N/A

RECOMMENDATION: ACTION PARTY

Nil -



Photo1: Line No.: 96-PL-10511-B4/4 (18 Road – SPRC MCB Main Gate)



Photo2: Line No.: 96-PL-13201, 13202 (18 Road – Cross Road)



Photo3: Line No.: 96-PL-10511-B4/4 (Along I8 Road)



Photo4: Line No.: 96-PL-13201, 13202 (Along I8 Road)

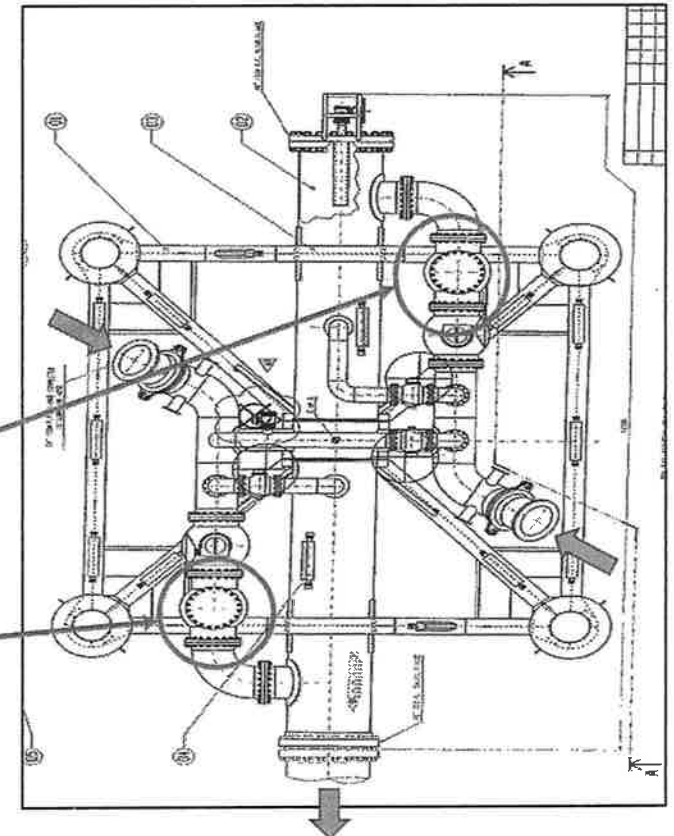
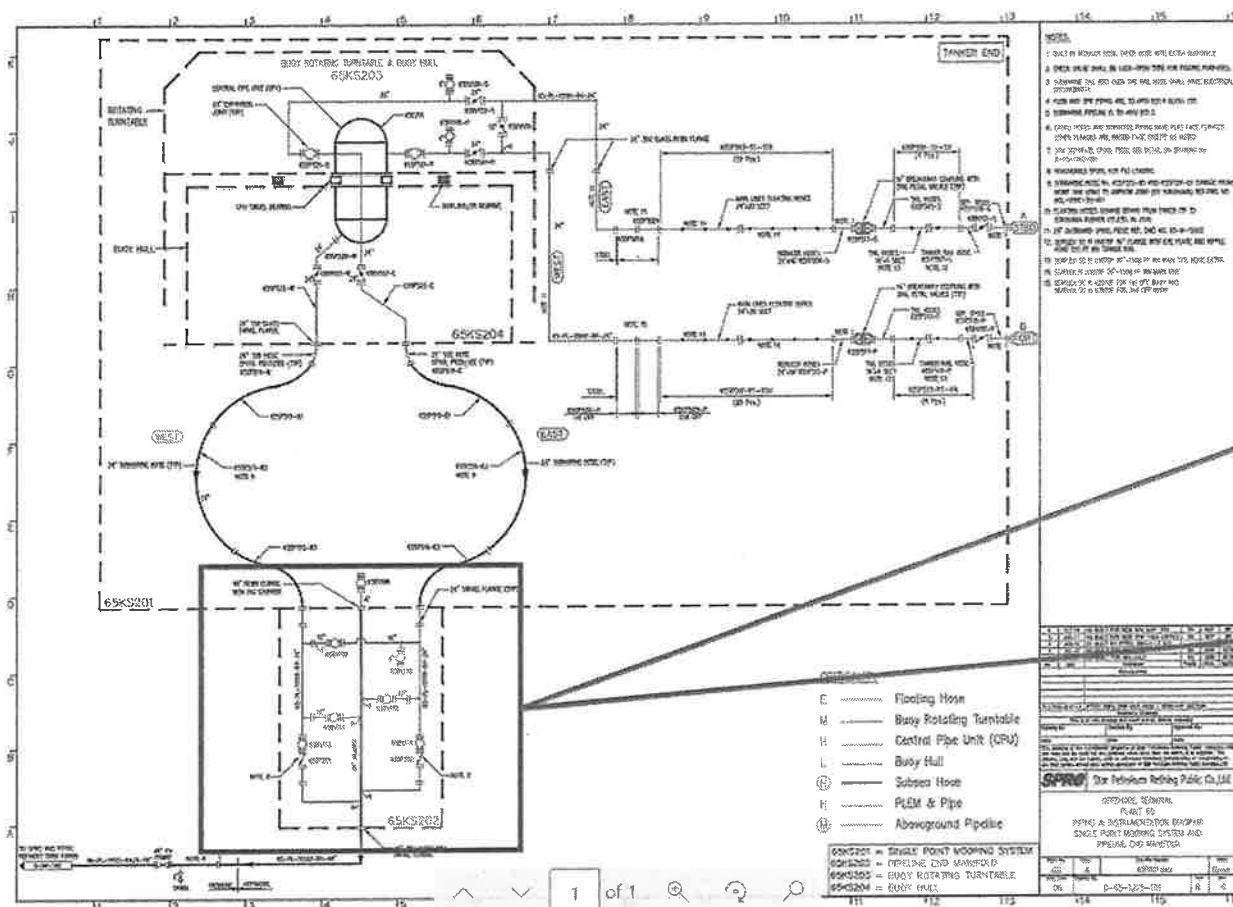


Photo5: Line No.: 96-PL-13201, 13202 (SPRC-Port)

ภาคผนวก ข.19

การติดตั้ง Check Valve ที่ปลายท่อขนถ่าย

การติดตั้งวาลวักน้ำม้นย้อนกลับทั้งหมด (check valve) เพื่อป้องกันน้ำมันไหลย้อนกลับ



ไปบนฝั่ง

ภาคผนวก ข.20

การแต่งตั้งคณะกรรมการความปลอดภัย อาชีวอนามัย
และสภาพแวดล้อมในการทำงาน



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

เลขทะเบียนนิติบุคคล 0107535000135

Announcement

Mar 31st, 2023

From : Chief Executive Officer

To : All SPRC Employees

Subject : Appointment SPRC EHS Main Committee (Rev.1)

In order to effective and continual implement of SPRC EHS Management, the EHS Main Committee has been revised by changing employer representative (Chairman) which aligning with the updating SPRC Organization. So, the company would like to announce the updating SPRC EHS Main Committee revision one which consists of the Person from Appointment (Employer Representative) and Election (Employee Representative) as following:

Employer Representative Members:

1. Mr. Narong	Triyotee	GR (Chairman)
2. Mr. Pongkorn	Chochuwong	GE
3. Mr. Paul	Andrew Rusiworth	PN
4. Miss Chaowasri	Luengratanakorn	PD
5. Mr. Wisit	Sukprasert	AS
6. Mr. Watthanasilp	Rajadej	AS/6

Employee Representative Members:

1. Mr. Pinpong	Hattakudom	PN/53
2. Mr. Tassanapan	Angkanawin	PN/34
3. Mr. Sathapana	Srichun	PD/31
4. Mr. Songkran	Yasaro	AS/243
5. Mrs. Saowapha	Thamsuruk	HR/12
6. Miss. Watcharaporn	Watcharamurak	TE/26

Member and secretary

1. Mr. Warayut	Promno	QS/41
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(Safety Officer – Professional Level)



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

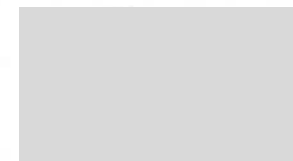
เลขทะเบียนนิติบุคคล 0107535000135

Responsibilities of the EHS Main Committee

1. Develop EHS related policies, action plan and activities for both work and non-work related safety to prevent accidents, illness, nuisance or unsafe conditions proposing to the employer,
2. Develop EHS measures, guideline to prevent incidents from the employee's work and make suggestion for the employer.
3. Recommend any corrective or improvement measures to comply with the law and standard for the safety of employee, contractor and visitor.
4. Promote and support EHS programs and related activities.
5. Consider EHS rules, regulations, safety manual and safety standard proposing to the employer.
6. Conduct EHS walkthrough survey and review injury statistic once a month.
7. Consider EHS training program or plan and responsibility training program or plan about responsibility of supervisor, manager, employer and staff at all level proposing idea to the employer.
8. Set the unsafe condition and near miss report system which are the responsibility of all employees.
9. Follow up the progress of proposed EHS items.
10. Prepare performance report of the committee including problems found and suggestion for the employer on a yearly basis.
11. Evaluate the EHS performance of the company.
12. Implement any EHS activities assigned by employer.

The term of this committee is valid from April 1, 2023 to December 31, 2024.

Please be informed accordingly.



Chief Executive Officer



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

เลขทะเบียนนิติบุคคล ๑๙๖๕๐๖๐๙๙๙

ประกาศ

วันที่ 31 มีนาคม 2568

จาก : ประธานเจ้าหน้าที่บริหาร

ถึง : พนักงานทุกท่าน

เรื่อง : การแต่งตั้งคณะกรรมการความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงาน (ฉบับปรับปรุงครั้งที่ 1)

เพื่อให้การดำเนินงานด้านความปลอดภัย อาชีวอนามัยและสิ่งแวดล้อมเป็นไปอย่างมีประสิทธิภาพและต่อเนื่อง จึงได้มี
การปรับปรุงรายชื่อสมาชิกคณะกรรมการความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงานในส่วนของผู้แทนนายจ้าง
(ประธาน) ซึ่งสอดคล้องกับการเปลี่ยนแปลงผังองค์กรของบริษัทฯ ดังนั้น จึงขอประกาศแต่งตั้งคณะกรรมการความปลอดภัยฯ (ฉบับ
ปรับปรุงครั้งที่ 1) ซึ่งประกอบด้วยกรรมการที่มาจากแต่งตั้ง (ผู้แทนนายจ้าง) และกรรมการที่มาจากแต่งตั้ง (ผู้แทนลูกจ้าง)
ดังรายชื่อต่อไปนี้

กรรมการผู้แทนนายจ้าง

1. นายณรงค์	โระโยธี	GR ประธานกรรมการ
2. นายพชรภรณ์	ช่อสูงศักดิ์	GE
3. นายพอล	แอนดรูว์ วีระวีร์	PN
4. นางสาวเขาวรรณ	เชลียงรัตนกร	PD
5. นายวิศิษฐ์	สุทธาโรจน์	AS
6. นายวัฒน์ศิลป์	ราชาเดช	AS/6

กรรมการผู้แทนลูกจ้าง

1. นายณัฐพงศ์	นริศกุลอุดม	PN/53
2. นายทัศนพันธ์	อังคณาวิณ	PN/34
3. นายสถาปนา	ศุภจิรินทร์	PD/31
4. นายสงกรานต์	ยัลโร	AS/243
5. นางสาวภา	ธรรมสุวัณ	HR/12
6. นางสาววิภาภรณ์	วีระพันธุ์	TE/28

กรรมการและเลขาฯ

1. นายวราวุธ	พรมโน	QS/41
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(เจ้าหน้าที่ความปลอดภัยในการทำงานระดับวิชาชีพ)



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

เลขทะเบียนนิติบุคคล ๑๙๖๕๐๖๐๙๙๙

เพื่อให้คณะกรรมการความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงานมีหน้าที่ดังต่อไปนี้

1. จัดทำนโยบายด้านความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงานของสถานประกอบการให้สอดคล้อง
ต่อนายจ้าง
2. จัดทำแนวทางการป้องกันและลดการเกิดอุบัติเหตุ การประสบอันตราย การเจ็บป่วยหรือการ เกิดเหตุเดือดร้อน
รำคาญอันเนื่องมาจากการทำงานของลูกจ้างหรือความไม่ปลอดภัยในการ ทำงานเสนอต่อนายจ้าง
3. รายงานและเสนอแนะมาตรการหรือแนวทางการปรับปรุงแก้ไขสภาพการทำงานและสภาพแวดล้อมในการทำงาน
ให้เป็นไปตามกฎหมายเกี่ยวกับความปลอดภัยในการทำงานต่อนายจ้างเพื่อความปลอดภัยในการทำงานของ
ลูกจ้าง ผู้รับเหมาและบุคคลภายนอกที่เข้ามาปฏิบัติงานหรือเข้ามาใช้บริการในสถานประกอบการ
4. ส่งเสริมและสนับสนุนกิจกรรมด้านความปลอดภัยในการทำงานของสถานประกอบการ
5. พิจารณาคู่มือว่าด้วยความปลอดภัยอาชีวอนามัยและสภาพแวดล้อมในการทำงานของสถานประกอบการ
เพื่อเสนอความเห็นต่อนายจ้าง
6. สืบสวนหาสาเหตุการเกิดความปลอดภัยในการทำงานและรายงานผลการสำรวจดังกล่าว รวมทั้งสถิติการ
ประสบอันตรายที่เกิดขึ้นในสถานประกอบการนั้น ในการประชุมคณะกรรมการความปลอดภัยทุกครั้ง
7. พิจารณาโครงการหรือแผนการฝึกอบรมเกี่ยวกับความปลอดภัยในการทำงาน รวมถึงโครงการหรือแผนการอบรม
เกี่ยวกับบทบาทหน้าที่ความรับผิดชอบในด้านความปลอดภัยของลูกจ้าง หัวหน้างาน ผู้บริหาร นายจ้างและ
บุคลากรทุกระดับเพื่อเสนอความเห็นต่อนายจ้าง
8. จัดวางระบบให้ลูกจ้างทุกคนทุกระดับมีหน้าที่ต้องรายงานสภาพการทำงานที่ไม่ปลอดภัยต่อนายจ้าง
9. ติดตามผลความคืบหน้าเรื่องข้อเสนอต่อนายจ้าง
10. รายงานผลการปฏิบัติงานประจำปี รวมทั้งระบุปัญหา อุปสรรคและข้อเสนอแนะในการปฏิบัติงานที่ของ
คณะกรรมการความปลอดภัยเมื่อปฏิบัติงานที่ครบหนึ่งปีเสนอต่อนายจ้าง
11. ประเมินผลการดำเนินงานด้านความปลอดภัยในการทำงานของสถานประกอบการ
12. ปฏิบัติงานด้านความปลอดภัยในการทำงานอื่นตามที่นายจ้างมอบหมาย

คณะกรรมการดังกล่าว มีวาระการทำงานตั้งแต่วันที่ 1 เมษายน 2566 ถึง วันที่ 31 มีนาคม 2567

จึงประกาศมาเพื่อทราบโดยทั่วกัน



ประธานเจ้าหน้าที่บริหาร



Place : M-226 Board room

Time : 13:30 - 14:30 hrs.

Attendees:

K. Wisit S. (AS)	- Acting Chairman
K. Pongkorn C. (GE)	- Employer representative
K. Chaowasri (PD)	- Employer representative
K. Watthanasilp R.(AS/6)	- Employer representative
K. Pinpong H. (PN/53)	- Employee representative
K. Sathapana S. (PD/31)	- Employee representative
K. Songkran (AS/243)	- Employee representative
K. Tassanapan A. (PN/34)	- Employee representative
K. Warayut (QS/41)	- Secretary
K. Teerawat C.(TE/81)	- Laboratory safety commettee
K. Paitoon M. (QS/4)	- Lead Health and Safety
K. Nillawan (QS/43)	- Health and Safety specialist

Apologize:

K. Narong T. (GR)	- Chairman
K. Paul R(PN)	- Employer representative
K. Watcharaporn W. (TE/26)	- Employee representative
K. Saowapha Th.(HR/12)	- Employee representative

Agenda	Details	Action by	Status/Due date
1	IIF Moment/SAA High-light		
	<p>K. Warayut shared a recordable hand injury case which occurred when a contractor using the motor operated insulation cladding sheet rolling machine at the insulation workshop beside the JGC warehouse. While feeding the cladding sheet into the rolling machine, the right middle finger got caught in between the rollers resulting a bleeding wound which required 10-stitches suture at pinched finger.</p> <p>This incident as a reminder to always be aware our position, tools/equipment/machine and surroundings working condition to avoid being in the line of fire. And beware latent condition and hazard which is related on routine or non-routine work by applying all elements of hazard wheel identification tool</p>	-	Info.

Agenda	Details	Action by	Status/Due date
1	<p>EHS Performance</p> <p>2.1 EHS Performance K.Warayut reported EHS performance of May'2023 are as followings;</p> <p><u>Safety & Health</u></p> <ul style="list-style-type: none"> • Total man-hours for employees were 77,710 YTD = 367,353 • Total man-hours for contractors were 161,077 YTD = 686,322 • Total man-hours were 238,787 YTD = 1,053,775 • There was one recordable injury case occurred, YTD - 4 case • There was no first aid case, YTD = 3 case • YTD Total Recordable Injury Rate (TRIR) = 0.76 • There was no MVC cases, YTD = 3 cases • There was no recordable fire case, YTD = 0 case • There was one non- recordable fire case, YTD = 1 case • The percent compliance on YTD RSI was 96.07 % <p>K. Nillawan will create instructions to communication for using the Wellnomic application while the computer is being take a break, in order to provide a more friendly usage.</p> <p><u>Off the Job Injury</u></p> <ul style="list-style-type: none"> • There were 4 first aid cases of off the job injury occurring in Apr, YTD First aid case = 16 cases • There was no recordable case, YTD = 2 cases • TRIR for off the job injury at the end of Apr = 0.00, YTD 0.34 <p><u>Process Safety Indicator</u></p> <ul style="list-style-type: none"> • There was no Tier 1 LOC, YTD = 0 cases • There was no Tier 2 LOC, YTD = 0 cases • There were 4 cases of SIS activated (Tier 3) LOC, YTD= 15 cases <p><u>Environment</u></p> <ul style="list-style-type: none"> • There was no incident with Environment Impact, YTD - 0 cases <ul style="list-style-type: none"> ◦ There was no cases incident of discharge/release to Envi. exceeding limits, YTD - 0 cases ◦ There was no recordable liquid petroleum and chemical spills, YTD - 0 case ◦ There was 1 cases of non- Recordable Liquid Petroleum and Chemical Spills, YTD = 7 cases ◦ There was no recordable community disturbance case, YTD - 0 case ◦ There was no non-recordable community disturbance case, YTD = 0 cases 	<p>Nillawan</p>	<p>Info.</p> <p>Jul 2023</p>

Agenda	Details	Action by	Status/Due date
	<p>SWP audit</p> <ul style="list-style-type: none"> There was no incidents/near misses related to failure of SWP requirements, YTD = 1 case Number of SWP audits is 90 reports, average YTD is 90 reports/month There were 2 cases of non-compliance of critical SWP, YTD = 7 cases 100% of the actions are closed out as due date <p>2.2 Highlight Activity from Supporting Committee</p> <p>K. Warayut reported to the committee about the key highlight issues of PN EHS committee as detailed below;</p> <ul style="list-style-type: none"> PN will arrange to lock the toilets in the Process Area Operator Shelters and provide an update for further communication. This is necessary because these shelters are located in the blast zone. AS/1 will be responsible for arranging toilet cabin facilities to ensure an adequate number of washrooms are available for our contractor family in the Process Area. <p>K. Chaowasri reported to the committee about the key highlight issues of PD EHS committee as detailed below;</p> <ul style="list-style-type: none"> Provide an update on PD's EHS Performance, which includes one non-recordable spill. This spill was caused by a minor oil leakage from a pressure gauge that was incorrectly installed according to the design specifications. <p>K. Songkarn reported to the committee about the key highlight issues of Maintenance & Contractor committee as detailed below;</p> <ul style="list-style-type: none"> Maintenance & Contractor committee's encouraged contractors to address/report Off the job case through the 24Hrs Off the Job Platform. Addressed a safety concern raised by the Electrical team regarding recurring improper storage and housekeeping practices in the Electrical and HVAC rooms. So, they requested the committee's support in sharing this information with the relevant team. K. Wisit will assist to coordinate with the Facility team to conduct a findings report, ensuring prompt notification and implementation of corrective measures <p>K. Teerawat reported to the committee about the key highlight issues of Laboratory as detailed below;</p> <ul style="list-style-type: none"> Provided an update on the discussion about Lab EHS committee's Performance. Provide an update on the curtains in the Lab room. Currently, repairs are underway to fix the broken curtains to ensure a safe workplace environment. Additionally, there are organizing and maintaining the lab's Safety Data Sheets (SDS) files to ensure proper safety measures are in place for handling chemical substances 		

Agenda	Details	Action by	Status/Due date
3	Review action from last meeting		
	<p>3.1 Review of Action Item from last meeting</p> <p>The action items in progress include:</p> <ul style="list-style-type: none"> Proposed considering the implementation of new competency & qualifications for permit requestors who are responsible for requesting permits and undergo thorough qualification screening. This proposal also led to the consideration of developing new guidelines for permit-to-work (PTW) training. Proposed to set up training mock-up station in preparation to train newcomers for upcoming turn-around activity that will be work out between QS and AS team. Consider to review the practice of providing drinking water for field workers Proposed to adopt the Commissioning start-up checklist for operators to use before transitioning to operations. This checklist should encompass not only large machinery or shutdown processes but also include smaller equipment to prevent incident prevention. The checklist details will be developed and shared with the committee. 	<p>Warayut P.</p> <p>Wisit & Paitoon</p> <p>Paitoon</p> <p>Chaowasri & Sathapana</p>	<p>Q4/2023</p> <p>2024</p> <p>Jul/2023</p> <p>Q4/2023</p>
4	Consideration topic		
	<p>4.1 Update feedback joint site visit program</p> <p>K.Chudapa provided update joint site visit program which background from the 2022 EHS API assessment. This program aims to identify which activities require a work permit at the work site and fall within the scope of the Joint site visit program.</p> <p>Since August 2022, we have been conducting a trial of this program, and we have now reached an agreement to implement it for all high-risk activities. As part of this agreement, the scope of the joint site visit will be incorporated into the e-PTW system. This addition ensures that thorough site visits are conducted specifically for high-risk activities.</p> <p>The joint site visit program has received endorsement from the EHS Main Committee for implementation.</p>	Chudapa	Done
	<p>4.2 Consideration proposal of the practice to provide the Drinking Water for the field workers</p> <p>K.Paitoon provided update that the current practices of providing drinking water for field workers, the practice is using single-use plastic bottles after Covid-19 pandemic. This method resulted in a large quantity of non-environmentally friendly plastic waste therefore,</p> <p>To handle this issue, two proposals were put forth:</p> <ul style="list-style-type: none"> Firstly, it is proposed to provide a cooler bin with a water tap and paper cups and reusable bottles for contractors to access drinking water. Secondly, it is proposed to provide reusable bottles for staff to fill and carry drinking water into the fields. <p>The proposal's been suggested to have further workout with team and update next meeting</p>	Paitoon	Jul 2023

Agenda	Details	Action by	Status/Due date
5	Roundtable		
	<p>K.Pongkorn shared Kor Hai Box has raised the issue of implementing a standard for reverse parking, where vehicles are parked facing outwards. The objective of reverse parking is to improve safety by allowing drivers to have better visibility when exiting their parking spaces. Reversing out of the parking spot provides drivers with a clearer view of their surroundings, especially in emergency situations, thereby minimizing potential risks. Therefore, it is encouraged for all vehicle users to utilize the reverse parking method.</p> <p>K.Pongkorn shared some information on managing office space and optimizing its usage. For example, implement a system for managing external parties who utilize office space. This ensures that the allocation of space is done appropriately and in a manner that best suits their needs and prioritize space allocation each group.</p> <p>K.Wisit shared regarding based on number of recent incidents, there will be a reorganization of the contractor group to focus on safety management and addressing soft issues. Additionally, K. Wanchai is implementing the use of HOP (Human Organizational Performance) in maintenance team, promoting a culture of learn and caring, share and learn. Before finish the meeting K. Wisit expresses appreciation to all committee member for actively engaging in capturing the meeting</p> <p>Slide pack: EHS main committee\2023\Meeting Presentation 06Jun 2023.pptx</p>	<p>Info.</p> <p>Info.</p> <p>Info.</p>	<p>Info.</p> <p>Info.</p> <p>Info.</p>

Close meeting on 14:30 hrs.

ภาคผนวก ข.21

แผนการจัดอบรมด้านอาชีวอนามัยและความปลอดภัย

ประจำปี พ.ศ.2566

EHS Training Schedule 2023

EHS Standard Training Program updated on 17 Nov 2020

Item	Course Name	Target Group	Duration	Type	Instructor	Frequency	Remark
1	Advance Fire 1 & 2 In EHS Std Training 1&2	ERT, EST, OSC	1 day	Practice	QS/3 team	Will separate Adv.1 - 1 day Adv.2 - 1 day in alternate year	Refer to the endorsement on EHS training proposal in LT meeting in 2011 that advance fire 1&2 will combine on alternate year (in 2013 it is separated advance fire 1 and Advance fire 2).
3	Fire Truck	PN, PD (Driver)	1 day	Practice	QS/3 team	0.5 day / first half year 0.5 day / second half year	EHS-WI-QS-3015_Emergency Response Team Structure
4	Hazmat	ERT, EST, OSC	0.5 day	Practice	QS/3 team	Annually	Refer to the EHS Standard Training Program (EHS-OT-QS-0001) - refer to the endorsement on EHS training proposal in LT meeting 2011 that Rescue training course will be reduce from 1 day course to half day course on alternate year (in 2013- one day course)
5	Rescue #1	ERT, EST	0.5 day	Classroom/Practice	QS/3 team	Annually	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
6	Fire Training Refresher for lat	Lab	0.5 day	Practice	QS/3 team	Annually	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
7	Basic Fire For new staff	New Staffs	1 day	Theory & Practice	QS/3 team	When there is new staff (one session/year)	EHS Main committee MOM - April 2013
8	Basic Fire For - Operator who not FIT - Technical - Non Technical Staff	Technical/ Non Technical staff and pass the training more than 2 years for tehcnical staff and every 5 years for office staff	0.5 day	Theory & Practice	QS/3 Team	Every 2 years for Operator who not FIT and Technical Staff Every 5 years for Non- Technical Staff	EHS Main committee MOM - April 2013. For the year 2013, we will start for refresher for both technical and office staff. However, to avoid the amount of sessions, thenboth QS and HR to be consider on amount of session to be conducted for planing in 2014 and 2015. We agreed that if conduct for all in 2014 then will impact to both instructor and training field as well as workload. Thus will plan to complete within 2 years.
9	Oil Spill Response Training Refresher	PD operator	1 Day	Classroom/Exercise	QS/3, PD/1B	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
10	Comprehensive Fire Training for ERT Team Leader	PN,PD ERT Leader (16 people)	2 Day	Classroom/Exercise	QS/3X and Outside	Annually	EHS-WI-QS-3015_Emergency Response Team Structure
11	Comprehensive Fire Training for ERT Members	PN,PD ERT Leader (40 people)	2 Day	Classroom/Exercise	QS/3X and Outside	Annually	EHS-WI-QS-3015_Emergency Response Team Structure
12	Radiation Safety for RTO and Operator	PN shift staff, RTO and Lab staff	1 day	Classroom	QS/41 & IR/11	Every 2 years	
13	Isolation of Equipment & Safe Work Practice	PN, PD, AS/1, AS/2	0.5 day	Classroom/practice	QS/41	Every 2 years	
14	Permit To Work / Confined Space / AGT Refresher	PN, PD	0.5 Day	Discussion	QS/42	Every 2 years	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
15	Radiation Safety Refresher*	PN shift staff, RTO and Lab staff	1 day	Classroom	IR/11, QS/41	Annually	Legal requirement and refer to the EHS Standard Training Program (EHS-OT-QS-2021)
16	Safety Training for Supervisor Level	New Supervisor	2 days	Classroom	QS/4 Team / outside	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
16	Safety Training for Management Leve	New Management	2 days	Classroom	QS/4 Team / outside	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
17	CPR/First aid	Technical staff	0.5 day	Practice	QS/43 team	Annually	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
18	CPR/First aid	Non Tech staff	0.5 day	Practice	QS/43 team	Every 2 years	EHS Main committee MOM - April 2013
19	Electrical safety + First Aid for electrician	New I&E	1 day	Practice	QS/43 Team	None	Legal requirement and refer to the EHS Standard Training Program (EHS-OT-QS-2021)
	Refresh Electrical safety + First Aid for electrician	I&E	0.5 day	Practice	QS/43 Team	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
	Refresh Electrical safety + First Aid for Operation	Operation	0.5 day	Practice	QS/43 Team	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
20	CPR/First Aid for new staff	New Staffs	1 day	Practice	QS/43 team	When there is new staff (one session/year)	EHS Main committee MOM - April 2013
21	Basic Fire Fighting for new staff	New Staffs	1 day	Practice	QS/31	None	
22	Confined Space Entry + 4hrs, SPRC req	New Staffs	2 days	Classroom/practice	QS/42	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
23	Permit To Work / Confined Space / AGT	New Operators	1 day	Classroom	QS/41	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
23	SWP/ Permit To Work / Confined Space / AGT Refresher	Shift Staff	0.5 day	Classroom	QS/41	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
24	Fire Command (On Scene)	ERT Leader, ERT, EST	1 day	Classroom/practice	QS/31	Every 2 years	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
25	Building Fire Fighting	New Oprators	1 day	Classroom/practice	QS/31	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
26	Techniques Fire Fighting	New Oprators	1 day	Classroom/practice	QS/32	None	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
27	EHS Refresher	All Staff	0.5 day	Classroom	QS Team	Every 2 years Every 3 years (based on EHS-OT-QS-0001, 17 Nov 2020)	Refer to the EHS Standard Training Program (EHS-OT-QS-0001)
28	HRA Facilitator	HRA Facilitator	0.5 day	Classroom	QS/43	Every 5 years	

Item	Course Name	Target Group	Duration	Type	Instructor	Frequency	Remark
1	Internal Auditor Refresher Training Plus CAR/PAR software	MS/PSM auditors	2 days	Class room	Outside (QS/1)	None	
2	ISO 45001 Requirement	MS Department Focal point/Champion	1 day	Class room	Outside (QS/1)	None	
3	IIF Roadshow	New staff, and staff who not attend	2 hrs	Class room	QS/1	None	
4	PSM Internal Auditor Course	For new PSM Auditor 7-8 persons	1 day	Class room	QS/1	None	Required by Law for IA PSM

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EHS Training Schedule 2023							
Course Name	Target Group	Shift/Day	Duration	Type	Date	Venue	Custodian/Instructor
Adv. Fire Training Refresher (Normex suit and PPE) Item 29	ERT, EST, OSC, OSC-NON	Shift A	1 day	Theory & Practice		NPC S&E	QS/3 Team
Adv. Fire Training Refresher (Normex suit and PPE) Item 29	ERT, EST, OSC, OSC-NON	Shift B	1 day	Theory & Practice		NPC S&E	QS/3 Team
Adv. Fire Training Refresher (Normex suit and PPE) Item 29	ERT, EST, OSC, OSC-NON	Shift C	1 day	Theory & Practice		NPC S&E	QS/3 Team
Adv. Fire Training Refresher (Normex suit and PPE) Item 29	ERT, EST, OSC, OSC-NON	Shift D	1 day	Theory & Practice		NPC S&E	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift A	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift B	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift C	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift D	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift A	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift B	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift C	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift D	1 day	Classroom/Exercise		R-106 / Fire Station	QS/3 Team
CPR & First Aid Training Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift A	0.5 day (A.M.)	Theory & Practice		R-106	QS/43
CPR & First Aid Training Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift B	0.5 day (A.M.)	Theory & Practice		R-106	QS/43
CPR & First Aid Training Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift C	0.5 day (A.M.)	Theory & Practice		R-106	QS/43
CPR & First Aid Training Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift D	0.5 day (A.M.)	Theory & Practice		R-106	QS/43
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift A	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift B	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift C	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift D	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift A	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift B	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift C	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift D	1 day (AM-6 PP, PM-6 PP)	Practice		Fire Station	QS/3 Team
HAZMAT Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift A	0.5 day	Theory & Practice		R-106	QS/3 Team
HAZMAT Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift B	0.5 day	Theory & Practice		R-106	QS/3 Team
HAZMAT Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift C	0.5 day	Theory & Practice		R-106	QS/3 Team
HAZMAT Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift D	0.5 day	Theory & Practice		R-106	QS/3 Team
Rescue Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift A	0.5 day (Tent)	Theory & Practice		R-106 & Field	QS/3 Team
Rescue Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift B	0.5 day (Tent)	Theory & Practice		R-106 & Field	QS/3 Team
Rescue Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift C	0.5 day (Tent)	Theory & Practice		R-106 & Field	QS/3 Team
Rescue Training Refresher 1 (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift D	0.5 day (Tent)	Theory & Practice		R-106 & Field	QS/3 Team
Oil Spill Response training refresher for front line operator (IMO Level 1)	PD shift staff (PD/32, PD/33, PM)	Shift A/D	1 day	Theory & Practice	TBC	MCB Meeting Room	PD/1B
Oil Spill Response training refresher for front line operator (IMO Level 1)	PD shift staff (PD/32, PD/33, PM)	Shift B/C	1 day	Theory & Practice	TBC	MCB Meeting Room	PD/1B
Forklift	PD shift staff (PD/32, PM) & Warehouse	Shift A/D	1 day	Theory & Practice	TBC	MCB Meeting Room	PD/7A6 & AS/135
Forklift	PD shift staff (PD/32, PM) & Warehouse	Shift B/C	1 day	Theory & Practice	TBC	MCB Meeting Room	PD/7A6 & AS/135
Basic Fire Fighting for Technical Staff (refresh every 2 years)	Technical Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Basic Fire Fighting for Technical Staff (refresh every 2 years)	Technical Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Basic Fire Fighting for Technical Staff (refresh every 2 years)	Technical Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Basic Fire Fighting for Technical Staff (refresh every 2 years)	Technical Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Basic Fire Fighting for Non-Technical Staff (refresh every 5 years)	Office Staff	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Basic Fire Fighting for Non-Technical Staff (refresh every 5 years)	Office Staff	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Basic Fire Fighting for Non-Technical Staff (refresh every 5 years)	Office Staff	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Basic Fire Fighting for Non-Technical Staff (refresh every 5 years)	Office Staff	Day	0.5 day	Theory & Practice		NPC S&E	QS/3 Team
Fire Training Refresher for Lab	Lab Staff	Day, Shift A/D	0.5 day	Practice		NPC S&E	QS/3 Team
Fire Training Refresher for Lab	Lab Staff	Day, Shift B/C	0.5 day	Practice		NPC S&E	QS/3 Team
CPR & First Aid Training Refresher for Technical Staff	Technical Staff (every year)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Technical Staff	Technical Staff (every year)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Technical Staff	Technical Staff (every year)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Technical Staff	Technical Staff (every year)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Non-Technical Staff	Day Staff (every 2 years)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Non-Technical Staff	Day Staff (every 2 years)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Non-Technical Staff	Day Staff (every 2 years)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Non-Technical Staff	Day Staff (every 2 years)	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
CPR & First Aid Training Refresher for Electrical Team	Electrical Team	Day	0.5 day	Theory & Practice	TBC	R-106	QS/43
Radiation Protection (Level 1)	Instrument, Inspector, Lab Staff, Shift Sup	Day/Shift	5 days	Theory		PUB	QS/41 & IR/2
Safety Working with Hazardous Substance and Gas cylinders handling (refresh every year)	Lab & Warehouse	Day, Shift A/D	0.5 day	Classroom		R-106	QS/43
Permit To Work-confirm-with-Bank-QS	Lab Staff	Day, Shift A/D	0.5 day	Classroom		R-106	QS/41
Safety Working with Hazardous Substance and Gas cylinders handling (refresh every year)	Lab & Warehouse	Day, Shift B/C	0.5 day	Classroom		R-106	QS/43
Permit To Work-confirm-with-Bank-QS	Lab Staff	Day, Shift B/C	0.5 day	Classroom		R-106	QS/41
e-Permit To Work	Operation	Day, Shift A/D	1 day	Classroom		R-106	QS/41
e-Permit To Work	Operation	Day, Shift B/C	1 day	Classroom		R-106	QS/41
e-Permit To Work	Day staff who relating with PTW	Day	1 day	Classroom		R-106	QS/41
Chief Safety Department	New Manager QS	Day	7 days	Classroom	TBC	PUB (if any)	QS/42
Safety Training for Supervisor Level	New Supervisor	Day/Shift	2 days	Classroom	TBC	PUB (if any)	QS/42
Safety Training for Management Level	New Management	Day/Shift	2 days	Classroom	TBC	PUB (if any)	QS/42
EHS Main Committee Member	Assigned Person	Day/Shift	2 days	Classroom	TBC	PUB (if any)	QS/41
EHS for Job Rotation (significant change in risk and hazard)	Assigned Person	Day/Shift	3 hrs.	Classroom	TBC	INH (if any)	QS/42
EHS Refresher (refresh every 3 years)	SPRC Staff	Day/Shift	6 hrs.	Classroom	TBC	INH	QS/42
Electrical safety + First Aid for Electrician	New I&E	Day	1 day	Theory & Practice	TBC	R-106 (if any)	QS/43
CPR & First Aid Training for New Staff	New Staff	Day	1 day	Theory & Practice	TBC	R-106	QS/43
Basic Fire Fighting for New Staff	New Staff (Inc. Operator)	Day	1 day	Theory & Practice	TBC	NPC S&E	QS/3 Team
Technical Fire Fighting for New Operation staff (PN & PD)	New Staff (Operator)	Day	1 day	Theory & Practice	TBC	R-106 & Fire Station	QS/3 Team
SCBA for New Operation Staff (Normex suit and PPE)	New Staff (Operator)	Day	0.5 day	Theory & Practice	TBC	Fire Station	QS/3 Team
SCBA refresher (refresh every 2 years)	Staff who use SCBA (except ERT, EST)	Day/Shift	0.5 day	Theory	TBC	INH	QS/3 Team
PTW / Isolation of equipment / JSA / SWP (every 2 years)	All operation, Maintenance	Day/Shift A	0.5 day	Classroom		R-106	QS/41
SPRC Confined Space Training Refresher	All operation, Maintenance, TE, IR	Day/Shift A	0.5 day	Classroom		R-106	QS/41
PTW / Isolation of equipment / JSA / SWP (every 2 years)	All operation, Maintenance	Day/Shift B	0.5 day	Classroom		R-106	QS/41
SPRC Confined Space Training Refresher	All operation, Maintenance, TE, IR	Day/Shift B	0.5 day	Classroom		R-106	QS/41
PTW / Isolation of equipment / JSA / SWP (every 2 years)	All operation, Maintenance	Day/Shift C	0.5 day	Classroom		R-106	QS/41
SPRC Confined Space Training Refresher	All operation, Maintenance, TE, IR	Day/Shift C	0.5 day	Classroom		R-106	QS/41
PTW / Isolation of equipment / JSA / SWP (every 2 years)	All operation, Maintenance	Day/Shift D	0.5 day	Classroom		R-106	QS/41
SPRC Confined Space Training Refresher	All operation, Maintenance, TE, IR	Day/Shift D	0.5 day	Classroom		R-106	QS/41
Confined Space Entry (4 มิ)	New Staff (Operation, OC)	Day/Shift	4 days	Classroom/Practice		PUB	QS/42
Confined Space Entry (อุปกรณ์ทำงาน)	New Staff (Process Engineer)	Day	2 days	Classroom/Practice		PUB	QS/42
Environmental Manager	New Manager QS	Day	1 day	Classroom	TBC	PUB	QS/2 Team
Environmental Controller	New Environmental Specialist	Day	5 days	Classroom	TBC	PUB	QS/2 Team
Environmental Operator (Water)	New PD Shift Supervisor	Shift	2 days	Classroom	TBC	PUB	QS/2 Team
Environmental Operator (Air)	New PN Shift Supervisor	Shift	2 days	Classroom	TBC	PUB	QS/2 Team
Environmental Operator (Waste)	New Equipment Service Supervisor	Day	2 days	Classroom	TBC	PUB	QS/2 Team
IIF Supervisor Skill	New Supervisor	Day/Shift	1 day	Classroom	TBC	R-106	QS/4
Energy Responsible Person (ผู้รับผิดชอบด้านพลังงาน)	Assigned Person			Classroom	TBC	PUB	QS/2 Team
Senior Energy Responsible Person (ผู้รับผิดชอบด้านพลังงานอาวุโส)	Assigned Person			Classroom	TBC	PUB	QS/2 Team

ภาคผนวก ข.22

แผนฉุกเฉิน และการซ้อมแผนฉุกเฉิน

ผังตอบโต้ภาวะฉุกเฉิน



SPRC

"One family ...
fueling the
future of
Thailand"



1

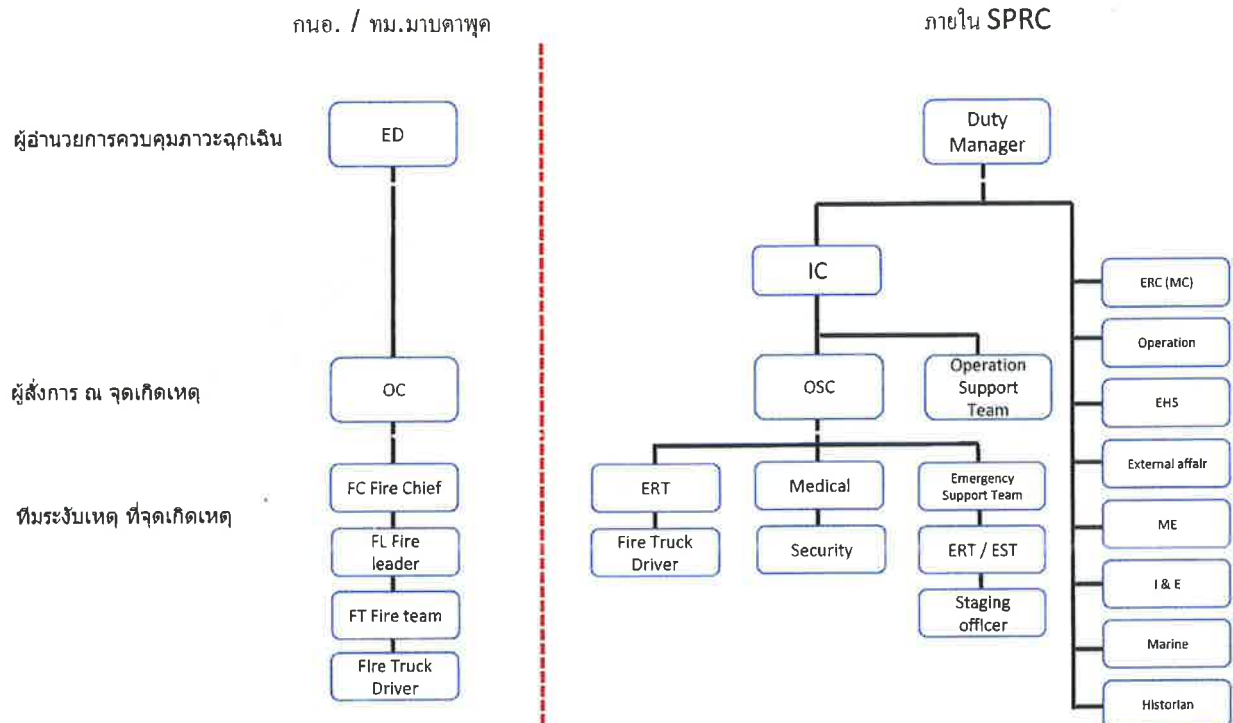
เปรียบเทียบระดับการตอบโต้ภาวะฉุกเฉิน

แผนฉุกเฉินจังหวัด ระยอง	แผนฉุกเฉินนิคม อุตสาหกรรม	แผนฉุกเฉิน SPRC	การใช้จ่ายพลังงานและทรัพยากร
เหตุฉุกเฉินระดับ 2			
เหตุฉุกเฉินระดับ 1	ภาวะฉุกเฉินระดับนิคม อุตสาหกรรม 3	ภาวะฉุกเฉินระดับ 3	- ขอสนับสนุนกำลังพลและทรัพยากร จากเทศบาลเมืองมาบตาพุด
เหตุฉุกเฉินระดับโรงงาน	ภาวะฉุกเฉินระดับนิคม อุตสาหกรรม 2	ภาวะฉุกเฉินระดับ 2	- ขอสนับสนุนกำลังพลและทรัพยากร จากกลุ่ม EMAG หรือ กนอ.
	ภาวะฉุกเฉินระดับนิคม อุตสาหกรรม 1	ภาวะฉุกเฉินระดับ 1 B	- ขอสนับสนุนทีม DUTY และพนักงาน ปฏิบัติการที่ Off Shift ของโรงงาน - ใช้ทรัพยากรของโรงงาน
		ภาวะฉุกเฉินระดับ 1 A	- พนักงานปฏิบัติการที่เข้าปฏิบัติงาน ภายในวัน-เวลาที่เกิดเหตุเท่านั้น - ใช้ทรัพยากรของโรงงาน
	เหตุผิดปกติระดับนิคม อุตสาหกรรม	เหตุผิดปกติระดับโรงงาน	



2

โครงสร้างผังองค์กรการตอบโต้ภาวะฉุกเฉิน





Star Petroleum Refining Public Company Limited

Process Safety & QEHS Department

EHS-SP-QS-0006
Emergency Response Plan

Prepared by: _____

Bundit Vayuwattanasiri
Lead Emergency Management (QS/3)

Reviewed and

Approved by: _____

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Manager Process Safety & QEHS (QS)

Distribution List

Copy No.	Controller/ Owner	Location
00	Emergency Response Coordinator (Document controller)	EDMS
01	PN EOC	Fire Station (F-115)
02	MCB EOC	MCB
03	PN CCB	CCB
04	QEHS and lab Document Control Room	R - 202
05	Emergency Response Coordinator	RE -103
06	Duty Manager	Duty Manager Brief Case
07	Operations Duty	Operations Duty Brief Case
08	External Affairs Duty	External Affairs Duty Brief Case
09	EHS Duty	EHS Duty Brief Case
10	ERC Duty	ERC Duty Brief Case
11	Marine Duty	Marine Duty Brief Case
12	Mechanical Duty	Mechanical Duty Brief Case
13	I&E Duty	I&E Duty Brief Case
14	PD Shift Supervisor	Incident Commander Brief Case
15	Tank Truck Loading Terminal	TTLT Office

Amendment List

Revision	Date	Page/ Section	Reason	By
0	06 Oct 08	First release	QS/1	0
1	1 Oct 09	Page Vi/ EMAG	Add IRPC in to member of Emergency Mutual Aid Group	Athit C.
		4/4.0Emergency Response Organization Overview	Change the line of command for emergency support team to under OSC	
		6/6.0 Emergency Response Decision Procedure Appendix R	Add action of PD shift supervisor as IC on asking REB to notify PTTAR-1 FIT in case of emergency.	
		7/7.0 Actions on Emergency	Add action of REB as following; 1. Alert PTTAR-1 via hotline to alert their FIT team (Level 1) 2. Send SMS to all FIT team (level 2) to call in to support at site.	
		8/8.0 Communication Method	Add scope of communication to all SPRC personnel and contractor to cover emergency level 1 which has significant impact on operation or affect public.	
		11/9.2.1 General requirement	1. Update the name of Rayong Emergency to " Kho Kaew" 2. Add notification to the authority (IEAT Map Ta Phut and Map Ta Phut Municipality for emergency level 1 that significant affect public.	
		20/11.3	Add link of Community Evacuation Plan	
		22/11.4 Emergency Contact Points in case of neighboring company incident	Add PTTAR 1 to the company that might affect to MCB.	
		65/3.1 Bomb Threat Checklist	Add link to bomb threat checklist	
		74/9.0 Offsite Road Accidents Involving Product from SPRC	Update telephone number of SPRC TTLT Coordinator; delete PPT and Caltex Depot Manager telephone number by link to the Emergency Telephone Number instead.	
		82/ Appendix F Headcount Procedure	Add areas of building that the Office warden shall do headcount (Marine Terminal Building and Construction Building)	
		87/ Appendix I Drinking Water and Refreshment	More clarification on cash reserved for emergency situation that EA duty will be	

Revision	Date	Page/ Section	Reason	By
		90/ Appendix N	the person to coordinate with treasurers for cash.	
		95	Update Emergency Operation Center Layout Add appendix R Mutual aid agreement between SPRC and PTTAR Refinery	
		97	Add appendix S Pier Evacuation Guideline	
		98	Add appendix T PTT group crisis and Emergency Report (form)	
2	3-May-11	10/8. Notification and Reporting	Revise the sub content of Notification and reporting by grouping the reporting to authority e.g. IEAT-MTP, MTP municipality, community (8.2) and share holder (8.3) in to one table (8.2 Notification and Reporting to Stakeholders). This change is to comply with the IEAT-MTP complex emergency response plan and Rayong Emergency Response Plan B.E.2553.	Athit C.
		11/8.2.4 Shareholder notification	Add a role of ERC duty to notify to the PTT communication center in case of emergency level 1. This updating is to comply with the PTT Group Emergency Management Plan	
		21/10.3 Neighboring Community/Company Notification	More explanation about community notification process in case of emergency can effect to the communities nearby the company by linking to Community Communication Process Guideline (EHS-WI-QS-3012)	
		31/ 5.1 Duty Manager	Re-write the specific task of Duty Manager Roles and Responsibilities by changing from Shareholders to be the Stakeholder which in line with the 8.2.4	
		36/5.3 External Affair	Define a scope of role and responsibility of External Affair Duty to cover the provision of additional resource including food and refreshment to support emergency response which can ask support and cooperate with ME/IE duty to help as well as mentioned about the list of vendor/supplier available in the contact list file.	
		43/5.8 Mechanical/Instrument and Electrical Duty	More explanation of ME/I&E role and responsibility about coordinate and process request for additional resource including foods, refreshment by coordinate and process with External Affair Duty and help to mobilize the additional resources.	
3	24-Jun-12	2/Glossary	Changing the company of the following company	
		6/5.0 Emergency		

Revision	Date	Page/ Section	Reason	By
		Response Decision		
		22/10.4 Emergency Contact Points In case of Neighboring Company Incident	PTTAR-1 to PTTGC-6 PTTChem I-1 to PTTGC-2, PTTChem I-4 to PTTGC-3 PTTAR-2 to PTTGC-4	
		95-96/Appendix R Mutual Aid Agreement between SPRC and PTTAR	Changing the name of PTTAR to PTTGC6	
		12/8.2 Notification& Reporting to Stakeholder	Update the name list of Shareholder Management (PTT) Management that to be notified in case of emergency level 2,3 according PTT Organization.	
4	15-Jan-13	All 2/Glossary 9/SMS 12/8.2 Notification& Reporting to Stakeholder 14/8.2.1 14/8.2.4 Appendix A/Role and Responsibilities – 35/5.2 Operation Duty 36/5.3 External Affair Duty 40/5.5 EHS Duty 43/5.8 ME &IE duty 79/Appendix D Mutual Assistance 86/Appendix H Foam Supplier 97/Appendix U 98/Appendix V	Update company name from Co.,Ltd to Public Company Limited Add new EMAG member – MOC Delete SMS code N Add notification to PTT Emergency Center in case of Emergency level 1 (by ERC Duty) Add the notification and reporting form to IEAT-MTP and MTP- Port Update the notification requirement according to labor law (Update the requirement). Add new notification requirement to the Office of Atomic for Peace according to the Radiation Safety law requirement Change the location of Operation Duty from CCB to EOC Re-write the responsibility of EA duty to be more clearly on buying additional resource include food and refreshment Add new responsibility “Call in Company Radiation Safety Officer (RSO) in case of Radiation Incident Re-write the responsibility of ME&IE duty to be more clearly on supporting to EA Duty by mobilize the additional resource include food and refreshment Add new EMAG Member (MOC) Update name list of Foam Suppliers Add Appendix U: Reporting form to the Labor Protection and Welfare Add Appendix V: Reporting form to the IEAT-MTP (EMCC) in case of emergency	Athit C.

