Sunoco Logistics

Sunoco Logistics Partners L.P.
1818 Market Street
Suite 1500
Philadelphia, PA 19103-3615

Via Facsimile, Electronic Mail and FedEx

May 24, 2012

Mr. Byron Coy
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration
820 Bear Tavern Road
Suite 306
West Trenton, NJ 08628

Re: CPF No. 1-2009-5003

Dear Mr. Coy:

This letter will serve as Sunoco Pipeline L.P.'s response to above reference enforcement case.

Compliance Order item 1: With respect to the violation of §195.402(a) (**Item1**), Respondent must amend its manual of written procedures for operations and maintenance to include specific procedures for installing completions plugs. The procedures may be developed by Sunoco or may be from another source, provided the source material is incorporated verbatim or referenced by name and made readily available as part of the operations and maintenance procedures.

Response: Sunoco Pipeline, L.P. (SPLP) in its Maintenance Manual under section 195.505 (attachment 1) references SPLP's Operator Qualification Plan where the specific procedures for installing completion plugs can be found under JPM–OQP-482-002A (attachment 2) and OQP-482 (attachment 3). These procedures were revised on March 1, 2009 to include specific reference to the installation of completion plugs.

Compliance Order item 2: With respect to the violation of §195.505(a) **(Item 3)**, Respondent must amend its qualification procedures to identify the installation of a completion plug as a covered task for which individuals must be qualified. The procedures must include sufficient details regarding installation of a completion plug to ensure that individuals can be properly qualified to perform the activity.

Response: SPLP in its Operator Qualification Plan identifies the revised task OQP-482 as a covered task. The specific procedures can be found in attachments two and three.

Compliance Order item 3: With respect to the violation of §195.505(b) (**Item 4**), Respondent must re-qualify each individual who installs a completion plug using the new qualification procedures prepared pursuant to this Compliance Order.

Response: SPLP re-qualified all employees who install completion plugs using the revised procedures under attachments two and three. The Qualification Report as of December 2011 on OQP-482 is attached (attachment 4).

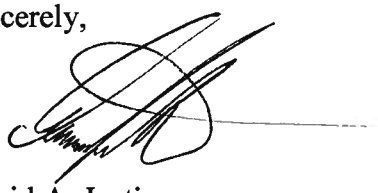
Compliance Order item 5: It is requested that Sunoco maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and report the total cost as follows: (a) total cost associated with preparation and revision of plans and procedures, and performance of studies and analyses; and (b) total cost associated with physical changes, if any, to the pipeline infrastructure, including replacement and additions.

Response: SPLP is maintaining documentation of the safety improvement costs. These are the costs incurred as dictated by the Order:

a) Cost Associated with preparation / revision of plans, procedures, studies and analysis: Seventy thousand two hundred and sixty six US Dollars.
b) Cost associated with replacements, additions, and other changes to pipeline infrastructure: Twenty two thousand seven hundred and thirty seven US Dollars.

Should you have any questions or require further information, please contact Lisa Runyon of our Philadelphia office at 215-977-3877.

Sincerely,



David A. Justin
Vice President, Operations
Sunoco Pipeline, L.P.

Rev. 2, 03/01/09

Sunoco Logistics

Operator Qualification Procedure

OQP-482

Hot Tapping

KNOWLEDGEWIRE TRACKING CODE QOQ0482

Operations Procedure

Hot Tapping

Table of Contents

1.0 Equipment and Work Site Setup 5
2.0 Preparing Hot Tap Machine 9
3.0 Completing Hot Tap 12
4.0 Installation of Completion Plug 15
5.0 Removal of Completion Plug 23

Purpose

To provide instructions for performing/monitoring and control of cutting or drilling an opening into an in-service pipeline facility without interfering with the normal operation of the facility. It also provides instruction for installation and removal of Completion Plug.

Safety and Precautions

1. During hot tapping consideration must be given to the possibility of operational upsets which may alter the process temperature or pressure.
2. For hot tapping above or below grade, provisions shall be made for an easily accessible means of egress.
3. If applicable to the location, permit(s) shall be issued listing the requirements and approving the entry into the excavation and hot work performed therein.
4. All excavations should be assessed for permit-required confined space issues. All efforts should be made to eliminate excavation restraints that result in permit required confined space.

5. Pre-planning should address hazards associated with the possibility of vapors being released after the tap is completed.
6. A hazard assessment SHALL be performed prior to conducting the hot tap procedure. This assessment should identify the personal protective equipment (PPE) required to perform the inspections as well as any potential hazards.
7. While performing this task, the individual may encounter hazardous liquids, vapors, or toxins (i.e., H_2S). If this occurs, the individual should take action in accordance with HES procedures: IMMEDIATELY perform any actions they have been trained in AND/OR evacuate the area whenever necessary, and then notify the SPLP Control Center, Supervision, and/or local emergency response personnel.
8. When working with flammable liquids and vapors, the potential ALWAYS exists for a fire or explosion. If either of these should occur, the individual shall IMMEDIATELY perform any incipient actions they have been trained in, evacuate the area AND notify the local emergency response personnel and the SPLP Control Center.

Abnormal Operating Conditions

At a minimum, the following Abnormal Operating Conditions may be encountered during performance of this task.

1. Component Failure: Malfunction of Hot Tap equipment
2. Fire / Explosion: Ignition of vapor through uncontrolled release
3. Unexpected Hazardous Liquids Encountered: Malfunction of Hot Tap equipment

References

- Title 49CFR part 195, "Transportation of Hazardous Liquids by Pipeline", paragraph 195.422, Pipeline repairs
- SPLP DOT 195 Maintenance Manual, Section 195.422; Pipeline repairs
- SPLP Welding Manual and Procedures
- API Standard: Welding of Pipelines and Related Facilities
- API 653; Tank Inspection, Repair, Alteration and Reconstruction
- TDWilliamson TDW-101A/B Tapping Tool Instruction Manual

- Operator Qualification Procedure: OQP-082, Measure Wall Thickness of Pipe Using Ultrasonic Tester
- KnowledgeWire Tracking Code QOQ0482, Hot Tapping

Special Equipment

The following tools, equipment, and/or supplies will be needed to complete this task depending on the conditions at the site of hot tap work.

1. Hot tapping tool
2. Full port hot tapping valve (pretested)
3. TDWilliamson THREAD-O-RING fitting (Nipple, Cap, and Completion Plug), as applicable
4. TDWilliamson TDW-101A/B Tapping Tool Instruction Manual
5. Sparkless hand tools
6. Bleeder valves
7. Air / impact wrenches, as applicable
8. Communications equipment
9. Atmospheric Monitoring equipment, as applicable
10. Ultrasonic Thickness (UT) tester, as applicable
11. Personal Protective equipment (PPE) as identified by hazard assessment

Task Considerations

1. Any open excavation has been maintained in accordance with SPLP and OSHA standards.
2. Any excavation was done under the direction and oversight of a "Competent Person" as defined by OSHA.
3. Atmospheric monitoring has been established and work area has been determined to have safe levels of vapors, toxins, and Oxygen.
4. The Control Center has been informed of the hot tapping procedure and is aware of their role during any operational changes, slowdowns, etc.

5. A welded appurtenance (e.g., Weld-o-let, Thread-o-let, THREAD-O-RING Nipple, etc) has been installed in accordance with SPLP Welding Manual and Procedures.
6. Communication device(s) have been obtained and a reliable communications link between personnel has been verified.
7. Trained fire watch personnel are stationed at the site with the appropriate fire extinguishing equipment.
8. Prior to performing this procedure, an individual should possess the following basic knowledge and skills:
   - Operation and function of Hot Tapping equipment
   - Potential hazards that may be encountered during task
9. A Hazard Assessment has been performed.

Procedure

1.0 Equipment and Work Site Setup

1.1. **ENSURE** the following conditions are satisfied before proceeding to job site:

1.1.1. **REVIEW** TDWilliamson Instruction Manual.

CAUTION

The tapping tool, tapping valve, pipe extensions and any other pressure containing parts should be of sufficient strength and condition to be left in service, if necessary, in the event of mechanical problems or hot tapping valve leakage.

1.1.2. **PERFORM** the following for tapping tool, tapping valve, and fittings:

1.1.2.1. **VERIFY** that tapping tool factory testing is up-to-date.

1.1.2.2. **CHECK** that pressure and temperature ratings are adequate.

1.1.2.3. **CHECK** that seals and materials of construction are compatible with contents in piping or vessel.

1.1.2.4. **CHECK** that tapping tool has adequate cutter travel.

1.1.2.5. **CHECK** that cutter and pilot bit or drill bit are in good condition.

NOTE 1: Tapping valves are to be leak tested according to SPLP procedures, **before** they are taken to jobsite.

NOTE 2: If using a TDWilliamson THREAD-O-RING fitting, TDW recommends using a tapping valve with a full-port I.D. of at least 2 1/16".

1.1.2.6. **CHECK** that hot tapping valve is adequate size and rating, proper metallurgy, and is a full-port type.

1.1.2.7. **CHECK** that tapping valve leak testing is up-to-date.

1.1.2.8. **IF** applicable,
CHECK that tapping tool coupon holder is functional.

CAUTION

Some process changes (e.g., line pressure increases, line shutdowns, unexpected Change of Product (COP), etc.) can impact the safety of personnel performing hot tapping activities.

1.1.3. **ENSURE** pipeline conditions are **MONITORED** by Control Center and/or field operators during hot tapping activities.

1.1.3.1. **ESTABLISH** communications with Control Center and/or local field operators.

1.1.3.2. **NOTIFY** Control Center and/or local field operators of intent to hot tap the line.

1.1.3.3. **CONFIRM** whether line being hot tapped will be active or inactive for the duration of the procedure.

1.1.3.4. **CONFIRM** what product will be in the line for the duration of the procedure.

1.1.3.5. **CONFIRM** whether there will be any Change of Products during the procedure.

1.1.3.6. **CONFIRM** that line pressure is within normal range for tapping tool.

1.1.3.7. **REQUEST** notification from Control Center and/or local field operators if line conditions should change unexpectedly.

1.1.4. **IF** unfamiliar liquid is in pipeline or tank,
REVIEW Material Safety Data Sheet for liquid.

1.1.5. **ASSESS** potential safety and health hazards **AND**
OBTAIN appropriate Personnel Protective Equipment.

1.1.6. **IF** permits are required,
OBTAIN confined space entry and/or hot work permits.

1.2. **ENSURE** the following conditions are satisfied at job site:

1.2.1. **PREPARE** procedures to isolate work area in event of an emergency.

1.2.2. **IF** signs and/or barriers are required,
PLACE signs and/or barriers to isolate job site from public and unauthorized personnel.

WARNING

A combustible atmosphere may be present in a tank above the liquid level or in a pipe that is not completely filled with crude or product. The combustible atmosphere is the result of the presence of both air and fuel in the correct mixture that will support combustion. Hot tapping a tank or pipeline could provide the ignition source for the combustion resulting in **fire, explosion, injury, or even death**.

1.3. **CONFIRM** area to be hot-tapped is located **below** liquid level of tank or on a pipe that is **completely** filled with product or crude oil.

