

ภาคผนวกที่ 14

การทดสอบการรั่วไหลของท่อด้วยวิธีชลสถิตย (Hydrostatic Test)



Acceptance Contents Sheet Pressure Test Package

Date : 8 FEB 23

Project Name : TO SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF HIGHWAY (BOH)
Test Package No.: HT-FL-22-I048-001-23

IAFE No. : E-22V0311
Job. No. : BPK-FL-22-I048-00-PTES/3" GGB

Description : 3" GGB Flowline (Partial Test J.2 to J.5)

System Name : N/A
Design Pressure : - Psig
Holding Time : 2 hr.
Test Pressure : 2,500 Psig

S/N	ITEM	STATUS	
1	Line List	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
2	Drawing / Contents List	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A
3	P & ID Drawing (Pressure test, System test) and P & ID's List	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
4	Isometric Drawings (Pressure test, System test) and Drawings List	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A
5	Punch List	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
6	Inspection Release Note (IRN)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A
7	Activity Sheets	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
8	Flushing Report	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A
9	Piping Inspection Test Record - Pressure / Temperature Report	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A
10	Pressure Test Chart (Included at Approval of Package)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A
11	Piping Inspection Test Record - Reinstatement and Exclusion List From Testing	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
12	Piping Inspection Test Record - Valve Schedule (if required)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
13	Calibration Certificates	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A
14	Site Instructions	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
15	Technical Queries	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> N/A
16	Water Test Report	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> N/A

☒ Hydrostatic Test ☐ Pneumatic Test Accepted

☒ Yes ☐ No ☐ N/A

Date: 10 FEB 23

Mechanical Reinstatement Completed

☒ Yes ☐ No ☐ N/A

Date: 10 FEB 23

TEST PACKAGE ACCEPTED - PRIOR TO TEST

Contractor's Engineer :

Signed :

Name :

Date : 9-02-23

Co

Signed :

Name :

Date : 8-Feb-23

Company's Representative :

Signed :

Name :

Date : 14/2/23

TEST PACKAGE APPROVAL AFTER TEST

Contractor's Engineer :

Signed :

Name :

Date :

Contractor's Inspection Services :

Signed :

Name :

Date :

Company's Representative :

Signed :

Name :

Date :



INSPECTION RELEASE NOTE

Piping Work : Before Hydrostatic test

Project Name : TO SUPPORT ROAD EXPANSION (1065)
BY DEPARTMENT OF HIGHWAY (BOH)

Test Package No.: HT-FL-22-I048-001-23

Test Drawing/Spools No.: 3" GGB Flowline (Partial Test J.2 to J.5)

PRE HYDROTEST	Item	Description of document	Yes	No	N/A
	1	Welding procedures approved (ขั้นตอนการเชื่อมได้ถูกอนุมัติแล้ว)	✓		
	2	NDE procedures approved (วิธีการทดสอบการทดสอบ NDE ได้ถูกอนุมัติแล้ว)	✓		
	3	Welder/welding operator qualified to governing codes & standards (ช่างเชื่อม/ช่างเชื่อมกึ่งอัตโนมัติผ่านการสอบตามข้อ)	✓		
	4	Material used compliant to applicable codes & standards (วัสดุที่ใช้เป็นไปตามมาตรฐานและข้อกำหนดที่ให้ไว้)	✓		
	5	Material traceability recall system available (สามารถตรวจสอบติดตามชิ้นส่วนของวัสดุได้)	✓		
	6	Weld map and history sheets available (บันทึกประวัติการเชื่อมเสร็จเรียบร้อยแล้ว)	✓		
	7	All components fabricated in accordance to approved drawings (ทุกชิ้นส่วนที่เชื่อมเรียบร้อยแล้วเป็นไปตามแบบที่ผ่านการอนุมัติ)	✓		
	8	Site instructions issued on components require modification on site (if any) (มีเอกสารคำสั่งให้ดัดแปลงชิ้นงานที่นอกเหนือจากแบบที่ได้รับอนุมัติ)			✓
	9	TQ raised and approved on deviations to Client Specifications (มีการนำเสนอข้อมูลทางเทคนิคเพื่อขอเบี่ยงเบนไปจากข้อกำหนดของลูกค้า)			✓
	10	All elements visually inspected and accepted (งานเชื่อมได้รับการตรวจสอบและอนุมัติแล้ว)	✓		
	11	Required NDT completed and accepted to Client specifications (งานได้ผ่านการตรวจสอบโดยไม่ทำลายเสร็จสมบูรณ์และผ่านการอนุมัติจากลูกค้าแล้ว)	✓		
	12	Approved hydrostatic test packages on individual piping system available (เอกสารที่นำเสนอเพื่อการทดสอบแรงดันด้วยน้ำหรือไนโตรเจนของระบบท่อที่จะทดสอบได้รับการอนุมัติแล้ว)	✓		
	13	NCR outstanding (if any) (บันทึกที่ไม่เป็นไปตามข้อกำหนดตามมาตรฐานของงาน)		✓	
	14	Punch list generated on outstanding materials and or work (if any) (มีบันทึกรายละเอียดงานที่ยังไม่ได้แก้ไขหรือไม่(ถ้ามีให้ระบุ NO. of Punch List))		✓	

REMARKS :

Inspection By BPE QC	CA(3rd Party) or Agency By :	Review/Approved By PTTEP QA/QC
 Signed : BPE QA/QC Name : 8-Feb-23 Date :	N/A Signed : Name : Date :	 Signed : PTTEP-ECM-QA/QC Name : 08 FEB 2023 Date :



INSPECTION RELEASE NOTE

Piping Work : After Hydrostatic test

Project Name : TO SUPPORT ROAD EXPANSION (1065)
BY DEPARTMENT OF HIGHWAY (BOH)

Test Package No.: HT-FL-22-I048-001-23

Test Drawing/Spools No.: 3" GGB Flowline (Partial Test J.2 to J.5)

POST HYDROTEST

Item	Description of document	Yes	No	N/A
1	Hydrostatic test completed, accepted and documented. (การทดสอบแรงดันด้วยน้ำหรือในโดรเจนที่เสร็จสมบูรณ์เป็นที่ยอมรับตามเอกสารที่กำหนดหรือแบบที่ผ่านการอนุมัติ)	✓		
2	Flushing completed (ได้ทำความสะอาดภายในท่อเรียบร้อยแล้ว : ท่อขนาดไม่เกิน 2 นิ้ว หรือท่อที่ใช้ส่งแรงดันลม-ทำความสะอาดด้วยแรงดันจากลม: ท่อมีขนาดโตกว่า 2 นิ้ว ทำความสะอาดด้วยแรงดันน้ำแล้วเป่าให้แห้งด้วยลม)	✓		
3	All piping components removed are reinstated back in to the system (ส่วนประกอบของท่อทั้งหมดได้ถูกถอดออกและใส่กลับคืนเข้าระบบตามที่กำหนด)			✓
4	System service test carried out and accepted (ผลการทดสอบการใช้งานจริงได้ถูกอนุมัติแล้ว)	✓		
5	Valve passing (if any) marked in P & ID and included in punch list (การทดสอบผ่านประตูเปิด-ปิดแล้วได้ถูกกำหนดในแผนผังของท่อรวมถึงบันทึกที่ตกหล่นจากข้อกำหนด)			✓
6	Flow direction of check valve, glove valve, control valve are correct (ทิศทางการไหลของของเหลวและลมผ่านประตูเปิดปิดของวาล์วชนิดต่างๆถูกต้องตามแผนผังท่อและอุปกรณ์)	✓		
7	Anti-seize compound applied to all stud-bolts (มีการทาสารป้องกันสนิมหรือติดขัดที่น็อตหรือสกรู)			✓
8	Tell-tale holes fill up with (รูระบายอากาศของแผ่นเหล็กเสริมท่อที่นำมาเชื่อมติดไว้กับท่อได้อุดจากรับ ซีลโคนหรือเชื่อมอุด)			✓
9	Valve handle not obstructed to facilitate full open / closed position (ประตูเปิด-ปิดแล้วไม่กีดขวางและสามารถเปิดได้สุดและปิดได้สุด)			✓
10	Valve handle / wheel operator of personnel in service platform (เมื่อเปิดปิดวาล์วสามารถอยู่ในระยะที่ผู้ทำงานสามารถเปิดปิดได้ในขณะทำงาน)			✓
11	Engineering approved Shipped Loose list - available (ได้มีการกำหนดรายการชิ้นส่วนของที่ส่งลงทะเลโดยได้รับการอนุมัติโดยฝ่ายวิศวกรรมของลูกค(์(DAN))			✓
12	Correct insulation type and stainless steel jacketing installed onto the required linds (ชนิดของฉนวนและปลอกสแตนเลสหุ้มฉนวนได้ติดตั้งอย่างถูกต้องตามข้อกำหนดของการออกแบบของแต่ละชนิด)			✓
13	NCR outstanding (if any) (บันทึกที่ไม่เป็นไปตามข้อกำหนดตามมาตรฐานของงาน)			✓
14	Punch list generated on outstanding materials and or works (if any) (มีบันทึกรายละเอียดงานที่ยังไม่ได้แก้ไขหรือไม่ (ถ้ามีให้ระบุ No. of Punch List))			✓

REMARKS :

Inspection By BPE QC	CA(3rd Party) or Agency By :	Review/Approved By PTTEP QA/QC
<p>Signed : </p> <p>Name : BPE QA/QC</p> <p>Date : 10 FEB 23</p>	<p>Signed : N/A</p> <p>Name :</p> <p>Date :</p>	<p>Signed :</p> <p>Name :</p> <p>Date :</p>



Acceptance Contents Sheet
Pressure Test Package

Date : 8 FEB 23

DRAWING CONTENTS/LISTING INDEX

Project Name : TO SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF
HIGHWAY (BOH)

Test Package No.: HT-FL-22-1048-001-23


Drawing/Isometric No.	Sheet No.	Rev. No.	Spool No.	P&ID	Rev. No.
PLS-2-05-125C	125C	C1	N/A	N/A	N/A

REMARK :

Contractor's Engineer :	Contractor's Inspection Services :	Company's Representative :
Signed : Name : Date : 9 - 02 - 23	Signed : Name : BPE QA/QC Date : 8 - Feb - 23.	Signed : Name : PTTEP-ECM-QA/QC Date : 08 FEB 2023

NOTE :

1.) WAS DRAWING No. T1193 P.1/2

	3" GGB Gas flowline Frome LKU-G TO LKU-H			Made by: PP.	Date: 7/01/03	Title : LKU-H, ACCESS ROAD ALIGNMENT	ISSUE	1	2	C1	
C1	ISSUED FOR 10"-14" GAS FLOWLINE INSTALLATION FROM LKU-M TO Y/SIN	30/03/18	T.AKE.	Checked by: SS.	Date: 01/04		DATE	01/03	13/01/04	30/03/18	
2	T UPDATE DRAWING FROM PFO/66	13/01/04	PT.	Appr. by: TT.	Date: 01/04		SIGN.	PP.	PT.	T.AKE.	
1	ASBUILT	7/01/03	PP.		Concession : S1	Area : Ban Nong Ta Sang LANKRABU, KAMPHAENGPHET	Project & group No. ASBUILT SURVEY				
NO.	REVISION	DATE	BY		PTTEP Greater S1 Assets		Drawing No. PLS-2-05-125C				



Report No. : PAUT-001/23	Rev. 0
Exam Date : February 2,2023	Page 1 of 4

Client :	PTTEP SIAM LIMITED/E-22V0311	STIC job No. :	JN-BPK-00038/RP-BPK-231052-014
Project / Job No. :	Support Road Expansion (1065) By Department of Highway (DOH) (Pipeline 3GGB & 6GB) /Job No.BPK-FL-22-1048-00-PTES		
Work Instruction No. :	WI-C30-037 Rev.00	Acceptance Criteria :	APJ 1104, 2021Ed./PEGS-10008-STD-6-PLR-025-R00

Instrument Setup

Indication Table

[illegible]

Result Summary : See above

Examination Quantities 4 Joints

Company	[REDACTED]	[REDACTED]	Reviewed by Third Party	[REDACTED]
Signature	[REDACTED]	[REDACTED]	N/A	[REDACTED]
Name	[REDACTED]	[REDACTED]		[REDACTED]
Date	February 2, 2023	10-106-2's.		19-FEB 2023

Document No.: FM-TM01-029

Revision No.-Date: 00-08/11/22

The present inspection has been carried out to the best of our knowledge and belief. By signing this inspection report, neither the inspector nor the company and its representatives shall be liable in any manner for any personal injury, properties damage or loss of any kind arising from or concerned with this inspection.

Bangkok 10160, Thailand

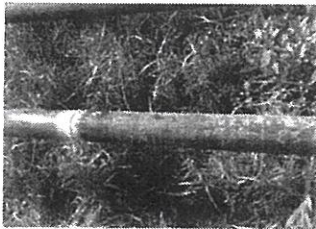
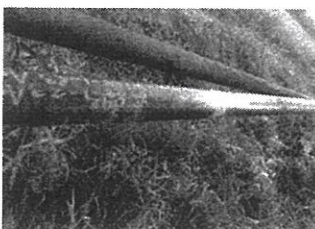
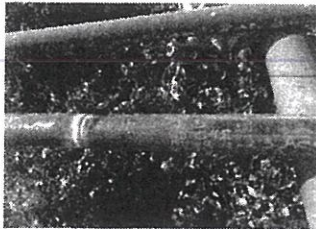
Rayong 21150, Thailand

Email: [REDACTED]

Website: www.sivrateesting.com

E-mail.



MAGNETIC PARTICLE EXAMINATION REPORT				Report No. : MT-001/23		Rev. 0		
				Exam. Date : February 2, 2023		Page 1 of 1		
Work Description	Client : PTTEP SIAM LIMITED/E-22V0311							
	Project : SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF HIGHWAY (DOH)(PIPELINE 3GGB & 6GB) JOB NO BPK-FL-22-1048-00 PTES							
	Examination Place : LKU-G TO LKU-H				STIC Job No. : JN-BPK-00038/RP-BPK-231051-0019			
	DWG No. : 3" GGB F/L				Material Thickness : 11.13 mm			
	Material Type : API5LX42+API5LX42							
Test Record	Procedure No. / Rev. : WI-C30-031/Rev.00				Procedure Qualification No. : -			
	Surface Preparation		<input checked="" type="checkbox"/> Brushing		<input type="checkbox"/> Grinding		<input type="checkbox"/> Others : -	
	Equipment and Technique		<input type="checkbox"/> Yoke		<input checked="" type="checkbox"/> Permanent Magnet (S/N:21613)			
			Manufacturer : Magnaflux		Model : KY-P2		Current : N/A	
	Magnetic Particle		Manufacturer : Magnaflux		Model : 7HF		Fluorescent N/A	
	Lighting Equipment :		Natural light & Spotlight : 1957 Lux		Light Meter LX-90 + (S/N: 1147747)			
Acceptance Criteria : API 1104,2021 Ed./10008-STD-6-PLR-025								
Test Location / Indication Record								
As minimum, the type of indications (linear or rounded), location and extent (length or diameter or aligned) shall be recorded.								
Joint No.	Iso / Line No.	Welder No.	Material		Type of weld	Welding process	Judgement	
			Size (Inch)	THK (mm)				
2	3" GGB F/L	042	NPS=3"	11.13	BW	GTAW+SMAW	Accepted	
3	3" GGB F/L	042	NPS=3"	11.13	BW	GTAW+SMAW	Accepted	
5	3" GGB F/L	042	NPS=3"	11.13	BW	GTAW+SMAW	Accepted	
  								
Examination Quantity : 3 joints								
Result Summary : No unacceptable indication was found.								
Judgement		<input checked="" type="checkbox"/> Accepted		<input type="checkbox"/> Rejected		<input type="checkbox"/> Attached Report = - Page(s) /		
Company		[Redacted]		Reviewed by Third P		[Redacted]		
Signature		[Redacted]		N/A		[Redacted]		
Name		[Redacted]		[Redacted]		[Redacted]		
Date		February 2, 2023		46-Feb-23		M.FEB 2023		

PAUT - 001R1

BEST PERFORMANCE ENGINEERING CO., LTD.

REQUEST FOR NDE SERVICES

PROJECT/PWO.: Support Road Expansion (1065) by Department of Highway (DOH) (Pipeline 3GG8 & 6GB) REQUEST NO.: 3rd 668-003-2023 PAGE: 1

LOCATION: LKU-G to LKU-H DATE OF SERVICE REQUEST: 7 Feb 23

JOB NO.: BPK-FL-22-1048-00-PTES CLIENT JOB NO.: THC21-5432 IAFE NO.: E-22V0311

☒ LUMP SUM ☐ TIME AND MATERIAL (DAY RATE) ☐ OTHER: LKU-H

CLIENT PROJECT ENGINEER NAME : Mr. Wiruch P.
CONTRACTOR-PROJECT ENGINEER NAME : Mr. Carchit C.
CLIENT-QC INCHARGE NAME : Mr. Chairat J.
CONTRACTOR-QC INCHARGE NAME :

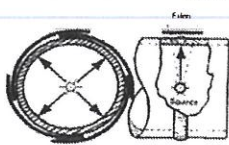
TECHNICAL	TYPE OF NDE : <input type="checkbox"/> RT <input checked="" type="checkbox"/> PAUT <input type="checkbox"/> HARDNESS TEST			
	<input checked="" type="checkbox"/> MT <input type="checkbox"/> PT <input type="checkbox"/> VICKER			
	<input type="checkbox"/> PMI <input type="checkbox"/> UTM <input type="checkbox"/> UT <input type="checkbox"/> BRINELL			
	<input type="checkbox"/> FERRITE MEASUREMENT <input type="checkbox"/> METALLOGICAL FILED REPLICA <input type="checkbox"/> ROCKWELL			
	STAGE OF EXAMINATION :			
	<input type="checkbox"/> BEFORE REPAIR	<input type="checkbox"/> PREPARE EDGE	<input checked="" type="checkbox"/> AFTER REPAIR	<input checked="" type="checkbox"/> BEFORE HYDROSTATIC TEST
	<input checked="" type="checkbox"/> AS WELD	<input type="checkbox"/> AS ROLLED	<input type="checkbox"/> BEFORE P.W.H.T.	<input type="checkbox"/> AFTER HYDROSTATIC TEST
				<input type="checkbox"/> OTHER

ACCEPTANCE CRITERIA	<input type="checkbox"/> AWS. D1.1	<input type="checkbox"/> STATICALLY	<input type="checkbox"/> ASME B31.3	<input type="checkbox"/> SEVERE CYCLIC	<input type="checkbox"/> HIGH PRESSURE	
		<input type="checkbox"/> CYCLICALLY		<input type="checkbox"/> D FLUID	<input type="checkbox"/> NORMAL, M FLUID	
	<input type="checkbox"/> ASME IX	<input type="checkbox"/> ASME 31.1	<input type="checkbox"/> ASME B31.8	<input checked="" type="checkbox"/> API 1104	<input type="checkbox"/> API 650	<input type="checkbox"/> API 620
	<input type="checkbox"/> API 570	<input type="checkbox"/> API 653	<input type="checkbox"/> API 510	<input type="checkbox"/> ASME I	<input type="checkbox"/> ASME VII DIV	<input type="checkbox"/> ASME PCC-2
	<input type="checkbox"/> API 568	<input type="checkbox"/> ASTM		<input type="checkbox"/> OTHER :		

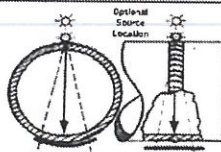
ACCEPTANCE CRITERIA BY CLIENT SPECIFICATION :

☒ PTTEP : 10008-STD-6-PLR-025-R00 ☐ CHEVRON : N/A ☐ CPOC : N/A

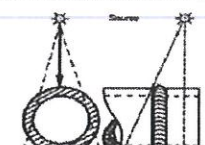
☐ OTHER :

[illegible]

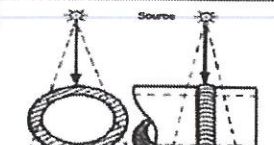
Exposure Arrangement — A



Exposure Arrangement — D



Exposure Arrangement—E



Exposure Assessment: 5

SWSI

DWSI

DWDI

DWDI/S

NOTE :

- 1) Copy of this request will be forwarded to NDE Supervisor with issued by NDE Coordinator.
- 2) Identify all welds by pen marking flagging etc. whichever practical.
- 3) Identify all line by using no. and drawing no.
- 4) Require "Extra Precaution Work permit".
- 5) An acceptance criteria is requested. If on marking, NDE Coordinator will call a Requestor to identify the category.

BATH.

BATH.

BATH.

Prepared by:	Reviewed by Client:	CA (3rd or Party) or Agency: SIWA	Reviewed and Approved by Owner:
Signature.: ken	Signature.: [Signature]	Signature.: [Signature]	Signature.: [Signature]
Name.: mr ken B.	Name: [Signature]	Name.: [Signature]	Name.: [Signature]
Date.: 7 Feb 93	Date.: [Signature]	Date.: 8-2-93	Date.: [Signature]



FLUSHING REPORT

Inspction date :	10-Feb-23	Test Package No.:	HT-FL-22-I048-001-23
Project name :	TO SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF HIGHWAY (BOH)		
IAFE. No. :	E-22V0311		
Job No. :	BPK-FL-22-I048-00-PTES/3" GGB	Location :	LKU-H

CLEAN CLASS : FLUSHING MEDIUM

☒ WATER & AIR
 ☐ WATER
 ☐ AIR BLOW
 ☐ OTHER _____

RESULT :

☒ ACCEPTED
 ☐ REJECTED



Remark :

Prepare By BPE QC Technician	Review By BPE QC Supervisor/Engineer	Review/Approved By PTTEP ECM/N
Signature : Name : Wattana Bunchu Date : 10 FEB 23	Signature : Name : Date :	Signature : Name : Date :



INSPECTION REPORT



Project : TO SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF HIGHWAY (BOH) Report No. : HT-FL-22-1048-001-23

Client : PTTEP

Date : 10 FEB 23

Job No. : BPK-FL-22-1048-00-PTES/3" GGB

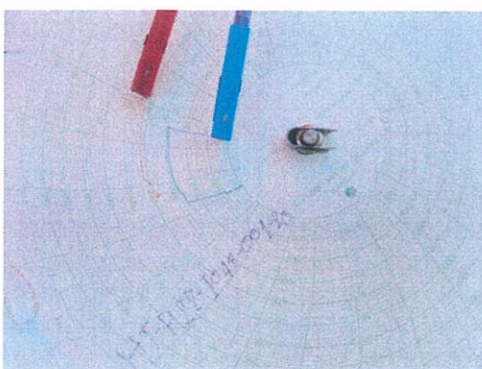
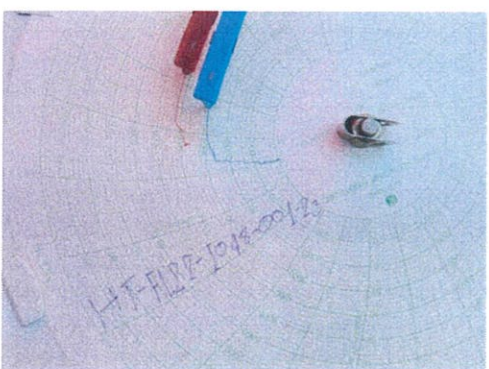
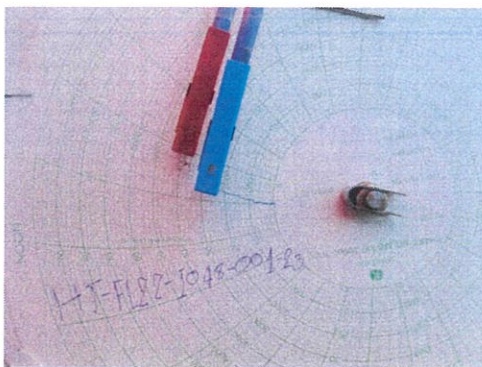
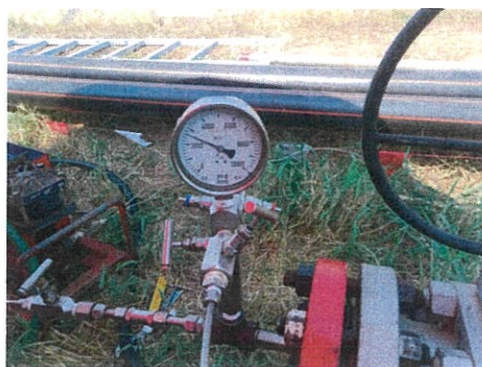
Inspector : MR.WATTANA B.