Revision	Date	Page/ Section	Reason	By
		99/Appendix W	Add Appendix W: Reporting form the MTP-Port (in case of abnormal situation and emergency occur at Port.	
5	1-Sep-14	2/Glossary 8/ 7.0 Communication 11-12 /8.2 Notification &Reporting to stakeholder	Update the EMAG member to be in line with updated EMAG agreement. Identify more area that need to communicate to SPRC family members via all mailboxes to cover the incident occur at adjacent companies. Add the wording of periodically update required to notify to the IEAT-MTP (EMCC) according to level3 exercise recommendation. State a requirement of have to notify to the IEAT-MTP (EMCC) in case of abnormal situations resulting from emergency shutdown that required to notify to the IEAT-MTP (EMCC) within 15 minutes after aware of the Shutdown (refer to the IEAT Notification no67/B.E.2557 announce date 31 July B.E.2557) Update the notification to shareholder (PTT) from the specific name list of PTT executives to the PTT Communication Center which in line with the PTT group emergency and Crisis Management Plan Add new subject “Leak Response Guides Decision” to be use as the guideline of SPRC leak response according to the CVX Leak Response Protocol guide of practice Update the EMAG member to be in line with updated EMAG agreement. Update refinery and marine terminal assembly areas Update pipe line lay out to be in line with service agreement	Athit C.
6	22-Dec-14	All pages 39-47 and 54/ Appendix A 62/Appendix B 78/Appendix C	Change SPRC logo More clearly identified the person to call in of each duty rota member to support Update the alcohol level in blood to be 0mg% Update the mobile phone number of TTLT coordinator	Athit C.

Revision	Date	Page/ Section	Reason	By
7	1-Sept-15	20/10.6 Leak Response Flow Chart 26/11.4 Emergency Contact Point in case of Neighboring Company Incident 44/Appendix A.5.5 EHS Duty 50/Appendix A7.Emergency Support Team 54/Appendix A11.Historian 65/Appendix C 103-104/Appendix V/W 106/15.Reference List	Update the Leak Response Flow Chart to be reflex the current practice Change the company name from Bayer Thai to Covestro (Thailand) Add role of keep monitoring and tracking of an injured person and head count details (to update to the Duty Team members) Add the wording of the responsibilities will be assigned by Emergency Response Coordinator Identify the roles of Historian to be the Assign Administrative Assistance or Marine Duty (If available/Not the Marine Case) by Duty Manager Update the H2S concentration at fence line from 10 ppm to 5 ppm Update the IEAT and IEAT-MTP Port Abnormal and Incident Notification Form to be in line with the IEAT Emergency Response Plan B.E.2557 Change the revision of IEAT-IEAT_MTP port emergency response plan from B.E.2557 to B.E.2558	Athit C.
8	24-Feb-16	10/8.1 Notification Flow Chart 11/8.2 Notification and reporting to Stakeholder 28/13 Post Incident Review 45/ Appendix A Role and Responsibility 5.6 Emergency Response Coordinator (Duty) 100/Appendix U Notification to the PTT 79, 80, 81 / Appendix C10.Failure of SPRC Trunked Radio system procedures	Take the PTT company out from the stakeholder notification list Indicate the tracking and follow up process of recommendation/feedback received from post incident review. Delete the role and responsibility of ERC Duty to notify the PTT out. Delete the Notification from to PTT out Update content on SPRC Trunked Radio system from old (analog) to new (digital) to reflect the fall back modes on new system implemented	Athit C (QS/3) Soontorn S. (TE/717)

Revision	Date	Page/ Section	Reason	By
9	15-Aug-16	1/1.Purpose & Scope 19/10.5 Leak Response Protocol 20/10.6 Leak Response Flow Chart	Add table of Employee involvement Delete Leak Response Protocol out Update the workflow of Leak Response Flow Chart	Athit C (QS/3)
10	16-Dec-16	43/ Appendix A (Role and Responsibilities) 92/Appendix M Emergency Training and Exercise	add role of EHS (5.5) duty to advise to OSC through IC about suspend the emergency operation when scene atmosphere is IDLH and/or imminent danger condition Add link to the EHS-OT-QS-3005 Emergency Response Training and Exercise Guideline	Athit C (QS/3)
11	28-May-18	Viii / Appendix A	4.0 Changed FIT to ERT 9.0 Changed EST (Back up team) to Emergency Support Team	Bunditv . (QS/3)
		Page 2	Changed FIT to ERT	
		4 / Glossary	Changed FIT to ERT Changed FIT-B to ERT or EST Added CMP and CMT	
		21 / 10.5	Deleted note and Leak check list out	
		34	Changed FIT to ERT	
			Role: ERT was reviewed	
		39 / 3.0	Changed FIT to ERT	
		50 / 7.0	EST added wording (Day Staffs)	
			Who: removed off-shift operators out	
			Emergency level 3 → 2, 3	
			FIT changed to ERT	
		53 / 9.0	FIT B revised to EST Operations and revised Responsibilities	
		62 / 17.0	Revised Legal Adviser Responsibility: Removed out “the Treasurer's Unit related to Traders Insurance Policy and /or other”	
		72 / 4.1	FIT changed to ERT	
		77 / 7.0	FIT changed to ERT	
		78 / 8.0	FIT changed to ERT	
		79 / 9.0	Revised: Off Site Road Accidents Involving Product from SPRC	
		95 / Appendix M	Revised Emergency Training and Exercises	
		103 / Appendix U	Updated form	
		104 / Appendix V	Updated form	
		105 / Appendix W	Removed out: APPENDIX W Emergency Response Considerations and Hazard Assessment Checklist for Process Loss of Containment	
		105 / REFERENCE LIST	Removed out: PTT Group Emergency Plan (CP-SSHE-3G-002)	
12	8-Apr-19	2 / 1.0 purpose and scope	Revised: response to the emergency situation by create emergency level 1A / 1B	QS/3
		2 / 3.0 Emergency level	Revised: Emergency level	
		9 / 4.0	Revised: EMERGENCY RESPONSE ORGANISATION OVERVIEW	

Revision	Date	Page/ Section	Reason	By
		8-9 / 5.0	Revised: EMERGENCY RESPONSE DECISION PROCEDURE	
		68 / Appendix C	Action major leak change item evacuation guideline 10.3 to 11.3	
		15-16 / 8.2	Revised emergency level in: Notification and Reporting to Stakeholder	
13	28-Oct-19	7 / 3.0	Revised stage of emergency, Map Ta Phut municipality move to Level 3 of company	QS/3
		15-16 / 8.2	Add inform Certification Body in Level 3	QS/3
14	7 Jun 21	6 / 2 10 / 6 15 / 8.2 29 / 11.3 34 / Appendix A 2 35 / Appendix A 3 35 / Appendix A 4 36 / Appendix A 5 36 / Appendix A 6 38 / Appendix A 7.1 47 / Appendix A 7.6 56 / Appendix A 14 59 / Appendix A 16 83 / Appendix D 2 92 / Appendix H 98 / Appendix R 100 / Appendix S 102 / Appendix U 103 / Appendix V	<ul style="list-style-type: none"> - Changed the Department name of QS & CA - Changed the position of Emergency Response Coordinator to Lead Emergency Management and Fire system specialist to Emergency management Specialist. - Add location of document control and updating on Smart Procedure - update actions on emergency table - Add Thai- MECC agency in Notification and Reporting to Stakeholder. - Changed the contact person to notify PorPor from CA to Emergency Response Coordinator. - Update responsibilities of OSC - Update responsibilities of PU Shift Supervisor - Add position and responsibilities of Emergency Response Team-Leader - Update responsibilities of ERT - Update responsibilities of FTD - Delete specific task "Act as site spoke person". - Update responsibilities of Emergency Response Coordinator (Duty) - Revised communication channel form EOC to REB - Update responsibilities of Staging Officer - Revised the SPRC Assistance to Other Companies and added the flow chart. - Add National Foam Universal Gold 1/3% at Foam Suppliers - Revised number of operation supporter from 4 person to 2 persons - Revised the assembly point. - update the IEAT-MTP Emergency Reporting Form - update the MTP-Port Abnormal situation and Emergency Reporting Form 	QS/3

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1. PURPOSE & SCOPE

Purpose

Star Petroleum Refining Public Company Limited (SPRC) Prepare Emergency Response Plan to provides an integrated approach to the management of all emergencies related to SPRC. This response plan details the action, coordination and resources required for the mitigation of an emergency. In the event of an emergency situation, available resources shall be used to achieve the following, in order of priority;

1. Preservation of human life, health and well-being.
2. Protection of the environment.
3. Protection of Company Assets
4. Render affected areas safe and stable.
5. Restoration of disrupted utilities.
6. Resumption of normal production.

Scope

The emergency response plan covers all SPRC operated locations. It also covers assistance to other parties as requested. Emergencies outside SPRC operated Locations (e.g. pipeline Emergencies) should be coordinated with the IEAT Emergency Response efforts.

The following events would be considered as an emergency:

1. A fire or explosion
2. Serious escape of gaseous, liquid hydrocarbons, and Hazardous Material likely to create health, safety hazards and contamination of environment.
3. Oil Spill.
4. The spilling or spreading of a source of ionizing radiation, or the exposure of personnel to harmful radiation.
5. Any event requiring the evacuation of buildings and other working areas
6. A bomb threat or the discovery of suspicious objects.
7. Any event which may harm the company's reputation

Employee Involvement

Process Activities	Employee Involvement	How	Training/ Competency Assurance of the Involved Employees
Response to the emergency situation			
Emergency Response Level 1A (Emergency Activation)	1) Senior Operator of Area affect 2) Emergency Response Team 3) Incident commander 4) Security Shift Officer	1) Assess the situation that have to mobilize the ERT to response to the incident 2) Communicate via trunk radio (announcement) for the resources need	Pass the required emergency related training according to the EHS Training Requirement
Emergency Response Level 1B (Emergency Activation)	1) Senior Operator of Area affect 2) Incident commander 3) Emergency Response Team 4) Security Shift Officer 5) Duty Team members	1) Assess the situation at the scene that need more resource to handle the incident. 2) Communicate via trunk. 3) Call the Duty team by Security Shift officer (via SMS). ERT/EST by SS	Passed the required emergency related training according to the EHS Training Requirement. Trained the Emergency Response for Duty Rota team
Emergency Response Level 2	1) Senior Operator of Area affect 2) Incident commander 3) Emergency Response Team 4) Security Shift Officer 5) Duty Team members 6) Mutual Aid Team members 7)	1) Assess the situation at the scene that need more resource to handle the incident 2) Communicate via trunk 3) Call the Duty team by Security Shift officer (via SMS). ERT/EST by SS	Passed the required emergency related training according to the EHS Training Requirement. Trained the Emergency Response for Duty Rota team
Emergency Response Level 3	1) Senior Operator of Area affect 2) Incident commander 3) Emergency Response Team 4) Security Shift Officer 5) Duty Team members 6) Mutual Aid Team members	Full scale emergency, which required more resource to be made available from refinery personnel and other Mutual Aid and Activate the Rayong Province Emergency Response Plan	Same as above

Process Activities	Employee Involvement	How	Training/Competency Assurance of the Involved Employees
Notification and Reporting to Stakeholder			
Notification and reporting to stakeholder-Abnormal situation	1) Environmental 2) CA Department 3) Security Shift officer (off-hour)	1) Telephone and IEAT Notification form (within 10 mins-via fax/Email)	Not required
Notification and reporting to stakeholder in case of emergency	1) External affair duty- Relevant authorities and communities 2) Nurse on Duty- Contract hospital 3) ERC Duty-Rayong Province 4) Duty Manager- Shareholder	1) Telephone and IEAT Notification form (within 10 mins-via fax/Email) 2) Telephone 3) E-mail	Not required
Mutual Aid and Assistance to Third Party			
Assistance to SPRC	1) Mutual aid group (EMAG) 2) Shift Security officer 3) On Scene Commander	1) Contact via telephone with resource required by the Security officer 2) Coordinate with the On Scene when arrival	Mutual aid group members
SPRC Assistance to other companies- Agreement Companies	1) Shift Supervisor on duty 2) ER Coordinator or Emergency management specialist.	1) Coordinate via telephone or trunk radio 2) Provide support according to the agreement or under decision of Shift Supervisor if there is any plant constraint	Not required
SPRC Assistance to other companies- Non agreement companies	1) ER Coordinator 2) Duty Manager 3) Shift supervisor on duty 4) Security Shift Officer	1) Coordinate and cooperate via telephone or trunk radio 2) Consider the plant constraint by Shift supervisor on duty 3) Get approval from Duty Manager which propose by the ER Coordinator	Not required

Process Activities	Employee Involvement	How	Training/Competency Assurance of the Involved Employees
Emergency Exercise			
Set up yearly ER master plan	Emergency Management Specialist and Area owner (PUs Process instructors)	Review; • Shift work schedule • Incident in the past (internal/External) • Past exercise scenario	Work position (Seniors) and exercise
Exercise master plan review and endorsement	QS/3, PUs Shift Supervisor and Area owner	E-Mail (circulation feedback)	Note required See details in the Emergency Response Exercise Guidance (EHS-OT-QS-3005)
Exercise preparation	Emergency Management Specialist	Meet with area owner for the scenario	Not required
Conduct the exercise and report the result	Emergency Management Specialist and Emergency Response Team	Table top exercise and field exercise	Not required
Post review	QS/3 Team and emergency response team	Evaluation and post exercise review meeting	Not required
Record keeping & Follow up	Emergency Management Specialist and whom may concern	Follow up meeting/Email (Exercise report form)	Not required
Fire Fighting Equipment Inspection Master Plan			
Set up yearly Fire Fighting Equipment Inspection	Emergency Management Specialist and fire service contractor	Review the past inspection record and schedule Applicable requirement (procedure/legal)	Education back ground/Experience on fire inspection/testing (Contractor)
Inspection master plan review	QS/3, Emergency Management Specialist, Supervisor and Area owner	E-Mail (circulation feedback)	Not required
Conduct the inspection and testing	Emergency Management Specialist, Area owner and fire service contractor	Field audit and inspection	Education back ground/Experience on fire inspection/testing (Contractor)
Record keeping & Follow up	Emergency Management Specialist and whom may concern	Follow up meeting/Report/E-mail	Not required

GLOSSARY

The following terms are used throughout the Emergency Response Plan and have the meanings given below:

Alarm	There are 3 emergency alarm levels for both sites as follow; Level 1 Wail tone for 15 second follow by announcement. Level 2 Second Wail Tone for 15 second Level 3 Third Wail Tone for 15 second All clear 15 seconds of Steady Tone
CCB	Central Control Building is located at PN
EMAG	Emergency Mutual Aid Group, including 9 companies (13 Units) in IEAT-MTP area. There are SPRC, PTTGC-6, PTTGC-2, PTTGC-3, PTTGC-4, PTTGC-5, ROC, TPE, VNT, <u>Covestro (Thailand)</u> , PTT (Gas Separation Plant), IRPC and MOC.
Emergency	A situation in which fire, explosion, Material damage, Destruction, or other circumstances threaten human life, the refinery's operation, company assets, business or environment.
EOC	Emergency Operation Centre
ERP	Emergency Response Plan.
ERC	Emergency Response Coordinator
ERT	Emergency Response Team
EST	Emergency Support Team
FIT	First Intervention Team
IC	Incident Commander
IEAT	Industrial Estate Authority of Thailand
IEAT-MTP	Map Ta Phut Industrial Estate Authority of Thailand
MC	Mutual aid Coordinator
MCB	Marine Control Building
MTP Fire brigades	Map Ta Phut Fire Brigade
OSC	On Scene Commander
PN	Production Unit
PD	The areas of Tank Farm and TTLT
RSO	Radiation Safety Officer
TTLT	Tank Truck Loading Terminal
CMP	Crisis Management Plan
CMT	Crisis Management Team
THAI MECC	Thai Maritime Enforcement Command Center

2. DOCUMENT CONTROL AND UPDATING

Controlled copies of the Emergency Response Plan are documented and maintained in the following locations:

- SMART PROCEDURE
- EDMS
- Holders at various locations (see distribution list page I).

The Emergency Response Coordinator reviews the Emergency Response Plan when there are substantial changes in the document. The Emergency Response Coordinator controls the Emergency Response Plan by:

- Maintaining controlled copies of the Plan in EDMS
- Revising the Plan to comply with the changes in documentation
- Notifying the revision of the Plan to all duty team and distribute controlled revised copies to the holders.

3. EMERGENCY LEVEL

State of Emergency

This section defines the levels of emergency and the resources required for emergency situations of increasing severity.

The following levels of emergency have been defined;

Level 1A

An emergency, which can be handled by personnel available already on site and requires no additional resources to be called in.

Level 1B

An emergency, which will require some additional resources to those currently available in the refinery. This would be the SPRC Duty Rota Team, ERT or EST Team

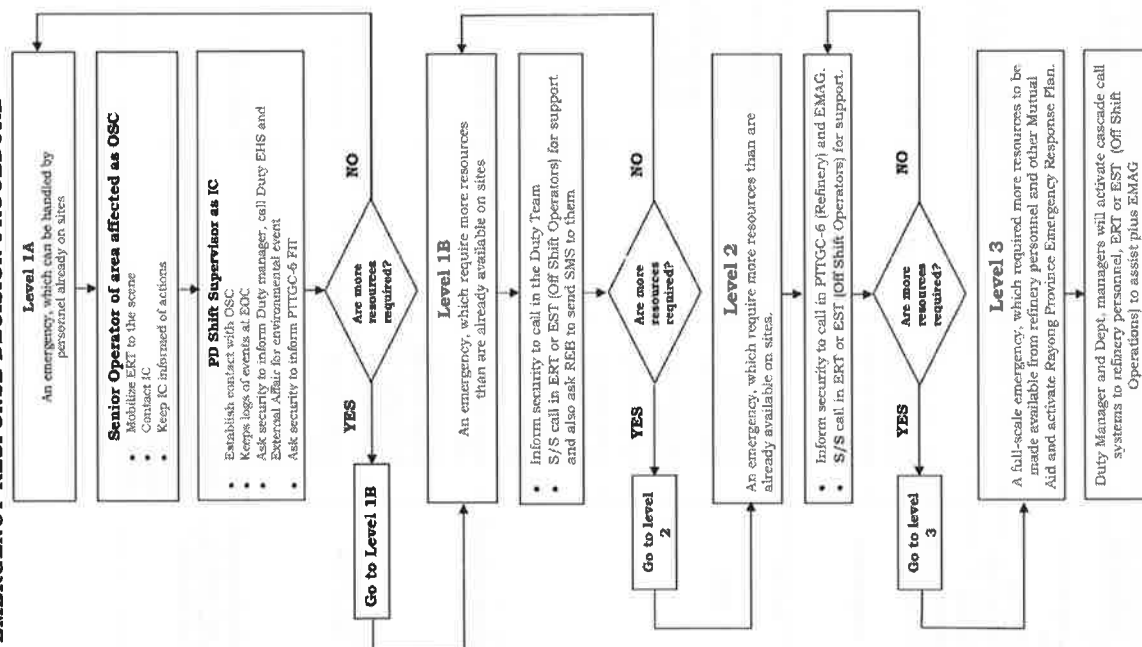
Level 2

An emergency, which will require some additional resources more than SPRC team. This would be the third-party mutual aid teams (EMAG,)

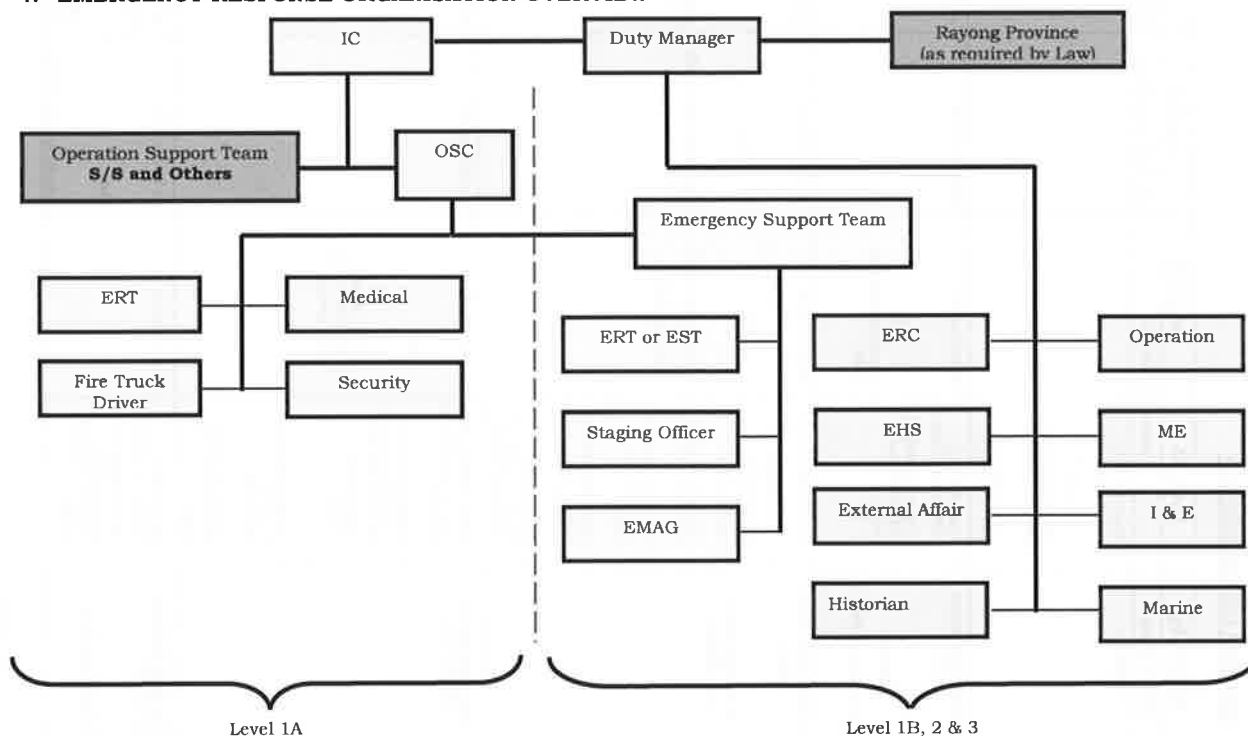
Level 3

A full-scale emergency which requires further resources to be made available from company personnel, other mutual aid teams, Map Ta Phut municipality and Rayong Province support team.

5. EMERGENCY RESPONSE DECISION PROCEDURE



4. EMERGENCY RESPONSE ORGANISATION OVERVIEW



6. ACTIONS ON EMERGENCY

Actions by	Level 1A	Level 1B	Level 2	Level 3
Authority to signal	Anyone in the refinery		On Scene Commander	On Scene Commander
Observer	<ul style="list-style-type: none"> Radio by Push emergency button. Telephone 7191 Give the name and position, company. Give location and nature of incident. 			
Incident Commander (IC) (PD Shift Supervisor on shift)	<ul style="list-style-type: none"> Switch radio to Emergency Channel Go immediately to EOC and assume as IC 	As for Level 1A Plus Coordinated with Duty Team	As for Level 1B	As for Level 1B
On Scene Commander (OSC) (Senior Operator of area affected)	<ul style="list-style-type: none"> Ask for ERT by radio Go immediately to the scene of the incident and assume the role of OSC. Set up the forward command post. Communicate with IC on Emergency channel. Cooperate with board man for plant condition Supervise ERT leader to control and secure the incident 	As for Level 1A Plus Communicate with IC who is at EOC on Emergency channel	As for Level 1B Plus Coordinated with EMAG-OSC	As for Level 2 Plus Coordinated with EMAG-OSC, Government-OSC
Shift Supervisor of affected area	<ul style="list-style-type: none"> Switch Radio to Area channel / Emergency Channel Make a decision unit shutdown agreement with OSC followed Leak response protocol. Control Emergency Shutdown procedures Consider to inform Off shift operator to aware 	As for Level 1A Plus <ul style="list-style-type: none"> Call in off shift to support ERT, shut down activity 	As for Level 1B	As for Level 1B
Emergency Response Team (ERT) (Assigned operators)	<ul style="list-style-type: none"> Switch radio to Emergency Channel Go immediately to the scene of the incident as directed by OSC. 	As for Level 1A	As for Level 1B Plus Coordinated with EMAG-	As for Level 2 Plus Coordinated with EMAG-Government agency

Actions by	Level 1A	Level 1B	Level 2	Level 3
ERT-B Level One B / Two / Three Off Shift Ops.		<ul style="list-style-type: none"> Get together at Fire Station and get ready to go to the scene as requested by OSC. 	As for Level 1B	As for Level 2
ERT-B from EMAG			Report at Staging area	
ERT-B from Government agency				Report at Staging area
Fire Truck Operator (Assigned Ops.)	<ul style="list-style-type: none"> Switch radio to Emergency Channel Nominated drivers to take the fire truck to the scene of incident as requested by OSC 	As for Level 1A	As for Level 1A	As for Level 1A
Security (REB)	<ul style="list-style-type: none"> Activate the Emergency Alert System as requested by OSC Call out ERT team, if required by OSC. Alert ERT EMAG Provide support as requested by OSC SMS to Duty Team and all off shift operator to alert and stand by 	<ul style="list-style-type: none"> Call in duty teams and Mutual Aid team requested by OSC. 	<ul style="list-style-type: none"> Activate the Emergency Alert System Call the refinery personnel and mutual aid team as requested by OSC 	<ul style="list-style-type: none"> As for Level 2 Activate the Emergency Alert System
Panel man of affected area	<ul style="list-style-type: none"> Monitor operation of units from CCB. Initiate emergency shutdown procedure as instructed by Shift Sup./ Operation Procedures. 	As for Level 1A	As for Level 1A	As for Level 1A
Medical Team	<ul style="list-style-type: none"> Provide first aid as requested by OSC. Evacuate by ambulance as needed. 	As for Level 1A	As for Level 1A	As for Level 1A
Staff and contractors not involved in emergency response and operations.	Personnel in All operational area must proceed to the nearest safe assembly point, unless directed otherwise by the emergency response team.	As for Level 1A	As for Level 1A	As for Level 1A

7. COMMUNICATION METHODS

Communication to all SPRC personnel and contractor

Emergency situation will be communicated to all personnel by using an Emergency Alarm. There are 3 emergency alarm levels as follow:

- Level 1** **Wail Tone for 15 second follows by Public Announcement by REB**
- Level 2** **Second Wail Tone for 15 second follows by Public Announcement by REB**
- Level 3** **Third Wail Tone for 15 second follows by Public Announcement by REB**
- All Clear** **Stead Tone for 15 second follows by Public Announcement by REB**

- ♦♦ The communication of an emergency level 1, 2 and level 3 or incident which has significant impact on operation or affect public will be emailed to all SPRC personnel by Duty Manager within 24 hours, which is a similar information reported to Shareholders.
- ♦♦ In the event of Emergency form Neighboring Companies, **which affects SPRC** such as toxic gas release, or incident that occur with the adjacent neighboring company. The communication to all SPRC personnel will be made by using Public Announcement **immediately** after becoming aware of the incident. After that, the Duty Manager will communicate the incident information by email to all SPRC personnel as soon as the information is available, but no later than 24 hours

Communications to related Emergency Response Parties will be by following methods.

Groups	Communications
On Site	
OSC and ERT	Radio: Emergency Channel. Messengers
Incident Commander	Radio: Emergency Channel Messengers
Shift Supervisor	Radio: Normal Channel for Operation/ Emergency Channel
Security Shift Officer	Radio: EHS Channel / Emergency Channel Phone: 7090, 7191
Operations	Radio: Normal Channel for Operations
Medical Centre	Radio: EHS Channel / Emergency Channel Phone: 7777
All other Group	Telephones, Messengers
Call In	
Duty Rota Team	Short Message Service (SMS) and following by mobile and/or home phone to ensure that the duty team members are acknowledged.
ERT & EST-B - Level 1B, 2, 3 On Shift Operations from other area	Level 1B, 2, 3 : Telephone by Shift Supervisor as priority and back up by SMS sending from REB
EMAG	Level 2: Trunk and Hotline via Security REB
Government Agency	Level 3: Telephone via Security REB
All other SPRC Personnel	Telephone by Cascade calling system (It is responsibility of Dept. Managers or their duty persons to call their own staff)
Mutual Aid	Telephones (refer to Appendix P: Emergency Telephone Numbers)
Short Message Service (SMS) Codes	FYI, Emergency Level 1A at.... (Location) 2222 Level 1B Emergency goes to EOC immediately. 2222 M Level 2 Marine Emergency goes to MCB immediately 3333 Level 3 Emergency goes to EOC immediately. 3333 M Level 3 Marine Emergency goes to MCB immediately 9999 Emergency group test, phone 038 699090 0000 All Clear.

All other radio communication must be kept to minimum and only use for URGENT messages.

8.2 Notification and Reporting to Stakeholder

In case of abnormal situation, emergency level 1A, 1B, 2, 3, Duty Manager shall ensure that the following stakeholders be notified:

Stakeholders Situations (2)	IEAT (EMCC) ⁽¹⁾ (require periodically update)	IEAT- MTP Port, Marine Dept	MTP Municipality	Rayong Province	Contract Hospitals	Neighboring community/Company defined in the External Contact List (AM-OT-PA-012)	CVX	CB Certification Body (3)
Abnormal situation which could impact internal and external Environment and communities; - Sound from abnormal operation - light and heat from flare - Nuisance smell	✓	-	✓	-	-	✓	-	-
Emergency Level 1A, 1B	✓	In case of occur at marine terminal,	✓	-	In case of injury and need transfer to hospitals	✓	-	-
Emergency Level 2	✓	The Oil spill case at SPM will notify to Thai MECC	✓	✓		✓	✓	-
Emergency Level 3	✓		✓	✓		✓	✓	✓

Note:

- (1) EMCC is Environmental Monitoring and Control Center located at IEAT Map Ta Phut Office. Abnormal situation which result to an emergency situation shall notify to the IEAT-MTP (EMCC) within 10 mins (refer to the form in Appendix V&W).
- (2) If the situations occur is resulting to the Emergency Shutdown, the responsible person is required to notify to the IEAT (EMCC) within 10 minutes after aware of the emergency shutdown.
- (3) Ms. Pavinee Sittikomkul (Operation Manager) SGS (Thailand) Limited, Certification and Business Enhancement, Tel. +66 2 6781813 Ext. 2065 Email: pavinee.sittikomkul@sgs.com
- (4) Thai MECC: Thai Maritime Enforcement Command Center ศูนย์บัญชาการในทะเลประจวบคีรีขันธ์ กองเรือลาดตระเวนทางทะเล โทร 095-8626506

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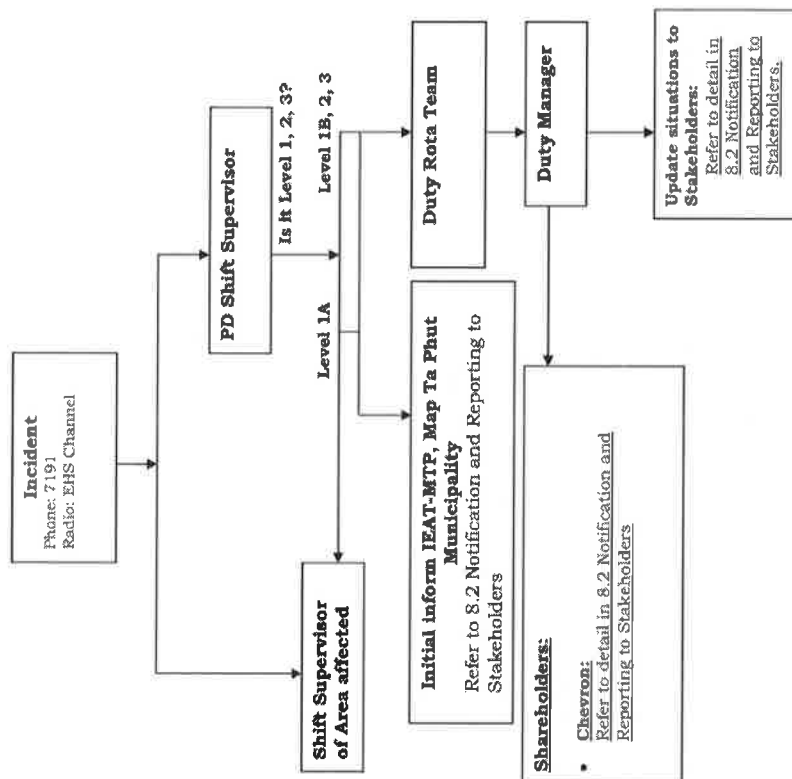
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8. NOTIFICATION AND REPORTING

8.1 Notification Flowchart



Situations	Notified By	Stakeholders	Contact channels
Abnormal situation; - Sound from abnormal operation - Light and Heat from flare - Nuisance smell	On-Hour: Environmental Specialist	IEAT-MTP (EMCC)	Duty phone: 081-732-3485, Phone:038-683933 Hotline: 1504, Trunk: EMCC Channel Fax: 038-685756 Email emcc.ieat@gmail.com
	Off-Hour: SSO	MTP Municipality	Phone: 038-685191 Radio:162.550 MHz
	CA Department	Communities	Defined in External Contact List (AM-OT-CA-012)
	On-Hour: CA Department Off-Hour : SSO	Companies	Defined in External Contact List (AM-OT-CA-012)
Emergency Level 1A, 1B	Same as abnormal situation which could impact internal and external environment, community and neighboring company.		
Emergency Level 2, 3	External Affair Duty	IEAT-MTP (ECC)	Duty phone: 081-732-3485, Phone:038-683933 Hotline: 1504, Trunk: EMCC Channel Email emcc.ieat@gmail.com Fax: 038-685756 (refer to IEAT-MTP Reporting Form Appendix U)
		MTP Municipality	Phone: 038-685191, Radio:162.550 MHz
		MTP Port	Phone: 038-683305-8, Fax:038-683309 (refer to MTP-Port Reporting form Appendix V)
		Communities/Companies	Defined in External Contract List (AM-OT-CA-012)
		Thai MECC (in case of Oil Spill)	Phone 095-8620506
	Nurse on Duty	Contract Hospital	Defined in Emergency Telephone Number (EHS-OT-QS-3003)
	ERC Duty	Rayong Province	PorPor Rayong 089-9696765 Rayong Welfare 065-5078682 Email rayong@labour.mail.go.th
	Duty Manager	Shareholder (CVX)	If require assistance contact to Chevron Emergency Information Center : (+1)-510-231-0623
		Shareholders (BOD)	Draft the notification for CE to send to Board of Directors (BOD)(1).
		CB Certification Body	Ms. Pavinee Sittikomkul (Operation Manager) SGS (Thailand) Limited, Certification and Business Enhancement, Tel. +66 2 6781813 Ext. 2065 Email: pavinee.sittikomkul@sgs.com
		SPRC staff (All)	By e-mail

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		Mailboxes)	
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Note;**(1) Using of notification template;**

1. I am required to notify you of an incident that occurred on (date) at (time) at (location).
2. One sentence description of incident
3. One sentence description of impact
4. One or two additional paragraphs should address authorities notified, other organizations involved, current status, and current actions being taken.
5. Close with the identity of the individual sending the notification, the reporting unit, and contact information for follow-up questions including cell or home phone numbers.
6. Any additional detail, if desired, can be in attachments.

8.2.1 Labor law (Safety Occupational Health and Working Environment Act (B.E2554)

In case of Hazardous chemical release or fire or explosion, the following actions are required;

- 1) In case of the incident resulting to fatality case, shall notify to the department of Labor Protection and Welfare (Rayong) via telephone, fax or other channel immediately and formal letter within 7 days.
- 2) In case of the incident resulting to operation shutdown or cause injury from both fire or explosion, shall notify to the department of Labor Protection and Welfare (Rayong) via telephone, fax or other channel immediately and formal letter within 7 days.

The formal letter shall comply with the notification of Department of Labor Protection and Welfare (refer to Appendix T- The Reporting Form to the Labor Protection and Welfare)

8.2.2 Factory Law (B.E. 1992)

It is required that any incident which cause fatality or lost time injury or illness (> 72 working hours lost) or cause operation shutdown (> 7 days) be reported in a letter to Ministry of industry Officers (Rayong Industrial Work Office) within 3 days

In case of Radiation incident shall immediately inform to the Ministry of Industry when become aware of an incident.

8.2.3 EIA Mitigation Measures

In any situation which could impact environment will notify to Office of Natural Resource and Environment Policy and Planning and the Office of Natural Resource and Environment Rayong.

8.2.4 Radiation Safety Law (Ministry Regulation B.E.2550, Permission of Radiation)

In case of radiation incident resulting leak of radiation source, the company Radiation Safety Officer (RSO) shall notify to the Office of Atomic For Peach immediately.

9. CRISIS MANAGEMENT AND BUSINESS CONTINUITY PLAN**9.1 Objective**

SPRC Crisis Management and Business Continuity Plan is aimed to provide a management process in order to strategically plan, direct and coordinate all actions and responses to reduce impact of crisis on people, environment and company business and reputation

The plan is developed to respond the crisis in a timely and coordinated manner to support the SPRC Emergency Response plan; and manage crisis to ensure business continuity

Note:

Crisis: Any incident that poses an actual or potential threat to SPRC's long-term ability to do business due to impact on its reputation and standing, legal and financial liabilities and ability to operate

9.2 Activation and Deactivation of SPRC-CMP**9.2.1 Activation**

Duty Manager with the consultation with Chief Executive Officer, will partially or fully activate SPRC-CMP depending on the necessary management efforts required for such crisis.

9.2.2 Deactivation

Duty Manager will deactivate the SPRC-CMP when he feel that all issues are addressed to the extent that the incident is no longer a threat to health, to safety and the environment; and there is no significant on the image of SPRC and Shareholders.

9.3 SPRC Crisis Management Team (CMT)

All Leadership Team Members (LT) are the member of the team. When SPRC-CMP is activated, the team will be met at M-226 Board.

9.4 Roles & Responsibilities of SPRC Crisis Management Team

The scope and extent of crisis management tactical and strategic actions carried out by the SPRC-CMT will depend on the nature and potential or actual consequences of the incident

In general terms, the SPRC CMT is to:

◆ Provide technical, logistic, legal, human resources, corporate affairs and financial support and assistance to the emergency response and management efforts.

◆ Identify the short and long-term strategic implications of the incident for the operability, image and commercial position of SPRC business.

- ♦ Develop, resource and action appropriate strategies to limit potentially adverse consequences to the business arising from the incident.
- ♦ Provide information and recommendations on incident related policy and strategic issues to the Shareholders.
- ♦ Develop and implement a long-term recovery plan.

Individual SPRC CMT members have specific responsibilities. Overall, the SPRC CMT is responsible for minimizing impacts and managing a rapid recovery by:

- ♦ On activation, establishing and assessing the situation caused by the incident and the initial effects on personnel and operations. Investigating all other facets of the incident: technical, financial, human resources, legal, corporate affairs, commercial and business.
- ♦ Identifying and analysing the short and long-term strategic implications of the incident for the operability, image and commercial position of the SPRC business.
- ♦ Establishing and maintaining coordinated and secure communications links with the affected entity and the Shareholders (if activated);
- ♦ Developing, resourcing and implementing appropriate tactics and strategies to limit potentially adverse consequences to the business arising from the incident, particularly those concerning in-country media, government and other public affairs matters.
- ♦ Liaising with the Emergency Response Organization; providing tactical and strategic support and monitoring that local emergency response efforts to follow the policies and strategies for managing the incident established by the SPRC CMT.
- ♦ Identifying other stakeholders and the consequences for them.
- ♦ Developing and coordinating a strategy to effectively manage internal and external communication flows; including those with stakeholders such as shareholders, customers, contractors and suppliers.
- ♦ Providing support to SPRC personnel and next of kin on all matters.
- ♦ Information management and security; and sharing within the team information accumulated during interactions with the affected entity and other stakeholders.
- ♦ Collecting, collating and securing all documentation related to the incident, which is generated by the SPRC CMT and support activities.
- ♦ Supporting in the planning and implementation of the recovery phase.

Preparation of post-incident reports assessing the effectiveness of the SPRC CMT's response and the institution of procedural (or other) Changes in the SPRC Emergency Response Plan, if necessary.

9.5 Schedule of Authority

The schedule of authority prescribes the approval limits for SPRC-CMT members who can approve cash and credit purchases during the crisis. This is in accordance with the Manual of Delegated Authorities (MODA).

10. Leak Response Guides Decision

10.1 Objective

This Leak Response Protocol attempts to mitigate risk in responding to leaks by providing additional guidance to Operations and bringing standardization to leak response decision-making.

10.2 Scope and Definition

A "leak" is defined as an unexpected loss of primary containment which has a potential to have a negative impact on operations, the safety of employees, and/or the environment.

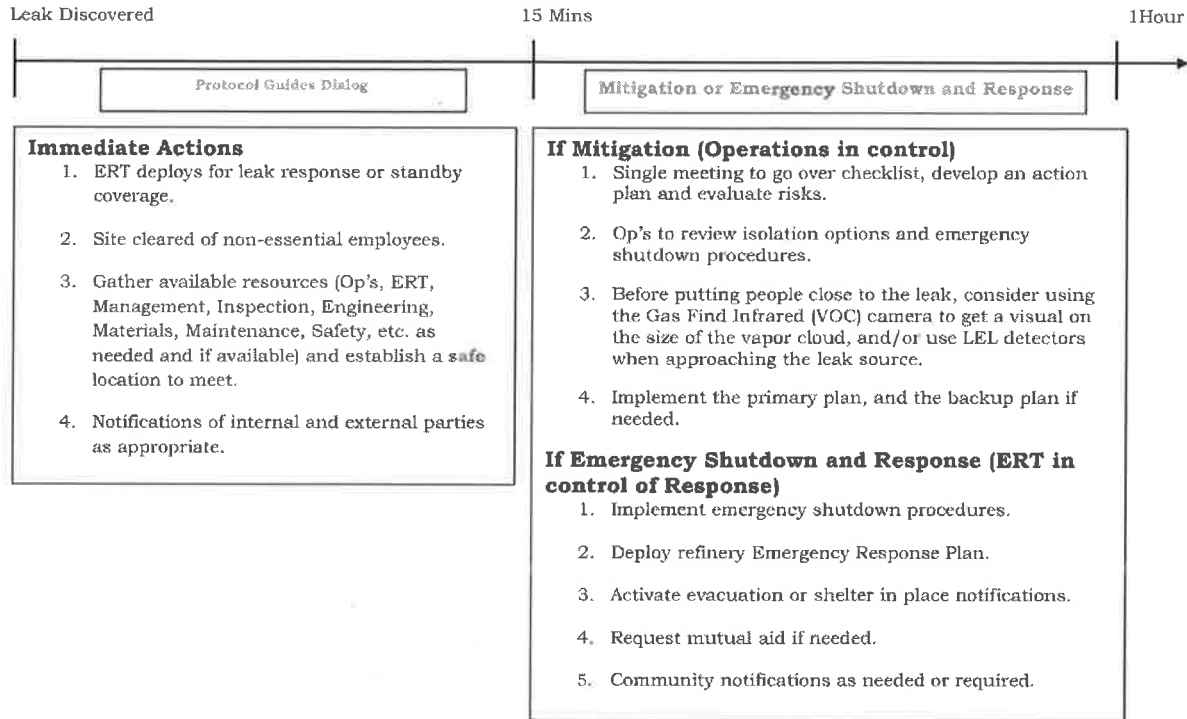
Incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel, are not included.

10.3 Overview

If there is any doubt about what to do, shut down the plant or move it to a safe condition.