NOTE: Pipe wall thickness or vessel metal thickness is measured in accordance with OQP-082, Measure Wall Thickness of Pipe Using Ultrasonic Tester.

CAUTION

In the event the pipe or tank wall is NOT of sufficient strength to support the appurtenance and the tapping tool, reinforcing pads or auxiliary support of the hot tapping tool must be provided.

1.4. **AFTER** pipe wall thickness or vessel metal thickness is measured,
PERFORM evaluation to determine the following:

- Pipe strength is adequate to support load and/or torque from new connection and hot tapping equipment
- Need for additional structural support (i.e., hoists, equipment platform, etc.) to prevent damage to pipe or structure

1.4.1. **IF** evaluation indicates need for additional support,
INSTALL necessary hoists and support for hot tapping tool and subsequent piping.

1.5. **ENSURE** external clearance is sufficient to retract cutter and coupon through tapping valve.

2.0 Preparing Hot Tap Machine

NOTE: When installing the tapping tool, the TDWilliamson Instruction Manual must be followed. If necessary, review the TDWilliamson Instruction Manual before performing this procedure.

2.1. **IF** TDWilliamson THREAD-O-RING Nipple is NOT used,
INSTALL Schedule 80 pipe nipple on tapping fitting or appurtenance.

NOTE 1: Tapping valves are to be leak tested according to SPLP procedures, **before** they are taken to jobsite.

NOTE 2: If using a TDWilliamson THREAD-O-RING fitting, TDW recommends using a tapping valve with a full-port I.D. of at least 2 1/16".

CAUTION
If TDWilliamson THREAD-O-RING (T-O-R) Nipple is used, DO NOT overtighten the valve. Overtightening can swage the T-O-R Nipple inside diameter, making installation of the Pig-Sig or Completion Plug difficult or impossible.

2.2. **INSTALL** tapping valve on pipe nipple or TDWilliamson THREAD-O-RING Nipple
USING sealant and/or Teflon tape on threads, **AND**
TIGHTEN ALL connections.

2.2.1. **INSTALL** valve handle **AND**
TIGHTEN set screw on handle, as required.

2.3. **IF** TDWilliamson THREAD-O-RING Nipple and Pig-Signal or Completion Plug are to be used,
CHECK for swaging of the T-O-R Nipple **BEFORE**
TAPPING the line as follows:

2.3.1. **REMOVE** O-ring from Completion Plug.

2.3.2. **INSERT** the Completion Plug through the valve **AND**
THREAD into T-O-R Nipple UNTIL seated.

2.3.3. **CHECK** for binding, **AND**
VERIFY that Plug is fully seated.

2.3.3.1. **IF** Plug binds or fails to seat, T-O-R Nipple has been swaged by **OVERTIGHTENING** valve.

2.3.3.1.1. **NOTIFY** Supervisor that T-O-R Nipple has been damaged.

2.3.4. **REMOVE** Plug from T-O-R Nipple.

2.3.5. **INSTALL** new O-ring on Plug.

NOTE: Use of TDWilliamson THREAD-O-RING (T-O-R) Nipple and installation of a Pig-Signal or Completion Plug requires that a measurement be made **after** tapping valve is installed and **before** the tapping tool is mounted. Consult TDWilliamson Instruction Manual for photos and instructions.

2.4. **IF** TDWilliamson THREAD-O-RING (T-O-R) Nipple and Pig-Signal or Completion Plug are to be used,
MEASURE the distance from the top face of tapping valve through the valve to the top of the T-O-R Nipple.

2.4.1. **RECORD** this measurement as dimension "J" for later use.

2.5. **CALCULATE** "Travel Distance" of cutter and pilot drill or drill bit according to TDWilliamson Instruction Manual **THEN**
VERIFY the following:

- Tap can be completed within dimensional limits of tool.
- Tap stops before cutter or pilot drill touches opposite side of tapped pipe or vessel.
- Retrieved cut-out coupon retracts enough to allow unimpeded closure of tap valve, if applicable.

2.6. **CONFIRM** tapping tool bleeder valve is functional and NOT plugged.

2.7. **ENSURE** precautions have been established for safe bleed-off and disposal of product or crude oil that will be collected in tapping tool above hot tapping valve.

2.7.1. **OBTAIN** approved container with proper grounding / bonding attachments.

2.8. **POUR** approved cutting oil into tapping fitting (THREAD-O-RING Nipple, Weld-o-let, or Thread-o-let) through open tapping valve.

2.9. **INSTALL** upper pipe nipple (TDW Valve Adapter) on tapping tool, **THEN** **INSTALL** tapping tool and upper nipple onto tapping valve, **USING** sealant and/or Teflon tape on all threads.

2.10. **ENSURE** tapping tool is stable and well-supported on pipe or vessel.

3.0 Completing Hot Tap

WARNING

Hot tapping activities have the potential to release petroleum liquids, explosive vapors, and Hydrogen Sulfide (H_2S) vapors into the work area. Failure to monitor and control these hazards could lead to fire, explosion, or extreme health hazards. H_2S can be **harmful or fatal** if inhaled, the action level for H_2S is 10 PPM.

3.1. **MONITOR** the atmosphere **CONTINUOUSLY - BEFORE** AND **DURING** all maintenance and welding activities as required by HES guidelines.

3.1.1. **FOLLOW** HES monitoring requirements and exposure guidelines for levels of:

- Oxygen
- Hydrocarbons
- H_2S - Hydrogen Sulfide (crude systems)

WARNING

The tapping tool shall NOT be operated while standing on an unstable location.

3.2. **ENSURE** work platform for tapping tool operator is stable.

3.3. **CLOSE** tapping tool bleed valve.

3.4. **OPEN** tapping valve.

3.5. **EXTEND** boring bar until pilot drill touches surface to be tapped.

NOTE: When tapping and/or cutting with the hot tapping tool, the TDWilliamson Instruction Manual must be reviewed and followed.

3.6. **COMMENCE** tapping tool cutting operation.

3.7. **PROCEED** without interruption until pilot drill/cutter or drill bit reaches required depth measurement.

CAUTION

The TDWilliamson Instruction Manual should be followed when retracting the boring bar and closing the valve. If a blank or coupon is lost, NO attempt should be made to retrieve it with the hot tapping tool. If recovery of the blank or coupon is necessary, it may require shutting down the pipeline and cutting the line.

3.8. **RETRACT** pilot drill/cutter or drill bit
UNTIL feed tube is set at zero mark on body tube.

3.9. **CLOSE** tapping valve.

CAUTION

Draining of liquid from a pipeline system shall be performed per HES Standards. All containers shall be metal with flame resisters and grounding / bonding attachments. All containers shall be immediately emptied into a contained system or covered to prevent vapor release.

3.10. **OPEN** tapping tool bleeder valve to relieve pressure **AND**
ENSURE tapping valve is NOT leaking.

3.10.1. **DIRECT** flow of product into an approved container with proper grounding / bonding attachments.

3.11. **REMOVE** tapping tool.

3.12. **IF** TDWilliamson Completion Plug is to be installed,
GO TO Section 4.0.

3.13. **INSTALL** pipe plug into tapping valve until ready for use,
USING sealant and/or Teflon tape on threads.

3.13.1. **IF** site will be unattended,
INSTALL locking device for security.

3.14. **RETURN** tapping tool to proper storage location.

4.0 Installation of Completion Plug

NOTE 1: The TDWilliamson THREAD-O-RING (T-O-R) fitting is made up of a T-O-R Nipple, Completion Plug, and 2"NPT pipe cap. SPLP uses the THREAD-O-RING (T-O-R) Nipple for most line taps and it can be used for Pig-Sig fixtures or for line maintenance tasks (e.g. vents, Nitrogen injection, line safeties, etc.) When not in use, the T-O-R Nipple is plugged internally with the Completion Plug which allows safe removal of the tapping tool and tapping valve. Installation of the 2" NPT pipe cap protects the external threads and allows for a second mechanical seal. Complete Installation / Removal instructions with photos and diagrams are contained in the TDWilliamson Instruction Manual and should be reviewed **before** performing this procedure.

NOTE 2: If using a TDWilliamson THREAD-O-RING fitting, TDW recommends using a tapping valve with a full-port I.D. of at least 2 1/16".

WARNING

Hot tapping activities have the potential to release petroleum liquids, explosive vapors, and Hydrogen Sulfide (H_2S) vapors into the work area. Failure to monitor and control these hazards could lead to fire, explosion, or extreme health hazards. H_2S can be **harmful or fatal** if inhaled, the action level for H_2S is 10 PPM.

4.1. **MONITOR** the atmosphere **CONTINUOUSLY - BEFORE** AND **DURING** all maintenance and welding activities as required by HES guidelines.

4.1.1. **FOLLOW** HES monitoring requirements and exposure guidelines for levels of:

- Oxygen
- Hydrocarbons
- H_2S - Hydrogen Sulfide (crude systems)

4.2. **MOUNT** TDW Completion Plug on the tapping tool, by **PERFORMING** the following:

4.2.1. **KEEP** body tube stationary **AND**
TURN feed tube clockwise **TO**
EXTEND boring bar.

4.2.2. **WHEN** retainer spring is accessible,
REMOVE retainer spring.

4.2.3. **REMOVE** drill bit or other fixture from boring bar end,
INSTALL ¾" square drive adapter (TDW Plug holder) in end of boring bar, **AND**
REINSTALL retainer spring.

4.2.3.1. **ENSURE** that retainer spring is fully seated in groove on boring bar.

4.2.3.2. **APPLY** several wraps of electrical tape around retainer spring **TO**
ENSURE that retainer spring stays in position (if applicable).

4.2.4. **PUSH** Plug onto ¾" square drive adapter
UNTIL adapter retainer balls
SEAT into groove in Plug square drive recess.

4.2.4.1. **ENSURE** about ¼" space between top of Plug and shoulder on ¾" square drive adapter,
ALLOWING Plug to float during installation.

WARNING
Failure to replace a damaged O-ring can result in a leak, personal injury, or abandonment of the line tap fitting. Used O-rings, which over a period of time can swell or degrade because of contact with product or crude in the pipeline, should always be replaced.

4.2.4.2. **VERIFY** Plug O-ring is new and not damaged.

4.2.4.2.1. **REPLACE** O-ring if used or damaged.

4.2.4.3. **GREASE** O-ring and Plug threads.

4.2.5. **KEEP** body tube stationary **AND**
TURN feed tube counter-clockwise **TO**
RETRACT boring bar
UNTIL feed tube is set at zero mark on body tube.

4.3. **INSTALL** upper pipe nipple (TDW Valve Adapter) on tapping tool,
USING sealant and/or Teflon tape on threads.

4.4. **DETERMINE** "Travel Distance" needed to seat Completion Plug.

4.4.1. **MEASURE** distance from bottom end of upper pipe nipple to bottom of Plug.

4.4.1.1. **RECORD** this measurement as dimension "G".

4.4.1.2. **TRANSFER** dimension "G" to outside of upper nipple by
MEASURING from bottom end of upper nipple **AND**
MARKING dimension "G" on outside of nipple.

