



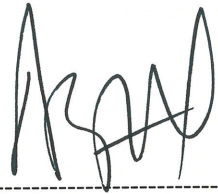


DIMENSION BID

WELL INTERVENTION | PERFORATION SERVICES

**SERVICE EXECUTION
PROCEDURE
DBSB-CHS-06**

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1.0 FLOW CHART

-Nil-

2.0 OBJECTIVE

- 2.1 To establish a complete guideline for all field operations to ensure all CHS personnel are aware of their responsibilities and performs their duties efficiently and in a safe manner.
- 2.2 To ensure that services provided meet Client's quality requirements for services, adhering on safety regulations and requirements by regulating bodies & client.
- 2.3 To increase client satisfaction through impeccable performance of high quality services and efficient operations using reliable and safe equipment.
- 2.4 For the purpose of this procedure, it is assumed that all of the equipment are cleaned, checked out and ready to go on service and that the engineer has familiarized himself with the procedures and the operating procedures for the type of equipment.

3.0 SCOPE

This procedure covers Field Engineers and crews in performing field operations at a client's facility. This procedure shall be intended to be a general guideline to carry out services and if any discrepancies are found on procedures, work programs and risk assessment, risk assessment shall take precedence, followed by work program and finally this procedure.

4.0 ABBREVIATION /DEFINITION

- 4.1 CHS - Cased Hole Service Department
- 4.2 SP - Specific Procedure
- 4.3 EIC - Engineer In Charge
- 4.4 FE - Field Engineer
- 4.5 CHSF – CHS Foreman
- 4.6 TA - Technical Assistant
- 4.7 WCE - Well Control Equipment
- 4.8 PPE - Personal Protective Equipment

- 4.9 QHSE - Quality Health, Safety and Environment
- 4.10 JSA - Job Safety Analysis
- 4.11 JHA - Job Hazard Analysis
- 4.14 TR-SCSSV - Tubing Retrievable Surface Controlled Subsurface Safety Valve
- 4.15 ESD - Emergency Shut Down
- 4.16 POOH - Pull Out Of Hole
- 4.17 PTW - Permit To Work
- 4.18 HUD - Hung Up Depth
- 4.19 LMV - Lower Master Valve
- 4.20 CV - Control Valve
- 4.21 SSV - Sub Surface Valve
- 4.22 SDV - Shut Down Valve
- 4.23 QTS- Quick Test Sub
- 4.24 HGT - Hydraulic Grease Tool
- 4.25 BHA - Bottom Hole Assembly
- 4.26 BOP - Blow Out Preventer
- 4.27 SITHP - Shut In Tubing Head Pressure
- 4.28 MDDF - Measured Depth Drill Floor
- 4.29 GLM - Gas Lift Mandrel
- 4.31 TD - Total Depth
- 4.31 DOR - Daily Operation Report
- 4.32 ASCII - American Standard Code for Information Interchange

5.0 REFERENCE

- 5.1 Quality Manual
- 5.2 ISO 9001:2015, Para 8.5.1 : Control of Production and Service Provision
- 5.3 API Spec Q2, Para 5.7.1 : Control of Service Execution

6.0 PROCEDURE

6.1 SERVICE PLANNING & PREPARATION

This step is discussed in detail in **DBSB-CHS-03 (Service Planning & Preparation)**. This chapter will give an outline tasks that are undertaken by CHS personnel and CHS Line Manager. This step performed by the CHS Personnel, FSM / EIC, Sales & Marketing Department and the client's must be recorded in a traceable manner.

6.1.1 Pre-Job Planning (Base)

- a. FSM shall receive the service notification from the client.
- b. FEIC Review client requirements: special presentations, data handling requirements (need for satellite system, etc.).
- c. Note well conditions: total depth, hole and/or casing sizes, borehole fluid characteristics, shut-in pressure (if any), wellhead control equipment and all other pertinent data.
- d. FEIC shall propose a rig up plan and equipment footprints on wellsite area.
- e. Determine third party equipment needs (if required) from local suppliers or other bases. Make arrangements to obtain that equipment.
- f. Check compatibility of all equipment especially third party equipment with each other and with the well conditions.
- g. Check winch unit's remaining available wireline length to ensure sufficient length to reach total depth, wire size to ensure its diameter is compatible with the wellhead pressure, wire type to ensure compatibility with borehole fluids and wire strength for with ample strength above maximum safe pulling tension.
- h. Assign duties and responsibilities of each member of the service team for both shop and wellsite operations. Assign tasks such as onsite tool preparation, client liaison, and information scribe etc.

