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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for calibrating vacuum gauges, flow switches, and functional testing the Totalizer, rotameter and timer in the Primary Stack Sampling, and Annulus Stack Sampling Enclosures.

1.2 Scope

This procedure involves calibration of CAM and Record Sample vacuum gauges, pressure/vacuum switches, flow switches, and functional testing of rotameters, totalizers and timers.

2.0 INFORMATION

2.1 General Information

2.1.1 Replacement of general service identical parts/equipment may be conducted within this procedure. Before a component can be replaced, the Responsible Engineer shall determine the safety classification and the suitability of a replacement component for the specific application using TFC-BSM-FPM_MC-C-01 “Material Control”. All maintenance or repair shall be recorded on the Comment Page with appropriate Responsible Engineer signature for component verification.

OR

A Work Request shall be initiated to correct any other deficiency and the Work Request number shall be referenced on the Comment Page.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Respirator protection is required in conjunction with IHT monitoring when opening primary exhauster system components.

3.1.1.1 Minimum required respiratory protection and voluntary upgrade is identified on the farm specific TVIS.

3.1.2 IHT monitoring is required when opening primary exhauster system components.

3.1.3 Industrial Hygiene monitoring requirements will be specified in the Industrial Hygiene Sample Plan (IHSP).

3.1.3.1 The Facility Industrial Hygienist must be contacted for the appropriate IHSP.

3.1.4 Failure to follow electrical safety practices as outlined in DOE–0359, Hanford Site Electrical Safety Program could result in serious injury or death.

3.1.5 If red label or no label is present, HPT’s will enter into a CAM cabinet only after a qualified electrical worker has put the cabinet into an electrically safe condition.

3.1.6 If a lock and tag is required during the performance of this procedure, comply with DOE-0336, Hanford Site Lockout/Tagout Procedure.

3.2 Radiation and Contamination Control

3.2.1 Work in radiological areas will be performed using a Radiological Work Permit following review by Radiological Control per the ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03.
3.3 Environmental Compliance

3.3.1 To ensure reporting requirements are met, all planned and unplanned outages of ventilation equipment and exhaust monitoring systems must be immediately reported to affected Shift Office and Environmental in compliance with procedures TF-REC-001 and TFC-ESHQ-ENV_FS-C-01.

3.3.2 Work on Potentially Contaminated Ventilation System:

- HPT coverage will be performed as specified in the Radiological Work Permit and/or Radiological Monitoring Plan.
- Equipment with removable contamination and/or work with removable contamination will be contained per the latest revision of the Containment Selection guide, Attachment A, in TFC-ESHQ-RP_RWP-C-02.
- Pre- and post-job surveys (smears) shall be taken.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

NOTE - Limit the amount of material taken into contaminated areas to minimize radioactive waste and future decontamination.

The following supplies may be needed to perform this procedure:
- Rotameter (standard)
- Vacuum source or pressure source (standard)
- Digital or Analog Volt Meter (standard)
- Stopwatch
- Magnet
- Lint-free cloth
- Approved cleaning agent
- Digital Manometer, or equivalent
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/USER.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- DOE-0336, Hanford Site Lockout/Tagout Procedure
- TO-100-052, Perform Waste Generation Segregation, and Accumulation
- TF-OPS-005, DST Daily CAM and Record Sampler Inspections

4.3 Field Preparation

NOTE The following steps may be performed in any logical order or in parallel:

4.3.1 ENSURE Shift Manager has notified Environmental per Section 3.3 that the Continuous Air Monitor Interlock and/or an Annulus CAM may become inoperable during the performance of this procedure and is routine maintenance.

4.3.2 IF lock and tag are required, INSTALL Lock and Tag or Authorized Worker Lockout/Tagout per DOE-0336, Hanford Site Lockout/Tagout Procedure.