4.4.2. **INSTALL** tapping tool with Completion Plug and upper nipple on tapping valve,
USING sealant and/or Teflon tape on threads.

4.4.3. **MEASURE** from the top face of the valve to "G" mark on upper pipe nipple.

4.4.3.1. **RECORD** this measurement as "G minus thread makeup".

NOTE: If the Completion Plug is being installed in a TDW THREAD-O-RING Nipple and dimension "J" is NOT available from earlier measurements, use Steps 4.4.4 through 4.4.4.2 to calculate this dimension. If dimension "J" is available, skip to Step 4.5.

4.4.4. **IF** dimension "J" is NOT available,
CALCULATE dimension "J".

4.4.4.1. **MEASURE** dimension "B", top face of tapping valve to top of pipeline.

4.4.4.2. **CALCULATE** "J"="B"— 4".

4.4.5. **ADD** "G minus thread makeup" + "J" (*from step 2.6.1 or 4.4.4.2*) + 1-7/8".

4.4.6. **RECORD** the total of the three dimensions as "Travel Distance" **AND**
MARK this dimension on scale on body tube.

4.5. **SCREW** bleeder valve onto tapping tool, **THEN**
OPEN bleeder valve.

CAUTION

Draining of liquid from a pipeline system shall be performed per HES Standards. All containers shall be metal with flame resisters and grounding / bonding attachments. All containers shall be immediately emptied into a contained system or covered to prevent vapor release.

4.6. **CRACK OPEN** tapping valve **TO**
ALLOW product to fill and purge air from tapping tool.

4.6.1. **DIRECT** flow of product into an approved container with proper grounding / bonding attachments.

4.7. **WHEN** tapping tool is filled with product and air is purged from tool,
CLOSE bleeder valve **AND**
OPEN tapping valve completely.

4.8. **CHECK** all tapping equipment and connections for leaks.

4.8.1. **IF** leak is found,
CORRECT problem before continuing Procedure.

CAUTION

DO NOT use air motor attachment to install Completion Plug; use ratchet to install Plug.

4.9. **USE** ratchet on ¾" hex drive **TO**
HOLD boring bar stationary.

4.10. **TURN** feed tube clockwise
UNTIL feed tube is about 2" from "Travel Distance" mark on body tube.

4.11. **LOCK** boring bar ¾" hex drive to feed tube,
ALLOWING the boring bar to turn and extend simultaneously, by one of following methods (depending on model or revisions to tool):

- Tightening socket head cap screw
- Tightening clutch nut
- Install locking cap

WARNING

If tool becomes hard to turn or stops **before** "Travel Distance" mark on body tube is reached, the Completion Plug is **NOT** fully seated. **DO NOT** remove the tapping tool or tapping valve. Removal of tapping tool or tapping valve may allow the plug to dislodge under pressure and can result in an **uncontrollable release of product, injury, or death.**

CAUTION

If tool becomes hard to turn or stops **before** "Travel Distance" mark on body tube is reached, **DO NOT FORCE** ratchet handle as damage may occur to T-O-R Nipple or Plug threads.

CAUTION

DO NOT overtighten Completion Plug; damage may occur to T-O-R Nipple or Plug threads or to the O-ring.

4.12. **TURN** ratchet and boring bar clockwise
UNTIL "Travel Distance" mark on body tube is reached **AND**
FIRMLY SEAT Completion Plug into T-O-R Nipple threads.

4.12.1. **IF** tool becomes hard to turn or stops **before** "Travel Distance" mark on body tube is reached,
STOP TURNING ratchet.

4.12.1.1. **RECHECK** "Travel Distance" measurements and calculations.

4.12.1.2. **IF** measurements and calculations are correct, threads may be improperly engaged or damaged.
GO TO Section 5.0 for Plug removal Procedure.

4.12.2. **TURN** ratchet and boring bar counter-clockwise ¼ turn **TO SET** Plug in final position.

4.13. **WHEN** Completion Plug is seated in T-O-R Nipple,
OPEN bleeder valve **TO**
RELIEVE pressure.

4.13.1. **DIRECT** flow of product into an approved container with proper grounding / bonding attachments.

4.13.2. **OPEN** bleeder valve for remainder of Procedure.

4.14. **CHECK** for Plug leakage through the open bleeder valve for several minutes **BEFORE CONTINUING** .Procedure.

4.14.1. **IF** leakage occurs, Plug is NOT seated or O-ring is damaged;
GO TO Section 5.0 for Plug removal Procedure.

4.15. **UNLOCK** boring bar from feed tube,
ALLOWING boring bar to retract **without** turning, by one of following methods (depending on model or revisions to tool):

- Loosening socket head cap screw
- Loosening clutch nut
- Removing locking cap

WARNING

The boring bar **MUST NOT TURN** while it is being retracted from the Completion Plug after installation of the Plug. Hold the boring bar stationary with the ratchet on the ¾" hex drive while the feed tube is turned counter-clockwise to retract the boring bar from the Plug. If the boring bar is allowed to turn counter-clockwise with the feed tube, the Plug will **unseat** from the T-O-R Nipple threads.

4.16. **WHILE HOLDING** the boring bar stationary with the ratchet on the ¾" hex drive,
TURN the feed tube counter-clockwise **TO**
RETRACT the boring bar from the Plug and tapping valve.

4.17. **WHEN** the feed tube has reached the zero mark on the body tube scale,
CLOSE the tapping valve **AND**
REMOVE the tapping tool.

4.17.1. **DIRECT** product into an approved container with proper grounding / bonding attachments.

WARNING

During removal of the upper nipple and tapping valve, and until visual inspection has confirmed that the Plug is fully seated in the T-O-R Nipple, individuals should NOT place their head, arms, or any other portion of the body above the Plug. If the Plug is NOT fully seated, it could dislodge under pressure and possibly result in **injury or death**.

4.18. **REMOVE** the upper nipple and tapping valve.

4.19. **AFTER** tapping valve is removed,
VISUALLY INSPECT the Plug Installation.

4.19.1. **VERIFY** that the Plug is fully seated in the T-O-R Nipple.

WARNING

If Completion Plug is NOT fully seated in the T-O-R Nipple, **DO NOT ATTEMPT** to tighten Plug using hand tools. The Plug could dislodge under pressure and possibly result in an **uncontrollable release of product, injury, or death**.

4.19.1.1. **IF** Plug is NOT fully seated in the T-O-R Nipple,
IMMEDIATELY REINSTALL AND CLOSE the tapping valve **THEN GO TO** Section 5.0 for Plug removal Procedure.

4.20. **COAT** the Plug with a light layer of grease, **BUT DO NOT GREASE** the external pipe threads.

4.21. **INSTALL** the 2" NPT pipe cap on the T-O-R Nipple, **USING** sealant and/or Teflon tape on threads.

4.21.1. **IF** site will be unattended, **INSTALL** locking device for security.

4.22. **NOTIFY** Supervisor and/or Control Center that the Completion Plug Installation has been completed.

NOTE: If the TDWilliamson THREAD-O-RING fitting has been welded to a buried section of the pipeline, it is SPLP's practice to install a High Hat and High Hat Marker, before backfilling, to prevent potential physical damage to the TOR. The High Hat and High Hat Marker **must** be installed in accordance with the SPLP Welding Manual and Procedures and SPLP Technical Procedure PR-11-0041, High Hat Procedure.

5.0 Removal of Completion Plug

NOTE 1: The TDWilliamson THREAD-O-RING (T-O-R) fitting is made up of a T-O-R Nipple, Completion Plug, and 2"NPT pipe cap. SPLP uses the THREAD-O-RING (T-O-R) Nipple for most line taps and it can be used for Pig-Sig fixtures or for line maintenance tasks (e.g. vents, Nitrogen injection, line safeties, etc.) When not in use, the T-O-R Nipple is plugged internally with the Completion Plug which allows safe removal of the tapping tool and tapping valve. Installation of the 2" NPT pipe cap protects the external threads and allows for a second mechanical seal. Complete Installation / Removal instructions with photos and diagrams are contained in the TDWilliamson instruction manual and should be reviewed **before** performing this procedure.

NOTE 2: If the TDWilliamson THREAD-O-RING fitting has been welded to a buried section of the pipeline and is protected from physical damage by a High Hat, the High Hat **must** be removed in accordance with the SPLP Technical Procedure PR-11-0041, High Hat Procedure.

WARNING

Product or oil leakage past the Completion Plug O-ring can cause a build-up of pressure between the Plug and the 2" pipe cap. The 2" pipe cap must be slowly loosened to allow trapped pressure to bleed off. If pressure does not quickly dissipate and flow stop, **DO NOT REMOVE** the cap. Assume that the O-ring is damaged and retighten the 2" pipe cap.

WARNING

Hot tapping activities have the potential to release petroleum liquids, explosive vapors, and Hydrogen Sulfide (H_2S) vapors into the work area. Failure to monitor and control these hazards could lead to fire, explosion, or extreme health hazards. H_2S can be **harmful or fatal** if inhaled, the action level for H_2S is 10 PPM.

5.1. **MONITOR** the atmosphere **CONTINUOUSLY - BEFORE** AND **DURING** all maintenance and welding activities as required by HES guidelines.

5.1.1. **FOLLOW** HES monitoring requirements and exposure guidelines for levels of:

- Oxygen
- Hydrocarbons
- H_2S - Hydrogen Sulfide (crude systems)

WARNING

Product or oil leakage past the Completion Plug O-ring can cause a build-up of pressure between the Plug and the 2" pipe cap. The 2" pipe cap must be slowly loosened to allow trapped pressure to bleed off. If pressure does not quickly dissipate and flow stop, **DO NOT REMOVE** the cap. Assume that the O-ring is damaged and retighten the 2" pipe cap.

5.2. **SLOWLY LOOSEN** the 2" pipe cap on TDWilliamson THREAD-O-RING fitting **WHILE CHECKING** for leakage.

5.2.1. **IF** leakage continues,
RETIGHTEN the pipe cap **AND**
IMMEDIATELY NOTIFY Supervisor.

5.2.2. **IF** leakage dissipates,
SLOWLY REMOVE the pipe cap.

NOTE 1: Tapping valves are to be leak tested according to SPLP procedures, **before** they are taken to jobsite.

NOTE 2: If using a TDWilliamson THREAD-O-RING fitting, TDW recommends using a tapping valve with a full-port I.D. of at least 2 1/16".

5.3. **INSTALL AND OPEN** tapping valve.

5.4. **PREPARE** the tapping tool.

5.4.1. **KEEP** body tube stationary **AND**
TURN feed tube clockwise **TO**
EXTEND boring bar.

5.4.2. **WHEN** retainer spring is accessible,
REMOVE retainer spring.

5.4.3. **REMOVE** drill bit or other fixture from boring bar end,
INSTALL ¾" square drive adapter (TDW Plug Holder) in end of boring bar, **AND**
REINSTALL retainer spring.

5.4.3.1. **ENSURE** that retainer spring is fully seated in groove on boring bar.