Place of Inspection : LKU-H

Sheet :

Description : HYDROSTATIC TEST 2500 PSI

Detail of Inspection Finding :



Visual Result :






ACCEPTED



REJECTED

Note :

 	<h2 style="margin:0;">Acceptance Contents Sheet</h2> <h3 style="margin:0;">Pressure Test Package</h3>																																									
Project Name : TO SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF HIGHWAY (BOH)		Test Package No.: HT-FL-22-I048-001-23																																								
Description : 3" GGB Flowline (Partial Test J.2 to J.5)																																										
<table style="width:100%; border:none;"> <tr> <td style="width:30%;">Test Pressure Requirements :</td> <td style="width:30%;"> <input checked="" type="checkbox"/> Hydrostatic Test </td> <td style="width:30%;"> <input type="checkbox"/> Pneumatic Test </td> <td style="width:10%;"> <input type="checkbox"/> Other : _____ </td> </tr> <tr> <td>Test Medium :</td> <td> <input checked="" type="checkbox"/> Fresh Water </td> <td> <input type="checkbox"/> Air </td> <td> <input type="checkbox"/> Nitrogen </td> </tr> <tr> <td>Test Pressure :</td> <td> 2,500 psig </td> <td> Allowable Recorder / Gauge Range : </td> <td> 0 - 10,000 psig </td> </tr> <tr> <td>Allowable Temperature Range :</td> <td> 0-100 °C </td> <td> Recorder Serial No.: </td> <td> P0008 </td> </tr> <tr> <td>Operating Medium :</td> <td> - </td> <td> Gauge 1 Serial No.: </td> <td> P0009 </td> </tr> <tr> <td>Design Pressure :</td> <td> - psig </td> <td> Gauge 2 Serial No.: </td> <td> P0010 </td> </tr> <tr> <td>Design Temperature :</td> <td> - °C </td> <td> Oxygen scavenger : </td> <td> <input type="checkbox"/> required <input checked="" type="checkbox"/> not required </td> </tr> <tr> <td>Duration of Test Pressure :</td> <td> 60 minute </td> <td> Chloride Contents : </td> <td> 3 ppm. </td> </tr> <tr> <td>Test Pressure Start Time :</td> <td> 13.30 </td> <td> Test Pressure Finish Time : </td> <td> 15.30 </td> </tr> <tr> <td>Test Pressure Reading :</td> <td> 2650 psig </td> <td> Test Pressure Reading : </td> <td> 2900 psig </td> </tr> </table>			Test Pressure Requirements :	<input checked="" type="checkbox"/> Hydrostatic Test	<input type="checkbox"/> Pneumatic Test	<input type="checkbox"/> Other : _____	Test Medium :	<input checked="" type="checkbox"/> Fresh Water	<input type="checkbox"/> Air	<input type="checkbox"/> Nitrogen	Test Pressure :	2,500 psig	Allowable Recorder / Gauge Range :	0 - 10,000 psig	Allowable Temperature Range :	0-100 °C	Recorder Serial No.:	P0008	Operating Medium :	-	Gauge 1 Serial No.:	P0009	Design Pressure :	- psig	Gauge 2 Serial No.:	P0010	Design Temperature :	- °C	Oxygen scavenger :	<input type="checkbox"/> required <input checked="" type="checkbox"/> not required	Duration of Test Pressure :	60 minute	Chloride Contents :	3 ppm.	Test Pressure Start Time :	13.30	Test Pressure Finish Time :	15.30	Test Pressure Reading :	2650 psig	Test Pressure Reading :	2900 psig
Test Pressure Requirements :	<input checked="" type="checkbox"/> Hydrostatic Test	<input type="checkbox"/> Pneumatic Test	<input type="checkbox"/> Other : _____																																							
Test Medium :	<input checked="" type="checkbox"/> Fresh Water	<input type="checkbox"/> Air	<input type="checkbox"/> Nitrogen																																							
Test Pressure :	2,500 psig	Allowable Recorder / Gauge Range :	0 - 10,000 psig																																							
Allowable Temperature Range :	0-100 °C	Recorder Serial No.:	P0008																																							
Operating Medium :	-	Gauge 1 Serial No.:	P0009																																							
Design Pressure :	- psig	Gauge 2 Serial No.:	P0010																																							
Design Temperature :	- °C	Oxygen scavenger :	<input type="checkbox"/> required <input checked="" type="checkbox"/> not required																																							
Duration of Test Pressure :	60 minute	Chloride Contents :	3 ppm.																																							
Test Pressure Start Time :	13.30	Test Pressure Finish Time :	15.30																																							
Test Pressure Reading :	2650 psig	Test Pressure Reading :	2900 psig																																							
15 Minute Intervals	Time	Test Pressure Reading	Temperature Reading	Recorded By :																																						
1.	13.30	2650	35.6	QC Hydro Test by Mr. Wattana B.																																						
2.	14.00	2850	36.2																																							
3.	14.30	2840	36.4																																							
4.	15.00	2900	37.0																																							
5.	15.30	2900	37.2																																							
REMARKS :																																										
Blown Dry : <input checked="" type="checkbox"/> Satisfied <input type="checkbox"/> Unsatisfied																																										
Inspection By BPE QC 		CA(3rd Party) or Agency By :		Review/Approved By PTTEP QA/QC																																						
Signed : Name : BPE QA/QC Date : 10 FEB 23		Signed : N/A Name : Date :		Signed : Name : Date :																																						



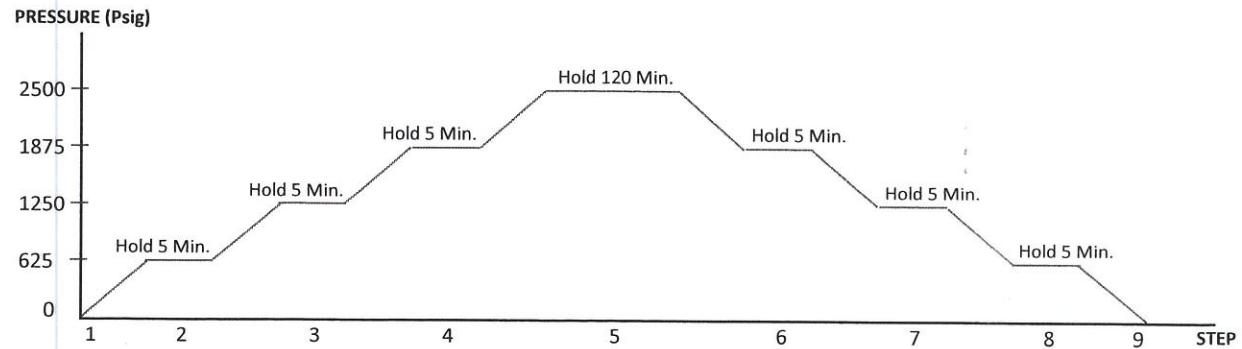
STEP FOR HYDROSTATIC PRESSURE TEST

Project name : TO SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF HIGHWAY (BOH)

Job. ID. No. : BPK-FL-22-I048-00-PTES/3" GGB

Drawing No. : PLS-2-05-125C

PRESSURE TABLE	
STEP	PRESSURE (Psig)
1	0
2	625
3	1250
4	1875
5	2500
6	1875
7	1250
8	625
9	0



1. Water Filling : Where possible filling shall be done at the lowest point as per hydrostatic test diagram. After filling completed all open vent point shall be closed/plugged.

2. Pressurizing : 1. Pressure shall be gradually increased to 25 %, 50 %, 75 % of maximum pressure test before achieving the full test pressure. At every step of pressurizing the pressure shall be held minimum of 5 minutes for pressure stabilize.

2. Temperature recorder shall be used simultaneous with the pressure recorder. This is to record and monitor the temperature decrease or increase. A temperature probe shall be used to monitor the temperature and has to be in place prior to start of the pressure testing and attached to the pipe surface or inserted at the test manifold.

Prepared by :

CA(3rd Party) or Agency By :

Approved by :

Signature
Name
Date

Signature
Name
Date

N/A

Signature
Name
Date

PTTEP-ECM-QA/
08 FEB 2023



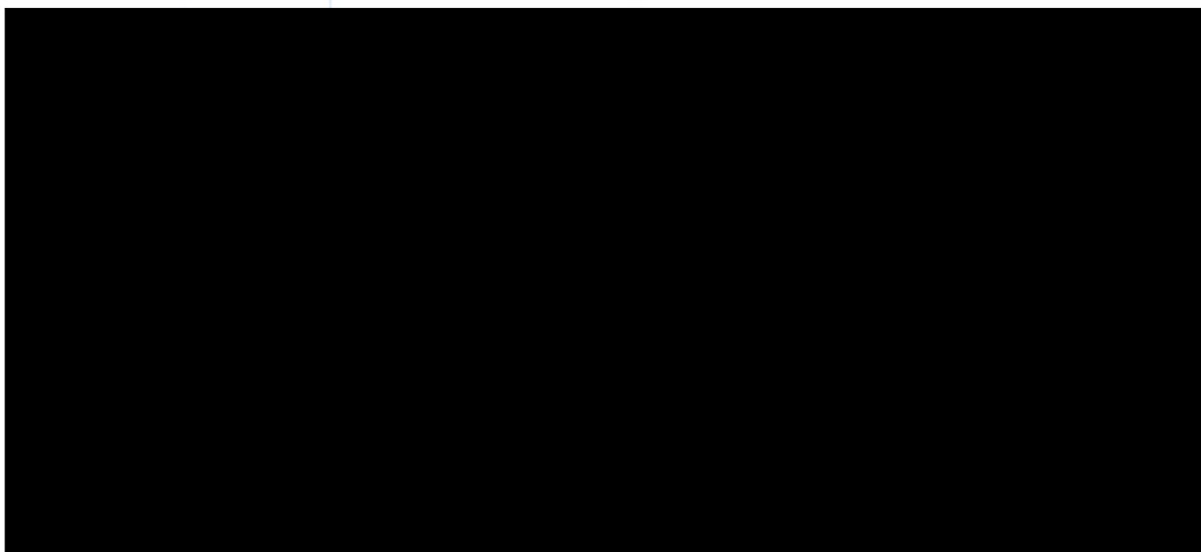
HYDROSTATIC TEST DIAGRAM



Project name : TO SUPPORT ROAD EXPANSION (1065) BY DEPARTMENT OF HIGHWAY (BOH)

Job ID. No. : BPK-FL-22-I048-00-PTES/3" GGB

Drawing No. : 3" GGB Flowline (Partial test J.2 to J.5)



Note : HP = High point, LP = Low point, PG = Pressure gauge, TG = Temperature gauge

Pressure test		Test Press. < { Min 2500 Psig Max Psig		Step of Pressurization	
Piping Class : -		Test Temp. < { Min 0 °C Max 100 °C		25% By: 625 Psig	
Test Press. : 2500 Psig		Test Fluid WATER		50% By: 1250 Psig	
		Test Fluid Q'T 209.27 Ltr.		75% By: 1875 Psig	
		Holding Time 2 Hrs.		100% By: 2500 Psig	
Prepared By		CA (3 rd Party) or Agency			
Signature		Signature N/A		Signature	
Name		Name		Name	
Date 7-Feb-23		Date		Date	

PTTEP-ECM-001
08 FEB 2023

ภาคผนวกที่ 15
ตำแหน่งแนวท่อลำเลียงปิโตรเลียม



ISSUED FOR
INFORMATION

BY EFE/D SECTION
21 December 2010

PTTEP

**APPROVED FOR
CONSTRUCTION**

**PTTEB**

BY EFE SECTION
20 December 2022

GENERAL NOTES

1. P-816 TO BE REPLACED BY P-812.
2. V-831 TO BE RELOCATED FROM 'NTM-C' LOCATION.
3. GROUND ELEVATION IS 100000.
4. B/P P-8103 RELOCATE TO 'NOH-A05T'

[illegible][illegible]

DESCRIPTION	DATE	DRN	CHK	AMT
PTTEP Greater S1 Assets				
NONG TUM 'A' PERMANENT PRODUCTION FACILITY				

DRAWING TITLE	PIPING G.A. KEY PLAN
------------------	----------------------

VENDOR DRAWING NO.		SCALE 1:600		DWG SIZE A1	REV. 1
NAME		DATE		PITTP	PITTP DRAWING NO.
DRAWN				CONTRACT NO.	
CHECKED CCH		02/10		NTMA-3-02-00	
APPROVED TM		02/10			

ภาคผนวกที่ 16
หนังสืออนุญาตให้ส่งกำจัดของเสียไม่อันตราย



ใบเสร็จรับเงิน

เลขที่ RCPT-00190/66

วันที่ 9 มกราคม 2566

องค์การบริหารส่วนตำบลลานกระบือ

ได้รับเงินจาก บริษัท เมสท์ เพอฟอร์แมนซ์ เอ็นจิเนียริ่ง จำกัด

ลำดับ	รายการ	รหัสบัญชี	จำนวนเงิน (บาท)	หมายเหตุ
	อ.ลานกระบือ จ.กาแพงเพชร			ประจำเดือน พฤศจิกายน 2565 - มกราคม 2566
		รวมเงิน		
ตัวอักษร (สามพันหกร้อยบาทถ้วน)				
ไว้เป็นการถูกต้องแล้ว		ลงชื่อ		รับเงิน
				เจ้าพนักงานจัดเก็บรายได้ปฏิบัติงาน

ภาคผนวกที่ 17
เอกสารการจ้างแรงงานท้องถิ่น

												11/4/2565										
No	รหัส	ตำแหน่ง	ชื่อ	สกุล	Name Surname	Position	แผนก (Section)	ฝ่าย (Department)	ส่วนงาน (Division)	ทีม (Team)	E-mail	Position Main	ประเภท (M/D)	วันเกิด (วัน/เดือน/ปี)	Birth Day	Age	ID card	Address ส่วน ID	ข้อมูลอื่นๆ	Tel.	หมายเหตุ	
1	BPL-65-0001	ช่าง				Project Manager	-	-	003 - Operation Team				ช่าง	8/8/2565	5/2/2517	48		อ.เบ๊จ จ.พิษณุโลก	-			
4	BPL-65-0010	ช่าง				Helper	Blasting and Painting Section	Production Department	003 - Operation Team	Blasting & Painting			ช่าง	9/2/2565	6/16/2518	47		อ.นายท่า จ.พิษณุโลก	-			
10	BPL-65-0015	ช่าง				Material Man	Material Section	Supply Chain Management Department	004 - Support Team	Material			ช่าง	9/19/2565	3/20/2541	24		อ.สาครณี จ.กำแพงเพชร	-			
11	BPL-65-0016	ช่าง				Safety Technician	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	9/21/2565	6/16/2523	42		อ.สาครณี จ.กำแพงเพชร	-			
13	BPL-65-0018	ช่าง				Document Control	-	QA/QC Management Department	002 - QA/QC Team	QA/QC			ช่าง	9/21/2565	8/26/2532	32		อ.นายท่า จ.พิษณุโลก	-			
14	BPL-65-0019	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/1/2565	3/22/2526	39		อ.สาครณี จ.กำแพงเพชร	-			
18	BPL-65-0023	ช่าง				Draftman I/E Design	-	Design Engineering Department	004 - Support Team				ช่าง	10/1/2565	3/22/2533	32		อ.สาครณี จ.กำแพงเพชร	-			
19	BPL-65-0024	ช่าง				Draftman (X) ME & Structure	-	Design Engineering Department	004 - Support Team				ช่าง	10/1/2565	9/14/2544	30		อ.สาครณี จ.กำแพงเพชร	-			
20	BPL-65-0025	ช่าง				Safety Technician	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/1/2565	12/24/2534	30		อ.สาครณี จ.กำแพงเพชร	-			
21	BPL-65-0026	ช่าง				Officer 1	Warehouse Service Section	Supply Chain Management Department	004 - Support Team	Store			ช่าง	9/15/2565	3/3/2528	37		อ.สาครณี จ.กำแพงเพชร	-			
22	BPL-65-0027	ช่าง				Material Controller	Material Section	Supply Chain Management Department	004 - Support Team	Material			ช่าง	10/5/2565	5/12/2537	28		อ.นายท่า จ.พิษณุโลก	-			
23	BPL-65-0029	ช่าง				Permit Applicator	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/1/2565	5/6/2533	32		อ.สาครณี จ.กำแพงเพชร	-			
24	BPL-65-0030	ช่าง				Permit Applicator	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/1/2565	11/11/2537	27		อ.สาครณี จ.กำแพงเพชร	-			
25	BPL-65-0031	ช่าง				Transport Leader,Hvy Eq Controller	Logistic and Packing Services Section	Supply Chain Management Department	004 - Support Team	SCH			ช่าง	10/3/2565	5/19/2539	26		อ.สาครณี จ.กำแพงเพชร	-			
26	BPL-65-0032	ช่าง				Task supervisor	-	QSHE Department	001 - QSHE Team	Safety			ช่าง	10/25/2565	12/17/2539	25		อ.สาครณี จ.กำแพงเพชร	-			
27	BPL-65-0033	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/1/2565	11/26/2535	29		อ.สาครณี จ.กำแพงเพชร	-			
28	BPL-65-0034	ช่าง				Helper	Material Section	Supply Chain Management Department	004 - Support Team				ช่าง	10/1/2565	9/19/2542	22		อ.สาครณี จ.กำแพงเพชร	-			
29	BPL-65-0035	ช่าง				QC Technician	-	QA/QC Management Department	002 - QA/QC Team	QA/QC			ช่าง	10/1/2565	9/2/2541	23		อ.สาครณี จ.กำแพงเพชร	-			
30	BPL-65-0036	ช่าง				Helper	Material Section	Supply Chain Management Department	004 - Support Team				ช่าง	10/1/2565	9/22/2541	23		อ.สาครณี จ.กำแพงเพชร	-			
31	BPL-65-0037	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/1/2565	1/2/2524	41		อ.ศินิชา จ.สุโขทัย	-			
32	BPL-65-0038	ช่าง				QC Technician	-	QA/QC Management Department	002 - QA/QC Team	QA/QC			ช่าง	10/1/2565	9/9/2540	24		อ.เบ๊จ จ.กำแพงเพชร	-			
33	BPL-65-0039	ช่าง				QC Technician	-	QA/QC Management Department	002 - QA/QC Team	QA/QC			ช่าง	10/1/2565	11/27/2540	24		อ.นายท่า จ.พิษณุโลก	-			
35	BPL-65-0041	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/31/2565	7/2/2525	40		อ.สาครณี จ.กำแพงเพชร	-			
36	BPL-65-0042	ช่าง				Safety Technician	-	SSHE Department	001 - QSHE Team	Safety			ช่าง	10/1/2565	8/14/2533	31		อ.สาครณี จ.กำแพงเพชร	-			
37	BPL-65-0044	ช่าง				Supervisor Piping	Project Fabrication Section	Production Department	003 - Operation Team	PRO / MOD			ช่าง	10/1/2565	3/18/2522	43		อ.สาครณี จ.กำแพงเพชร	-			
38	BPL-65-0045	ช่าง				Supervisor Piping	Project Fabrication Section	Production Department	003 - Operation Team	ALT			ช่าง	10/17/2565	4/11/2516	49		อ.สาครณี จ.กำแพงเพชร	-			
39	BPL-65-0046	ช่าง				Supervisor Piping	Project Fabrication Section	Production Department	003 - Operation Team	ALT			ช่าง	10/1/2565	7/12/2533	32		อ.สาครณี จ.กำแพงเพชร	-			
40	BPL-65-0047	ช่าง				Supervisor Piping	Project Fabrication Section	Production Department	003 - Operation Team	Rig / MOD			ช่าง	10/1/2565	2/28/2520	45		อ.นายท่า จ.พิษณุโลก	-			
41	BPL-65-0048	ช่าง				Supervisor Civil	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/5/2565	8/13/2533	31		อ.สาครณี จ.กำแพงเพชร	-			
42	BPL-65-0049	ช่าง				Supervisor Civil	Project Fabrication Section	Production Department	003 - Operation Team	WHU / MPF			ช่าง	10/1/2565	6/12/2521	44		อ.คลองขลุง จ.กำแพงเพชร	-			
43	BPL-65-0050	ช่าง				Supervisor Civil	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/1/2565	1/14/2539	26		อ.พชรชัย จ.พิษณุโลก	-			
44	BPL-65-0052	ช่าง				Permit Applicator	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/1/2565	1/31/2540	25		อ.สาครณี จ.กำแพงเพชร	-			
45	BPL-65-0054	ช่าง				Technician Assistant	Logistic and Packing Services Section	Supply Chain Management Department	004 - Support Team	SCM			ช่าง	10/17/2565	11/23/2539	25		อ.สาครณี จ.กำแพงเพชร	-			
46	BPL-65-0055	ช่าง				Construction Engineer	Project Engineering Section	Production Department	003 - Operation Team	FLO			ช่าง	10/17/2565	2/6/2524	41		อ.สาครณี จ.กำแพงเพชร	-			
47	BPL-65-0056	ช่าง				Engineer I/E	-	QA/QC Management Department	002 - QA/QC Team	QA/QC			ช่าง	10/1/2565	9/6/2539	25		อ.สาครณี จ.กำแพงเพชร	-			
48	BPL-65-0058	ช่าง				Accountant	Accounting Section	Accounting & Finance Department	004 - Support Team	SCM			ช่าง	10/1/2565	2/5/2540	25		อ.นายท่า จ.พิษณุโลก	-			
49	BPL-65-0059	ช่าง				Document Control	Marketing and Market Research Section	Marketing and Business Development Department	004 - Support Team	Marketing			ช่าง	10/1/2565	1/3/2532	33		อ.พชรชัย จ.พิษณุโลก	-			
50	BPL-65-0060	ช่าง				Document Control	-	SSHE Department	001 - SSHE Team	PRO			ช่าง	10/3/2565	4/4/2541	24		อ.นายท่า จ.พิษณุโลก	-			
51	BPL-65-0061	ช่าง				Document Control	-	QA/QC Management Department	002 - QA/QC Team	QA/QC			ช่าง	10/15/2565	5/6/2541	24		อ.คลองขลุง จ.กำแพงเพชร	-			
52	BPL-65-0063	ช่าง				Document Control	-	SSHE Department	001 - SSHE Team	PRO			ช่าง	10/1/2565	10/18/2542	22		อ.คลองขลุง จ.กำแพงเพชร	-			
53	BPL-65-0064	ช่าง				Labour	Blasting and Painting Section	Production Department	003 - Operation Team	Blasting & Painting			ช่าง	10/5/2565	11/12/2531	33		อ.สาครณี จ.กำแพงเพชร	-			
54	BPL-65-0065	ช่าง				Maintenance	Maintenance Section	Project Engineering Department	003 - Operation Team	ALT			ช่าง	10/5/2565	3/12/2536	29		อ.พชรชัย จ.พิษณุโลก	-			
55	BPL-65-0066	ช่าง				Electrician	Maintenance Section	Project Engineering Department	003 - Operation Team				ช่าง	10/5/2565	9/28/2539	25		อ.โพธาราม จ.กำแพงเพชร	-			
56	BPL-65-0067	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/5/2565	1/30/2534	31		อ.สาครณี จ.กำแพงเพชร	-			
57	BPL-65-0068	ช่าง				Helper (I & I)	Maintenance Section	Project Engineering Department	003 - Operation Team				ช่าง	10/5/2565	8/15/2544	20		อ.เบ๊จ จ.พิษณุโลก	-			
58	BPL-65-0071	ช่าง				Helper	Project Fabrication Section	Production Department	003 - Operation Team	ALT/RIG			ช่าง	10/5/2565	1/1/2542	23		อ.พชรชัย จ.พิษณุโลก	-			
59	BPL-65-0072	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/5/2565	1/8/2544	21		อ.ศินิชา จ.สุโขทัย	-			
60	BPL-65-0073	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/5/2565	11/11/2532	32		อ.สาครณี จ.กำแพงเพชร	-			
61	BPL-65-0074	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/5/2565	5/28/2537	28		อ.สาครณี จ.กำแพงเพชร	-			
62	BPL-65-0075	ช่าง				Maintenance Technician	Warehouse Service Section	Supply Chain Management Department	004 - Support Team				ช่าง	10/5/2565	4/6/2503	62		อ.ราชบุรี จ.มหาสารคาม	-			
63	BPL-65-0077	ช่าง				Helper (I & I)	Maintenance Section	Project Engineering Department	003 - Operation Team				ช่าง	10/5/2565	9/17/2541	23		อ.สาครณี จ.กำแพงเพชร	-			
64	BPL-65-0078	ช่าง				Helper (I & I)	Maintenance Section	Project Engineering Department	003 - Operation Team				ช่าง	10/5/2565	1/25/2542	23		อ.สาครณี จ.กำแพงเพชร	-			
65	BPL-65-0081	ช่าง				Admin Safety	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	9/26/2565	3/21/2539	26		อ.สาครณี จ.กำแพงเพชร	-			
66	BPL-65-0082	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	11/11/2565	9/23/2518	46		อ.สาครณี จ.กำแพงเพชร	-			
68	BPL-65-0084	ช่าง				Foreman Piping	Project Fabrication Section	Production Department	003 - Operation Team	MPF			ช่าง	10/1/2565	7/5/2517	48		อ.สาครณี จ.กำแพงเพชร	-			
69	BPL-65-0085	ช่าง				Foreman Mech Shop	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop			ช่าง	10/1/2565	12/13/2522	42		อ.สาครณี จ.กำแพงเพชร	-			
70	BPL-65-0086	ช่าง				Foreman Civil	Project Fabrication Section	Production Department	003 - Operation Team	WHU			ช่าง	10/1/2565	1/1/2496	69		อ.สาครณี จ.กำแพงเพชร	-			
71	BPL-65-0087	ช่าง				Task supervisor	-	SSHE Department	001 - SSHE Team	Safety			ช่าง	10/17/2565	7/4/2543	22		อ.บึงสามพัน จ.สุโขทัย	-			
72	BPL-65-0088	ช่าง				Officer 2	Office Facilities Section	Human Resources Department	004 - Support Team	OPS			ช่าง	10/1/2565	3/15/2521	44		อ.ราชบุรี จ.พิษณุโลก	-			
73	BPL-65-0089	ช่าง				Mason (I & I)	Maintenance Section	Project Engineering Department	003 - Operation Team	ALT			ช่าง	10/1/2565	10/5/2540	24		อ.สาครณี จ.กำแพงเพชร	-			
74	BPL-65-0090	ช่าง				Fitter A (Beam Pump)	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/17/2565	3/15/2524	41		อ.สาครณี จ.กำแพงเพชร	-			
75	BPL-65-0091	ช่าง				Foreman Piping	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	9/26/2565	9/26/2523	41		อ.สาครณี จ.กำแพงเพชร	-			
76	BPL-65-0092	ช่าง				Fitter B	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop			ช่าง	10/17/2565	6/14/2523	42		อ.พชรชัย จ.พิษณุโลก	-			
77	BPL-65-0093	ช่าง				Fitter C	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/17/2565	9/5/2546	18		อ.พชรชัย จ.พิษณุโลก	-			
78	BPL-65-0094	ช่าง				Fitter B	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/17/2565	9/18/2524	40		อ.สาครณี จ.กำแพงเพชร	-			
79	BPL-65-0095	ช่าง				Construction Engineer	Project Engineering Section	Project Engineering Department	003 - Operation Team	Civil			ช่าง	10/1/2565	5/12/2523	42		อ.เบ๊จ จ.พิษณุโลก	-			
81	BPL-65-0097	ช่าง				Fitter A	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop			ช่าง	10/17/2565	9/10/2523	41		อ.โพธาราม จ.กำแพงเพชร	-			
82	BPL-65-0099	ช่าง				Helper Beam Pump	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/17/2565	11/28/2546	18		อ.นายท่า จ.พิษณุโลก	-			
83	BPL-65-0100	ช่าง				Fitter A	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/1/2565	9/1/2513	51		อ.สาครณี จ.กำแพงเพชร	-			
84	BPL-65-0101	ช่าง				Fitter B	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG			ช่าง	10/1/2565	7/20/2521	44		อ.สาครณี จ.กำแพงเพชร	-			
85	BPL-65-0102	ช่าง				Helper (I & I)	Maintenance Section	Project Engineering Department	003 - Operation Team				ช่าง	10/17/2565	9/5/2541	23		อ.ศินิชา จ.สุโขทัย	-			
86	BPL-65-0103	ช่าง				Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil			ช่าง	10/1/2565	6/8/2519	46		อ.สาครณี จ.กำแพงเพชร	-			
87	BPL-65-0105	ช่าง				Labour	Project Fabrication Section	Production Department	003 - Operation Team													

