7.2 Pressure Test of Waste Line Jacket via MLDB

7.2.1 Attachment Precautions and Limitations

1. Failure to perform this attachment within the required frequency or failure to meet the acceptance criteria of this surveillance could result in a violation of the Authorization Basis.

| NOTE: | Correct lube oil for DSA compliance can only be verified by use of compressors obtained from PECMC or any approved oil free compressor. |

2. **ENSURE** only oil free compressors are used when supplying air with portables, OR

   IF portable compressors using oil are used to supply air, THEN

   **ENSURE** the portable compressors used are from the PECMC organization with an SRO number or any approved oil free compressor.

7.2.2 Attachment Prerequisites

1. A Radiological Work Permit (RWP / SRWP) has been prepared and approved.

2. RCO is to be present and constantly monitoring during all line breaks.

3. Work shall not proceed beyond a QA Hold/Witness Point until the inspection is performed, acceptance of the item/activity is authenticated and the inspector releases the Hold/Witness Point.

4. Whip checks must be utilized at all flush water hose connections.

5. Hearing protection requirements must be adhered to when operating portable air compressors.

6. A pre-job brief has been held with all personnel involved in the completion of this procedure to include each work groups responsibilities and the review of the applicable RWP / SRWP.

7.2.3 Manpower / Communication

- This attachment is performed by Tank Operator(s).
7.2.4 Required Measuring and Test Equipment (M&TE)

**M&TE Data** (Refer to Section 6.4, *Typical Pressure Test Equipment*)

Pressure gage 2 maximum indication to be 1.5 to 4 times testing pressure.

Gage 1 M&TE Number: ________________
Calibration Due Date: ________________
Gage 2 M&TE Number: ________________
Calibration Due Date: ________________

Electronic user log scanned (Circle One): Yes / No

**IF NO, THEN**

**DO NOT PROCEED**, until Electronic User Log is scanned.

Comments: __________________________________________

7.2.5 Additional Tools and Equipment

- Portable Air Compressor
- Portable Air Delivery System
- 3/8 to 1 inch air tubing or hose
- Contamination control supplies, as required by Shift Management
- Pipe dope or Teflon® tape
- Leak detection liquid (i.e., liquid soap or equivalent)
- Portable Air Sampler(s) (as required)
- Adequate supply of PC’s (protective clothing) and PPE (personal protective equipment)
- Helium cylinder(s) with regulator (only if determining leak site)
- MLDB 8 - inch flange, with Valve 8 stub-out and associated gasket.
- MLDB overflow plug as specified by W702976.
- Portable ventilation system (if required)
- Pipe wrench
- Adjustable wrench
- Yellow plastic or launderable tarps
- Brown craft paper
7.2.6 Preparations

1. **NOTIFY** the following individuals, **AND**

   **OBTAIN** approval for taking the associated MLDB (s) out of service:
   
   - Associated CRO Signature: __________________________
   - Appropriate Shift Management Signature: __________________________

2. **REQUEST** Shift Management **REVIEW** the following, **AND**

   **SIGN** below:
   
   I have reviewed this procedure against the Waste Line Jacket System to be tested and
   
   - There are no transfers in progress associated with this line segment.
   - There are no alarms activated associated with this line segment.
   - This line segment is **NOT** currently in a Transfer Path.

   __________________________ /  
   Signature  Print Name
   Date:_______________  Time:_______________

3. **IF** Helium is to be utilized for determining a leak site, **THEN**

   **NOTIFY** Camera Crew in advance of job performance.

4. **SCHEDULE** RCO coverage for the job.

5. **NOTIFY** QA in advance of the test to be performed to ensure QA inspector is available to be present.

6. **IF** required by Operations / Engineering, **THEN**

   **PREPARE** lockout plan per Manual 8Q, Procedure 32.

7. **ENSURE** all work groups sign in on the applicable AHA prior to beginning work.

8. **IF** portable ventilation system is to be utilized for venting the Air Delivery System, **THEN**

   **ENSURE** HEPA filter has current performance test date.

   __________________________
   Expiration Date
7.2.6 Preparations, Cont.’d

9. **IF** utilizing Helium for determining leak site(s) on Line Number(s) 151, 152, 156 or 157, **THEN**
   
   **UTILIZE** Appendix 6.2, *Helium Sample Points For Line Numbers 151 And 152 Via MLDB 1 At FDB-3, OR, Appendix 6.3, Helium Sample Points For Line Numbers 156 And 157 Via MLDB 2 At FDB-3*, for points from which Helium samples will be obtained.

10. **ENSURE** Air Delivery System pressure relief valve is within the required PM frequency.

