Title	Maintenance – Coiled Tubing Equipment					
Target Population	Field Engineers, Field Specialists & Equipment Operators					
This requirement is applicable to:	✓	JFE	✓	FST	✓	EOT
	✓	FE1	✓	FS1	✓	EO1
		FE2		FS2	✓	EO2
				FS3	✓	EO3
					✓	GEO

Objective:

The objective of this task is to evaluate and verity the employee's competency in performing basic maintenance on Coil Tubing Unit under supervision including:

	Description	JFE	FE1	FST	FS1	EOT	EO1	EO2	EO3	GEO
1	Batch Mixer	✓		✓		✓	✓			✓
2	Fluid Pumping Unit	✓		✓			✓	✓		✓
3	Nitrogen Converter	✓	✓		✓			✓	✓	✓
4	Coiled Tubing Unit including:	✓	✓		✓				✓	✓
	Power Pack									
	Control Cabin									
	CT Reel									
	Injector Head									
	Pressure Control Equipment			✓						
5	Basic BHA Components	✓	✓	✓				✓	✓	✓

The employee should be able to identify the components of CT equipment including those found in hydraulic circuits, explain their functions, ratings and maintenance procedures. This include filling out the EMC 1 form.

He should have basic knowledge of hydraulics including the various components and principles of operations.

Tasks:

The employee will be assigned under an experienced mechanic / electrician or a mentor in the base to guide him in performing the maintenance tasks. This include tracing of the hydraulic lines by referring to Operation and Maintenance Manual.

1. Identify the main components and functions of CTU (i.e. injector head, CT reel, stripper, BOP etc.)
2. Identify main components and functions of basic BHA
3. Physically check the CTU components and fill out the EMC 1 form.
4. Assist in assembly and disassembly of the following components (whenever possible):
   - Injector head conversion. Identify each parts.

- Reel swivel maintenance. Identify each parts.
- Stripper (replace inserts/brass bushing). Identify each parts.
- BOP conversion/replacing inserts including function and pressure testing. Identify each parts.
- Downhole tools (connectors, check valves, nozzles)

5. Show and explain the hydraulics system of the CT unit.
6. Prepare a report for the activities and explain it to the assigned mentor

IMPORTANT NOTE: The assigned Assessor must conduct the required evaluation to evaluate employee's competency and provide feedback through the respective Task Evaluation Forms PRIOR TO completing this Task Sheet.
This task is deemed INCOMPLETE without the Task Evaluation Forms

Brief summary of employee's learning outcome (to be completed by Assessor):

Able to conduct EMC 2
Pstand alone without any
supervision
- Quick learner and hard working staff.

Assessor's Comments & Recommendation:			
Signature	AZMAN ABD RAZAK C/Mechanic Hp : 013-[illegible]	Assessment Date	22/10/2024
Name		Position	C/Mechanic

FSM / OM Comments & Recommendation:			
– Able to perform EMC standalone			
Signature	M. KHAIRUL RIDHWAN AZIZAN CTS FIELD SERVICE MANAGER Dimension Bid (M) Sdn Bhd	Assessment Date	31/12/24
Name		Position	FSM

TASK EVALUATION FOR BASIC MAINTENANCE

(ref. CTS-FORM-93 BASIC MAINTENANCE)

NAME	MOHD BURHAN BIN YUSOF.
EMPLOYMENT DATE	20 MAY 2018
PERFORMANCE CRITERIA	1. **Equipment design, technical specification, components and functions**: Know and understand equipment design, technical specifications, components and functions 2. **Equipment operation**: Able to operate the equipment 3. **Equipment maintenance / care**: Able to perform equipment recommended care / maintenance 4. **Equipment maintenance report**: Able to track on all required equipment data prior to plan for next maintenance 5. **Maintenance analysis**: Able to analyse equipment problem based on problem report and EMC. Hence, to identify root cause and best practice to avoid the same problem from happen

ASSESSMENT RESULT SUMMARY

Element of Competency	Score	Assessed By	Assessment Date
1. Batch Mixer	N/A		
2. Fluid Pumping Unit	8	JOHARI BIN JOHAR	29/01/25
3. Nitrogen Converter	8	JOHARI BIN JOHAR	30/01/25
4. Coiled Tubing Unit	N/A		
4.1 Power Pack	N/A		
4.2 Control Cabin	N/A		
4.3 CT Reel	N/A		
4.4 Injector Head	N/A		
4.5.1 Pressure Control Equipment (Stripper)	N/A		
4.5.2 Pressure Control Equipment (SBOP)	N/A		
4.5.3 Pressure Control Equipment (Combi BOP)	N/A		
5. Maintenance Reporting	N/A		