103	BPL-65-0126	นาง		Filter C	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG		นางสาว	10/17/2565	12/29/2540	24			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
105	BPL-65-0128	นาง		Electrician	Maintenance Section	Project Engineering Department	003 - Operation Team			นางสาว	10/10/2565	8/22/2523	41			อ.มานะภัก จ.พิษณุโลก	-		
106	BPL-65-0129	นาง		Helper (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team			นางสาว	10/17/2565	7/18/2539	26			อ.ชาติเชษฐกร จ.พิษณุโลก	-		
107	BPL-65-0130	นาง		Electrician	Maintenance Section	Project Engineering Department	003 - Operation Team			นางสาว	10/10/2565	9/16/2541	23			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
108	BPL-65-0131	นาง		Filter B (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team	PRO / MOD		นางสาว	10/17/2565	5/19/2544	21			อ.พลากรธนาจ จ.กำแพงเพชร	-		
109	BPL-65-0132	นาง		Helper (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team			นางสาว	10/17/2565	9/10/2544	20			อ.ศุภินา จ.สุโขทัย	-		
110	BPL-65-0133	นาง		Engineer Civil	-	QA/QC Management Department	002 - QA/QC Team	QA/QC		นายเสียน	10/1/2565	4/4/2536	29			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
111	BPL-65-0136	นาง		Filter B (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team	ALT / MPF		นางสาว	10/10/2565	9/24/2520	44			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
112	BPL-65-0137	นาง		Task supervisor	-	SSHE Department	001 - SSHE Team	Safety		นางสาว	10/26/2565	12/15/2537	27			อ.ศุภินา จ.สุโขทัย	-		
113	BPL-65-0138	นาง		Filter B (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team	ALT / RIG		นางสาว	10/5/2565	7/23/2524	41			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
114	BPL-65-0139	นาง		Electrician (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team			นางสาว	10/17/2565	7/28/2535	30			อ.ณัฐกรโชติ จ.สุโขทัย	-		
115	BPL-65-0141	นาง		Helper (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team			นางสาว	10/10/2565	9/30/2545	19			อ.ศุภินา จ.สุโขทัย	-		
116	BPL-65-0143	นางสาว		Officer 1	Warehouse Service Section	Supply Chain Management Department	004 - Support Team	Store		นายเสียน	10/14/2565	5/22/2539	26			อ.ณัฐกรโชติ จ.กำแพงเพชร	-		
118	BPL-65-0145	นาง		Filter B	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG		นางสาว	10/5/2565	10/28/2519	45			อ.ศุภินา จ.สุโขทัย	-		
119	BPL-65-0146	นาง		Filter B	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG		นางสาว	10/5/2565	4/29/2523	42			อ.มานะภัก จ.พิษณุโลก	-		
120	BPL-65-0148	นาง		Filter B	Project Fabrication Section	Production Department	003 - Operation Team	WHU / MPF		นางสาว	10/17/2565	2/17/2529	36			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
121	BPL-65-0149	นาง		Warehouse Helper	Warehouse Service Section	Supply Chain Management Department	004 - Support Team	Store		นางสาว	10/17/2565	8/11/2539	25			อ.ไพรัช จ.กำแพงเพชร	-		
122	BPL-65-0150	นาง		Electrician (E&I)	Maintenance Section	Project Engineering Department	003 - Operation Team	WHU / MPF		นางสาว	10/17/2565	7/23/2539	26			อ.ณัฐกรโชติ จ.กำแพงเพชร	-		
123	BPL-65-0153	นาง		Filter B	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop		นางสาว	12/21/2565	10/31/2540	24			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
124	BPL-65-0155	นาง		Filter C	Project Fabrication Section	Production Department	003 - Operation Team	WHU / MPF		นางสาว	10/17/2565	9/23/2544	20			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
125	BPL-65-0156	นางสาว		Maid	HR Service Section	Human Resources Department	004 - Support Team	OFS		นางสาว	10/8/2565	12/4/2526	38			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
126	BPL-65-0157	นาง		Filter C	Project Fabrication Section	Production Department	003 - Operation Team	Beam & Pump		นางสาว	10/10/2565	9/9/2524	40			อ.มานะภัก จ.พิษณุโลก	-		
127	BPL-65-0158	นางสาว		Document Control	Logistic and Packing Services Section	Supply Chain Management Department	004 - Support Team	SCH		นายเสียน	10/10/2565	6/23/2532	33			อ.พลากรธนาจ จ.กำแพงเพชร	-		
128	BPL-65-0159	นางสาว		Maid	HR Service Section	Human Resources Department	004 - Support Team	OFS		นางสาว	10/10/2565	1/30/2534	31			อ.เชษฐกรณิจ จ.กำแพงเพชร	-		
129	BPL-65-0160	นางสาว		Admin	Office Facilities Section	Human Resources Department	004 - Support Team	OFS		นายเสียน	10/10/2565	9/27/2541	23			อ.พลากรธนาจ จ.กำแพงเพชร	-		
130	BPL-65-0161	นางสาว		Draftman Piping	-	Design Engineering Department	004 - Support Team			นายเสียน	10/10/2565	10/9/2540	24			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
131	BPL-65-0162	นาง		Engineer Piping	Maintenance Section	Project Engineering Department	003 - Operation Team	WHU		นายเสียน	10/11/2565	4/5/2539	26			อ.ณัฐกรโชติ จ.กำแพงเพชร	-		
132	BPL-65-0163	นาง		Equipment Control Officer	Logistic and Packing Services Section	Supply Chain Management Department	004 - Support Team			นายเสียน	10/12/2565	9/12/2542	22			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
133	BPL-65-0164	นางสาว		Material Controller	Material Section	Supply Chain Management Department	004 - Support Team			นายเสียน	10/12/2565	9/21/2542	22			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
134	BPL-65-0165	นาง		Hydrotect	-	QA/QC Management Department	002 - QA/QC Team	QA/QC		นางสาว	10/13/2565	3/26/2538	27			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
136	BPL-65-0167	นางสาว		Purchase	Purchasing Section	Supply Chain Management Department	004 - Support Team	SCM		นายเสียน	10/10/2565	8/24/2541	23			อ.มานะภัก จ.กำแพงเพชร	-		
137	BPL-65-0169	นาง		Filter B	Project Fabrication Section	Production Department	003 - Operation Team			นางสาว	10/17/2565	7/7/2542	23			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
138	BPL-65-0170	นาง		Helper Civil	Blasting and Painting Section	Production Department	003 - Operation Team	Civil		นางสาว	10/17/2565	2/14/2506	59			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
139	BPL-65-0171	นาง		Helper Civil	Blasting and Painting Section	Production Department	003 - Operation Team	Civil		นางสาว	11/11/2565	9/20/2510	54			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
140	BPL-65-0172	นาง		Helper Civil	Blasting and Painting Section	Production Department	003 - Operation Team	Civil		นางสาว	10/18/2565	4/13/2528	37			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
141	BPL-65-0173	นางสาว		Safety Officer	-	SSHE Department	001 - SSHE Team	Safety		นายเสียน	10/18/2565	11/25/2541	23			อ.มานะภัก จ.พิษณุโลก	-		
142	BPL-65-0174	นางสาว		E&I Engineer	Project Engineering Section	Project Engineering Department	003 - Operation Team			นายเสียน	10/18/2565	11/5/2541	23			อ.ณัฐกรโชติ จ.กำแพงเพชร	-		
143	BPL-65-0175	นาง		Mason (ช่างปูน)	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	10/18/2565	11/10/2510	54			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
144	BPL-65-0176	นางสาว		Labour	Blasting and Painting Section	Production Department	003 - Operation Team	Blasting & Painting		นางสาว	10/18/2565	9/1/2540	24			อ.มานะภัก จ.พิษณุโลก	-		
145	BPL-65-0177	นางสาว		Document Control	-	Design Engineering Department	004 - Support Team			นายเสียน	10/20/2565	6/4/1994	27			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
146	BPL-65-0178	นางสาว		Admin HR	HR Service Section	Human Resources Department	004 - Support Team	HR		นายเสียน	10/20/2565	12/30/2537	27			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
147	BPL-65-0179	นางสาว		Labour	Blasting and Painting Section	Production Department	003 - Operation Team	Blasting & Painting		นางสาว	10/22/2565	3/17/2540	25			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
148	BPL-65-0180	นาง		Filter C Beam & Pump	Project Fabrication Section	Production Department	003 - Operation Team	ALT/ Beam & Pump		นางสาว	10/27/2565	3/29/2532	33			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
149	BPL-65-0181	นาง		Helper Beam Pump	Project Fabrication Section	Production Department	003 - Operation Team	ALT/ Beam & Pump		นางสาว	10/28/2565	3/2/2547	18			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
150	BPL-65-0182	นาง		Senior HR	HR Development Section	Human Resources Department	004 - Support Team	HR		นายเสียน	10/31/2565	7/21/2024	41			อ.ณัฐกรโชติ จ.กำแพงเพชร	-		
151	BPL-65-0183	นางสาว		Sale Coordinator	Marketing and Market Research Section	Marketing and Business Development Department	004 - Support Team	Marketing		นายเสียน	11/1/2565	2/22/1943	22			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
152	BPL-65-0185	นางสาว		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	7/10/2026	39			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
153	BPL-65-0186	นาง		Mason (ช่างปูน)	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	2/24/1982	40			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
154	BPL-65-0187	นางสาว		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	3/21/1940	25			อ.ศุภินา จ.สุโขทัย	-		
155	BPL-65-0188	นาง		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	9/5/1934	31			อ.มานะภัก จ.พิษณุโลก	-		
156	BPL-65-0189	นางสาว		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	10/15/2027	38			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
157	BPL-65-0190	นาง		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	4/24/1977	45			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
160	BPL-65-0193	นาง		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	9/20/2013	52			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
161	BPL-65-0194	นาง		Helper Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	7/15/1945	20			อ.มานะภัก จ.พิษณุโลก	-		
162	BPL-65-0195	นาง		Mason (ช่างปูน)	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	10/5/1978	44			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
163	BPL-65-0196	นาง		Mason (ช่างปูน)	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	1/1/2005	60			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
164	BPL-65-0197	นาง		Filter A	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop		นางสาว	11/1/2565	9/23/1991	31			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
165	BPL-65-0198	นาง		Mason (ช่างปูน)	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	3/12/1976	46			อ.มานะภัก จ.พิษณุโลก	-		
166	BPL-65-0199	นาง		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	4/5/2026	39			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
167	BPL-65-0200	นาง		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	10/8/2023	42			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
168	BPL-65-0201	นาง		Filter A	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop		นางสาว	11/1/2565	1/13/1979	45			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
169	BPL-65-0202	นาง		Mason (ช่างปูน)	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	5/8/2017	48			อ.มานะภัก จ.พิษณุโลก	-		
170	BPL-65-0203	นาง		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	8/9/2001	21			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
171	BPL-65-0204	นางสาว		Admin HR	HR Service Section	Human Resources Department	004 - Support Team			นายเสียน	11/3/2565	11/29/1996	25			อ.ไพรัช จ.กำแพงเพชร	-		
172	BPL-65-0205	นางสาว		Labour Civil	Project Fabrication Section	Production Department	2 - Operation Team	Civil		นางสาว	11/3/2565	10/27/1983	39			อ.มานะภัก จ.พิษณุโลก	-		
173	BPL-65-0206	นางสาว		Labour Civil	Project Fabrication Section	Production Department	003 - Operation Team	Civil		นางสาว	11/1/2565	7/31/2020	45			อ.มานะภัก จ.พิษณุโลก	-		
174	BPL-65-0207	นาง		E&I supervisor	Project Engineering Section	Project Engineering Department	003 - Operation Team			นายเสียน	11/3/2565	1/20/1982	40			อ.ไพรัช จ.กำแพงเพชร	-		
175	BPL-65-0208	นาง		Filter A	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop		นางสาว	11/4/2565	2/4/1965	57			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
176	BPL-65-0209	นาง		Filter A	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop		นางสาว	11/4/2565	7/20/1978	44			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
177	BPL-65-0210	นาง		Foreman Piping	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG		นางสาว	11/1/2565	2/12/1964	58			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
178	BPL-65-0211	นาง		Foreman Mech Shop	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG		นางสาว	11/4/2565	1/31/1988	34			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
179	BPL-65-0212	นาง		Foreman Piping	Project Fabrication Section	Production Department	003 - Operation Team	ALT / RIG		นางสาว	11/4/2565	4/6/1970	52			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
181	BPL-65-0214	นาง		Filter A	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop		นางสาว	11/4/2565	12/10/1994	28			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
182	BPL-65-0215	นาง		Filter B	Project Fabrication Section	Production Department	003 - Operation Team	Fab / Shop		นางสาว	11/4/2565	8/11/1995	27			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
183	BPL-65-0216	นาง		Transport	Logistic and Packing Services Section	Supply Chain Management Department	004 - Support Team			นายเสียน	11/4/2565	9/5/1996	26			อ.สาธิตกรณิจ จ.กำแพงเพชร	-		
1	นาง			Warehouse Helper	Warehouse Service Section	Supply Chain Management Department	004 - Support Team	Store		นางสาว	11/7/2565	12/23/1998	24			อ.ไพรัช จ.กำแพงเพชร	-		
2	นางสาว			Sale Coordinator	Marketing and Market Research Section	Marketing and Business Development Department													

ภาคผนวกที่ 18
บันทึกการตรวจวัดแอลกอฮอล์

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ภาคผนวกที่ 19
การตรวจสอบสภาพพนักงาน

ภาคผนวกที่ 20

S1 Emergency Response Plan



PTTEP

PTT Exploration and Production Public Company Limited

S1 Emergency Response Plan

Document Code: 13247-PDR-SSHE-501/08-R03

November 2019

Approval Register

Document Subject S1 Emergency Response Plan
Document Code 13247-PDR-SSHE-501/08-R03
Document Owner S1 Production Operations Department (PS1)
Prepared by [REDACTED], SSHE Engineer
Effective Date November 2019

Review and Approve

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	PS1/P	[REDACTED]	21/11/19
	[REDACTED] PS1/O	[REDACTED]	21/11/19
	[REDACTED] PS1/L	[REDACTED]	21/11/19
	[REDACTED] PTN/A	[REDACTED]	22/11/19
	[REDACTED] HRC/O	[REDACTED]	21/11/19
	[REDACTED] PLG/M	[REDACTED]	21/11/19
	[REDACTED] ETN <i>CEIN Workshop</i>	[REDACTED]	25/11/19
Document Owner	[REDACTED] PS1	[REDACTED]	13/12/19
Approval Authority	[REDACTED] PS1	[REDACTED]	13/12/19

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

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INTRODUCTION

1. PURPOSE

In the context of S1 Emergency Response Plan (herein referred to as “Plan”), an emergency is any event, happening with or without advance warning, causing, or which may cause, death or injury, damage to property or the environment or disruption to the community and/ or business within PTTEP S1 onshore operation premises.

The plan is developed for guiding S1 asset personnel to clearly understand the roles and responsibilities of the S1 Emergency Response Team (ERT) during an actual or potential emergency that could cause an impact to S1 asset and its associated stakeholders, especially staff, contractors and surrounding communities. The emergency response shall be actioned to align with the plan as well as related Thai laws and regulations. Apart from S1 ERT member roles and responsibilities and their responsive actions outlined in this document, the emergency preparedness, resources, training and competency, drills & exercises, and recovery/mitigation measures should be also included in this document for ensuring effective emergency management.

- The objectives of emergency response are to:-
- prevent fatalities and injuries;
- reduce damage to plants, facilities, and equipment;
- protect the communities and the environment; and
- accelerate the resumption of normal operations.

The development of the Emergency Response Plan (ERP) begins with a vulnerability assessment. The results of study:-

- Identifies the emergency situations likely to occur and threaten life, environment, community, and S1 operations;
- Identifies means and resources necessary for a given emergency situation;
- Defines S1 emergency organization and key personnel involved with their roles & responsibilities;
- Defines the actions to be taken by S1 ERT members for the emergency preparedness and response;
- Defines the actions to be taken by S1 Community & Media Response Team (CMRT) and Relative Response Team (RRT) for emergency preparedness and response;
- Defines the correct and clear lines of command and reporting in an emergency;
- Describes the guidelines for community handlings in an emergency; and
- Defines interface between S1 ERT and PTTEP corporate Emergency Management Team (EMT) and Crisis Management Team (CMT) and other external parties.

The plan should ensure an integrated response at the appropriate level to any related emergency situations and to minimize the potential impact on People, Environment, Legal Compliance, Asset & Property, and Reputation.

The response of S1 ERT at all levels of the organization will follow the following priorities.

1. Protection of People
2. Protection of Environment
3. Protection of Asset and Property (including infrastructure, machinery, equipment, and facilities)
4. Protection of Reputation and Business

2. SCOPE

This plan applies to all emergency situations occurred within PTTEP S1 and L22/43 Operation premises owned or controlled by PTTEP subsidiaries.

This also includes other relevant agencies that may be requested to provide assistance or expertise to cope with PTTEP S1 emergency situations.

Scope of S1 emergency response covers all operating areas of S1 asset and L22/43 concession areas as well as the activities outside the owned premises, but under the responsibility of S1 asset e.g. land or rail transports, accommodating facilities, etc.

The areas which S1 ERP shall cover are:-

- LKU flow station including crude process area, LPG process, spheres & loading area, and LKU crude depot;
- Production sub-stations including NTM-A, STN-A, and NSG-A;
- Active production well locations;
- Non-productive well locations;
- Flow lines connecting to well locations;
- Bung Pra depot;
- S1 well services workshop;
- S1 material yard and material storage locations;
- Chong Non See (CNS) rail tanker inspection and maintenance workshop; and
- PHS housing compounds.

The activities which S1 ERP shall cover are:-

- Production operation;
- Brownfield construction project activities;

- Drilling activities;
- Well service activities;
- Maintenance & inspection activities;
- Land transports including oil movement, materials and personnel transportation; and
- Other emergency situations which may arise e.g. community concerns, security concerns, natural disasters, etc.

Pertaining to other operations in S1 concession area e.g. drilling, greenfield construction, seismic survey, rig camps, etc. within the scope of S1 concessionaire's liability that have their own emergency organization, they shall establish their own On-Scene Commander (OSC) and responsive team.

The OSC shall report all incidents to S1 Emergency Response Team (ERT) primarily via S1 telecom officer. In any case when situation becomes uncontained by site emergency response organization, S1 ERT comes to take over the command. The OSC constantly report to Deputy Emergency Team Leader (DERTL).

Note: All appendices of this document shall cover:-

- Appendix A: Emergency Call Message from LKU Telecom Officer
- Appendix B: Initial Emergency Report Form
- Appendix C: Emergency Log Sheet
- Appendix D: Locations of Predetermined Muster Points
- Appendix E: Examples of Communication Tools
- Appendix F: Example of S1 Duty Roster
- Appendix G: Incident Guideline for Emergency Situations
- Appendix H: Prompt Cards
- Appendix I: Emergency Contact Lists and Numbers

All appendices of this document shall be reviewed and endorsed by the document owner, Vice President (VP) of S1 Production Operations Department. The appendices will be amended and added without requirements for the document's revision and approval endorsement.

REQUIREMENTS

3. EMERGENCY MANAGEMENT

3.1 PTTEP EMERGENCY AND CRISIS CLASSIFICATION

With reference to the 3-Tier definition of Emergency & Crisis in PTTEP Emergency Crisis Management Standard (SSHE-106-STD-500), emergency covers the situations in tier 1 and tier 2; whereas, a crisis situation is classified as and treated by **a tier 3 response level**.

Tier 1:

- The situation involves a problem, which has limited impact and minimal potential for escalating, poses a threat to the safety & the environment **and poses no threat to the general public**.
- The situation can be handled by the on OSC with the site operation team and/or intervention team within a reasonable timeframe. Tier 1 emergency response can be totally managed by DERTL, being appointed based on the area affected by an incident. After tier 1 emergency situation can be managed and resumed to normal operation, the situation and response details shall be reported to the duty officer and ERTL respectively.

Examples of tier 1 emergency situations in the S1 operation area are, but not limited to, the following.

- Small manageable fires and/or gas leaks, accidents or safety & security threats;
- No hazard to the public in adjacent areas exists;
- Minor injuries may have occurred (treatable through first aid); and
- Danger to the environment is minimal, however, the potential for escalation exists.

Tier 2:

- The situation involves an emergency with greater magnitude and major severity in nature or has the potential to escalate and continue for a significant period of time, or cause a significant impact to public or environment that requires sophisticated implications with external parties.
- The situation involves damage to S1 facilities/assets and/or impact on 3rd parties and may pose a significant threat to safety, environment, and facilities/assets.
- The situation may request external assistance from local authorities in the affected areas i.e. local fire brigade, Sub-district Administrative Office (SAO), local hospital/public health center, Oil Industry Environment Safety Group Association of Thailand (IESG) or the nearby external organizations, and etc.
- The situation may result in the activation of S1 Asset EMT in BKK.

For tier 2 emergency situations, ERT will respond to the emergency site while S1 asset EMT in BKK may be established to manage and provide relevant support to the S1 ERT and/or the affected site.

S1 asset EMT members should include the top management/authorized person of the S1 asset and other key positions from various disciplines that are, but not limited to, the following.

1. EMT Leader – Thai Onshore Asset Senior Vice President (SVP) acts as EMT Leader;
2. Common members such as BKK S1 asset duty, logistic duty, SSHE duty, corporate RRT duty, communication team, IT duty, administration team duty, event logger, etc.
3. Specific members such as drilling duty, construction duty, well operation duty, etc.

Examples of tier 2 emergency situations in S1 operation area are the followings:

- Employees, contractors, service providers, visitors, community, the environment, property, facilities (or any combination of these) are exposed to a significant hazard.
- Non-essential personnel in adjacent areas of S1 operating areas such as LKU flow station, production sub-stations, active well sites, flow lines, BPR depot and etc will need to be evacuated.
- Deaths, and/or multiple serious injuries may have occurred (ambulance and/or medivac may be required).
- There may be significant environmental impacts such as the large volume of hydrocarbon leaks to site surrounding areas.

Tier 3:

- Involves a catastrophic scenario resulted in multiple injuries, fatalities, major fires, environmental damage, toxic gas release, significant business interruption and poses a significant threat to the environment or damage to PTTEP assets and finally brings in significant media attention.
- Requests external assistance from aboard or international resources i.e. the Oil Spill Response Limited Company (OSRL) and the East Asia Response Limited Company (EARL), etc.
- Results in the activation of CMT.