If there is no time to review options, shut down the plant or move it to a safe condition. In some cases it may not be immediately clear what action should be taken to best protect people, the plant and the environment. If there is time to review options, get all available parties together in a meeting so all issues and concerns can be considered. After all the inputs have been gathered, develop an action plan, make sure it is clearly communicated to everyone involved, and then move forward to implement it. Utilize the Leak Response Protocol and Leak Response Flow Chart to guide the decision-making.

10.4 Leak Response Timeline

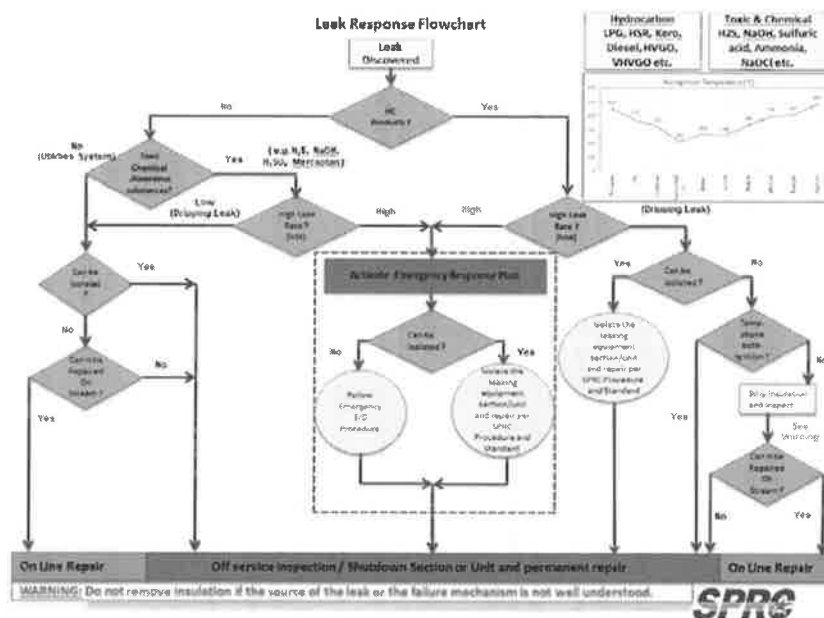


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10.5 Leak Response Flow Chart



More details about the Leak Response Protocol is refer to EHS-WI-QS-3013_Leak Response Protocol [EHS-WI-QS-3013 Leak Response Protocol](#)

11. EVACUATION PROCEDURES

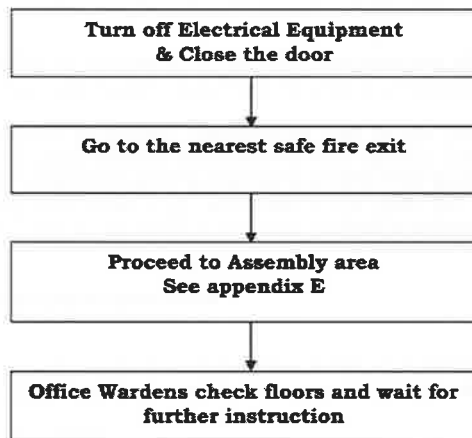
11.1 In case of Fire:

11.1.1 Actions for Building Evacuation in case of Fire in Building

1. Pull the fire alarm switch or break the fire break glass
2. Calling Security Office at 7191 to state your name and location of the fire
3. Extinguish the fire if you have had fire training and you think you can do
4. Switch off electrical equipment if time permit and close the door (do not lock)
5. Evacuate from the building by using the nearest fire exit
6. Proceed to assembly area, report to your Office Warden and wait for further instruction

Do not stay away or re-enter a building prior receiving the advice from Office Warden or Public Announcement made by REB

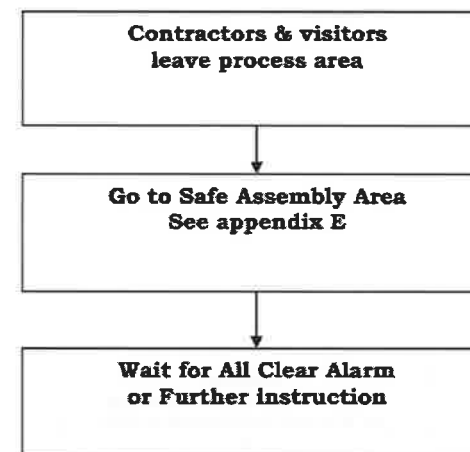
Action on Building Fire Alarm



11.1.2 Actions for Other Working Areas Evacuation in case of Fire in other working area

1. The personnel in the area of the alarm, who are not essential to emergency response or operations, must immediately stop work and go to the nearest safe emergency assembly area.
2. Evacuations must take place across wind away from fire incident.
3. It is the responsibility of the supervisors to account for their own personnel.
4. Personnel must remain at the assembly area until the " All Clear " has been sounded, or unless directed otherwise by emergency personnel.

Action on Refinery Alarm



11.2 In case of Smell or Toxic Gas Leak:

(from both SPRC internal incident and Neighboring Company Incident)

In the event of emergency caused by the smell or toxic gas leak from both SPRC internal source and neighboring company, which affects to personnel in SPRC premises, the incident can be classified into 2 levels;

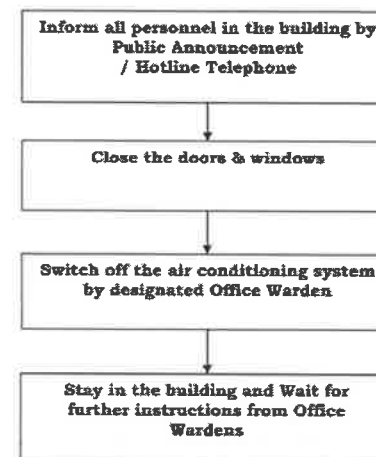
- Level 1** Only information of incident, do not need evacuation of the personnel.
- Level 2** The incident becomes more serious and the personnel on the affected area need to be either sheltered-in-place or evacuated.

11.2.1 Actions for Building Occupants**LEVEL 1**

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field, the Security at REB will inform Shift Supervisor of affected area and Duty Manager
- Security at REB informs personnel in the affected building by Public Announcement or Hotline Telephone to stay in the building – Do Not Panic.
- Office Warden will prepare evacuation in case of evacuation needed.
- Office Warden keeps update on situation until situation is back to normal.

LEVEL 2

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field or, 3) detecting the smell inside the building, the Security at REB will inform Shift Supervisor of affected building(s) and Duty Manager. **Then, activate Emergency Level 2**
- Security at REB will inform personnel in the affected building by Public Announcement or Hotline Telephone.
- Shift Supervisor of affected area will assign Senior Operator to be OSC.
- OSC will cooperate with Office Warden to respond the incident either Shelter-In-Place or evacuate the personnel in the building to the safe assembly area depending on the situation.
- OSC will be informed of the current situation via Security at all time until the situation is back to normal.

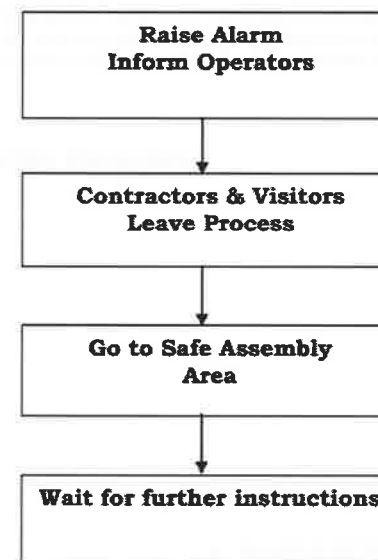
Action Steps

11.2.2 Actions for Personnel in Other Working Areas**LEVEL 1**

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field, the Security at REB will inform Shift Supervisor of affected area and Duty Manager
- Shift Supervisor will consider the action according to the information provided.
- Shift Supervisor will prepare evacuation in case of evacuation needed.
- Shift Supervisor keeps update on situation until situation is back to normal.

LEVEL 2

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field, the Security at REB will inform Shift Supervisor of affected area(s) and Duty Manager. **Then, activate Emergency Level 2**
- Shift Supervisor will assign Senior Operator to be OSC.
- OSC will evacuate the personnel of the affected areas to the safe assembly areas. Evacuation must take place across the wind direction.
- OSC will assign the operators with SCBA to the unsafe assembly areas in order to direct the people to the safe assembly areas
- OSC will be informed of the current situation via Security at all time until the situation is back to normal.

Action Steps**11.3 Neighbouring Community/Company Notification**

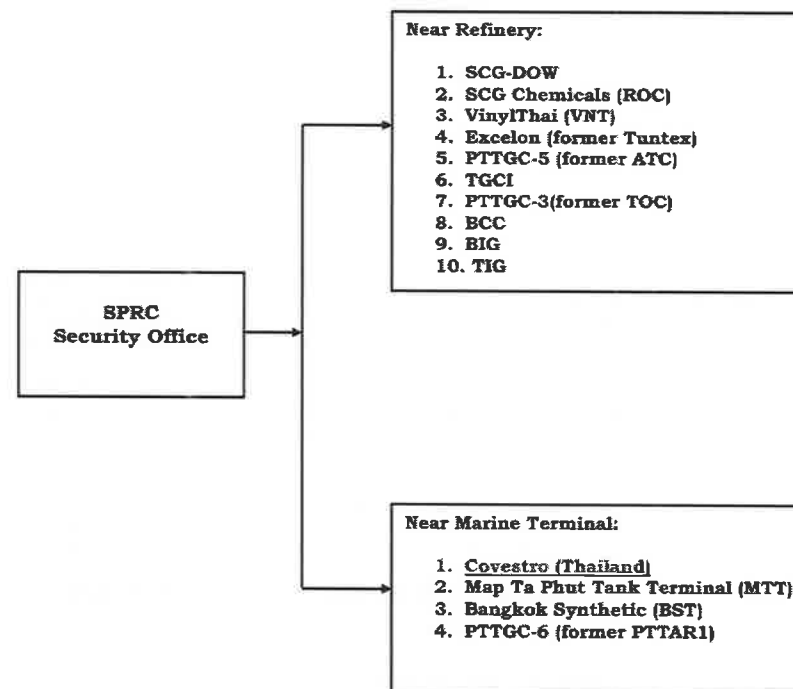
When emergency and abnormal situation which could effect to neighboring community /company, SPRC shall notify to the community leader or his deputy and company contact person refer to External Contact List (AM-OT-CA-012) for early aware refer to 8.2 Notification and Reporting to Stakeholder.

When a community evacuation is recommended, Map Ta Phut Fire Department and the Rayong Disaster Prevention and Mitigation office (PorPor) will be notified by Emergency Response Coordinator during on hours and Shift Security Officer during off hour. The Map Ta Phut Fire Department and the Rayong Disaster Prevention and Mitigation office (PorPor) will provide evacuation information. The Rayong Disaster Prevention and Mitigation office (PorPor) will then supervise the community evacuation with liaison with local police officials. **The Provincial Emergency Response Plan has to be activated.**

11.4 Emergency Contact Points In Case of Neighbouring Company Incident

(Smell or Toxic Gas Release Incident)

Below is the list of companies which have a possibility to affect SPRC once their operation upset.



12. DEACTIVATION AND RECOVERY

12.1 Deactivation

The authority for deactivating an emergency response is vested in the On-Scene Commander who will consult with the Incident Commander. Deactivation should begin when it is considered that the emergency has been contained, and satisfactorily overcome in all respects.

The activities and procedures which must be undertaken to **recover** from an emergency incident includes, but is not limited to:

- ☐ The cleanup, maintenance and testing of equipment.
- ☐ The re-commissioning of facilities, plant and equipment.
- ☐ The replenishment of stocks (such as, firefighting foam, spill cleanup materials, replacement parts).
- ☐ The returning of equipment to outside contractors and mutual aid organizations.
- ☐ The accounting for all expenses incurred as a result of the incident.
- ☐ The filing of insurance claims
- ☐ Preparation and dispatch of final reports to relevant Shareholders, Government and local authorities.

12.2 Re-commissioning

Before re-commissioning plant or equipment which may have been involved in the emergency or affected by it, a thorough and detailed inspection must be carried out to ensure that the integrity of equipment has not been adversely affected.

12.3 Incident Investigation

It is the responsibility of the next level of management above the On-Scene Commander to designate the team responsible for performing the appropriate incident investigation. All incidents, which have resulted in the activation of an emergency response, must be investigated.



NOTE: Part of the incident investigation must be devoted to a critique of the emergency response itself. Detailed recommendations for improvements to the Emergency Response Plan and/or to Contingency Plans should be made.

13. POST INCIDENT REVIEW

The Company requires that a post-incident review be conducted to examine the Company's response to the emergency incident.

The Incident Commander or the On-Scene Commander shall convene the review within forty-eight hours of the Incident conclusion. Those attending shall include the Manager Process Safety & QEHS, Emergency Response Coordinator, and all employees who participated in the incident. Minutes shall be kept. The review shall determine:

- ☐ Were employees properly informed of Company procedures?
- ☐ Did employees respond according to Company procedures?
- ☐ Were employee's responses timely?
- ☐ Are the procedures adequate?
- ☐ What problems were encountered during the response activities?
- ☐ What improvements can be made?
- ☐ How can similar events be avoided in the future?

If public emergency services were involved they will be invited to participate in the critique.

All recommendation and feedback received from the post incident review shall be tracked and follow up by Emergency Response Coordinator. The status update of the action items shall kept in the share drive and communicate to all duty rota members. However, the update status of the actions shall be updated at least 2 times/year by incorporating with the exercise feedback highlight update and sharing.

14. APPENDIX

APPENDIX A ROLES AND RESPONSIBILITIES

1. Incident Commander (IC)**Who:** PD Shift Supervisor on shift**Report to:** Duty manager**Location:** EOC (Fire Station)**Emergency level:** 1A, 1B, 2, 3**Roles:** To control all activities during emergency**Responsibilities:** On receiving the emergency alarm:

- ☐ Switch radio to emergency channel
- ☐ Inform PU manager of affected area
- ☐ Set up contact with OSC and inform Security Shift Officer
- ☐ Ensure that the ERT on duty are the person who fit for duty
- ☐ Initiate site head count (Reference Appendix F)
- ☐ Organize and control all activities in the EOC until the Duty Manager arrives.
- ☐ Ensure a log is kept of all activities.
- ☐ Decide with OSC the level of emergency, and initiate call-in.
- ☐ Receive situation reports from the OSC and take appropriate actions.
- ☐ If needed ensure that the fire pump has started and that the fire panel is monitored.
- ☐ Liaise with outside 3rd parties until the communications team is formed.
- ☐ Contact other companies who may be affected by the incident.
- ☐ Arrange for refreshments to be delivered to the incident scene via the EOC Team.
- ☐ Provide regular situation reports to all relevant groups via telephone or messenger.
- ☐ Arrange for relief teams to be sent to the incident scene as required.
- ☐ For external requests for assistance from Mutual Aid Partners, determine if possible to assist and provide Fire Truck driver as circumstance warrant.

The PD Shift Supervisor shall notify Duty Manager, Production Unit manager of affected areas, EHS and External Affairs duty persons if the following incidents occur:

- Injuries requiring hospitalization (transfer to a hospital).
- Oil Pollution.
- Air Pollution.

2. On Scene Commander (OSC)**Who:** Senior Operator of area affected / EST (G/H)**Report to:** Incident Commander**Location:** At the scene of the incident.**Emergency Level:** 1A, 1B, 2, 3**Roles:** To control all activities at the scene of incident.**Responsibilities:** On receiving the emergency alarm;

- ☐ Go to incident scene immediately and consider activate the emergency level.
- ☐ Switch to Emergency channel.
- ☐ Set up a command point (OSC Vehicle) at a safe location, wearing the Full Fire bunker gear, OSC helmet.
- ☐ Assigned the operator drive the OSC vehicle to command post.
- ☐ Establish radio contact with the Incident Commander (IC) and supply situation reports.
- ☐ Account for all personnel at the scene of the incident.
- ☐ Scenario briefing and setup the strategy, tactics, resources to all responders prior go to the incident scene.
- ☐ Assigned the responder record the SCBA & incident log at the OSC vehicle.
- ☐ Control all rescue and first aid activities at the scene of the incident.
- ☐ Apply Leak Response Protocol for unit shutdown.
- ☐ Asked agreement from Shift Supervisor for unit shutdown.
- ☐ Cooperated with boardman for plant condition and emergency shutdown.
- ☐ Establish casualty control area when required.
- ☐ Considered raise or reduce an emergency level.
- ☐ Assess the situation is safe for responding, if the situation is raised to high risk must command ERT-Leader to retract to a safe location.
- ☐ Assigned 2 ERT Leader to lead response the situation (1 person from PN and 1 person from PD)
- ☐ Liaise with mutual aid focal point person when called.
- ☐ Set up Hot Zone and assure personnel have proper PPE
- ☐ Required the HAZMAT Suit in case of toxic/hazardous substance spill/leakage.
- ☐ Request ambulance if needed and arrange for casualty treatment and evacuation.
- ☐ Deactivate the emergency when it is considered that the emergency has been contained, and satisfactorily overcome in all respects with consult IC

Remark the OSC who passed the area cross-training must have well the knowledge of Unit Isolation, Unit Shutdown, and Start-up.

3. Production Unit Shift Supervisor of affected area

Who: Shift Supervisor of affected area on shift

Report to: Incident Commander

Location: CCB or the scene of incident

Emergency Level: 1A, 1B, 2, 3

Role: To control overall plant operation.

Responsibilities:

- ☐ Switch radio to emergency channel
- ☐ Coordinate with IC and OSC
- ☐ Make decision with OSC on plant emergency operation such as shutdown the unit, bypass equipment followed Leak response Protocol
- ☐ Back up IC or OSC
- ☐ Ensure sufficient manpower available, call extra operators if required.

4. Emergency Response Team Leader (ERT-Leader)

Who: 2 persons Assigned by OSC (1 from PN & 1 from PD)

Report to: On Scene Commander

Location: At the scene of the incident.

Emergency Level: 1A, 1B, 2, 3

Roles: Front line Responder at the scene

Responsibilities: On receiving the emergency alarm;

- ☐ Switch radio to Emergency channel.
- ☐ Go to incident scene and report to OSC.
- ☐ Response the incident as directed by the OSC.
- ☐ Control the ERT followed OSC's mission, objectives, and strategy.
- ☐ Keep feedback communication of situation and mission to OSC
- ☐ Ensure all the ERT are safe during response.
- ☐ Ask resources support to achieve the mission, strategy.
- ☐ Assess the situation is safe for responding, if the situation is raised to high risk must command ERT to retract to a safe location.
- ☐ Required the HAZMAT Suit in case of toxic/hazardous substance spill/leakage.

5. Emergency Response Team (ERT)

Who: Nominated on shift operators

Report to: Emergency Response Team Leader

Location: At the scene of the incident.

Emergency Level: 1A, 1B, 2, 3

Roles: Front line Responder at the scene

Responsibilities: On receiving the emergency alarm;

- ☐ Switch radio to Emergency channel.
- ☐ Go to incident scene and report to OSC.
- ☐ Response the incident as directed by the ERT-Leader.
- ☐ Assure proper PPE must be wearied related incident Fire / Chemical Spill case
- ☐ Keep the mission complete safely.
- ☐ Reported to ERT Leader and retract to the safe location if the situation raised to high risk.
- ☐ Act to Rescuer

6. Fire Truck Drivers

Who Nominated on shift operators (PN=1, PD=1), under the control of the OSC

Report to On Scene Commander

Location Fire Station and the scene of the incident

Emergency Level 1A, 1B, 2, 3

Responsibilities

On receiving the emergency alarm;

- ☐ Switch radio to emergency Channel.
- ☐ Requested the safe route and command post location from OSC.
- ☐ FTD 1: Go immediately to fire station and take the first fire truck to the scene of the incident when requested by OSC.
- ☐ FTD 2: Go immediately to the fire station and wait for instructions.
- ☐ Contact the OSC and report location.
- ☐ Operate the fire trucks as directed by the OSC.
- ☐ Competency to operate Fire Truck and able to discharge foam as required.
- ☐ Able to estimate time of foam consumption table when required foam top up.

7. Duty Rota Team

Who 1) Duty Manager,
2) Operation Duty,

- 3) External Affairs,
- 4) EHS,
- 5) Emergency Response Coordinator,
- 6) Historian (Marine),
- 7) Mechanical, and
- 8) Instrument & Electrical Duty Persons

Location EOC (Fire Station).

Emergency level 1B, 2, 3

Roles To support all activities as requested by IC and contact third parties during emergency.

General Responsibilities

- ❑ **First person to arrive must establish contact with Incident Commander and act as Duty Manager until the Duty Manager Arrives**
- ❑ Keep a register of all personnel present.
- ❑ Keep a log of all activities.
- ❑ Ensure all personnel who are not directly involved in the emergency, including personnel at assembly areas, are kept informed.
- ❑ Ensure that a head count is done.
- ❑ Inform shareholders.
- ❑ Prepare a preliminary statement.
- ❑ Report to Authorities in accordance with statutory requirements.
- ❑ Liaise with local, national and international authorities.
- ❑ Liaise with the media.
- ❑ Liaise with local industries.
- ❑ Liaise with the local hospitals regarding any casualties.
- ❑ Answer queries from relatives of staff on site.
- ❑ Control all communications in and out of the refinery.
- ❑ Call on any other specialist organizations as required.
- ❑ Arrange for food and drink for emergency teams.
- ❑ Arrange for extra security.

7.1 Duty Manager

Role

- To handle on-site emergency activity and ensure appropriate emergency procedures are activated. Act as site spokesperson for enquiries, including the media, if required.
- To lead the EOC organization through the emergency, and to manage the activities of the Duty Team, concentrating primarily on strategy development and monitoring management of all activities.

Responsibilities

- ❑ Set up EOC and adjust, as appropriate, as the situation develops.
- ❑ Co-ordinate the efforts of the Duty Team.
- ❑ Take only those decisions, which cannot be delegated.
- ❑ Authorize commitments, deviations from normal procedures, press releases (in conjunction with the Public Affair Manager, the Initial Response Statement is in appendix G), etc., as required.
- ❑ Appoint the Company spokesperson.
- ❑ Ensure that all personnel not directly involved in the emergency are kept informed.
- ❑ Notify IEAT and update on the status.

Specific Tasks

- ❑ Implement site Emergency Response Plan.
- ❑ Notify the CEO, DO and ensure that PN, PD are communicated.
- ❑ Notify to all related stakeholders, (Refer to Section 8.2 Notification and Reporting to Stakeholder) and also communicate to all SPRC Staff by e-mail.
- ❑ Provide a regular update on the status of the emergency to CEO, DO and Shareholders and establish the frequency for update briefings.
- ❑ Maintain a log of important events, commitments, decisions, etc., and pass hourly to CEO and Secretarial Services. Monitor external communications and ensure that these take place at an adequate level of frequency.
- ❑ Set up teams to address the short-term reinstatement or permanent restoration.

Checklist

- ☐ Ascertain what has happened
 - reason
 - scope
- ☐ Establish resources required
 - organization type
 - mobilizes
- ☐ Establish information flow
 - who is the Incident commander
 - injuries/deaths
 - frequency of update reports
 - authorities involved
 - who is spokesperson
- ☐ Establish timetable for;
 - Internal briefing
 - Media briefing (if necessary)
 - Management strategy
- ☐ Commence strategy development

Plus 1 hour

- ☐ Ascertain what has happened.
- ☐ Are resources sufficient and have been notified.
- ☐ Is there sufficient field support.
- ☐ Where is the media activity center?
- ☐ Are all sources of information being monitored.
- ☐ What are the emerging issues?
- ☐ Has a public release been made?
- ☐ Are we supporting the authorities sufficiently?

Plus 5 hours

- ☐ Review what has happened.
- ☐ Review resources (both Emergency Operation Center Team) and determine need to establish shifts.
- ☐ What is our media strategy and is the Company being proactive.
- ☐ What commitments have been made and are deadlines being met.

5 Hours and beyond

- ☐ Every three hours revisit the Plus 5 hours checklist.

DUTY MANAGER

- PRIORITIES:**
1. **Preservation of human life, health and well being**
 2. **Protection of the environment**
 3. **Protection of Company Asset**
 4. **Restoration of disrupted utilities**
 5. **Resumption of normal production**

Aide Memoir Level 1B/2/3 Emergency

1. **Nominate historian**
2. **Consider incident:**
 - ☐ What happened?
 - ☐ Victims? (Fatalities, injuries)?
 - ☐ Personnel missing? (All personnel accounted for?)
 - ☐ Medical assistance required?
 - ☐ Current process status?
 - ☐ Any toxic/radioactive releases?
 - ☐ Weather conditions? (wind direction)
 - ☐ Road barriers set up?
 - ☐ Authorities and/or other outside parties informed?
 - ☐ Time?
 - ☐ Escalation possibilities? (Safety/Health/Environmental)
3. **Consider possibilities:**
 - ☐ What kind of equipment do we need?
 - ☐ Enough personnel available? (ERT in attendance/additional operators for running units/ fitters/instrument technicians?) Any personnel called in?
 - ☐ What kind of extinguishing agents do we need and how much?
 - ☐ Do we need assistance (mutual aid)?
4. **Be in control:**
 - ☐ Think about relief and refreshments for crew.
 - ☐ Keep an eye on drainage systems.
 - ☐ Check procedures, prioritize and delegate.
5. **Notifications**
 - ☐ Shareholders
 - ☐ Authorities
 - ☐ CEO, DO
 - ☐ SPRC Staff
6. **After the incident:**
 - ☐ Think about protection of open flammable and/or toxic products
 - ☐ Think about protection of collapsing structures.
 - ☐ Debrief / interview involved personnel
 - ☐ Maintain / secure incident site for investigation
 - ☐ Deal with emotional stress to employees / families / responders particularly if deaths or significant injuries occurred
 - ☐ Restock emergency response equipment (firefighting, first aid, HAZMAT, PPE)
 - ☐ Check equipment and clean it.
 - ☐ Reload and refuel truck.
 - ☐ Clean protective clothing

7.2 Operation Duty**Report to:** Duty Manager**Role**

To provide support to Shift Supervisor on all operational matters during emergency when emergency level 1B, 2, 3 at EOC.

To be the Operation Support Team member when emergency level 3

Responsibilities

- ☐ Call in other staff member of Operation Duty.
- ☐ Inform PN/PD as considered appropriate.
- ☐ Be aware of operational requirements and issues during emergency.
- ☐ Provide assistance by operational experience and liaison with the operating units an appropriate plan of action in emergencies. Contact operations personnel that may provide additional information.

7.3 External Affair Duty - Corporate Affairs Issues**Report to** Duty Manager**Role**

- To provide a link with the Duty Manager on corporate affairs aspects associated with the emergency and establish information flows and timings of briefings.
- To keep an open line of communication with appropriate organizations / national authorities.

Responsibilities

- ☐ To maintain a log of issues and identify key information which is likely to be required by the Emergency Operations Team.
- ☐ In conjunction with the Duty Manager to establish a pro-active media liaison and public affairs strategy.
- ☐ To brief the Duty Manager / CEO on media interest, issues developing and requests from the media for information.
- ☐ To assist in developing/delivering a response to the media as directed by the Duty Manager / CEO
- ☐ Inform appropriate organizations on aspects of the crisis that may affect them.
- ☐ Obtain from affected organizations, information that may be of assistance to the Company.
- ☐ Coordinates and processes to buy additional resources including foods, refreshment, and other facilities to support Emergency Response Team in event of Emergency. These responsibilities can ask support from Mechanical / Instrument & Electrical Duty to help by mobilizes additional resource. The list of vendor/supplier are defined in External Contact List (AM-OT-CA-012)

Specific Tasks

- ☐ Call in other staff members of CA/HR and EA Duty
- ☐ Maintain a log of media activity identifying the line of questioning being adopted by the media and community and issues developing. Pass this information to the Duty Manager /CEO on a regular pre-agreed frequency.
- ☐ Establish contact numbers where the media can call for information.
- ☐ Enact the requirements and requests of the Duty Manager.
- ☐ Prepare media, community, and staff briefing material as requested by the Duty Manager.

- ❑ Check contacts listed in Appendix P (Emergency Telephone Numbers) against the type of emergency being managed, and ensure appropriate liaison links are established and maintained, including precautionary contact.
- ❑ Consider, in conjunction with the Duty Manager, additional organizations with whom liaison should be established.
- ❑ Determine whether liaison officers should be sent to outside organizations and advise the Duty Manager, arrange accordingly.
- ❑ Report regularly to the Duty Manager.
- ❑ Keep a record of contact with authorities and pass to Secretarial Services hourly.
- ❑ Coordinate with CA AD to make the rooms available for presses and media.
- ❑ In case of any tanks fire occurred, inform to the Department of Energy Business
- ❑ To support on cash box and arrangement.

7.4 External Affair Duty - Human Resource Issues

Report to Duty Manager

Role

- To provide advice to Duty Manager on personnel/welfare aspects associated with the emergency, and establish information flows and timings of briefings.
- To provide and maintain appropriate legal advice regarding Human Resources' aspects as required.

Responsibilities

- ❑ To brief the Duty Manager on personnel and welfare issues relating to staff.
- ❑ Maintain a list of personnel on site and the status of casualties.
- ❑ Enact Company personnel policies relating to staff welfare.
- ❑ Co-ordinate with hospitals for the treatment of injured persons provides additional support of required.
- ❑ Ensure appropriate legal advice is available for the Duty Manager when making critical decisions and press releases.

Specific Tasks

- ❑ Call in other staff members of CA/HR and EA Duty
- ❑ Establish a list of personnel on site and forward to the Duty Manager on a regular basis.
- ❑ Establish the names of casualties and forward to the EOC Team and the CEO on regular basis or when significant information becomes known.
- ❑ Identify welfare requirements and seek direction on a response strategy.
- ❑ If required make arrangements to advise or visit the next of kin of any casualties.
- ❑ Arrange for the movement of staff dependents to be with injured employees.
- ❑ Arrange for the co-ordination of grief counseling.
- ❑ Establish the relatives contact numbers at SPRC, and in Bangkok, and advise to staff and relatives so that they can receive information on assistance and status of family members.
- ❑ Monitor the quality of medical treatment being given to injured staff to ensure it is appropriate.

- ☐ Coordinate and ensure the switchboard operator is aware of the incident and fully manned.
- ☐ Make a room and telephones available for answering incoming calls.
- ☐ Ensure that all personnel not directly involved in the emergency are kept informed, including personnel at the assembly areas.

Policy for Notification of Next of Kin

Notification of Death

The responsibility for notification of next of kin lies with the company for staff and with the contractor for contract staff. Any enquiries related to the physical well being of SPRC staff, contractors, etc., will be directed to the appropriate employer.

Every endeavor should be made for a senior representative from the Company to be present when notifying the next of kin.

Notification of Injuries

The responsibility for notification of next of kin lies with the Company for staff and with the contractor for contract staff. Any enquires related to the physical well being of SPRC staff, contractors, etc., will be directed in the first instance to SPRC Management.

- ** No name of injured or death person should be given to the media until it is verified that next of Kin have been informed.**

7.5 EHS Duty

Report to Duty Manager

Role

- Provide advice on EHS related aspects to the Duty Manager, identify reporting and liaison requirements to the Public Affair focal point.

Responsibilities

- ☐ Advise on EHS requirements to assist in the containment of any physical situation.
- ☐ Identify parties (authorities, neighbors) to be contacted or advised of the situation as dictated by statutory and other requirements.
- ☐ Advise to the Duty Manager of any investigation required by authorities and any associated requirements.

Specific Tasks

- ☐ Call in other members of the EHS personnel.
- ☐ Provide technical advice on EHS equipment and other resources to be utilized to control any situation and contain its impact.
- ☐ Advise the requirements under the various EHS regulations and other statutory reporting requirements.
- ☐ Advise to the OSC through IC about suspension of emergency response operation when the scene atmosphere result in a IDLH level and/or to involve an imminent danger condition
- ☐ Advise to the OSC through IC to decrease level of respiratory protection when the air monitoring at the scene result that the situation is safe to decrease level of protection (refer to [EHS-SP-QS-0017 Respiratory Protection Program.doc](#))
- ☐ Provide technical data as is required by the emergency response organization and the Duty Team.
- ☐ Call in the company Radiation Safety Officer (RSO) in case of radiation incident (Khun Suchart B (IR/2) Tel.087-833-8957
- ☐ Keep monitoring and tracking of an injured person and head count details (to update to the Duty Team members)

7.6 Emergency Response Coordinator (Duty)**Report to** Duty Manager**Roles** To provide advice to Duty Manager /OSC on all Emergency Response aspects.

To be member of Emergency Support Team when emergency level 3

Location Emergency Level 1B at the EOC.

Emergency Level 2 / 3 report to Duty Manager and Act to leader of Emergency Support Team also between EOC with Fire Station.

Responsibilities

- ☐ Call in other staff members of ERC Duty.
- ☐ Advise on using all firefighting equipment.
- ☐ Advise the OSC through IC on strategy, objective, tactics, and resources.
- ☐ Brief the situation to ERC member when they arrived.
- ☐ Record the external communication and information.
- ☐ Assign Emergency Response Coordinator member go to incident scene to assist OSC on control activities at the scene if level 2 or 3.
- ☐ Coordinate with Mutual Aid Teams.
- ☐ Assign Emergency Response Coordinator member to be the Mutual Aid Coordinator and Staging Officers when emergency level 2 or 3.
- ☐ Evaluate and calculate the needed resources to control the situation.
- ☐ Coordinate more resources from EMAG and Government.
- ☐ Assigned the QS/31 or QS/32 go to incident scene to assist OSC on level 1B (if required on a working day).

Note: When a community evacuation is recommended, Map Ta Phut Fire Department and the Rayong Disaster Prevention and Mitigation office (PorPor) will be notified by Emergency Response Coordinator during on hours.

7.7 Marine Duty**Report to** Duty Manager**Role**

To provide marine technical and marine pollution advice in general, give support to the Duty manager on all emergencies.

Responsibilities

- ☐ Call in members of Marine Duty.
- ☐ Be aware of the planned ship movements.
- ☐ Give marine technical advice to Duty manager on all marine matters, which are outside the normal operational routine.
- ☐ Advise the Trading Department of ship acceptance criteria for anticipated ship chartering requirements
- ☐ Act as the historian (in case of not related to the marine incident)

7.8 Mechanical / Instrument & Electrical Duty**Report to** Duty Manager**Role**

To coordinate and direct mechanical / I&E maintenance and Logistic Concerns (facilities, foods, etc.) to support Emergency Response Team in event of emergency.

Responsibility

- ☐ Call in other staff members of the Maintenance
- ☐ Assists Duty Manager on logistics / equipment issues.
- ☐ Provide mechanical, electrical and instrument assistance.
- ☐ Assigns work locations and preliminary work tasks to section personnel.
- ☐ Identifies services and support requirements for plan and expected operations.
- ☐ Provide support to External Affair Duty for mobilizing additional resources including foods, refreshment, and other facilities to support Emergency Response Team in event of Emergency.
- ☐ Reviews Incident Action Plan and estimate section requirement for next operation period.
- ☐ Assist in developing a recovery plan.
- ☐ Provide specialized maintenance / construction services as required.
- ☐ Coordinate equipment inspectors as needed.
- ☐ Coordinates turnaround-planning capabilities to assist with the orderly restoration of services.
- ☐ Provide specialized services relating to engineering drawing, documentation of equipment, operational procedures relevant to the process involved.

In event of process plant and /or off sites equipment breakdown, the mechanical /I&E duty person shall do the following additional:

- ☐ Respond promptly (establish verbal response where possible) to a request for assistance from the Operations and determine, as far as possible, the scope of the work and the skill(s) required.
- ☐ Inform the relevant maintenance area supervisor(s) the next working day about detail of maintenance action taken during call out and required follow up action.
- ☐ Inform PN/PD Superintendence Mechanical of serious matters as soon as possible.

8. Operations Support Team

Who Affected area Manager, off-shift Shift Supervisors, off-shift Senior Operator, Process engineers

Location CCB

Emergency level 3

Responsibilities

Main priority is to support, and take over some of the responsibilities

- ☐ Keep a register of all personnel present.
- ☐ Provide technological to the operating shift.
- ☐ Provide panel assistance.
- ☐ Provide supervisory assistance as requested by the IC/ OSC or operating shift.
- ☐ Provide assistance / relief for the On Scene Commander if requested.
- ☐ Provide assistance for the Incident Commander / On Scene Commander if requested.
- ☐ Assist outside operators to bring plants to a safe condition.

9. Emergency Support Team (Day Staffs)**Who** Maintenance group, Emergency Response Coordinator group**Location** Fire Station**Emergency Level** 2, 3**Responsibilities**

- ☐ **The first person to arrive will establish contact with the IC until the Emergency Response Coordinator arrives. The following responsibilities will be assigned by the Emergency Response Coordinator.**
- ☐ Keep a register of all personnel present.
- ☐ Keep a log of all activities.
- ☐ Assist OSC on control activities at the scene.
- ☐ Advise on using all firefighting equipment.
- ☐ Appoint radio operator and Historian.
- ☐ Collect and register radios as people arrive.
- ☐ Check pool vehicles for availability.
- ☐ Arrange transport for personnel and equipment to go to the incident scene.
- ☐ Provide back up for the ERT at the incident scene as required using trained personnel.
- ☐ Prepare and provide fire-fighting equipment as required from the fire station.
- ☐ Nominate Personnel to assist as Mutual Aid Coordinators.
- ☐ Provide messengers as required by Incident Commander / On scene Commander.
- ☐ Provide guides for outside agencies arriving at the refinery.
- ☐ Assist with traffic control at the main gate and approach roads, as requested by security.
- ☐ Ensure that all communications systems remain operable.
- ☐ Coordinated with REB to Open the workshop and warehouse.
- ☐ Arrange for extra personal protective equipment to be available.
- ☐ Provide transport assistance.

- ☐ Keep all radio transmissions to a minimum.
- ☐ To be the Staging Officers
- ☐ If necessary arrange for 24 hours coverage by splitting team into 2 shifts

All members of this team must bring with them PPE and any radios or pool vehicles assigned to them.

If assigned as the Mutual Aid Coordinator, he will coordinate with Mutual Aid Teams (Refer to Appendix D Mutual AID and Assisting to third parties).

10. Emergency Support Team (EST) PU Operations team**Who** On-shift EST and Off shift EST**Report to** SS**Location** Fire Station**Emergency level** 1B, 2, 3**Responsibilities**

- ☐ Switch radio to Emergency channel and report to OSC
- ☐ Contact fire station for request fire bunker gear with SCBA and dress up.
- ☐ Go to the incident scene and report to OSC
- ☐ Response to the incident as directed by the OSC.

11. Operating Shift**Who** On shift operators, under control of Shift Supervisor of area where the incident occurred**Report to** Shift Supervisor**Location** CCB**Emergency level** 1A, 1B, 2, 3**Responsibilities**

- ☐ Activate Fix fire water system where available.
- ☐ Activate Emergency Isolate Valves to stop fuel source.
- ☐ Liaise with OSC
- ☐ Bring plants / systems to a safe level of operation.
- ☐ Request additional operational resources when necessary.

12. Historian**Who** An assigned Administrative Assistance or Marine Duty (if available)(Assigned by Duty Manager)**Report to** Duty Manager**Location** EOC**Role** To act as official recorder for the EOC**Responsibilities**

- ☐ Ensure that all events are accurately recorded in the EOC logbook as they occur.
- ☐ Liaise with the radio operator to ensure that all information is recorded.
- ☐ Keep the Duty Team informed of any significant events or changes in the status of the emergency.

Specific Tasks

- ☐ Ensure sufficient log sheets are available.
- ☐ Check the whiteboard for up to date information.
- ☐ Record all events accurately and clearly including incident type, location, date and times.
- ☐ Inform the Duty Manager of significant events or changes in the status of the emergency.
- ☐ Liaise with the radio operator so that all events are recorded.

13. Switchboard Operator**Who** Receptionist/ Security Shift Officer**Report to:** HR**Location** Reception table / REB**Role** Operate the refinery switchboard.**Responsibilities**

- ☐ Separate emergency calls from normal business calls.

Specific Tasks

- ☐ Direct emergency calls to EOC or other numbers as and when directed by the Duty Manager.
- ☐ Direct normal business calls to the requested person or department secretary where possible. If not possible take the name and contact number of the caller.
- ☐ Keep the switchboard as clear as possible for emergency calls.
- ☐ Contact security to attend to unauthorized visitors.

Do not give out any statements about the emergency.**14. Office Wardens****Who** Regular building staff who have been assigned**Report to** REB**Location** Responsible Zone**Roles** To ensure all building occupants area safely evacuate during building emergency.**Responsibilities**

- ☐ Department heads or managers will nominate wardens and deputies.
- ☐ There will be a minimum of two wardens present at all times on each level of a building.
- ☐ If wardens are going to be absent from the building then they must inform their deputy
- ☐ The building will be separated into sections for checking.
- ☐ Each warden and deputy will have a floor plan showing areas to be checked.
- ☐ If it is safe to do so. On hearing the fire alarm the wardens will ;
Check all the rooms in their area of responsibility, and they will make sure that the occupants have left or are leaving the building.
- ☐ When a room has been checked the warden will close the door.
- ☐ When all the rooms have been checked the wardens will go to the assembly area.
- ☐ They will confirm with each other that the building has been evacuated.
- ☐ They will check with the senior personnel from each department, using the printout from the computer access control system supplied by security, to ensure everybody is accounted for.
- ☐ The wardens will report to the REB or IC with their findings.

Where office wardens have radios, they should be taken with them to the assembly areas.

15. Security

Who All security personnel on site under the direction of the Security Shift Officer

Report to OSC

Location REB

Emergency Level 1A, 1B, 2, 3

Responsibilities

- ☐ Monitor all emergency radio communications.
- ☐ Close the road, which related to the incident and take care of traffic.
- ☐ Ensure emergency radio traffic recorded.
- ☐ Follow instructions of the OSC.
- ☐ Emergency road closing.
- ☐ Emergency gate closing.
- ☐ Site accesses control.
- ☐ Cooperate with law enforcement as required.
- ☐ Keep a log of all activities.
- ☐ Operate the refinery switchboard (out of hours).
- ☐ Call in, as requested by the IC
 - * Duty Rota Team
 - * Mutual aid
 - * Others requested by IC/OSC
- ☐ Get confirmation from duty team members of acknowledging via phone call.
- ☐ Control all traffic into and out of the refinery.
- ☐ Liaise with the police for roadblocks outside property as required.
- ☐ Prepare lists of all personnel on site using access control.
- ☐ Restrict all entry to the Refinery to emergency vehicles and personnel.
- ☐ Keep the incident area free of all non-emergency vehicles and personnel.
- ☐ Ensure that all the master keys are available ready for use at the main gate.

- ☐ Have a mobile security guard ready to open emergency gates if required.
- ☐ Call in extra security guards as required
- ☐ Notify to the stakeholder refer to section 8.2 Notification and Reporting to Stakeholder

16. Staging Officer**Who** Member of the Emergency Response Coordinator Group**Report to** OSC**Location** Staging Areas will be assigned by OSC**Emergency level** 2, 3**Responsibilities**

- ☐ Establish Staging Area Layout.
- ☐ Maintain radio communication with OSC and other Staging Officers.
- ☐ Request maintenance/fuel service for equipment at Staging Area as appropriated.
- ☐ Request and prepare all equipment and make available as required by the OSC and report resource status changes.
- ☐ Maintain Staging Area Resources Form.
- ☐ Maintain Unit Log
- ☐ Assembly and release of fire protection or emergency equipment and supplies to support the emergency response action.

All resources within the designated Staging Areas are under the direct control of the Staging Officer and should be available as soon as possible.

17. Medical Team**Who** Medical Clinic Nurses**Report to** OSC**Location** Medical Clinic and scene of the incident.**Emergency level** 1A, 1B, 2, 3**Responsibilities**

On receiving the emergency alarm;

- ☐ Switch radio to Emergency Channel.
- ☐ Provide first aid as requested by the OSC.
- ☐ Evacuate injured personnel by ambulance.
- ☐ Pass the information of injured or death to External Affair Duty Person / Duty Manager.

18. Legal Advisor**Who** Corporate Legal Counsel and Company Secretary**Location:** EOC (Fire Station)**Emergency level:** 2, 3**Roles:** To be an advisor on legal issues**Responsibilities:**

This person is responsible for the following:

- ☐ Coordinating with outside Thai legal counsel, Shareholder companies, CPC General Counsel and other Chevron in-house counsel (Singapore) on all issues relating to legal liability of SPRC and shareholders.
- ☐ Render legal advice and assistance to the Treasurer's Unit related to Traders Insurance Policy and /or other related insurance policy coverage, claims procedures and on matters related to legal interpretation of scope, degree and type of liability for which insurance will respond.
- ☐ Provide ad-hoc legal advice to Incident Commander on issues, which may have Thai, USA, Chevron or Shareholder legal implications.
- ☐ Ensure appropriate legal advice is available for the Duty Manager when making critical decisions and press release.
- ☐ Assist the Duty Manager and other Emergency Response Team members in respect of legal matters related to Emergency Response aspects
- ☐ Provide and maintain appropriate legal advice as required.

APPENDIX B DUTY ROTA GUIDELINE FOR EMERGENCIES**1. Generic Guidelines**

The Duty Rota is intended to provide support to the operating shifts in resolving Emergency and non-routine matters in various disciplines, outside normal working hours.

Furthermore, all positions of the Duty Rota will be called in the event of a Level 1B or Level 2 or Level 3 emergency.

2. Emergency Duty Rota List

Common group: Duty Manager, Operations, External Affairs, EHS, Emergency Response Coordinator, Marine, Mechanical Duty and Instrument & Electrical Duty.

Note: For Maintenance and Support Groups Duty details refer to the Maintenance and Support Groups Duty Guidelines.

3. Nomination to Duty Rota

Staff are nominated to duty rota for a period 7 consecutive calendar days starting on Friday morning at 0730 hrs.

The duty rota is updated weekly by AD/6 and distributed to all duty holders and other concerned persons. Line managers are responsible for providing AD/6 with the information on forward planning of the duty rota.

Changes during a duty rota week are allowed, and are the responsibility of the person scheduled for duty and must always be communicated by the person requesting the change, to AD/6, Security Shift Officer and Duty Manager. This change must be to another qualified duty person.

Duty Team member who is a lady, there is a Labor Law Protection stated that **no work during 22:00-06:00hrs is allowed when getting pregnant**, as a result, the lady who is getting pregnant will not be on duty.

Note: QS, PU Managers or AS shall approve Qualified Duty Persons. The Duty Rota nomination form is EHS-FO-QS-3011 Duty Rota Nomination Form.doc available in EDMS

4. Communications and Transport

Staff on duty who are the first line of emergency i.e. Emergency Duty Rota, will have a duty vehicle available if required, a mobile telephone, which must be handed over in working order to the next person on duty.

5. Duty Rota Short Message Service (SMS) Test

The Duty Rota SMS test will be happened every Friday at 1930 hrs. The message will be “ **9999 Emergency Group Test, phone 038-699090**”. When this message is received the duty person must call to REB and confirm his/her SMS reception.

If by 2030 hrs the duty person has not been received SMS, he/she must call REB and inform security shift officer on non-receiving message. Security shift officer will then do an individual SMS test for that particular duty person. In case of SMS failure, SSO will immediately call to all duty rota member.

6. Personal Protective Equipment (PPE)

Staff on duty must have their SPRC standard PPE available when responding to an emergency. PPE should be kept in the duty vehicle for after hour's response.