- i. Review TRIM-Check and Q-Check with mechanic / CHS Foreman for surface equipment which include Air Compressor, Generator set, Logging Cabin, Winch and Mast refer to :
 - i. TRIM-Check for Air Compressor
 - ii. TRIM- Check for Generator
 - iii. TRIM-Check for Power Pack
 - iv. Q-Check for Air Compressor
 - v. Q-Check for Generator
 - vi. Q-Check for Power Pack
 - vii. Q-Check for Logging Cabin
 - viii. Q-Check for Mast

- j. Review QIT-Check and QCT-Check with WCE specialist for WCE equipment. Refer to related QIT and QCT checklists.

Refer to **DBSB-MT-01: SRP PREVENTIVE MAINTENANCE, INSPECTION AND TEST PROGRAM PROCEDURE** for details.

6.1.2 Pre-job Preparation at Wellsite

6.1.2.1 Acquisition System Checkout.

For offshore units, these checks are to be performed once arrived at the platform.

- a. Check for proper start up and initialization of the acquisition system and all panels.

- b. Check insulation and continuity of the cable. Visually check for bent or broken banana plugs in cable head and instrument subs.

- c. Check Instrumentation by hooking up all logging or perforating tools primary strings and check the response of each tool by performing calibration, verification or test box. Extreme care must be undertaken to preserve the designation of the primary string and backup string.

- d. Logging Cabin Unit: Function test weight indicator, Smart Head encoder & tension device, Gas detector, smart display & smart monitor and etc.
- e. EIC to verify all required guns, associated equipment, special tools, charges, detonator cord and detonators are aboard and properly stored in approved containers and the containers correctly positioned and properly secured in place. Verify that loaded guns are loaded with the correct charges and configuration.
- f. EIC to verify all needed setting tools, firing heads, power charges and associated equipment are aboard and their explosives are in approved containers.
- g. EIC to verify actual wellhead pressure to ensure our WCE compatibility.

6.2 WELLSITE OPERATIONS

Dimension Bid equipment and personnel reflects the company image at the well site. Their appearance, trouble-free safe performance, and friendly while at the same time professional conduct has a large contribution to client satisfaction and future service requests. Upon arrival at the well site:

- a. The team should arrive on time, neatly dressed, well groomed, and fully compliant to HSSE rules. On a well site where H2S is anticipated, do not keep facial hair (e.g. beards) that can interfere with safety requirements and with a complete PPE.
- b. Hold a Safety Meeting and Pre-Job discussion with the Client's Representative on the planned work area and discuss the job scope and objective. Discussion must be conducted formally and professionally. Confirm all details of the well, current status, well intervention history, logging depth interest, perforation area to be cover and etc.

- c. Unload and spot the equipment on specified work area and make sure that it is not blocking the escape route or walkway area. Equipment must be clean and appear well maintained in good working order.
- d. Place instruments and subsurface tools in the order in which they will be used. The first to be used should be the closest to the well. In remote or offshore locations, unload both the primary and back-up equipment; designate their identities.
- e. Set out appropriate warning signs (explosives, radioactive materials, etc.).
- f. Store radioactive sources in their shipping containers in a designated storage area until needed in the instruments. Secure the shipping containers appropriately.
- g. Specify and mention special requirement if any to Client's Representative e.g. location of hazardous materials brought to the well site. Determine what controlled access area will be set aside for storage of the materials.
- h. Discuss on the rig up plan and identify associated risk or hazard and how to eliminate it.

6.3 GENERAL SAFETY REQUIREMENT

a. General

DB has a strong commitment to ensuring all operations are performed in a safe and environmentally responsible manner. All operations conducted in the course of any well operations shall be in accordance with the safety and environmental requirements specified by the following documents:

- i. DB HSSE Manual
- ii. DB Health, Safety and Environment Policy Statements.

DB also has a stop work policy, which can be enforced at all times and do not discourage enforcement.

b. **Job Safety Analysis**

JSA / JHA meeting shall be conducted prior to any well operations and prior to each run in the hole.

c. **Well Control**

During well intervention operations, control of the TR-SCSSV will be removed from the wellhead control panel and will be controlled via the Slickline control panel on the main deck. The Actuated master valve will have a fusible cap installed and will not be shut in the event of an ESD. In the event of ESD activation during the well intervention operations, Client's Production Technician/Operations, Well Services Supervisor and DB personnel shall monitor the situation and if required and permitted, commence POOH of wireline and secure the equipment and wellsite.