OR

CONFIRM DOE–0359, Hanford Site Electrical Safety Program requirements have been satisfied.
5.0 PROCEDURE

Special Instructions

If performance of any steps in this procedure is not required for procedure completion, steps not performed are to be marked, "N/A" in appropriate Data Sheet signoff space, and explained in comments/remarks section of Data Sheet.

Sections 5.1, 5.2 and 5.3 may be performed simultaneously, in any order, or not at all.

5.1 Primary / Annulus Stack CAM Loop Set-up

5.1.1 IF performing Calibration/Testing on Primary Stack CAM Loop, NOTIFY Shift Manager testing is starting on a Primary Stack CAM Loop AND SIGN for notification.

_________________________ / ______________________ / ____________
Signature Print Date
FWS

5.1.2 IF performing Calibration/Testing on an Annulus Stack Leak Detector CAM Loop, NOTIFY Shift Manager that testing is starting on an Annulus Stack Leak Detector CAM Loop AND SIGN for notification.

_________________________ / ______________________ / ____________
Signature Print Date
FWS

5.1.3 IF Loop has an AMS-4 CAM installed, PERFORM the following:

5.1.3.1 OBTAIN AMS-4 fixed flow rate AND RECORD the As-Found value on Data Sheet.

5.1.3.2 SET AMS-4 fixed flow rate to 2 CFM.
5.2 **Primary/Annulus Stack Calibrations/Functional Tests**

**Special Instructions**

Component Activities may be completed as needed but steps within the Activity must be completed in sequence, unless otherwise directed.

The following Activities shall be repeated as applicable to calibrations and function tests specified in the various Data Sheets.

Timer Check Activity should be performed simultaneously with other Component Activities.

Vacuum Gauge Calibration Activity shall be completed before Totalizer (Rockwell/Equimeter Type Gasmeter) Functional Test Activity.

Vacuum Pump Power Cords can be moved to the un-switched outlet for calibration/testing purposes as many times as needed; returning to original position upon completion of calibration/testing.

**Timer Check**

5.2.1 **RECORD** the As-Found Timer reading on Data Sheet.

5.2.2 **IF** performing this procedure on a system that has the potential for free liquids or moisture to enter the Pressure M&TE, **USE** a water trap device.

5.2.2.1 **ENSURE** the Water Trap is installed in a vertical position to operate correctly.

5.2.2.2 **IF** liquids or moisture gets into the Water Trap or Pressure M&TE, **REFER** to Attachment 1

5.2.3 **IF** performing this procedure on a system that is potentially contaminated, **FOLLOW** Calibration Instructions. (Attachment 2)
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

Vacuum Gauge Calibration

NOTE - Calibration may be performed in-place or instrument may be returned to the shop for bench calibration.

5.2.4 CONNECT test equipment to vacuum gauge,

OR

REMOVE gauge AND

CONNECT test equipment.

5.2.5 APPLY test input values specified on Data Sheet AND

RECORD output values in As-Found column of Data Sheet.

5.2.6 IF gauge is within tolerance per applicable Data Sheet, and no adjustments are desired, RECORD As-Found values in the As-Left column AND

PROCEED to Step 5.2.12.

5.2.7 IF gauge is out of tolerance per applicable Data Sheet, SET test input vacuum source to specified on Data Sheet AND

ADJUST ZERO adjustment until pointer tip indicates minimum value.

5.2.8 IF gauge has no ZERO adjustment, REMOVE pointer from spindle AND

WITHOUT moving spindle, RE-ATTACH pointer to spindle so tip indicates minimum value (0%).

5.2.9 APPLY test inputs specified on Data Sheet.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.10 IF output values are within output tolerance range specified by Data Sheet, and no more adjustments are desired, RECORD values in the As-Left column AND

PROCEED to Step 5.2.12.