11. **ENSURE** M&TE data for Gage 1 AND Gage 2 has been recorded in Subsection 7.2.4.

   **CAUTION**

   Waste Line Jacket MUST be vented through a HEPA filtered ventilation system.

12. **ENSURE** the H&V System, through which the Waste Line Jacket will be vented, is OPERATING and all parameters are within associated roundsheet limits or portable ventilation system should be staged and operable.

13. **ENSURE** all necessary equipment and supplies are at the applicable job site, as specified by Shift Management. (Refer to Subsection 7.2.5)

14. **IF** required, **THEN**

   **PREPARE** the area around the MLDB with paper and plastic for contamination control.

15. **IF** using a portable compressor, **THEN**

   a. **ENSURE** portable compressor is from PECMC Organization with an SRO Number or any approved oil free compressor. [*A/C* Admin Control 5.8.2.45]

   b. **ENSURE** portable compressor is operable and the necessary hose fittings are available.

16. **ENSURE** pre-job brief has been conducted with all personnel involved in the completion of this procedure.

**Subsection Completed By:**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Print Name</th>
</tr>
</thead>
</table>

**Date:** ________________ **Time:** ________________
7.2.7 MLDB Preparation

1. **IF** liquid is detected in the MLDB during the performance of this section, **THEN**
   
   **STOP, AND**
   
   **CONTACT** Shift Management for further instructions, **AND**
   
   **HAVE** Shift Manager EVALUATE entry into applicable LCO(s).

2. **HAVE** RCO present and monitoring during the performance of this section.

3. **HAVE** RCO barricade the area around the MLDB, **AND**
   
   **POST** radiological conditions as required.

4. **IF** posted limits are exceeded at any time during the performance of this section, **THEN**
   
   **RETURN** area to a safe condition, as directed by RCO, **AND**
   
   **CONTACT** Shift Management for further instructions.

5. **COMPLETE** the appropriate Line Segment Information in Subsection 7.2.15, Step 1. (Refer to Section 6.6, Line Segments).

6. **NOTIFY** the applicable Control Room Operator, **AND**
   
   **INFORM** Control Room Operator that MLDB(s) will be OOS and to update status board.

7. **PREPARE** the MLDB(s) by performing the following:
   
   a. **CLOSE** pressure gage isolation valve per Appendix 6.5, Typical Pressure Test Systems.

   b. **PULL** conductivity probe per SW10.1-SOP-WTE-2, Section 7.3 MLDB (Modified Leak Detection Box) Conductivity Probe Removal.

   c. **IF** necessary, **THEN**
      
      1) **REMOVE** reducer/locking ring on the conductivity probe port.
      
      2) **HAVE** Maintenance **DISCONNECT** probe leads from the terminal strip.
      
      3) **HAVE** CRO record in CR log that leads have been lifted.
7.2.7 MLDB Preparation, Cont.'d

Step 7, Cont.'d

d. IF more than one conductivity probe is being disconnected, THEN

LABEL the conductivity probe with either the MLDB number / location or with the probe CLI number.

e. HAVE Maintenance remove the MLDB flange bolts.

f. REMOVE Conductivity Probe Junction Box, stanchion, and 8 inch flange from the MLDB, AND

PLACE in prepared area.

g. PLUG the MLDB overflow line utilizing approved plug. (Ref. W702976, Bldg. 241-F&H Waste Management Improvements Modified Leak Detection Box Process & Instruments (U).

h. IF inspection dictates, THEN

HAVE Maintenance replace gasket on flange.

i. PLACE 8 - inch flange, with Valve 8 air connection stub-out, onto the MLDB.

j. HAVE Maintenance install and tighten flange bolts.

8. ENSURE preparation is COMPLETE for the Line Number associated MLDB(s).

9. IF pressure testing waste line jacket via an MLDB using air, THEN

GO TO Subsection 7.2.8.

10. IF determining a leak site via an MLDB using Helium, THEN

GO TO Subsection 7.2.10.
7.2.8 Air Delivery System Assembly And Pressure Check Using Air

1. **ENSURE** completion of Subsection 7.2.7.