The CMT members consist of the PTTEP top management at the Corporate Level and other supporting functions. Their responsibilities and procedures are defined in the PTTEP CMP (12148-PDR-SSHE-501).

PTTEP Risk Assessment Matrix (RAM) demonstrated in appendix D of PTTEP SSHE risk management standard (11038-STD-SSHE-401) can be used as a guideline to consider the initial appropriate levels of response to any particular event.

3.2 S1 EMERGENCY RESPONSE TEAM ORGANIZATION

S1 production operations are governed by Vice President (VP) of S1 Production Operations Department with a total of six (6) sections of the followings:

1. Production Section (PS1/P);
2. Maintenance Section (PS1/M);
3. Oil Movement and Transportation Section (PS1/O);
4. Production Operations Support Section (PS1/T);
5. Land Acquisition, Permits & Operation Services Section (PS1/L); and
6. Safety, Security, Health, and Environment (SSHE) Section (PS1/S).

Additionally, there are eight (8) support functions providing supports to S1 production operations. These support functions consist of:

1. Public Affairs Section (PTN/A)
2. Operations Training Center Section (HRC/O)
3. Onshore Construction Execution Section (ECM/N)
4. Drilling Operations Section (ETN/D)
5. Well Services Section (ETN/W)
6. Well Services Workshop (ETN)
7. Lan Krabue Support Base Section (PLG/M)
8. Lifting Equipment & Services (PLG/L)

An organigram of S1 production operations is illustrated in **Figure 1**.

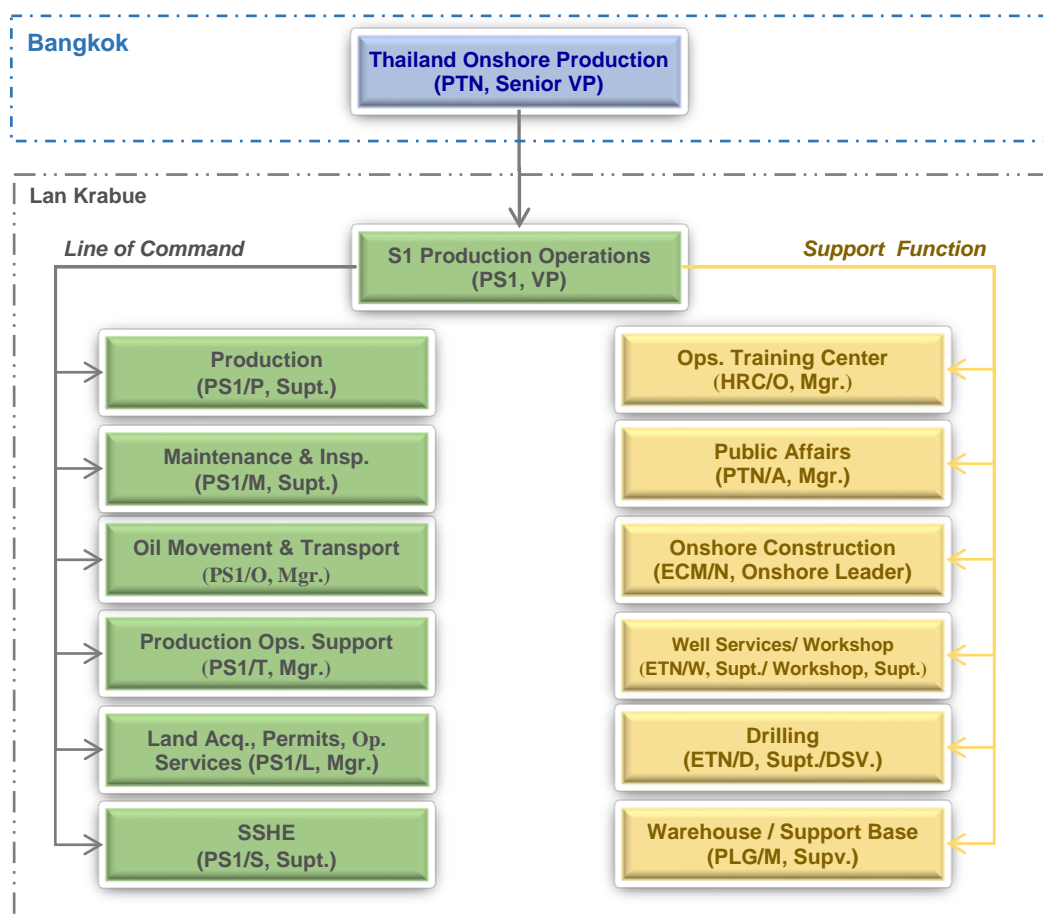


Figure 1: Organigram of S1 production Operations

S1 production operations management team including VP, section heads and representatives from support functions specified in the above organigram is assigned to take roles and responsibilities in ERT depicted in the following paragraphs of this document.

ERT is lead by VP and consists of staff with roles and responsibilities necessary for responding to emergency situations likely to occur in S1 production operations as well as with the conjoined activities e.g. drilling, well workover, project construction, road transport, etc.

ERT assesses the occurring emergency situation & consequences, then determines & prioritize the potential impacts and responsive actions to ensure that emergency operations are conducted in a safe manner while the given emergency situation is sufficiently contained and controlled. To do so, ERT directs, supports and collaborates with the on-scene responsive team, concerned external parties e.g. local authorities, local communities, media, staff's relatives, contractors, customers, etc. In parallel, ERT communicates and collaborates with S1 asset duty person and EMT.

ERT members are:-

1. Emergency Response Team Leader (ERTL) – Vice President of S1 production operations department;
2. Deputy Emergency Response Team Leader (DERTL) – appointed by ERTL, by default the top authority of the area affected by the given emergency situation otherwise specifically appointed by ERTL;
3. Duty Officer – S1 production superintendent otherwise specifically appointed by ERTL;
4. S1 SSHE Advisor – S1 SSHE superintendent or his delegate;
5. Event Logger – S1 production engineer;
6. Muster Logger / Deputy Muster Checker – S1 SSHE officer (operational safety);
7. Muster Checkers – the trained persons assigned to the given muster points;
8. On-scene Commander (OSC) – appointed persons in charge of site location affected by the given emergency situation;
9. Site Operation Team – Normally regular staff who are working at site location;
10. Intervention Team/Firefighting Team – Trained staff who are competent in emergency, fire and rescue operations appointed by ERTL;
11. Medical Team – LKU Doctor/Nurse, Ambulance, and Stretcher Team;
12. LKU Telecommunication Officer (24/7); and
13. On-call Support Team – includes transportation/logistic, drilling, well service, construction, maintenance, IT/Telecom, spill response team, medical response team (CMRT), relative response team (RRT), security, and administration & finance.

The organigram of S1 ERT is illustrated in **Figure 2**.

ERT member assignments for the areas under S1 premise are illustrated in **Table 1 - 5**.

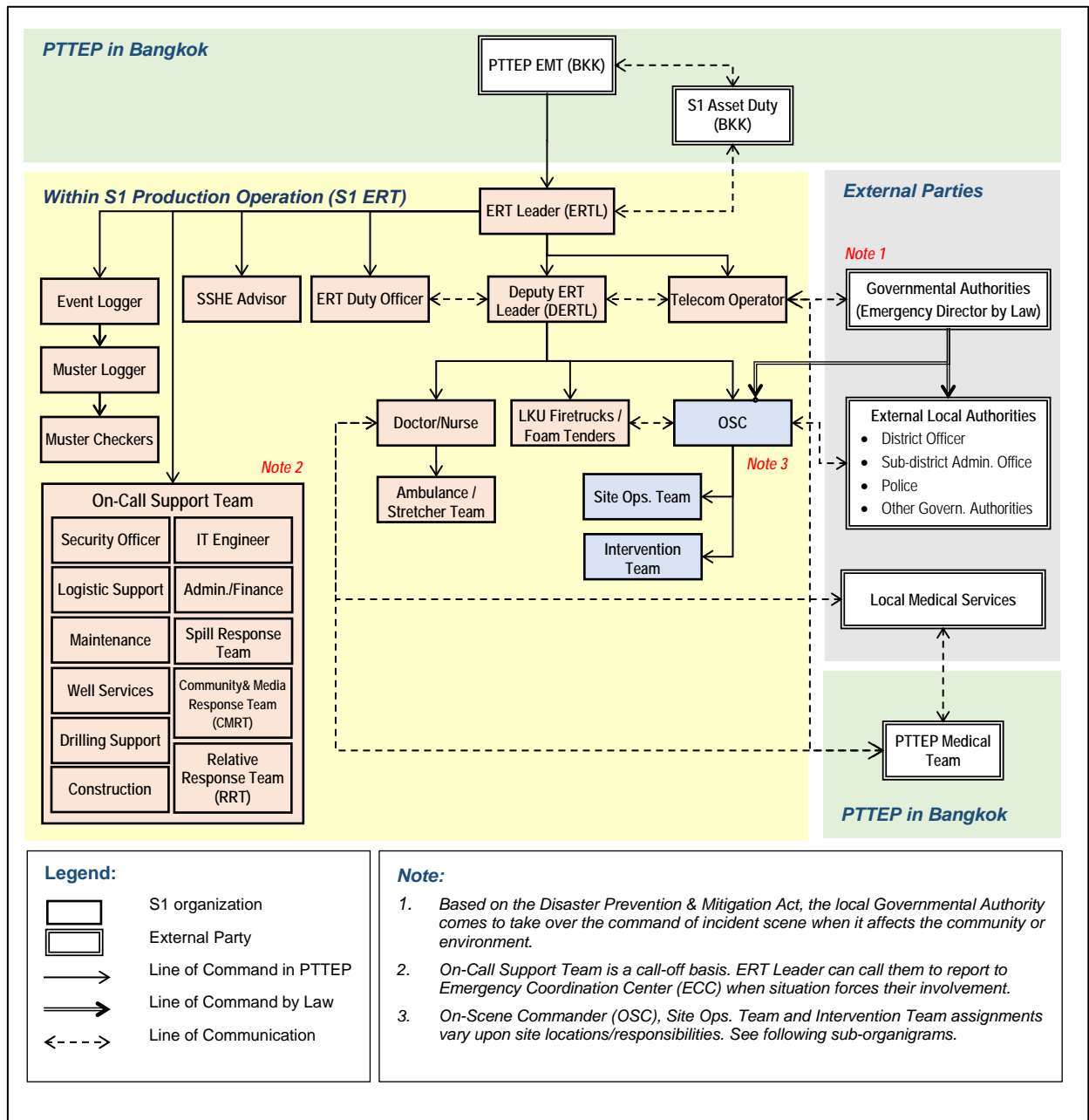


Figure 2: Overall S1 Emergency Response Team Organization

Table 1: ERT Assignment for LKU Flow Station, Workshops and Offices

ERT Assignment for LKU Flow Station, Workshops and Offices		
Role	Assigned to:	Primary Master Point
ERT Leader	VP, S1 Production Operations	ECC
ERT Duty Officer	Production Superintendent	ECC
Deputy ERT Leader	Production Superintendent Workshop Superintendent (Well Service Workshop)	ECC
SSHE Advisor	SSHE Superintendent	ECC
Telecom Operator	On duty telecom Operator	Telecom Room
Event Logger	Production Engineer	ECC
<u>LKU Flow Station and Offices</u>		
On-Scene Commander (OSC)	LKU Plant Supervisor	LKU CCR
Main Muster Logger	SSHE Officer (operation safety)	ECC
Muster Checker 1	Wellsite Supervisor 2	Main Muster Point @ Fire station
Muster Checker 2	Public Affairs Officer	Muster Point #2 @ PNEC Building
Muster Checker 3	LKU Plant Foreman	Muster Point #3 @ LKU CCR
<u>Well Services Workshop</u>		
On-Scene Commander (OSC)	Workshop Supervisor	Well Services Workshop
Area Muster Logger	Workshop Team Leader	Well Services Workshop
Muster Checker	Snr. Tech. (Workshop and General Services)	Muster Point @ In front of the workshop
<u>Material Yard and Material Storage Locations</u>		
On-Scene Commander (OSC)	LKU Support Base Supervisor	Material Yard
Area Muster Logger	Warehouse & Material Yard Team Leader	Material Yard
Muster Checker	Snr. Store Keeper	Muster Point @ In front of the material yard
ERT Assignment Details		
Doctor/Nurse	Doctor/Nurse	Clinic
Ambulance	On duty Ambulance Driver	Clinic
LKU Fire Truck FT01	SSHE Officer (Emergency)	Fire Station
LKU Fire Truck FW01	SSHE Senior Tech. (Emergency)	Fire Station
LKU Foam Tender Truck 1	LKU Depot Operator #1	LKU Depot
LKU Foam Tender Truck 2	LKU Depot Operator #2	LKU Depot
Site Operations Team: <ul style="list-style-type: none"> - Production Supervisor - Power Plant Operator - Panel Operator 	LKU Plant Supervisor Maintenance Power Plant Operator Lead Production Operator (CCR) Senior Production Operator (CCR)	LKU CCR LKU Switchgear Room LKU CCR LKU CCR

ERT Assignment for LKU Flow Station, Workshops and Offices		
Intervention Team: Fire Chief Fireteam Leader 1 - Fireteam 1 member - Fireteam 1 member Fireteam Leader 2 - Fireteam 2 member / Crude/LPG Fire Pump - Fireteam 2 member Fireteam Leader 3 (Backup – F/S) - Fireteam 3 member - Fireteam 3 member Fireteam Leader 4 (Backup – West Well Sites) - Fireteam 4 member - Fireteam 4 member Fireteam Leader 5 (Backup – East Well Sites) - Fireteam 5 member - Fireteam 5 member - Fireteam 5 member	Lead Production Operator (LKU Flow Station) On-duty Production Operator #1 On-duty Production Operator #2 On-duty Production Operator #3 On-duty Production Operator #4 On-duty Production Operator #5 On-duty Lab Technician Off-duty Production Operator #1 Off-duty Production Operator #2 Off-duty Production Operator #2 On-duty Production Operator #1 On-duty Production Operator #2 On-duty Production Operator #3 On-duty Production Operator #1 On-duty Production Operator #2 On-duty Production Operator #3 On-duty Production Operator #4	LKU CCR LKU Flow Station LKU Flow Station LKU Flow Station LKU Flow Station LKU Flow Station LKU Flow Station LKU Accommodation LKU Accommodation LKU Accommodation West Well Sites West Well Sites West Well Sites East Well Sites East Well Sites East Well Sites East Well Sites
On-Call Support Team: - Security Officer - IT Engineer - Logistics Support - Admin./Finance - Construction - Maintenance - Spill Response Team - Community & Media Response Team - Relative Response Team	GGI security Supervisor IT and Telecommunications Supervisor Oil Movement and Transportation Manager Cost Coordination Officer Onshore Execution Team Leader Maintenance Superintendent BRK Intertransport Co., Ltd. Public Affairs Manager Operations Training Center Manager	LKU Gate 1 Officer Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station BRK Office Main Muster Point @ Fire Station Main Muster Point @ Fire Station

Table 2: ERT Assignment for Well Sites and MPFs (West, East & North)

ERT Assignment for Well Sites and MPFs (West, East & North) including DDC training center		
Role	Assigned to:	Primary Master Point
ERT Leader	VP, S1 Production Operations	ECC
ERT Duty Officer	Production Superintendent	ECC
Deputy ERT Leader	Production Superintendent	ECC
SSHE Advisor	SSHE Superintendent	ECC
Telecom Operator	On duty telecom Operator	Telecom Room
Event Logger	Production Engineer	ECC
Muster Logger	SSHE Officer (operation safety)	ECC
Muster Checker	Assigned Operator	Affected Well Site / MPF
Doctor/Nurse	Doctor/Nurse	Clinic
Ambulance	On duty Ambulance Driver	Clinic
LKU Fire Truck FT01 LKU Fire Truck FW01	SSHE Officer (Emergency) SSHE Senior Tech. (Emergency)	Fire Station
LKU Fire Truck FT02 LKU Fire Truck FW02	Fire Truck Driver (Emergency) Fire Truck Driver (Emergency)	NTM-A
LKU Foam Tender Truck 1 LKU Foam Tender Truck 2	LKU Depot Operator #1 LKU Depot Operator #2	LKU Depot LKU Depot
On-Scene Commander (OSC)	Affected Area Supervisor (Field Supervisors – North, East, West)	LKU Office
Site Operations Team: <ul style="list-style-type: none"> - Production Supervisor - Production Operator - LKU CAO Operator - NTM CCR Operator - STN CCR Operator 	Field Supervisors (North including NTM-A & STN/A, East, West) Affected Area Operators (MPFs) Lead Production Operator (CAO) Production Operator (CAO) Production Operator (NTM-A) Production Operator (STN-A)	LKU Office Affected Well Site / MPF CAO Room NTM-A STN-A
Intervention Team (Well Sites): <ul style="list-style-type: none"> - Fire Chief - Fireteam Leader 1 <ul style="list-style-type: none"> - Fireteam 1 member - Fireteam 1 member - Fireteam Leader 2 (Back-up – Well Sites) <ul style="list-style-type: none"> - Fireteam 2 member - Fireteam 2 member - Fireteam 2 member - Fireteam Leader 3 (Back-up – Well Sites) <ul style="list-style-type: none"> - Fireteam 3 member 	Well Sites in a radius of 30 km from LKU Flow Station including DDC training center Lead Production Operator (Well Sites) On-duty Production Operator #1 On-duty Production Operator #2 On-duty Production Operator #3 On-duty Production Operator #1 On-duty Production Operator #2 On-duty Production Operator #3 On-duty Production Operator #4	Affected Well Sites Affected Well Sites Affected Well Sites Affected Well Sites Other Well Sites Other Well Sites Other Well Sites Other Well Sites Other Well Sites LKU Accommodation

ERT Assignment for Well Sites and MPFs (West, East & North) including DDC training center		
<ul style="list-style-type: none"> - Fireteam 3 member - Fireteam 3 member 	Off-shift duty Production Operator #1 Off-shift duty Production Operator #2 Off-shift duty Production Operator #3 Off-shift duty Production Operator #4	LKU Accommodation LKU Accommodation LKU Accommodation
Intervention Team (NTM-A): <ul style="list-style-type: none"> - Fire Chief - Fireteam Leader 1 <ul style="list-style-type: none"> - Fireteam 1 member - Fireteam 1 member - Fireteam 1 member - Fireteam 1 member - Fireteam 2 member 	Lead Production Operator (NTM-A) On-duty Production Operator #1 Off-shift duty Production Operator #1 Off-shift duty Production Operator #2 Off-shift duty Production Operator #3 Off-shift duty Production Operator #4 Operators assigned to LKU Flow Station, E&W well sites	NTM-A NTM-A NTM-A Accommodation NTM-A Accommodation NTM-A Accommodation NTM-A Accommodation LKU Flow Station, East/West Well Sites
Intervention Team (STN-A): <ul style="list-style-type: none"> - Fire Chief <ul style="list-style-type: none"> - Fireteam 3 member 	On-duty Production Operator #1 Production Operators assigned to NTM-A, east & west well sites	STN-A East/West Well Sites, NTM-A
Intervention Team (MPFs):	Request support by nearby production hub and/or external local authorities	The other production hub
On-Call Support Team: <ul style="list-style-type: none"> - Security Officer - IT Engineer - Logistics Support - Admin./Finance - Construction - Maintenance - Spill Response Team - Community & Media Response Team - Relative Response Team 	GGI security Supervisor IT and Telecommunications Supervisor Oil Movement and Transportation Manager Cost Coordination Officer Onshore Execution Team Leader Maintenance Superintendent BRK Intertransport Co., Ltd. Public Affairs Manager Operations Training Center Manager	LKU Gate 1 Officer Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station BRK Office Main Muster Point @ Fire Station Main Muster Point @ Fire Station

Table 3: ERT Assignment for Bung Pra (BPR) Depot

ERT Assignment for Bung Pra (BPR) Depot		
Role	Assigned to:	Primary Master Point
ERT Leader	VP, S1 Production Operations	ECC
ERT Duty Officer	Production Superintendent	ECC
Deputy ERT Leader	Oil Movement and Transportation Manager	ECC
SSHE Advisor	SSHE Superintendent	ECC
Telecom Operator	On duty telecom Operator	Telecom Room
Event Logger	Production Engineer	ECC
Main Muster Logger	SSHE Officer (operation safety)	ECC
Affected Area Muster Logger	BPR Depot Operator	BPR Depot
Muster Checker (Road Side)	BPR Depot Senior Security Guard	Muster Point @ In front of T-904
Muster Checker (Rail Side)	BPR Depot Security Guard	Muster Point @ In front of security guardhouse
Doctor/Nurse	Doctor/Nurse	Clinic
Ambulance	On duty Ambulance Driver	Clinic
LKU Fire Truck FT01 LKU Fire Truck FW01	SSHE Officer (Emergency) SSHE Senior Tech. (Emergency)	Fire Station
NTM Fire Truck FT02 NTM Fire Truck FW02	Fire Truck Driver (Emergency) Fire Truck Driver (Emergency)	NTM-A
LKU Foam Tender Truck 1 LKU Foam Tender Truck 2	LKU Depot Operator #1 LKU Depot Operator #2	LKU Depot LKU Depot
On-Scene Commander (OSC)	BPR Depot Supervisor	BPR Depot
Site Operations Team: - Depot Supervisor	BPR Depot Supervisor	BPR Depot
Intervention Team: - Fire Chief - Fireteam Leader 1 - Fireteam 1 member - Fireteam 1 member - Fireteam 1 member - Fireteam 1 member - Fireteam Leader 2 - Fireteam 1 member - Fireteam 1 member - Fireteam 1 member - Fireteam 1 member - Fire Water Pump Operator - First Aider	BPR Depot Operator Rail Side Loader Foreman Rail Side Loader North #1 Rail Side Loader North #2 Rail Side Loader North #3 Rail Side Loader North #4 Rail Side Loader South #1 Rail Side Loader South #2 Rail Side Loader South #3 Rail Side Loader South #4 Road Side Loader Road Side Loader Foreman Tractor Driver	BPR Depot BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Rail Side) BPR Depot (Road Side) BPR Depot (Rail Side)
On-Call Support Team: - Security Officer	GGI security Supervisor	LKU Gate 1 Officer

ERT Assignment for Bung Pra (BPR) Depot		
- IT Engineer	IT and Telecommunications Supervisor	Main Muster Point @ Fire Station
- Logistics Support	Oil Movement and Transportation Manager	Main Muster Point @ Fire Station
- Admin./Finance	Cost Coordination Officer	Main Muster Point @ Fire Station
- Construction	Onshore Execution Team Leader	Main Muster Point @ Fire Station
- Maintenance	Maintenance Superintendent	Main Muster Point @ Fire Station
- Spill Response Team	BRK Intertransport Co., Ltd.	BRK Office
- Community & Media Response Team	Public Affairs Manager	Main Muster Point @ Fire Station
- Relative Response Team	Operations Training Center Manager	Main Muster Point @ Fire Station

Table 4: ERT Assignment for CNS Rail Tanker Inspection and Maintenance Workshop

ERT Assignment for CNS Rail Tanker Inspection and Maintenance Workshop		
Role	Assigned to:	Primary Master Point
ERT Leader	VP, S1 Production Operations	ECC
ERT Duty Officer	Production Superintendent	ECC
Deputy ERT Leader	Oil Movement and Transportation Manager	ECC
SSHE Advisor	SSHE Superintendent	ECC
Telecom Operator	On duty telecom Operator	Telecom Room
Event Logger	Production Engineer	ECC
Main Muster Logger	SSHE Officer (operation safety)	ECC
Affected Area Muster Logger	CNS Site Manager (contractor)	CNS
Muster Checker	CNS Safety Officer (contractor)	Muster Point @ In front of security guardhouse
Doctor/Nurse	Doctor/Nurse	-
On-Scene Commander (OSC)	Depot Supervisor (BCP/ TOC/ PTTGC) or CNS Site Manager (contractor)	CNS
Intervention Team	Request support by external local authorities such as BKK metropolitan officer, sub-district office, local medical services, police and/or other government authorities	External local authorities
On-Call Support Team: <ul style="list-style-type: none"> - Security Officer - IT Engineer - Logistics Support - Admin./Finance - Construction - Maintenance - Spill Response Team - Community & Media Response Team - Relative Response Team 	GGI security Supervisor IT and Telecommunications Supervisor Oil Movement and Transportation Manager Cost Coordination Officer Onshore Execution Team Leader Maintenance Superintendent BRK Intertransport Co., Ltd. Public Affairs Manager Operations Training Center Manager	LKU Gate 1 Officer Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station BRK Office Main Muster Point @ Fire Station Main Muster Point @ Fire Station

Table 5: ERT Assignment for PHS Housing Compounds

ERT Assignment for PHS Housing Compounds		
Role	Assigned to:	Primary Master Point
ERT Leader	VP, S1 Production Operations	ECC
ERT Duty Officer	Production Superintendent	ECC
Deputy ERT Leader	Production Superintendent	ECC
SSHE Advisor	SSHE Superintendent	ECC
Telecom Operator	On duty telecom Operator	Telecom Room
Event Logger	Production Engineer	ECC
Main Muster Logger	SSHE Officer (operation safety)	ECC
Affected Area Muster Logger	Security Guard	PHS Housing Compounds
Muster Checker	Security Guard	Muster Point @ In front of security guardhouse
Doctor/Nurse	Doctor/Nurse	Clinic
Ambulance	On duty Ambulance Driver	Clinic
LKU Fire Truck FT01 LKU Fire Truck FW01	SSHE Officer (Emergency) SSHE Senior Tech. (Emergency)	Fire Station
NTM Fire Truck FT02 NTM Fire Truck FW02	Fire Truck Driver (Emergency) Fire Truck Driver (Emergency)	NTM-A
On-Scene Commander (OSC)	Operation Services Supervisor	LKU office
Intervention Team	Request support by external local authorities such as district officer, -sub-district office, -local medical services, -police and/or -other government authorities	External local authorities
On-Call Support Team: <ul style="list-style-type: none"> - Security Officer - IT Engineer - Logistics Support - Admin./Finance - Construction - Maintenance - Spill Response Team - Community & Media Response Team - Relative Response Team 	GGI security Supervisor IT and Telecommunications Supervisor Oil Movement and Transportation Manager Cost Coordination Officer Onshore Execution Team Leader Maintenance Superintendent BRK Intertransport Co., Ltd. Public Affairs Manager Operations Training Center Manager	LKU Gate 1 Officer Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station Main Muster Point @ Fire Station BRK Office Main Muster Point @ Fire Station Main Muster Point @ Fire Station

3.3 ROLES AND RESPONSIBILITIES

This section advises each S1 ERT member of their roles and responsibilities in dealing with emergency situations.