5.4.3.2. **APPLY** several wraps of electrical tape around retainer spring **TO**
ENSURE that retainer spring stays in position (if applicable).

5.4.4. **KEEP** body tube stationary **AND**
TURN feed tube counter-clockwise **TO**
RETRACT boring bar
UNTIL feed tube is set at zero mark on body tube.

5.5. **INSTALL** upper pipe nipple (TDW Valve Adapter) on tapping tool,
USING sealant and/or Teflon tape on threads.

5.6. **DETERMINE** "Travel Distance" needed to insert ¾" square drive into Completion Plug.

5.6.1. **MEASURE** distance from bottom end of upper pipe nipple to end of ¾" square drive.

5.6.1.1. **RECORD** this measurement as dimension "M".

5.6.1.2. **TRANSFER** dimension "M" to outside of upper nipple by
MEASURING from bottom end of upper pipe nipple **AND**
MARKING dimension "M" on outside of upper nipple.

5.6.2. **MEASURE** the distance from the top face of tapping valve through the valve to the bottom of the square drive recess in Plug.

5.6.2.1. **RECORD** as dimension "N".

5.6.3. **INSTALL** tapping tool and upper pipe nipple on tapping valve,
USING sealant and/or Teflon tape on threads.

5.6.4. **MEASURE** from the top face of the valve to "M" mark on upper nipple.

5.6.4.1. **RECORD** this measurement as "M minus thread makeup".

5.6.5. **ADD** "M minus thread makeup" + "N".

5.6.6. **RECORD** the total of the two dimensions as "Travel Distance" **AND**
MARK this dimension on scale on body tube.

5.7. **FULLY OPEN** tapping valve.

5.8. **SCREW** bleeder valve onto tapping tool **THEN**
CRACK OPEN bleeder valve.

5.9. **UNLOCK** boring bar from feed tube,
ALLOWING boring bar to extend without turning, by one of the following methods (depending on model or revisions to tool):

- Loosening socket head cap screw
- Loosening clutch nut
- Removing locking cap

5.10. **WHILE HOLDING** the boring bar stationary with the ratchet on the ¾" hex drive,
TURN the feed tube clockwise **TO**
EXTEND the ¾" square drive through tapping valve into the recess in the Plug.

5.10.1. **IF** the feed tube is 1" short of "Travel Distance" mark on body tube,
REALIGN ¾" square drive.

5.10.1.1. **SLOWLY TURN** boring bar clockwise with ratchet **WHILE**
TURNING feed tube clockwise with light force
UNTIL square drive aligns with recess in Plug.

5.10.1.2. **HOLD** boring bar stationary with ratchet **AND**
TURN feed tube clockwise
UNTIL "Travel Distance" mark on body tube is reached.

5.10.1.3. **HOLD** boring bar stationary with ratchet **AND**
TURN feed tube counter-clockwise one half-turn **TO**
SEAT retainer balls on ¾"square drive into groove in Plug square drive recess.

5.11. **LOCK** boring bar ¾" hex drive to feed tube,
ALLOWING the boring bar to turn and retract simultaneously, by one of the following methods (depending on model or revisions to tool):

- Tightening socket head cap screw
- Tightening clutch nut
- Install locking cap

CAUTION
Draining of liquid from a pipeline system shall be performed per HES Standards. All containers shall be metal with flame resisters and grounding / bonding attachments. All containers shall be immediately emptied into a contained system or covered to prevent vapor release.

5.12. **SLOWLY TURN** boring bar and feed tube counter-clockwise with ratchet, **TO**
LOOSEN the Plug
UNTIL product / oil begins to fill tapping tool and purge air.

5.13. **STOP TURNING UNTIL** tool is purged of air, **THEN**
CLOSE bleeder valve.

5.14. **RESUME TURNING** boring bar and feed tube counter-clockwise with ratchet **TO**
REMOVE Plug,
UNTIL feed tube is at zero mark on body tube.

5.15. **CLOSE** tapping valve, **THEN**
OPEN bleeder valve **TO**
RELIEVE pressure.

5.15.1. **DIRECT** flow of product into an approved container with proper grounding / bonding attachments.

5.16. **CHECK** for tapping valve leakage through the open bleeder valve for several minutes **BEFORE** **CONTINUING** Procedure.

5.17. **REMOVE** the tapping tool and upper nipple **WHILE** **HOLDING-BACK** on tapping valve.

5.17.1. **CATCH** product in an approved container with proper grounding / bonding attachments.

5.18. **INSTALL** pipe plug into tapping valve **USING** sealant and/or Teflon tape on threads.

5.18.1. **IF** site will be unattended, **INSTALL** locking device for security.

5.19. **NOTIFY** Supervisor and/or Control Center that the Completion Plug Removal has been completed.

END

Sunoco Logistics	JPM–OQP-482-002A Rev. 2 03/01/09 **JOB PERFORMANCE MEASURE**

TASK: Complete Hot Tap / Install or Remove Completion Plug

Performance Objective: Hot Tap is completed or a Completion Plug has been installed in or removed from the line tap.

METHOD OF ACCOMPLISHMENT: Perform __X__ Simulate __X__

SYSTEM/DUTY AREA: Operations

ASSOCIATED TASK ID: JPM-OQP-482-001A

TASK PERFORMANCE STANDARD: Perform actions in correct sequence to safely complete hot tap; install or remove Completion Plug from line tap.

APPROVED FOR INDEPENDENT PERFORMANCE: Yes

SPECIAL EQUIPMENT:

1. Hot tapping tool
2. Full port hot tapping valve (pretested)
3. TDWilliamson THREAD-O-RING fitting (Nipple, Cap, and Completion Plug), as applicable
4. TDWilliamson TDW-101A/B Tapping Tool Instruction Manual
5. Sparkless hand tools
6. Bleeder valves
7. Air/ impact wrenches, as applicable
8. Communications equipment
9. Atmospheric Monitoring equipment, as applicable
10. Ultrasonic Thickness (UT) tester, as applicable
11. Personal Protective equipment (PPE) as identified by hazard assessment

REFERENCE: OQP-482, Rev. 2

ASSOCIATED TASKS: Preparing for Hot Tapping

CAUTION

No facility equipment shall be operated during the performance of this JPM without the following:

1. Permission from the Operations Manager
2. Direct oversight by a qualified individual (determined by the individual granting permission based on facility conditions).

EVALUATORS INSTRUCTIONS

NOTE
Questions asked by the evaluator will be limited to the information contained in the objectives.

1. Use the Objectives and Abnormal Operating Conditions (AOCs) to develop questions to be discussed prior to performance of this JPM.

2. Knowledge Questions will be documented in the appropriate section of this JPM. These questions should be used to determine whether the candidate has an adequate understanding of equipment and system operation to perform as well as recognize and react to conditions that would indicate abnormal response required. The evaluator should use this portion of the JPM to determine whether the candidate should be allowed to perform the skills portion of the JPM.

3. Attach any supporting documentation used during the performance of this JPM.

4. Sign the appropriate section of the JPM.

5. If the evaluation is **SAT**, enter qualification status in ISNetworld database.

6. Forward JPM evaluation to DOT Records File.

THE EVALUATOR SHALL REVIEW THE FOLLOWING WITH THE CANDIDATE:

1. Prior to beginning the task, the evaluator shall ask the candidate questions on the associated system(s) and the potential Abnormal Operating Conditions (AOCs) that could occur during task performance. The purpose of these questions are to obtain a representative sampling of the candidate's knowledge concerning task performance and their ability to recognize and react to abnormal operating conditions (AOCs).

2. Once the questioning is complete, the evaluator shall explain the JPM initial conditions and clarify as required.

3. The candidate may use any references that are normally available.

4. The candidate shall indicate all required log entries, status board updates, chart recorder annotations, and communications.

5. The candidate shall make oral reports for annunciators and any abnormal indications observed. The examiner will act as the Controller or other individuals for communications purposes if the JPM is to be simulated.

6. The candidate shall verbally inform the evaluator of all actions performed during the performance of this JPM to ensure knowledge and understanding.

ABNORMAL OPERATING CONDITIONS

THE FOLLOWING ABNORMAL OPERATING CONDITIONS (AOCs) APPLY TO THIS TASK. Candidates must be able to recognize and respond to these conditions if they are encountered during task performance.

1. **Component failure [Example:** Malfunction of Hot Tap equipment]
2. **Fire / Explosion [Example:** Ignition of vapor through uncontrolled release]
3. **Unexpected Hazardous Liquid Encountered [Example:** Malfunction of Hot Tap equipment]

KNOWLEDGE EVALUATION

Evaluator Instructions: Prior to starting the skills portion of the JPM, the evaluator shall ask questions based on the Objectives that are specific to the tasks being performed AND the AOCs associated with the task. The evaluator will document the questions and answers below.

Question 1: _____

_____

_____

Response: _____

_____

_____

_____

Question 2: _____

_____

_____

Response: _____

_____

_____

_____

Question 3: _____

_____

_____

Response: _____

_____

_____

_____

EVALUATOR'S NOTE: Use additional pages as necessary to document any additional Q&A

INITIAL CONDITIONS

1. Open excavation has been maintained in accordance with SPLP and OSHA standards.
2. Communications have been established with the Control center and are aware of the role and responsibilities during the hot tap concerning flow and pressure on the pipeline.
3. Atmospheric monitoring has been established and monitoring indicates safe levels at the work site.
4. Personnel performing fire watch duties are trained and equipped with appropriate fire extinguishers.
5. A welded appurtenance (e.g., Weld-o-let, Thread-o-let, THREAD-O-RING Nipple, etc) has been installed in accordance with SPLP Welding Manual and Procedures.
6. All hot tap preparations have been completed.

INITIATING CUE

The Terminal Manager has directed you to complete hot tap or install or remove a Completion Plug.

SYSTEM: Operations

TASK: Completing Tap / Installation or Removal of Completion Plug

NOTE: All step numbers in this JPM reflect the corresponding step numbers in the associated procedure.

NOTE 1: If the evaluation is simulated, the evaluator should provide the Candidate with simulation cues provided in the JPM.

NOTE 2: If the evaluation is being performed, depending on the length of the weld area, some JPM steps may not be performed. The steps not performed should be noted with an N/A in the COMMENTS column.

NOTE: This JPM is comprised of three Subtasks that can be performed together or independently of one another. The Candidate is required to perform all three Subtasks based on the requirements of the evaluation. Perform the following Steps to complete each required Subtask:

SUBTASK #3.0: Completing Tap, perform Steps 3.1 through 3.14.

SUBTASK #4.0: Installation of Completion Plug, perform Steps 4.1 through 4.22.

SUBTASK #5.0: Removal of Completion Plug, perform Steps 5.1 through 5.19.