5.2.11 IF vacuum gauge cannot be calibrated, PERFORM the following:

5.2.11.1 STOP work.

5.2.11.2 PLACE system in a safe configuration.

5.2.11.3 NOTIFY FWS of problems encountered.

5.2.12 IF not needed for other activities, REMOVE test equipment.

5.2.13 RETURN gauge to service.

5.2.14 IF testing is complete, GO TO Restoration Section 5.4.

Pressure/Vacuum Switch Calibration

NOTE - Calibration may be performed in-place or instrument may be returned to the shop for bench calibration.

- AN Farm and AP Farm have no Pressure/Vacuum Switches.

5.2.15 IF for AN Farm and/or AP Farm, GO TO 5.2.32 (Flow Switch Calibration).

5.2.16 IF Vacuum Pump is off, MOVE power cord to the un-switched outlet AND

RECORD on the Work Record.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.17 REMOVE switch from service.

5.2.18 REMOVE calibration caps or signal lines to switch.

5.2.19 CONNECT test equipment to appropriate inlet of switch.

5.2.20 CONFIRM contacts operate by one of the following methods:

5.2.20.1 USE the alarm.

5.2.20.2 CONNECT DMM across output contacts of switch.

5.2.20.3 LIFT leads, CONNECT across contacts at switch, or at nearest junction.

NOTE - High pressure alarms are approached with increasing pressure. Low pressure alarms are approached with decreasing pressure.

- High vacuum alarms are approached with decreasing pressure. Low vacuum alarms are approached with increasing pressure.

5.2.21 APPLY each test input signal specified by Data Sheet AND

RECORD each corresponding output value and/or switch response in As-Found section of Data Sheet.

5.2.22 IF instrument's As-Found output values and/or alarms are within tolerance range specified by Data Sheet, RECORD output values in As-Left column AND

GO TO Step 5.2.29.

NOTE - Approach trip point from above desired pressure for low settings, and from below desired pressure for high settings.

5.2.23 APPLY appropriate pressure or vacuum signal to pressure switch as specified on Data Sheet.

5.2.24 ADJUST set point.

5.2.25 APPLY appropriate pressure or vacuum signal to pressure switch to check set point adjustment.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.26 REPEAT Steps 5.2.23 through 5.2.25 until the instrument reads appropriately AND

RECORD the As-Left set point(s) on Data Sheet.

5.2.26.1 IF steps 5.2.23 to 5.2.25 have been repeated four times unsuccessfully, RECORD issues on Comment Page. AND

NOTIFY FWS for resolution.

5.2.27 IF power cord was moved to un-switch outlet, RETURN to original outlet AND

RECORD on Work Record.

5.2.28 IF switch set-point is not within the tolerance range specified by the Data Sheet, PERFORM the following:

5.2.28.1 STOP work.

5.2.28.2 PLACE system in a safe configuration.

5.2.28.3 NOTIFY FWS of problems encountered.

5.2.29 IF not needed for other activities, REMOVE test equipment.

5.2.30 REPLACE calibration cap or signal line removed in Step 5.2.18 and leads, if lifted in Step 5.2.20 AND

RETURN switch to service.

5.2.31 IF testing complete, GO TO Restoration Section 5.4.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

Flow Switch Calibration

5.2.32 IF Vacuum Pump is off, MOVE power cord to the un-switched outlet AND RECORD on Work Record.

NOTE - AN Farm has no local control room alarms.

5.2.33 IF local stack monitoring and control room alarms exist, CHECK that stack monitoring and local control room alarms are CLEAR/NOT LIT.

NOTE - If Totalizer (Rockwell/Equimeter Type Gasmeter) Functional Test Activity will be performed, the standard rotameter needs to be installed upstream of installed Totalizer as well.

5.2.34 IF standard rotameter not installed, INSTALL standard rotameter in the system upstream of installed flow switch AND LEAVE upstream end of standard rotameter open to atmosphere.