Emergency Response Team Leader (ERTL)	
Responsible Person	Vice President of S1 Production Operations Department
Work Station	S1 LKU Emergency Coordination Centre (ECC) room
Responsibilities	<p>Protect life, environment, plant, production, and reputation by taking effective actions; managing the S1 ERT and collaborating with PTTEP EMT and necessary external parties to ensure the potential for escalation and risk of injury and damage is minimised. S1 ERT leader shall:-</p> <ul style="list-style-type: none"> • Ensure all ERT, CMRT & RRT have received adequate training to cope with their assignments; • Maintain a state of readiness; • Assess the situation; • Take effective actions; • Maintain communication; • Delegate authorities to act; • Manage team performance; and • Deal with stress.
Key Actions	<ul style="list-style-type: none"> • Establish early contact with PTTEP EMT and S1 asset duty persons; • Consider to activate Emergency Coordination Centre (ECC) and call in the ERT members and the On-Call Support Team as deemed necessary. • Manage and coordinate the activities of all S1 ERT members; • Develop an incident response strategy; • Control the incident to prevent escalation; • Maintain communications with PTTEP EMT, SVP of S1 asset, and necessary external parties; • Minimize risk to personnel including intervention team, S1 staff, contractors, and 3rd parties; • Minimize impact on the environment; • Ensure sufficient resources are available to support all response teams; • Plan the delegations of ERT members for rests if the emergency situation has been prolonged; • Plan and prepare for safe evacuation when necessary; • Keep closely informed and monitor the emergency situation, response, and recovery; • Provide any advice and support requested by the operating site;

Emergency Response Team Leader (ERTL)	
	<ul style="list-style-type: none"> Be a focal point to report and update the emergency situation to BKK S1 Asset Duty by phone as specified in the S1 weekly duty roster or direct report to BKK PTTEP EMT; Maintain records of events through Event Logger; Utilise "Time Outs" to update EMT of ongoing situation including: <ul style="list-style-type: none"> The exact status of the event at the accident scene and evacuation details. Status and priority of supports provided to the site such as firefighting, medical evacuation, transportation, etc. Brainstorming and resolving key issues/problems faced. <p>For Tier 2 and 3 other than above:</p> <ul style="list-style-type: none"> Activate S1 Emergency Coordination Center (ECC) and call in all ERT members and necessary On-Call Support Team. <p>In case of a press release to local media or communities:</p> <ul style="list-style-type: none"> Call in CMRT to support in dealing with media and community; Consult with the Crisis Communication Team (CCT) Leader on the general approach to be taken when speaking to the media; Be a spokesperson for disclosure of information and public statement to local media or communities; Represent the company externally, in interviews, and at a press conference; Ensure aid materials (charts, maps, etc) & Technical Advisor are available; Assess the effectiveness of the press conference with the CCT Leader; and Log own actions, messages on communication, involved party, and time on the log sheet and pass it to event logger.

ERT Duty Officer	
Responsible Person	The person appointed by ERTL, or by default, the S1 Production Superintendent
Responsibilities	<ul style="list-style-type: none"> Take a role and responsibility as ERTL until his/her arrival (see ERTL responsibility); and Keep ERTL informed of the emergency situation, response, and recovery.
Key Actions	<ul style="list-style-type: none"> Act as ERTL until his/her arrival (see Roles and Responsibilities of ERTL); Share workloads of ERTL as directed; and Direct and approve for the mobilization of ambulance, firetrucks, and Spill Response Team.

Deputy Emergency Response Team Leader (DERTL)	
Responsible Person	<p>The person appointed by ERTL based on the area affected by an incident.</p> <ul style="list-style-type: none"> • PS1/P for LKU flow station, well sites, MPF locations, workshops, offices, material yard and material storage locations, PHS housing compounds and DDC training center. • PS1/O for BPR depot in Phitsanulok Province and CNS rail tanker inspection and maintenance workshop in BKK.
Responsibilities	<ul style="list-style-type: none"> • Minimise injury, environmental pollution, asset/property damage and reputation; • Assist ERTL to manage and direct actions of the emergency response team, medical team, and incident support function to contain and control the emergency situation; • Collaborate with local external parties; and • Coordinate with RRT and CMRT when necessary.
Key Actions	<ul style="list-style-type: none"> • Update the situation with OSC and assess for the effective response strategy; • Provide the resources e.g. manpower, fire/foam trucks, spill response team, financial support, etc. required for the emergency response to OSC, medical team and affected area; • Provide technical advice to OSC, ERTL/ERT Duty Officer; • Closely report to and take constant directions from ERTL/ERTL Duty Officer for uninterrupted and effective management of the emergency situation. • Communicate, directly or through Telecom Operator, with local external parties e.g. governmental authorities, community, etc involving in the emergency situation; • Support in collaboration between OSC and external parties; • Communicate and collaborate with CMRT and RRT when the situation requires; and • Log own actions, messages on communication, involved party, and time on the log sheet and pass it to event logger.

On-scene Commander (OSC) or Deputy OSC		
Responsible Person	The person appointed by DERTL based on the area affected by an incident.	
	Location	OSC
	LKU flow station, workshops, offices	LKU Plant Supervisor
	Well sites and MPFs including DDC training center	Affected Area Supervisors (Field Supervisors – West, East & North)
	Well services workshop	Workshop Supervisor
	Material yard and material storage locations	LKU Support Base Supervisor
	BPR Depot	BPR Depot Supervisor
	CNS rail tanker inspection and maintenance workshop	Depot Supervisor (BCP/ TOC/ PTTGC) or CNS Site Manager (contractor)
	PHS housing compounds	Operation Services Supervisor
Responsibilities	<ul style="list-style-type: none"> • Protect personnel including staff, contractors, community, intervention & medical teams; • Minimise the impact to environment and community in the vicinity; • Assess the situation and establish the tactical response; • Take commands of all immediate responsive activities on the incident scene; • Report to and provide constant updates of the situation to DERTL; • Collaborate with involving local authorities; and • Maintain records of events. 	
Key Actions	<ul style="list-style-type: none"> • Assess the current emergency situation, associated hazards, impacts, and their potentials; • Establish tactical response plan e.g. isolation, blowdown, spill containment, evacuation, intervention, etc; • Command the site operation, intervention & medical teams on the scene; • Provide necessary resources to site operation, intervention and medical teams; 	

On-scene Commander (OSC) or Deputy OSC	
	<ul style="list-style-type: none"> • Ensure all personnel are adequately protected against arising hazards, especially site operation and intervention teams; • Regularly call “time out” to update and assess the current status of the situation and changes, then direct site operation, intervention, & medical teams as appropriate; • Initiate site evacuation if necessary; • Provides necessary initial information to immediate local authority e.g. SAO, police, hospital, etc; • In consultation with PTN/A (public affairs), assess the impacts and inform the nearby community as necessary; • In consultation with DERTL, consider community evacuation if situation deemed dangerous or has potential to cause danger; • Plan the staff change over for site operation, intervention and medical teams if the situation is prolonged; • Keep DERTL updated with situation, changes, progress, and potentials; and • Log own actions, messages on communication, involved party, and time on the log sheet and pass it to event logger. <p>According to the “Disaster Prevention and Mitigation Act”, when emergency situation poses or has potential to pose the significant danger to community and environment, the governmental authority of the affected area will overtake the command of overall emergency response as “Emergency Director”.</p> <ul style="list-style-type: none"> • When a situation deemed as in the above condition, provides initial information on the emergency situation to the local authority; • When local authority comes to take over the command, report to Emergency Director, and in parallel collaborate with ERT for effective emergency response and recovery; and • Provide necessary technical advice to the Emergency Director and teams.

Site Operation Team	
Responsible Person	The staff assigned by OSC to operate and/or control the affected facility and area. In an emergency, they assist OSC to recover or make safe the facility and area by operating the facility, isolating & removing the arising hazards and providing necessary supports to the intervention team to contain the situation.
Responsibilities	<ul style="list-style-type: none"> • Be under command of the OSC; • Operate/control/stabilize the affected facility and area; and • Support the intervention and medical teams.
Key Actions	<ul style="list-style-type: none"> • Provide detailed current status of facility and area to the OSC e.g. process & area condition, process safety system, F&G system, firefighting system, etc; • Control and stabilize the facility and area e.g. shutdown, isolation, blowdown, inhibit/override of system, removal of hazards, etc; • Maintain safe conditions of facilities and area throughout emergency situation; • Notify hazards associated with process, facility, and area to OSC and intervention team; • Keep OSC updated with changes in conditions of the process, facilities, and area; and • Log own actions, messages on communication, involved party, and time on the log sheet and pass it to event logger as applicable.

Intervention Team Leader (ITL)	
Responsible Person	The person assigned to lead the intervention team and direct tactical intervention activities e.g. firefighting, rescue, recovery of distressed personnel, etc.
Responsibilities	<ul style="list-style-type: none"> • Provide a frontline response to the incident scene as directed by OSC; • Lead intervention team in coordination with site operation and medical teams.
Key Actions	<ul style="list-style-type: none"> • Update the status of situation and potential with OSC and intervention team; • Take priority on the safety of the intervention team and others; • Consider the hazards and potentials of a gas cloud, oil spill, fire, boil over, BLEVE, collapse of structure & vessel, traffic, etc.; • Size up the situation and establish tactical frontline action plan; • Utilize automatic system e.g. fire pumps, monitor, deluge, etc. • Ensure adequate and effective communication amongst the intervention team and with others; • Establish the forward control point for intervention and medical teams as necessary; • Collaborate with other supporting teams e.g. site operation & medical team, and others e.g. fire brigade, police, etc.; • Brief the intervention team on the situation, potentials, target of achievement, and tactical action plan; • Direct the intervention team to accomplish the tactical action plan; • Monitor closely the intervention actions and assess the result. The intervention action plan may change upon the upcoming changes with the situation; • Make regular contact with the intervention team and OSC for updates and changes; and • Request external supports and resources when necessary.

Intervention / Fire Team Member	
Responsible Person	The persons assigned as an intervention team member shall be adequately trained and competent to conduct the hand-on intervention activities e.g. firefighting, rescue, oil spill response, etc.
Responsibilities	<ul style="list-style-type: none"> • Ensure the safety of own and others; • Under command of ITL • Provide frontline responsive actions on the emergency situation as directed.
Key Actions	<ul style="list-style-type: none"> • Wear adequate and proper PPE to conduct the assigned task e.g. firefighting, rescue, chemical intervention, oil spill, etc.; • Receive a briefing on the situation, hazards, preventive measures and responsive action plan from ITL; • Conduct the actions assigned by ITL in a safe manner that may involve: <ul style="list-style-type: none"> - Reconnaissance of incident scene; - Operating the automatic firefighting device; - Conducting firefighting task; - Conducting rescue, extraction, recovery, and handling of casualties; and - Assisting in control of traffic and access.

Medical Team	
Responsible Person	Medical Team consists of <ol style="list-style-type: none"> 1. LKU Doctor/Nurse 2. Ambulance Driver 3. Off-shift Duty Ambulance Driver 4. Stretcher Team
Responsibilities	<ul style="list-style-type: none"> • Safety of own and others; • Size up the situation and activate the appropriate medical procedure; • Stabilize the casualties and initiate the transfer of casualty to hospital/medical centre in a safe manner as necessary; • Assess the extents of injuries and provide advice to the DERTL and/or OSC for appropriate treatment and further supports and resources required; • Assist in arranging medical evacuation/referral; • Coordinate with the PTTEP medical team and casualty-receiving hospitals; and • Log all actions, communication made, detail & number of injury, time, etc. on the log sheet.

Medical Team	
Key Actions	<p>LKU Nurse</p> <ul style="list-style-type: none"> • Make ready, at all times, the medical equipment, and supplies at the clinic, in portable packs, and on the ambulance required for emergency response; • Size up the situation and take appropriate actions and give adequate first aid/initial medical treatment; • Utilize the available supporting staff in casualty handling e.g. intervention team, stretcher team, etc.; • For multiple casualties, consider to activate triage procedure and request for support from the selected hospital and medical service centre; • Seek advice from PTTEP medical team when necessary; • Assess and advise on the appropriate medical evacuation/referral to OSC and/or DERTL; • Coordinate with PTTEP medical team and hospital receiving the casualty to ensure the appropriate treatment and followup; and • Keep records of casualties and treatments. <p>On-Duty Ambulance Driver</p> <ul style="list-style-type: none"> • Have undergone the defensive driving and advanced first aid training courses; • Have ensured the ambulance is in ready & clean condition with adequate fuel (minimum half a tank); • Get familiarized with the routes for transport; • Drive the ambulance in a safe manner based on defensive driving principle; • Assist the handling of casualties under supervision of doctor/nurse; and • Make entries into a driving log. This information includes injured persons'/ patients' names and addresses, trip times, mileage, and services performed. <p>Off-Duty Ambulance Driver</p> <ul style="list-style-type: none"> • Assist doctor/nurse to provide first aid treatment and handling of casualties. <p>Stretcher Team</p> <ul style="list-style-type: none"> • Assist medical team in manual transfer of casualty. <p>Remark: In case of PTTEP ambulance absence, a back-up van having medical equipment as equal to the ambulance should be available.</p>

SSHE Advisor	
Responsible Person	Superintendent, SSHE of S1 Asset or his delegation
Responsibilities	<ul style="list-style-type: none"> • Advise ERTL, DERTL, ERT duty officer, OSC, etc on SSHE matters and procedures relevant to emergency response & management; • Observe the situation, taken actions, deficiencies, gaps for improvement, and advise ERTL & ERT duty officer; • Ensure the procedure and actual practice are consistent and appropriate to regulations; and • Collect all information for the summary report to be further issued.
Key Actions	<ul style="list-style-type: none"> • Evaluate the hazards and potentials of the incident and impacts; • Provide necessary information to ERTL, ERT duty officer and other members in ECC room; • Observe the ERP, relevant legislations, and the actual actions taken along with the emergency response process, then identify discrepant and deficiency and inform ERTL and/or DERTL; • Take note of all observations; • Support and liaise with event logger to ensure all necessary information and correct timeline are logged; • Ensure personnel accountability including those deployed to the emergency scene; • Provide technical advice on equipment, resources, and method to control, contain, and prevent the emergency situation, escalation & impact; • Communicate with and seek advice from corporate SSHE division as necessary; • Call in other members of S1 SSHE staff to support as necessary; • After the emergency is over, collect all information, papers, photographs, other evidence of the emergency and response process. Compile a summary report for Vice president of S1 production operations department; and • Log own actions, messages on communication, involved party, and time on the log sheet and pass it to event logger.

Telecom Officer	
Responsible Person	Telecommunication Operator
Responsibilities	<ul style="list-style-type: none"> Be available, at all times, to receive an emergency call; Make accurate communication with internal and external parties as specified in ERP and instructed by ERTL; and Record details of all calls made in and out with the timeline.
Key Actions	<ul style="list-style-type: none"> Maintain up-to-date emergency contact numbers for all internal and external parties; Make weekly call tests with S1 duty roster numbers; Ensure all telecommunication equipment in telecommunication room is readily available at all times; Upon receiving the emergency information, immediately report to ERT duty officer, ERTL, OSC, SSHE duty respectively; Upon confirmation from ERTL or ERT duty officer, report to EMT duty person; Upon request from ERTL or ERT duty officer, call in ERT members to report to ECC room; Support ERT in making calls to internal and external parties; and Log details of calls received and made on the log sheet.

Event Logger	
Responsible Person	S1 Production Engineer
Responsibilities	<ul style="list-style-type: none"> Log details of the situations and actions on the event log boards/sheets; and Ensure the logged information logged are accurate and adequate with what, when, where, who, whom & how questions principle.
Key Actions	<ul style="list-style-type: none"> Liaise with all ERT members to obtain significant and accurate information; Observe and listen to the communication made in ECC and take necessary information; Avoid interrupting ERT members when they are occupied with work; Log the received information in the chronological order on the event log boards/sheets in an accurate and clear manner; Update the status board e.g. mustering, mobilization of firetrucks & other resources, etc.; Maintain the trailing records and update the current information of the situation; and Assist ERTL or ERT duty officer to feed necessary information in "time out".

Muster Logger / Deputy Muster Checker	
Responsible Person	S1 SSHE Officer (Operational Safety)
Responsibilities	<ul style="list-style-type: none"> Obtain and consolidate the personnel counts from each muster point (muster checkers); Communicate with muster points; Monitor and record the movements of personnel when called for duty;
Key Actions	<ul style="list-style-type: none"> Communicate with all muster checkers to obtain personnel counts; Together with muster checkers, identify the missing person; Update status of personnel counts to event logger; Coordinate with muster checkers for evacuations; Log own actions, messages on communication, involved party, and time on the log sheet and pass it to event logger; and Assist event logger for event logs.

Muster Checker	
Responsible Person	Persons appointed to responsible muster points
Responsibilities	<ul style="list-style-type: none"> Personnel counts at the designated muster point; Identifying missing person; Ensure safety and order of personnel at the muster point to be in order; Control and lead the evacuation of the designated muster point; and Communicate with a muster logger.
Key Actions	<ul style="list-style-type: none"> Ensure the mustered personnel are safe and remain in order; If the designated muster point is not safe, coordinate with muster logger for alternative muster point; Take a headcount of personnel at the designated muster point and report the result to muster logger; Identify the missing person with muster logger; Observe the mustered personnel for illness or injury and provide necessary supports; Coordinate with muster logger for personnel called from muster point for duty during an emergency; Encourage mustered personnel to calm down and be positive; Release persons for specific duty as requested by ER Team Leader and Muster Logger informed of this update/change; and

Muster Checker	
	<ul style="list-style-type: none"> Ensure all personnel remains at muster point during an emergency, it is not safe or receives instruction from ERTL, ERT duty officer or DERTL.

Fire Warden (Building)	
Responsible Person	Persons working in building assigned to take the role of fire warden.
Responsibilities	In evacuation, ensure all personnel leaves area in a safe manner to muster points
Key Actions	<ul style="list-style-type: none"> Direct all personnel in the designated area to leave the area for musters in a safe manner using appropriate routes and exits; Assist handicaps e.g. elderlies, children, injured, pregnant, disable, etc. Check all accessible spaces in their area, including the bathroom, store, pantry, etc, to make sure everyone has evacuated – this should be done on the way out of the building so that the fire warden does not put himself/herself at risk by re-entering the evacuated area; Close doors to help suppress or hinder the fire; Guide personnel to the muster points and assist in checking personnel having arrived safely at muster points; and Update with the list of staff stationed in the building given by PS1/S (emergency team).

On-Call Support Team	
Responsible Person	The persons selected are the representatives of each discipline to support ERT when needed.
Responsibilities	<p>The On-Call Support Team comprises of representatives from a number of various disciplines. They are specialized and act as advisors and communication links.</p> <p>The On-Call Support Team consists but not limited to the following members:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Logistic Support; <input type="checkbox"/> Well Service; <input type="checkbox"/> Maintenance; <input type="checkbox"/> Security Supervisor; <input type="checkbox"/> Community & Media Response Team; <input type="checkbox"/> Relative Response Team. <input type="checkbox"/> Drilling; <input type="checkbox"/> Construction; <input type="checkbox"/> IT/ Telecom Supervisor; <input type="checkbox"/> Spill Response Team;
Key Actions	<ul style="list-style-type: none"> • Be ready on call, able to report to ECC within 2 hours when called by ERTL or ERT duty officer; • Be the link of communication between ERT and their assigned sections, departments, contractors; • Advise ERT on their specialized matters; • Collaborate with the assigned discipline on request; • Execute the task to support emergency response requested by ERT; • Receive briefing from ERTL or delegation; • Advise ERT members on matters relating to their discipline matters; • Call in or consult with other staff in their disciplines as required; • Provide support to ERT members as required; and • Log own actions, messages on communication, involved party and time on the log sheet and pass it to event logger.

Community & Media Response Team (CMRT)	
Responsible Person	Manager, Public Affairs Section and Team
Responsibilities	<p>Act as a point of contact and advise on all press related issues in supporting ERTL for appropriate communication with media and community.</p> <p>Note: Mobilize the team to Communication & Media Response Room (CMRR) at LKU Building #1 Room #2 when Tier 2 and 3 emergency level is activated.</p>
Key Actions	<ul style="list-style-type: none"> • Establish a proactive media liaison and public affairs strategy; • Seek advice, work closely and maintain communication with PTTEP Crisis Communication Team (CCT) for information review prior to delivering a response to local media and community; • Brief ERTL on local media interest, issues developing and requests from the media for information; • Assist in developing/delivering a response to the local media and community as directed by ERTL; • Maintain a log of media activity identifying the line of questioning being adopted by the media and issues developing and pass this information to ERTL; • Maintain a personal log of events undertaken during the incident life cycle and pass completed log sheets to Event Logger; • Ensure that Event Logger has a record of all contact with authorities; • Establish contact numbers where the media can call for information; • Pass any press releases to ERTL for approval process; • Update ERTL on all media and external affairs issues; • Monitor media related to an emergency; and • Liaise with ERTL if there is a requirement to confront any press interviews/conference.

Relative Response Team (RRT)	
Responsible Person	Manager, Operations Training Center Section and Team
Responsibilities	<p>Act as a point of contact and advise on all human resources related issues.</p> <p>Provide support for human resource issues handling.</p> <p>Note: Mobilize the team to Relative Response Room (RRR) at LKU Building #2 Meeting Room when Tier 2 and 3 emergency level is activated.</p>
Key Actions	<ul style="list-style-type: none"> • Have information on staff's selected relative's contact number for emergency; • Seek advice, work closely and maintain communication with PTTEP HR department for the information on the status of staff injuries, company welfare, legal concerns, and additional support required; • Advise ERTL on personnel and welfare issues relating to staff. • Hold the information on the status of ERT members, staff and contractors affected by the incident and emergency e.g. injured, deceased, locations, etc. • Coordinate with PTTEP HHR (Human resources) division; • Coordinate with hospitals for treatment of injured persons and provide the additional support required; • Consider mobilising RRT to interface with family or relatives of the impacted staff; • Make a note and maintain a personal log of all relevant information received and the consequential activity performed and pass each note to Event Logger; • Assist the Event Logger in tracking personnel on the status boards and ensure accuracy of information; and • Establish the requirement for counselling services for those affected by the emergency (open to all employees and contractors).

Each ERT member shall record the details of message/events upon receiving in to the emergency log sheet form (**Appendix C**).

3.4 EMERGENCY RESPONSE ACTION

The response action of an emergency situation occurring at S1 operating sites can be summarized in flowing details.

1. When an emergency occurs, OSC with the site operation team and intervention team responds to the emergency situation as soon as possible.
2. OSC will evaluate the tier of emergency in consultation with the ERT duty officer.
 - a. Even though the emergency situation is within tier 1, localized and can be handled by site staff (OSC, site operation, intervention, and medical team), yet OSC shall immediately report to ERT duty officer for further justification;
 - b. If the emergency falls into tier 2,
 - i. Upon receiving the emergency information, ERTL or ERT duty officer shall activate ERT and ECC room. LKU telecom officer shall immediately call the duty persons of S1 ERT (see Section 3.2) to meet together at the S1 ECC room.
 - ii. ERTL or ERT duty officer shall lead ERT, in responding to the emergency situation.
 - iii. ERTL or ERT duty officer shall immediately contact BKK S1 asset duty and/or EMT Leader (SVP.). EMT will be established to manage and provide relevant supports to the asset in the tier 2 emergency situation.
 - iv. ERTL or ERT duty officer reported the emergency situation to the local governmental authority of the affected area.
 - v. DERTL or OSC may establish direct contacts for supports with external parties in the area e.g. SAO, police, hospital, medical service centers, provincial electricity authority, etc.
 - vi. The affected local government authority takeovers the emergency management by acting as Emergency Director (ED) if the emergency significantly affects the community or environment according to the Disaster Prevention and Mitigation Act.
 - vii. Even though OSC takes the command from ED, OSC yet carries on with emergency response on the scene in an effective way. The ED could be the executive chief of affected SAO or higher.
 - viii. OSC, while taking command from ED, collaborates with ERT for supports and information updates.
 - c. If the emergency escalates to tier 3, the situation goes beyond the capability of EMT, ERT & OSC to handle, the CMT shall be established in BKK. Emergency response and management shall be conducted according to PTTEP Emergency and Crisis Management Standard (SSHE-106-STD-500) and Crisis Management Plan (SSHE-106-PDR-501).