SUBTASK #3.0: Completing Tap

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)

WARNING

Hot tapping activities have the potential to release petroleum liquids, explosive vapors, and Hydrogen Sulfide (H_2S) vapors into the work area. Failure to monitor and control these hazards could lead to fire, explosion, or extreme health hazards. H_2S can be **harmful or fatal** if inhaled, the action level for H_2S is 10 PPM. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
3.1	NO	**MONITOR** the atmosphere **CONTINUOUSLY - BEFORE** AND **DURING** all maintenance and welding activities as required by HES guidelines.	P, S	N/A	SAT / UNSAT	
Standard: Atmosphere MONITORED as required by HES guidelines.						
3.1.1	NO	**FOLLOW** HES monitoring requirements and exposure guidelines for levels of: • Oxygen • Hydrocarbons • H_2S - Hydrogen Sulfide (crude systems)	P, S	N/A	SAT / UNSAT	
Standard: HES monitoring requirements FOLLOWED.						
WARNING The tapping tool shall NOT be operated while standing on an unstable location. Evaluator should be ready to stop performance of this procedure in the event the Candidate's actions could result in an unsafe condition.						
3.2	NO	**ENSURE** work platform for tapping tool operator is stable.	P, S	N/A	SAT / UNSAT	
Standard: Work platform STABILIZED.						
3.3	YES	**CLOSE** tapping tool bleeder valve.	P, S	N/A	SAT / UNSAT	
Standard: Bleeder valve CLOSED.						
3.4	YES	**OPEN** tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Tapping valve OPENED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
3.5	YES	**EXTEND** boring bar until pilot drill touches surface to be tapped.	P, S	N/A	SAT / UNSAT	
Standard: Pilot drill EXTENDED to surface.						
NOTE: Evaluator should have a TDWilliamson Instruction Manual available for the Candidate to use for reference.						
3.6	YES	**COMMENCE** tapping tool cutting operation.	P, S	N/A	SAT / UNSAT	
Standard: Cutting operation STARTED.						
3.7	YES	**PROCEED** without interruption until pilot drill/cutter or drill bit reaches required depth measurement.	P, S	N/A	SAT / UNSAT	
Standard: Require depth REACHED with one continuous cut.						
CAUTION The TDWilliamson Instruction Manual should be followed when retracting the boring bar and closing the valve. If a blank or coupon is lost, NO attempt should be made to retrieve it with the hot tapping tool. If recovery of the blank or coupon is necessary, it may require shutting down the pipeline and cutting the line. Evaluator should be ready to stop performance of this procedure in the event the Candidate's actions could result in an unsafe condition.						
3.8	YES	**RETRACT** pilot drill/cutter or drill bit **UNTIL** feed tube is set at zero mark on body tube.	P, S	N/A	SAT / UNSAT	
Standard: Pilot drill / cutter or drill bit RETRACTED.						
3.9	YES	**CLOSE** tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Tapping Valve CLOSED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
CAUTION Draining of liquid from a pipeline system shall be performed per HES Standards. All containers shall be metal with flame resisters and grounding / bonding attachments. All containers shall be immediately emptied into a contained system or covered to prevent vapor release. Evaluator should be ready to stop performance of this procedure in the event the Candidate's actions could result in an unsafe condition.						
3.10	**YES**	**OPEN** tapping tool bleeder valve to relieve pressure **AND** **ENSURE** tapping valve is NOT leaking.	P, S	N/A	SAT / UNSAT	
Standard: Pressure RELIEVED; tap valve properly SEATED.						
3.10.1	**YES**	**DIRECT** flow of product into an approved container with proper grounding / bonding attachments.	P, S	N/A	SAT / UNSAT	
Standard: Product DIRECTED into approved container.						
3.11	**YES**	**REMOVE** tapping tool.	P, S	N/A	SAT / UNSAT	
Standard: Tapping tool REMOVED.						
NOTE: Step 3.12 is performed only if a TDWilliamson Completion Plug is to be installed.						
3.12	**NO**	**IF** TDWilliamson Completion Plug is to be installed, **GO TO** Section 4.0.	P, S	N/A	SAT / UNSAT	
Standard: Procedure CONTINUED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
3.13	YES	**INSTALL** pipe plug into tapping valve until ready for use, **USING** sealant and/or Teflon tape on threads.	P, S	N/A	SAT / UNSAT	
Standard: Plug INSTALLED in tapping valve.						
NOTE: Step 3.13.1 is performed only if site will be unattended.						
3.13.1	YES	**IF** site will be unattended, **INSTALL** locking device for security.	P, S	N/A	SAT / UNSAT	
Standard: Locking device INSTALLED.						
3.14	YES	**RETURN** tapping tool to proper storage location.	P, S	N/A	SAT / UNSAT	
Standard: Tapping tool is PROPERLY STORED.						
NOTE: Qualification Testing for **SUBTASK #3.0: Completing Tap** is complete.						

SUBTASK #4.0: Installation of Completion Plug

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
NOTE 1: The TDWilliamson THREAD-O-RING fitting is made up of a Nipple, Completion Plug, and 2"NPT pipe cap. SPLP uses the THREAD-O-RING Nipple for most line taps and it can be used for Pig-Sig fixtures or for line maintenance tasks (e.g. vents, Nitrogen injection, line safeties, etc.). When not in use, the Nipple is plugged internally with the Completion Plug which allows safe removal of the tapping tool and tapping valve. Installation of the 2" NPT pipe cap protects the external threads and allows for a second mechanical seal. Complete Installation / Removal instructions with photos and diagrams are contained in the TDWilliamson Instruction Manual and should be reviewed **before** performing this procedure. **NOTE 2:** If using a TDWilliamson THREAD-O-RING fitting, TDW recommends using a tapping valve with a full-port I.D. of at least 2 1/16".						
WARNING Hot tapping activities have the potential to release petroleum liquids, explosive vapors, and Hydrogen Sulfide (H_2S) vapors into the work area. Failure to monitor and control these hazards could lead to fire, explosion, or extreme health hazards. H_2S can be **harmful or fatal** if inhaled, the action level for H_2S is 10 PPM. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
4.1	**NO**	**MONITOR** the atmosphere **CONTINUOUSLY - BEFORE** AND **DURING** all maintenance and welding activities as required by HES guidelines.	P, S	N/A	SAT / UNSAT	
Standard: Atmosphere MONITORED as required by HES guidelines.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.1.1	YES	**FOLLOW** HES monitoring requirements and exposure guidelines for levels of: • Oxygen • Hydrocarbons • H_2S - Hydrogen Sulfide (crude systems)	P, S	N/A	SAT / UNSAT	
Standard: HES monitoring requirements FOLLOWED.						
4.2 & 4.2.1	YES	**MOUNT** TDW Completion Plug on the tapping tool, by **PERFORMING** the following: **KEEP** body tube stationary **AND** **TURN** feed tube clockwise **TO** **EXTEND** boring bar.	P, S	N/A	SAT / UNSAT	
Standard: Boring bar EXTENDED.						
4.2.2	YES	**WHEN** retainer spring is accessible, **REMOVE** retainer spring.	P, S	N/A	SAT / UNSAT	
Standard: Retainer spring REMOVED.						
4.2.3	YES	**REMOVE** drill bit or other fixture from boring bar end, **INSTALL** ¾" square drive adapter (TDW Plug Holder) in end of boring bar, **AND** **REINSTALL** retainer spring.	P, S	N/A	SAT / UNSAT	
Standard: Bit REMOVED; ¾" square drive adapter and retainer spring INSTALLED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.2.3.1	NO	**ENSURE** that retainer spring is fully seated in groove on boring bar.	P, S	N/A	SAT / UNSAT	
Standard: Fit of retainer spring ENSURED.						
4.2.3.2	YES	**APPLY** several wraps of electrical tape around retainer spring **TO** **ENSURE** that retainer spring stays in position (if applicable).	P, S	N/A	SAT / UNSAT	
Standard: Tape APPLIED around retainer spring (if applicable).						
4.2.4	YES	**PUSH** Plug onto ¾" square drive adapter **UNTIL** adapter retainer balls **SEAT** into groove in Plug square drive recess.	P, S	N/A	SAT / UNSAT	
Standard: Plug PUSHED onto adapter; retainer balls SEATED in groove.						
4.2.4.1	NO	**ENSURE** about ¼" space between top of Plug and shoulder on ¾" square drive adapter, **ALLOWING** Plug to float during installation.	P, S	N/A	SAT / UNSAT	
Standard: Space above Plug ENSURED; Plug float ALLOWED.						