6.4 ELINE OPERATION

Note: This procedure is a general procedure, in the event of a discrepancy between Client procedure and service company procedure, the Well Services Supervisor and the Well Services Engineer are to be consulted.

a. **Tool box meeting**

Tool Box Meeting must be held prior to initiating the electric line operation after receiving PTW approval from platform. All personnel involved in the planning, supervision or execution of the program should attend the meeting and items to be discussed are as follows:

- i. The cased hole services program and procedures.
- ii. Possible interference with other field activities.
- iii. Safety aspect of the work and review JSA.
- iv. Ensure that the necessary equipment, tools, and materials are available and are operable.
- v. Field personnel that will be involved in the operation and how and when they may be needed.
- vi. Personnel safety orientation

b. Surface Equipment Daily Checklist

Field crew must perform pre-job inspection to all surface equipment according to the daily checklist. The entire daily checklist must be compiled and submitted after returning to the base. Refer to:

- i. Daily Checklist for Powerpack, Genset & Air Compressor
- ii. Checklist for Logging Cabin
- iii. Checklist for Mast

c. Well Hand Over

The well tubing clearance (drift run) and HUD check must be done using Slickline prior handing over the well to E-Line Operation.

- i. Production Technician / Operation to shut in Gas-Lift to well at gas lift header (if required).
- ii. Allow well to produce to inflow test until well stops flowing naturally.
- iii. Production Technician / Operation to shut in well at choke and production wing valve.
- iv. Close Lower Master Valve (LMV) and Crown Valve (CV).
- v. Install “Do Not Operate Tag” on LMV and CV and “Lock Out” tag on SSV. E-line crew will handle subsequent operations on the LMV and CV until the well is returned to Operations.
- vi. Production Technician / Operation to close the TR-SCSSV and isolate the control line from its control panel. Subsequently, install a “Do Not Operate” tag on the TR-SCSSV control panel and SDV.
- vii. Production Technician / Operation to hand over well to E-line team

d. Rig up E-line

- i. Arrange and position surface equipment at the main deck. Refer to equipment layout diagram planning in for each job. Do not block any escape route.
- ii. Locate the well. Remove existing well hatch cover and replace with working well cover. Only the necessary personnel are permitted to be on site during the hatch cover replacement.

- iii. Spot Wireline Mast location (refer **CHS-SOP-02: Logging Modules Operation**). Ensure the mast's outriggers support stands on a flat surface and wood planks of sufficient length are available to cover any hole on the main deck resulting from the well cover change, if any.
- iv. Erect the Wireline Mast and always follow mast-specific operating procedure.
- v. Secure the mast properly with all guy-wires supplied to strong platform structure.
- vi. Rig up (R/U) lower section of riser to wellhead up to Quick Test Sub (QTS). The remaining upper section of lubricator with HGT assembly are laid down on the main deck. Refer **Figure 1** for rig up lubricator assembly diagram.
- vii. Make up BHA string to the cable head. BHA details can be referred to each specific service program procedures discussed prior to each services provided. Verify actual tool length.
- viii. Load BHA string into upper section of lubricator. Rig up upper lubricator section with tool string inside and bottom lubricator is capped.
- ix. Make the cable head tension before removing the bottom capped.
- x. Release cable head from tension and connect the remaining BHA tool through BOP to wellhead.
- xi. Slowly and carefully lower the lubricator and stab lubricator until it is in the place and install it.
- xii. Pull cable head into Tool Catcher. Ensure tool is engaged properly in Tool Catcher. Reset current end of tool depth. Drill floor to tubing hanger height.
- xiii. Pressure test WCE assembly by staging up the pressure every 200 psi to maximum 2500 psi using platform water. Wait for 10 minutes at 2500 psi.

Note: Only Quick Test Sub (QTS) connection shall be pressure tested on subsequent tool rig up. However, if other section of WCE connection is broken off for some reason, step **6.4.d.vi** must be repeated again.

On completion of the test, drain the test fluid to the closed drain.

Downhole Operations

- i. Connect TR-SCSSV to wireline control panel. Pressure tests the C/L to 4000 psi for 10 minutes.
- ii. Pressure up the C/L to 4000 psi to open TR-SCSSV. Observe for the flapper valve opening indication. If unsure or unable to observe flapper valve's opening, stop and consult onsite Supervisor and Well Services Engineer.
- iii. Production Technician / Operator to install fusible / lock open cap on actuated master valve (SSV)
- iv. Open LMV and CV. Count turns to open valve (should be 18-1/2 turns and then Back-off ¼ turn).