   **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

2. **ENSURE** position of the following valves:

   - Valve 1 CLOSED
   - Valve 2 CLOSED
   - Valve 3 CLOSED
   - Valve 4 CLOSED
   - Valve 5 CLOSED
   - Valve 6 CLOSED
   - Valve 7 CLOSED
   - Valve 10 CLOSED
   - Valve 11 CLOSED
   - Valve 12 CLOSED
   - Valve 13 CLOSED

3. **ENSURE** proper assembly of the Air Delivery System by performing the following:

   a. **CONNECT** flush hose to the air compressor at Valve 1, **THEN**
      **CONNECT** opposite end of flush hose to the Air Delivery System at Valve 2.

   b. **ENSURE** that Valve 8 is CLOSED.

   c. **CONNECT** the 3/8 inch to 1 inch air tubing or hose to the Air Delivery System at Valve 6, **THEN**
      **CONNECT** opposite end of the air tubing or hose to the MLDB at Valve 8, **AND**
      **TIGHTEN**.
7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d

Step 3, Cont.'d

d. IF utilizing a permanent H&V system, THEN

ENSURE the H&V System at which the waste line jacket will be vented, is OPERATING, and all parameters are within the associated Round sheet limits.

e. IF utilizing portable ventilation system to vent the waste line jacket, THEN

ENSURE portable ventilation system is staged and operable.

CAUTION

Waste line jacket MUST be vented through a HEPA filtered ventilation system.

NOTE 1: Notification must be made to the appropriate Control Room prior to removal of any inspection port plugs.

NOTE 2: Venting the Waste Line Jacket to a Waste tank should be a last resort because of the higher potential for contamination release and radiation exposure to employees.

4. PERFORM one of the following to assemble the Air Delivery System vent:

a. VENT the Air Delivery System to a permanent H&V system as follows:

1) REMOVE an inspection port plug from a nearby Pump Pit, Diversion Box, or Waste Tank / Annulus, AND

PLACE in a plastic bag for temporary storage.
7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.’d

Step 4.a, Cont.’d

**NOTE:** Using the inspection port plug to secure the air tubing/hose may restrict venting capabilities.

2) **CONNECT** air tubing or hose from the Air Delivery System at Valve 7, **AND**

ROUTE to the inspection port, **THEN**

**SECURE AND SEAL** air tubing in inspection port to prevent movement or removal.

3) **ENSURE** all tubing / hose connections are tight / secure.

b. **VENT** the Air Delivery System to a portable ventilation system as follows:

1) **CONNECT** air tubing or hose from the Air Delivery System at Valve 7, **AND**

ROUTE to the portable ventilation system HEPA filter bank inlet duct.

2) **SECURE, AND**

**SEAL** air tubing to the inlet duct.

3) **ENSURE** all tubing / hose connections are tight / secure.

**NOTE:** Troubleshooting of the Air Delivery System may be performed at anytime **before** the test commences to achieve proper test parameters. Troubleshooting may include, but is not limited to, valving, venting and regulator adjustments.

5. **PERFORM** pressure check of the Air Delivery System by performing the following:

a. **SET** Air Delivery System pressure regulator to ZERO psig by turning the regulator bolt counterclockwise until loose.

b. **START** air compressor, **AND**

**ALLOW** warm up time as directed by Shift Management.
7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d

Step 5, Cont.'d

c. **POSITION** the following valves:

- Valve 1 OPEN
- Valve 2 OPEN
- Valve 3 OPEN
- Valve 5 OPEN
- Valve 12 OPEN
- Valve 13 OPEN

---

d. **Slowly ADJUST** air pressure regulator bolt (by turning clockwise) until 15 - 18 psig is indicated on Gage 2, **THEN**

CLOSE Valve 2.

---

e. **OBSERVE** pressure on Pressure Gage 2 for 2 minutes.

f. **IF** pressure on Gage 2 does **NOT** decrease, **THEN**

OPEN Valve 2, and proceed to Step 7.2.8.5.h.

g. **IF** a reduction of pressure is observed, **THEN**

**PERFORM** the following:

1) **IF** required, **THEN**

**LEAK-CHECK** all fittings from Valve 2 to Valve 6/7 using leak detection liquid (i.e., liquid soap or equivalent).

2) **IF** using portable ventilation system, **THEN**

**START** portable ventilation system.

3) **POSITION** the following valves:

- Valve 2 CLOSED
- Valve 7 OPEN

4) **PERFORM** troubleshooting and repair as needed to prevent leaks on the Air Delivery System.

5) **WHEN** troubleshooting and repair of all leaks is complete,** THEN** shutdown portable ventilation system, if portable ventilation system is in use.
7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d

Step 5g, Cont’d

6) **PERFORM** the following:

   - Valve 7 CLOSED
   - Valve 2 OPEN

7) **REPEAT** Step 5g, as necessary, until NO leaks are found.

h. **WHEN** the rotameter float lowers to ZERO, **AND**
   
   **WHEN** pressure gage 2 indicates between 15-18 psig, **THEN**

   **OPEN** Valve 6, **AND**

   **ENSURE** pressure is between 15-18 psig, **THEN**

   **CLOSE** Valve 3.

i. **OBSERVE** pressure indication on gage 2 for two (2) minutes.

j. **IF** pressure remains stable, as indicated on gage 2, **THEN**

   **GO TO** Subsection 7.2.9.

k. **IF** a reduction of pressure is observed, **THEN**

   1) **OPEN** Valve 3.