In case of emergency with S1 external organization in S1, but not directly under responsibility of S1 production operations department (PS1), e.g. new drilling site, new construction site, seismic survey, etc., the Company Site Representative (CSR) shall act as OSC for their responsible location and report directly to S1 DERTL.

Apart from the normal function line reporting procedure, CSR as OSC shall report all incidents to S1 telecom officer and ERT duty officer.

The Emergency Tier Evaluation & Response Flowchart is shown in **Figure 3**.

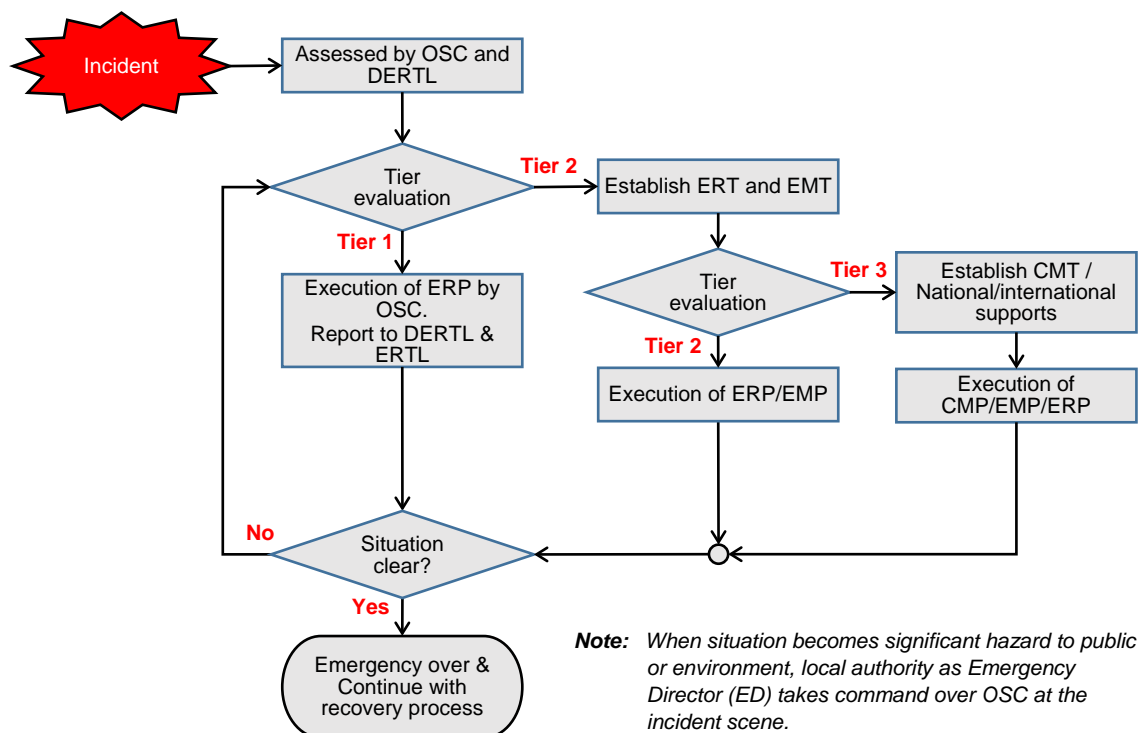


Figure 3: Emergency Tier Evaluation & Response Flowchart

3.5 COMMUNICATION DURING EMERGENCY

During an emergency, communications can be executed by the following methods.

- Radio;
- Landline Telephone;
- Mobile Phone;
- E-mail; or
- Fax

Portable radios (VHF) are provided to S1 operational staff and assigned as the primary option for emergency communication. In normal situations, all handheld radio users are on channel 15. In emergency situations, telecom operator broadcasts to all stations involving an emergency e.g. ERT, OSC, affected site operation, intervention & medical teams to switch to channel 16 for emergency communication. Others not related to emergency may remain on channel 15 for their normal operational communication.

Besides, the external and internal telephone numbers are provided to support both normal and emergency communication. The S1 emergency numbers (external: 055 731 150, internal: 33) are provided at the telecom room which is manned 24 hours every day for all emergency calls from S1 internal and from external parties e.g. community, governmental bodies, etc. Telecom operator is responsible to respond to all calls, take & log precise messages on the given log sheet and relay it to responsible persons (see roles and responsibilities of telecom operator in section 3.3).

The formal emergency call messages that need to be informed to Emergency Response Team, on-call support team and involved parties by LKU Telecom. Operator are shown in **Appendix A**. The emergency report form which will be logged by LKU Telecom. Operator on receiving notification of emergency is illustrated in **Appendix B**.

Email; LKUtelexRoom@pttep.com and fax; 02 537 6212 are available to support informative communication e.g. text, photographs, etc.

Most of the emergency cases, they begin with the incidents then escalate into an emergency. Therefore, the appropriate and timely notification of incidents can improve the responsive actions to the incident and attenuate the situation not to become an emergency. The initial emergency communication flow is illustrated in **Figure 4**.

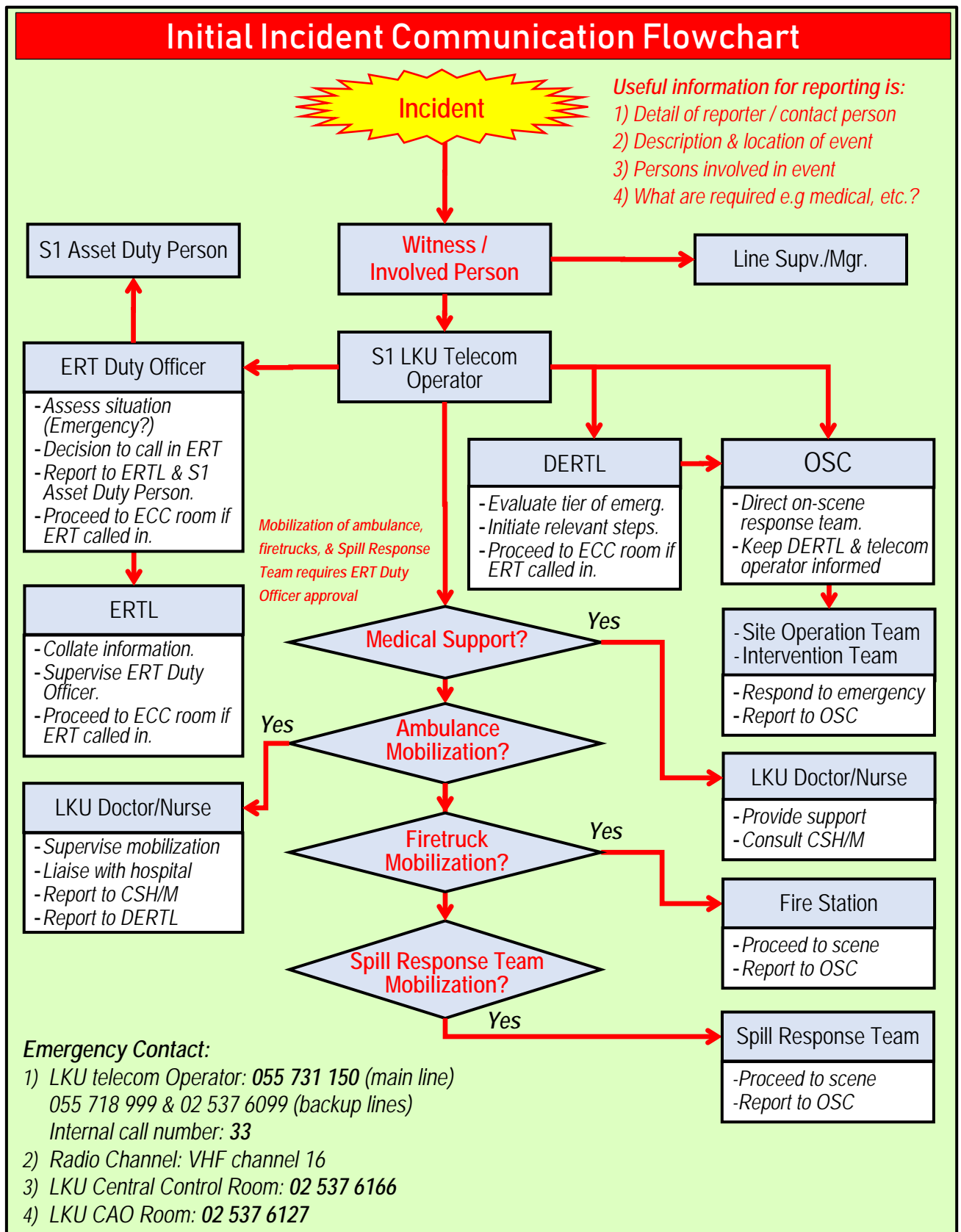


Figure 4: S1 Initial Incident Communication Flowchart

3.6 MUSTER POINT

The muster point is the predetermined place where is at a safe distance from the potential hazards and with adequate space for gathering and counting personnel in an emergency situation.

3.6.1 Type of Muster Point

a) Primary Muster Point

The primary muster points are for personnel to take an initial assembly when the emergency situation requests to muster e.g. LKU CCR is a primary muster point for flow station operation & intervention teams, ECC room is a primary muster point for ERT, area behind fire station is a primary point for all personnel not involving the emergency response actions. The assigned muster checker (and backup muster checker) shall be present to keep muster in order, for personnel movement control, for personnel counts, and for communication with muster logger.

b) Backup Muster Point

The backup muster point is the secondary muster point where personnel gathers in case they cannot safely proceed to the primary muster points. The backup muster point is not always necessary for all locations if alternative escape routes to primary muster point can be assured.

Depending on emergency situation, the predetermined muster points of all S1 locations are displayed in **Appendix D**.

3.6.2 Mustering Action

All personnel at S1 shall be briefed on their designated muster point and action to take at muster point that shall include, but not limited to:

For all personnel:

- On hearing/knowning mustering alarm or notification, make worksite safe proceed to the designated muster point. Walk fast and do not run;
- Observe the safety of the passage. Take the fastest route to proceed to the designated primary muster point. If it is not safe, take an alternative route;
- If there is no safe alternative route, proceed to the predetermined backup muster point, call S1 emergency number 055 731 150 or radio VHF channel 15, and standby for instruction; and
- At the primary muster point, stay calm and keep noise low. Respond to the muster checker and report any information necessary to emergency handling.

Note: Security guards on duty at all gates remain at gates and support access control during emergency otherwise it is not safe to do so.

For muster checker:

- At the muster point, stay calm and take control of the muster;
- Initiate the predetermined personnel count procedure;
- Observe and provide support to the mustered persons e.g. injury, fear, panic, etc.;
- Report the number of mustered persons, missing persons, injury, etc. to the muster logger when requested;
- Maintain muster in order and ensure the comfort of mustered persons as practical. No person should leave the muster point without instruction from ERT. Take record of mustered person movement when called out by ERT;
- When the muster point is deemed unsafe, consult the muster logger to move the muster point to the safe place as practical; and
- Only when the muster logger instructs, release the mustering.

The locations of predetermined muster points, positions of Muster Checker and Muster logger of each S1 operating location are summarized in **Appendix D**.

3.7 FACILITIES

The facilities shall be provided to support activities by the OSC team, ERT, CMRT, and RRT. These facilities shall be adequately equipped for the effective performance of the designed team, especially for communication and information management. All ICT equipment in those rooms shall be well maintained and checked by PS1/M (ICT) to ensure all ICT equipment is always readily available and fully functioning. All materials and documents in those rooms are prepared and made ready for prompt use by the PS1/S section.

At LKU office, 4 separate rooms are provided for:-

1. Emergency Coordination Centre (ECC) room for ERT to occupy for their duties;
2. Relative Response Room (RRR) for RRT to occupy for their duties;
3. Communication and Media Response Room (MRR) for CMRT to occupy for their duties;
and
4. Press Release Room (PRR) for the press release and media interfaces.

Other than the aforementioned rooms, the LKU CCR and CAO rooms are to be ready with ICT, materials, and documents ready for emergency response as well. PS1/P section is in charge of ensuring they are readily available.

3.7.1 Emergency Coordination Centre (ECC)

ECC is located at LKU building #1 meeting room #1. The ECC is arranged for S1 ERT and on-call support team to gather and use for their emergency duties.

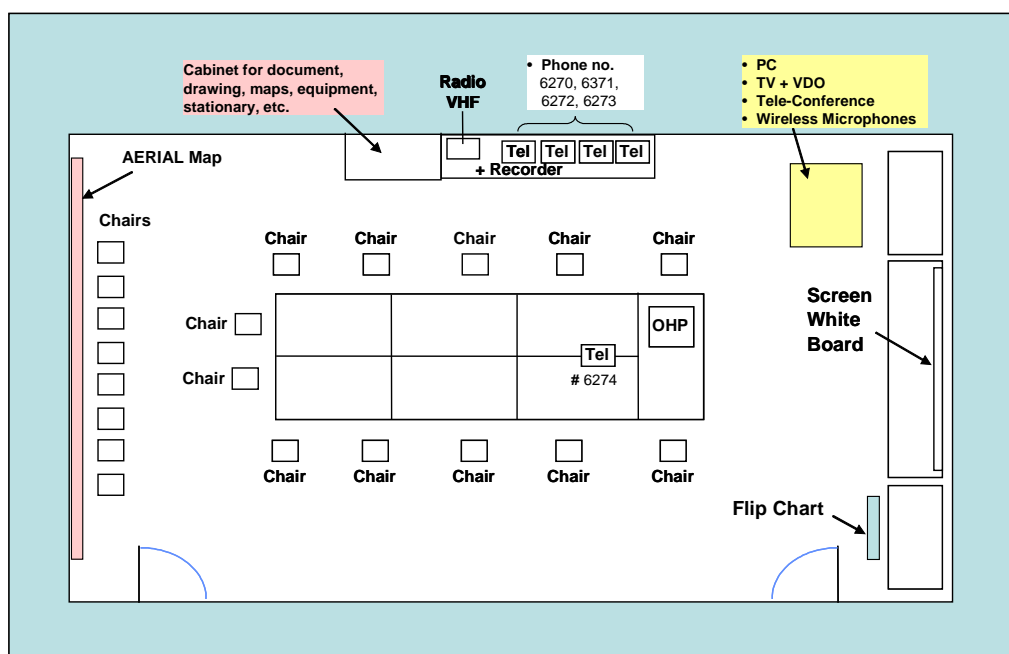


Figure 5: Simplified Layout of Emergency Control Room

Emergency Coordination Centre (ECC) – First In Actions

- Shift the magnet bar for register/muster;
- Switch on and ensure that the PC is working correctly;
- Lower the projection screen and turn on the digital projector;
- Log on the main PC using appropriate user name & password (kept in the cupboard);
- Check that all telephones are working correctly;
- Checks all required documents are available and updated (tel. directory, duty roster list, drawings, etc.);
- Take the briefing from ERTL or ERT duty officer and refer to individual role checklists.

ECC Equipment List

Telephones:	5 PABX telephone extensions {810-6270, 6272, 6273, 6274, 6371}
Display boards:	Casualties' status, the sequence of events, POB status, weather condition, and status of emergency resources.
Information Board:	1 board showing POB information, authorised delegates, Duty Rosters, stationery and forms
Documentation:	<ol style="list-style-type: none"> 1. Corporate Emergency Management Plan 2. Corporate Crisis Management Plan 3. S1 Emergency Response Plan 4. Key Site Drawings of Facilities and Installations 5. Emergency Log Sheets 6. Telephone directory 7. S1 Emergency Reporting Flowchart 8. S1 Duty Roster List

In case the ECC room at LKU building #1 meeting room #1 cannot be utilized when an emergency occurs such as fire or bomb threat at the office building, flooding, road blockage, the predetermined alternative venues are:

1. The meeting room at well services workshop; and
2. PHS housing.

Upon such a situation, ERTL or ERT duty officer announces to all ERT members to report to an alternative ECC room.

3.7.2 Community and Media Response Room (CMRR)

CMRR is located at LKU Building #1 Room #2 for CMRT to utilize for their emergency duties e.g. information preparation, press compilation, communication, etc. S1 Public Affairs (PTN/A) staff take roles and responsibilities as CMRT.

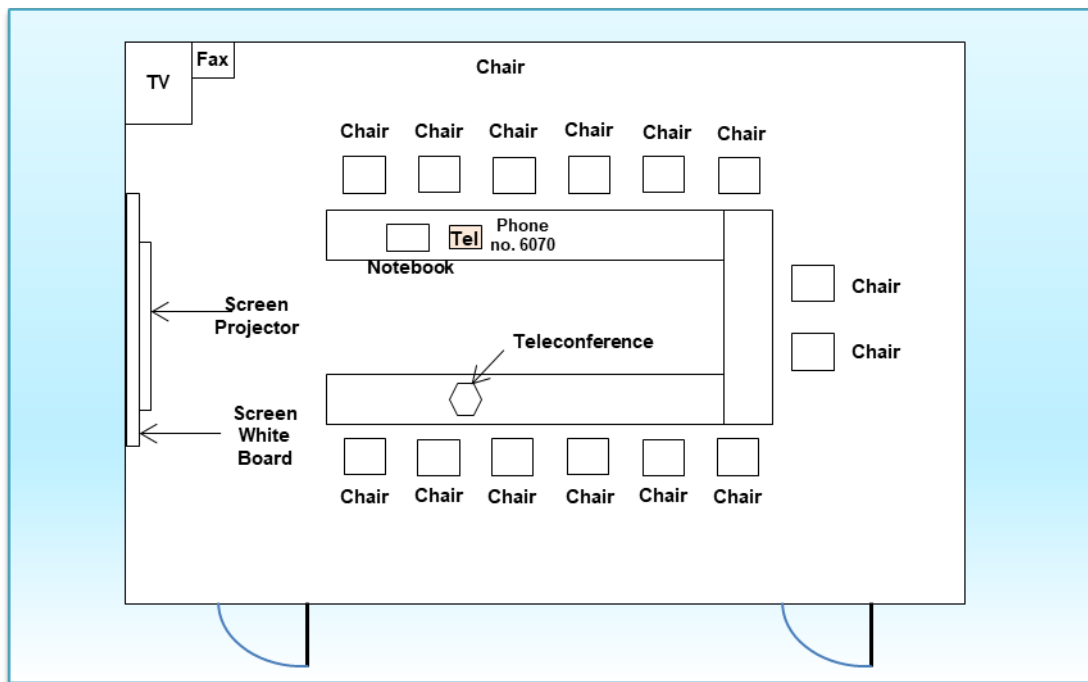


Figure 6: Simplified Layout of Media Response Room (MRR)

Community and Media Response Room (CMRR) – First In Actions

- Ensure that the PC is working correctly;
- Log on the main PC using appropriate user name & password (kept in the cupboard);
- Ensure all required document e.g. emergency contact list, community contact list, etc. are available;
- Check that all telephones are working correctly;
- Await the briefing from Manager, Public Affairs Section.

CMRR Equipment List

- Telephones:** 1 PABX telephone extensions No. 810-6070
- Information Board:** 1 board for preparation on the media press release
- Documentation:**
1. S1 Emergency Response Plan
 2. List of local media with telephone directory
 3. List of Corporate Community & Media Response Team with telephone directory
 4. S1 Emergency Reporting Flowchart
 5. S1 Duty Roster List

3.7.3 Relative Response Room (RRR)

Relative Response Room (RRR) is located at LKU Building #2 Meeting Room. RRR is arranged for the Relative Response Team (RRT) for preparation on information and coordination with relatives of staff and contractors who are injured or deceased. Operations Training Center (HRC/O) staff take roles and responsibilities as RRT.

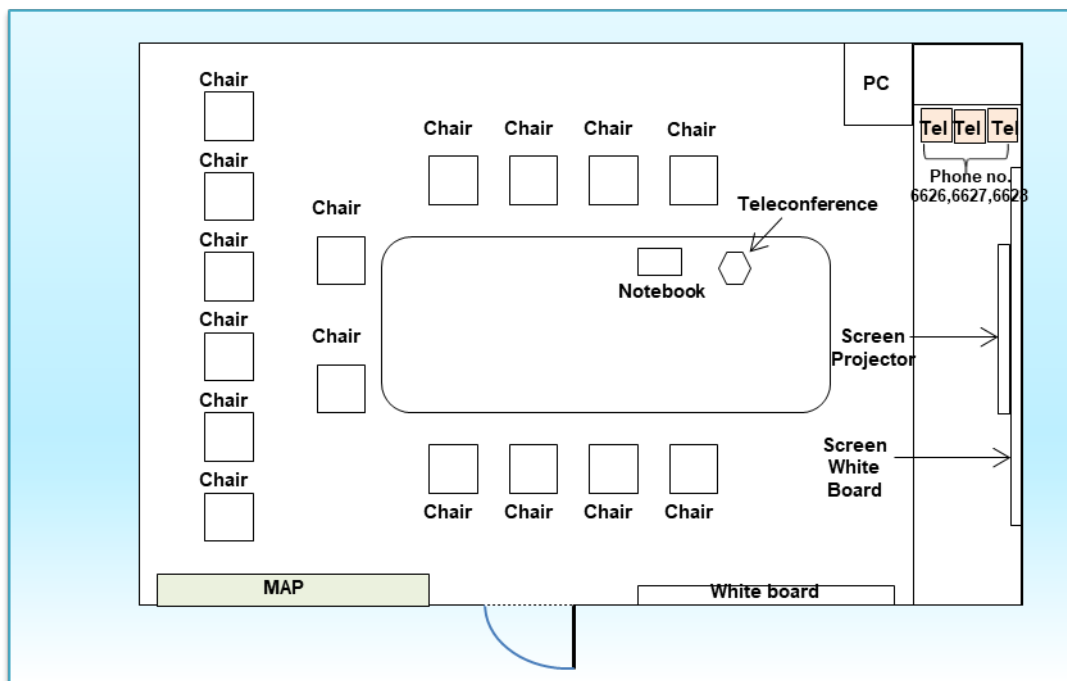


Figure 7: Simplified Layout of Relative Response Room (RRR)

Relative Response Room (RRR) – First In Actions

- Ensure that the PC is working correctly;
- Ensure accessibility to staff database and contract holder list;
- Log on the main PC using appropriate user name & password (kept in cupboard);
- Check that all telephones are working correctly;
- Await the briefing from manager, Operations Training Center Section

RRR Equipment List

- Telephones:** 3 PABX telephone extensions {810-6626, 6627, 6628}
- Information Board:** Staff and contractor status board
- Documentation:**
1. S1 Emergency Response Plan
 2. List of focal point of S1 department staff and contractors with telephone directory
 3. List of Corporate Relative Response Team with telephone directory
 4. S1 Emergency Reporting Flowchart
 5. S1 Emergency Duty Roster List

3.7.4 Press Release Room (PRR)

Press Release Room (PRR) is located at a room of 1st floor, 30th Year Building. The room is used for information disclosure and issuing public statements to local media or communities in case of emergency.



Figure 8: Photo of Press Release Room (PRR)

3.8 PRESS RELEASE

In the event of an emergency and/or a crisis, a special communication task force is to be set up. The team comprises, at least, a media spokesperson and the Crisis Communications Team (CCT). Their responsibilities include communication with external audiences that are media, authorities, and local communities.

According to PTTEP Delegation of Authority & Signature (DAS), only the President and Chief Executive Officer (CEO) and/or designated representatives of the organization are authorized to disclose information and issue public statements in case of an emergency. The level of spokesperson shall be as the following chart.



In case of an emergency at S1 asset, VP of S1 Production Operations Department (ERTL) or designated representative has the authority as a media spokesperson for disclosure of information and public statement to local media or communities, according to Crisis Communication Guideline (12145-GDL-004-R04) and PTTEP DAS. The information and/or public statement is prepared by S1 CMRT and reviewed & approved by PTTEP Crisis Communication Team (CCT) and EMT Leader prior to the press release. ERTL will provide the press release to local media or communities at Press Release Room (PRR) located at S1 SSHE Induction Room.

Examples of communication tools (as follows) are illustrated in **Appendix E**.

- Key Messages
- Media Release Template
- 1st Telephone Message to Answer Media and Investor Enquiries
- Holding Statement

3.9 DEACTIVATION AND POST EMERGENCY ACTIONS

3.9.1 Deactivation

The EMT Leader, in consultation with S1 ERTL, is the sole authority for deactivating an emergency declaration. Deactivation should only be called when S1 ERTL and EMT Leader agree that the emergency has been contained, and satisfactorily safe in all respects.