WARNING

Failure to replace a damaged O-ring can result in a leak, personal injury, or abandonment of the line tap fitting. Used O-rings, which over a period of time can swell or degrade because of contact with product or crude in the pipeline, should always be replaced. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.2.4.2	NO	**VERIFY** Plug O-ring is new and not damaged.	P, S	N/A	SAT / UNSAT	
Standard: O-ring condition VERIFIED.						
NOTE: Step 4.2.4.2.1 is performed only if O-ring is used or damaged.						
4.2.4.2.1	YES	**REPLACE** O-ring if used or damaged.	P, S	N/A	SAT / UNSAT	
Standard: O-ring REPLACED.						
4.2.4.3	YES	**GREASE** O-ring and Plug threads.	P, S	N/A	SAT / UNSAT	
Standard: O-ring and Plug GREASED.						
4.2.5	YES	**KEEP** body tube stationary **AND** **TURN** feed tube counter-clockwise **TO** **RETRACT** boring bar **UNTIL** feed tube is set at zero mark on body tube.	P, S	N/A	SAT / UNSAT	
Standard: Boring bar RETRACTED to zero mark.						
4.3	YES	**INSTALL** upper pipe nipple (TDW Valve Adapter) on tapping tool, **USING** sealant and/or Teflon tape on threads.	P, S	N/A	SAT / UNSAT	
Standard: Upper pipe nipple INSTALLED.						
4.4	NO	**DETERMINE** "Travel Distance" needed to seat Completion Plug.	P, S	N/A	SAT / UNSAT	
Standard: "Travel Distance" DETERMINED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.4.1	YES	**MEASURE** distance from bottom end of upper pipe nipple to bottom of Plug.	P, S	N/A	SAT / UNSAT	
Standard: Distance MEASURED.						
4.4.1.1	NO	**RECORD** this measurement as dimension "G".	P, S	N/A	SAT / UNSAT	
Standard: Dimension RECORDED.						
4.4.1.2	YES	**TRANSFER** dimension "G" to outside of upper nipple by **MEASURING** from bottom end of upper pipe nipple **AND** **MARKING** dimension "G" on outside of nipple.	P, S	N/A	SAT / UNSAT	
Standard: Distance MEASURED; dimension MARKED on nipple.						
4.4.2	YES	**INSTALL** tapping tool with Completion Plug and upper pipe nipple on tapping valve, **USING** sealant and/or Teflon tape on threads.	P, S	N/A	SAT / UNSAT	
Standard: Tool with Plug, and nipple INSTALLED on valve.						
4.4.3	YES	**MEASURE** from the top face of the valve to "G" mark on adapter.	P, S	N/A	SAT / UNSAT	
Standard: Distance MEASURED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.4.3.1	NO	**RECORD** this measurement as "G minus thread makeup".	P, S	N/A	SAT / UNSAT	
Standard: Measurement RECORDED.						
NOTE: If the Completion Plug is being installed in a TDW THREAD-O-RING Nipple and dimension "J" is NOT available from earlier measurements, use Steps 4.4.4 through 4.4.4.2 to calculate this dimension. The Candidate should be able to calculate dimension "J" if it is not available. If dimension "J" is available, skip to Step 4.4.5.						
4.4.4 & 4.4.4.1	YES	**IF** dimension "J" is NOT available, **CALCULATE** dimension "J". **MEASURE** dimension "B", top face of tapping valve to top of pipeline.	P, S	N/A	SAT / UNSAT	
Standard: Dimension "B" MEASURED.						
4.4.4.2	NO	**CALCULATE** "J"="B"— 4".	P, S	N/A	SAT / UNSAT	
Standard: Dimension "J" CALCULATED.						
4.4.5	NO	**ADD** "G minus thread makeup" + "J" (*from step 2.6.1 or 4.4.4.2*) + 1-7/8".	P, S	N/A	SAT / UNSAT	
Standard: Dimensions ADDED.						
4.4.6	YES	**RECORD** the total of the three dimensions as "Travel Distance" **AND MARK** this dimension on scale on body tube.	P, S	N/A	SAT / UNSAT	
Standard: Total RECORDED AND MARKED on body tube.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.5	YES	**SCREW** bleeder valve onto tapping tool, **THEN** **OPEN** bleeder valve.	P, S	N/A	SAT / UNSAT	
Standard: Bleeder valve SCREWED onto tool AND OPENED.						
CAUTION Draining of liquid from a pipeline system shall be performed per HES Standards. All containers shall be metal with flame resisters and grounding / bonding attachments. All containers shall be immediately emptied into a contained system or covered to prevent vapor release. The evaluator should be prepared to stop the procedure in the event that actions by the qualification candidate could lead to an unsafe condition.						
4.6	YES	**CRACK OPEN** tapping valve **TO** **ALLOW** product to fill and purge air from tapping tool.	P, S	N/A	SAT / UNSAT	
Standard: Valve CRACKED OPEN TO fill tool and purge air.						
4.6.1	YES	**DIRECT** flow of product into an approved container with proper grounding / bonding attachments.	P, S	N/A	SAT / UNSAT	
Standard: Product flow DIRECTED into approved container.						
4.7	YES	**WHEN** tapping tool is filled with product and air is purged from tool, **CLOSE** bleeder valve **AND** **OPEN** tapping valve completely.	P, S	N/A	SAT / UNSAT	
Standard: Bleeder valve CLOSED AND tapping valve OPENED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.8	NO	**CHECK** all tapping equipment and connections for leaks.	P, S	N/A	SAT / UNSAT	
Standard: Equipment and connections CHECKED for leaks.						
NOTE: Step 4.8.1 is performed only if a leak is found on tapping equipment or connections.						
4.8.1	YES	**IF** leak is found, **CORRECT** problem before continuing Procedure.	P, S	N/A	SAT / UNSAT	
Standard: Problem CORRECTED.						
CAUTION DO **NOT** use air motor attachment to install Completion Plug; use ratchet to install Plug. The evaluator should be prepared to stop the procedure in the event that actions by the qualification candidate could lead to an unsafe condition.						
4.9	YES	**USE** ratchet on ¾" hex drive **TO HOLD** boring bar stationary.	P, S	N/A	SAT / UNSAT	
Standard: Ratchet USED TO HOLD boring bar stationary.						
4.10	YES	**TURN** feed tube clockwise **UNTIL** feed tube is about 2" from "Travel Distance" mark on body tube.	P, S	N/A	SAT / UNSAT	
Standard: Feed tube TURNED clockwise.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.11	YES	**LOCK** boring bar ¾" hex drive to feed tube, **ALLOWING** the boring bar to turn and extend simultaneously, by one of following methods (depending on model or revisions to tool): • Tightening socket head cap screw • Tightening clutch nut • Install locking cap	P, S	N/A	SAT / UNSAT	
Standard: Boring bar LOCKED to feed tube.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
WARNING If tool becomes hard to turn or stops **before** "Travel Distance" mark on body tube is reached, the Completion Plug is **NOT** fully seated. **DO NOT** remove the tapping tool or tapping valve. Removal of tapping tool or tapping valve may allow the plug to dislodge under pressure and can result in an **uncontrollable release of product, injury, or death.** The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
CAUTION If tool becomes hard to turn or stops **before** "Travel Distance" mark on body tube is reached, **DO NOT FORCE** ratchet handle as damage may occur to T-O-R Nipple or Plug threads. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
CAUTION **DO NOT** overtighten Completion Plug; damage may occur to T-O-R Nipple or Plug threads or to the O-ring. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
4.12	**YES**	**TURN** ratchet and boring bar clockwise **UNTIL** "Travel Distance" mark on body tube is reached **AND** **FIRMLY SEAT** Completion Plug into T-O-R Nipple threads.	P, S	N/A	SAT / UNSAT	
Standard: Ratchet TURNED; Plug SEATED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
NOTE: Step 4.12.1 is performed only if tool becomes hard to turn or stops **before** "Travel Distance" mark on body tube is reached.						
4.12.1	**YES**	**IF** tool becomes hard to turn or stops **before** "Travel Distance" mark on body tube is reached, **STOP TURNING** ratchet.	P, S	N/A	SAT / UNSAT	
Standard: TURNING of ratchet STOPPED.						
4.12.1.1	**NO**	**RECHECK** "Travel Distance" measurements and calculations.	P, S	N/A	SAT / UNSAT	
Standard: "Travel Distance" CHECKED.						
NOTE: Step 4.12.1.2 is performed only if measurements and calculations are correct.						
4.12.1.2	**NO**	**IF** measurements and calculations are correct, threads may be improperly engaged or damaged, **GO TO** Section 5.0 for Plug removal Procedure.	P, S	N/A	SAT / UNSAT	
Standard: Procedure STOPPED AND Plug Removal Procedure FOLLOWED.						
4.12.2	**YES**	**TURN** ratchet and boring bar counter-clockwise ¼ turn **TO** **SET** Plug in final position.	P, S	N/A	SAT / UNSAT	
Standard: Plug SET in final position.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.13	YES	**WHEN** Completion Plug is seated in T-O-R Nipple, **OPEN** bleeder valve **TO RELIEVE** pressure.	P, S	N/A	SAT / UNSAT	
Standard: Bleeder valve OPENED; pressure RELIEVED.						
4.13.1	YES	**DIRECT** flow of product into an approved container with proper grounding / bonding attachments.	P, S	N/A	SAT / UNSAT	
Standard: Product flow DIRECTED into approved container.						
4.13.2	YES	**OPEN** bleeder valve for remainder of Procedure.	P, S	N/A	SAT / UNSAT	
Standard: Bleeder valve OPENED.						
4.14	NO	**CHECK** for Plug leakage through the open bleeder valve for several minutes **BEFORE CONTINUING** Procedure.	P, S	N/A	SAT / UNSAT	
Standard: Valve CHECKED for leakage.						
NOTE: Step 4.14.1 is performed only if Plug leakage occurs through the open bleeder valve.						
4.14.1	NO	**IF** leakage occurs, Plug is NOT seated or O-ring is damaged; **GO TO** Section 5.0 for Plug removal Procedure.	P, S	N/A	SAT / UNSAT	
Standard: Procedure STOPPED **AND** Plug Removal Procedure FOLLOWED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.15	YES	**UNLOCK** boring bar from feed tube, **ALLOWING** boring bar to retract **without** turning, by one of following methods (depending on model or revisions to tool): • Loosening socket head cap screw • Loosening clutch nut • Removing locking cap	P, S	N/A	SAT / UNSAT	
Standard: Boring bar UNLOCKED form feed tube.						
WARNING The boring bar **MUST NOT TURN** while it is being retracted from the Completion Plug after installation of the Plug. Hold the boring bar stationary with the ratchet on the ¾" hex drive while the feed tube is turned counter-clockwise to retract the boring bar from the Plug. If the boring bar is allowed to turn counter-clockwise with the feed tube, the Plug will unseat from the Nipple threads. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
4.16	YES	**WHILE HOLDING** the boring bar stationary with the ratchet on the ¾" hex drive, **TURN** the feed tube counter-clockwise **TO** **RETRACT** the boring bar from the Plug and tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Boring bar RETRACTED from Plug and tapping valve.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
4.17	YES	**WHEN** the feed tube has reached the zero mark on the body tube scale, **CLOSE** the tapping valve **AND REMOVE** the tapping tool.	P, S	N/A	SAT / UNSAT	
Standard: Tapping valve CLOSED AND tapping tool REMOVED.						
4.17.1	YES	**DIRECT** product into an approved container with proper grounding / bonding attachments.	P, S	N/A	SAT / UNSAT	
Standard: Product flow DIRECTED into approved container.						
WARNING During removal of the upper nipple and tapping valve and until visual inspection has confirmed that the Plug is fully seated in the T-O-R Nipple, individuals should **NOT** place their head, arms or any other portion of the body above the Plug. If the Plug is NOT fully seated, it could dislodge under pressure and possibly result in **injury or death.**						
4.18	YES	**REMOVE** the upper nipple and tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Upper nipple and tapping valve REMOVED.						
4.19	YES	**AFTER** tapping valve is removed, **VISUALLY INSPECT** the Plug Installation.	P, S	N/A	SAT / UNSAT	
Standard: Plug installation VISUALLY INSPECTED.						
4.19.1	NO	**VERIFY** that the Plug is fully seated in the T-O-R Nipple.	P, S	N/A	SAT / UNSAT	
Standard: Plug position VERIFIED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
WARNING If Completion Plug is NOT fully seated in the T-O-R Nipple, **DO NOT ATTEMPT** to tighten Plug using hand tools. The Plug could dislodge under pressure and possibly result in an **uncontrollable release of product, injury, or death.**						
NOTE: Step 4.19.1.1 is performed only if Plug is NOT fully seated in the T-O-R Nipple.						
4.19.1.1	**YES**	**IF** Plug is NOT fully seated in the T-O-R Nipple, **IMMEDIATELY REINSTALL AND CLOSE** the tapping valve **THEN GO TO** Section 5.0 for Plug removal Procedure.	P, S	N/A	SAT / UNSAT	
Standard: Tapping valve IMMEDIATELY REINSTALLED AND CLOSED; Section 5.0 PERFORMED.						
4.20	**YES**	**COAT** the top of Plug with a light layer of grease, **BUT** **DO NOT GREASE** the external pipe threads.	P, S	N/A	SAT / UNSAT	
Standard: Top of Plug GREASED.						
4.21	**YES**	**INSTALL** the 2" NPT pipe cap on the T-O-R Nipple, **USING** sealant and/or Teflon tape on threads.	P, S	N/A	SAT / UNSAT	
Standard: Cap INSTALLED on T-O-R Nipple.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
NOTE: Step 4.21.1 is performed only if site will be unattended.						
4.21.1	YES	**IF** site will be unattended, **INSTALL** locking device for security.	P, S	N/A	SAT / UNSAT	
Standard: Locking device INSTALLED.						
4.22	NO	**NOTIFY** Supervisor and/or Control Center that the Completion Plug Installation has been completed.	P, S	N/A	SAT / UNSAT	
Standard: Supervisor and/or Control Center NOTIFIED.						
NOTE: If the TDWilliamson THREAD-O-RING fitting has been welded to a buried section of the pipeline, it is SPLP's practice to install a High Hat and High Hat Marker, before backfilling, to prevent potential physical damage to the TOR. The High Hat and High Hat Marker **must** be installed in accordance with the SPLP Welding Manual and Procedures and SPLP Technical Procedure PR-11-0041, High Hat Procedure.						
NOTE: Qualification Testing for **SUBTASK #4.0: Installation of Completion Plug** is complete.						