7. Generic Duty Rota Responsibilities

- Be within a 60 minutes radius of SPRC at all times.
- Be available to go directly to the refinery at any time.
- Carry the duty mobile phone at all times.
- Be aware of specific responsibilities during an emergency.
- When receiving SMS, responding as directed by the message.
- Ensure that the duty mobile telephone is working all times.
- Immediately report any problems with duty communications equipment to Helpdesk.
- Inform AD/6 of any changes to the Duty Rota schedule.
- Must not have a blood alcohol level above 0 mg%
- Notify AD/6 of any changes in home and mobile phone numbers.
- When receiving SMS, the duty team members shall call back to REB in order to acknowledge and advise their status of availability.
- If receiving “ All Clear” message during on the way to refinery in case of emergency level 1B/2/3, the duty team should continue to refinery for the summary of situation.

8. Specific Roles and Responsibilities (refer to Appendix A)**APPENDIX C EMERGENCY CONTINGENCY PLAN****1. Hydrogen Sulphide (H₂S) Leak****Hazards of H₂S**

H₂S normally enters the body through inhalation. It is a highly toxic gas with an odor of rotten eggs at low concentrations. The toxic effects of H₂S are rapid, and death can occur very quickly. Many liquid and gaseous hydrocarbons may contain H₂S in sufficient concentrations to present a potential hazard to personnel, and the environment. A small quantity of H₂S in the atmosphere (500 ppm) is enough to render a victim unconscious, and can cause death if rescue does not take place immediately.

REMEMBER:

50% OF PEOPLE KILLED IN H₂S INCIDENTS ARE WOULD BE RESCUERS. THEREFORE ENSURE ALL PRECAUTIONS ARE TAKEN BEFORE ATTEMPTING ANY RESCUE OPERATIONS.

Types of Leak**Minor Leak**

Unlikely to affect any one outside the immediate area involved, and not requiring outside assistance.

Major Leak

Likely to cause a spread of gas affecting surrounding plants and/or the public outside the refinery boundary, or requiring assistance from outside the area involved.

The Shift Supervisor of the area affected will decide on the type of leak.

Notification of leak

- Notify the Shift Supervisor
- Notify Security to stand by.
- Notify the Duty Rota Team in the event of a major leak.

Actions on Minor Leak

- The Senior Operator of affected area becomes OSC will direct the operations to repair the leak.
- Two operators working together in SCBA and personal H₂S monitors will secure the plant boundary.
- Two operators working together in SCBA and with personal H₂S monitors will search the area for casualties, notify Emergency On Scene commander if any are found and begin rescue operations.
- Consider wind direction and evacuation of affected areas including assembly areas.
- All evacuations and movements should be across wind away from the leak.
- All roads in affected area to be closed.
- Isolate and de-pressure the leaking equipment to reduce/eliminate the leak.

Action on Major Leak

- Action as for minor leak plus the alarm is to be sounded for a level 1B or level 2 or level 3 emergency.
- Notify personnel in buildings down wind of the leak.
- All personnel involved in the emergency must be wearing SCBA and carry personal H₂S monitors.

Note: If H₂S detected at the fence line at concentration of 5 ppm. or more, activate Community Evacuation Plan (see 11.3 Community Evacuation of this plan) and refer to EHS-WI-QS-2025 Hydrogen Sulfide Work Instruction.doc

2. Radiation Emergencies**In the event of an emergency such as:**

- Leak or contamination of radiation source.
- Observed or suspected damage to radiation equipment, a radiation source, or its container.
- Observed or suspected malfunction of radiation equipment, or shutter control mechanisms.
- Suspected or actual losses of radiation source.
- Fire explosion or other disaster.

In cases of emergency involving radiation the EHS-SP-QS-0014 Radiation Safety.doc ☒ must be followed.

3. Bomb Threat

Introduction

Bomb threats will usually be made directly to the refinery, but may also be made through the news media, police or other third party.

Threats may come from:

- Misguided practical jokers.
- Malcontents presently or previously employed by the Company or a Contractor deliberately causing inconvenience and disruption to production without sinister motivations for injury or damage.
- Extremist organizations operating primarily in the fields of local or national politics with malicious intent.

Threats are usually made by:

- Telephone to the refinery usually to the switchboard operator.
- Telephone to the local police or other authorities.
- Communication to the local news media.
- Anonymous Letters
Note; Letters containing information on the alleged placing of a bomb should be handed to the police for any action they think is required. The letter should be handled as little as possible and by the minimum number of people.

NO BOMB THREAT CAN BE IGNORED

The decision to evacuate some or all personnel must rest with the OSC / Incident Commander presents when the message is received. Duty manager must be informed.

Handling bomb threat calls

The most like persons to receive the call are:

During Normal Working Hours

- Switchboard Operators.
- Managers.
- Secretaries.

After Hours

- Security Personnel.
- Control Room Operators.

Responsibilities

The person receiving the bomb threat call shall;

- Ask questions from caller
- Immediately notify Security

Security Shift Officers:

- Notify the Shift Supervisor who will then establish an evaluation team.
- Contact the police.
- Follow Bomb Threat Instruction in Security Work Instruction.

Evaluation Team:

Evaluation Team is consisted of OSC, IC, and ERT. Duty Manger must be informed. Upon notification the evaluation team will proceed directly to the EOC. The person receiving the threat will meet with the team on its arrival.

The Evaluation Team will:

- Evaluate the threat.
- Decide on a course of action in conjunction with the advice of the police.
- Call in Duty Manager and key personnel to assist in a search if required.
- Reconvene with the police and other parties upon discovery of a suspected, or actual, device to discuss decision/action.
- Advise the Control room not to use portable radios until further notice.

Searching Procedures

- When a decision has been made to search, the OSC will designate the personnel most familiar with the target area to carry out a systematic search including with the Security Shift officer (or competence person).
- Communications will be by telephone (desk phone), radios or 'runners'.
- If a suspicious object is located then it must not be touched, its location conveyed to the Duty Manager and the area cordoned off.
Firefighting equipment should be set up in strategic positions.
Duty Manager will contact the local police or bomb disposal squads (by assistance of Security Shift Officer), if they are not already on site. Notify all staff.

Remark: The mobile is not allow to use during searching



3.1 BOMB THREAT CHECKLIST

NAME OF EMPLOYEE _____ TIME _____ DATE _____

QUESTIONS TO ASK

1. Has a bomb been placed or is the caller threatening to place one? _____
1. Was it mailed? _____
2. Where is bomb going to explode? _____
3. Where is bomb right now? _____
5. What kind of bomb is it? _____
6. What does it look like? _____
7. Why did you place the bomb? _____
8. Where are you calling from? _____

WRITE OUT THE MESSAGE IN ITS ENTIRETY USING EXACT WORDING

CALLER'S IDENTITY

Male ___ Female ___ Adult ___ Juvenile ___ Accent ___ Approximate Age ___

ORIGIN OF CALL

Local ___ Long Distance ___ Booth ___ Unknown ___ Internal ___ (From within
SPRC) if internal leave line open for tracing the call.

LANGUAGE

Excellent ___ Good ___ Fair ___ Poor ___ Foul ___ Other ___

SPEECH

Fast ___ Slow ___ Lisp ___ Distinct ___ Distorted ___ Slurred ___ Stutter ___ Nasal ___ Other ___

ACCENT

Foreign ___ Race ___ Local ___ Not Local ___ Region ___

BACKGROUND NOISES

Animals ___ Airplanes ___ Bedlam ___ Factory Machines ___ Music ___ Mixed ___
Office Machines ___ Traffic ___ Trains ___ Party Noise ___ Voices ___ Quiet ___

VOICE CHARACTERISTICS

Loud ___ Soft ___ Deep ___ High Pitch ___ Raspy ___ Pleasant ___ Intoxicated ___ Other ___

MANNER

Calm ___ Angry ___ Rational ___ Laughing ___ Irrational ___ Coherent ___ Incoherent ___
Deliberate ___ Emotional ___ Righteous ___

Link to Telephone bomb threat form [EHS-FO-QS-3050 Telephone Bomb Threat Form.doc](#) ☐



3.2 Mail Bomb Recognition Checklist

Mail bombs have exhibited unique characteristics, which should be helpful in identifying a suspect item. The following could be of assistance when opening mail:

Envelope

- ❖ Envelope will be lopsided or uneven in weight or packaging with possible cutting or pasting.
- ❖ Excessive use of securing materials such as sealing tape or string.
- ❖ Feelings of springiness or sponginess in the top, bottom or sides.
- ❖ Protruding wires, tinfoil or string.
- ❖ Oily stains or discoloration ("Sweating" of plastic explosive).
- ❖ Peculiar odor. Sometimes smells like almonds.
- ❖ Sloshing, buzzing or ticking sounds. Inks, particularly reds and blues may bleed, staining the envelope.

Weight

- ❖ Heavier than usual for its size.
- ❖ Weight uneven or volume distribution uneven with possible bulging.
- ❖ Heavier than usual for its class of mail. (For example, an airmail envelope weighing more than 2 ounces).

Rigidity

- ❖ Greater than normal, particularly along its center length.

Thickness

- ❖ Not uniform, or with bulges.
- ❖ For medium size envelope, the thickness of a small book and fairly rigid.
- ❖ For larger envelopes, bulkiness, an inch or more in thickness.

Address

- ❖ No return address.
- ❖ Hand printed or poorly printed or typed address.
- ❖ Incomplete or erroneous destination address.
- ❖ Foreign, poor or disguised handwriting.
- ❖ Restrictive markings such as Private, Confidential, Personal, or Eyes-Only.
- ❖ Marked (written or stamped) airmail, Special Delivery, Certified or Registered.
- ❖ Mail designated Rush, Handle with Care or Fragile.
- ❖ Misspelled words, particularly those in common business usage.

IF YOU SUSPECT A MAILING AND ARE UNABLE TO VERIFY THE CONTENTS:

- ❖ **DO NOT OPEN THE ARTICLE.**
- ❖ Isolate the mailing and secure the immediate area.
- ❖ Notify Supervisor and Shift Security Officer.
- ❖ **DO NOT** put the article in water or confined space such as a desk.
- ❖ If possible, open windows and doors in the immediate area to assist in venting potential explosive gases

4. Marine Terminal / SPM Emergencies

4.1 Marine Terminal Emergency

All Jetty operations must stop and product flows must be isolated

In case of fire in Marine Terminal Area, Senior Operator of Marine Terminal will be OSC and control all activities at the scene of incident and report to Incident Commander (PD Shift Supervisor) at EOC. ERT Team will be mobilized from Marine Terminal Areas. If the incident is associated with oil spill, the OSC should call Marine on Duty person to deal with oil spill.

In the case of a fire on a ship the SPRC emergency organization will assist as requested by the person in charge of the ship.

It is not necessary to wait for a formal request from the ship before action is taken.

Command

In the case fire on the jetty itself, the command will be referred to Emergency Response Plan. In the case of a fire on a ship, the command will be the ships master and or the harbormaster. The refinery emergency organization will assist as requested.

Notification

1. In case of fire on ship, the following parties shall be notified by Ship Master

- Ship agency
- Ship Charterer
- Ship Owner

2. SP Department will notify off taker/Charterers

Additional resources

In case of additional resources such as ships should be requested via MTP Port Authority

4.2 SPM Emergency

4.2.1 Emergency situation " Fire on the tanker which secured at the SPM "

The following steps must be taken;

- The tanker must raise alarm consisting of a series of long blast on the ship's whistle, each blast being not less than 10 seconds in duration.
- Mooring Master on board the tanker inform to Marine control building & towing tug to be on stand by and inform to Marine Manager.
- Marine Manager will inform to duty Manager & Oil Movement - Dispatch Manager for the situation at the SPM.
- All cargo, bunkering or ballasting operations must be stopped.
- Tanker's main engines & steering gear brought to stand by condition.
- Activated fire-fighting team on board the vessel.
- Discussion between the Master and the Mooring Master whether the tanker can move under her own power or not.
- If the tanker can move under her own power, then the towing tug can be released from the stern of the tanker to assist in Fire Fighting. SPM maintenance vessels need to have all firefighting equipment in ready to use including foam compound as well.
- If the tanker cannot move under their own power so the decision have to be made between the team whether or not require assistance from firefighting tug or assistance from Refinery ERT team.
- Mooring Master needs to have a close communication with the MCB regarding the outside assistance from the tugboat, rescue launches, medical aid and ambulance, port authority.

Emergency Removal of a Tanker from a berth.

- If a fire on a tanker which secured at the SPM cannot be controlled. It may be necessary to consider whether or not the tanker should be removed from the berth.
- Planning for such an eventuality may requires consultation between Master, Mooring Master, Marine Manager, Emergency Response Coordinator and Oil Movement & Dispatch Manager.
- The safe location for anchoring is 3 miles South of SPM.

Rescue Launch

- The work boat on the SPM maintenance vessel will act as a rescue launch for the recovery of personnel who may be in the water or the evacuation of personnel who may be injured from the fire.

Launch detailed of these duties should have the following equipment;

- A communication link capable of being integrated into the control center communication system (Marine band or mobile phone)
- Fixed or portable search lights for operations during darkness or periods of reduced visibility.
- Self contained breathing apparatus
- Resuscitation equipment
- The crews of the rescue launch should have knowledge of first aid and know how to use artificial respiration.

Communication

- Via Marine band ch. 67 , UHF trunk radio in emergency channel or by mobile phone.
- SCM tug boat on Marine band ch. 11 or by telephone (038) (684556-9)

4.2.2 Emergency situation “ Fire on the SPM “**Fire on the SPM which no tanker berthing at the SPM**

- SPM maintenance vessel will be on standby, activated firefighting team on the vessel and make firefighting equipment ready to combat with the fire.
- Communicate to MCB and Marine Manager . Approaching to SPM and sprayed water to SPM as soon as possible.
- Marine Manager will inform to duty Manager & Oil Movement - Dispatch Manager for the situation at the SPM .
- Mooring Master will travel to SPM by SPRC speed boat if the weather permit.
- SPM maintenance vessel will send the photo via e mail so Marine duty team can assess the situation from time to time. and discussion have to be made between the team whether or not require assistance from firefighting tug or assistance from Refinery ERT team.
- After the fire stopped, the Marine team need to investigate for the cause of the fire and check for the condition of the SPM whether fit for purpose or not and may be need to launch the procedure “ contingency plan when SPM being out of order “

Fire on the SPM which tanker still discharging at the SPM

- The tanker must raise alarm consisting of a series of long blast on the Ship's whistle, each blast being not less than 10 seconds in duration.
- Mooring Master on board the tanker inform to Marine control building & towing tug to be on stand by and inform to Marine Manager.
- Marine Manager will inform to duty Manager & Oil Movement - Dispatch Manager for the situation at the SPM
- All cargo, bunkering or ballasting operations must be stopped.
- Tanker's main engines & steering gear brought to stand by condition and Released towing tug to be stand by as firefighting tug.
- Activated fire-fighting team on board the vessel.
- The ship's fire main should be pressurized and water fog applied to the SPM and tanker 's forecastle.
- Marine duty team can assess the situation from time to time. And discussion have to be made between the team whether or not require assistance from SC firefighting tug or assistance from Refinery ERT team.
- Mooring Master need to ask our rigger to stand by at the ship's manifold and ready for hose disconnection if necessary.
- Ensuring the unmooring equipment on the tanker must be brought to state of immediate readiness and ready for use.

Communication

- Via Marine band ch. 67 , UHF trunk radio in emergency channel or by mobile phone.
- SCM tug boat on Marine band ch. 11 or by telephone (038) (684556-9)

4.2.3 Emergency situation “ Tanker grounding during maneuvering at the SPM Area prior Mooring Master boarding“

The following step must be taken;

- Tanker need to inform to Ship's owner & agent.
- The agent will inform to MCB and Mooring Master in charge of that tanker.
- If the grounding area is not within the Map Ta Phut SPM area (3 mile south of SPM then the Marine team need to assess the situation via the ship's agent.
- If the grounding cause the spill, Please see oil spill plan scenario “ vessel grounding “
- If the grounding area is within the Map Ta Phut SPM then Mooring Master will ask the SPM maintenance vessel to search around the ship.

- Tanker must check the sounding of all cargo tank , ballast tank and fuel tank whether the quantity was still the same or not. The sounding of the tank need to check from time to time until the situation was improved.
- The ship's owner must contact to the outside tug assistance for assisting from aground position by discussing with the Mooring Master as well.
- Mooring master can feed initial information for the tide table and the current direction.
- When vessel afloat again, the diving inspection need to be done to confirm for the condition of the vessel and the class surveyor need to be approved for the fitness of the ship before the decision of berthing the tanker at the SPM had been made.

4.2.4 Emergency situation “ Vessel grounding during maneuvering at the SPM Area during Piloting by SPRC Mooring Master“

The following step must be taken;

- Stopped maneuvering on the tanker and inform to MCB and Marine Manager to know the initial condition.
- Marine Manager will inform to all concerned parties and call for standby.
- Tanker must check the sounding of all cargo tank , ballast tank and fuel tank whether the quantity was still the same or not. The sounding of the tank need to check from time to time until the situation was improved.
- During the tanker check the sounding of all tank, the maintenance vessel can check around the tanker whether have an oil spill or not.
- If oil spill occurred, activated oil spill response plan as per SPRC OSRP.
- If no oil spill occurred, the Master & Mooring Master need to discussion with SPRC Marine team.
- Time of high water, the assistance of the SC tug, assistance from SPM maintenance vessel need to be considered to assist the tanker to afloat condition.
- When vessel afloat again, the diving inspection need to be done to confirm for the condition of the vessel and the class surveyor need to be approved for the fitness of the ship before the decision of berthing the tanker at the SPM had been made.

Control Center

During the emergency at the SPM , MCB conference room will act as control center and discussion have to made between the Marine team and the emergency team from the refinery . The final decision will come from Duty Manager & Oil Movement – Dispatch Manager.

Remark : Reliable communications are essential in dealing successfully with emergency situations. Because of their importance, consideration

should be given to setting up a secondary system to take over if the main system is put out of action.

6. TLT Emergencies

In event of an emergency at the Tank Truck Loading Terminal area the response will be as for all other refinery emergencies.

7. SPRC pipelines Emergencies

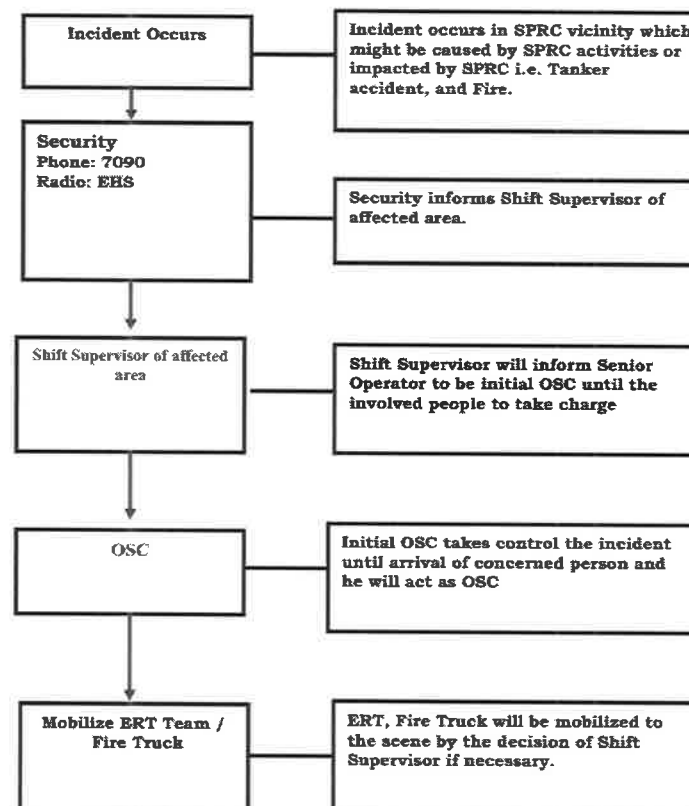
In event of an emergency at pipelines which are SPRC responsibility (see Appendix O) the response will be as for the refinery emergency as following:

- On receiving an emergency call, the PD Senior Operator (Tank Farm) will go to the scene and act as On Scene Commander.
- The ERT will be mobilized to the scene.
- The OSC will set up a command post at the scene and direct firefighting and rescue operations.
- OSC coordinated with OSC-EFT (Eastern Fluid Transportation)
- The PD Shift Supervisor will act as IC sets up the EOC.
- OSC report situation to IC.

8. Off Site Facilities Incident in SPRC Vicinity

In event of an emergency off site facilities in SPRC vicinity which might be caused by either SPRC activities or not SPRC activities, but nearby SPRC perimeter (i.e. Tanker accident, Fire). The guidelines have to be carried out as follows:

- Inform Security
- Security informs Shift Supervisor of location affected.
- Senior Operator of affected area will be the initial OSC.
- ERT team will be mobilized by Shift Supervisor consideration.
- Inform involved persons who are responsible to be in charge.



9. Off Site Road Accidents Involving Product from SPRC

The tanker drivers must be aware of the actions to be taken in an emergency. It is the responsibility of the Road Tanker-Depot Manager of each company (PTT, Caltex, and Shell) to ensure that the drivers are aware of their instructions in the actions to be taken in an emergency.

In the event of SPRC being contacted about an incident concerning a Road Tanker, which was loaded at SPRC terminal, the following procedure should be followed:

In case of incident occurs in IEAT-MTP Area:

Truck Accident:

- The person who is aware of the incident should inform the SPRC TTLT Operation Coordinator and Security Shift Officer at Refinery Entrance Building (REB). Then REB inform to Emergency Response Coordinator
- The TTLT Operation Coordinator will then inform the Depot Managers of Off takers and Security Shift Officer
- SPRC will assist when receiving a request from an Authority or Customer
- The TTLT Operation Coordinator considers assisting by consulting with PD Manager in Day working hour and keep inform Duty Manager.
- The TTLT Operation Coordinator considers assisting by consulting with Duty Manager in Off hour and keep inform PD Manager.
- The TTLT Operation Coordinator will coordinate with SPRC concern party to assist the Truck accident and keep inform to PD Manager or Duty Manager

Truck Fire:

- The person who is aware of the incident should inform the SPRC TTLT Operation Coordinator and Security Shift Officer at Refinery Entrance Building (REB). Then REB inform to Emergency Response Coordinator
- The TTLT Operation Coordinator will then inform the Depot Managers of Off takers and Security Shift Officer
- SPRC will provide a Fire Truck to assist when receiving a request from an Authority
- The TTLT Operation Coordinator request support from Emergency Response Coordinator
- Emergency Response Coordinator considers assisting by consulting with Duty Manager for get approve to send SPRC Fire truck to support and keep inform to Duty Manager.
- The decision to supply this equipment will be with Duty manager.

In case of incident occurs out of IEAT-MTP Area:

- SPRC will provide a Fire Truck to assist when receiving a request from an Authority
- Emergency Response Coordinator considers assisting by consulting with Duty Manager.
- The decision to supply this equipment will be with **Duty manager.**

Emergency Contact Numbers.

TTLT Operation Coordinator:

Office: 038-699289

Mobile phone: 081- 863-8023 (TTLT Coordinator)

Security Shift Officer: 038-699090

For others referred to [EHS-OT-QS 3003 Emergency Telephone Number.doc](#)

10. Failure of SPRC Trunked Radio system procedures

10.1 Fall Back Mode

There are three fall back modes available on SPRC Trunked Radio System:

- Zone Isolated Wide Area Trunking
- Local Site Trunking
- Direct Mode Operation

For zone isolated wide area and local site trunking, the radios will switch to available site automatically, and radios will work as normal.

SPRC defines the direct mode in detail of EHS-OT-QS-3010 Trunk Radio Emergency Procedure.doc (Page 5).

10.2 Direct Mode Operation (DMO)

If all connections to the Radio Network Infrastructure are lost (CAT main site, SPRC backup sites, and SPRC site down), each SPRC radio can enter into direct mode operation (DMO). This means that the radio will use its own antenna and amplifying power to communicate with other radios that support DMO and are within range of 0.5-1 kilometer.

During DMO mode operation, radios at SPRC site will not be able to connect to those at MCB, except one fixed radio at Area 5 panel (Backup MCB machine). Similarly, MCB radios will not be able to communicate with SPRC site radios, except one fixed radio at MCB Operation Board panel (SPRC Area 5 Backup) machine.

In case of incident occur during radio total fail (Direct mode)

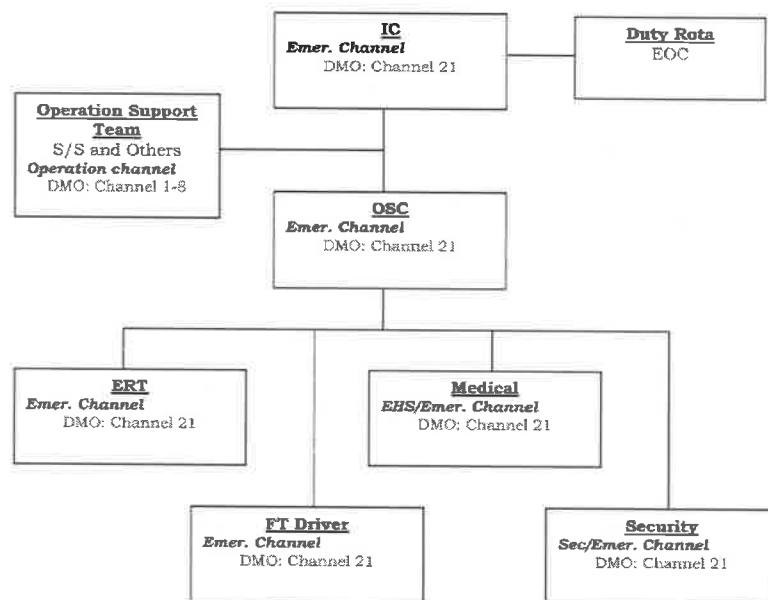
When all available network is lost, the radio displays channel indicates "No Service" word

Incident commander informs REB for announcement

REB announce by radio each direct mode channel to switches the radio to **"DMO"** and selects **emergency channel** for direct mode in case of trunk radio is totally failed.

During trunk fail period, minimize the usage of radio communication is required. The command to response action is mainly conduct from on scene commander on site, incident commander or duty manager to first intervention team and support team.

10.3 Workflow of communications to related trunk radio partial or total failure (Direct Mode) during incident or emergency cases will be by following methods;



Note:

1. IC will get the process information by contacting with Area Shift Supervisor via internal telephone (extension number).

2. The followings are the recommendation emergency exercise programs

Exercises

- | | | |
|---------------|--|--------------|
| ▪ Level 1A/1B | Operation on shift | Weekly |
| ▪ Level 2 | Emergency Response Teams /EMAG | 2 times/year |
| ▪ Level 3 | Emergency Response Teams /EMAG/Rayong Province | 1 time/year |

Evacuation Building Occupants 1 time/year/Building zone

It shall be set up the mandatory emergency exercise at least once a year with practice the trunk radio failure for ensuring all back up mode of radio system (Wide area backup-Local site and DMO mode) has good reliability of communication.

3. The link is the trunk radio emergency procedure, which is provided the operation guideline to shift staff on the principle of trunk radio system including emergency

response action during trunk radio failed EHS-OT-QS-3010 Trunk Radio Emergency Procedure.doc

10.4 SPRC Portable Radio Channel Configuration

Trunk Radio " Normal "	Use Wide Area of Local Site Trunking	Area/Location
↓	<ul style="list-style-type: none"> - Talk groups run on radio frequency channel. - North site has 16 talk groups opposite. - Controller monitors anyone making a call. - Intrinsically safe (use color stickers). - 2 batteries provided per radio. - Battery conditioning required every 3 months. - North site: REB CCB W/S TTLT - Helpdesk handles all repairs, returns, transfers etc 	A1 A2 A3 A4 A5 Marine TTLT PNM PDM RELIB CTM CTM Project Tank/OSI/NM Paint/Civil Scaff/Insula Rigging 1 Rigging 2 Taxi 1&2 EHS/SEC/MED Security EMER
" Direct Mode "	## Failure of all radio networks: Use DMO mode	North Site
↓	<ul style="list-style-type: none"> - Manually switch to DOM - Point to point" conversation only. - Limited distance e.g. 500 - 1 km. - Sensitive to obstructions e.g. walls etc. - Only use when "controller & base" have failed - On screen radio will show "DMO" - On Screen radio will show symbol "I->I" - Standby at appropriate channel. - Monitor channel before calling. 	DMO-A1 DMO-A2 DMO-A3 DMO-A4 DMO-A5 DMO-Marine DMO-TTLT DMO-PNM DMO-PDM DMO-RELIB DMO-CTM DMO-CTM Project DMO-Tank/OSI/NM DMO-Paint/Civil DMO-Scaff/Insula DMO-Rigging 1 DMO-Rigging 2 DMO-Taxi 1&2 DMO-EHS/SEC/MED DMO-Security DMO-EMER

11. Product Contamination Procedure

In event of SPRC products which become off specification either at the refinery or at discharging port of customers. The response will be referred to **Non Conforming Products Procedure**

12. Oil /Chemical Spill/Release and Leak on land

The response of Oil / Chemical Spill/ Release on Land will be referred to **EHS-WI-QS-3003 Hazardous Material Release, Spill and Leak.doc**

13. Marine Oil Spill

The response of Marine Oil Spill Plan will be referred to **EHS-WI-QS-3001 Oil Spill Response contingency Plan.doc**

APPENDIX D MUTUAL AID and ASSISTING TO THIRD PARTIES

The following mutual aid has been agreed, to provide assistance in case of an emergency at installations in the industrial estate.

1. Assistance to SPRC

In the case of SPRC requiring assistance from outside sources the following is a list of resources in the order to be called in:

The Emergency Mutual Aid Group (EMAG) is consisted of SPRC, ROC, PTTGC2 (PTT-Chem 11) , PTTGC3 (former PTTChem-14), PTTGC4 (former PTTARO-1), PTTGC5 (former PTTAR2-RIL) and PTTGC6 (refinery), PTT (gas Separation Plant), VNT, Covestro (Thailand), IRPC, TPE and MOC

On arrival at the refinery mutual aid teams will stand by at REB for PN until they are required by the OSC or IC. The Mutual Aid coordinator will take them to the incident scene and liaise with the OSC.

2. SPRC Assistance to Other Companies**2.1 Agreement Companies**

In the case of a request to SPRC for mutual aid from one of the EMAG members, SPRC has to immediate provide for the equipment. The mutual aid company will call assistance via the REB and/or SPRC EMAG representative (Lead Emergency Management and Emergency Management Specialist)

The equipment will be supplied and the decision to supply this equipment will rest with the **Shift Supervisor** at the time.

For Fire Truck driver and an assistant or other personnel if needed will be arranged by **Shift Supervisor**. More consult or advice will be supported by Emergency Management Specialist if required.

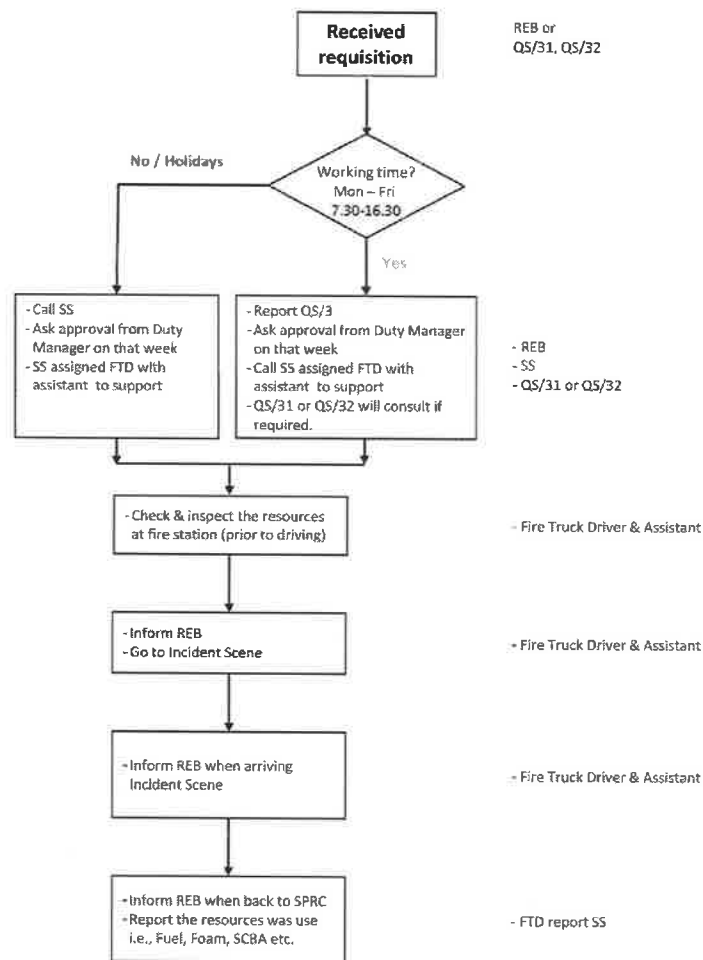
2.2 Non Agreement Companies

In case of the other companies which not in agreement need assistance from SPRC. SPRC will provide a Fire truck and necessary equipment. Fire Truck driver and an assistant or other personnel if needed will be arranged by Lead Emergency Management (**should not be Operators**)

The decision to supply this equipment will be with Duty manager.

SPRC will provide a Fire Truck, driver and Fire Truck operator plus other equipment and personnel as necessary to either Agreement Companies or Non Agreement Companies.

Flowchart of SPRC Assistance to Other Companies



Noted

- Record information & resources was to requested.
- Use Fire Truck check list for resources clarification with EMAG or other company requester
- In case of the other companies which not in agreement need assistance from SPRC will be arranged by Lead Emergency Management (should not be Operators)

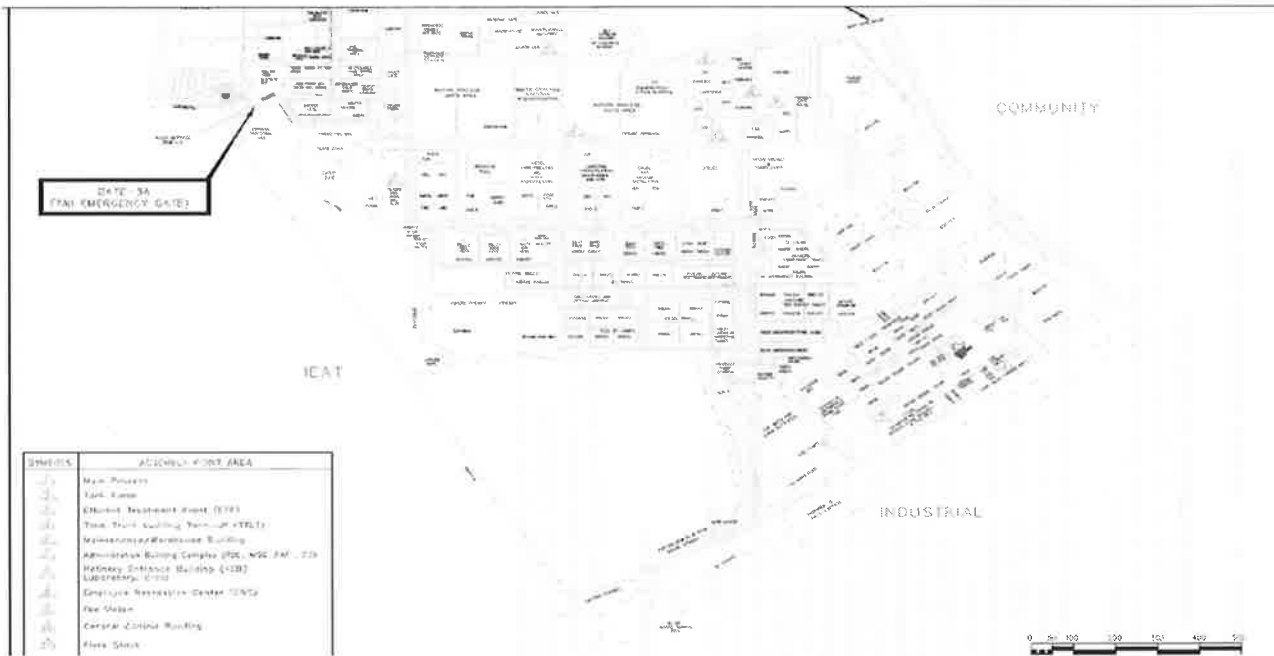
3. Mutual Aid Coordinators

ERC members or persons nominated from the Emergency Support Team will be assigned and wear a **reflective vest marked "MC"**

Mutual aid fire trucks should be parked in the vicinity of REB for PN in a safe location. If mutual aid fire trucks are required on site they must be accompanied at all times by SPRC personnel.

Mutual Aid Coordinator should log in equipment, personnel, and quantity of foam of Mutual Aid Team. Brief of emergency situation should be made to Mutual Aid Teams.

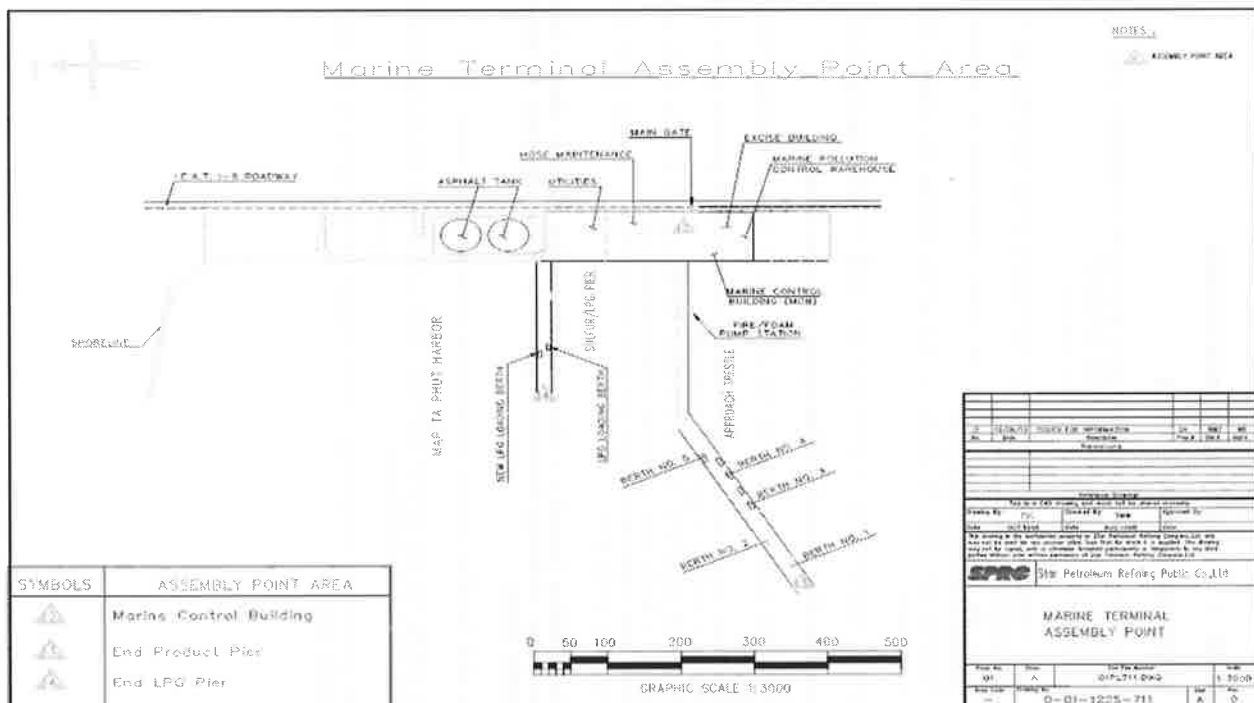
Note: At the first stage of emergency if needs assistance from Mutual Teams, the security personnel will be the Mutual Aid Coordinators until ERC members arrive.

APPENDIX E EMERGENCY ASSEMBLY AREAS**Refinery Assembly Areas**

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Marine Terminal Assembly Areas

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APPENDIX F HEAD COUNT PROCEDURES**1. HEAD COUNT PROCEDURES**

All personnel not involved in the emergency must go to an assembly area.
Contractors are responsible for their own personnel.
SPRC personnel are responsible for their visitors.

- It is responsibility of the Incident Commander or the Duty Manager to assign the person to do a head count.
- It is the responsibility of the On Scene Commander to account for all personnel in the incident area.
- Security will take the names of any person leaving the refinery during an emergency.

The person assigned to do the head count will follow the following procedure:

Process Area (See Appendix E Emergency Assembly Areas)

1. Check the number of jobs in the work permit from the permit rooms (COS shelters).
2. Check with supervisor of each job about the number of persons at the assembly area No. 1 in front of the CCR/Platformer.
3. Check with supervisor of each job about the number of persons at the assembly area No. 2 at the west of Oil Movement Building (OMB).
4. Check with supervisor of each job about the number of persons at the assembly area No. 3 at the ETP.

Admin. Building Complex / Employee Recreation Center/ Marine Building/ Construction Building/Warehouse and TTLT (See Appendix E Emergency Assembly Areas)

Check with the office wardens for personnel at the assembly areas.

When moving around between assembly areas always take into account the type of incident and the wind direction.

Inform the Incident Commander / Duty Manager of the results of the head count and action taken.

APPENDIX G PRESS RELEASES GUIDELINES**1 PRESS RELEASES GUIDELINES**

Communicating in an emergency/a crisis Public attention in the event of an emergency or a crisis, particularly media attention, can be overwhelming so bear these points in mind:

- **Concern:** show that the company cares for those affected
- **Clarity:** adopt a clear media response statement
- **Co-ordination:** ensure that it is widely understood who is the spokesperson
- **Co-operation:** maintain a good working relationship with the media and other agencies
- **Consistency:** ensure that you come across clearly and without contradiction and that your facts are verified at source
- **Consultation:** if a joint-venture partner or contractor is involved, consult them before any statement are made
- **Control:** centralize and control the flow of information by
 - Response statement cleared by Duty Manager
 - Prepared answers to expected media questions
 - Regular news briefing if appropriate
 - Factual information to offset rumor using every means of communication
 - No unauthorized interviews or statements
 - Only ONE spokesperson at any one time to avoid confusion

CAUTION – don't

- Admit legal liability unless specifically empowered to do so
- Lie or try to hide behind " NO COMMENT"
- Blame anyone or anything
- Release details of cost estimate of damage or loss



2. INITIAL RESPONSE STATEMENT

(To be completed by Duty Manager then pass on to External Affairs Duty)

When: Date _____ Time _____

What happened: _____

Where exactly: _____

Any fatality/injured: _____

How many people are on site: _____

What actions being taken: _____

What effects will the incident have on operation/production: _____

SPRC is still investigating the cause of this incident and at this point in time is not able to provide any details until the investigation is complete.

Completed by: _____ (Duty Manager)



3. MEDIA AND OFFICIALS OFFICES

PA department designates the offices for the media and officials for working during an emergency when they needed as following:

Officials: Room Number R-106

Media: Room Number R 106

External Affairs to request IT duty person to set appropriate equipment, but cover the following as minimum:

- ◆ Facsimile Machine
- ◆ Telephones
- ◆ Computer
- ◆ Copy machine

APPENDIX H FOAM SUPPLIERS

2.1 Red Alert Service (National Foam Inc.- Kidde Fire Fighting)

Tel: + 610-363-1400

2.2 Ansul

Tel: Local distributor TTK: (+66 or 0) 2704 6430

2.3 Chemguard

Tel: +1-817-473-9964

2.4 National Foam Universal Gold 1/3%

Tel: +668-9079-9448 or 02-026-0470-92 # 506

APPENDIX I DRINKING WATER AND REFRESHMENTS

The drinking water for emergency support is kept in the Fire Station storeroom both sites call security for the keys.

In case of long period of incident, which need cash for arranging refreshments and/or meal, External Affair duty will be the person to support.

APPENDIX J TRANSPORTATION

In case of emergency the duty vehicles and TAXI will be parked at the car park nearby the fire stations and leave the key in the ignition sockets

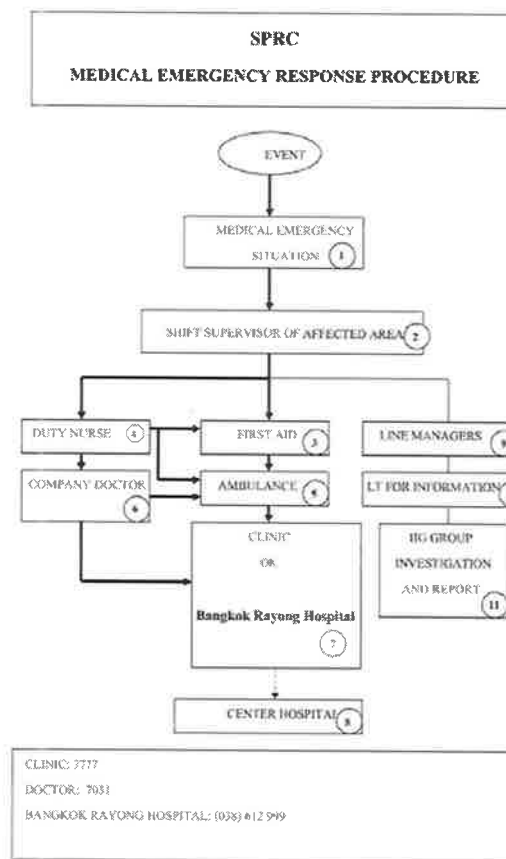
There is a driver available (stand by Lab) during off-hours at the shelter and vans are parked in the car parking shelter with the key are left in the ignition socket. Phone Number **7089**

During off hours and holiday Taxi (pick up truck) will be parked beside the REB and key will be kept at REB.

APPENDIX K EMERGENCY ALARM TEST

The emergency alarms will be tested each Wednesday at 1330 hrs. Follow by the All clear.

The Emergency telephone 7191 will be tested after the emergency alarm test, Security room, Medical Clinic and also the Fire station when manned.



APPENDIX L MEDICAL ERP PROCEDURE

In cases of emergency involving medical needed the EHS-WI-QS-2005 Medical Emergency Response Plan.doc must be follow

APPENDIX M EMERGENCY TRAINING AND EXERCISES

All personnel working in the refinery must be trained in emergency response. The type of training will depend on the individuals work location and job. The followings are the recommendation training and exercise programs.