   2) **LEAK-CHECK** all fittings from Valve 3 to Valve 8 using leak detection liquid. (i.e., liquid soap or equivalent)

   3) **IF** using portable ventilation system, **THEN**

      **START** portable ventilation system.

   4) **POSITION** the following valves:

      - Valve 2 CLOSED
      - Valve 7 OPEN

   5) **PERFORM** troubleshooting and repair as needed to prevent leaks on the Air Delivery System.
7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d

**Step 5 k, Cont’d**

6) **WHEN** troubleshooting and repair of all leaks are complete, **THEN**

SHUTDOWN portable ventilation system, if system is in use.

7) **POSITION** the following valves:

- Valve 7 CLOSED
- Valve 2 OPEN

8) **REPEAT** Steps 5.h through 5.k, as necessary, until NO leaks are observed.

9) **PROCEED** to Subsection 7.2.9.

Subsection Completed By: __________________________ / __________________________

Signature Print Name

Date: _______________ Time: _______________
7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air

**NOTE:** This Section contains Quality Assurance Independent Inspection Witness Point(s). QA is to be notified at the start of this Section.

1. **ENSURE** completion of Subsection 7.2.8.

2. **NOTIFY** QA of the test to be performed, **AND** **REQUEST** the presence of a QA Inspector.

   QA Person Notified: __________________________
   Notified by: __________________________
   Date: __________ Time: __________
   Comments: __________________________

3. **IF** not already started, **THEN**

   **START** portable air compressor and ALLOW warm up time as directed by Shift Management.

4. **ENSURE** position of the following valves:

   - Valve 1 OPEN
   - Valve 2 OPEN
   - Valve 3 OPEN
   - Valve 5 OPEN
   - Valve 6 OPEN
   - Valve 8 OPEN

   - Valve 10 as needed to expedite pressurization of the waste line jacket.

5. **OPEN** Valve 10 as needed to expedite pressurization of the waste line jacket.

6. **PRESSURIZE** the Waste Line Jacket until the pressure, as indicated on gage 2, indicates 15-18 psig.
7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air, Cont.’d

7. WHEN either the rotameter indicates ZERO or minimal flow, OR
   WHEN 45 minutes has elapsed, THEN
   CLOSE Valve 10.

8. IF 45 minutes had elapsed in the previous step, AND
   IF 15-18 psig is NOT indicated on gage 2 with ZERO or minimal flow on the rotameter, THEN
   PERFORM the following:
   a. CLOSE Valve 5
   b. CLOSE Valve 1.
   c. IF using Portable Ventilation System, THEN
      START portable ventilation System
   d. VENT Jacket by opening Valve 7.
   e. AFTER Gage 2 is indicating 0 psig, THEN
      CLOSE Valve 7, AND
      SHUTDOWN Portable Ventilation, if in use.
   f. CLOSE Valve 8.
   g. CLOSE Valve 6.
   h. OPEN Valve 5.
   i. OPEN Valve 7 to vent the Air Delivery System.
   j. IF using Portable Ventilation System, THEN
      START Portable Ventilation System.
   k. AFTER Gage 2 is indicating 0 psig, THEN
      CLOSE Valve 5 AND Valve 7, AND
      SHUTDOWN Portable Ventilation, if in use.
7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air, Cont.’d

Step 8, Cont’d

I. NOTIFY Shift Management of failed test, AND
   INFORM Shift Management of the need to initiate Subsection 7.2.10 for determining the leak site using Helium.

m. Initiate NCR (Non Conformance Report) against this pressure test failure, and initiate work request to repair waste line jacket.

n. IF not initiating Subsection 7.2.10, THEN
   INITIATE Subsection 7.2.12.

o. SHUTDOWN air compressor as directed by Shift Management.

9. WHEN the Waste Line Jacket is pressurized to 15-18 psig, as indicated on Gage 2, AND/OR minimal flow is indicated on the rotameter, THEN
   CLOSE Valve 5.

10. SHUTDOWN air compressor per manufacturer instructions.
    (normally located on the inside of the control panel door)

    * QA WITNESS POINT *

11. RECORD initial Gage 2 pressure reading and time in Subsection 7.2.15, AND
    VERIFY initial Gage 2 pressure reading is \( \geq 15 \) psig, THEN
    AFTER 20 minutes have elapsed, RECORD final Gage 2 pressure reading and time in Subsection 7.2.15, AND
    VERIFY \( \leq 1 \) psig pressure drop in 20 minutes.