SUBTASK #5.0: Removal of Completion Plug

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
NOTE1: The TDWilliamson THREAD-O-RING fitting is made up of a Nipple, Completion Plug, and 2"NPT pipe cap. SPLP uses the THREAD-O-RING Nipple for most line taps and it can be used for Pig-Sig fixtures or for line maintenance tasks (e.g. vents, Nitrogen injection, line safeties, etc.) When not in use, the Nipple is plugged internally with the Completion Plug which allows safe removal of the tapping tool and tapping valve. Installation of the 2" NPT pipe cap protects the external threads and allows for a second mechanical seal. Complete Installation / Removal instructions with photos and diagrams are contained in the TDWilliamson Instruction Manual. **NOTE 2:** If the TDWilliamson THREAD-O-RING fitting has been welded to a buried section of the pipeline and is protected from physical damage by a High Hat, the High Hat **must** be removed in accordance with the SPLP Technical Procedure PR-11-0041, High Hat Procedure.						
WARNING Product or oil leakage past the Completion Plug O-ring can cause a build-up of pressure between the Plug and the 2" pipe cap. The 2" pipe cap must be slowly loosened to allow trapped pressure to bleed off. If pressure does not quickly dissipate and flow stop, **DO NOT REMOVE** the cap. Assume that the O-ring is damaged and retighten the 2" pipe cap.						
WARNING Hot tapping activities have the potential to release petroleum liquids, explosive vapors, and Hydrogen Sulfide (H_2S) vapors into the work area. Failure to monitor and control these hazards could lead to fire, explosion, or extreme health hazards. H_2S can be **harmful or fatal** if inhaled, the action level for H_2S is 10 PPM. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
5.1	**NO**	**MONITOR** the atmosphere **CONTINUOUSLY - BEFORE** AND **DURING** all maintenance and welding activities as required by HES guidelines.	P, S	N/A	SAT / UNSAT	
Standard: Atmosphere MONITORED as required by HES guidelines.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
5.1.1	YES	**FOLLOW** HES monitoring requirements and exposure guidelines for levels of: • Oxygen • Hydrocarbons • H_2S - Hydrogen Sulfide (crude systems)	P, S	N/A	SAT / UNSAT	
Standard: HES monitoring requirements FOLLOWED.						
WARNING Product or oil leakage past the Completion Plug O-ring can cause a build-up of pressure between the Plug and the 2" pipe cap. The 2" pipe cap must be slowly loosened to allow trapped pressure to bleed off. If pressure does not dissipate and flow stop, **DO NOT REMOVE** the cap. Assume that the O-ring is damaged and retighten the 2" pipe cap. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
5.2	YES	**SLOWLY LOOSEN** the 2" pipe cap on TDWilliamson THREAD-O-RING fitting **WHILE CHECKING** for leakage.	P, S	N/A	SAT / UNSAT	
Standard: Pipe cap LOOSENED; leakage CHECKED.						
NOTE: Step 5.2.1 is performed only if leakage continues.						
5.2.1	YES	**IF** leakage continues, **RETIGHTEN** the pipe cap **AND IMMEDIATELY NOTIFY** Supervisor.	P, S	N/A	SAT / UNSAT	
Standard: Pipe cap RETIGHTENED AND Supervisor NOTIFIED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
NOTE: Step 5.2.2 is performed only if leakage dissipates.						
5.2.2	YES	**IF** leakage dissipates, **SLOWLY REMOVE** the pipe cap.	P, S	N/A	SAT / UNSAT	
Standard: Pipe cap SLOWLY REMOVED.						
NOTE 1: Tapping valves are to be leak tested according to SPLP procedures, **before** they are taken to jobsite. **NOTE 2**: If using a TDWilliamson THREAD-O-RING fitting, TDW recommends using a tapping valve with a full-port I.D. of at least 2 1/16".						
5.3	YES	**INSTALL AND OPEN** tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Tapping valve INSTALLED AND OPENED.						
5.4 & 5.4.1	YES	**PREPARE** the tapping tool. **KEEP** body tube stationary **AND** **TURN** feed tube clockwise **TO** **EXTEND** boring bar.	P, S	N/A	SAT / UNSAT	
Standard: Boring bar EXTENDED.						
5.4.2	YES	**WHEN** retainer spring is accessible, **REMOVE** retainer spring.	P, S	N/A	SAT / UNSAT	
Standard: Retainer spring REMOVED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
5.4.3	YES	**REMOVE** drill bit or other fixture from boring bar end, **INSTALL** ¾" square drive adapter (TDW Plug Holder) in end of boring bar, **AND** **REINSTALL** retainer spring.	P, S	N/A	SAT / UNSAT	
Standard: Bit REMOVED; square drive adapter and retainer spring INSTALLED.						
5.4.3.1	NO	**ENSURE** that retainer spring is fully seated in groove on boring bar.	P, S	N/A	SAT / UNSAT	
Standard: Fit of retainer spring ENSURED.						
5.4.3.2	YES	**APPLY** several wraps of electrical tape around retainer spring **TO** **ENSURE** that retainer spring stays in position (if applicable).	P, S	N/A	SAT / UNSAT	
Standard: Tape APPLIED around retainer spring (if applicable).						
5.4.4	YES	**KEEP** body tube stationary **AND** **TURN** feed tube counter-clockwise **TO** **RETRACT** boring bar **UNTIL** feed tube is set at zero mark on body tube.	P, S	N/A	SAT / UNSAT	
Standard: Boring bar RETRACTED.						
5.5	YES	**INSTALL** upper pipe nipple (TDW Valve Adapter) on tapping tool, **USING** sealant and/or Teflon tape on threads.	P, S	N/A	SAT / UNSAT	
Standard: Upper nipple INSTALLED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
5.6	NO	**DETERMINE** "Travel Distance" needed to insert ¾" square drive into Completion Plug.	P, S	N/A	SAT / UNSAT	
Standard: "Travel Distance" DETERMINED.						
5.6.1	YES	**MEASURE** distance from bottom end of upper pipe nipple to end of ¾" square drive.	P, S	N/A	SAT / UNSAT	
Standard: Distance MEASURED.						
5.6.1.1	NO	**RECORD** this measurement as dimension "M".	P, S	N/A	SAT / UNSAT	
Standard: Dimension RECORDED.						
5.6.1.2	YES	**TRANSFER** dimension "M" to outside of upper nipple by **MEASURING** from bottom end of upper pipe nipple **AND** **MARKING** dimension "M" on outside of upper nipple.	P, S	N/A	SAT / UNSAT	
Standard: Distance MEASURED.						
5.6.2	YES	**MEASURE** the distance from the top face of tapping valve through the valve to the bottom of the square drive recess in Plug.	P, S	N/A	SAT / UNSAT	
Standard: Distance MEASURED.						
5.6.2.1	NO	**RECORD** as dimension "N".	P, S	N/A	SAT / UNSAT	
Standard: Dimension RECORDED.						
5.6.3	YES	**INSTALL** tapping tool and upper pipe				

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
		nipple on tapping valve, **USING** sealant and/or Teflon tape on threads.	P, S	N/A	SAT / UNSAT	
Standard: Tapping tool and upper nipple INSTALLED.						
5.6.4	**YES**	**MEASURE** from the top face of the valve to "M" mark on upper nipple.	P, S	N/A	SAT / UNSAT	
Standard: Distance MEASURED.						
5.6.4.1	**NO**	**RECORD** this measurement as "M minus thread makeup".	P, S	N/A	SAT / UNSAT	
Standard: Dimension RECORDED.						
5.6.5	**NO**	**ADD** "M minus thread makeup" + "N".	P, S	N/A	SAT / UNSAT	
Standard: Dimensions ADDED.						
5.6.6	**YES**	**RECORD** the total of the two dimensions as "Travel Distance" **AND MARK** this dimension on scale on body tube.	P, S	N/A	SAT / UNSAT	
Standard: Dimension RECORDED AND MARKED on body tube.						
5.7	**YES**	**FULLY OPEN** tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Tapping valve OPENED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
5.8	YES	**SCREW** bleeder valve onto tapping tool **THEN** **CRACK OPEN** bleeder valve.	P, S	N/A	SAT / UNSAT	
Standard: Bleeder valve SCREWED onto tapping tool THEN CRACKED OPENED.						
5.9	YES	**UNLOCK** boring bar from feed tube, **ALLOWING** boring bar to extend without turning, by one of the following methods (depending on model or revisions to tool): • Loosening socket head cap screw • Loosening clutch nut • Removing locking cap	P, S	N/A	SAT / UNSAT	
Standard: Boring bar UNLOCKED from feed tube.						
5.10	YES	**WHILE HOLDING** the boring bar stationary with the ratchet on the ¾" hex drive, **TURN** the feed tube clockwise **TO EXTEND** the ¾" square drive through tapping valve into the recess in the Plug.	P, S	N/A	SAT / UNSAT	
Standard: Boring bar EXTENDED.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
NOTE: Steps 5.10.1 through 5.10.1.3 are performed only if the feed tube is 1" short of "Travel Distance" mark on body tube.						
5.10.1 & 5.10.1.1	**YES**	**IF** the feed tube is 1" short of "Travel Distance" mark on body tube, **REALIGN** ¾" square drive. **SLOWLY TURN** boring bar clockwise with ratchet **WHILE TURNING** feed tube clockwise with light force **UNTIL** square drive aligns with recess in Plug.	P, S	N/A	SAT / UNSAT	
Standard: Square drive REALIGNED.						
5.10.1.2	**YES**	**HOLD** boring bar stationary with ratchet **AND** **TURN** feed tube clockwise **UNTIL** "Travel Distance" mark on body tube is reached.	P, S	N/A	SAT / UNSAT	
Standard: Feed tube TURNED UNTIL "Travel Distance" mark is REACHED.						
5.10.1.3	**YES**	**HOLD** boring bar stationary with ratchet **AND** **TURN** feed tube counter-clockwise one half-turn **TO** **SEAT** retainer balls on ¾"square drive into groove in Plug square drive recess.	P, S	N/A	SAT / UNSAT	
Standard: Retainer balls SEATED in groove.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
5.11	YES	**LOCK** boring bar ¾" hex drive to feed tube, **ALLOWING** the boring bar to turn and retract simultaneously, by one of the following methods (depending on model or revisions to tool): • Tightening socket head cap screw • Tightening clutch nut • Install locking cap	P, S	N/A	SAT / UNSAT	
Standard: Boring bar LOCKED to feed tube.						
CAUTION Draining of liquid from a pipeline system shall be performed per HES Standards. All containers shall be metal with flame resisters and grounding / bonding attachments. All containers shall be immediately emptied into a contained system or covered to prevent vapor release. The evaluator should be prepared to stop the procedure in the event that actions by the Candidate could lead to an unsafe condition.						
5.12	YES	**SLOWLY TURN** boring bar and feed tube counter-clockwise with ratchet **TO LOOSEN** the Plug **UNTIL** product / oil begins to fill tapping tool and purge air.	P, S	N/A	SAT / UNSAT	
Standard: Plug LOOSENED UNTIL product fills and purges air from tool.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
5.13	YES	**STOP TURNING UNTIL** tool is purged of air, **THEN** **CLOSE** bleeder valve.	P, S	N/A	SAT / UNSAT	
Standard: Turning STOPPED AND bleeder valve CLOSED.						
5.14	YES	**RESUME TURNING** boring bar and feed tube counter-clockwise with ratchet **TO** **REMOVE** Plug, **UNTIL** feed tube is at zero mark on body tube.	P, S	N/A	SAT / UNSAT	
Standard: Tool TURNED UNTIL tube is at zero mark TO REMOVE Plug.						
5.15	YES	**CLOSE** tapping valve, **THEN** **OPEN** bleeder valve **TO** **RELIEVE** pressure.	P, S	N/A	SAT / UNSAT	
Standard: Tapping valve CLOSED, THEN bleeder valve OPENED TO RELIEVE pressure.						
5.15.1	YES	**DIRECT** flow of product into an approved container with proper grounding / bonding attachments.	P, S	N/A	SAT / UNSAT	
Standard: Product flow DIRECTED into approved container.						
5.16	NO	**CHECK** for tapping valve leakage through the open bleeder valve for several minutes **BEFORE** **CONTINUING** Procedure.	P, S	N/A	SAT / UNSAT	
Standard: Tapping valve CHECKED for leakage.						