Training Course as list:

- Basic Fire Fighting
- Basic Office Fire Fighting
- Advanced Fire Fighting
- Fire Command (For OSC and IC)
- Breathing Apparatus
- Hazmat
- Rescue
- Fire Truck Driver

Refer to EHS-OT-QS-001 EHS Standard Training Program

Exercises	Operation on shift	Weekly
▪ Level 1A or 1B	Emergency Response Teams /EMAG	2 times /year
▪ Level 2	Emergency Response Teams /EMAG/Rayong Province	1 time/year
▪ Level 3	Building Occupants	1 time/year/Building zone
Evacuation Refer to <u>EHS-OT-QS-3005 Emergency Response Exercise Guidance.doc</u>		

Note: For Oil Spill response training refer to EHS-OT-QS-0001 EHS Standard Training Program

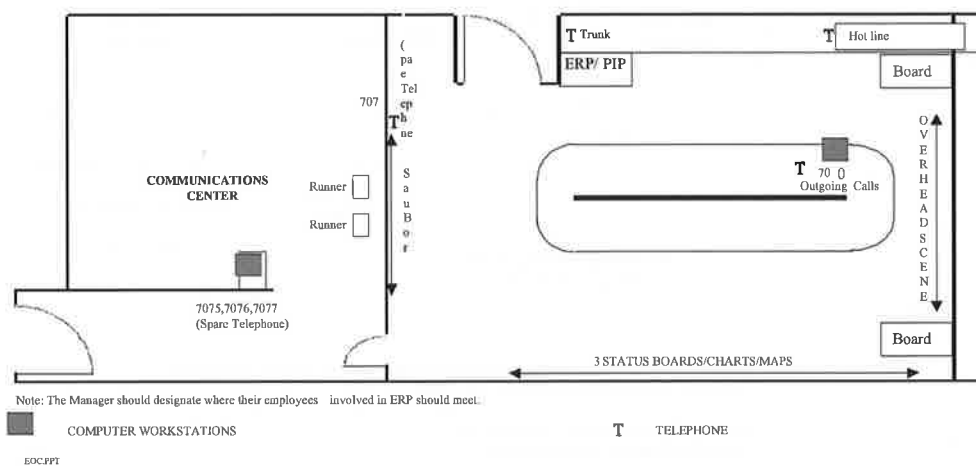
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APPENDIX N EMERGENCY OPERATION CENTER LAYOUT

**EMERGENCY OPERATIONS CENTER (EOC) LAYOUT PLAN
(FIRE STATION TRAINING ROOM F-115)**



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APPENDIX P EMERGENCY TELEPHONE NUMBERS

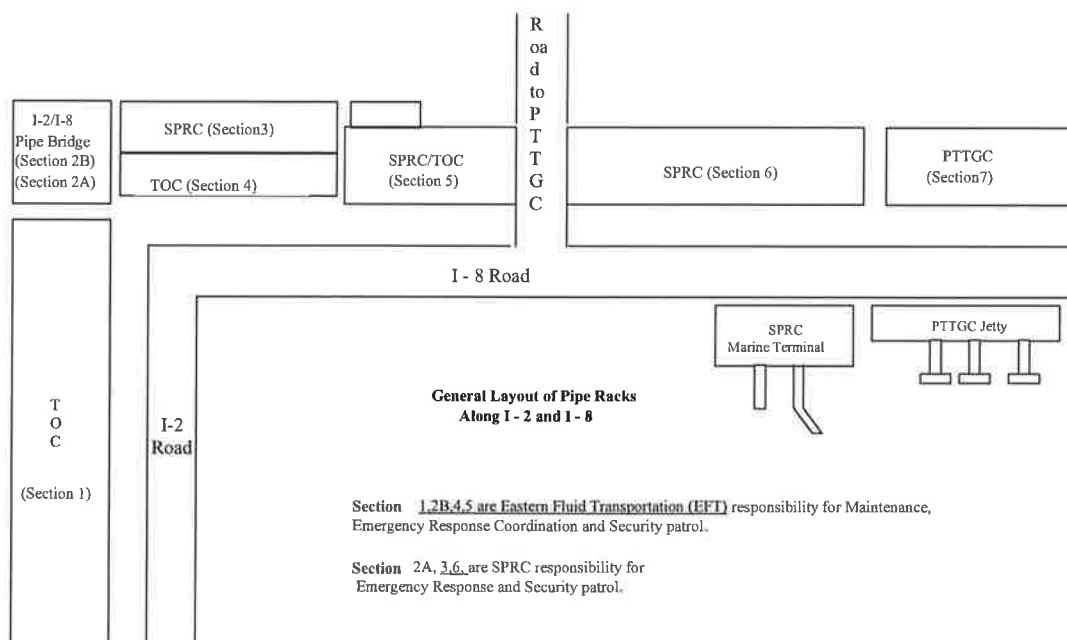
The Corporate Affairs and Emergency Response Coordinator are responsible for obtaining and updating a list of applicable local and national government contacts, with support and supervision by QEHS. This list is updated six monthly or when changed as detailed at [EHS-OT-QS-3003 Emergency Telephone Number.doc](#)

APPENDIX Q SPRC FLU PANDEMIC BUSINESS CONTINUITY PLAN

The Flu Pandemic Business Continuity Plan is the plan to control the possible impact of Flu Pandemic and monitor the phase of Pandemic plan, which is recommended by WHO or Shareholder.

Influenza pandemics result in serious health effects to large proportions of the population with significant disruption to the community, economy and businesses. See more details in [EHS-OT-QS-3017 SPRC Flu Pandemic Business Continuity Plan](#).

APPENDIX O PIPE LINE LAY OUT



APPENDIX R MUTUAL AID AGREEMENT BETWEEN SPRC & PTTGC-6

In order to support each other in case of emergency, the followings have been discussed and agreed to be a guideline for both SPRC and PTTGC-6

1. Emergency Support Team;

- Both companies will support 2 operation staff (ERT Team members) to be the ERT back up team for each other in case of calling and can support. All members will equip with full bunker gears or other personal protective equipment that suit for the emergency case.
- All ERT team members support will be under supervision of on scene commander of the incident happening company.

2. Communication channel:

- In case of need support ERT back up from the other site shall PD shift supervisor (SPRC) or RM shift supervisor (PTTGC6) as Incident commander (IC) notify to Shift Security Officer on shift (SPRC REB) or Security Leader (PTTGC-6 Security Center) to call to the other Site (REB or Security Center) for requesting help via Hot Line.
- Incident Commander (IC) shall specify other equipment need beyond full bunker gears that need support such as Fire truck, Ambulance, Foam Truck, Oil spill equipment or others to the Shift Security Officer (SSO) or Security Leader during calling too.

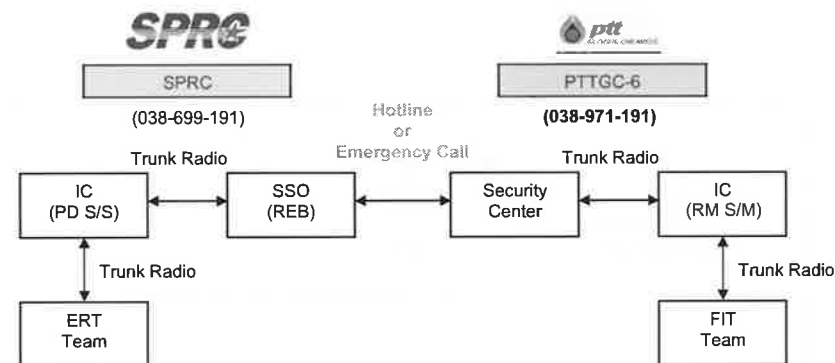
Exercise:

To ensure reliability of guideline implementation, we agreed;

- Do testing the communication channel and ERT team according agreed by emergency exercise together (schedule will be combined in to existing master exercise schedule in each site).
- Do the communication testing to ensure that the channel set is work: Every Friday (19.30 hrs) each site by SSO will ring the hotline provide to do the test to ensure it work and record status of testing under SMS call back from emergency duty Rota team.

Remark;

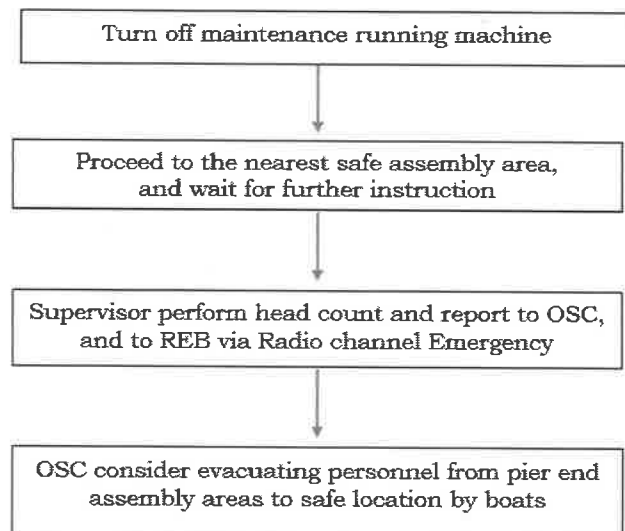
- It is the right of the company to deny on supporting of ERT team when request in case that there is an emergency case happen at site or other site which have agreed to provide support.



APPENDIX S PIER EVACUATION GUIDELINE

Personnel evacuating from product pier and LPG pier can go to either:

- assembly point 12 (near MCB main gate), or
- pier end assembly areas, if it is not safe to go to assembly point 12 (e.g. fire on pier or on ship alongside)



Remark 1) Under circumstances, OSC may consider evacuate all personnel at the marine terminal to pier end assembly areas, e.g. the shore assembly point 11 is unsafe for such.

2) Boat crew will provide life vests or other kinds of flotation devices to personnel embarking.

APPENDIX T The Reporting form to the Labour Protection Welfare

แบบ ปร. ๕

แบบแจ้งการเกิดอุบัติเหตุร้ายแรง หรือการประสบอันตรายจากการทำงาน
ตามมาตรา ๑๔ (๑) และ (๒) แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔

(๑) ชื่อสถานที่ประกอบกิจการ.....
เลขทะเบียนการค้า.....ประเภทกิจการ.....
ที่ตั้งเลขที่.....หมู่ที่.....ต./ร./แขวง.....
อำเภอ/เขต.....จังหวัด.....จังหวัดไปรษณีย์.....โทรศัพท์.....
จำนวนผู้จ้างทั้งหมด.....คน

(๒) ความเสียหายจากการเกิดอุบัติเหตุร้ายแรง หรือการประสบอันตรายจากการทำงาน
☐ เสียชีวิต จำนวน.....ราย ตามบัญชีแนบท้าย (ระบุชื่อ - สกุล อายุ เพศ ตำแหน่ง)
☐ บาดเจ็บ/เจ็บป่วย จำนวน.....ราย ตามบัญชีแนบท้าย (ระบุชื่อ - สกุล อายุ เพศ ตำแหน่ง)
☐ ทรัพย์สินเสียหาย จำนวน.....บาท
☐ มีการหยุดการผลิด

(๓) สถานที่เกิดเหตุ.....
วัน/เดือน/ปี ที่เกิดเหตุ.....เวลา.....น.


(๔) สาเหตุของการเกิดอุบัติเหตุร้ายแรง หรือการประสบอันตรายจากการทำงาน.....
.....
.....

(๕) การดำเนินการแก้ไขเพื่อป้องกันการเกิดซ้ำ กรณีเกิดเหตุตามมาตรา ๑๔ (๒).....
.....
.....

ข้าพเจ้าขอรับรองว่าข้อความข้างต้นเป็นความจริงทุกประการ

ลงชื่อ.....นายจ้าง/ผู้รับมอบอำนาจ
(.....) ประทับตรา/ลายมือ
ตำแหน่ง.....
วันที่.....เดือน.....ปี.....

APPENDIX U IEAT-MTP Emergency Reporting Form

 แบบรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น
ของผู้ประกอบการพื้นที่นิคมอุตสาหกรรมและท่าเรืออุตสาหกรรมมาบตาพุด

เขียน ผู้อำนวยการศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC)
สำเนาเขียน ☐ ผอ. สม. ☐ ผอ. สท. ☐ ผอ. สท. ☐ ผอ. สท.

ขอรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น ดังนี้

ลักษณะเหตุการณ์

☐ ไฟไหม้ ☐ ระเบิด ☐ ก๊าซ/สารเคมีอันตรายรั่ว ☐ น้ำปนเปื้อนรั่วไหล ☐ อื่นๆ ระบุ _____

ชื่อโรงงาน/บริษัทฯ ที่เกิดเหตุ _____ นิคม _____

ความรุนแรง

☐ เล็กน้อย ☐ ปานกลาง ☐ มาก ☐ อื่นๆ _____

เหตุการณ์เบื้องต้น (ระบุเหตุการณ์ที่เกิดขึ้นคร่าวๆ เกิดอะไร ที่ไหน ผลกระทบต่อภายนอก)

วันที่เกิดเหตุ _____ เวลา _____ น.

เหตุการณ์เบื้องต้น _____

ชื่อผู้แจ้ง (ตัวบรรจง) _____ หมายเลขโทรศัพท์ที่ติดต่อกลับได้ _____

ศูนย์สื่อสารและรับแจ้งเหตุ

☐ สมท./EMCC Fax: 0-3304-7041 Fax: 0-3868-3941 โทร: 0-3868-3933 มือถือ: 0-81732-3485 Line ID : adminemcc

☐ สม. Fax: 0-38017-496 โทร: 0-3868-6776

☐ สท. Fax: 0-3868-3176 โทร: 0-3868-7-810 มือถือ: 0-965452-428

☐ สท. Fax: 0-38915-316 โทร: 0-38915-285

สำหรับ: เจ้าหน้าที่ศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC)

ผู้รับแจ้งเหตุ (ตัวบรรจง) : _____ เวลาที่รับแจ้ง _____ น.

การดำเนินการ

☐ แจ้งเจ้าหน้าที่เวร กทม. ☐ รายงาน ผอ. นิคม _____

☐ ขอตรวจสอบพื้นที่เกิดเหตุ _____

☐ แจ้งเตือนโรงงาน/ชุมชน ที่อาจได้รับผลกระทบ _____

☐ แจ้งขอความช่วยเหลือจากหน่วยงานที่เกี่ยวข้อง

☐ ศักดิ์ _____

☐ โรงพยาบาล _____


☐ ตำรวจ _____

☐ อื่นๆ _____

หมายเหตุ : ผอ.สมท. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด
ผอ.สท. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด
ผอ.สม. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด
สำหรับที่กำกับดูแล นิคมอุตสาหกรรมมาบตาพุด (มาบตาพุด)
นิคมอุตสาหกรรมมาบตาพุด, นิคมอุตสาหกรรมมาบตาพุด, นิคมอุตสาหกรรมมาบตาพุด

ฉบับที่ 1/2561 (Rev. 4) 10 Jan 19

APPENDIX V MTP- Port Abnormal Situation and Emergency Reporting Form

 แบบรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น
ของผู้ประกอบการพื้นที่นิคมอุตสาหกรรมและท่าเรืออุตสาหกรรมมาบตาพุด

เขียน ผู้อำนวยการศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC)
สำเนาเขียน ☐ ผอ. สม. ☐ ผอ. สท. ☐ ผอ. สท. ☐ ผอ. สท.

ขอรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น ดังนี้

ลักษณะเหตุการณ์

☐ ไฟไหม้ ☐ ระเบิด ☐ ก๊าซ/สารเคมีอันตรายรั่ว ☐ น้ำปนเปื้อนรั่วไหล ☐ อื่นๆ ระบุ _____

ชื่อโรงงาน/บริษัทฯ ที่เกิดเหตุ _____ นิคม _____

ความรุนแรง

☐ เล็กน้อย ☐ ปานกลาง ☐ มาก ☐ อื่นๆ _____

เหตุการณ์เบื้องต้น (ระบุเหตุการณ์ที่เกิดขึ้นคร่าวๆ เกิดอะไร ที่ไหน ผลกระทบต่อภายนอก)

วันที่เกิดเหตุ _____ เวลา _____ น.

เหตุการณ์เบื้องต้น _____

ชื่อผู้แจ้ง (ตัวบรรจง) _____ หมายเลขโทรศัพท์ที่ติดต่อกลับได้ _____

ศูนย์สื่อสารและรับแจ้งเหตุ

☐ สมท./EMCC Fax: 0-3304-7041 Fax: 0-3868-3941 โทร: 0-3868-3933 มือถือ: 0-81732-3485 Line ID : adminemcc

☐ สม. Fax: 0-38017-496 โทร: 0-3868-6776

☐ สท. Fax: 0-3868-3176 โทร: 0-3868-7-810 มือถือ: 0-965452-428

☐ สท. Fax: 0-38915-316 โทร: 0-38915-285

สำหรับ: เจ้าหน้าที่ศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC)

ผู้รับแจ้งเหตุ (ตัวบรรจง) : _____ เวลาที่รับแจ้ง _____ น.

การดำเนินการ

☐ แจ้งเจ้าหน้าที่เวร กทม. ☐ รายงาน ผอ. นิคม _____

☐ ขอตรวจสอบพื้นที่เกิดเหตุ _____

☐ แจ้งเตือนโรงงาน/ชุมชน ที่อาจได้รับผลกระทบ _____

☐ แจ้งขอความช่วยเหลือจากหน่วยงานที่เกี่ยวข้อง

☐ ศักดิ์ _____

☐ โรงพยาบาล _____

☐ ตำรวจ _____

☐ อื่นๆ _____

หมายเหตุ : ผอ.สมท. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด
ผอ.สท. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด
ผอ.สม. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด
สำหรับที่กำกับดูแล นิคมอุตสาหกรรมมาบตาพุด (มาบตาพุด)
นิคมอุตสาหกรรมมาบตาพุด, นิคมอุตสาหกรรมมาบตาพุด, นิคมอุตสาหกรรมมาบตาพุด

ฉบับที่ 1/2561 (Rev. 4) 10 Jan 19

15. REFERENCE LIST

The following references were used for this document:

Chevron: Global Manufacturing Loss/Near Loss Classification and Reporting Metrics

Rayong Province Emergency Response Plan

IEAT-IEAT-MTP Port Emergency Response Plan B.E.2558

Chevron Leak Response Protocol June 2015

Oil Spill Response Drills

MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	10 Jan 23 / 14:30-15:30	WF Shift	A	SC Shift/Foreman	Mr. Prakob
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SCENARIO

Spill Location	Berth 2		
Product/Quantity/Area Size	Black oil (FO-5) / 1 M3 / Area 20 m ²		
Wind Direction/Speed	155 deg / 10 knot	Tide	1.7 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Fuel oil spilled by overflow from ship's mast riser while loading at berth no. 2		

EVENTS

Time	Description
14:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.2 due to overflow from ship's mast riser.
14:31	MCB Panel man stop loading and all valves closed.
14:35	Berth operator go to berth no.2 and found black oil spill to ship deck and overflow to sea around 20 m ² at port side of ship.
14:35	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A.
14:15	IC & OSC and ERT setting team for prepare Oil spill equipments
14:50	OSC request SC and ERT team commence deployed boom by tug RS-18 & SC-22
15:00	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
15:10	Recover the oil by using skimmer and apply dispersant after got approve from PCD
15:10	Assign RS-14,RS-27 to spray dispersant.
15:20	Berth operators do survey around all berth and LPG pier for find out another oil slick.
15:30	- Exercised over.
Comments/Rem	

Comments/Remarks:



MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	17 Feb 23 / 13:30-15:30	WF Shift	B	SC Shift/Foreman	Mr. Prakob
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SCENARIO

Spill Location	Berth 3		
Product/Quantity/Area Size	Black oil (FO-5) / 1 M3 / Area 15 m ²		
Wind Direction/Speed	110 deg / 10.7 knot	Tide	1.1 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Fuel oil spilled by overflow from ship's mast riser while loading at berth no. 3		

EVENTS

Time	Description
13:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.3 due to overflow from ship's mast riser.
13:31	MCB Panel man stop loading and all valves closed.
13:36	Berth operator go to berth no.3 and found black oil spill to ship deck and overflow to sea around 20 m ² at port side of ship.
13:37	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A.
13:55	IC & OSC and ERT setting team for prepare Oil spill equipments
14:10	OSC request SC and ERT team commence deployed boom by tug RS-18 & SC-23
14:20	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
14:50	Recover the oil by using skimmer and apply dispersant after got approve from PCD
15:10	Assign RS-14,RS-27 to spray dispersant.
15:20	Berth operators do survey around all berth and LPG pier for find out another oil slick.
15:30	- Exercised over.
Comments/Rem	

Comments/Remarks:



MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	14 Mar 23 / 11:30-13:30	WF Shift	C	SC Shift/Foreman	Mr. Viroj
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SCENARIO

SCENARIO

Spill Location	Tug berth		
Product/Quantity/Area Size	Black oil / 1 M3 / Area 15 m ²		
Wind Direction/Speed	110 deg / 10.7 knot	Tide	1.1 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Heavy raining makes black oil from oily water tug berth overflow because pump failure		

EVENTS

Time	Description
11:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.3 due to overflow from ship's mast riser.
11:31	MCB Panel man stop loading and all valves closed.
11:36	Berth operator go to tug berth and found black oil overflow to bund and overflow to sea around 20 m ² at port side of ship.
11:37	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A.
11:55	IC & OSC and ERT setting team for prepare Oil spill equipments
12:10	OSC request SC and ERT team commence deployed boom by tug RS-26 & SC-23
12:20	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
12:50	Recover the oil by using skimmer and apply dispersant after got approve from PCD
13:10	Assign RS-14,RS-27 to spray dispersant.
13:20	Berth operators do survey around all berth and LPG pier for find out another oil slick.
13:30	- Exercised over.

Comments/Rem

Comments/Remarks:





MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	7 Apr 23 / 09:00-09:30	WF Shift	D	SC Shift/Foreman	Mr. Pisan
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SCENARIO

Spill Location	Berth 4		
Product/Quantity/Area Size	Mogas Oil / 0.5 M3 / Area 10 m ²		
Wind Direction/Speed	115 deg / 10 knot	Tide	1.0 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Mogas oil Base fuel 95 spilled by over flow from ship's mast riser while loading at berth 4.		

EVENTS

Time	Description
09:00	Ship Officer calling to MCB for emergency stop loading Base Fuel 95 at berth no.4 due to overflow from ship's mast riser.
09:01	MCB Panel man stop loading and all valves closed.
09:05	Berth operators go to berth 4 and found Base Fuel 95 overflow to bund and overflow to sea around 0.5 m ² at port side of ship.
09:07	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A.
09:15	IC & OSC and ERT setting team for prepare Oil spill equipments
09:17	OSC request SC and ERT team commence deployed boom by tug RS-26 & SC-23
09:22	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
09:25	Let oil film disperse and apply dispersant after got approve from PCD
09:28	Assign RS-14,RS-27 survey oil film.
09:30	Berth operators do survey around all berth and LPG pier for find out another oil slick.
09:30	Exercised over.
Comments/Rem	



Comments/Remarks:



MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	11 May 23 / 10:30-11:30	WF Shift	A	SC Shift/Foreman	Mr. Pisan
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SCENARIO

Spill Location	Berth 2		
Product/Quantity/Area Size	Black oil (FO-5) / 1 M3 / Area 20 m ²		
Wind Direction/Speed	155 deg / 6 knot	Tide	1.7 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Fuel oil spilled by overflow from ship's mast riser while loading at berth no. 2		

EVENTS

Time	Description
10:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.2 due to overflow from ship's mast riser.
10:31	MCB Panel man stop loading and all valves closed.
10:35	Berth operator go to berth no.2 and found black oil spill to ship deck and overflow to sea around 20 m ² at port side of ship.
10:35	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A.
10:15	IC & OSC and ERT setting team for prepare Oil spill equipments
10:50	OSC request SC and ERT team commence deployed boom by tug RS-18 & SC-22
11:00	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
11:10	Recover the oil by using skimmer and apply dispersant after got approve from PCD
11:10	Assign RS-14,RS-27 to spray dispersant.
11:20	Berth operators do survey around all berth and LPG pier for find out another oil slick.
11:30	- Exercised over.
Comments/Rem	

Comments/Remarks:



MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	11 June 23 / 15:30-16:30	WF Shift	B	SC Shift/Foreman	Mr. Pakorb
-----------	--------------------------	----------	---	------------------	------------

SCENARIO

Spill Location	Berth 3		
Product/Quantity/Area Size	Black oil (FO-5) / 0.5M3 / Area 20 m ²		
Wind Direction/Speed	130 deg / 8 knot	Tide	1.7 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Fuel oil spilled by overflow from ship's mast riser while loading at berth no. 3		

EVENTS

Time	Description
15:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.3 due to overflow from ship's mast riser.
15:31	MCB Panel man stop loading and all valves closed.
15:35	Berth operator go to berth no.3 and found black oil spill to ship deck and overflow to sea around 20 m ² at port side of ship.
15:35	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A.
15:45	IC & OSC and ERT setting team for prepare Oil spill equipments
15:50	OSC request SC and ERT team commence deployed boom by tug RS-18 & SC-23
16:00	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
16:10	Recover the oil by using skimmer and apply dispersant after got approve from PCD
16:10	Assign RS-14,RS-27 to spray dispersant.
16:20	Berth operators do survey around all berth and LPG pier for find out another oil slick.
16:30	- Exercised over.
Comments/Rem	

Comments/Remarks:

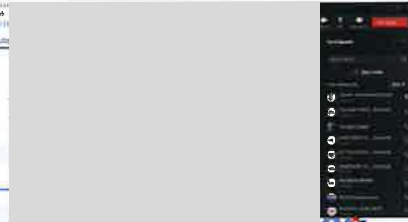


การฝึกซ้อมการโต้ตอบสถานการณ์ฉุกเฉิน

การประชุม EMAG



ประชุม EMAG ครั้งที่ 1
ประจำปี 2566-2567
วันที่ 2 พฤษภาคม 2566



EMAG's Seminar on Mar 10, 2023



Emergency exercise with EMAG on Jul 7, 2023



10:00-11:00 AM

23 มิถุนายน 2566

วัตถุประสงค์ของการฝึกซ้อมคือการทดสอบความพร้อมของแผนฉุกเฉินและทีมตอบสนองต่อเหตุการณ์ในกรณีฉุกเฉิน

การฝึกซ้อมจะดำเนินการขึ้นในวันที่ 7 กรกฎาคม 2566 เวลาประมาณ 10:00-11:00 น. ณ บริเวณโรงกลั่นปิโตรเลียม (Refinery) ของ บริษัท ปตท. จำกัด (มหาชน) ซึ่งทีมผู้เข้าร่วมการฝึกซ้อมประกอบด้วย

ผู้ฝึกซ้อมจะได้รับการแจ้งเตือนล่วงหน้าก่อนการเกิดเหตุการณ์ฉุกเฉิน และจะดำเนินการตามแผนฉุกเฉินที่กำหนดไว้

จึงขอเรียนเชิญท่านเข้าร่วมการฝึกซ้อมในครั้งนี้ด้วย และขอขอบคุณเป็นอย่างสูง

ดร.สมชาย งามวิจิตร

นายสุวิทย์ งามวิจิตร

ผู้ฝึกซ้อมและทีมตอบสนองต่อเหตุการณ์

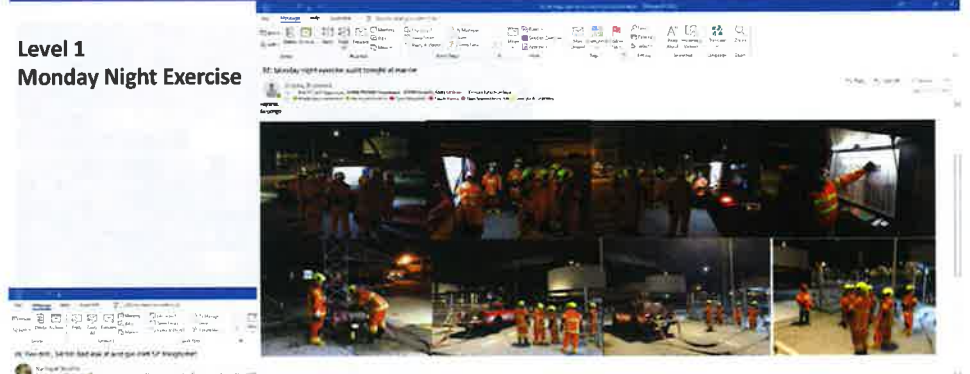


2



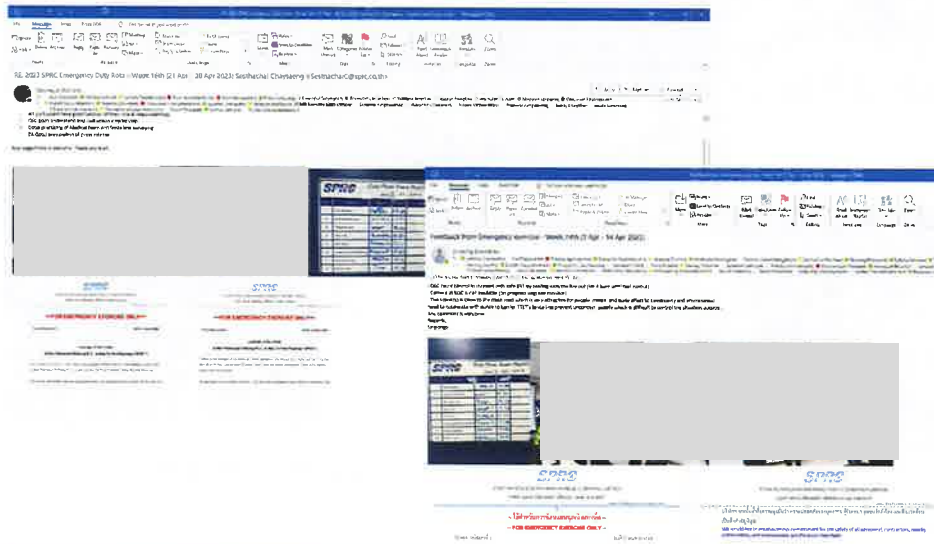
Emergency Exercise 2023

Level 1 Monday Night Exercise

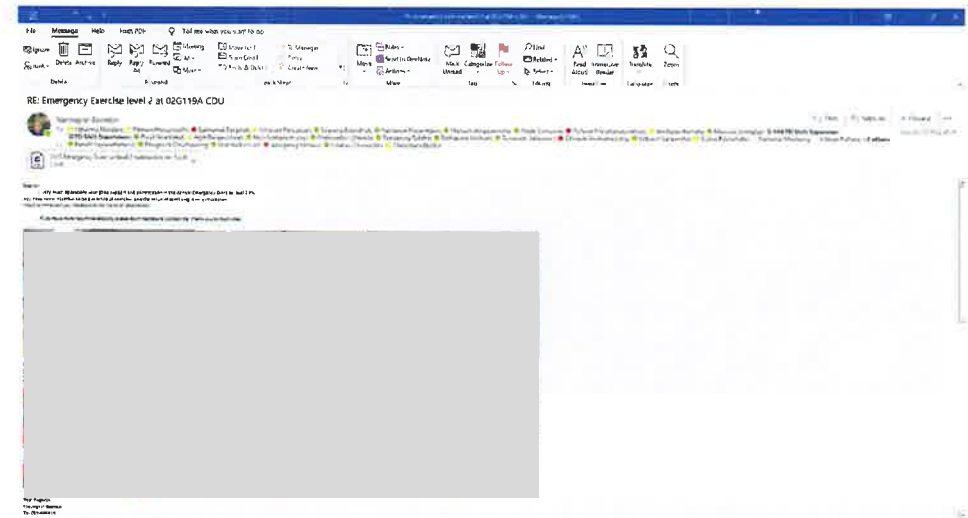


Emergency Exercise 2023

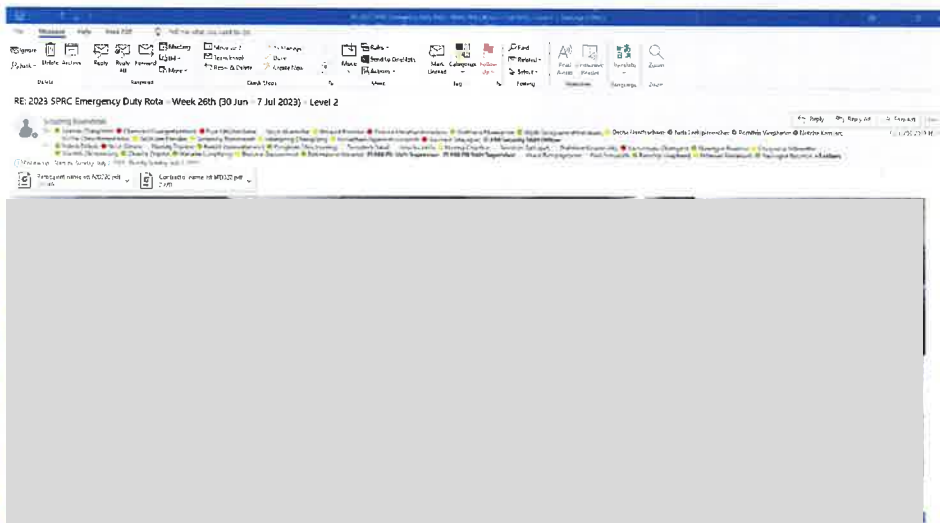
Level 1 Friday Table-Top Exercise



Emergency Exercise Level 2 at CDU 12 May 2023



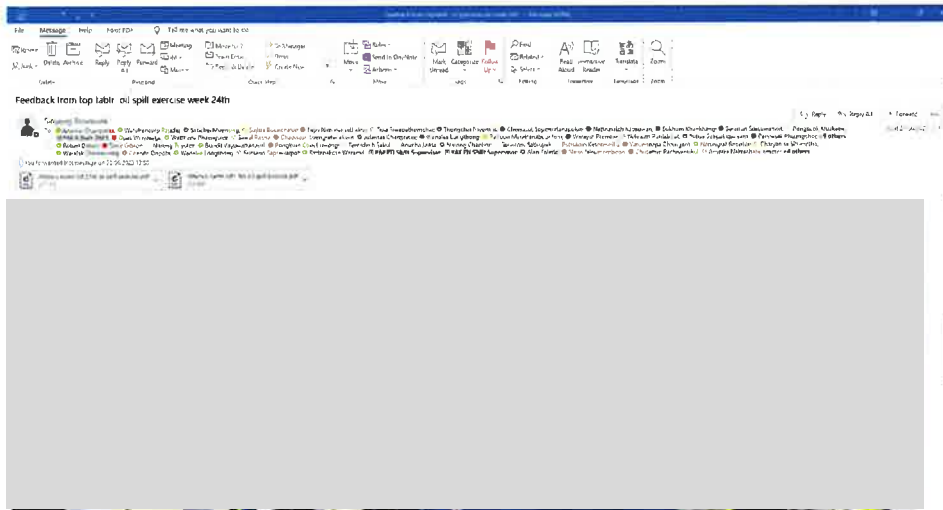
Emergency Exercise Level 2 at 60D320 30 Jun 2023



Building Evacuation Exercise in 2023



Oil Spill Table-Top Exercise in 2023



Emergency Mutual Aid Agency

- PTT Global Chemical branch-6
- Emergency Mutual Aid Group (EMAG)
- Shareholder (Chevron)
- Oil Industry Environmental Safety Group Association (IESG)



SPRC

Oil Spill Exercise in 2022 with IESG Rayong 7-8 Sep.



Rayong Oil Spill Response Exercise (ROSE'22)

วันที่ 7 กันยายน 2565 : การอบรมเพื่อทบทวนความรู้ของปฏิบัติการงานในการจัดการน้ำมัน

Oil Spill Exercise in 2022 with IESG Rayong 7-8 Sep.



FFE inspection 2023

Project : SPRC MONTHLY REPORT

Monthly Inspection
of
Fire Fighting Equipment
JUNE 2023

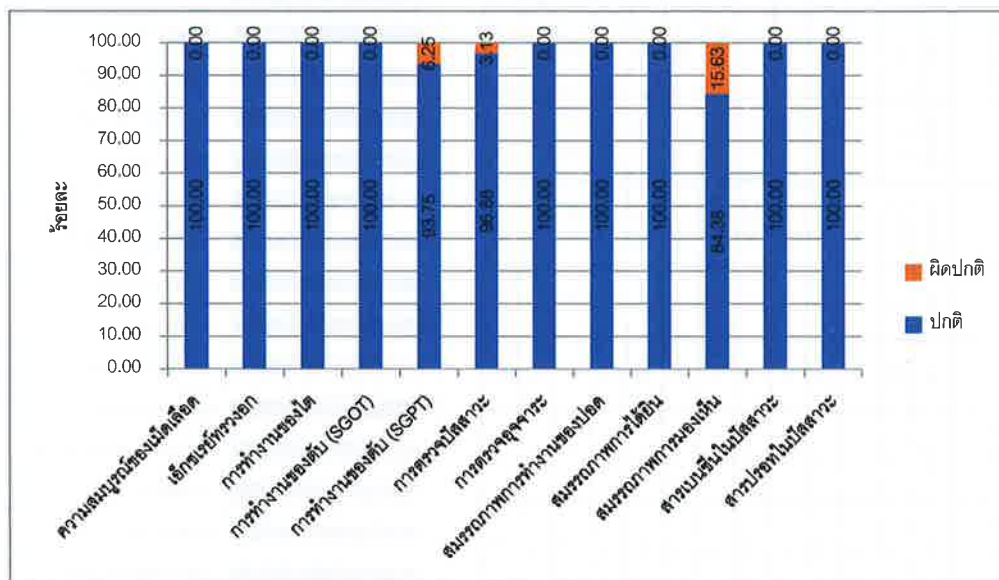


ภาคผนวก ข.23

การตรวจสอบภาพพนักงาน ประจำปี พ.ศ.2565

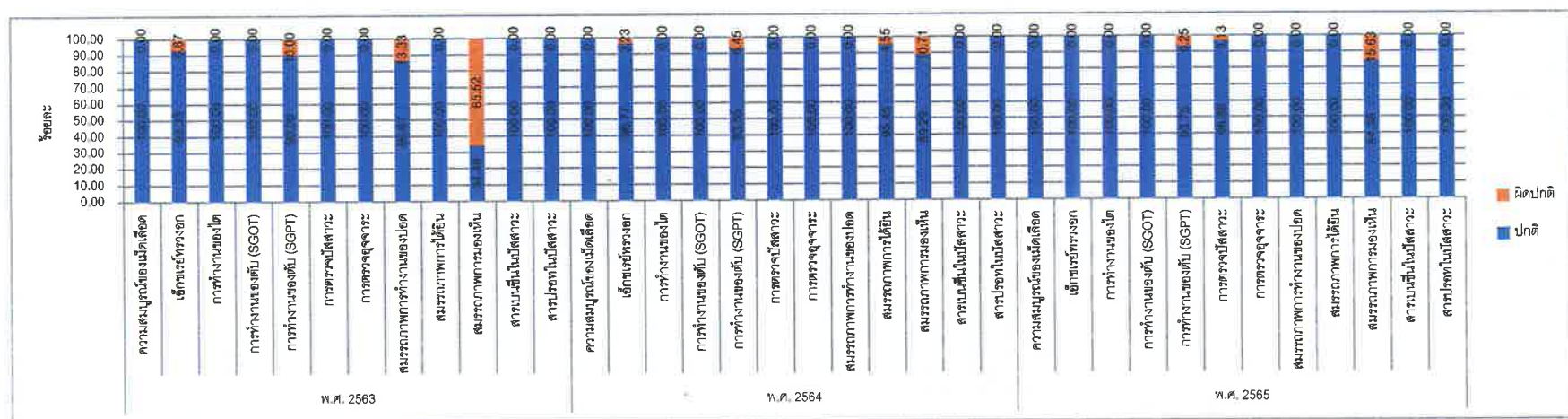
สถิติผลการตรวจสุขภาพพนักงาน ประจำปี พ.ศ. 2565
โครงการทำเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)
โดยโรงพยาบาลอินเตอร์เมดิคัล แคร่ แอนด์ แล็บ จำกัด (มหาชน)

รายการตรวจ	พ.ศ. 2565					
	ผู้เข้ารับ การตรวจ	ไม่เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ
	(คน)	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)
ความสมบูรณ์ของเม็ดเลือด	32	0	32	0	100.00	0.00
เอ็กซเรย์ทรวงอก	32	0	32	0	100.00	0.00
การทำงานของไต	32	0	32	0	100.00	0.00
การทำงานของตับ (SGOT)	32	0	32	0	100.00	0.00
การทำงานของตับ (SGPT)	32	0	30	2	93.75	6.25
การตรวจปัสสาวะ	32	0	31	1	96.88	3.13
การตรวจอุจจาระ	24	8	24	0	100.00	0.00
สมรรถภาพการทำงานของปอด	32	0	32	0	100.00	0.00
สมรรถภาพการได้ยิน	31	0	31	0	100.00	0.00
สมรรถภาพการมองเห็น	32	0	27	5	84.38	15.63
สารเบนซีนในปัสสาวะ	31	0	31	0	100.00	0.00
สารปรอทในปัสสาวะ	31	0	31	0	100.00	0.00



สถิติผลการตรวจสอบสุขภาพพนักงาน ระหว่างปี พ.ศ. 2563-2565
โครงการทำเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

รายการตรวจ	พ.ศ. 2563						พ.ศ. 2564						พ.ศ. 2565					
	ผู้เข้ารับ การตรวจ	ไม่เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ	ผู้เข้ารับ การตรวจ	ไม่เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ	ผู้เข้ารับ การตรวจ	ไม่เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ
	(คน)	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)	(คน)	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)	(คน)	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)
ความสมบูรณ์ของเม็ดเลือด	30	0	30	0	100.00	0.00	31	0	31	0	100.00	0.00	32	0	32	0	100.00	0.00
เอ็กซเรย์ทรวงอก	30	0	28	2	93.33	6.67	31	0	30	1	96.77	3.23	32	0	32	0	100.00	0.00
การทำงานของไต	30	0	30	0	100.00	0.00	31	0	31	0	100.00	0.00	32	0	32	0	100.00	0.00
การทำงานของตับ (SGOT)	30	0	30	0	100.00	0.00	31	0	31	0	100.00	0.00	32	0	32	0	100.00	0.00
การทำงานของตับ (SGPT)	30	0	27	3	90.00	10.00	31	0	29	2	93.55	6.45	32	0	30	2	93.75	6.25
การตรวจปัสสาวะ	30	0	30	0	100.00	0.00	31	0	31	0	100.00	0.00	32	0	31	1	96.88	3.13
การตรวจอุจจาระ	26	4	26	0	100.00	0.00	20	11	20	0	100.00	0.00	24	8	24	0	100.00	0.00
สมรรถภาพการทำงานของปอด	30	0	26	4	86.67	13.33	28	3	28	0	100.00	0.00	32	0	32	0	100.00	0.00
สมรรถภาพการได้ยิน	29	0	29	0	100.00	0.00	22	8	21	1	95.45	4.55	31	0	31	0	100.00	0.00
สมรรถภาพการมองเห็น	29	0	10	19	34.48	65.52	28	3	25	3	89.29	10.71	32	0	27	5	84.38	15.63
สารเบนซีนในปัสสาวะ	29	0	29	0	100.00	0.00	28	2	28	0	100.00	0.00	31	0	31	0	100.00	0.00
สารปรอทในปัสสาวะ	29	0	29	0	100.00	0.00	28	2	28	0	100.00	0.00	31	0	31	0	100.00	0.00



ภาคผนวก ข.24

กิจกรรมส่งเสริมสุขภาพและความปลอดภัย



กิจกรรมส่งเสริมความปลอดภัย

มกราคม – มิถุนายน 2566



"One family ...
fueling the future
of Thailand"

มาตรการป้องกันโควิด-19

- จัดทำกล่องห่วงใย (Caring box) ให้กับพนักงานและครอบครัวพนักงานที่ติดโควิด-19



กิจกรรมรณรงค์ขับขีปลอดภัย Start Safe, Stay Safe

จัดกิจกรรมต้อนรับพนักงานและผู้รับเหมากลับมาทำงานหลังวันหยุดยาว
เพื่อเน้นย้ำเรื่องการขับขีปลอดภัยก่อนเริ่มปฏิบัติงาน



การตรวจวัดคุณภาพอาหารที่โรงอาหารเป็นประจำทุกเดือน



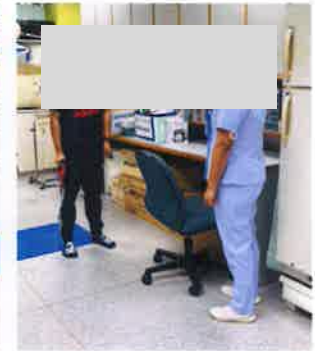
การตรวจคุณภาพน้ำประจําเดือน



SPRC

กิจกรรมส่งเสริมเรื่องสุขภาพ

ทำ Functional Capacity Evaluation เพื่อประเมินสุขภาพทีมดับเพลิง



SPRC

กิจกรรมส่งเสริมเรื่องสุขภาพ

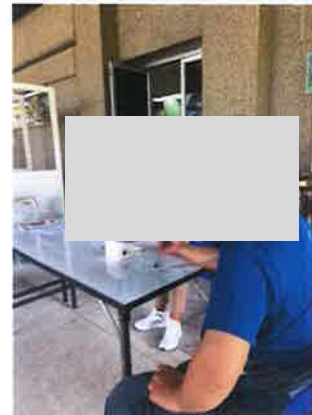
โครงการฉีดวัคซีนป้องกันไข้หวัดใหญ่ให้กับพนักงานและผู้รับเหมา



SPRC

กิจกรรมส่งเสริมเรื่องสุขภาพ

ทำ Fit Test เพื่อประเมินความพร้อมสุขภาพทีมการทำงานในกิจกรรมที่มีความเสี่ยงสูง เช่น
การทำงานในที่อับอากาศ การทำงานที่สูง



SPRC

กิจกรรมส่งเสริมเรื่องสุขภาพ

โครงการ SPRC Get Fit Challenge 2023 เพื่อส่งเสริมให้พนักงานออกกำลังกายและรับประทานอาหารสุขภาพ

ขอเชิญครอบครัว SPRC ร่วมกิจกรรม
SPRC family are invited to join

GET FIT CHALLENGE 2023

เปิดรับสมัคร
วันนี้ - 16 มิ.ย. 2566
Apply period from today until 16 June 2023

CLICK HERE OR SCAN ME



กิจกรรมส่งเสริมเรื่องสุขภาพ

โครงการกินถูกสัดส่วน 2:1:1 ลดพุง ลดโรค (Free Salad bar available at canteen) ฟรีสลัดและผลไม้เพื่อสุขภาพให้พนักงาน

กินถูกสัดส่วน 2:1:1 ลดพุง ลดโรค

เราสนับสนุนให้ทุกท่านกินผักและผลไม้เยอะ ๆ เพื่อสุขภาพ

FREE Salad bar available at canteen

May	10, 24
June	7, 21
July	5, 19
August	9, 23
September	6, 20
October	11, 25
November	8, 22
December	6, 20

หมายเหตุ: ความถี่แบบ 2:1:1 ร่วมกับการออกกำลังกายเพื่อลดพุงลดโรค

Contact for more information:
Khun Phongnarin, HR/111, x7151 | Khun Sirirat, HR/111, x7542



กิจกรรมส่งเสริมเรื่องสุขภาพ

Doctor talk EP.1 STROKE โรคหลอดเลือดสมอง รู้ไว้...ห่างไกล...ชีวิตรวย
คุณหมอให้ความรู้พนักงานเกี่ยวกับโรคหลอดเลือดสมอง สาเหตุ และการป้องกันตนเอง

DOCTOR TALK #1 STROKE โรคหลอดเลือดสมอง รู้ไว้...ห่างไกล...ชีวิตรวย

Virtual Talk via MS Team
20th January 2023
10.00 - 11.30 AM

RERUN WATCH NOW DOCTOR TALK EP#1

โรคหลอดเลือดสมอง รู้ไว้...ห่างไกล...ชีวิตรวย

Scan QR Code for Facebook



กิจกรรมส่งเสริมเรื่องสุขภาพ

Doctor talk EP.2 Healthy Mind Healthy Body คุณหมอให้ความรู้พนักงานในการดูแลสุขภาพกาย สุขภาพใจ เพื่อส่งเสริมให้พนักงานมีสุขภาพกาย สุขภาพใจที่ดี

DOCTOR TALK EP#2 HEALTHY MIND & BODY ดูแลกายใจ...ไร้โรค

Virtual Talk via MS Team
02nd June 2023
10.00 - 11.30 AM

RERUN WATCH NOW DOCTOR TALK EP#2 HEALTHY MIND & BODY ดูแลกายใจ...ไร้โรค

Scan QR Code for Facebook



การเดินตรวจความปลอดภัย (SWP Audit)

SPRC Safe Work Practice Audit (SWP) Dashboard

SWP Audit (SWP) Details Report

Duration : 2023 (Year) - Q1 (Q1/2023)



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SPRC

กิจกรรมส่งเสริมเรื่องสุขภาพ

เพื่อขอบคุณผู้สอน และผู้ตรวจสอบระบบภายในด้านความปลอดภัย

กิจกรรม Tool Box Talk ประจำสัปดาห์



SPRC

มาตรการป้องกันโรคออฟฟิศซินโดรม (RSIP)

มีการจัดกิจกรรม Big Cleaning Day เพื่อส่งเสริมความสะอาดพื้นที่การทำงาน ระหว่าง phase 1-2



SPRC

SPRC

ภาคผนวก ข.25

ขั้นตอนการปฏิบัติในการล้างท่อรับน้ำมันและ SPM
ก่อนการซ่อมบำรุงระบบท่อ



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1.1	Purpose	1
1.2	Notes, Cautions, and Warnings	1
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2.1	Preparation Prior to Tanker completing cargo discharge operations	2
3.	FLUSHING PROCEDURE	3
3.1	For flushing seawater with diving operations	3
3.2	For flushing seawater without diving operations	4



1. Introduction

1.1 Purpose

This procedure provides the necessary information to carry out a seawater flush of the surface and sub sea hose strings using SPM Maintenance boat pumps. Only seawater will remain in the hoses prior to disconnection for maintenance.