The activities and procedures which must be undertaken to recover from an emergency, the EMT Leader shall ensure the conducting of the following activities include, but are 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 clean-up materials, replacement parts);
- The accounting for all expenses incurred as a result of the incident;
- The filing of insurance claims; and
- Preparation and dispatch of final reports to relevant Shareholders, Government, and Local Authorities.

3.9.2 Emergency End and Final Actions

Once a decision has been made that no further actions are outstanding and that an emergency is over, many issues need to be considered before standing down. There is a need to consider the following:

- If the severe impact taken place with the production continuity as a result of incident, the S1 Business Continuity Plan (BCP) shall be activated referring to Thai Onshore Asset (PTN) Business Continuity Plan (BCP) (Document Code: 63984.1/2017)
- Ascertain the current position of each team member as regards their role, responsibilities and any ongoing/ outstanding actions;
- Identify and assign any outstanding actions including debriefing of interested external parties, such as authorities, community, etc;
- Put in place an emergency situation review to ensure the completion of outstanding actions;
- Understand any outstanding human resource issues and ensure that the necessary information is provided and the appropriate steps are being taken;
- Ensure that all staff are aware of the emergency close out and update them regarding the short and long-term issues affecting the company (if known);
- Ensure that all information has been captured and recorded;

- Have a team debrief before staff leave or return to normal duties;
- Ensure the plan of a future debrief time when all actions can be analysed. This can usually be within 24 - 48 hours of emergency closeout. Consider including the participation of independent reviewers; and
- This review should also address the sensitivity of the report information and determine the most appropriate means of secure storage.

After the review, a closeout report should be prepared. The report should cover the following:

- Understand and document the cause(s) of the emergency;
- Document all involved parties and details of participating personnel;
- Analyse the response and identify any learning points to be incorporated into the appropriate procedures and/or to be shared with other parts of the Business;
- Incorporate a full picture of the costs incurred as a result of the incident; and
- Review the effectiveness of all actions taken.

3.9.3 Incident Investigation

Incident investigation shall be conducted in accordance with Incident Management Standard (SSHE-106-STD-600) as soon as possible and when safe to do so. It should be conducted right after the emergency situation has been cleared in order to collect all evidence & facts and capture actual causes of the incident for proper analysis to define the effective mitigations and improvements for recurrence prevention and emergency/crisis response strategy.

3.9.4 Post Emergency Review

A post-emergency review is required for conducting to examine the response to the emergency. The EMT Leader and/or S1 ERTL should convene an emergency review meeting. Those attending the review meeting shall include the EMT & ERT members, and all other support team members. Minutes of the review meeting shall be recorded and archived for future analysis. The review meeting shall determine (but not limited to) the following:

- Were employees properly informed of S1 ERP and relevant corporate standards/procedures?
- Did employees respond according to S1 ERP and relevant corporate standards/procedures?
- Were employee's responses timely?
- Were the procedures adequate?
- What were the problems encountered during the response activities?
- What can be improved?

- How can similar events be avoided in the future?

If public emergency services were involved, they shall be invited to participate in the critique.

3.10 TRAINING AND EXERCISE

All concerned personnel who are assigned as the emergency response team shall be trained and have competency for their emergency response roles and responsibilities. Training requirements for personnel involving emergency response are illustrated in S1 SSHE Training and Competency Procedure (13247-PDR-SSHE-305/01) and PTTEP SSHE Training and Competency Standard (SSHE-106-STD-340).

Emergency exercise shall be regularly performed by S1 emergency response team members according to the set plan agreed by S1 management. These emergency exercises and drills are to enhance the knowledge & skills of the members and to test the effectiveness of existing ERP for improvement.

3.11 S1 DUTY ROSTER GUIDELINE

The S1 duty roster is designed to provide effective support around the clock for resolving the emergency situation. The duty persons are appointed by the ERT members in each discipline to act on their behalf when they are not readily available to respond to emergency calls. They shall be trained and competent to respond to emergency in their given discipline's roles.

All duty persons are expected to be contactable at all times during their duty period. All duty persons shall respond to all emergency call and take their given roles to support the emergency. When called in, they shall proceed to their designated emergency station the soonest within 2 hours.

The ERT duty persons shall act in emergency response until released by the ERT member in the given discipline.

The duty roster consists of two groups as follows:

3.11.1 ERT Duty Roster

ERT Essential Duty Group:

The ERT essential duty group is the main group that will always be called in when emergency tier 2 & 3 is initiated. The ERT essential duty group comprises the following persons:

- Domestic Onshore Asset Duty (S1, PTTEP1 and SPH)
- Duty Officer
- Event Logger
- SSHE Officer
- SSHE Duty
- Logistics Duty

- Maintenance Duty
- IT/ Telecom Services
- Security Services
- Medical Team
- Community & Media Response Team (CMRT) Duty
- Relative Response Team (RRT) Duty

For the essential duty group, the duty officer (S1 Production Superintendent) is a key person for coordination with other duty persons including on-call support team on emergency supports.

On-Call Support Team Duty Persons:

The On-Call Support Team Duty Group will be assigned from various disciplines' representatives working within S1 operation premise. The selected persons will be called in when their related discipline has sustained an emergency or ER Team Leader / EMT requires assistance. The On-Call Support Team Duty Group is comprised of (but not limit to) the following groups:

- Drilling Duty – ETN SSHE
- Well Services Duty
- Construction Duty
- Material Yard Duty

In addition to above duty groups, the register of S1 duty roster shall include other support staffs of S1 operation department for fulfilling support on emergency situation as required.

Depending on the different roles and responsibilities of duty staff, mobilization time to LKU office for support emergency are varied as follows:

- Available immediately (restricted to shift staff working on facilities including duty officer, event logger, SSHE officer, security services, medical team, well services duty);
- Within 2 hours (key support staff e.g. SSHE duty, logistic duty, maintenance duty, CMRT duty, RRT duty, drilling duty, construction duty, material yard duty, IT/Telecom).

The example of S1 duty roster for emergency response as per duty group classification and mobilization period is illustrated in **Appendix F**.

Back-up Duty Roster Team:

If an emergency takes long time to last, ER Team Leader and/or Duty Officer shall consider having a relieve team. The Duty Roster Team in a later week will be called for backup.

In the event of two emergencies happen at the same time, the Back-up Team will be called.

3.11.2 Duty Roster Nomination

Staff are nominated by their line managers/supervisors for duty roster for a period 7 consecutive calendar days, starting on Monday at 12:00 hrs. The duty roster will be updated to all duty staff and Corporate SSHE division by S1 SSHE department as per weekly basis. The roster will be distributed every Thursday to the following week's duty holders, and the personnel who will be on duty during the following weeks. This will include key personnel such as Telecom Officer. The assigned Department Focal Points are responsible for providing the Corporate SSHE Division with information regarding the forward planning of the Duty Roster. Changes during a Duty Roster Week are allowed, but it shall be the responsibility of the person scheduled for duty. The change must be amicably agreed by the nominated recipient and shall be communicated, by the person requesting the change, to S1 SSHE Department focal point (Officer, Data Management (SSHE) or assigned person). The requested change shall only be to another qualified duty person in the group.

3.11.3 Communication for Duty Roster Personnel

Staff on Duty Roster will receive an Emergency Duty Book which consists of a log book and contact list. Details of all calls, received and transmitted, should be entered into the log book. The Emergency Duty Book must be handed over to the next person of duty.

1. DUTY ROSTER MOBILE PHONE TEST

The Duty Roster mobile phone will be tested by LKU Telecom Officer every Monday at 13:00 hrs. The message will be;

- "Duty Telephone Test, please confirm it is working ... over".

(ทดสอบการติดต่อโทรศัพท์ ครับ ไม่ทราบว่าจะชัดเจนหรือไม่ ครับ)

This is to ensure that the mobile phones are workable and also to remind duty persons that they are on duty.

If by 16.00 hrs. the Duty Person has not been phoned, he/ she must ring LKU Telecom Officer and report that they did not receive the test call.

The Operator, Telecom Services will then test that number again.

2. GENERIC DUTY ROSTER RESPONSIBILITIES

- Be available and be within the mobilization time radius of LKU Office at all times;
- Carry the duty mobile phone at all times;
- Ensure that the mobile telephones are always working;
- Be aware of specific responsibilities during an emergency;
- When receiving an emergency call, respond as directed by the call message;
- Immediately report any problems with duty communications equipment to Operator, Telecom Services;

- Inform S1 SSHE Department focal point (Officer, Data Management (SSHE)) of any changes to the published duty roster;
- Must not have a blood alcohol level above the National legal limit;
- Notify S1 SSHE Department focal point (Officer, Data Management (SSHE)) of any changes in mobile telephone numbers.

3. DUTY ROSTER PERSONNEL QUALIFICATION REQUIREMENT

The Duty Roster personnel shall be qualified and be approved by SVP, Thai Onshore Asset (EMT Leader). Each discipline is required to have the following qualifications;

- Duty Roster Team members shall be assigned from experience and competence personnel of each discipline;
- Expertise in their areas of responsibility, including knowledge and experience;
- Understand the PTTEP EMP and S1 Emergency Response Plan and know the response process under his/her responsibilities;
- Bilingual – Fluent in both written & spoken Thai & English;
- Has no record of disabilities that may impair his/her ability to perform the functions assigned to them;

All Duty Roster Personnel shall receive training and participate in the emergency response exercise as indicated **Table 6**.

Table 6: Training Requirement and Exercises of S1 Duty Roster

Training Course	Recommended for	Frequency	Responsible Parties
PTTEP Emergency Management Plan (EMP) Introduction and Incident Command Introduction	All new Duty Roster personnel	Yearly	Corporate Security Section
S1 Emergency Response Plan Introduction	All new Duty Roster personnel	Yearly	S1 SSHE Department
Exercise	Recommended for	Frequency	Responsible Parties
Table Top	Selected from Weekly Duty Roster personnel	As appropriated or at least yearly	S1 SSHE Department
Tier 2	Selected from Weekly Duty Roster Team	Yearly	Corporate Security Section and S1 SSHE Department
Tier 3	Duty Roster Team and Crisis Management Team	Yearly	Corporate Security Section and S1 SSHE Department
Note: For table top exercises, to ensure that all duty persons understand and confidence to deal with the real emergency, the frequency of table top exercises shall be more frequency. The exercises can be both informing in advance and surprising without advance informed.			

APPENDICES

APPENDIX A: EMERGENCY CALL MESSAGE FROM LKU TELECOM OFFICER

The emergency call messages that need to be informed to Emergency Response Team, on-call support team and involved parties by LKU Telecom Officer are as follows:

- Tier 1 Emergency at.....For information and standby.
(ขณะนี้เหตุการณ์ฉุกเฉิน ระดับ 1 ที่.....แจ้งเพื่อทราบ และเตรียมความพร้อม)
- Tier 2 Emergency at.....Go to S1 Emergency Coordination Centre (ECC) immediately.
(ขณะนี้เหตุการณ์ฉุกเฉิน ระดับ 2 ที่..... กรุณามาที่ศูนย์ประสานงานเหตุฉุกเฉินทันที)
- Tier 3 Emergency at.....Go to S1 Emergency Coordination Centre (ECC) immediately.
(ขณะนี้เหตุการณ์ฉุกเฉิน ระดับ 3 ที่..... กรุณามาที่ศูนย์ประสานงานเหตุฉุกเฉินทันที)
- Emergency is over. (ขณะนี้เหตุการณ์เข้าสู่ภาวะปกติ)

APPENDIX B: INITIAL EMERGENCY REPORT FORM

This form will be completed by LKU Telecom. Operator on receiving notification of an emergency.

แบบฟอร์มการแจ้งเหตุการฉุกเฉินเบื้องต้น				
รายละเอียดผู้แจ้งเหตุฉุกเฉิน				
ชื่อผู้แจ้งเหตุ:		เบอร์โทรศัพท์ผู้แจ้งเหตุ:		
วันและเวลาที่แจ้งเหตุ:				
รายละเอียดเหตุฉุกเฉิน				
วันและเวลาที่เกิดเหตุ:				
สถานที่เกิดเหตุ:				
ประเภทของเหตุฉุกเฉิน	<input type="checkbox"/> ไฟไหม้ <input type="checkbox"/> ระเบิด <input type="checkbox"/> ก๊าซรั่วไหล <input type="checkbox"/> สารเคมี/น้ำมันรั่วไหล <input type="checkbox"/> อุบัติเหตุทางถนน <input type="checkbox"/> การก่อการร้าย <input type="checkbox"/> อื่นๆ โปรดระบุ			
รายละเอียดของเหตุฉุกเฉิน:				
ผู้แจ้งเหตุต้องการความช่วยเหลือหรือไม่	<input type="checkbox"/> ใช่ <input type="checkbox"/> ไม่ใช่			
ความช่วยเหลือที่ต้องการ	<input type="checkbox"/> การช่วยทางการแพทย์ <input type="checkbox"/> การค้นหาผู้สูญหาย/การช่วยชีวิต <input type="checkbox"/> การตอบสนองต่อการรั่วไหล <input type="checkbox"/> การช่วยเหลือด้านเทคนิค <input type="checkbox"/> อื่นๆ โปรดระบุ			
รายละเอียดด้านบุคคล				
รายละเอียด	พนักงาน ปตท.สม.	ผู้รับเหมา	บุคคลที่สาม	ไม่ทราบ/ไม่สามารถระบุได้
จำนวนผู้เสียชีวิต				
จำนวนผู้บาดเจ็บ				
จำนวนผู้สูญหาย				
รายละเอียดด้านสิ่งแวดล้อม				
ระบุชื่อวัสดุที่รั่วไหล				
ปริมาณการรั่วไหล (ถ้ามี)				
รายละเอียด ณ จุดเกิดเหตุ				
มีตัวแทนของบริษัทฯ อยู่ ณ จุดเกิดเหตุหรือไม่	<input type="checkbox"/> มี <input type="checkbox"/> ไม่มี ถ้ามี โปรดระบุ ชื่อ เบอร์ติดต่อกลับ			
การดำเนินการ ณ จุดเกิดเหตุ				
ชื่อผู้บันทึกเหตุ	วันและเวลาที่บันทึกเหตุ:			



APPENDIX C: EMERGENCY LOG SHEET

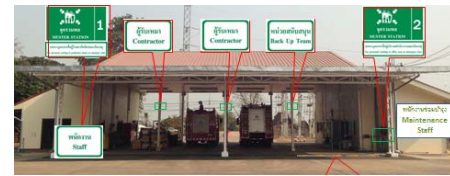

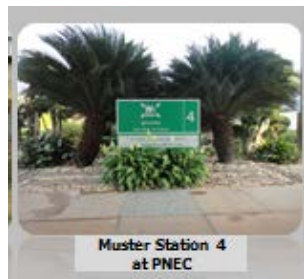
See next page.



รายละเอียดเหตุการณ์			ชื่อผู้บันทึก: ตำแหน่งผู้บันทึก: วันที่:	
เวลา	ข้อความ		รายละเอียดของเหตุการณ์	หมายเหตุ
	จาก	ถึง		




APPENDIX D: LOCATION OF PREDETERMINED MUSTER POINTS




The locations of predetermined muster points, positions of Muster Checker and Muster logger of each S1 operating location are shown in below table.


Table 1: The muster points, positions of Muster Checker and Muster logger of each S1 operating location

No.	S1 Operating Location	Location of Muster Point	Mustered Person	Position of Muster Checker	Position of Muster Logger	Photo of Muster Point
1	LKU Flow Station, accommodation, maintenance workshop, officer	Behind Fire Station Building	Emergency Response Team, personnel working in LKU Flow Station, personnel working in the office area, maintenance workshop, visitors	Well Site Supervisor #2	S1 SSHE Officer (Shift)	
		In front of CCR	Emergency Response Team within LKU Flow Station	LKU Plant Foreman	S1 SSHE Officer (Shift)	
		In front of Piyachat Nithat (PNEC) Building	Persons working at PNEC building and their visitors Persons working at OJT center building and their visitors	Public Affair Staff	S1 SSHE Officer (Shift)	

No.	S1 Operating Location	Location of Muster Point	Mustered Person	Position of Muster Checker	Position of Muster Logger	Photo of Muster Point
2	NTM-A	By the security guardhouse at the main gate.	Persons working at NTM-A, contractors, visitors	NTM-A Security Guard	NTM-A Production Lead Operator	
		In front of NTM-A control room	Site Operation Team/ Emergency Response Team	NTM-A Production Operator	NTM-A Production Lead Operator	-
3	STN-A	Beside security guardhouse by the main gate.	Persons working in STN-A, contractors, visitors	STN-A Security Guard	STN-A Production Operator	
		In front of STN-A control room	Site Operation Team/ Emergency Response Team	STN-A Production Operator	STN-A Production Operator	-

No.	S1 Operating Location	Location of Muster Point	Mustered Person	Position of Muster Checker	Position of Muster Logger	Photo of Muster Point
4	Well Sites	Outside by the main gate	Persons working within well sites, contractors, visitors	Security Guard	Area Operator	
5	BPR Depot	In front of T-904 (Road tanker area)	Emergency Response Team, persons working at road tanker area within BPR Depot, visitors	Security Guard (Road tanker area)	BPR Depot Operator	
		In front of the security guardhouse (Rail tanker area)	Emergency Response Team, persons working at rail side area within BPR Depot, visitors	Security Guard (Rail tanker area)	BPR Depot Operator	

No.	S1 Operating Location	Location of Muster Point	Mustered Person	Position of Muster Checker	Position of Muster Logger	Photo of Muster Point
6	Well Service Workshop	In front of the main gate	Persons working within well service workshop, visitors	Senior Technician (workshop)	Well Service Supervisor	
7	Material Yard	In front of the main gate	Persons working within the material yard, visitors	Senior Store Keeper	Team Leader, Warehouse and Material Yard	
8	PHS Housing Compounds	Car park area	Persons living in PHS housing compounds, persons working (gardeners, housekeepers), visitors	Security Guard	Security Guard	

No.	S1 Operating Location	Location of Muster Point	Mustered Person	Position of Muster Checker	Position of Muster Logger	Photo of Muster Point
9	CNS Rail Tanker Maintenance Workshop	In front of the security guardhouse	Persons working CNS rail tanker maintenance workshop, visitors	CNS Contractor (JS TECH) SSHE Officer	CNS Contractor (JS TECH) Site Manager	

APPENDIX E: EXAMPLES OF COMMUNICATION TOOLS

1. Key Messages

These key messages should be conveyed in all communications to all stakeholders of PTTEP.

- In conducting exploration and production of petroleum and other activities in accordance with its mission, PTTEP, strives at all times to achieve a manner ensures that incidents affecting the health and safety of its employees, contractors and member of the public, the environment and the integrity of its assets shall not occur.
- PTTEP's primary concern in all incidents of this nature is for the people involved. PTTEP staff have been trained to strictly follow the emergency plan to ensure maximum safety for themselves, partners and rescue workers.
- The nature of PTTEP's business demands the most stringent Safety, Security, Health, and Environmental standards and the company remains committed to maintaining the highest possible standards in this vital area in all its activities.


ข้อความการสื่อสารหลัก

ข้อความการสื่อสารหลักสำหรับผู้มีส่วนได้ส่วนเสียของ ปตท.สผ. กลุ่มต่างๆ

- ในการดำเนินการสำรวจและผลิตปิโตรเลียมรวมทั้งกิจกรรมอื่นๆ ปตท.สผ. มีแนวทางปฏิบัติเพื่อป้องกันมิให้เกิดเหตุการณ์ที่จะส่งผลกระทบต่อสุขภาพและความปลอดภัยของพนักงานบริษัทฯ ผู้รับเหมาและบุคคลทั่วไป รวมทั้งสภาพแวดล้อมและทรัพย์สินของบริษัทฯ
- ในสถานการณ์ดังกล่าว ปตท.สผ. ห่วงใยในสวัสดิภาพของพนักงานที่เกี่ยวข้อง อย่างไรก็ตาม พนักงานของ ปตท.สผ. ทุกคนได้ผ่านการฝึกฝนให้ปฏิบัติตามแผนการในภาวะฉุกเฉินโดยเคร่งครัด เพื่อให้เกิดความมั่นใจ
- ในความปลอดภัยสูงสุดของพนักงาน พันธมิตรธุรกิจ และเจ้าหน้าที่กู้ภัย ด้วยลักษณะของธุรกิจของ ปตท.สผ. บริษัทฯ ยึดถือหลักเกณฑ์และมาตรฐานที่เข้มงวดที่สุดด้านสุขภาพ ความปลอดภัย และสิ่งแวดล้อม บริษัทฯ มุ่งมั่นปฏิบัติตามหลักการดังกล่าวมาโดยตลอด เพื่อรักษามาตรฐาน สูงสุดในการปฏิบัติงานด้านดังกล่าว

2. Media Release Template

The Media Release Template gives an overview of the structure and content of a press release or a statement, in line with the common way press releases are written. Using this template helps the Writer develop a press release or a statement quickly and in a consistent way. The Writer and Media Relations Team work closely together to ensure they receive all information as per the template.



News Release

ข่าวประชาสัมพันธ์

Date : _____
Time : _____

Headline (subject matter)

What happened : _____
Where it happened : _____
When did it happen (date, time) : _____
Services involved : _____
Current situation as verified by facts : _____
Effect on stakeholders (JVs, partners, government, suppliers, public) : _____
Status of investigation/recovery : _____
Which government agencies are involved : _____
Any additional information : _____

For further information, please contact : _____
Contact details
Name and designation _____
Tel : _____
Fax : _____
Email : _____

Disclaimer
The information, statements, forecasts and projections contained herein reflect the Company's current views with respect to future events and financial performance. These views are based on assumptions subject to various risks. No assurance is given that these future events will occur, or that the Company's future assumption are correct. Actual results may differ materially from those projected.

บริษัท ปตท.สำรวจและผลิตปิโตรเลียม จำกัด (มหาชน)
PTT Exploration and Production Public Company Limited

www.pttep.com

ปตท.สำรวจและผลิตปิโตรเลียม จำกัด (มหาชน) | Passion to Explore for a Sustainable Future

3. 1st Telephone Message to Answer Media and Investor Enquiries

Based on the latest report on _____(date) at _____(time 24 hours) we obtained, there was a/an _____ at _____. The cause of the incident is still unclear. However, the company is doing its best (to evacuate all staff) (and extinguish then fire/control the spill). Please tell me your name, the publication you represent, the telephone number and email address. For any further update on this situation, please visit www.pttep.com. Thank you.

ข้อความแรกในการตอบโทรศัพท์สื่อมวลชน

จากรายงานที่บริษัท ปตท.สำรวจและผลิตปิโตรเลียม จำกัด (มหาชน) ได้รับเมื่อเวลา_____วันที่_____ได้เกิดเหตุ _____ ขึ้นที่ _____ สาเหตุของอุบัติเหตุยังไม่ทราบแน่ชัด อย่างไรก็ตาม บริษัทฯ กำลังดำเนินการอย่างเต็มที่เพื่อ _____ (อพยพพนักงาน และดับเพลิง หรือกำจัดคราบน้ำมัน) ขอทราบชื่อของคุณ ชื่อสื่อที่สังกัด หมายเลขโทรศัพท์ และ e-mail ทั้งนี้ คุณสามารถติดตามรายละเอียดความคืบหน้าของเหตุการณ์ได้ที่เว็บไซต์ www.pttep.comค่ะ/ครับ

4. Holding Statement

Tips on Writing a Holding Statement

- Three paragraphs
 - Keeps to facts
 - What is being done
 - Some context about the company
- Keep it short and factually accurate
- Avoid emotive language
- Don't prompt further questions
- Avoid digging holes which you can fall into later
- Don't commit to anything - unless it is your intention to do so
- State date (time) and contact details

Note:

Never make statements like "There was no loss of life or injury to staff members resulting from the incident." unless this is confirmed.

Such statements made prematurely will reflect badly on the company if ultimately deaths and/or injuries have occurred.

If not yet confirmed, say something like: "Up till now, we have not received reports of any loss of life or injuries." Then you may add: "Information is still coming in and we will update you as and when we get it."