Note: Once the LMV is fully opened, crack open the CV slowly until well pressure has stabilized inside the lubricator assembly.

- v. Record SITHP and hanging weight of tool string. Inspect the lubricator assembly and connection for any leaks. Verify minimal gas blow by from grease injector.
- vi. Release cable head from TC and RIH slowly until TR-SCSSV at 10 m/min. Onsite supervisor must witness traveling thru TR-SCSSV.
Note: FE to start record the run-in-hole data from surface to bottom. For explosive service job, FE should record the data from 200m MDDF.
- vii. Once the tool string has traveled past TR-SCSSV, RIH at maximum speed of 40 m/min and slowing down to 10 m/min to pass thru any GLMs and other well accessories.

- viii. Perform Z wrap diagram, record depth and pulling weight when cable reaches edge of drum. **Refer to CHS-FORM-62 Z-Chart.**
Note: This step is also purposely to release new cable torque during the first RIH.
 - ix. Perform cable pickup weight at every 300 m and record the cable tension readings.
 - x. Approach TD at a slow descent rate. Stop the RIH string at Bottom logging depth or 2m above slickline tagged TD and check cable pickup weight.
 - xi. Perform the logging job. Record the log over the interval of interest.
 - xii. Repeat the log interval sections, as required.
 - xiii. Check repeatability of repeat sections.
 - xiv. Position the tool at the depth of interest for stationary services.
 - xv. Verify the log quality before pull out of hole.
- e. Pull Out of Hole
- Ascent rate depends on many factors such as type of downhole instruments or tools, borehole conditions, line condition, etc. It may range from a few feet to several hundred feet per minute. It must be slow where chances of sticking are high such as bad boreholes, casing shoe, packers, seating nipples, BOP, control head, etc.
- i. Observe the weight indicator for signs of abnormal pull.
WARNING: Any time the SWL (Safe Working Load) of the floor chain, elevator bar, break-over pin, load cell, or sheave wheels must be exceeded, the main deck must be cleared of all personnel.
 - ii. Pull entire string into lubricator. On surface, pull cable head into TC. Close CV and LMV by counting turns. It should be the same as the amount of turns required to open it.
 - iii. Vent the lubricator to the closed drain, once all pressure is vented.

6.5 FIELD LOG REPORT AT WELLSITE

- a. Perform post job data processing and quality check as required.
- b. Prepare logs to make field prints
- c. Submit Data and field log report to base /i-Solution.
- d. Complete Job Service Ticket and signed by client's representative.

6.6 QUICK POST JOB SERVICE PROCEDURES AT WELLSITE

- a. Clean all instruments and surface equipment; wash them with water, if possible, or wipe down with rags. Using contact cleaner spray cans, clean the contacts inside the heads of subsurface instruments and lubricate top sub threads. Visually inspect all rig up equipment for signs of damage or defects. Any defective or damaged rig-up equipment must be red-tagged and removed from service until repaired and re-inspected. Fill out **OP-FORM-01: Problem Report** to repair of any downhole equipment or surface panel which failed during the job; the failed equipment must also be red-tagged.

- b. Load equipment and properly secure it in place.
- c. Housekeeping the worksite area. Ensure any explosives are kept in the Explosive box magazine.

Refer to **DBSB-MT-01: SRP PREVENTIVE MAINTENANCE, INSPECTION AND TEST PROGRAM PROCEDURE** for Post-Demob/Handover Maintenance Checklist

6.7 DAILY REPORTING

- a. Daily reporting for the last 24 hours duration must be prepared by EIC.
- b. It must be submitted to CHS Department via fax or email before 8 a.m. on the next day.
- c. FSM must be updated on offshore activities and information received.
- d. In the event that there is a communication problem with fax /email, personnel should update their last 24 hours activity via phone to FSM/EIC.

- e. All reporting must be emailed to FSM₇, and include CHS Administrator and Foreman in the e-mail CC.

- f. All the important data (field log data, ASCII, DOR) must be sent to client representative.