1.2 Notes, Cautions, and Warnings

This procedure uses the following symbols to draw the Operator's attention to the steps in the procedure that are particularly important or may lead to safety hazards if done incorrectly.



NOTE: General information useful to understand a particular step in the procedure.



CAUTION: A step that, if done incorrectly, could cause a safety hazard leading to personal injury, equipment or environmental damage, or a delay.



WARNING: A step that, if done incorrectly, could cause a serious safety hazard leading to death, serious personal injury, major equipment damage, fire or a large environmental release.

2. Seawater Flushing Procedure

To ensure there is no oil pollution or environmental impact when the hose string is disconnected for changing hoses and maintenance of hose ancillary equipment.

2.1 Preparation Prior to Tanker completing cargo discharge operations.



CAUTION: A step that, if done incorrectly, could cause a safety hazard leading to personal injury, equipment or environmental damage, or a delay.

2.1.1 For flushing seawater with diving operations.

- 2.1.1.1 The SPM Maintenance Boat deck to be cleared of obstructions.
- 2.1.1.2 Prepare Permit to Work for Hoses flushing operation and diving operation.
- 2.1.1.3 Sufficient VHF handsets to be available for communications between SPM, Dive control and SPM Maintenance Boat

2.1.2 For flushing seawater without diving operations.

- 2.1.2.1 SPM Maintenance Boat deck to be cleared of obstructions.
- 2.1.2.2 Prepare Permit to Work for Hoses flushing operation.
- 2.1.2.3 Sufficient VHF handsets to be available for communications between SPM and SPM Maintenance Boat

3. Flushing Procedure

On completion of Tanker discharging operations and tanker was un-berthing and clear from the SPM

3.1 For flushing seawater with diving operations.

- 3.1.1 The SPM Maintenance Boat anchor and moor to SPM. Deck port string and deck starboard string. End of starboard string on deck, set up for flushing flange.
- 3.1.2 During this time the shore tank which is to receive the oil from the flush should be measured so that an accurate estimate can be made on completion of the seawater used in the flush.
- 3.1.3 Divers to prepare for diving operations i.e. to close PLEM valves.
- 3.1.4 Close port string butterfly valve and open starboard string butterfly valve (at the hose end on SPM Maintenance Boat)
- 3.1.5 Commence pumping Clean Seawater, from the SPM Maintenance Boat FIFI system down the Starboard hose string. SPM Maintenance Boat to pump at 10 bar (10.2 kg). Estimated quantity pumped = 700 m3. **During this time the diver is to open the Pigging valve No.6 and Crossover valve No.4 for 2 minutes and then close both valves.**

Diver to commence closing 24 inch PLEM valve No 7, prior to stopping pumping from SPM Maintenance Boat.



CAUTION: When commencing to close PLEM valve, while still pumping, ensure SPM pressure gauge reading does not increase above 10 bar (10.2 kg).

- 3.1.6 SPM Maintenance Boat to stop pumping to enable divers to fully close PLEM valve No 7.
- 3.1.7 Close Starboard string butterfly valve and Open Port string butterfly valve on deck of the SPM Maintenance Boat.
- 3.1.8 Repeat the procedure for flushing the Port hose string. Pigging line No.3 will be opened for 2 minutes and then closed. **(DO NOT open Cross over valve No.4)** Closing PLEM valve No. 2 on completion. Estimated quantity pumped = 700 m3
- 3.1.9 Divers to confirm that both PLEM valves are closed.



WARNING: Leaving a PLEM valve open could result in a release of oil when the PLEM hose connections are unbolted.



- 3.1.10 Divers to open 10 inch cross over valve No 4, between 24 inch branch lines.
- 3.1.11 Open both butterfly valves for port & starboard hose string (On the deck of SPM Maintenance Boat)
- 3.1.12 Using FiFi system on The SPM Maintenance Boat flush clean seawater down port string and back to the starboard string via PLEM 10" cross over and discharge to Iso tank on deck of SPM Maintenance Boat for checking whether have oil or not. In case no oil contents, Stop pumping.
- 3.1.13 Close both SPM moon pool 24" valves and both SPM deck 24" valves.



NOTE: The following additional flush may be done.

- 3.1.14 Open SPM deck 10" cross over valve. Close port & starboard 24" SPM deck valve.
- 3.1.15 Using FiFi system on SPM Maintenance Boat flush clean seawater down port string and back to Starboard string via deck 10" cross over and discharge to ISO tank.
- 3.1.16 Take sample of returning seawater at ISO tank to ensure there is no oil content.
- 3.1.17 Stop pumping. Reduce the SPM Maintenance Boat and SPM pressure to zero.
- 3.1.18 Close SPM deck 10" cross over.
- 3.1.19 The shore tank which has received the crude during the flushing, can now be measured and the quantity of the flush received into the tank calculated.

3.2 For flushing seawater without diving operations.

- 3.2.1 SPM Maintenance Boat anchor and moor to SPM. Deck port string and deck starboard string. End of port & starboard string on deck, set up for flushing flange.

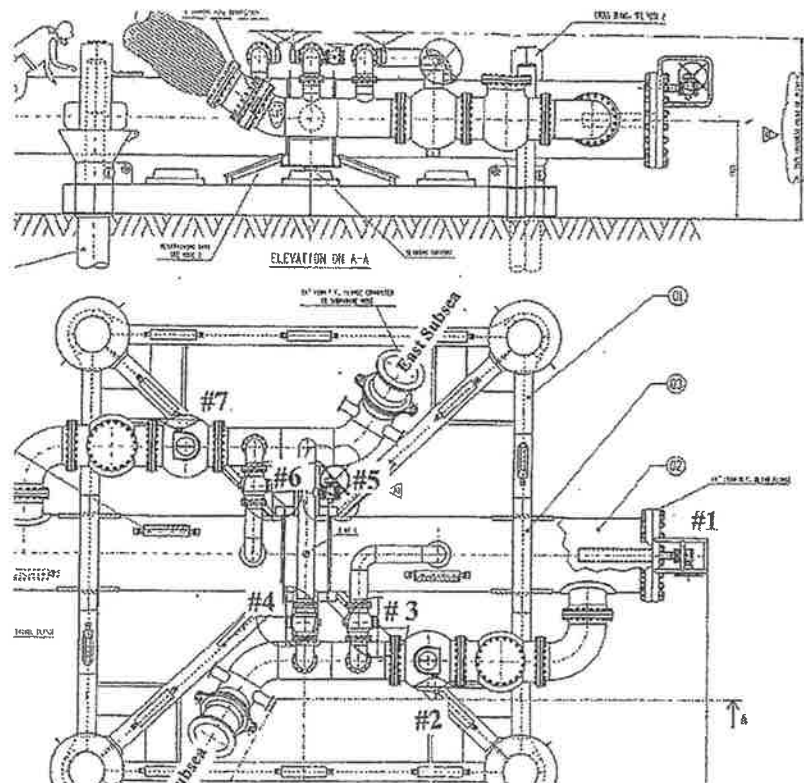


- 3.2.2 The shore tank which is to receive the oil from the flush should be measured so that an accurate estimate can be made on completion of the seawater used in the flush.
- 3.2.3 Close port string butterfly valve and open starboard string butterfly valve (at the hose end on SPM Maintenance Boat)
- 3.2.4 Commence pumping Clean Seawater, from the SPM Maintenance Boat FiFi system, down the Starboard hose string. SPM Maintenance Boat to pump at 10 bar. Estimated quantity pumped = 700 m3.
- 3.2.5 Take sample of the seawater on SPM (for starboard string)to confirm that no oil contents before stop pumping. Stop pumping.
- 3.2.6 Close starboard string butterfly valve and open port string butterfly valve.
- 3.2.7 Pumping clean seawater from the SPM Maintenance Boat FiFi system down the port string. SPM Maintenance Boat to pump at 10 bar (10.2 kg). Estimate quantity pumped = 700 m3.
- 3.2.8 Take sample of the water on SPM (for port string)to confirm that no oil contents before stop pumping. Stop pumping.



NOTE: The following additional flush may be done.

- 3.2.9 Open SPM deck 10" crossover valve. Close port & starboard 24" SPM deck valve.
- 3.2.10 Using FiFi system on SPM Maintenance Boat flush clean seawater down port string and back to starboard string via deck 10" cross over and discharge to Iso tank.
- 3.2.11 Take sample of returning water at Iso tank to ensure there is no oil content.
- 3.2.12 Stop pumping. Reduce SPM Maintenance Boat & SPM pressure to zero.
- 3.2.13 Close SPM deck 10" cross over.
- 3.2.14 The shore tank which has received the crude during the flushing, can now be ullaged and the quantity of the flush received into the tank calculated.



ภาคผนวก ข.26

การตรวจสอบอุปกรณ์การสูบน้ำมันก่อนเรือขนส่งน้ำมันเข้าเทียบท่า

Movement/Dispatches		
<div style="display: flex; align-items: center;"> Plant 66 Pre Berth Checklist </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>Prepared by: Sawai Paena</div> <div>Number: HC-FO-PD-6022</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div>Approved by: Opas Waiyasatja</div> <div>Revision: 4.1</div> </div>		
Low	Medium	High

Pre-Berth Checklist

Vessel Name	Chulipa 5
Date	17-07-2023
Berth	4

Who	Step	Action	Check
Detailed Activities			
OP	1.	Verify Fire and Foam pumps are available and ready for service. <ul style="list-style-type: none"> 66G701 Electrical Fire Pump 66G702 Diesel Engine Fire Pump 66G704 Foam Pump 67G117 Jockey pump 	<input checked="" type="checkbox"/>
OP	2.	Verify Fire equipment's are available and ready for immediately use. <ul style="list-style-type: none"> Fire monitors are correctly set up Dry powder cart 150 lb International shore fire connection (Bolt, nut, gasget and corrosive check) 	<input checked="" type="checkbox"/>
OP	3.	Verify safety equipments are available and ready for use. <ul style="list-style-type: none"> SCBA Life buoy Fixed Gas detectors. (Product pier Sub. and LPG pier) 	<input checked="" type="checkbox"/>
OP	4.	Verify shore access gangway in stowed position and no damage.	<input checked="" type="checkbox"/>
OP	5.	Verify berth fenders no damage for safe mooring.	<input checked="" type="checkbox"/>
OP	6.	Verify Loading arm and hydraulic system are ready for use. <ul style="list-style-type: none"> Hydraulic oil level/Pump/Pressure/Leak Perform the loading arm function test, check Couplers and O-ring. (For Import/Export shipment) 	<input checked="" type="checkbox"/>

SPRC		Plant 66 Pre Berth Checklist	Low
Who	Step	Action	Check
OP	7.	Verify loading arm is emptied before connection.	<input checked="" type="checkbox"/>
OP	8.	Verify all vent and drain valves in metering skid are closed.	<input checked="" type="checkbox"/>
OP	9.	Verify injector systems are correctly line up and ready for use. <ul style="list-style-type: none"> Orange dye ✓ (Base 95) Green dye Lubricity Marker 	<input checked="" type="checkbox"/>
		NOTE Ensure loading arm drain point and branch line which on service for LSWR/Crude high pour-point are properly flush/drain after discharge completed that to prevent line plug.	
LM	10.	Verify ship vetting status in the Coaster suitability list.	<input checked="" type="checkbox"/>
		CAUTION FOR: New Vessel or First shipment in SPRC Marine terminal	
LM	11.	Verify all ship documents as required for new vessel are available. <ul style="list-style-type: none"> Ship particular Approved of ship's tank table calibration for old ship Pre-approval of ship's tank calibration for new ship (หนังสือขอทำการสอบเทียบปริมาณความจุของถังเรือ) ใบรับแจ้งเป็นผู้ขนส่งน้ำมันเชื้อเพลิง ตามมาตรา 12 ทวิ ใบอนุญาตใช้เรือของกรมเจ้าท่า (ทะเบียนเรือ) 	N/A <input type="checkbox"/>
		Check By: <i>Vincent</i>	
END OF TASK			

Movement/Dispatches		
Plant 66 Pre Berth Checklist		
Prepared by: Sawai Paena	Number: HC-FO-PD-6022	
Approved by: Opas Waiyasatja	Revision: 4.1	
Low	Medium	High

Pre-Berth Checklist

Vessel Name	Ching Sea - 105
Date	14-09-23
Berth	2

Who	Step	Action	Check
Detailed Activities			
OP	1.	Verify Fire and Foam pumps are available and ready for service. <ul style="list-style-type: none"> 66G701 Electrical Fire Pump 66G702 Diesel Engine Fire Pump 66G704 Foam Pump 67G117 Jockey pump 	<input checked="" type="checkbox"/>
OP	2.	Verify Fire equipment's are available and ready for immediately use. <ul style="list-style-type: none"> Fire monitors are correctly set up Dry powder cart 150 lb International shore fire connection (Bolt, nut, gasget and corrosive check) 	<input checked="" type="checkbox"/>
OP	3.	Verify safety equipments are available and ready for use. <ul style="list-style-type: none"> SCBA Life buoy Fixed Gas detectors. (Product pier Sub. and LPG pier) 	<input checked="" type="checkbox"/>
OP	4.	Verify shore access gangway in stowed position and no damage.	<input checked="" type="checkbox"/>
OP	5.	Verify berth fenders no damage for safe mooring.	<input checked="" type="checkbox"/>
OP	6.	Verify Loading arm and hydraulic system are ready for use. <ul style="list-style-type: none"> Hydraulic oil level/Pump/Pressure/Leak Perform the loading arm function test, check Couplers and O-ring. (For Import/Export shipment) 	<input checked="" type="checkbox"/>

Revision No.: 4.1

Date: 20 August 2018

This is a controlled document and must be used within 7 days of printing 14 July, 2023

HC-FO-PD-6022

Page 1 of 2

Plant 66 Pre Berth Checklist			Low
Who	Step	Action	Check
OP	7.	Verify loading arm is emptied before connection.	<input checked="" type="checkbox"/>
OP	8.	Verify all vent and drain valves in metering skid are closed.	<input checked="" type="checkbox"/>
OP	9.	Verify injector systems are correctly line up and ready for use. <ul style="list-style-type: none"> Orange dye Green dye Lubricity Marker 	<input checked="" type="checkbox"/>
		NOTE Ensure loading arm drain point and branch line which on service for LSWR/Crude high pour-point are properly flush/drain after discharge completed that to prevent line plug.	
LM	10.	Verify ship vetting status in the Coaster suitability list.	<input checked="" type="checkbox"/>
		CAUTION FOR: New Vessel or First shipment in SPRC Marine terminal	
LM	11.	Verify all ship documents as required for new vessel are available. <ul style="list-style-type: none"> Ship particular Approved of ship's tank table calibration for old ship Pre-approval of ship's tank calibration for new ship (หนังสือขอทำการสอบเทียบปริมาณความจุของถังเรือ) ใบรับแจ้งเป็นผู้ขนส่งน้ำมันเชื้อเพลิง ตามมาตรา 12 ทวิ ใบอนุญาตใช้เรือของกรมเจ้าท่า (ทะเบียนเรือ) 	<input type="checkbox"/>
		Check By: [Signature]	
END OF TASK			

Revision No.: 4.1

Date: 20 August 2018

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HC-FO-PD-6022

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ภาคผนวก ข.27

คู่มือการขนถ่ายน้ำมันดิบ


Movement/Dispatches		
 Plant 60 Crude Oil Import via SPM		
Prepared by: Sarayut Jantima	Number: HC-WI-PD-5391	
Approved by: Nub Tunyasith	Revision: 5.1	
Low	Medium	High

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Purpose

The purpose of this procedure is to be taken for safely crude unloading step and crude tank switching from SPM to SPRC.

System Information

Summary

This procedure is explain and instruction covers the operational steps for receiving crude oil import from SPM (Single Point Mooring) which can route to any of the 7 crude oil tanks of SPRC and also can route to PTTGC.

Roles and Responsibility

Deviation from the procedure must be stopped and informed a line supervisor or line manager, concerned people for a solution prior to executing this procedure.

1. DCS Operator

- Verify crude discharge plan
- Compare the unloading outturn figure with ship and discharge plan
- Prepare document for custom
- Verify tank receiving volume hourly with DCS Marine

2. Operator

- Verify cargo surveyor seal valves and tanks
- Line up to nominated crude unloading tanks
- Check leak during tank unloading
- Prepare crude water drain off for no water present
- Sample crude for lab analysis lab test report

Precautions



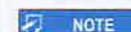
Crude oil contain the high H₂S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organic respirator, mercury vapor cartridge and H₂S monitor must require when working.



The last crude import tank shall leave crude import MOVs valve opened position to prevent crude import lines the thermal expansion.



Crude tank 60D103 - 60D107 allow to receive high pour point crude and demulsifier chemical injection.







Effective demulsifier chemical reaction with free water in crude requires temperature 38 - 40 degree C, then crude heat up shall operate crude oil and circulate via heater until get the temperature 38 - 40 degree C.

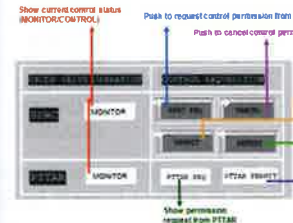
Prerequisites

1. Crude tank always de water every shift
2. Create sample for LTR in the Star Lim system as method following;
 - ASTM D4007 - 81: Water & Sediment in Crude Oil by Centrifuge
 - ASTM D5002 - 13: Density at 15 degree C.



Detailed Activities


Who	Step	Action		Check
1. Tank Preparation				
OP DCS	1.1	Verify the crude discharge plan for; <ul style="list-style-type: none">◦ Crude tanker estimate time arrival (ETA)◦ Nominated tank and lifting volume◦ Crude type◦ Cargo surveyor◦ Tanker sample as per crude schedule requirement◦ Special guide line for crude sample◦ Special guide line for chemical injection		<input type="checkbox"/>
DCS	1.2	Verify reconstituted crude must be switched out to next nominated crude tank at least 24 Hrs.		<input type="checkbox"/>
 WARNING		Crude oil contain the high H ₂ S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organinc respirator, mercury vapor cartridge and H ₂ S monitor must require when working.		
OP	1.3	Notify helper operator to de water nominated crude tank until no water present.		<input type="checkbox"/>
DCS	1.4	IF	THEN	<input type="checkbox"/>
		Nominated crude tank can not completely de water before crude unloading 30 minutes.	Notify shift supervisor to consult with crude scheduler for LT approval, do not proceed to the next step until LT approved.	
 NOTE		Crude tank mixers must stop before tank open gauge at least 2 hrs.		
	1.5	Notify to cargo surveyor witness for;		
OP	1.5.1	Verify nominated crude tank no water represent.		<input type="checkbox"/>
OP	1.5.2	Seal all valves as nominated crude tank in discharge plan.		<input type="checkbox"/>
OP	1.5.3	Collect crude oil sampling.		<input type="checkbox"/>
END OF TASK				



Who	Step	Action	Check												
2. Sample analysis															
<div><div> CAUTION</div><div>Crude oil contain the high H₂S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organinic respirator, mercury vapor cartridge and H₂S monitor must require when working.</div></div>															
<div><div>Crude tank require to sample for mass balance as sampling point level available.</div><table><tr><th>Sample point</th><th>Level (mm)</th><th>Amount (bottles)</th></tr><tr><td>Bottom</td><td>1,500 - 6,000</td><td>2</td></tr><tr><td>Middle</td><td>6,001 - 11,000</td><td>2</td></tr><tr><td>Top</td><td>Above 11,000</td><td>2</td></tr></table></div>				Sample point	Level (mm)	Amount (bottles)	Bottom	1,500 - 6,000	2	Middle	6,001 - 11,000	2	Top	Above 11,000	2
Sample point	Level (mm)	Amount (bottles)													
Bottom	1,500 - 6,000	2													
Middle	6,001 - 11,000	2													
Top	Above 11,000	2													
OP	2.1	Collect nominated crude tank sample to lab for analysis.	<input type="checkbox"/>												
<div><div> CAUTION</div><div>Crude sample which contain H₂S greater than 600 ppm shall not be admitted into the SPRC laboratory.</div></div>															
SS	2.2	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Crude sample get H₂S result greater than 600 ppm.</td><td>Consult with PD shift supervisor to delivery crude sample to Nalco laboratory.</td></tr></table>	IF	THEN	Crude sample get H ₂ S result greater than 600 ppm.	Consult with PD shift supervisor to delivery crude sample to Nalco laboratory.	<input type="checkbox"/>								
IF	THEN														
Crude sample get H ₂ S result greater than 600 ppm.	Consult with PD shift supervisor to delivery crude sample to Nalco laboratory.														
END OF TASK															


Who	Step	Action	Check																
3. Crude header preparation																			
3.1 SPRC/PTTGC line up																			
 <p>There is interlock defeat switch 01KSA013 to bypass the logic, normally it has to be in OFF position. The interlock defeat switch is only available for the site SPRC/PTTGC, which is currently holding the operation permission.</p> <table border="1"> <thead> <tr> <th>open</th><th>MOV fault</th><th>Defeat switch (01KSA013)</th><th>keep close</th></tr> </thead> <tbody> <tr> <td>96HV001/002</td><td>96YA001/2 no</td><td>off</td><td>66HV001/002</td></tr> <tr> <td>96HV003/004</td><td>96YA003/4 no</td><td>off</td><td>96HV001/002</td></tr> <tr> <td>66HV001/002</td><td>66YA001/2 no</td><td>off</td><td>96HV001/002</td></tr> </tbody> </table> <p>Incase 96HV001 and 96HV002 left open, the command to open 66HV001/66HV002 and 96HV003/96HV004 was not allowed.</p> <p>If 96YA001 and 96YA002 show faults, the interlock will keep the last action until 96YA001 and 96YA002 back to normal.</p> <p>Refer to HC-WI-TE-4525 Crude valve interlocking system</p>				open	MOV fault	Defeat switch (01KSA013)	keep close	96HV001/002	96YA001/2 no	off	66HV001/002	96HV003/004	96YA003/4 no	off	96HV001/002	66HV001/002	66YA001/2 no	off	96HV001/002
open	MOV fault	Defeat switch (01KSA013)	keep close																
96HV001/002	96YA001/2 no	off	66HV001/002																
96HV003/004	96YA003/4 no	off	96HV001/002																
66HV001/002	66YA001/2 no	off	96HV001/002																
DCS	3.1.1	Verify all valves in close position as following; <ul style="list-style-type: none"> 96HV003 96HV004 66HV001 66HV002 	<input type="checkbox"/>																
DCS	3.1.2	Verify DCS Marine open valves as following; <ul style="list-style-type: none"> 96HV001 96HV002 	<input type="checkbox"/>																


Who	Step	Action	Check
3.2 PD tank farm line up			
OP	3.2.1	Verify all valves in close position as following; <ul style="list-style-type: none"> 61BV003 61BV004 	<input type="checkbox"/>
OP	3.2.2	Verify all valves in open position as following; <ul style="list-style-type: none"> 61BV002 61HV060 	<input type="checkbox"/>
END OF TASK			


Who	Step	Action	Check
4. Crude tank line up and switching			
 NOTE Crude tank 60D103 - 60D107 allow to receive high pour point crude and demulsifier chemical injection.			
4.1 60D101 Line Up			
DCS	4.1.1	Close all valves as following; <ul style="list-style-type: none"> 60HV001 60HV050 	<input type="checkbox"/>
DCS	4.1.2	Print Saab level 60D101 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.1.3	Open valve 60HV002 for crude unloading.	<input type="checkbox"/>
DCS	4.1.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV004 60HV017 60HV019 60HV033 60HV035 60HV880 	<input type="checkbox"/>



Who	Step	Action	Check
OP	4.1.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV004 60HV017 60HV019 60HV033 60HV035 60HV880 60HV001 60HV050 	<input type="checkbox"/>
4.2 60D102 Line Up			
DCS	4.2.1	Close all valves as following; <ul style="list-style-type: none"> 60HV003 60HV053 	<input type="checkbox"/>
DCS	4.2.2	Print Saab level 60D102 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.2.3	Open valve 60HV004 for crude unloading	<input type="checkbox"/>
DCS	4.2.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV017 60HV019 60HV033 60HV035 60HV880 	<input type="checkbox"/>
OP	4.2.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV017 60HV019 60HV033 60HV035 60HV880 60HV003 60HV053 	<input type="checkbox"/>

Who	Step	Action	Check
4.3 60D103 Line Up			
DCS	4.3.1	Close all valves as following; <ul style="list-style-type: none"> 60HV016 60HV020 60HV058 	<input type="checkbox"/>
DCS	4.3.2	Print Saab level 60D103 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.3.3	Open valve 60HV017 for crude unloading	<input type="checkbox"/>
DCS	4.3.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV019 60HV033 60HV035 60HV880 	<input type="checkbox"/>
OP	4.3.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV019 60HV033 60HV035 60HV880 60HV016 60HV020 60HV058 	<input type="checkbox"/>
4.4 60D104 Line Up			
DCS	4.4.1	Close all valves as following; <ul style="list-style-type: none"> 60HV018 60HV021 60HV061 	<input type="checkbox"/>
DCS	4.4.2	Print Saab level 60D104 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			


Who	Step	Action	Check
DCS	4.4.3	Open valve 60HV019 for crude unloading	<input type="checkbox"/>
DCS	4.4.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV033 60HV035 60HV880 	<input type="checkbox"/>
OP	4.4.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV033 60HV035 60HV880 60HV018 60HV021 60HV061 	<input type="checkbox"/>
4.5 60D105 Line Up			
DCS	4.5.1	Close all valves as following; <ul style="list-style-type: none"> 60HV036 60HV032 60HV066 	<input type="checkbox"/>
DCS	4.5.2	Print Saab level 60D105 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.5.3	Open valve 60HV033 for crude unloading	<input type="checkbox"/>
DCS	4.5.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV035 60HV880 	<input type="checkbox"/>

Who	Step	Action	Check
OP	4.5.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV035 60HV880 60HV036 60HV032 60HV066 	<input type="checkbox"/>
4.6 60D106 Line Up			
DCS	4.6.1	Close all valves as following; <ul style="list-style-type: none"> 60HV034 60HV037 60HV068 	<input type="checkbox"/>
DCS	4.6.2	Print Saab level 60D106 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.6.3	Open valve 60HV035 for crude unloading	<input type="checkbox"/>
DCS	4.6.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV880 	<input type="checkbox"/>
OP	4.6.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV880 60HV034 60HV037 60HV068 	<input type="checkbox"/>


Who	Step	Action	Check
4.7 60D107 Line Up			
DCS	4.7.1	Close all valves as following; <ul style="list-style-type: none"> 60HV860 60HV881 60HV883 	<input type="checkbox"/>
DCS	4.7.2	Print Saab level 60D107 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.7.3	Open valve 60HV880 for crude unloading	<input type="checkbox"/>
DCS	4.7.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV035 	<input type="checkbox"/>
OP	4.7.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV035 60HV860 60HV881 60HV883 	<input type="checkbox"/>
END OF TASK			

Who	Step	Action	Check
5. Receive SPM line flushing setting by program			
 NOTE Crude oil line content from SPM to storage tank is 23,130 m ³ .			
 NOTE Require reduce flow rate 4,000m ³ /hr if remain left 5,000 m ³ by base on 96HV001, 96HV002 and 96HV003 closing time 420second (7 mins) then will be set to stand by and stop to minimize short/over within 1,000 BBL.			

Who	Step	Action	Check
<p>The SPM flush line step program that have alarm blink and buzzer then to action;</p> <p>NOTE</p> <ol style="list-style-type: none"> 1. Call SPM to stand by 30 mins and reduce rate to 4,000 m³/hr then If remain left 2,250 m³ 2. Call SPM to stand by 15 mins If remain left 1,250 m³ 3. Call SPM to stand by 5 mins If remain left 600 m³ 4. Call SPM to stop discharge and close 96HV001, 96HV002, 96HV003 If remain left 200 m³ 			
DCS	5.1	Put the nominated crude tank number in "SPM FLUSH LINE " program step "1. Tank"	<input type="checkbox"/>
DCS	5.2	Select step "2. SPMFLUSH.SW" to "ON" mode.	<input type="checkbox"/>
DCS	5.3	Notify DCS Marine ready to SPM line flushing.	<input type="checkbox"/>
DCS	5.4	Go to step 9. Stop crude unloading setting by DCS.	<input type="checkbox"/>
END OF TASK			



Who	Step	Action	Check				
6. Unloading activities							
DCS	6.1	Notify DCS Marine before crude discharge 1 hour	<input type="checkbox"/>				
<div> NOTE</div> <p>Some high pour point crude type get difficultly to separate free water from normal crude drain off, demulsifier chemical uses to improve crude de watering. Crude tank 60D103 - 60D107 allow to receive high pour point crude and demulsifier chemical injection.</p>							
DCS	6.2	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>The nominated tank receive that require to inject the Demulsifier as referred DOG1 and DOG 2,</td><td>Notify DCS Marine to prepare Demulsifier injection is ratio10 ppm.</td></tr></table>	IF	THEN	The nominated tank receive that require to inject the Demulsifier as referred DOG1 and DOG 2,	Notify DCS Marine to prepare Demulsifier injection is ratio10 ppm.	<input type="checkbox"/>
IF	THEN						
The nominated tank receive that require to inject the Demulsifier as referred DOG1 and DOG 2,	Notify DCS Marine to prepare Demulsifier injection is ratio10 ppm.						
DCS	6.3	Compare the loading outturn figure hourly during discharge with ship and the crude tank receiving to DCS Marine.	<input type="checkbox"/>				
DCS	6.4	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Any significant of discrepancies loading outturn figure have to investigate,</td><td>Stop unloading and report to shift supervisor,</td></tr></table>	IF	THEN	Any significant of discrepancies loading outturn figure have to investigate,	Stop unloading and report to shift supervisor,	<input type="checkbox"/>
IF	THEN						
Any significant of discrepancies loading outturn figure have to investigate,	Stop unloading and report to shift supervisor,						


Who	Step	Action		Check
DCS	6.5	Notify DCS Marine and tank farm operator to commence discharge crude at initial flow rate 4,000 m ³ /hr for 30 minutes.		<input type="checkbox"/>
OP	6.6	Verify no leak and seeping from tank.		<input type="checkbox"/>
OP	6.7	Notify the conditions to DCS Tank Farm.		<input type="checkbox"/>
DCS	6.8	IF	THEN	<input type="checkbox"/>
		Demulsifier injecting,	Verify DCS Marine that Demulsifier injecting is ratio 10 ppm.	
DCS	6.9	Verify the crude correct in sequence order receiving tank.		<input type="checkbox"/>
DCS	6.10	Notify DCS Marine and tank farm operator to increase flow rate to 9,000 m ³ /hr		<input type="checkbox"/>
END OF TASK				



Who		Step	Action	Check
7. Crude Oil filling/mixing				
<p>The setting of auto stop mixer logic is designed to stop mixers when the level become low in the order to prevent build up of static electricity in tank.</p>				
<div> NOTE</div> <p>The interlock inhibit operator to restart the crude mixers while condition is still lower than setting limit level is at 3,473 mm.</p> <p><u>Refer to HC-WI-TF-4560 Auto stop mixer logic</u></p>				
DCS	7.1	IF	THEN	<input type="checkbox"/>
		The crude tank unloading level reach to 3,473 mm,	Start crude tank mixers.	
END OF TASK				

Who	Step	Action		Check
8. SPRC crude tank switching				
DCS	8.1	IF	THEN	<input type="checkbox"/>
		Crude unloading is the end of step discharge plan.	Go to 9. Stop crude unloading setting by DCS	

Who	Step	Action		Check
DCS	8.2	IF	THEN	<input type="checkbox"/>
		Crude unloading plan switch to the next tank.	Go to the next step 8.3.	
DCS	8.3	Notify DCS Marine to stand by crude tank switching 30 minutes.		<input type="checkbox"/>
DCS	8.4	Notify DCS Marine to stand by 15 minutes and reduce flow rate to 4,000 m³/hr.		<input type="checkbox"/>
DCS	8.5	Verify ship reduce flow rate to 4,000 m³/hr by monitor flow 96FI001.		<input type="checkbox"/>
DCS	8.6	WHEN	THEN	<input type="checkbox"/>
		Flow 96FI001 reading below 4,000 m³/hr	Switch crude unloading to others tank can be go to the step 7.7.	
DCS	8.7	Switch and Line Up through; Step 4.1 60D101 Line Up, or Step 4.2 60D102 Line Up, or Step 4.3 60D103 Line Up, or Step 4.4 60D104 Line Up, or Step 4.5 60D105 Line Up, or Step 4.6 60D106 Line Up, or Step 4.7 60D107 Line Up		<input type="checkbox"/>
DCS	8.8	WHEN	THEN	<input type="checkbox"/>
		Crude tank switching tank complete.	Go to Step 6.6.	
END OF TASK				

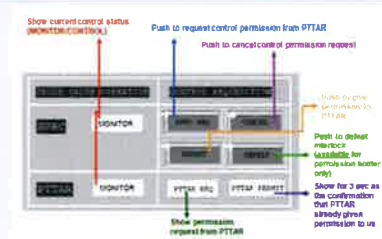
Who	Step	Action		Check
9. Stop crude unloading setting by DCS				
 NOTE		Crude oil line content from SPM to storage tank is 23,130 m ³ .		
 NOTE		DCS Tank Farm will notify to DCS Marine 30 minutes for decrease the crude unloading flow rate to minimum at 4,000 m ³ /hr before crude discharge completed.		
DCS	9.1	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 2,250 m ³ .	Notify DCS Marine stand by 30 minutes and reduce flow rate to 4,000 m ³ /hr.	

Who	Step	Action		Check
DCS	9.2	IF	THEN	<input type="checkbox"/>
		Demulsifier injecting,	Notify DCS Marine to stop Demulsifier injection.	
DCS	9.3	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 1,250 m ³ .	Notify DCS Marine stand by 15 minutes.	
DCS	9.4	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 600 m ³ .	Notify DCS Marine stand by 5 minutes.	
DCS	9.5	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 200 m ³ .	Notify DCS Marine stop crude unloading.	
DCS	9.6	Verify DCS Marine stop crude unloading and monitor; <ul style="list-style-type: none">• 96FI001 crude unloading flow rate reading below 0 m³/hr or• 96PI001 crude unloading pressure indicator reading below 0 kg/cm²		<input type="checkbox"/>
 CAUTION		The last crude import tank shall leave crude import MOVs valve opened position to prevent crude import lines the thermal expansion.		
DCS	9.7	IF	THEN	<input type="checkbox"/>
		The crude unloading plan switch to PTTGC.	Go to 11.Crude switch SPRC to PTTGC	
END OF TASK				

Who	Step	Action		Check
10. Tank close gauge				
 NOTE		To support mass balance figure for whole tank temperature average then crude tank mixers shall continues mixing after crude tank finished unloading.		
OP DCS	10.1	Continue mixing at least 6 hrs after finished crude unloading.		<input type="checkbox"/>
DCS	10.2	WHEN	THEN	<input type="checkbox"/>
		Crude tank mixers mixing at least 6 hrs,	Print Saab level the nominated crude tank close gauging.	
 CAUTION		Crude oil contain the high H ₂ S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organic respirator, mercury vapor cartridge and H ₂ S monitor must require when working.		

Who	Step	Action	Check
OP	10.3	Notify helper operator to de water nominated crude tank.	<input type="checkbox"/>
OP	10.4	Verify nominated crude tank no water represent.	<input type="checkbox"/>
OP	10.5	Verify no leak and seeping from tank.	<input type="checkbox"/>
OP	10.6	Verify condition to DCS Tank Farm.	<input type="checkbox"/>
END OF TASK			

Who	Step	Action	Check
11. Crude switch SPRC to PTTGC			
DCS	11.1	Notify PTTGC when SPRC crude discharge completed	<input type="checkbox"/>
DCS	11.2	Verify DCS Marine stop crude unloading to SPRC.	<input type="checkbox"/>
DCS	11.3	Switch crude unloading from SPRC to PTTGC.	<input type="checkbox"/>

Who	Step	Action	Check																				
 <p>There is interlock defeat switch 01KSA013 to bypass the logic, normally it has to be in OFF position. The interlock defeat switch is only available for the site SPRC/PTTGC, which is currently holding the operation permission.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>CAUTION</p> <table border="1"> <thead> <tr> <th colspan="4">NEW</th> </tr> <tr> <th>open</th> <th>MOV fault</th> <th>Defeat switch (01KSA013)</th> <th>keep close</th> </tr> </thead> <tbody> <tr> <td>96HV001/002</td> <td>96YA001/2 no</td> <td>off</td> <td>66HV001/002</td> </tr> <tr> <td>96HV003/004</td> <td>96YA003/4 no</td> <td>off</td> <td>96HV001/002</td> </tr> <tr> <td>66HV001/002</td> <td>66YA001/2 no</td> <td>off</td> <td>96HV001/002</td> </tr> </tbody> </table> </div> <p>Incase 96HV003 and 96HV004 left open, the command to open 96HV003/96HV004 was not allowed. If 96YA003 and 96YA004 show faults, the interlock will keep the last action until 96YA003 and 96YA004 back to normal.</p> <p>Refer to HC-WI-TE-4525 Crude valve interlocking system</p>				NEW				open	MOV fault	Defeat switch (01KSA013)	keep close	96HV001/002	96YA001/2 no	off	66HV001/002	96HV003/004	96YA003/4 no	off	96HV001/002	66HV001/002	66YA001/2 no	off	96HV001/002
NEW																							
open	MOV fault	Defeat switch (01KSA013)	keep close																				
96HV001/002	96YA001/2 no	off	66HV001/002																				
96HV003/004	96YA003/4 no	off	96HV001/002																				
66HV001/002	66YA001/2 no	off	96HV001/002																				
DCS	11.3.1	Verify all valves in close position as following; <ul style="list-style-type: none"> 96HV001 96HV002 	<input type="checkbox"/>																				
DCS	11.3.2	Verify DCS Marine open valve as following; <ul style="list-style-type: none"> 96HV003 96HV004 	<input type="checkbox"/>																				
END OF TASK																							

Who	Step	Action	Check
12. Crude circulation heater			
<div>NOTE</div> <p>Effective demulsifier chemical reaction with free water in crude requires temperature 38 - 40 degree C, then crude heat up shall operate crude oil and circulate via heater until get the temperature 38 - 40 degree C.</p>			
OP	12.1	Refer to procedure HC-WI-PD-5397 Crude Oil circulation via heater 60E101.	<input type="checkbox"/>
END OF TASK			

Senior Operator

Initial

Time

Date

Shift Supervisor

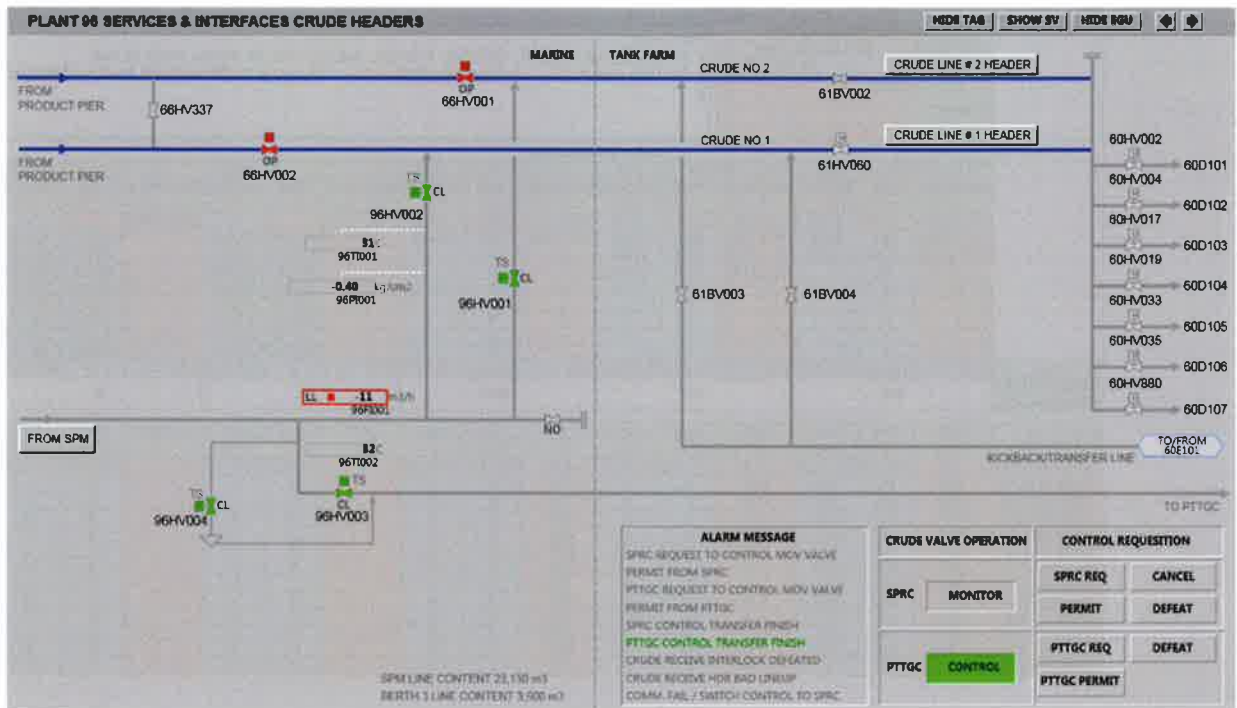
Initial

Time

Date

Appendix

Appendix A : GR0781 Service and Interface Crude HDR



Revision No.: 5.1

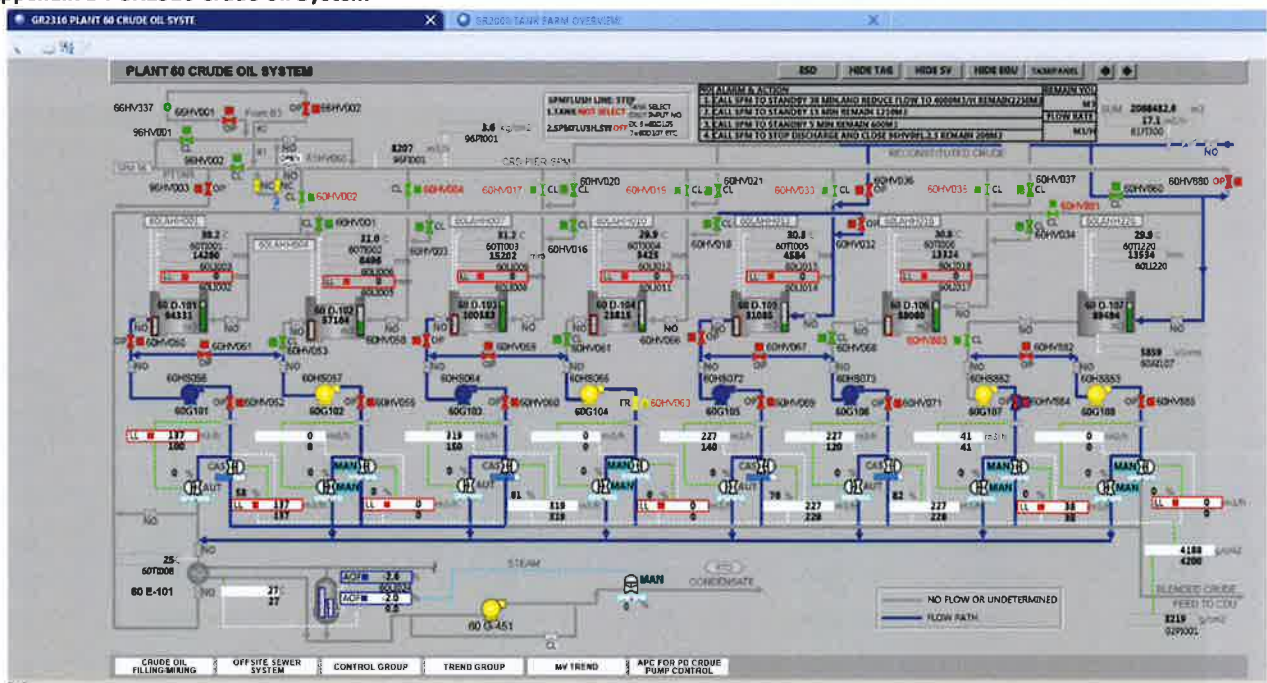
HC-WI-PD-5391

Date: 19 October 2021

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Appendix B : GR2316 Crude Oil System



Revision No.: 5.1

HC-WI-PD-5391

Date: 19 October 2021

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Appendix C : Loading outturn figure

Crude Ship Unloading Table

Ship name :

M/T xin yue yang

Quantity :

78,520

m³

Crude type :

Hurban

How to use:

1. Put data in Cell C13:C20, G13:G20, K13:K20, and O13:O20 for volume target by step.

2. Put Date start in A32 --> 01-Jan-06 01:45, A33 --> 01-Jan-06 02:00 and both level on that time

3.

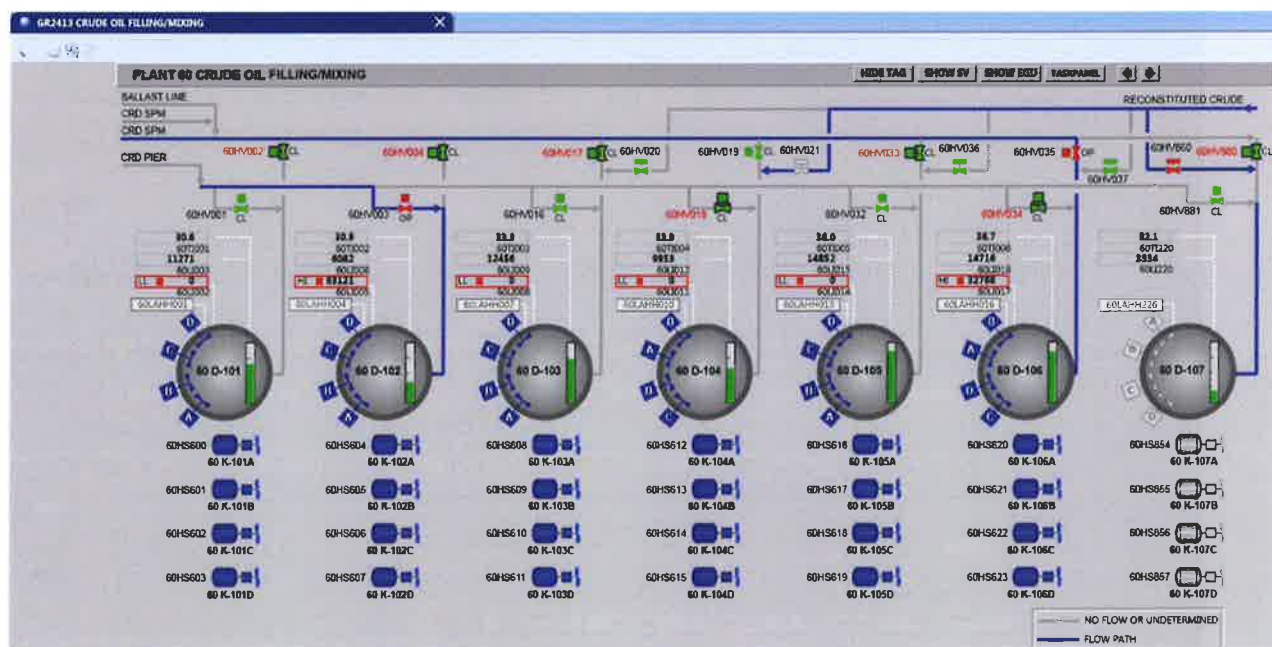
Crude discharge step

600102			6.52			600103			6.52			600107			6.516			FALSE			FALSE			
Step	Volume	Level	Set Level	Step	Volume	Level	Set Level	Step	Volume	Level	Set Level	Step	Volume	Level	Set Level	Step	Volume	Level	Set Level	Step	Volume	Level	Set Level	
	m ³	mm	mm		m ³	mm	mm		m ³	mm	mm		m ³	mm	mm		m ³	mm	mm		m ³	mm	mm	
		1623	1623			2118	2118			8790	8790						0				0			
6	46940	7199	8822	10	23130	3548	5666	12	8630	1324	10114			=DIV/0!	=DIV/0!				=DIV/0!	=DIV/0!				
7	23130	3548	12370	11	55390	8495	14161			0				=DIV/0!	=DIV/0!				=DIV/0!	=DIV/0!				
		0		12	14500	2224	16385			0				=DIV/0!	=DIV/0!				=DIV/0!	=DIV/0!				
		0				0				0				=DIV/0!	=DIV/0!				=DIV/0!	=DIV/0!				
		0				0				0				=DIV/0!	=DIV/0!				=DIV/0!	=DIV/0!				
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		0				0				0				=DIV/0!	=DIV/0!				=DIV/0!	=DIV/0!				
		0				0				0				=DIV/0!	=DIV/0!				=DIV/0!	=DIV/0!				
Total	79070	12369.9			\$5029	16384.9			8630	10114.4				0	0		0		0		0			
Compare volume (Tank-Target)	131			-38			-2042						0			0						0		

Date : Time	Level	Level	Flow	Level	Level	Flow	Level	Level	Flow	Level	Level	Flow	Level	Level	Flow	Level	Level	Flow	Level	Level	Flow
	mm	mm/hr	m ³ /hr	mm	mm/hr	m ³ /hr	mm	mm/hr	m ³ /hr	mm	mm/hr	m ³ /hr	mm	mm/hr	m ³ /hr	mm	mm/hr	m ³ /hr	mm	mm/hr	m ³ /hr
24-Jul-16 01:00	1623			2118						8790			0			0			0		
24-Jul-16 02:00	1885	262	1708	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 03:00	2969	1084	7068	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 04:00	4107	1138	7420	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 05:00	5162	1055	6879	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 06:00	6295	1133	7387	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 07:00	7343	1048	6833	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 08:00	8361	1018	6637	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 09:00	9451	1090	7107	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 10:00	10551	1100	7172	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 11:00	11661	1110	7237	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 12:00	12390	729	4753	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0
24-Jul-16 13:00		0	0	2118	0	0	8790	0	0	8790	0	0	0	0	0	0	0	0	0	0	0

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Appendix D : GR2413 Crude Oil filling/mixing



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Definitions

N/A

References

- D-60-1225-101
- D-60-1225-102
- D-60-1225-103
- D-60-1225-104
- D-60-1225-105
- D-60-1225-106
- D-61-1225-106
- D-61-1225-107
- GR0781 Service and interfaces crude header
- GR2413 Crude oil filling and mixing
- GR2314 Crude oil system
- MOM "SPM Operating Workshop in November, 2018"
- HC-WI-TE-4525 Crude valve interlocking system
- HC-WI-PD-5397 Crude Oil circulation via heater 60E101

Amendment List

Below is a list of changes between the previous and the current revision of this document.