Important Note: The minimum passing score is 80%. If the score falls below the minimum passing score, the employee must repeat the assessment

DIMENSION BID

Assessor's Comments & Recommendation (COMPULSORY): Operator adheres strictly to all safety protocols ensuring that pump and Nitrogen system are handled with the utmost care. They consistently demonstrate a strong understanding of high pressure operations.			
Signature		Assessment Date	30/01/2025.
Name	OTHAKI JOHOR	Position	FIELD SPECIALIST III

2. FLUID PUMPING UNIT

THEORY	COMMENT
1. Identify the Fluid Pumping Unit and explain its functions	8
2. Show where the following components of Fluid Pumping Unit and explain the function	
i. Engine component	3
ii. Zone 2 system	3
iii. Hydraulic line	3
iv. Fluid end component	3
v. Parameter on control panel	3
3. How did you assemble pump?	3
4. How did you rig up sensor cable?	3
5. What should you check BEFORE start the Single Pump?	3
6. What should you check and monitor during operating the Single Pump?	3
7. What is the safety precaution during operating the Single Pump?	3
8. What should you check BEFORE stop the Single Pump?	3
9. How to perform horse power test	3
PRACTICAL	
1. Show how to carry out following basic maintenance i. Check coolant level 10 ii. Perform hydrotest for radiator and cooler 8 iii. Replace engine oil 9 iv. Replace engine oil filter 9 v. Replace fan and alternator belt 8 vi. Clean crankcase vent breather 9 vii. Test OPSD 9 viii. Service exhaust cooler (pyroban) 8 ix. Grease u-joint and propeller shaft 10 x. Change gearbox oil 9 xi. Change fuel filter 9 xii. Service pneumatic control valve 7 xiii. Clean air cleaner 9 xiv. Grease butterfly valve 10 xv. Change fluid end insert valve 9 xvi. Change fluid end packing 9 xvii. Perform horse power test 9	

OVERALL SCORE	STRONG			ADEQUATE			IMPROVEMENT NEEDED		
	10	9	(8)	7	6	5	4	3	2

3. NITROGEN CONVERTER

THEORY	COMMENT
1. Identify the Nitrogen Unit and explain its functions	8
2. Show where the following components of Nitrogen Unit and explain the function	
i. Engine component	8
ii. Zone 2 system	8
iii. Hydraulic line	7
iv. Cold end component	8
v. Nitrogen liquid line	8
vi. Nitrogen gas line	8
vii. Parameter on control panel	8
vii. Nitrogen tank line	8
3. How did you rig up cryogenic hose?	8
4. How did you rig up sensor cable?	8
5. What should you check BEFORE start the Nitrogen Unit?	8
6. What should you check and monitor during operating the Nitrogen Unit?	8
7. What is the safety precaution during operating the Nitrogen Unit?	8
8. What should you check BEFORE stop the Nitrogen Unit?	8
9. How did you transfer on the fly from storage tank to working tank?	8
10. How did you perform normal transfer from storage tank to working tank?	7
PRACTICAL	
1. Show how to carry out following basic maintenance	
i. Check coolant level 10	
ii. Perform hydrotest for radiator and cooler 8	
iii. Change engine oil 10	
iv. Change engine oil filter 10	
v. Change fan belt and clean pulley area 9	
vi. Check fan hub bearing for any wobble 8	
vii. Clean the crankcase vent breather 8	
viii. Test OPSD 8	
ix. Service exhaust cooler (pyroban) 8	
x. Grease bearing and u-joint 9	
xi. Change hydraulic oil 9	
xii. Change fuel filter 10	
xiii. Service pneumatic control valve N/A	
xiv. Replace air filter 10	
xv. Clean flame trap 8	
xvi. Redress booster pump 6 (ASSIST SENIOR OPERATOR)	
xvii. Redress cold end 5 (ASSIST SENIOR OPERATOR)	

OVERALL SCORE	STRONG			ADEQUATE			IMPROVEMENT NEEDED		
	10	9	(8)	7	6	5	4	3	2