QA Inspection
Performed By: _______________________________ / _______________________________
                 Signature                     Print Name

Date: _______________    Time: _______________

Comments: ____________________________________________________________
___________________________________________________________
___________________________________________________________
___________________________________________________________
7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air, Cont.’d

**NOTE:** If Gage 2 pressure DOES NOT reduce by more than 1.0 psig and initial Gage 2 pressure reading was ≥ 15 psig during the performance of Step 11, then the test has met the acceptance criteria.

12. **IF** Gage 2 pressure DID NOT reduce by more than 1.0 psig and initial Gage 2 pressure reading was ≥ 15 psig during the performance of Step 11, **THEN**

**PERFORM** the following:

a. **REPORT** the test results to the Shift Management.

b. **COMPLETE** Subsection 7.2.15.

c. **PROCEED** to Subsection 7.2.12.

13. **IF** Gage 2 pressure DID reduce by more than 1.0 psig during the performance of Step 11, **THEN**

a. **REPORT** the test failure to the Shift Management.

b. **COMPLETE** Subsection 7.2.15.

c. **INITIATE** Work Request to repair the waste line jacket and/or LDB.

d. **INITIATE** NCR (Non Conformance Report) against this pressure test failure.

e. **INFORM** Shift Management of the need to **INITIATE** Subsection 7.2.10 for determining the leak site using helium.

f. **IF** NOT initiating Subsection 7.2.10, **THEN**

**INITIATE** Subsection 7.2.12.
7.2.10 **Air Delivery System Assembly And Pressure Check Using Helium**

1. **ENSURE** completion of Subsection 7.2.7.

2. **ENSURE** Helium Testor is OPERABLE.

3. **ENSURE** Engineering has identified sample points.

```
NOTE: Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.
```

4. **ENSURE** position of the following valves:

   - Valve 2 CLOSED
   - Valve 3 CLOSED
   - Valve 4 CLOSED
   - Valve 5 CLOSED
   - Valve 6 CLOSED
   - Valve 7 CLOSED
   - Valve 9 CLOSED
   - Valve 10 CLOSED
   - Valve 11 CLOSED
   - Valve 12 CLOSED
   - Valve 13 CLOSED

5. **ENSURE** proper assembly of the Air Delivery System by performing the following:

   a. **ENSURE** that Valve 8 on MLDB is CLOSED.

   b. **CONNECT** the 3/8 inch to 1 inch air tubing or hose to the Air Delivery System at Valve 6, **THEN**

      **CONNECT** opposite end of the air tubing or hose to the MLDB at Valve 8, **AND**

      **TIGHTEN.**
7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.'d

Step 5, Cont.'d

c. **IF** utilizing a permanent H&V system, **THEN**

   **ENSURE** the H&V System at which the waste line jacket will be vented, is OPERATING, and all parameters are within the associated Round sheet limits.

   

d. **IF** utilizing portable ventilation system to vent the waste line jacket, **THEN**

   **ENSURE** portable ventilation system is staged and operable.

6. **CONNECT** air tubing / hose to the Helium cylinder regulator at Valve 9, **THEN**

**CONNECT** opposite end of air tubing / hose to the Air Delivery System at Valve 4.

---

**CAUTION**

Waste line jacket **MUST** be vented through a HEPA filtered ventilation system.

---

**NOTE 1:** Notification must be made to the appropriate Control Room prior to removal of any inspection port plugs.

**NOTE 2:** Venting the Waste Line Jacket to a Waste Tank should be a last resort because of the higher potential for contamination release and radiation exposure to employees.

**NOTE 3:** Only Tanks 1-8 have a HEPA filtered Annulus H&V System.

7. **PERFORM** one of the following to assemble the Air Delivery System vent:

   a. **VENT** the Air Delivery System to a permanent H&V system as follows:

      1) **REMOVE** an inspection port plug from a nearby Pump Pit, Diversion Box or Waste Tank / Annulus, **AND**

         **PLACE** in a plastic bag for temporary storage.
7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.’d
Step 7.a, Cont.’d

2) CONNECT air tubing or hose from the Air Delivery System at Valve 7, AND

ROUTE to the inspection port, THEN

SECURE AND SEAL air tubing in inspection port to prevent movement or removal.

3) ENSURE all tubing / hose connections are tight / secure.

b. VENT the Air Delivery System to a portable ventilation system as follows:

1) CONNECT air tubing or hose from the Air Delivery System at Valve 7, AND

ROUTE to the portable ventilation system HEPA filter bank inlet duct.