Step/Section

Reason for Change

(Changed) - Converted to SmartProcedure, changed document number from HC-WI-PD-1400 to HC-WI-PD-5391, reviewed all contents

(Changed) - - Change flowrate of tank switch and topping off from 4,000 - 5,000 m³/hr to be 4,000 m³/hr. - Change the maximum flow rate from 8,500 - 8,800 m³/hr to be 9,000 m³/hr. - Change SPM operating from PTTGC to be SPRC. (Refer to SPM Operation Interface Workshop in November 2018)

Information

(Changed) - Major change to add section 5. SPM line flush and change data in section 10. Tank close gauge, (Note, 10.1)

Caution
Step (Unnumbered) - 2.

(Added) - Minor change to chatge that add caution in section Precautions and section 9. Stop crude unloading setting by DCS

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedures

ภาคผนวก ข.28

ขั้นตอนการทำงานเกี่ยวกับการรับจ่ายน้ำมันที่ท่ากลางทะเล



SPM Terminal Operating Procedures

Suranun Silasuwanwit
SPM Superintendent

Winyou Chandorn
Marine Manager

Copy No.	Controller/Holder	Location
00	Electronic Controller	EDMS
01	SPM Maintenance Boat	Boat

[illegible]

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1. Introduction

1.1 Purpose

This procedure provides the necessary information about the SPM, location and steps required to moor tankers, connect hoses, discharge crude oil, disconnect hoses, and un-berth the tankers and SPM maintenance.

1.1 Notes, Cautions, and Warnings

This procedure uses the following symbols to draw the Operator's attention to the steps in the procedure that are particularly important or may lead to safety hazards if done incorrectly.



NOTE: General information useful to understand a particular step in the procedure.



CAUTION: A step that, if done incorrectly, could cause a safety hazard leading to personal injury, equipment or environmental damage, or a delay.



WARNING: A step that, if done incorrectly, could cause a serious safety hazard leading to death, serious personal injury, major equipment damage, fire or a large environmental release.

2. Description and Location of Terminal

2.1 Terminal Location

The MAP TA PHUT SPM TERMINAL consists of a single point mooring buoy located in position:

Latitude	12° 29.3' North
Longitude	101° 11.76' East

in approximately 25 Meters of water (LLT).

The Terminal is designed to handle vessels from 60,000 to 280,000 DWT with a maximum displacement of 350,000 tones and draft of 20.7 meters. Crude Oils for the Star Petroleum Refining Co., Ltd. are imported through the facility.

A 48 inch diameter submarine pipeline, approximately 19 kilometers in length connects the SPM with the shore terminal. This pipeline terminates at the SPM PLEM to which the sub-sea hoses are connected.

2.2 Principle Particulars

The buoy is a CALM type, secured by Six Anchors and Chains. The principle particulars of the buoy are :

Outer Shell Diameter	11.00	meters
Outer Skirt Diameter	15.17	meters
Height	4.80	meters
Draft	3.20	meters
Weight(Ballasted)	216.5	ton
Weight inc. susp. chains	260.0	ton

High Holding Power		
Marine Drag Anchors	15.5	ton
Anchor Chain lengths	315	meter
Anchor Chain diameter	4-1/4	inches
Min Breaking Load	8721	k N
Anchor Leg Spacing	60°	

2.3 Operating Conditions

The operational conditions up to which tankers can stay securely moored at the terminal correspond to a return period of 5 years as given below.

	Unit	Value
Significant Wave Height	m	3.3
Peak Wave Period	s	8
Wind Speed (1 minute mean)	knot	35
Current Speed (Surface)	knot	1.2

It is assumed that wind, waves and current are collinear.



NOTE: In case of operating wind limit is persisting that Mooring Master has considered for risky consequence. Mooring Master will make decision and take necessary action for all safety respect to the operation.

2.4 Survival Conditions

The survival conditions correspond to a period of 100 years and are given in the following table. There is no tanker moored during such conditions.

	Unit	Value
Significant Wave Height	m	3.4
Wave Period	s	8
Wind Speed (1 minute mean)	Knot	42
Current Speed (Surface)	Knot	1.4

2.5 Mooring Hawsers

Number of Hawsers	2
Type	Single - leg
Material	Nylon
Circumference	16 inch
Length	50 meters
Breaking Load NBDS	395 Ton
Maximum allowable mooring loads	220 Ton
Chafe Chain R 3	76 mm.

2.6 Sub-sea Hose Configuration

The Chinese Lantern sub-sea hose configuration consists of two hose strings, each of 3 hoses 24 inch in diameter.

2.7 Surface Hose Strings

The floating hose configuration consists of two hose strings. The main hoses being 24 inch and the tail hoses 16 inch diameter. The starboard string 955 feet and the port string 990 feet in length. The strings are marked by winker lights.

Double closure Gall Thomson breakaway couplings are fitted to both floating strings.

2.8 Navigation Aids

- 2.8.1 The SPM exhibits a white light flashing 6 times per 15 second Fl (6) 15 sec and visible at a range of 5 miles. In addition a fog horn will sound Morse Code "U" at 30 second intervals.

White winker lights are also fitted to the floating hose strings.

- 2.8.2 Buoy "A" Isolated Danger, Black with a broad red horizontal red band, top mark two black spheres one above the other, exhibiting a White light Fl (2) 12 sec 6M located in position:

Latitude 12° 29' 33.9" North

Longitude 101° 10' 18.4" East

This buoy marks a rock pinnacle which is considered dangerous to navigation.

- 2.8.3 Buoy "B" Special Mark, Yellow with single Yellow "X" top mark, exhibiting a Yellow light Fl (4) 20 sec 6M located in position:

Latitude 12° 29' 43.0" North

Longitude 101° 12' 24.7" East

A RACON transmitting Morse Code "B" (Bravo) is also fitted to this buoy.

- 2.8.4 Station Buoy, Orange in color and exhibiting a White light Fl 4 sec 5M located in position:

Latitude 12° 29' 54.0" North

Longitude 101° 12' 30.0" East

3 Berthing Procedures

3.1 Mooring and Assistant Mooring Masters



CAUTION: The Mooring Master (MM) will be responsible for the berthing, un-berthing and coordination of all operations undertaken by the vessel in the berth. He is to ensure all operations are carried out in a safe and seaman like manner, complying with International, National, Industry and Company Standards. Close coordination with the vessel's Master, Crew and the Marine Control Building must be maintained at all times.

While onboard the import tanker, the MM is the Company Representative and in such a capacity is responsible for ensuring that SPRC's interests are protected. The MM is responsible for issuing Letters of Protest for any shipboard equipment deficiencies or operational deficiencies that might be found or serious safety violations that may occur while he is on the vessel.

The MM should not hesitate to contact SPRC Management at any time he feels their assistance or advice is required.

The Assistant Mooring Master (AMM) will work under the directions and leadership of the MM.

3.2 Vessel acceptance



NOTE: Prior to berthing any vessel at the SPM Terminal the following checks must be made :

- 3.2.1 Vessel has been cleared by SPRC / PTTGC vetting system.
- 3.2.2 Appropriate Refinery (SPRC / PTTGC) ready to receive the vessel's cargo
- 3.2.3 Vessels Agent notified of berthing schedule
- 3.2.4 Independent Cargo Inspection Company been advised of berthing schedule.
- 3.2.5 SPM Pre-berthing Inspection has been completed by the Standby vessel's crew.
- 3.2.6 Load Monitor System has been set up.
- 3.2.7 Vessel acceptable on Displacement and Draft.
- 3.2.8 Cargo Tanks inerted as required by SOLAS
- 3.2.9 Vessel confirmed information on the Pre-berthing Check List.
- 3.2.10 Record of Inspection of Pipeline, Cargo Pump Stop and Cargo Pump Pressure relief tests to be inspected.

3.3 Vessel Pre - Berthing Check List

1. Name of Vessel
2. Name of Master
3. Summer Dead weight
4. Arrival Draft
5. Net Registered Tonnage
6. Last Port of Call
7. Owner's name and Address
8. Bill of Lading Figures
9. Nationality of Officers and Crew
10. Number and Size of Chain Stoppers for SPM Mooring
11. Can Vessel maintain 30 percent of Summer DWT while in Berth
12. IGS Operational and all cargo tanks conditions as required by SOLAS
13. Adequate Stability at all stages of Cargo / Ballast operations.
14. Number and size of Manifolds.
15. S.W.L. of Derrick or Crane.

This information may be obtained from the vessel's Master by VHF or E-Mail through his agent.

The vessel must comply fully with all equipment and safety requirements and not exceed the displacement or draft limitations for the SPM. If the vessel exceeds the SPM designed criteria or is deficient in equipment or safety requirements the vessel will not be berthed.

3.4 SPM Pre - Berthing Check List



NOTE: Prior to berthing a tanker, an inspection shall be made of the SPM and ancillary equipment by the stand-by vessel's crew on supervision of SPM Maintenance Supervisor.



CAUTION: In times of bad weather, consideration should be given as to whether conditions permit safe boarding of the buoy by personnel. While personal safety is paramount, the possibility of damage to the buoy by boats should be taken into consideration.

The final decision as to whether it is safe to board the buoy, is to be taken by the assigned Mooring Master in consultation with the Master of the Standby Vessel and SPM Maintenance Supervisor.

3.5 Drug and Alcohol Policy

- 3.5.1 STRICTLY FORBIDDEN to consume either alcohol or illegal drugs and any person may be requested to do drug/alcohol test.
- 3.5.2 Any Mooring Master, Assistant Mooring Master and Contractors thought to be under the influence of either alcohol or illegal drugs during working hours shall be requested to report for testing.
- 3.5.3 Refusal by a Mooring Master, Assistant Mooring Master and Contractors to submit to this drug/alcohol test shall result in them being requested to leave from operation.
- 3.5.4 Disciplinary action for refusing to submit to this drug/alcohol test shall be determined by management but may include:
- 3.5.5 Time off without pay for 1st occurrence.
- 3.5.6 Possible termination of employment for any additional occurrence.
- 3.5.7 If the Mooring Master and/or Contractor is tested and found to be under the influence of either alcohol or illegal drugs, they will be subjected to immediate disciplinary action which could include termination of their employment.
- 3.5.8 The use, possession, distribution or sale of either alcohol, illegal drugs and controlled substances by any person within SPRC premises or while engaged in performing services for SPRC is strictly and absolutely prohibited.

4 Mooring and Unmooring

4.1 Mooring Master Boarding

The Mooring Master his Assistant and SPM Maintenance Supervisor/ assigned rigger will board the vessel by boat.

- A safe means of access shall be provided in accordance with the requirements of SOLAS.
- The vessel must provide an adequate lee for boarding.
- During night operations the access shall be adequately illuminated to allow the safe approach and boarding of the Mooring Master, Government Officials Agent and Surveyors.
- The Conditions of Entry into and use of the Map Ta Phut SPM Terminal form and Pilotage Plan will be presented to the Master of the Tanker and shall be signed prior to the commencement of berthing operations.
- The Notice of Readiness will only be accepted / received provided the SPRC Mooring Master is satisfied that the vessel is in all respects ready to moor and discharge.

In no event shall the Notice of Readiness, whether previously accepted / received or not, be valid or binding on the Terminal unless the vessel, her tanks and equipment, are in fact, in every respect ready to discharge cargo.

The Mooring Master and Assistant will advise the Master on all maneuvers and operations relative to berthing, connecting/disconnecting of hoses and un-berthing. They will also provide all communications between vessel and shore during transfer operations and be the SPRC Representative with respect to cargo operations, documentation, safety observations and other requirements.

These Mooring Masters will remain on board the vessel while in the berth and suitable officer style accommodation is to be provided for them. Also accommodation to be provided for mooring crew(s)

4.1.1 Maximum Wind, Sea /Swell criteria for SPM mooring operation.

Significant Wave Height	2.0 - 2.5 m.
Wind Speed	20- 25 Knots.

Wind and wave are collinear.



Note: In case of operating wind limit is persisting that, Mooring Master

has considered for risky consequence. Mooring Master will make decision and take necessary action all safety respect to the operation.

4.1.2 Maximum Wind, Sea /Swell criteria for SPM discharging operation.

Suspend Discharge	Significant Wave Height = 2.5 meters.
Criteria	Stop cargo at : 30 Knots.
	Hose Disconnection at : 35 Knots.
	Un Berthed at : 35 Knots.



Note:

- In case of squall / heavy rain / thunder storm at SPM vicinity, the mooring and discharging operation will be suspended .
- In case of operating wind limit is persisting that, Mooring Master has considered for risky consequence. Mooring Master will make decision and take necessary action all safety respect to the operation

4.2 Under Pilotage and at Berth

The Mooring Master and Assistant will carry portable intrinsically safe multi-channel radios by means of which all communications regarding approach, mooring and cargo transfer will be made. They will also carry battery chargers for these radios during the vessel's stay at the SPM Terminal.

In addition, the vessel's VHF Radio should be available on the bridge and in the cargo control room for back up communications.

4.3 Preparation for Mooring



WARNING: During the approach, while mooring and secured in the SPM, the vessel's anchors **MUST** be secured by stoppers and secured to prevent accidental dropping with subsequent damage to the subsea pipeline and equipment.

The port Crane should be rigged ready to lift the mooring box from the boat and for connecting the cargo hoses. Crane shall have a minimum 15 tons SWL. However, vessels should have the recommended SWL capacity for their size as recommended in the Oil Companies International Marine Forum (OCIMF) publication **"Recommendations for Oil Tanker Manifolds and Associated Equipment"** Fourth Edition 1991

The vessel will provide 2 x 16 inch 150 lbs ASA flange connections on selected cargo manifolds made ready for hose connections, drip trays, sawdust or sand and fire fighting equipment in position at the manifold area.

The following vessel's equipment should be ready on the forecandle head:

- Two empty spool drums to heave onboard mooring pick up ropes. This will necessitate the removal of the mooring wire or rope from the spool drums.
- Two messenger lines 24 millimeter diameter, 150 meters in length.
- Two large crow bars.
- Sledge hammer
- Pail of grease
- Large flashlight for night berthing.

4.4 Mooring



CAUTION: Line handling during mooring and unmooring is performed by the vessel's crew, with an experienced officer, under instruction of the Mooring Master and Assistant Mooring Master.

Vessels must be fitted as recommended in the OCIMF publication **"Standards for Equipment Employed in Mooring of Ship's at Single Point Moorings"**.

ONLY VESSELS FITTED WITH APPROVED CHAIN STOPPERS AND 2 BOW FAIRLEADS WILL BE BERTHED AT THE SPM. THE USE OF SMIT BRACKETS OR ANY OTHER MEANS OF SECURING THE CHAFE CHAIN IS NOT PERMITTED.

Prior to the final approach of the tanker upon instruction from the Mooring Master, the starboard mooring hawser will be towed to the port side of the buoy to keep it clear from the port hawser. One boat after instruction from the Mooring Master will then tow the floating hose string away from the tanker's direction of approach in the form of a bight to ensure that the hose strings are kept clear of the vessel's propeller during berthing. Extreme caution shall be exercised to ensure that no excessive strain is placed on the floating hose strings by the boat while towing or holding the hoses clear.

When the vessel is within reasonable distance from the SPM, a ship's messenger line will be carried by the mooring launch and connected to the port mooring messenger

on the mooring hawser. This mooring messenger will be used to heave the 76 millimeter chafe chain on board.



WARNING: Care must be taken during this operation to ensure that no excessive weight comes on the mooring messenger.

Whenever possible, self spooling drums should be used to heave the messenger rope onboard.

The chafe chain will then be secured in the chain stopper in such a manner that the supporting buoy and nylon hawser remains outside and clear of the ship's fairlead. Allowing the chain to absorb any chafing in the mooring system.

The operation will then be repeated to secure the starboard mooring hawser.

Once the vessel is securely moored, a tug will bring (one-by-one) hose string end to make connection at the port manifold and then be secured on a towline astern.

4.5 Moored to Berth

A Mooring Hawser Load Monitoring Device is fitted to the SPM. It provides each hawser and the total load on the mooring system at the present time and displays on the display monitor carried to set up on each tanker. There are also visual and audible signal on the buoy to indicate to the Mooring Master that high mooring stresses are being experienced while the tanker is at the SPM.

At 155 tonnes strain, which is 70% of the preset threshold value of 220 tonnes, a red warning light flashes on the buoy. When this occurs the Mooring Master is to be informed by the Forecastle Watchman. The Mooring Master will request the tanker's engines be placed on Standby, cargo operations will be suspended and preparations made ready in case it is necessary to disconnect the hoses.

If the warning light goes out and stays out, it will be the Mooring Master decision whether to resume cargo operations.

In the event the red light remains flashing, indicating continuous load in excess of 155 tonnes the hoses are to be disconnected immediately and preparation made to leave the berth.

If the red flashing light remains on and the audible alarm sounds, indication that the threshold limit of 220 tonnes has been reached, the hose should be disconnected and the tanker un-berthed and taken to anchor.

However, if at *any time*, in the Mooring Master's judgment, weather conditions are such that he feels it is unsafe to continue cargo operations or remain at the SPM, such as when wind/swell conditions have reached the operating parameters of the SPM and the Load Monitoring Alarms have *not* yet activated, then his decision shall over ride all other factors.

When weather conditions improve the tanker can be re-berthed.

4.6 Unmooring

During discharging, Mooring Master will arrange with Ship's officer to pay out the mooring messengers from each spool drums, remove shackles connecting ship-shore messengers then each messenger will be rolled back to the spool drum neatly.

When the hoses have been disconnected and lowered to the water, the unmooring operation will commence which ship engine could be tested and the tug astern will be released either subsequently or after tanker unmoor and safely clear from SPM, as per Mooring Master decision.

The weight will then be allowed to come off the mooring hawsers, it may be necessary to use the ship's engines for this purpose. When the weight is off, the both mooring hawser will be released and lowered to the water.

At once both of the hawser messengers are cleared from the ship heaving drum, the vessel moved astern clear of the berth.



NOTE: Care must be taken to ensure that the hawsers do not become entangled in each other or are dropped onto, or across the hose strings.

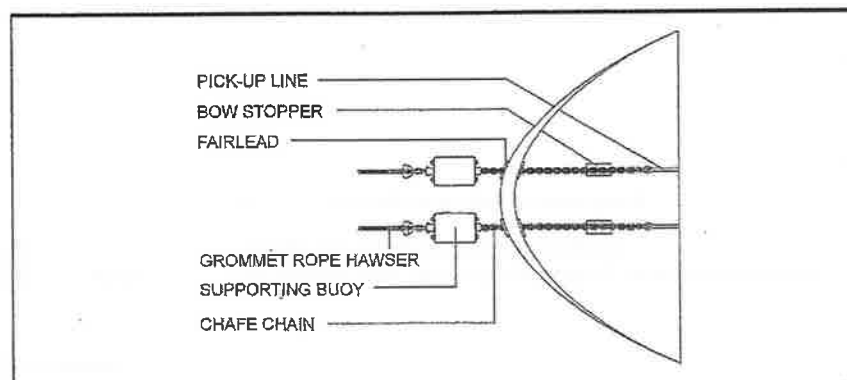
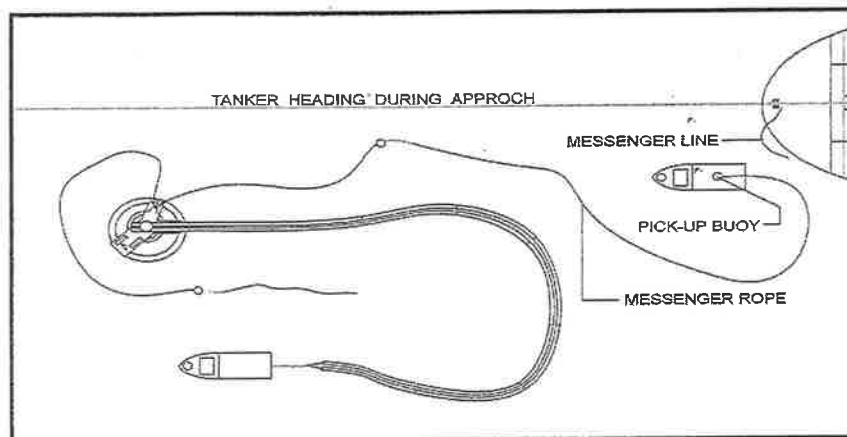
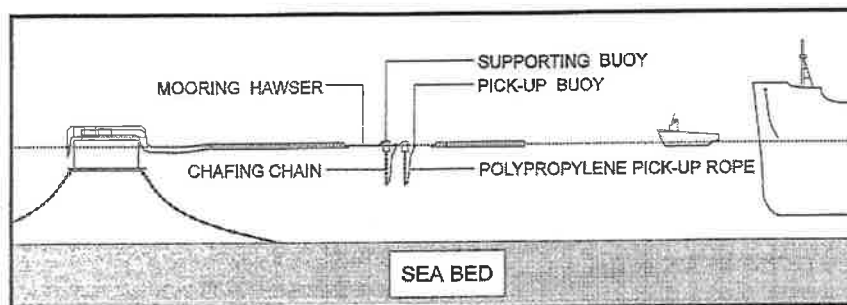


CAUTION: ANCHORS SHALL REMAIN SECURED UNTIL THE VESSEL IS WELL CLEAR FROM SPM AND SUBSEA PIPELINE.

4.7 SPM Equipment Defect List Report

- 4.7.1 During the tanker berthing discharging and un berthing, SPM Equipment Defect List Report shall be recorded to the following items.
- 4.7.2 SPM Navigation light, fog horn, Winker light.
- 4.7.3 Port and Starboard Mooring Hawser and messenger line.
- 4.7.4 Port & Starboard Hose strings.
- 4.7.5 Port & Starboard Tanker rail hose, accessories, and messenger.

4.8 Figure 1



5 Hose Connecting Procedures

5.1 Connecting Procedure

Tanker manifold arrangements must comply with the latest OCIMF publication "Recommendations for Oil Tanker Manifolds and Associated Equipment" fourth edition 1991.

- 5.1.1 After the vessel has been securely moored, the Maintenance boat will bring the SPM starboard floating cargo hose string alongside at port side tanker manifold area.
- 5.1.2 Lower derrick/crane hook to the maintenance boat, which will connect it to the SPM starboard hose's lifting wire.
- 5.1.3 Heave up the hose until the connection of lower part of snubbing chain is level with the hose rail's fairlead then secure the snubbing wire/chain with a supporting chain.
- 5.1.4 Lower the hose until the snubbing chain/wire connection are level at tanker rail's fair lead.
- 5.1.5 Unshackle hose snubbing chain/wire and secure snubbing wire with rope messenger.
- 5.1.6 Heaving up the hose until the suitable height. Pull in all length of snubbing wire / chain until slack tight.
- 5.1.7 Secure snubbing wire by turning to a bollard and secure the end using a tirlfor.
- 5.1.8 Lower the hose to the safe access manifold area that for safely opening the blind flange. Open blind flange.
- 5.1.9 Lift the hose, alignment and connect to the manifold. Use a new gasket and fully bolt the flanges.
- 5.1.10 Open the hose end butterfly valve and secure.
- 5.1.11 Repeat the procedures for the after hose (SPM Port hose string).

After both hoses have been connected, they must be supported in way of the tanker rail by means of webbing strop suspended from the crane

**CAUTION:**

No way Tanker rail hose will be sit on Ship's tanker rail for avoid hose deformed.

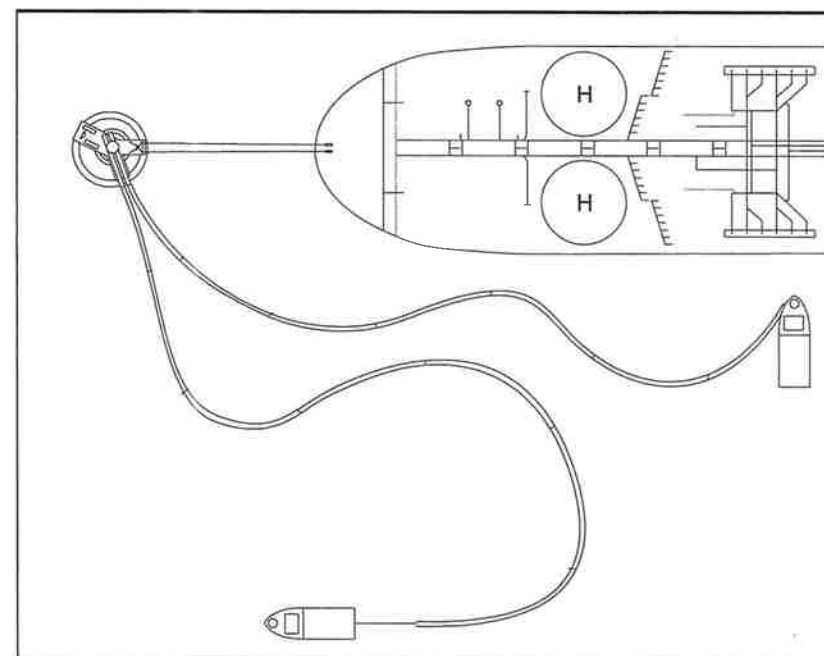
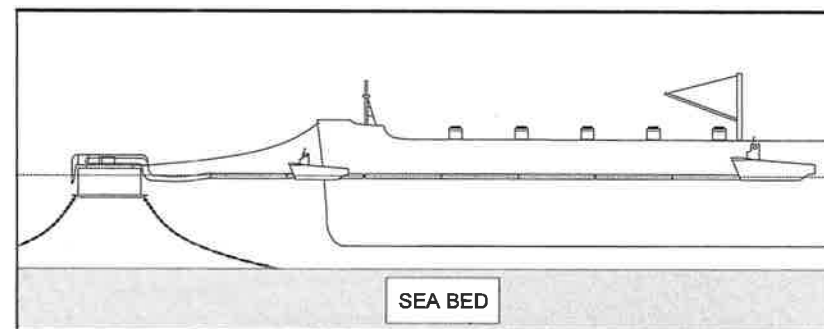
Before Hose connection operation commence, Mooring Master to ensure that no any part or equipment of tanker will harmful and might lead to damage to the hoses either on tanker manifold

area or tanker's side area / rail / tanker rail. Mooring Master will perform the operation only on safely condition.

**NOTE:**

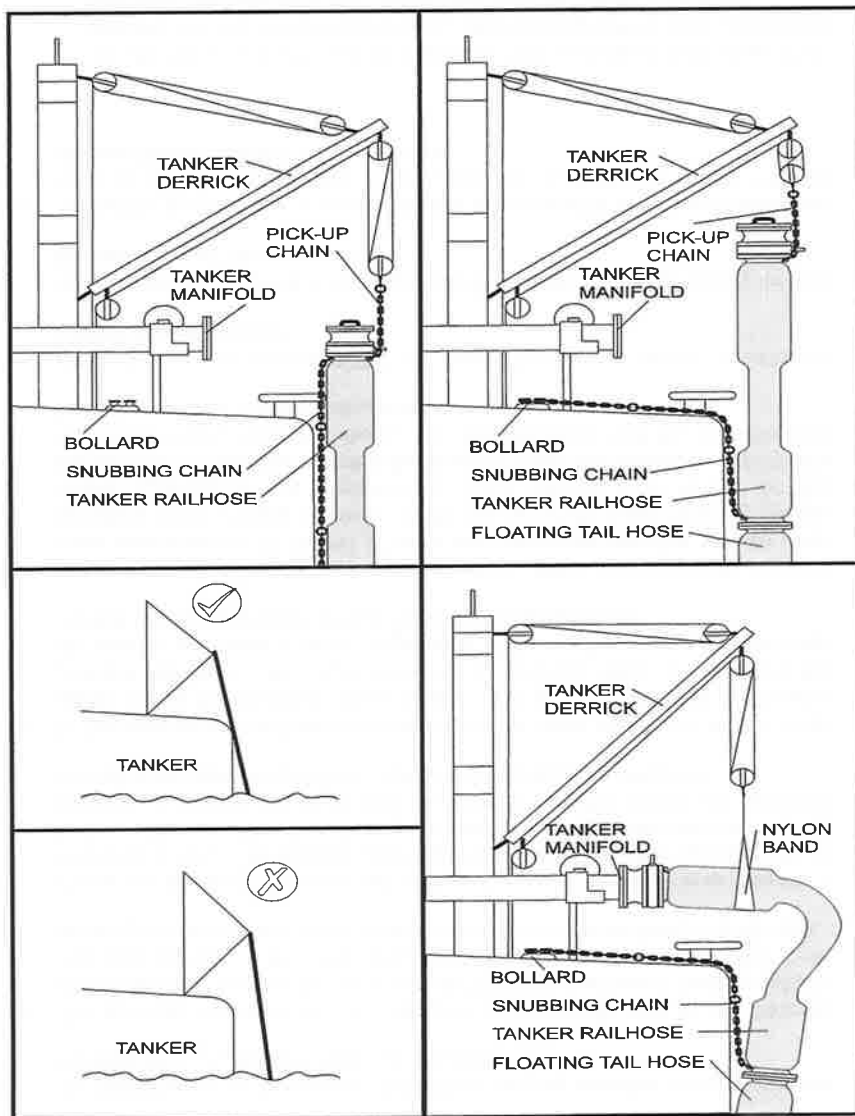
Care should be taken during the hose handling operation to avoid serious damage to the hoses and associated equipment.

Aware of oil spillage when open the blind flange.

5.2 Figure 2**HOSE CONNECTION**

5.3 Figure 3

HOSE CONNECTING SEQUENCE



6 Hose Disconnecting Procedure

6.1 Disconnecting Procedure

- 6.1.1 Shut vessel manifold valve and Shut & secure SPM hose end butterfly valve on completion of discharging and arrange for draining manifolds.
- 6.1.2 Remove nylon bands and position crane hook over after most hose
- 6.1.3 Attach lifting wire to the quick release which connected with crane hook, take the weight and disconnect the hose.
- 6.1.4 Replace the blank flange using a new gasket and fully bolt the flange.
- 6.1.5 Heave up the hose until the weight is off the snubbing chain/wire, release the snubbing chain/wire.
- 6.1.6 Lower the hose until the flange is level with the tanker rail, shackle snubbing chain/wire to flange lug and secure shackle with seizing wire.
- 6.1.7 Lower hose to the water as directed by the Mooring Master.
- 6.1.8 Repeat the procedure for the forward hose.



CAUTION:

Before Hose disconnection operation commence, Mooring Master to ensure that no any part or equipment of tanker will harmful and might lead to damage to the hoses either on tanker manifold area or tanker's side area / rail / tanker rail. Mooring Master will perform the operation only on safely condition.

SPM maintenance, particularly in bad weather, is extremely difficult and involves possible danger to personnel. For this reason, vessels are requested to give as much assistance as possible by taking seaman like care of the mooring and hose equipment and returning it to the water ready for the next tanker and in such a condition as they would like to find it.



NOTE:

Care must be taken when lowering the forward hose to prevent hose damaged due to scratch / sharp edge / entanglement of the hoses.

Hose/hawser maintenance is expensive and if SPRC judges that the vessel has misused any hose or hawser, the vessel will be liable for the expenditure incurred in making repairs.

7 Discharge Procedures

7.1 Cargo Discharge

- 7.1.1 On completion of all Government formalities, gauging, sampling, safety checks and documentation, discharge of cargo can commence.
- 7.1.2 The discharge operation will be controlled by VHF/UHF radio by the Mooring Master/Assistant between the vessel and the SPRC Marine Control Building (MCB). This does not absolve the vessel from communicating directly with the MCB if the Mooring Master/Assistant do not respond to radio calls or in an Emergency Situation.
- 7.1.3 During the discharge operation and while at the berth, the vessel must maintain a minimum of 30% of the Summer deadweight at all times. The SPM supplies crude oil to two refineries. Therefore, it may be necessary at the commencement of the discharge to displace the oil already contained in the SPM system and submarine pipeline to the appropriate refinery, before bulk discharge can commence.
- 7.1.4 In line samplers may be fitted at certain times to the vessel manifold to monitor cargo quality during the discharge. These samplers will be operated by the Independent Surveyor appointed to the vessel. However, the Mooring Master should ensure that the samplers are started at the commencement of the line flush and/or bulk discharge and that they are operational through out the discharge operation.
- 7.1.5 In the event that a line displacement is necessary, SPRC will require the vessel to pump approximately 23,130 m³ of crude into the system and then suspend cargo operations while changes are made to the line up of the crude receiving systems ashore. (Quantity will be dependent on which refinery is to receive the line displacement). During this operation the Mooring Master will coordinate directly with the Marine Control Building, who in turn will coordinate with the respective tank farm where the line displacement is being received.
- 7.1.6 During the line displacement, SPRC will require the vessel to carefully monitor the quantity being discharged.
- 7.1.7 Once the line displacement is completed and the quantity discharged agreed, the bulk discharge of cargo can commence.
- 7.1.8 Throughout the discharge, a responsible deck officer must be in charge of operations, either on deck, or in the cargo control room and in continuous contact with the Mooring Master/Assistant via portable radio.

An efficient deck watch must be maintained with continuous observation of the manifold area and the mooring hawsers. Ship mooring crew to keep a continuous forecastle watch and be in radio contact with Mooring Master at all times.

- 7.1.9 On commence discharging operation, once confirmation are ready for receive from terminal and ship's are ready to discharge. Ship will discharge with initial pressure 3.0 kg/cm² then to confirm for shore received cargo and every aspect are in good

order. To increase discharge rate as per terminal instruction.

Maximum discharge pressure at ship's manifold 10.5 kg/cm² or flow rate at shore not more than : SPRC tanks 9,000 m³/hr, PTTGC tanks 8,500 m³/hr which will control whichever come first.

- 7.1.10 At any time during discharge operations the terminal may request a reduction in rates, switch cargo grade / refinery, suspend discharge, etc. The Terminal will be give 30, 15, 5 minutes notice. At last 5 minutes, the discharge rate will be a minimum, approximately 3.0 Kg/cm². Whenever reach the target the terminal will instruct to suspend discharge then the tanker officer to stop discharge immediately and report time for suspend discharge to the Terminal.

During suspend discharging, both hose butterfly valve will be shut and secured.

- 7.1.11 To resume the discharging operation, the terminal will give 10 mins or as agree notice to SPM tanker. Whenever ready for received cargo, Terminal will instruct to SPM tanker for resume discharging.

Tanker manifold will be fully opened. Discharging operation be resumed with initial pressure 3.0 k/cm² and report discharging time to the terminal.

To increase discharge rate as per terminal instruction

- 7.1.12 At any time during discharge operations the terminal may request to reduction in rates for switch shore tank. The Terminal will be give 30, 15, 5 minutes notice. Approximately 5 minutes, the discharging flow rate will be 4,000 m³/hr. Whenever the shore tank have been switched to the other tank, as per discharging plan. Terminal will instruct to SPM tanker for switch shore tank time and requested discharging flow rate.
- 7.1.13 As an anti-pollution measure, the volume of oil discharged in m³ by the vessel must be relayed to the terminal on an hourly basis to allow for the comparison of figures (discharged against received). This is particularly important at night when it is difficult to detect oil pollution.
- 7.1.14 During the hours of darkness, it is required that all available approved floodlights are used to illuminate the vessel and surrounding waters to facilitate the detection of oil and generally assist in the transfer operation. Vessels are advised that failure to supply sufficient lighting could result in the transfer operation being suspended during the hours of darkness. Such delays would be for the vessel's account.
- 7.1.15 It is strictly against the law to pollute the waters of Thailand and the Master and Owners, may be subject to prosecution by the Thai Authorities.
- 7.1.16 Maximum trim at all stages are 5.5 meters.
- 7.1.17 Discharge operation will be suspended when significant wave height are more than 5.5 meters.



CAUTION: The maximum discharge pressure allowed at the Ship's Manifolds is 10.5 kg/cm² or 10.3 bar (150 psi)

- 7.1.18 On completion of discharge operation the rail tail hoses and ship's manifolds will be drained to prevent spillage of oil when disconnecting hoses.

7.2 Crude Oil Washing

Mooring Master will provide instruction for terminal Crude Oil Washing (COW) requirement which be **required or not required** up to each crude specification. However, **MINIMUM COW OPERATIONS , AS REQUIRED BY MARPOL REGULATION 1973 – 1978** permission will only be granted provided all safety and operational requirements recommended in the “**International Safety Guide for Oil Tankers and Terminals**” (ISGOTT) have been met in full. (Ref. to Item 4.4 of the Terminal Safety Regulations).

- 7.2.1 The surveyor will be sealed at COW line 's master valve of all cargo discharging tank . To break seal of nominate COW tanks by the surveyor as per tanker officer 's request

7.3 Ballasting Operations



WARNING: Extreme caution must be taken when ballasting operations are undertaken, to ensure no oil escapes through the vessel's sea valves.

7.4 Cargo Outturn

On the completion of the cargo discharge and prior to the tank inspection, all cargo valves, with the exception of the manifold valves should be opened to ensure all cargo lines and pumps have been properly drained during the discharge.

A comparison of Bill of Lading and Total Cargo Ship Discharge figures must be undertaken. If the quantity Ship Discharge is found to be 0.5% or more below the Bill of Lading figure / and or the Observed Quantity received ashore compare with Observed Quantity which Ship Discharge found the different is 0.5% or more, the vessel's tanks must be checked again in conjunction with the Independent Surveyor for any quantity remaining.

If the discrepancy still exists after the check, a Letter of Protest for the Shortage in Cargo Out Turn must be issued to the vessel's Master for his signature.

8 Terminal Services Contract

8.1 Contractor

Uniwise Towage Limited is the Contractor responsible for providing marine support craft and manpower for the SPM Maintenance and day to day Operations, 24 hours a day, 365 days of the year.

The Contractor will work under the directions of and report to the SPRC SPM Superintendent.

8.2 Contractor Vessel

The SPM maintenance boat is the Multi-purpose Maintenance Vessel .

The SPM maintenance boat is used primarily for mooring, hose handling, maintenance and diver support but is capable of performing all SPM support duties.



CAUTION: The SPM maintenance boat will remain on station at the SPM location for security purposes. This is to prevent pilferage from the SPM or associated equipment and to ensure vessels navigating in the area give the SPM a wide berth.

Emergency Support Tug boat

Support tug boat equipped with Oil Spill Response Equipment and team to standby during SPM discharging Operation and if need at SPM area . The list of Oil Spill Equipment as follow :

- | | | |
|----------------------|---|--------|
| • Ro-Boom | 2 | sets. |
| • Power Pack | 1 | set. |
| • Dispersant Sprayer | 1 | set . |
| • Oil Dispersant | 8 | drums. |

8.3 Maintenance Support Personnel

Maintenance support personnel for SPM and associated equipment. Minimum of three dedicated personnel, consist of 1 Diving Supervisor (AODC Certified) and 2 Maintenance and Emergency divers (fluent in English and have previous experience of SPM maintenance). In addition crew from the SPM maintenance boat to be available to assist in maintenance operations as and when required.

8.4 Supervision

The role of the Mooring Master during maintenance periods, is to oversee the work performed by the Contractors personnel. He is responsible for seeing that the work undertaken is done safely, following the procedures laid down in the HC-WI-PD-4003 SPM Terminal Operating Procedure, HC-WI-PD-4006 SPM Inspection and Maintenance, The SBM "Calm Buoy Operating and Maintenance Manual" and the OCIMF publication "Single Point Mooring Maintenance and Operations Guide".

If at any time the Mooring Master is not satisfied with the way the maintenance is being carried out, either through unsafe working practices or incorrect procedures, he is to suspend the operation immediately. The Contractor's supervisor at the location is to be notified and remedial action taken.

If the situation cannot be resolved on site, the Mooring Master is to notify the SPM Superintendent immediately.



NOTE: THERE CAN BE NO COMPROMISE ON SAFETY OR INCORRECT MAINTENANCE PROCEDURES.

9 Diving Services Agreement.

9.1 Contractor

Diving Contractor shall provide all personnel, material, supervision and expertise to undertake the following services as directed by SPRC.

Diving Contractor shall provide the following requirement for any SPM / SPM related 's diving job scope :

- One (1) Supervisor hold the formal International Marine Contractor Association (IMCA) training certificate.
- Diving Operation Team shall hold minimum requirement of diving certificate and to be conducted training by full IMCA member.

Inspection of the SPM subsea installation.

Diver assistance with surface hose change out.

Removal of marine growth on SPM, hoses and PLEM by high pressure water jet.

Cathodic protection readings of SPM and PLEM as directed by SPRC.

Subsea hose change as directed by SPRC.

Emergency call out, diver to be on site within 3 hours



WARNING: Diving operations to be conducted in accordance with Internationally recognized standards.

10 Pollution

10.1 Prevention



WARNING: All International, National and Company rules, regulations and guidelines covering oil pollution must be strictly complied with at all times.

The discharge of oil to the sea is strictly forbidden.

10.2 Reporting

All pollutions observed offshore originating from the SPM, pipeline, hoses, vessel or from any other source are to be reported immediately to the Shift Supervisor, via the Marine Control Building Marine Coordinator. Action should be taken to reduce or stop the pollution if it safe to do so without endangering human life.

10.3 Response

On receiving a pollution report, SPRC Management will investigate, and if necessary, activate the SPRC “Oil Spill Response Contingency Plan”.

The plan outlines the required procedures to be followed in the event of a Marine Pollution. All personnel involved in the SPM operations must familiarize themselves with the contents of this document.

The relevant sections covering the SPM area will be attached as an Appendix to this document.

11. Attachments

11.1 Appendix 1 : Mooring Master Check list

CONDITIONS OF ENTRY INTO AND USE OF

MAP TA PHUT SPM TERMINAL, THAILAND.

1. All services, facilities and assistance provided by or on behalf of PTT Global Chemical Public Company Limited (“The Company”) in or in connection with the Port, whether or not any charge is made by The Company there for, are provided subject to all applicable Laws, Bye-Laws and Harbor Regulations, Safety Regulations, and Towage Conditions for the time being in force and to the following further conditions:

- a) The services of the Mooring Master(s) are provided on the express understanding and condition that when any Mooring Master furnished by The Company goes on board a vessel for the purpose of assisting such vessel, he becomes for such purposes the servant of the Owner or Charterer of the vessel; and The Company, including its joint venture co-owner, parent companies, subsidiaries, and affiliates, shall in no way be liable for any damage or personal injury, including death, of any nature whatsoever, incurred by any person whomsoever, in any way connected with, contributed by, or resulting from the advice or assistance given or for any action taken by such Mooring Master, whether negligent or otherwise, while on board or in the vicinity of such assisted vessel.
 - b) Similarly, the services of mooring launches and mooring personnel, if any, and the furnishing of mooring lines and hosing-up gear are under the supervision and control of the Mooring Master, and The Company, including its joint venture co-owner, parent companies, subsidiaries, and affiliates, shall in no way be liable for any damage or personal injury, including death, of any nature whatsoever, incurred by any person whomsoever, in any way connected with, contributed by, or resulting from the performance of these additional services, or furnishing of equipment, whether or not any of such are utilized by any vessel.
2. In addition, neither The Company, its joint venture co-owner, parent companies, subsidiaries, or affiliates, nor its or their servants, agents or contractors (in whatever capacity they may be acting), shall be in any way whatsoever responsible for (or liable for any contribution with respect to) any loss, personal injury, including death, damage or delay, from whatsoever cause, including the negligence of The Company or its servants, agents, or contractors, arising whether directly or indirectly in consequence of any assistance, advice or instructions whatsoever given or tendered in respect of any vessel, whether by way of tugs, pilotage or berthing services, the provision of navigation facilities, including buoys or other channel markings, or otherwise howsoever. In all circumstances the Master of any vessel shall remain solely responsible on behalf of his Owners for safety and proper navigation of his vessel.
3. While The Company exercises due care to ensure that the berths, premises, facilities, property, gear, craft and equipment provided by The Company are safe and suitable for vessels permitted or invited to use them, no guarantee, express or implied, of such safety and suitability is given by The Company that such berths, premises, facilities, property, gear, craft, and equipment are devoid of defects or fit for the service or use to which it is put, and every vessel shall be and remain at the sole risk of the Owners and Master thereof; and The Company, including its joint venture co-owner, parent companies, subsidiaries, and affiliates, shall not be responsible (or liable for any contribution) with respect to any loss, personal injury including death, damage, or delays whatsoever, that may be sustained whether directly or indirectly by, or occur to, any vessel or to her Owners or her crew or cargo or for any part thereof (whether such cargo is on board or in the course of discharging) by whomsoever and by whatsoever cause such as loss, injury, damage, or delay is occasioned, and whether or not it is caused, occasioned, or contributed to, in whole or in part, to any act, neglect, omission or default on the part of The Company, or any servant, agent or contractor of The Company, or by fault or defect in any berth, premises, facilities, property, gear, craft, or equipment of any sort of The Company or its servants, agents or contractors.