Step	Critical?	Element	Action	Weight	SAT / UNSAT	COMMENTS (Required for UNSAT)
5.17	YES	**REMOVE** the tapping tool and upper nipple **WHILE HOLDING-BACK** on tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Tapping tool and upper nipple REMOVED.						
5.17.1	YES	**CATCH** product in an approved container with proper grounding / bonding attachments.	P, S	N/A	SAT / UNSAT	
Standard: Product CAUGHT in approved container.						
5.18	YES	**INSTALL** pipe plug into tapping valve.	P, S	N/A	SAT / UNSAT	
Standard: Pipe plug INSTALLED in valve.						
NOTE: Step 5.18.1 is performed only if site will be unattended.						
5.18.1	YES	**IF** site will be unattended, **INSTALL** locking device for security.	P, S	N/A	SAT / UNSAT	
Standard: Locking device INSTALLED.						
5.19	NO	**NOTIFY** Supervisor and/or Control Center that the Completion Plug Removal has been completed.	P, S	N/A	SAT / UNSAT	
Standard: Supervisor and/or Control Center NOTIFIED that Completion Plug Removal is complete.						
NOTE: Qualification Testing for **SUBTASK #5.0: Removal of Completion Plug** is complete.						

Job Performance Measure

Task: Complete Hot Tap / Install or Remove Completion Plug

Method of Accomplishment: Perform or simulate

Associated Task ID: JPM-OQP-482-001A

Approved for Independent Performance? Yes

Candidate Name: _____ **Employee ID:** _____

Purpose of JPM Performance: (*Circle One*) **Training** **OQ Evaluation**

Type of Evaluation: (*Circle One*) **Initial** **Requalification** **Post Accident** **Reasonable Cause**

Purpose of JPM	Knowledge Evaluation	JPM Performance	Overall Performance
Training	SAT / UNSAT	SAT / UNSAT	SAT / UNSAT
OQ Evaluation	SAT / UNSAT	SAT / UNSAT	SAT / UNSAT

Successful completion of this JPM requires a demonstration of the candidate's knowledge, skill and ability to perform the task.

Satisfactory Performance Criteria

Knowledge Evaluation – Candidate demonstrated sufficient knowledge of task and AOCs to allow skill performance of JPM.

JPM Performance - Satisfactory performance of ALL Step Items defined as "Critical" for successful task completion AND 80% of Non-Critical Steps.

JPM complete: _____ _____
Trainer / Evaluator Name Date

Comments: _____

_____

_____

Concurrence: _____ _____
Candidate Signature Date

Qualification Report as of 12.07.11 for Task 482 - Hot Tapping

Employee Name	Location	Evaluation Method	Status	TD Williamson Completed	TD Williamson Expires
Ammons, Frederick	Honeybrook	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Angle, Leslie	Akron	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Billman, Michael	Honeybrook	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Birkett, Michael	Inkster	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Bishop, Richard	Greensburg	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Bratner, James	Ft Mifflin	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Brown, Erik	Drumright	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Campbell, William	Greensburg	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Cartwright, Burtis	Livingston MLP	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Dalto, Joseph	Inkster	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Dunn, Charles	Inkster	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Eckert, Mark	Montello Oper	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012
Edmonds, Scott	Corsicana	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/18/2009	6/18/2012
Flournoy, Kevin	Breckenridge	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/18/2009	6/18/2012
Gifford, Stephen	Ft Mifflin	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Gray, Jay	Aldine	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Hunter, Robert	Trenton	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Johnston, Vernon	Big Flats	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012
King, Timothy	Seminole	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Kistler, David	Corsicana	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/18/2009	6/18/2012
Koerner, Billy	Corsicana	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	8/27/2009	8/27/2012
Kubasik, John	Ft Mifflin	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Loomis, Robert	Montello Oper	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012
Lorah, Brian	Montello Oper	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012
Mathis, Herbert	Big Flats	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012
Moore, James	Keller Station	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/18/2009	6/18/2012
Newell, Randall	Maysville	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Nickolas, Christopher	Trenton	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Pace, Douglas	Longview	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Page, Ronald	Nederland	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Preston, Ryan	Big Flats	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012
Rabuck, Ralph	Montello Oper	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012

Raley, Joe	Herbert	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Rauwerda, David	Nederland	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Reim, Dan	Montello Oper	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Reimers, Jonathan	Montello Oper	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	7/21/2009	7/21/2012
Riddle, Eddie	Toledo	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Russell, Fred	Keller Station	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	8/27/2009	8/27/2012
Russell, Guy	Longview	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/18/2009	6/18/2012
Senchishin, Nicholas	Fort Mifflin	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/26/2009	3/26/2012
Sims, Jacob	Longview	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Smith, Raymond	Inkster	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012
Terry, Robert	Snyder	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/18/2009	6/18/2012
Thomas, Charley	Merten	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Vinson, Cory	Keller Station	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/18/2009	6/18/2012
Watters, Jeffery	Seminole	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Williams, Bruce	Haynesville	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Williamson, Casey	Haynesville	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	5/27/2009	5/27/2012
Williamson, Daryl	Hebron	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	6/23/2009	6/23/2012
Wood, Robert	Inkster	TD Williamson - T50 - Written Test & Observation & AOCFG	Qualified	3/19/2009	3/19/2012

PURPOSE / OBJECTIVE

To ensure, that SUNOCO PIPELINE L. P. (SPLP) uses only individuals who are qualified, through evaluation, and through training, as appropriate, to perform "Covered Tasks" (as defined in 49 CFR 195.501 (b)) on DOT regulated pipeline facilities as well as recognize and react to abnormal operating conditions. This will reduce the probability and consequences of pipeline accidents caused by human error.

SUBJECT COMPONENTS

1. All parts of a pipeline facility for which covered tasks have been identified. A list of SPLP's covered tasks can be found in the Sunoco Pipeline L..P. & Affiliates Operator Qualification Plan that is located in the Document Repository of the SPLP Intranet under 'DOT', 'Operator Qualification', and titled 'Appendix A, Covered Task List'.

2. This plan applies to all individuals who perform Covered Tasks, including but not limited to SPLP employees, contractors of SPLP, sub-contractors of a contractor of SPLP, or any other entity performing Covered Tasks on SPLP DOT regulated facilities.

DOCUMENTATION

As required in the Sunoco Pipeline L.P. & Affiliates Operator Qualification Plan. This plan is available for review by OPS or state pipeline agencies, who will be notified of significant modifications to the OQ program.

SPLP REQUIREMENTS/PROCESS DESCRIPTION

1. SPLP has developed a plan to comply with all regulations found in 49 CFR Part 195, Subpart G, Sections 195.501 through 195.509. The plan can be found on the SPLP Intranet under the 'DOT' and 'Operator Qualification' folders and is titled Sunoco Pipeline L.P. & Affiliates Operator Qualification Plan. This plan describes the Operator Qualification Program for SPLP and all entities performing Covered Tasks on SPLP DOT regulated facilities will be qualified under this Plan.

2. Upon notification by the SPLP OQ Program Administrator, the SPLP Area DOT Compliance Supervisor shall notify the OPS Information Resource Manager by e-mail at InformationResourcesManager@phmsa.dot.gov, or in writing to the U.S. Department of Transportation, Pipeline and Hazardous Materials Administration, Office of Pipeline Safety, Information Resources Manager, 1200 New Jersey Avenue, SE., East Building, 2nd Floor (PHP-10), Room E22-321, Washington DC 20590. Notification of changes will also be made to the appropriate state agency(s).

3. The notification to PHMSA should include:

   a. OPID(s), operator name(s), HQ address, name of the individual submitting notification, Data/e-mail/phone number, commodity (gas/liquid/both), PHMSA Region(s) where pipeline(s) operate, and names of respective facilities or pipeline systems where changes apply.
   b. Complete Plan accompanied by revision/change log and effective date of changes(s). The plan should be notated such that changed areas of the plan can be readily identified. Employee-specific information (i.e., social security numbers) and testing material are not needed.

4. The OQ Written Program is comprised of the following sections:
    - OQ-000 OQ Program Table of Contents
    - OQ-001 Operator Qualification Written Plan
    - OQ-002 OQ Program Implementation Plan
    - OQ-003 Contractor Qualification
    - OQ-004 Abnormal Operating Conditions
    - OQ-Appendix A, Covered Task List
    - OQ-Appendix B, Detailed Covered Task List
    - OQ-Appendix C, Qualification Frequency & Direct Observation Limits
    - OQ-Appendix D, Task-to-Qualification Requirements
    - OQ-Appendix E, OQ Program Definitions
    - OQ-Appendix F, Covered Task Procedures (OQP)
    - OQ-Appendix G, Covered Task Job Performance Measures (JPM)
    - OQ-Appendix H, Contractor OQ Requirements
    - OQ-Appendix I, Covered Task-to-Job Title Assignment
    - OQ-Appendix J, Field Manager's Guide to Evaluation Process
    - OQ-Appendix K, Evaluator's Guide to Conducting Evaluations
    - OQ-Appendix L, OQ Program Forms
    - OQ-Appendix M, ISNetworld
    - OQ-Appendix N, Field Audit
    - OQ-Appendix O, Mergers & Acquisitions