หมายเหตุ:

ไม่ควรระบุว่า "ไม่มีการบาดเจ็บหรือเสียชีวิตจากเหตุการณ์ที่เกิดขึ้น" จนกว่าจะมีการยืนยันแน่นอน มิฉะนั้นจะส่งผลเสียอย่างมากต่อบริษัท หากยังไม่ได้รับการยืนยันที่แน่นอนว่า มีผู้เสียชีวิต และ/หรือ ผู้บาดเจ็บจริง ควรชี้แจงว่า "จนถึงขณะนี้ เรายังไม่ได้รับรายงานเกี่ยวกับผู้เสียชีวิตหรือผู้บาดเจ็บ" และเสริมว่า "ข้อมูลเพิ่มเติมจะมาถึงในเร็วๆ นี้" และบริษัทฯ จะแจ้งความคืบหน้าให้ท่านทราบทันทีที่ได้รับข้อมูล"

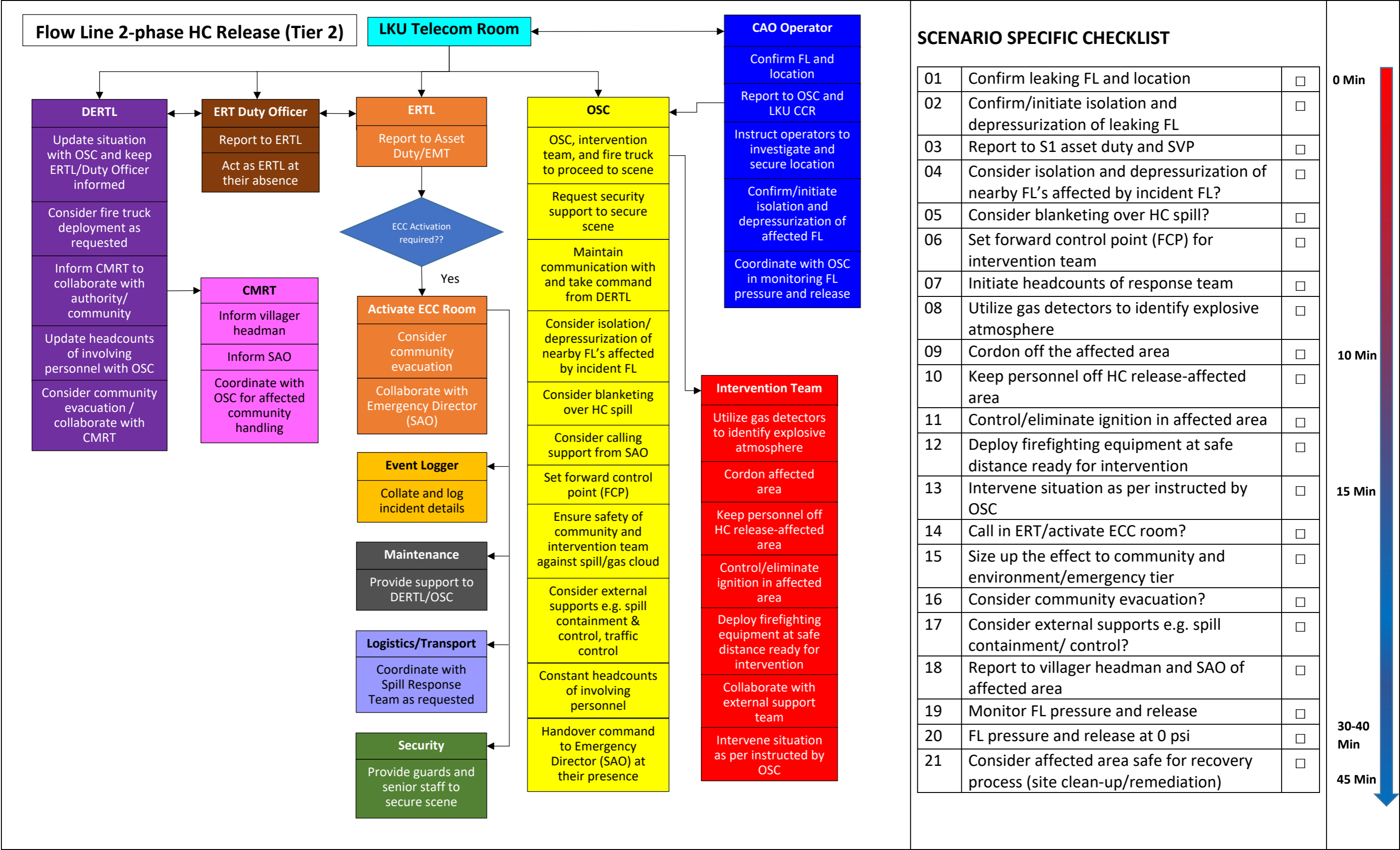
APPENDIX F: EXAMPLE OF S1 DUTY ROSTER

S1 Duty Roster for Emergency Response					
	24-Jun-2019		To	01-Jul-2019	
Operator, Telecom. Services (LKU)					
First point of call	LKU Office			055-731150, 055-718-999, 02-537-6099 Internal line 33 or 810-6099	
ERT Main Duty Group					
Pool Field (Available immediately in the Field)					
Role	From	To	Name	Office	Mobile
Duty Officer	24/06/19	1/7/2019		810-6238	
Event Logger	24/06/19	1/7/2019		810-6187	-
SSHE Officer	24/06/19	1/7/2019		810-6100, 810-6163	
Security Services	-	-	-	810-6045, 810-6069	-
Medical Team (LKU Nurse/Ambulance)	-	-	-	810-6038	
Contactable 24 hours, Mobilize in 2 hours					
Role	From	To	Name	Office	Mobile
Domestic Onshore Asset Duty	24/06/19	1/7/2019		800-4616	
SSHE Duty	24/06/19	1/7/2019		810-6298	
Logistics Duty	24/06/19	1/7/2019		810-6190	
Maintenance Duty	24/06/19	1/7/2019	-	810-6150 (Officer hour)	(After office hour)
IT/Telecom Services	24/06/19	1/7/2019		6304	
Community & Media Response Team (CMRT) Duty	24/06/19	1/7/2019		810-4507	
Relative Response Team (RRT) Duty	24/06/19	1/7/2019		810-6292	XXXXXXX
On-Call Support Team Duty Persons					
Pool Field (Available immediately in the Field)					
Role	From	To	Name	Office	Mobile
Well Services (Superintendent)	24/06/19	1/7/2019		810-6082, 810-6006	
ETN SSHE Duty	24/06/19	1/7/2019		810-6118	
Contactable 24 hours, Mobilize in 2 hours					
Construction Duty	24/06/19	1/7/2019		810-6168	
Material Yard Duty	24/06/19	1/7/2019	-	810-6064	



APPENDIX G: INCIDENT GUIDELINE FOR EMERGENCY SITUATIONS

<< File embedded in PDF >>



ROLES AND RESPONSIBILITIES

Roles	Responsibilities
Document Owner	<p>The owner of the S1 Emergency Response Plan is VP, S1 Production Operations Department, with responsibilities for:-</p> <ul style="list-style-type: none"> ■ Issuing the S1 Emergency Response Plan and its revisions; ■ Issuing the S1 Emergency Response Plan and its revisions; and ■ Ensuring effective implementation of the plan.
Document Custodian	<p>The custodian of the S1 Emergency Response Plan is Superintendent, SSHE, with responsibilities for:-</p> <ul style="list-style-type: none"> ■ Identify deficiencies or potential improvements; ■ Initiating periodic revision; and ■ Maintaining revision history and document status register.

DEFINITION AND ACRONYMS

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

Term	Definition
Asset	Refers to an operating Asset, site, or location within a respective Function Group.
Corporate	Refers to the PTTEP business groups hierarchically above Asset level, and located in the PTTEP headquarters, Bangkok.
Division	A business group may have one or more distinct groups within its hierarchy. These are referred to as Divisions.
Department	A subgroup within a Function Group, Division or Asset.
Function Group	Refers to a corporate level business group. These may have associated Divisions, Departments, or operational Assets within their hierarchy.
Crisis	<p>is a major or catastrophic event (out of control emergency). A crisis could result in sustained national impacts over a prolonged period of time; almost immediately exceeds resources normally available to the company, local authorities, and country in the impacted area; and significantly interrupts governmental operations and emergency services to such an extent that national security could be threatened. The crisis may challenge the ability and capacity of the company, community, and country to achieve a timely recovery.</p> <p>Crisis situations include terrorism that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, company reputation, national morale, and/ or government functions. In PTTEP, a crisis situation is treated by a tier 3 response level.</p>
Crisis Management Team (CMT) Leader	The Chief Executive Officer (CEO) of the company who has the top authority to the overall management of a group/ company impact related to any crisis situations. He has the authority to activate the Corporate Crisis Management Team and work closely with the Asset Emergency Management Team Leader.
Emergency	is an occurrence or event, natural or human-caused, that requires an emergency response under the determination of affected asset leader or acting person, to protect life, environment, property, and reputation or to lessen or avert the threat of a major or catastrophe in any part of the company premises. The external assistance may or may not be needed to supplement the company's efforts and

Term	Definition
	<p>capabilities to save lives, environmental, protect property, public health and safety.</p> <p>Emergency situations can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, fires, floods, oil, and hazardous material spills, marine vessels and aircraft accidents, earthquakes, tropical storms, typhoon, war-related disasters, an outbreak of diseases and medical emergencies, and etc.</p> <p>In PTTEP emergency situations can be evaluated and treated by using a tier 1 – 2 response level.</p>
S1 Emergency Management Team Leader (EMT Leader)	<p>S1 asset's SVP or the acting person who has overall authority and responsibility for supporting and providing tactical advice, activities, and action plans to the S1 ERT or On-Scene Commander (OSC), including the development of strategic objectives. EMT leader also sets priorities and defines the organization of the EMT and the overall action plans for a particular response. He/she has to work closely with asset EMT.</p>
S1 Emergency Response Team Leader (ERT Leader)	<p>S1 VP with responsibility for all onsite responses, especially providing directions and onsite tactical operations and always retaining the authority to determine the appropriate course of response actions. S1 ERT leader has the authority to activate the S1 ERT.</p>

Acronyms	Description
DERTL	S1 Deputy Emergency Response Team Leader
ECC	Emergency Coordination Centre
ERP	S1 Emergency Response Plan
ERT	S1 Emergency Response Team
ERTL	S1 Emergency Response Team Leader
CMRT	S1 Community & Media Response Team
OSC	S1 On-Scene Commander
RRT	S1 Relative Response Team
EMT	S1 Asset Emergency Management Team
CMT	PTTEP Crisis Management Team
SAO	Sub-district Administrative Office
OSRL	Oil Spill Response Limited Company
EARL	East Asia Response Limited Company
IESG	Oil Industry Environment Safety Group Association of Thailand
LKU	Area of Lan Krabue District, Kampanget Province
ITL	Intervention Team Leader
NTM	Nong Tum Sub-district, Kong Krai Lad District, Sukhothai Province
PHS	Phitsanulok Province
CNS	Chong Nonsi, Bangkok
CCT	PTTEP Crisis Communication Team
CMRR	Communication and Media Response Room
VP.	Vice President

Acronyms	Description
SVP.	Senior Vice President
CSR	Company Site Representative

REFERENCES

Document Code	Document Title
PTTEP SSHE Controlling Documents	
11038-STD-SSHE-000	PTTEP SSHE Management System
11038-STD-SSHE-401	PTTEP SSHE Risk Management Standard
SSHE-106-STD-500	PTTEP Emergency and Crisis Management Standard
12148-PDR-SSHE-501	PTTEP Crisis Management Plan
SSHE-106-PDR-502	PTTEP Emergency Management Plan
SSHE-106-STD-340	PTTEP SSHE Training and Competency Standard
11003-GDL-SSHE-501-003	PTTEP Medical Emergency Management Guideline
12145-GDL-004-R04	PTTEP Crisis Communications Guideline
13247-PDR-SSHE-305/01	S1 SSHE Training and Competency Procedure
63984.1/2017	Thai Onshore Asset (PTN) Business Continuity Plan (BCP)
Other Reference Documents	
-	Disaster Prevention and Mitigation Act B.E.2550 พรบ.ป้องกันและบรรเทาสาธารณภัย พ.ศ. 2550

REVISION HISTORY

Rev.	Description of Revision
0	<p>Authorized by: -, Date: -</p> <p>New issue.</p>
1	<p>Authorized by: DSA, Date: August 2010</p> <p>Key changes from the previous version are as follows:-</p> <ul style="list-style-type: none"> ■ Re-formatted from SSHE-ER-01, S1 Emergency and Crisis Response Plan; ■ Aligned with new PTTEP SSHE MS, ISO14001:2004 and OHSAS18001:2007 requirements; ■ Current ERC (PS1/P) is changed to OSC (On-Scene-Commander) as per corporate guideline; ■ Current OSC is changed to Intervention Team Leader(s); ■ Added emergency plan for Protesting/Demonstration & Terrorist; and ■ Updated Organizational Indicators.
2	<p>Authorized by: DSA, Date: November 2013</p> <p>Key changes from the previous version are as follows:-</p> <ul style="list-style-type: none"> ■ Assigned new document code; ■ Aligned with Corporate Emergency and Crisis Management Standard and Plan; ■ Changed back OSC to be at the incident scene; ■ S1 IC is to be at ECC; ■ Revised role & responsibilities; and ■ Updated emergency contact numbers.
3	<p>Authorized by: PS1, Date: November 2019</p> <p>Major amendment of the whole procedure. Key changes from the previous version are as follows:-</p> <ul style="list-style-type: none"> ■ Aligned with the Corporate Emergency Management Plan and Crisis Management Plan; ■ Revised S1 Emergency Response Team Organization with their roles and responsibilities; ■ Revised emergency response action; and ■ Included sections of S1 duty roster guideline, must points and press release.

เบอร์โทรฉุกเฉิน		
ลำดับ	สถานที่	เบอร์ติดต่อ
1	สายด่วนเหตุฉุกเฉิน	1669
2	โรงพยาบาลลานกระบือ	055-769086
3	ศูนย์บรรเทาสาธารณภัย	055-769411
4	สถานีตำรวจอำเภอลานกระบือ	055-769124

ลำดับ	BPE		เบอร์ติดต่อ	
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

ภาคผนวกที่ 21

รายงานการซ่อมแผนฉุกเฉิน และการฝึกซ้อมแผนอพยพ ปี 2566

ภาคผนวกที่ 22
ใบอนุญาตทำงาน

Page 1 of 2

ภาคผนวกที่ 23
การตรวจสอบแนวเชื่อมต่อท่อโดยวิธี NDT
(Non Destructive Test)



PTTEP

Completion Certificate of Construction MANUFACTURERS DATA RECORD (MDR)

JOB NO. : BPK-FL-22-I047-00-PTES / 3"-NTM-HGA

IAFE.No. : E-21A0502

Project : FLOWLINE CONSTRUCTION FROM 'NTM-H' TO 'NTM-A' AT 'NTM-H'
AREA (PLS.)(3"'-NTM-HGA' Gas flowline from 'NTM-A to 'NTM-H')

☐ Civil

☒ Mechanical

☐ Electrical

☐ Instrument

DWG. Referene : TH-GS1-PRO-20012-00-NTMH-PLR-DWG-0001 REV.C4

Checked Construction Completion

by

Best Performance Engineering Co.,LTD.		PTTEP Co., LTD.	
QA/QC	CONSTRUCTION SUPERVISOR	QA/QC	CONSTRUCTION SUPERVISOR
Sign: [Redacted]	Sign: [Redacted]	Sign: [Redacted]	Sign: [Redacted]
Name: [Redacted]	Name: [Redacted]	Name: [Redacted]	Name: [Redacted]
Date: 9 Jan 2024	Date: 9 Jan 2024	Date: 12 JAN 2024	Date: 15/1/24
Construction Engineer		Construction Engineer	
Sign: [Redacted]	Sign: [Redacted]	Sign: [Redacted]	Sign: [Redacted]
Name: [Redacted]	Name: [Redacted]	Name: [Redacted]	Name: [Redacted]
Date: 9 Jan 2024	Date: 15/01/2024	Date: [Redacted]	Date: [Redacted]



MANUFACTURERS DATA RECORD (MDR)

FLOWLINE CONSTRUCTION FROM 'NTM-H' TO 'NTM-A' AT 'NTM-H' AREA
(PLS.)

ONSHORE PIPE PROCESS SCOPE OF WORK

Job. No.: BPK-FL-22-1047-00-PTES / 3"-NTM-HGA

Date: 4-Jan-23

INDEX

- 1 Service Release Order (SRO) / Scope of Work
- 2 P&ID, G.A., Isometric
- 3 Inspection and Test Plan
- 4 Welding Procedure Specification (WPS)
& Procedure Qualification Record (PQR)
and Welder Performance Qualification Testing(WQT)
- 5 Material Verification
- 6 Weld Log Book
- 7 Welding Consummable
- 8 Dimensional
- 9 Non Destructive Examination (NDE)
- 10 Hydrostatic Test
- 11 Pin Hole Test
- 12 Blasting & Painting
- 13 Punch List of Pre-Commissioning
- 14 Other
 - Cold Bending Report
 - JIMS Report
- 14.1 Weld log book joint deduct cost of repair & modify
- 14.2 NCR N/A
- 14.3 TQ No. 001/2023 Rev. 1



MANUFACTURERS DATA RECORD (MDR)

FLOWLINE CONSTRUCTION FROM 'NTM-H' TO 'NTM-A' AT 'NTM-H' AREA
(PLS.)

ONSHORE PIPE PROCESS SCOPE OF WORK

Job. No.: BPK-FL-22-047-00-PTES / 3'-NTM-HGA

Date: 4/Jan/23

9

Non Destructive Examination (NDE)



MANUFACTURERS DATA RECORD (MDR)

FLOWLINE CONSTRUCTION FROM 'NTM-H' TO 'NTM-A' AT 'NTM-H' AREA
(PLS.)

ONSHORE PIPE PROCESS SCOPE OF WORK

Job. No.: BPK-FL-22-1047-00-PTES / 3"-NTM-HGA

Date: 4/Jan/23

RT



บริษัท ศิวะ เทสติ้ง อินสเปคชั่น แอนด์ คอนซัลติง จำกัด
SIWA TESTING INSPECTION & CONSULTING CO., LTD.

Summary List and Transmittal of Film Scanning

Client : PTTEP SIAM LIMITED

Project : FLOWLINE CONSTRUCTION FROM 'NTM-H' TO 'NTM-A' AT 'NTM-H' AREA (PLS.)

Job No. : BPK-FL-22-I047-00-PTES/3"-NTM-HGA

No.	Report No.	Joint No.	Remark
1	RP-P196RT001/23	1,81	

Company	Prepared By STIC	Reviewed and Accepted By BPE
Signature		
Name		
Date	October 26, 2023	03 NOV 2023

BPERTON

F/L-NTM-H 3-N7M-HGAM F1E
3-X11-13 MM J-81 BPE-023 G

TAWISMAW 2011



LGTAW/SMALL

PTTEP

FAIL-NTM-H

3" X 11" 13 MM

3-N-TM-HGAMF1F

J-81 BPE-023 GTAW/SMW

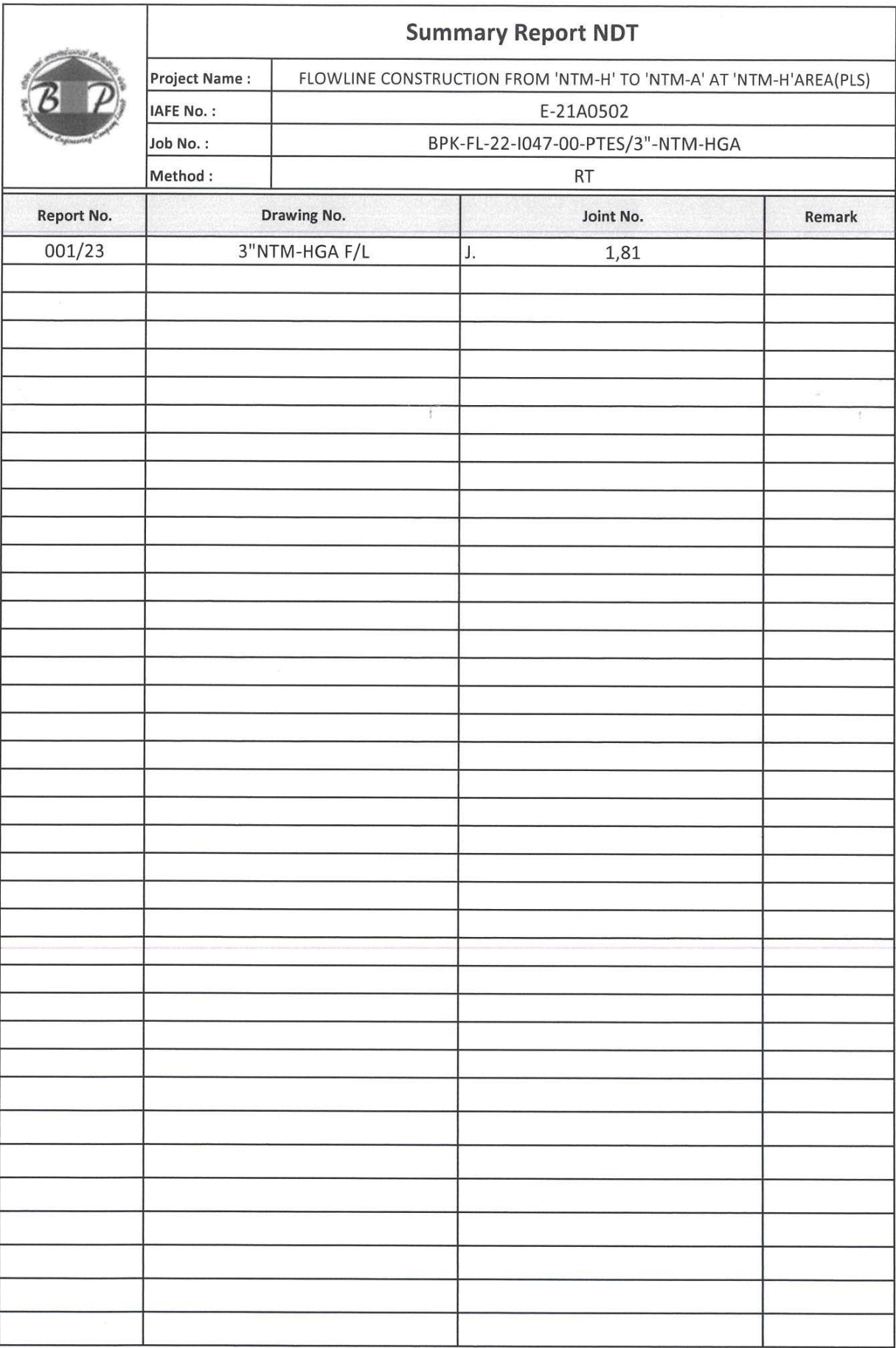
BPE RTDWSI

CAS

20123

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Report No. : RT-001/23 Rev. 0
Exam. Date : January 20, 2023 Page 1 of 1

Work Description	Client : PTTEP SIAM LIMITED / E-21A0502	
	Project : FLOWLINE CONSTRUCTION FROM 'NTM-H TO 'NTM-A' AT 'NTM-H' AREA(PLS.)JOB NO.BPK-FL-22-1047-00-PTES/3"-NTM-HGA	
	Examination Place : BPE SHOP	STIC Job / Report No. : JN-BPK-00038/RP-BPK-230016-167
	DWG No. : 3"-NTM-HGA-F/L	Weld Thickness : 17.13 mm
	Base Material Type : A105+API5L-X42	Weld Reinforcement Thickness (CW) : 3.0 mm
	Base Material Thickness : 11.13 mm	Weld Reinforcement Thickness (LW) : - mm
Test Record	Procedure No. / Rev. : WI-C30-028/ Rev.00	Film Manufacturer and Designation : AGFA D4 (C3)
	Source of Radiation : Ir-192 24.1 Ci	Number of Film in Each Cassette : 1
	Exposure Technique : DWSI	Source Size / Focal Spot : 3 x 2.5 mm
	IQI Essential/ Placement : ASTM 1B Wire No.7 (Film side)	Source-to-Object Distance (D) : 145.00 mm
	Density : 2.8 - 3.2	Object-to-Film Distance(d) : 17.13 mm
	Acceptance Criteria : API 1104, 2021 Ed./ PEGS 10008-STD-6-PLR-025	

[illegible]

Total Films :	3.5" x 8.5" = 8	3.5" x 17" =	4.5" x 8.5" =	4.5" x 17" =	Others =
Abbreviation :	EA : Exposure Arrangement	ND : No Relevant Indication	IF : Incomplete Fusion / Lack of Fusion	UC : Undercut	C : Crack
	RI : Round Indication	TI : Tungsten Inclusion	AI : Aligned Indication	SI : Slag Inclusion	Ca : Cavities
	IP : Incomplete Penetration	EI : Elongated Indication	RC : Root Concavity / Concave Root	P : Porosity	CP : Cluster Porosity
	IFD : Incomplete Fusion Due to Cold Lap	ISI : Isolated Slag Incursion	BT : Burn-through	AI : Accumulation of Imperfection	
	IPD : Inadequate Penetration Due to High-low	ESI : Elongated Slag Incursion	HB : Hollow-bead Porosity	IC : Internal Concavity	
	ICP : Inadequate Cross Penetration	EU : Undercutting adjacent to the cover pass	IU : Undercutting adjacent to the root pass		
ASME Sec VIII Div.1, UW-51 : C, IF, IP, EI, AI, RI		ASME Sec IX : C, IF, IP, EI, AI, RI		ASME B31.1 : C, IF, IP, EI, RC, UC, P	
ASME Sec VIII Div.1, UW-52 : C, IF, IP, RI, SI, Ca		ASME Sec IX : C, IF, IP, RI, SI		ASME B31.3 : C, IF, IP, EI, SI, RC, UC, TI, RI	
AWS D1.1 : C, EI, RI		API 1104 : C, IF, IFD, IP, IPD, ICP, ESI, ISI, P, CP, IC, BT, HB, EU, IU, AI			

Company	<div></div>	Accepted By Contractor	Reviewed By Third Party	<div></div>
Signature		<div></div>	N/A	
Name		BPE QA/QC		
Date	January 21, 2023	3-MAR-23		9-MAR-23