4. The Company will not be responsible for any loss, damage or delay directly or indirectly caused or contributed to by or arising from, strikes, lock-outs, or labor disputes or disturbances whether The Company or its servants, agents or contractors are parties thereto or not.
5. If in connection with or by reason of the use by any vessel of any berth, or of part of The Companies premises, or of any gear or equipment provided by or on behalf of The Company, or of any craft, or of any other facilities or property, of any sort whatsoever, belonging to or provided by on behalf of The Company, any damage or injury is caused to such berth, premises, gear or equipment, craft, or other facility or property, or any third party, or any vessel (its Owners' crew), from whatsoever cause such damage may arise, and irrespective of whether or not such damage has been caused, occasioned or contributed to, in whole or in part, by the negligence of The Company or its servants, agents or contractors, and irrespective of whether there has been any neglect or default on the part of the vessel or the Owners, in any such event the vessel and the Owners shall hold The Company, its parent companies, subsidiaries and affiliates, harmless from and indemnified without limitation against all such damage and injury and against loss sustained by The Company, its parent companies, subsidiaries or affiliates, consequent thereon.

6 The vessel and her Owners shall hold The Company, its joint venture co-owner, parent companies, subsidiaries, and affiliates, and its and their servants, agents and contractors, harmless from and indemnified without limitation against the following whether or not caused, contributed to, or due, in whole or in part, to any act, neglect, omission or default on the part of The Company, its servants, agents or contractors:

- a) All and any action, liabilities, claims, damages, cost, awards and expenses arising whether directly or indirectly out of any loss, damage, personnel injury, including death, or delay, of whatsoever nature, occasioned to any third party or any vessel (her Owner and crew), including your vessel and Owners and crew, including but not limited to, that caused or contributed, whether directly or indirectly, by the vessel or any part thereof or by any substance or material leaking or escaping therefrom or by the Master or crew or by any other servant or agent of the Owners.
- b) All or any damage, personal injury, including death, delay or loss, of whatsoever nature, occasioned to The Company, its joint venture co-owner, parent companies, subsidiaries and affiliates, or its or their servants, agents, and contractors, arising out of any cause whatsoever including but not limited to, that caused or contributed to, whether directly or indirectly, by the vessel or any part thereof or by any substance or material leaking or escaping therefrom or by her Master or crew or by any other servant or agent of the Owners.
7. The Laws of Thailand shall apply to the actual entry to and use of the SPM terminal though these conditions shall be construed according to the Laws of New York. The vessel and Owners shall submit any dispute hereunder which cannot be amicably agreed between the parties within 120 days, to final and binding arbitration to be conducted in the English language before three arbitrators (one each selected by the parties and the third by the two arbitrators thus selected [in default of which the third arbitrator shall be selected by the President for the time being of the American Chamber of Commerce in Geneva]), in Geneva, Switzerland, applying the UNCITRAL Rules of Arbitration.

RECEIPT AND ACCEPTANCE

I hereby acknowledge receipt of the foregoing Conditions of Entry into and Use of the Map Ta Phut SPM Terminal, Thailand and accept and agree to be bound by, on behalf of myself, my vessel and Owners, the terms and conditions set forth therein.

M.T. _____

Signature _____ (Time and Date) _____



HIRING OF TUGS

TO: **Star Petroleum Refining Public Company Limited**
No. 1, I-8 Road
Map Ta Phut Industrial Estate,
Map Ta Phut, Rayong 21150,
Thailand.

I hereby authorize you to supply to and on behalf of the

M.T. _____

such tugs and line boats as you consider necessary for the moving of my vessel while entering or within or leaving the harbor or the approaches thereto, such hiring to be at currently established rates and the terms of the :

UNITED KINGDOM STANDARD FOR TOWAGE AND OTHER SERVICE
(Revised 1986) as per copy attached.

Date: _____

Time: _____

Sign _____

Master _____

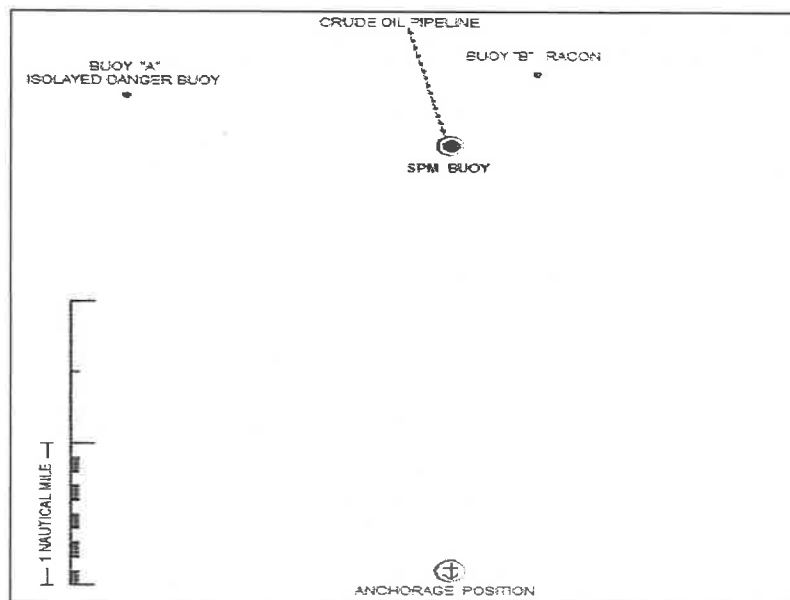
Ship's stamp

SCHEDULE 3**U.K. STANDARD CONDITIONS FOR TOWAGE AND OTHER SERVICES**
(Revised 1986)

1. (a) The agreement between the Tugowner and the Hirer is and shall at all times be subject to and include each and all of the conditions herein-after set out.
- (b) for the purposes of these conditions.
 - (i) "towing" is any operation in connection with the holding, pushing, pulling, moving, escorting or guiding of or standing by the Hirer's vessel, and the expressions "to tow", "being towed" and "towage" shall be defined likewise.
 - (ii) "vessel" shall include any vessel, craft or object of whatsoever nature (whether or not coming within the usual meaning of the word "vessel") which the Tugowner agrees to tow or to which the Tugowner agrees at the request, express or implied, of the Hirer, to render any service of whatsoever nature other than towing.
 - (iii) "tender" shall include any vessel, craft or object of whatsoever nature which is not a tug but which is provided by the Tugowner for the performance of any towage or other service.
 - (iv) The expression "whilst towing" shall cover the period commencing when the tug or tender is in a position to receive orders direct from the Hirer's vessel to commence holding, pushing, pulling, moving, escorting, guiding or standing by the vessel or to pick up ropes, wires or lines, or when the towing line has been passed to or by the tug or tender, whichever is the sooner, and ending when the final orders from the Hirer's vessel to cease holding, pushing, pulling, moving, escorting, guiding or standing by the vessel or to cast off ropes, wires or lines has been carried out, or the towing line has been finally slipped, whichever is the later, and the tug or tender is safely clear of the vessel.
 - (v) Any service of whatsoever nature to be performed by the Tugowner other than towing shall be deemed to cover the period commencing when the tug or tender is placed physically at the disposal of the Hirer at the place designated by the Hirer, or, if such be at a vessel, when the tug or tender is in a position to receive and forthwith carry out orders to come alongside and shall continue until the employment for which the tug or tender has been engaged is ended. If the service is to be ended at or off a vessel the period of service shall end when the tug or tender is safely clear of the vessel or, if it is ended elsewhere, then when any persons or property of whatsoever description have been landed or discharged from the tug or tender and/or the service for which the tug or tender has been required is ended.
 - (vi) The word "tug" shall include "tugs", the word "tender" shall include "tenders", the word "vessel" shall include "vessels", the word "Tugowner" shall include "Tugowners", and the word "Hirer" shall include "Hirers".
 - (vii) The expression "tugowner" shall include any person or body (other than the Hirer or the owner if the vessel on whose behalf the Hirer contracts as provided in Clause 2 hereof) who is a party to this agreement whether or not he in fact owns any tug or tender, and the expression "other Tugowner" contained in Clause 5 hereof shall be construed likewise.
2. If at the time of making this agreement or of performing the towage or of rendering any service other than towing at the request, express or implied, of the Hirer, the Hirer is not the Owner of the vessel referred to herein as "the Hirer's vessel", the Hirer expressly represents that he is authorised to make and does make this agreement for and on behalf of the owner of the said vessel subject to each and all of these conditions and agrees that both the Hirer and the Owner are bound jointly and severally by these conditions.
3. Whilst towing or whilst at the request, express or implied, of the Hirer, rendering any service other than towing, the master and crew of the tug or tender shall be deemed to be the servants of the Hirer and under the control of the Hirer and/or his servants and/or his agents, and anyone on board the Hirer's vessel who may be employed and/or paid by the Tugowner shall likewise be deemed to be the servant of the Hirer and the Hirer shall accordingly be vicariously liable for any act or omission by any such person so deemed to be the servant of the Hirer.
4. Whilst towing, or whilst at the request, either expressed or implied, of the Hirer rendering any service of whatsoever nature other than towing:-
 - (a) The Tugowner shall not (except as provided in Clauses 4 (c) and (e) hereof) be responsible for or be liable for
 - (i) damage of any description done by or to the tug or tender; or done by or to the Hirer's vessel or done by or to any cargo or other thing on board or being loaded on board or intended to be loaded on board the Hirer's vessel or the tug or tender or to or by any other object or property;
 - or
 - (ii) loss of the tug or tender or of the Hirer's vessel or of any cargo or other thing on board or being loaded on board or intended to be loaded on board the Hirer's vessel or the tug or tender or any other object or property; or
 - (iii) any claim by a person not a party to this agreement for loss or damage of any description whatsoever; arising from any cause whatsoever, including (without prejudice to the generality of the foregoing) negligence at any time of the Tugowner his servants or agents, unseaworthiness, unfitness or breakdown of the tug or tender, its machinery, boilers, towing gear, equipment, lines, ropes or wires, lack of fuel, stores, speed or otherwise and
 - (b) The Hirer shall (except as provided in Clauses 4(c) and (e)) be responsible for, pay for and indemnify the Tugowner against and in respect of any loss or damage and any claims of whatsoever nature or howsoever arising or caused, whether covered by the provisions of Clause 4(a) hereof or not, suffered by or made against the Tugowner and which shall include, without prejudice to

the generality of the foregoing, any loss of or damage to the tug or tender or any property of the Tugowner even if the same arises from or is caused by the negligence of the Tugowner his servants or agents.

- (c) The provisions of Clauses 4(a) and 4(b) hereof shall not be applicable in respect of any claims which arise in any of the following circumstances:-
 - (i) All claims which the Hirer shall prove to have resulted directly and solely from the personal failure of the Tugowner to exercise reasonable care to make the tug or tender seaworthy for navigation at the commencement of the towing or other service. For the purpose of this Clause the Tugowner's personal responsibility for exercising reasonable care shall be construed as relating only to the person or persons having the ultimate control and chief management of the Tugowner's business and to any servant (excluding the officers and crew of any tug or tender) to whom the Tugowner has specifically delegated the particular duty of exercising reasonable care and shall not include any other servant of the Tugowner or any agent or independent contractor employed by the Tugowner.
 - (ii) All claims which arise when the tug or tender, although towing or rendering some service other than towing, is not in a position of proximity or risk to or from the Hirer's vessel or any other craft attending the Hirer's vessel and is detached from and safely clear of any ropes, lines, wire cables or moorings associated with the Hirer's vessel. Provided always that, notwithstanding the foregoing, the provisions of Clauses 4(a) and 4(b) shall be fully applicable in respect of all claims which arise at any time when the tug or tender is at the request, whether expressed or implied, of the Hirer, his servants or his agents, carrying persons or property of whatsoever description (in addition to the Officers and crew and usual equipment of the tug or tender) and which are wholly or partly caused by, or arise out of the presence on board of such persons or property or which arise at anytime when the tug or tender is proceeding to or from the Hirer's vessel in hazardous conditions or circumstances.
 - (d) Notwithstanding anything hereinbefore contained, the Tugowner shall under no circumstances whatsoever be responsible for or be liable for any loss or damage caused by or contributed to or arising out of any delay or detention of the Hirer's vessel or of the cargo on board or being loaded on board or intended to be loaded on board the Hirer's vessel or of any other object or property or of any person, or any consequence thereof, whether or not the same shall be caused or arise whilst towing or whilst at the request, either express or implied, of the Hirer rendering any service of whatsoever nature other than towing or at any other time whether before during or after the making of this agreement.
 - (e) Notwithstanding anything contained in Clauses 4(a) and (b) hereof the liability of the Tugowner or death or personal injury resulting from negligence is not excluded or restricted thereby.
5. The Tugowner shall at any time be entitled to substitute one or more tugs or tenders for any other tug or tender or tugs or tenders. The Tugowner shall at any time (whether before or after the making of this agreement between him and the Hirer) be entitled to contract with any other Tugowner (hereinafter referred to as "the other Tugowner") to hire the other Tugowner's tug or tender and in any such event it is hereby agreed that the Tugowner is acting (or is deemed to have acted) as the agent for the Hirer, notwithstanding that the Tugowner may in addition, if authorised whether expressly or impliedly by or on behalf of the other Tugowner, act as agent for the other Tugowner at any time and for any purpose including the making of any agreement with the Hirer. In any event should the Tugowner as agent for the Hirer contract with the other Tugowner for any purpose as aforesaid it is hereby agreed that such contract is and shall at all times be subject to the provisions of these conditions so that the other Tugowner is bound by the same and may as a principal sue the Hirer thereon and shall have the full benefit of these conditions in every respect expressed or implied herein.
 6. Nothing contained in these conditions shall limit, prejudice or preclude in any way any legal rights which the Tugowner may have against the Hirer including, but not limited to, any rights which the Tug owner or his servants or agents may have to claim salvage remuneration or special compensation for any extraordinary services rendered to vessels or anything aboard vessels by any tug or tender. Furthermore, nothing contained in these conditions shall limit, prejudice, or preclude in any way any right which the Tugowner may have to limit his liability.
 7. The Tugowner will not in any event be responsible or liable for the consequences of war, riots, civil commotions, acts of terrorism or sabotage, strikes, lockouts, disputes, stoppages or labour disturbances (whether he be a party thereto or not) or anything done in contemplation or furtherance thereof or delays of any description, howsoever caused or arising, including by the negligence of the Tug owner or his servants or agents.
 8. The Hirer of the tug or tender engaged subject to these conditions undertakes not to take or cause to be taken any proceedings against any servant or agent of the Tug owner or other Tug owner, whether or not the tug or tender substituted or hired or the contract or any part thereof has been sublet to the owner of the tug or tender, in respect of any negligence or breach of duty or other wrongful act on the part of such servant or agent which, but for this present provision, it would be competent for the Hirer so to do and the owners of such tug or tender shall hold this undertaking for the benefit of their servants and agents.
 9. (a) The agreement between the Tug owner and the Hirer is and shall be governed by English Law and the Tugowner and the Hirer hereby accept, subject to the proviso contained in sub-clause (b) hereof, the exclusive jurisdiction of the English Courts (save where the registered office of the Tug owner is situated in Scotland when the agreement is and shall be governed by Scottish Law and the Tug owner and the Hirer hereby shall accept the exclusive jurisdiction of the Scottish Courts).
 - (b) No suit shall be brought in any jurisdiction other than that provided in sub-clause (a) hereof save that either the Tugowner or the Hirer shall have the option to bring proceedings in rem to obtain the arrest of or other similar remedy against any vessel or property owned by the other party hereto in any jurisdiction where such vessel or property may be found.

MAP TA PHUT SPM Pilotage Plan**SPM Buoy (Single Point Mooring)**

Orange Buoy, White Light Fl.(6) 15 sec. 5 M., Fog Horn Morse Code "U" 30 sec intervals.

Location :- Lat 12° 29.3' N., Long 101° 11.76' E.

Winker Lights on floating hose strings.

Attached by 6 mooring chains leading 1,000 ft. in horizontal direction.

Buoy "A" Isolated Danger Buoy

Black Buoy with Red Band, White Light Fl.(2) 12 sec. 6 M.

Location :- Lat 12° 29' 33.9"N., Long 101° 10' 18.4"E.

From SPM : Bearing 276° Distance 1.68 M. (10,080 ft.)

Buoy "B" RACON

Yellow Buoy, Yellow Light Fl.(4) 20 sec. 6 M.

Location :- Lat 12° 29' 43.0"N., Long 101° 12' 24.7"E.

From SPM : Bearing 042° Distance 0.68 M. (4,080 ft.)

Anchorage Position

Location :- Lat 12° 26' 12.6"N., Long 101° 11' 57.6"E.

From SPM : Bearing 180° Distance 3 M.

Crude Oil Pipeline

Diameter 48" Length to the shore 19.5 Km.

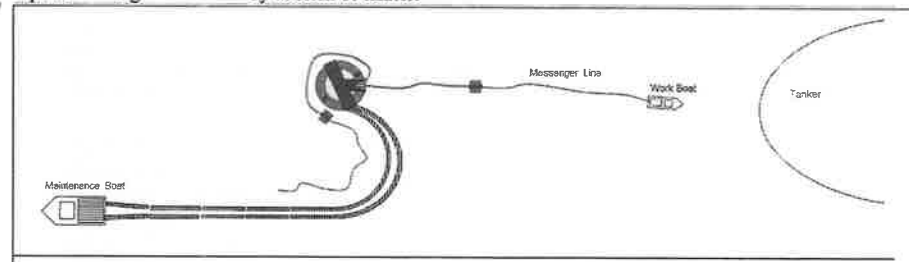
Direction from SPM 346°

MAP TA PHUT SPM Berthing Contingency Plan

- If case of emergency, contact **SPRC Marine Control Building (MCB)** on Radio VHF channel 67 or 16.
- Any situation that affects the vessels maneuvering ability (Engine or Rudder failure) will result in the berthing being aborted and the SPM support vessels will take following actions:
Maintenance tug boat will pass a towline to the vessel and provide towage assistance.
or push on the bow to swing the vessel away from the SPM approach course as request.
- Vessel anchors are not to be used, except under direction of Mooring Master.
- Echo Sounder to be running during operation.
- **During berthing operation:**

When the vessel is within reasonable distance from the SPM, **one tug boat** will made fast at the stern of the tanker and standby until complete berthing.

Maintenance tug boat to towing the hoses clear away during tanker approach SPM , work boat will pass up shore mooring messenger to tanker, after completed mooring. Maintenance boat bring hoses to manifold for connection. after completed hose connection, Maintenance tug boat will replace the tug which stand by at stern of tanker.

**Maintenance tug boat (M.V. Uniwise Rayong)**

5,500 BHP.

55 Tons Bollard Pull

Twin Screw

Fendered for pushing

**** Towing wire ready for emergency use during berthing operation ****

Fire fighting capability

Pi Fi 1 for water

Pi Fi 3 for foam

Equipped for oil recovery and dispersant application

Standby radio VHF channel 67 and 16

If extra tugs is required in an emergency, contact S.C. Management who operate harbour tugs up to 3,600 HP. in the Port of Map Ta Phut. : Radio VHF channel 13 (operate 24 Hours)

Tel. (038) - 684556 - 9

Fax. (038) - 684560

Signature _____
Master

Signature _____
Map Ta Phut SPM Mooring Master

M.T. _____

Time / Date _____

STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
MAP TA PHUT SPM TERMINAL

VESSEL / PILOT INFORMATION

Vessel _____ Date _____

Summer Deadweight _____ Arrival Draft Fwd _____ Aft _____

Arrival Displacement _____

At What Draft is the Propeller Submerged? _____

Type of Vessel : Double Hull.

Propulsion : Motor (Minimum Start Air Pressure _____)

Bridge Control Yes / No Propeller : Fixed / Variable

Max Rudder Angle _____ Gyro Error _____

SHP _____ Maximum Astern time _____ Mins.

Maneuvering Speed : Ahead RPM Speed Astern RPM

D Slow	_____	_____	_____
Slow	_____	_____	_____
Half	_____	_____	_____
Full	_____	_____	_____

The Pilot / Mooring Master will discuss with the vessel's Master his intended plan of navigation and approach to the berth, advising of tidal conditions and mooring plan.

Take your time and **SLOW DOWN** if necessary to ensure all parties agree to the proposed actions.

Vessel's Master _____

Pilot / Mooring Master _____

Remarks : _____

STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
MAP TA PHUT SPM TERMINALSMOKING NOTICE
WHILE VESSEL IS MOORED TO SPM.

Smoking is strictly prohibited on board the Vessel except in the following spaces specifically designated by the Master and agreed by the Mooring Master as **SMOKING AREAS**.

1. _____

2. _____

Failure to comply with this regulation will involve cessation of cargo and ballast operations until investigations have been completed and a written assurance has been received from the Master that effective controls have been established.

The Mooring Master reserves the right in usual circumstances to withdraw the above concession and to prohibit smoking in any area whatsoever.

M.T. _____

Signed _____
Master.Signed _____
Mooring Master.

VESSEL											
Vessel's name		M.T.				IMO/LR No.					
Flag		Port of Register				D.H.					
Summer Deadweight		D.H.				Voyage No.					
Captain's name		Captain									
Arrival Draft		Fore				m.		Aft			
Sailing Draft		Fore				m.		Aft			
m.		m.				m.		m.			
CARGO											
					Bill of Lading Quantity						
					m. ³		Bbbs.		M. Ton		
Grade 1											
Grade 2											
Grade 3											
Grade 4											
Ship's Figure Before Discharge											
	m. ³ (obs)		Bbbs.(obs)		M. Ton		m. ³ at 60°F		API/Den		
Grade 1									Temp		
Grade 2									Water m. ³		
Grade 3											
Grade 4											
TIME											
End of passage		Date	Time		Anchored					Date	Time
Arrive pilot station					Anchor aweigh						
Free pratique granted					Complete Cargo inspection						
Pilot on board					Ship / Shore safety checklist completed						
Notice of readiness tendered					Notice of readiness received						
Weather condition Wind					Weather condition Sea / Swell						
Commence mooring					Final heading						
First line fast					All fast						
Tug fast aft					Tug released						
Commence hose connection					Completed hose connection						
Number and size of hoses		2x16"			Number and size of manifold						
Vessel ready to discharge					Shore ready to receive						
Commence discharge grade 1					Complete discharge grade 1						
Commence discharge grade 2					Complete discharge grade 2						
Commence discharge grade 3					Complete discharge grade 3						
Commence discharge grade 4					Complete discharge grade 4						
Commence crude oil washing					Complete crude oil washing						
Commence ballast					Complete ballast						
Commence hose disconnection					Complete hose disconnection						
Commence un-mooring					Complete un-mooring						
Weather condition Wind					Weather condition Sea / Swell						
Pilot disembarked					Vessel Sailed						
REMARK											
Mooring box on board, Oxygen Checked %, Tool Box meeting prior to mooring,											
Tool box meeting prior to hose connection, Tool box meeting prior to hose disconnection											
Tool box meeting prior to unmooring,											

Mooring Master

[illegible]

Mooring Master

STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
MAP TA PHUT SPM TERMINALMooring Master Capt. _____

Cabin _____ Tel. _____

Mooring Master Capt. _____

Cabin _____ Tel. _____

Mooring Master Capt. _____

Cabin _____ Tel. _____

COMMUNICATIION

Radio VHF Channel 67

Callsign Tanker : **SPM** (Single Point Mooring)Shore : **MCB** (Marine Control Building)OFFSHORE BOATS

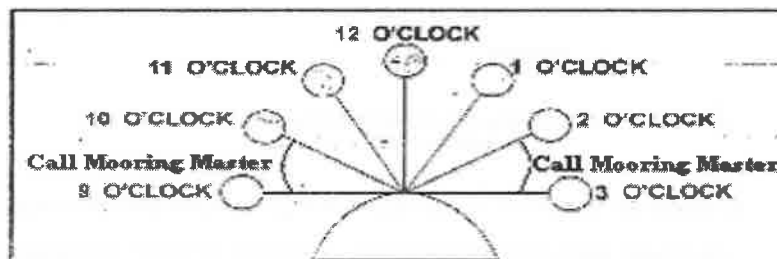
Stern Tug : Uniwise Rayong

M.T. _____

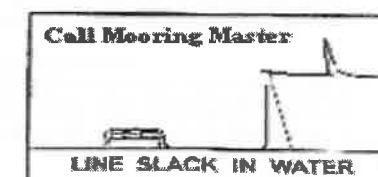
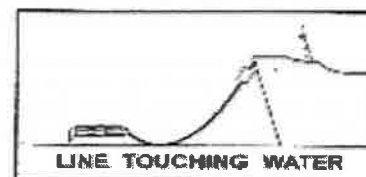
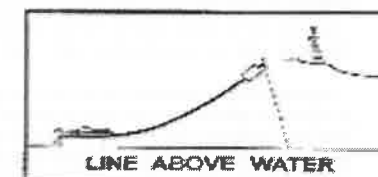
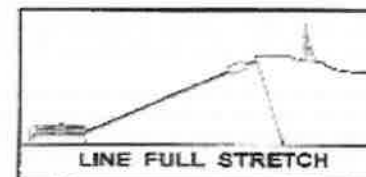
Signature _____ (Time and Date) _____

HOW TO REPORT

CALL MOORING MASTER FROM FORECASTLE

EXAMPLE SPM 11 O'CLOCK, LINE ABOVE WATER, DISTANCE 50 METERReport Mooring Master suddenly when:

1. Red light come up on the SPM
2. SPM position coming to 10-9 o'clock or 2-3 o'clock
3. Mooring hawsers slack in the water



M.T. _____

Date _____ Time _____

Signature _____



OPERATION OF SEA VALVES

The Master

M.T. _____
Date _____

During your vessel's stay at Map Ta Phut SPM all sea valves will remain closed and sealed. If for any reason the sea valves are to be opened, the Mooring Master on duty must be informed before any action is taken.

The cargo surveyors on board your vessel are to witness all sea valve operations which includes the breaking of seals. after ballasting operations have been completed the surveyors are to witness the closing and re-sealing the sea valves.

	<u>Date</u>	<u>Time</u>	<u>Seal Number</u>	<u>Signature</u>
<u>Port sea valve</u>				
Checked before cargo discharge :-	_____	_____	_____	_____
Opened	_____	_____	_____	_____
Ballasting :-	_____	_____	_____	_____
Closed	_____	_____	_____	_____
<u>Starboard sea valve</u>				
Checked before cargo discharge :-	_____	_____	_____	_____
Opened	_____	_____	_____	_____
Ballasting :-	_____	_____	_____	_____
Closed	_____	_____	_____	_____
<u>Overboard sea valve</u>				
Checked before cargo discharge :-	_____	_____	_____	_____
Opened	_____	_____	_____	_____
Ballasting :-	_____	_____	_____	_____
Closed	_____	_____	_____	_____

Master/Chief Officer
Master

Cargo Surveyor

Mooring Master/Assist. Mooring

Name _____ Name _____ Name _____

Date / time _____ Date / time _____ Date / time _____

MT _____ Company _____



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED MAP TA PHUT SPM TERMINAL

The Master

M.T. _____ Date _____

SAFETY REQUIREMENTS

Responsibility for the safe conduct of operations on board your ship while at our Terminal rests with you as Master. Nevertheless, since personnel, property and other shipping may also suffer serious damage in the event of an accident aboard your ship, we wish, before operations start, to seek your cooperation and understanding on the safety requirements set out in the Map Ta Phut SPM Terminal Safety Check List.

These safety requirements are based on practices widely accepted by the oil and tanker industries. We therefore expect you and all under your command to adhere strictly to them throughout your stay in this port. We, for our part, have instructed our personnel to do likewise and cooperate fully with you in the mutual interest of a safe and efficient operation. In order to assure ourselves of your compliance with these safety requirements, we shall, before the start of operations and thereafter from time to time, instruct a member of our staff to inspect your ship. After reporting to you or your deputy, he will invite one of your officers to join him in a routine inspection of your ship to ensure that the Map Ta Phut SPM Terminal Safety Check List can be completed in the affirmative.

If we observe any infringement on board your ship of any of these safety requirements, we shall bring this immediately to the attention of yourself or your deputy for corrective action. If such action is not taken in a reasonable time, we shall adopt measures which we consider to be the most appropriate to deal with the situation and we shall notify you accordingly. If you observe any infringement of these regulations by SPRC staff onboard your ship, please bring this immediately to the attention of the SPRC Mooring Master who is nominated as your contact during your stay in port. Should you feel that any immediate threat to the safety of your ship arises from any action on our part, or from the equipment under our control, you are fully entitled to demand an immediate cessation of operations.

IN THE EVENT OF CONTINUED OR FLAGRANT DISREGARD OF THESE SAFETY REGULATIONS BY ANY SHIP, WE RESERVE THE RIGHT TO STOP ALL OPERATIONS AND TO ORDER THAT SHIP OFF THE BERTH FOR APPROPRIATE ACTION TO BE TAKEN BY THE CHARTERER AND OWNERS CONCERNED.

Please acknowledge receipt, understanding and acceptance of this letter by countersigning and returning the attached copy.

For and on behalf of
STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED

(Signature)

M.T. _____

RECEIPT AND ACCEPTANCE OF THIS LETTER
IS HEREBY ACKNOWLEDGED:

Signed: _____ Master

Date: _____ Time: _____ Hours.



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
MAP TA PHUT SPM TERMINAL
SHIP/SHORE SAFETY CHECK LIST

MT. _____

Date of Arrival _____

Time of Arrival _____

INSTRUCTIONS FOR COMPLETION

The safety of operations requires that all questions be answered affirmatively with a tick i.e. ✓. If an answer is not possible, the reason should be given and agreement reached upon appropriate precautions between the ship and the terminal. Where any question is not considered to be applicable a note to that effect should be inserted in the remarks column.

☐ -the presence of this symbol in the columns "Ship" and STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED ("SPRC") indicates that the check shall be carried out by the party concerned.

The presence of the letters A, P and R in the column "Code" indicates the following:

A ('Agreement'). This indicates an agreement or procedure that should be identified in the 'Remarks' column of the Check-List or communicated in some other mutually acceptable form.

P ('Permission'). In the case of a negative answer to the statements coded 'P', operation should not be conducted without the written permission from the appropriate authority.

R ('Recheck'). This indicates items to be re-checked at appropriate intervals, as agreed between both parties, at period stated in the declaration.

Bulk liquid – General - Physical Checks	Ship	SPRC	Code	Remarks
1. There is safe access between the ship and shore	<input type="checkbox"/>	<input type="checkbox"/>	R	
2. The ship is securely moored	<input type="checkbox"/>	<input type="checkbox"/>	R	
3. The agreed ship/shore communication system is operative	<input type="checkbox"/>	<input type="checkbox"/>	A R	System: Backup system:
4. Emergency towing-off pennants are correctly rigged and positioned.	<input type="checkbox"/>	<input type="checkbox"/>	R	
5. The ship's fire hoses and fire-fighting equipment are positioned and ready for immediate use.	<input type="checkbox"/>	<input type="checkbox"/>	R	
6. The terminal's fire-fighting equipment are positioned and ready for immediate use.	<input type="checkbox"/>	<input type="checkbox"/>	R	
7. The ship's cargo and bunker hoses, pipelines and manifolds are in good condition, properly rigged and appropriate for the service intended.	<input type="checkbox"/>	<input type="checkbox"/>		
8. The terminal's cargo and bunker hoses or arms are in good condition properly rigged and appropriate for the service intended.	<input type="checkbox"/>	<input type="checkbox"/>		
9. The cargo transfer system is sufficiently isolated and drained to allow the safe removal of blank flanges prior to connection.	<input type="checkbox"/>	<input type="checkbox"/>		
10. Scuppers and save-alls on board are effectively plugged and drip trays are in position and empty.	<input type="checkbox"/>	<input type="checkbox"/>	R	
11. Temporarily removed scupper plugs will be constantly monitored.	<input type="checkbox"/>	<input type="checkbox"/>	R	
12. Shore spill containment and sumps are correctly managed.	<input type="checkbox"/>	<input type="checkbox"/>	R	
13. The ship's unused cargo and bunker connections are properly secured with blank flanges fully bolted.	<input type="checkbox"/>	<input type="checkbox"/>		
14. The terminal's unused cargo and bunker connections are properly secured with blank flanges fully bolted.	<input type="checkbox"/>	<input type="checkbox"/>		
15. All cargo, ballast and bunker tank lids are closed.	<input type="checkbox"/>	<input type="checkbox"/>		
16. Sea and overboard discharge valves, when not in use, are closed and visibly secured	<input type="checkbox"/>	<input type="checkbox"/>		
17. All external doors, ports and windows in the accommodation, stores and machinery spaces are closed. Engine vents may be open	<input type="checkbox"/>	<input type="checkbox"/>	R	
18. The ship's emergency fire control plans are located externally.	<input type="checkbox"/>	<input type="checkbox"/>		Location:
19. Fixed IGS pressure and oxygen content recorder are working.	<input type="checkbox"/>	<input type="checkbox"/>	R	
20. All cargo tank atmospheres are at positive pressure with oxygen content of 8% or less by volume.	<input type="checkbox"/>	<input type="checkbox"/>	P R	



	Ship	SPRC	Code	Remarks
Bulk Liquid General-Verbal Verification				
21. The ship is ready to move under its own power.	<input type="checkbox"/>	<input type="checkbox"/>	P R	
22. There is an effective deck watch in attendance on board and adequate supervision of operations on the ship and in the terminal.	<input type="checkbox"/>	<input type="checkbox"/>	R	
23. There are sufficient personnel on board and ashore to deal with an emergency	<input type="checkbox"/>	<input type="checkbox"/>	R	
24. The procedures for cargo, bunker and ballast handling have been agreed,	<input type="checkbox"/>	<input type="checkbox"/>	A R	
25. The emergency signal and shutdown procedure to be used by the ship and shore have been explained and understood.	<input type="checkbox"/>	<input type="checkbox"/>	A	
26. Material Safety Data Sheets (MSDS) for the cargo transfer have been exchanged where requested.	<input type="checkbox"/>	<input type="checkbox"/>	P R	
27. The hazards associated with toxic substances in the cargo being handled have been identified and understood.	<input type="checkbox"/>	<input type="checkbox"/>		H2S Content: Benzene Content:
28. An internal Shore Fire Connection has been provided.	<input type="checkbox"/>	<input type="checkbox"/>		
29. The agreed tank venting system will be used.	<input type="checkbox"/>	<input type="checkbox"/>	A R	Method:
30. The requirements for closed operations have been agreed	<input type="checkbox"/>	<input type="checkbox"/>	R	
31. The operation of the P/V system has been verified.	<input type="checkbox"/>	<input type="checkbox"/>		
32. Where a vapour return line is connected, operating parameters have been agreed.	<input type="checkbox"/>	<input type="checkbox"/>	A R	
33. Independent high level alarms, if fitted, are operational and have been tested.	<input type="checkbox"/>	<input type="checkbox"/>	A R	
34. Adequate electrical insulating means are in place in the ship/shore connection.	<input type="checkbox"/>	<input type="checkbox"/>	A R	
35. Shore lines are fitted with a non-return valve, or procedure to avoid back filling have been discussed.	<input type="checkbox"/>	<input type="checkbox"/>	P R	
36. Smoke rooms have been identified and smoking requirements are being observed.	<input type="checkbox"/>	<input type="checkbox"/>	A R	Nominated smoking rooms
37. Naked light regulations are being observed.	<input type="checkbox"/>	<input type="checkbox"/>	A R	
38. Ship/shore telephones, mobile phones and pager requirements are being observed.	<input type="checkbox"/>	<input type="checkbox"/>	A R	
39. Hand torches (flashlights) are of an approved type.	<input type="checkbox"/>	<input type="checkbox"/>		
40. Fixed VHF/UHF transceivers and AIS equipment are on the correct power mode or switched off.	<input type="checkbox"/>	<input type="checkbox"/>		
41. Portable VHF/UHF transceivers are of an approved type.	<input type="checkbox"/>	<input type="checkbox"/>		
42. The ship's main radio transmitter aerials are earthed and radars are switched off.	<input type="checkbox"/>	<input type="checkbox"/>		
43. Electric cables to portable electrical equipment within the hazardous area are disconnected from power.	<input type="checkbox"/>	<input type="checkbox"/>		
44. Windows type air conditioning units are disconnected.	<input type="checkbox"/>	<input type="checkbox"/>		
45. Positive pressure is being maintained inside the accommodation, and air conditioning intakes, which may permit the entry of cargo vapours, are closed.	<input type="checkbox"/>	<input type="checkbox"/>		
46. Measures have been taken to ensure sufficient mechanical ventilation in the pump room.	<input type="checkbox"/>	<input type="checkbox"/>	R	
47. There is provision for an emergency escape.	<input type="checkbox"/>	<input type="checkbox"/>		
48. The maximum wind and swell criteria for operations have been agreed.	<input type="checkbox"/>	<input type="checkbox"/>	A	Stop cargo at: Disconnect at: Un-berth at:
49. Security protocols have been agreed between the Ship Security Officer and the Port Facility Security Officer, if appropriated.	<input type="checkbox"/>	<input type="checkbox"/>	A	
50. Where appropriate, procedures have been agreed for receiving nitrogen supplied from shore, either for inerting or purging ship's tanks or for line clearing into the ship.	<input type="checkbox"/>	<input type="checkbox"/>	A P	



Star Petroleum
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Inert Gas System-Verbal Verification	Ship	SPRC	Code	Remarks
51. The IGS is fully operational and in good working order.	<input type="checkbox"/>		P	
52. Deck seals, or equivalent, are in good working order.	<input type="checkbox"/>		R	
53. Liquid levels in pressure/vacuum breakers are correct.	<input type="checkbox"/>		R	
54. The fixed and portable oxygen analysers have been calibrated and are working properly.	<input type="checkbox"/>		R	
55. All the individual tank IG valves (if fitted) are correctly set and locked.	<input type="checkbox"/>		R	
56. All personnel incharge of cargo operations are aware that, in the case of failure of the inert gas plant, discharge operations should cease and the terminal be advised.	<input type="checkbox"/>			
Crude Oil Washing-Verbal Verification	Ship	SPRC	Code	Remarks
57. The Pre-Arrival COW check-list, as contained in the approved COW manual, has been satisfactorily completed.	<input type="checkbox"/>			
58. The COW check-lists for use before, during and after COW, as contained in the approved COW manual, are available and being used.	<input type="checkbox"/>		R	

Declaration

We, the undersigned, have checked the above items, in accordance with the instructions, and have satisfied ourselves that the entries we have made are correct to the best of our knowledge, and arrangements have been made to carry out repetitive checks as necessary and agreed that those items with code 'R' in the Check-List should be re-checked at intervals not exceeding _____ hours.

If to our knowledge the status of any item changes, we will immediately inform the other party.

For Ship	For SPRC
Name	Name
Rank	Position or Title
Signature	Signature
Date / time	Date / time

Record of repetitive checks:

Date:							
Time:							
Initials for Ship:							
Initials for Shore:							



Star Petroleum
Refining Public Co., Ltd

HC-WI-PD-4003
SPM Terminal Operating Procedure

CRUDE OIL WASHING

THE MASTER

DATE:.....

M.T. _____
NO.

CARGO

STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED as receiver of all or part of the cargo loaded onboard your vessel wishes to draw your attention to the fact that COW is only permitted in accordance to MARPOL 73/78 and as detailed in the IMO publication "Crude Oil Washing Systems"

In addition to the tanks designated, with due regard to the ship's trading pattern, to carry clean or dirty ballast approximately one quarter of all remaining tanks shall be crude oil washed for sludge control purposes on a rotational basis. However, tanks need not be crude oil washed more than once in every four months.

As a consequence your are kindly requested to verify your C O W needs as follows :

TANKS DESIGNATED FOR DIRTY BALLAST : _____

TANKS DESIGNATED FOR CLEAN BALLAST : _____

25 % OF THE REMAINING TANKS : _____

ADDITIONAL COW AS INSTRUCTED BY SPRC _____

Master / Chief Officer

Mooring Master

PRE-CRUDE OIL WASHING OPERATIONS CHECK LIST

No.	ITEM	CHECK	REMARKS
1	Have the: Pre-arrival cargo port; I.S.G.O.T.T. Pre-arrival at discharge port; Pre-discharging; and During discharging; check lists been completed and are all conditions satisfactory?	Yes / No	
2	Are the communications links between: Deck and control room; cargo control room and engine room; cargo control room and ashore; established and working satisfactory?	Yes / No	
3	Have the crude oil washing abort conditions and procedures been discussed and agreed by both ship and shore staff?	Yes / No	
4	Are the fixed and portable oxygen analyzers working properly?	Yes / No	
5	Is the inert gas system working properly and is the oxygen content of the delivered gas below 5% by volume?	Yes / No	
6	Has the oxygen content of the tank(s) to be washed been checked and is it below 8% by volume?	Yes / No	
7	Do all cargo tanks have a positive inert gas pressure?	Yes / No	
8	Are responsible personnel assigned to check all deck lines for leakage when crude oil washing commences?	Yes / No	
9	Are the fixed tank washing machines set for the required washing stages?	Yes / No	
10	Have the valves and lines in the pump room and on deck been checked and are they correctly set?	Yes / No	
11	Has the bottom 1 meter of the cargo tank(s) to be used to supply the washing fluid been discharged to remove any accumulated water? Yes / No		
12	Have the re-circulate crude tanks been discharged and replenished with dry crude?	Yes / No	

Checking Officer _____

Date: _____ Time _____

DURING CRUDE OIL WASHING CHECK LIST

No.	ITEM	CHECK	REMARKS
1	Is the quantity of delivered inert gas frequently checked by portable instrument and recorded and is the oxygen content below 8% by volume?	Yes / No	
2	Are all the deck and pump room lines and tank washing machines frequently checked for leakage?	Yes / No	
3	Is the crude oil washing in progress in the designated cargo tank(s) only.	Yes / No	
4	Is the pressure in the tank washing ring main 10 bar or above?	Yes / No	
5	Are the cycle times of the tank washing machines as specified in the COW Manual?	Yes / No	
6	Are the tank washing machines in operation frequently checked and are they working properly?	Yes / No	
7	Is a responsible person stationed continuously on deck?	Yes / No	
8	Have float type gauges been raised and housed in the tank being crude oil washed?	Yes / No	
9	Is the stern trim at least 3 meters when bottom washing is in progress?	Yes / No	
10	Is the tank draining method specified in the COW Manual being followed?	Yes / No	
11	Are the levels in the recirculatory crude oil tanks frequently checked to prevent overflow?	Yes / No	

Checking Officer _____

Date _____ Time _____

POST CRUDE OIL WASHING AND CARGO DISCHARGING OPERATIONS CHECK LIST

No.	ITEM	CHECK	REMARKS
1	Have all valves between the cargo discharge line and the tank washing ring main been shut?	Yes / No	
2	Has the tank washing ring main been drained?	Yes / No	
3	Are all the tank washing machine supply valves shut?	Yes / No	
4	Are all the cargo tanks, cargo pumps and cargo pipelines properly drained as specified in the COW Manual?	Yes / No	
5	Have the recirculatory crude tanks been discharged?	Yes / No	

Checking Officer _____

Date _____ Time _____

STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
MAP TA PHUT SPM TERMINAL

M.T.
SHIP / SHORE HOURLY CARGO FIGURES

[illegible]

10.4 Appendix 2: Discharging Information

SPRC Star Petroleum Refining Public Company Limited		Discharging Information Map Ta Phut SPM	
Tanker Name: _____		Date: _____	
1 <u>Crude to be discharged</u>			
First grade	TOV (M ³)		
Second grade	TOV (M ³)		
Third grade	TOV (M ³)		
Fourth grade	TOV (M ³)		
2 <u>Mooring Master / MM/Shore Foreman staying onboard:</u>			
Capt. (Pilot)	Cabin	Tel	Watch Time
Capt. (MM)	Cabin	Tel	Watch Time
Capt. (MM)	Cabin	Tel	Watch Time
Shore Foreman	Cabin	Tel	
3 <u>Surveyor / Agent Checker staying onboard</u>			
Surveyor (No.1)	Cabin	Tel	
Surveyor (No.2)	Cabin	Tel	
Agent Checker	Cabin	Tel	
4 <u>Communication:</u>			
4.1 With Shore Control Station			
- Shore CALL SIGN..."MCB" and Ship CALL SIGN "...SPM"			
- Means VHF CH.67 (Primary) ... UHF CH . 7 (Back up)			
4.2 With Mooring Master			
- Pilot/Mooring Master will keep watching during discharging.			
- Means VHF CH.67, CALL SIGN..." Mooring Master "			
5 <u>Requirement:</u>			
5.1 Ship's crew watch keeping at FORE CASTLE and at MANIFOLD all time			
5.2 Initial discharge pressure 3 kg/cm ² . Maximum discharging pressure at manifold to 10.5 Kg/cm ² .			
or flow rate at shore not more than : PTTGC tank 8,500 M3/hr. , SPRC tank 9,000 M3/hr.			
5.3 During discharging , terminal will give a notice (30 ,15, 5 , ... mins) for any reduction due to stoppage , change tank , etc. SPM Tanker will give 10 mins notice to MCB for cargo grade completion.			
5.4 To switch shore tank , MCB request to reduce flow rate to 4,000 m3/ hr.			
5.3 Ship's officer in charge CCR to call ... " MCB " and exchange crude(s) volume (cubic meter) every hour :			
- Total cubic meter remaining onboard (TOV)			
- Discharge rate / quantity discharge last hour			
- Total cubic meter been discharged			
- Then ... "MCB " will return total cubic meter shore has received			
- Comparison between Ship/ shore figure : Always monitor and if more than 500 m3 , the volume will be carefully rechecked and clarify with both tanker / shore side.			
5.4 Ship to maintain stability at least 30% of summer dead weight.			
5.5 Maximum trim at all stages are 5.5 meters.			
5.6 Discharge operation will be suspended when significant wave height more than 2.5 meters.			
Acknowledge Receipt ,		Truly Yours ,	
_____ Ship's Officer		_____ Mooring Master	

APPENDIX 3 : SPM PREBERTH INSPECTION

SPRC Star Petroleum Refining Public Company Limited		SPM Pre-berth Inspection Report	
Tanker Name: _____		Date: _____	
Prior the tanker berthing operation, the following actions to be carried out :			
Subjects	Yes / No	Remarks	
Check SPM ,environment , no damaged / no spillage / no leakage			
Check correction of SPM freeboard and trim			
Inspect hawsers /mooring arrangement / pick up ropes not damage not fouling / not entangle and connections tight: - Boarding SPM to inspect hawsers and relating connection - Workboat pull pick up rope and self-observe the mooring assembly and entire mooring hawsers - Eye inspection from the workboat or Uniwise Rayong			
Trial Load Monitoring system to working properly			
Check hose and MBC connection no damaged/leakage/fouling : - Surface swimming perform (if require) or checking from the boat - Check lifting gear at hose end laying properly - Check hose strings steaming correctly.			
Check Turntable rotating freely : - Boarding SPM and Check or observing from the boat			
Check navigation aids position / lighting correctly			
Check SPM pipework.swivel,expansion joint : no damaged/no leakage			
Check SPM fitting , Valve operable/correct position. Pressure gauge reading			
Check SPM security hatched / vent / drain v/v / sounding cap			
Hose Connection / Disconnection Operation : - To verify and confirm that no any ship's part/equipment at manifolds / rail /tanker rail area will harmful or lead to damage to the hoses during . operation			
Above subjects have accomplished and confirm SPM READY / NOT READY for berthing.			
<u>Additional Remarks</u>			

Check by (name) _____ Date / Time _____

Acknowledge by _____ Date / Time _____
Mooring Master



APPENDIX 4 : SPM DEFECT LIST



Tanker Name: _____ Date: _____

During the tanker berthing / discharging / un-berthing, the following items observed:

Subjects	Remarks
SPM Light / Fog horn and Winker lights	
Port Mooring Hawser	
Stbd. Mooring Hawser	
Port Mooring Messenger	
Stbd. Mooring Messenger	
Port 24" Hose String	
Stbd. 24" Hose String	
Port 16" Tail Hoses	
Stbd. 16" Tail Hoses	
Port 16" Tanker rail hose & - Butterfly valve - Snubbing wire / chain - Lifting gear - Messenger	
Stbd. 16" Tanker rail hose & - Butterfly valve - Snubbing wire / chain - Lifting gear - Messenger	

Check by (name) _____ Date / Time _____

Responsibility (signature) _____ Date / Time _____