2) SECURE, AND

SEAL air tubing to the inlet duct.

3) ENSURE all tubing / hose connections are tight / secure.

8. PERFORM pressure check of the Air Delivery System by performing the following:

a. SET Air Delivery System pressure regulator to ZERO psig by turning the regulator bolt counterclockwise until loose.
7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.’d

Step 8, Cont.’d

b. **ENSURE** position of the following valves:

- Valve 9 OPEN ✔
- Valve 4 OPEN
- Valve 3 OPEN
- Valve 5 OPEN
- Valve 12 OPEN
- Valve 13 OPEN

**NOTE:** Helium cylinder regulator may also need to be adjusted to obtain desired pressure at gage 2.

c. **Slowly ADJUST** air pressure regulator bolt (by turning clockwise) until 14 - 18 psig is indicated on gage 2, THEN CLOSE Valve 4.

d. **OBSERVE** pressure on Pressure Gage 2 for 2 minutes, **AND**

IF a reduction in pressure is observed, THEN

**PERFORM** the following:

1) **LEAK** check all fittings from Valve 4 to Valve 6/7 using leak detection liquid.

2) **IF** using portable ventilation system, THEN

START portable Ventilation System.

3) **POSITION** the following valves:

- Valve 4 CLOSED ✔
- Valve 7 OPEN

4) **PERFORM** troubleshooting and repair as needed to prevent leaks on the Air Delivery System.
7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.’d
Step 8d, Cont’d

5) WHEN troubleshooting and repair of all leaks are complete, THEN

SHUTDOWN portable ventilation system, if portable ventilation system is in use.

6) POSITION the following valves:

- **CLOSE** Valve 7
- **OPEN** Valve 4

7) REPEAT Step 8.d as necessary until no leaks are found.

e. **OPEN** Valve 4, **AND**

WHEN the rotameter float lowers to ZERO, **AND**
WHEN gage 2 indicates 14-18 psig, **THEN**

**OPEN** Valve 6, **AND**

**CLOSE** Valve 9.

f. **OBSERVE** pressure indication on gage 2 for 2 minutes.

g. **IF** pressure remains stable, as indicated on gage 2, **THEN**

GO TO Subsection 7.2.11.

h. **IF** a reduction of pressure is observed, **THEN**

1) **OPEN** Valve 9.

2) **LEAK-CHECK** all fittings from Valve 4 to Valve 8 using leak detection liquid. (i.e., liquid soap or equivalent)

3) **IF** using portable ventilation system, **THEN**

START Portable Ventilation System.

4) **POSITION** the following valves:

- Valve 9 CLOSED
- Valve 7 **OPEN**

5) **PERFORM** troubleshooting and repair as needed to prevent leaks on the Air Delivery System.
7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.'d

Step 8h, Cont'd

6) WHEN troubleshooting and repair of all leaks are complete, THEN

SHUTDOWN portable ventilation system, if portable ventilation system is in use.

7) ENSURE position of the following valves:

- CLOSE Valve 7
- OPEN Valve 9

i. REPEAT Steps 8.e through 8.h, as necessary, until no leaks are observed.

j. PROCEED to Subsection 7.2.11.

Subsection Completed By: ______________________________ / ______________________________

Signature Print Name

Date: ________________ Time: ________________
7.2.11 Determining Leak Site Via MLDB Using Helium/Pressure Testing Line Number(s) 151, 152, 156 Or 157

1. **ENSURE** completion of Subsection 7.2.10.

   **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

2. **CHANGE OUT** the Helium cylinders per Subsection 7.2.14 when the pressure on Gage He-2 indicates 20 psig.

3. **RECORD** each cylinder change out in the comment section of Subsection 7.2.14.

4. **ENSURE** position of the following valves:

   - Valve 2 CLOSED
   - Valve 3 OPEN
   - Valve 5 OPEN
   - Valve 6 OPEN
   - Valve 7 CLOSED
   - Valve 8 CLOSED
   - Valve 10 CLOSED
   - Valve 11 CLOSED
   - Valve 12 OPEN
   - Valve 13 OPEN

5. **ENSURE** position of the following valves:

   - Valve 4 OPEN
   - Valve 9 OPEN

6. **SAMPLE** in pre-designated areas prior to initiating Helium induction.

7. **BEGIN** inducing Helium into the waste line jacket by performing the following:
   a. **OPEN** Valve 8.
   b. **OPEN** Valve 10 as needed to expedite pressurization of the waste line jacket.
   c. **ADJUST** Helium cylinder regulator, AND/OR, Air Delivery System regulator, as needed, to obtain desired flow.
7.2.11 Determining Leak Site Via MLDB Using Helium/Pressure Testing
Line Number(s) 151, 152, 156 Or 157, Cont’d

8. **CONTINUE** to induce Helium into the Waste Line Jacket, as directed by Shift Management.