6.8 FIGURE

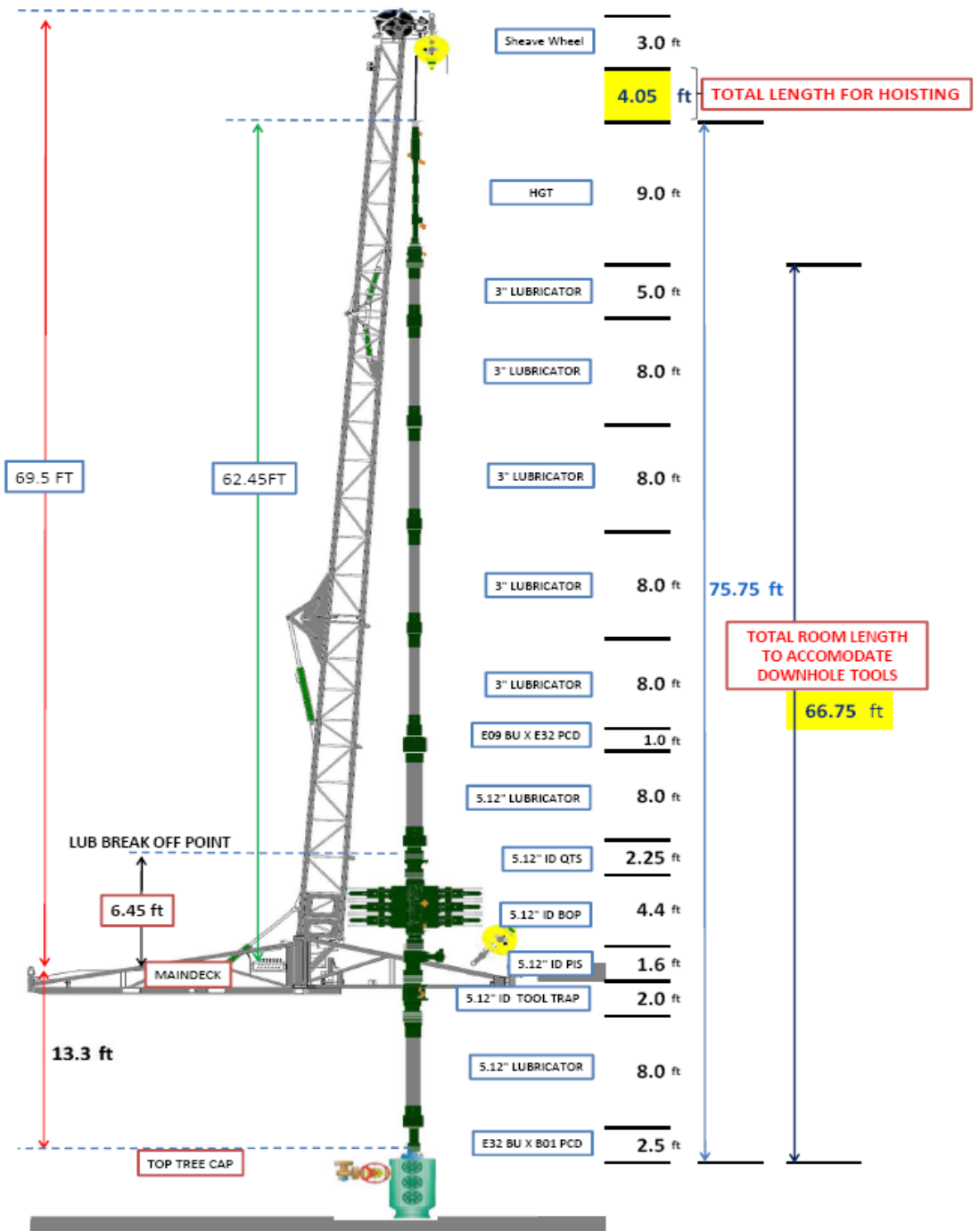


Figure 1: Typical Setup Of E-Line Rig Up

7.0 QUALITY RECORDS

No.	Title of Records	Person In-Charge	Retention Period (Year)
1.	CHS-FORM-31: Daily Checklist for Powerpack, Genset & Air Compressor	CHS Personnel	5
2.	CHS-FORM-34: Checklist for Logging Cabin		
3.	CHS-FORM-35: Checklist for 70ft Mast		
4.	CHS-FORM-100: Checklist Skyfold Mast		
5.	CHS-FORM-62: Z-Chart		
6.	MT-Form-28 – MT-Form-34 : Q Check		
7.	MT-Form-35 – MT-Form-42: Trim Check		
8.	MT-Form-02 – MT-Form-12: Pre Mob/Handover Checklist	Administrator (Maintenance)	5
9.	MT-Form-15 – MT-Form-25: Post Demob/Handover Checklist		