9. **AFTER** 30 minutes, sample in pre-designated areas every 10 minutes for 30 minutes **AND**
   
   RECORD results in Subsection 7.2.15.

10. **WHEN** all pre-designated areas have been sampled, OR, as directed by Shift Management, **THEN**
    
    a. **CLOSE** Valve 5
    
    b. **CLOSE** Valve 9

11. **WHEN** sample results are obtained, **AND**

    **IF** required, **THEN**

    **INITIATE** Work Request to repair the Waste Line Jacket and/or MLDB as directed by Shift Management.
7.2.12 Air Delivery System Return To Normal

NOTE: Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

1. IF using portable ventilation system, THEN

START portable Ventilation system.

2. Slowly OPEN Valve 7 to vent the Waste Line Jacket.

3. WHEN pressure, as indicated on Gage 2, reduces to less than or equal to 1 psig, AND no further decrease is observed, THEN

SHUTDOWN air compressor, (if operating), AND

CLOSE Valve 8

CLOSE Valve 6

4. ENSURE position of the following valves to depressurize the Air Delivery System:

   • Valve 1 OPEN (if using air)
   • Valve 9 CLOSED (if using Helium)
   • Valve 2 OPEN (if using air)
   • Valve 3 OPEN
   • Valve 4 OPEN (if using Helium)
   • Valve 5 OPEN

5. WHEN pressure, as indicated on Gage 1, reduces to less than or equal to 1 psig, AND no further reduction of pressure is observed, THEN

   ENSURE position of the following valves:

   • Valve 1 CLOSED
   • Valve 2 CLOSED
   • Valve 4 CLOSED
   • Valve 5 CLOSED
   • Valve 7 CLOSED
   • Valve 12 CLOSED
   • Valve 13 CLOSED
7.2.12 Air Delivery System Return To Normal, Cont.’d

NOTE: RCO shall be present during all line breaks and constantly monitoring.

6. WHEN the system is vented, THEN

PERFORM the following:

a. REMOVE air tubing / hose from Valve 7 and the inspection port OR portable ventilation system.

b. IF RCO survey warrants, THEN

DISPOSE of vent tubing per RCO instructions.

c. IF valve port plug was removed, THEN

REMOVE valve port plug from plastic bag, AND

RE-INSTALL valve port plug in valve port.

d. IF air was used, THEN

REMOVE hose from air compressor at Valve 1, AND

REMOVE other end of hose from Air Delivery System at Valve 2.

e. IF Helium was used, THEN

REMOVE air/tubing / hose from Helium cylinder at Valve 9, AND

REMOVE other end of air tubing/ hose from Air Delivery System at Valve 4.

f. IF portable ventilation system was used for the performance of this procedure, THEN

INITIATE portable ventilation system return to normal as directed by Shift Management.
7.2.12 Air Delivery System Return To Normal, Cont.’d

7. **DISCONNECT** Air Delivery System from the Waste Line Jacket as follows:

   a. **DISCONNECT** air tubing / hose from the Air Delivery Systems at Valve 6, **THEN**

   **DISCONNECT** the opposite end of the air tubing / hose from Valve 8.

Subsection
Completed By: __________________________ / __________________________

Signature                   Print Name

Date: _______________       Time: _______________
7.2.13 MLDB Return TO Normal

1. RETURN the MLDB(s) to normal by performing the following:
   a. HAVE Maintenance remove the MLDB flange bolts.
   b. REMOVE the flange, with valve 8 air connection stub-out.
      * Independent Verification*
   c. REMOVE MLDB overflow plug.
   d. PLACE the new gasket onto the MLDB.
   e. PLACE the original 8- inch flange and conduit onto the MLDB.
   f. HAVE Maintenance install and tighten flange bolts.
   g. IF necessary, INSTALL the conductivity probe junction box, AND
      1) INSTALL reducer/locking ring on the conductivity probe stand pipe.
      2) HAVE Maintenance CONNECT probe leads to the terminal strip.
      3) HAVE CRO record in Control Room log that leads have been landed.
   h. RE-INSTALL conductivity probe per SW11.6-SVP-21, Section 4.4, Method Four, Conductivity Probe Installation and Testing.

2. REPEAT Step 1, as necessary, to complete return to normal for MLDB(s) listed in Subsection 7.2.15.

3. ENSURE return to normal is complete for the Line Segments associated MLDB(s).

4. RETURN Air Delivery System and air compressor to proper storage, as RCO survey(s) dictate, if applicable.
7.2.13 **MLDB Return To Normal, Cont.’d**

5. **IF** Helium cylinder(s) were used, **THEN**

   Return Helium cylinder(s) to proper storage, as RCO survey(s) dictate.

6. **IF** lockout was installed on line segments prime movers, **THEN**

   Remove lockout from line segments prime movers as directed by Shift Manager / Shift Management.

7. **COMPLETE** all applicable steps of subsection 7.2.15.

Subsection Completed By: ____________________________ / ____________________________

   Signature                  Print Name

   Date: ____________         Time: ____________

Independent Verification By: ____________________________ / ____________________________

   Signature                  Print Name

   Date: ____________         Time: ____________
7.2.14 Changing Helium Bottles

NOTE: Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

1. IF changing out Helium bottle, THEN

PERFORM the following:

- **CLOSE** Valve 9
- **CLOSE** Valve 4

2. **REMOVE** Helium regulator assembly from the empty Helium bottle.

3. **CONNECT** Helium regulator assembly to full Helium bottle.

NOTE: Helium cylinder regulator may need to be adjusted to prevent regulator gage He-2 indication from exceeding 15 psig.


5. **Slowly OPEN** Valve 4 allowing Helium to enter system.

Comments: ______________________________________

____________________________________

____________________________________

____________________________________

____________________________________

____________________________________

____________________________________

____________________________________

____________________________________

_________________________ / _______________________
Subsection Completed By: Signature Print Name

_________________________ / _______________________
Date: Time:
7.2.15 Acceptance Criteria

**NOTE:** The Independent Verification in Step 1 is to ensure the following:

- Correct Attachment is being used.
- Line Number CLI(s) and LDB(s) / MLDB(s) are correct.
- Service is correct.
- Information was entered legibly.

*Independent Verification*

1. **RECORD** the following information below and in Passport History:
   (Refer to Section 6.6, *Line Segments*)

   Line Number CLI: ____________________________
   Service: ____________________________
   Associated Line Numbers(s) CLI: ___________
   Associated LDB(s)/MLDB(s): ___________
   Type Test (air, helium, water): ___________
   Test Date Performed: ______________________
   Test Results (SAT or UNSAT): ______________________

   **INITIAL READING**

<table>
<thead>
<tr>
<th>TIME</th>
<th>PRESSURE READING (psig) (7.2.9.11)</th>
<th>INITIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Initial Gage 2 pressure reading is \( \geq 15 \) psig? YES / NO (Circle One)

   **FINAL READING**

<table>
<thead>
<tr>
<th>TIME</th>
<th>PRESSURE READING (psig) (7.2.9.11)</th>
<th>INITIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Pressure Dropped \( \leq 1 \) psig in 20 Minutes? YES / NO (Circle One)

   Comments: ________________________________________________
7.2.15 Acceptance Criteria, Cont.’d

2. Surveillance test results: SAT ________ UNSAT ________

   IF surveillance test results are UNSAT, THEN

   DOCUMENT actions taken below:

   Comments: ____________________________________________________________________

3. UPDATE the "Transfer Line & Associated Conductivity Probe" Status Board.

4. Data or observed operations performed in this attachment have been reviewed and are within the required acceptance criteria or tolerance. Exceptions or data outside of the required acceptance criteria are recorded in the comments section of this procedure.

   IF the data or observed operations in this procedure deviate from the acceptance criteria, THEN

   NOTIFY Shift Manager.

Attachment
Completed By: ____________________________ / ____________________________

   Signature                      Print Name

   Date: ______________  Time: ______________

First Line Management
Review By: ____________________________ / ____________________________

   Signature                      Print Name

   Date: ______________  Time: ______________

STE/System Engineer
Review By: ____________________________ / ____________________________

   Signature                      Print Name

   Date: ______________  Time: ______________

Independent Verification
By: ____________________________ / ____________________________

   Signature                      Print Name

   Date: ______________  Time: ______________

Shift Manager
Review By: ____________________________ / ____________________________

   Signature                      Print Name

   Date: ______________  Time: ______________

FORWARD a copy of this surveillance to the Surveillance Tracking Coordinator to place a copy in the Surveillance Tracking Files.
7.2.15 **Acceptance Criteria**, Cont.’d

**NOTE:** Additional copies of this page may be needed to complete this procedure.

Annulus Fan  **ON / OFF**  

Purge Fan  **ON / OFF**

### TABLE 1

<table>
<thead>
<tr>
<th>SAMPLE DATA</th>
<th>Time Since Beginning Helium Introduction</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Response</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________