5.2.35 INSPECT flow switch for mechanical integrity with attention to the following conditions:
- No missing or loose fasteners or tubing supports.
- No evidence of crimped or damaged sensing lines.
- No evidence of damage to the switch housing.
- No evidence of corrosion or foreign material build-up on the flow switch housing.

5.2.35.1 IF evidence of any of the above conditions are met, NOTIFY FWS for resolution.

5.2.36 IF the flow switch contacts are not closed, ADJUST flow regulator above trip point.

5.2.37 ADJUST Flow Regulator until flow switch contacts open.

5.2.38 RECORD the As-Found flow switch reading on Data Sheet.

5.2.39 IF as found is in tolerance RECORD as left AND GO TO step 5.2.49.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.40 IF local stack monitoring and control room alarms exist, ENSURE local stack monitoring and control room alarms are Activated AND RECORD the status on the Data Sheet.

5.2.41 DISASSEMBLE AND CLEAN flow switch.

5.2.42 REASSEMBLE flow switch.

5.2.43 ADJUST set point per Data Sheet.

5.2.44 ADJUST Flow Regulator until flow switch contacts open.

5.2.45 REPEAT Steps 5.2.43 and 5.2.44 as necessary to adjust trip point.

5.2.46 RECORD the trip point As-Left value on Data Sheet.

5.2.47 IF local stack monitoring and control room alarms exist, CHECK that local stack monitoring and control room alarms are Activated AND RECORD the status on the As-Left Data Sheet.

5.2.48 IF flow switch set-point is not within the tolerance range specified by the Data Sheet, PERFORM the following:

5.2.48.1 STOP work.

5.2.48.2 PLACE system in a safe configuration.

5.2.48.3 NOTIFY FWS of problems encountered.

5.2.49 ADJUST flow regulator to mid-point value of flow rate in East or West Daily CAM and Record Sampler Data Sheet of TF-OPS-005, DST Daily CAM and Record Sampler Inspections for sample location being tested.

5.2.50 IF not needed for other activities, REMOVE test equipment.

5.2.51 ENSURE that local stack cabinet and control room alarms are Clear/Not Lit AND RECORD status on Data Sheet.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.52 IF power cord was moved to a un-switched outlet, RETURN to original outlet AND

RECORD the action on Work Record.

5.2.53 IF testing is complete, GO TO Restoration Section 5.4.

**Record Sample Rotameter Functional Test**

5.2.54 IF Vacuum Pump is off, MOVE power cord to the un-switched outlet AND

RECORD on Work Record.

5.2.55 INSPECT Rotameter for mechanical integrity with attention to the following conditions:

- No missing or loose fasteners or tubing supports
- No evidence of crimped or damaged sensing lines
- No evidence of damage to the housing
- No evidence of corrosion or foreign material build up on the Rotameter housing
- No leaks.

5.2.55.1 IF evidence of any of the above conditions are met, NOTIFY FWS for resolution.

5.2.56 CHECK that the Rotameter is functional (the minimal flow rate is ≥ 60 scfh) by response of flow indicator to moving air column AND

RECORD results on the Data Sheet.

5.2.57 IF power cord was moved to a un-switched outlet, RETURN to original outlet AND

RECORD on Work Record.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.58 IF Rotameter is not functional, **PERFORM** the following:

5.2.58.1 **STOP** work.

5.2.58.2 **PLACE** record sample system in a safe configuration.

5.2.58.3 **NOTIFY** FWS of problems encountered.

5.2.58.4 IF directed to replace unit, **GO TO** Step 5.2.55.

5.2.59 IF testing complete, **GO TO** Restoration Section 5.4.

**NOTE** - Vacuum Gauge Calibration Activity shall be completed before Totalizer (Rockwell/Equipmeter Type Gasmeter) Functional Test Activity.

**Totalizer (Rockwell/Equipmeter Type Gasmeter) Functional Test**

5.2.60 IF Vacuum Pump is off, **MOVE** power cord to the un-switched outlet **AND**

**RECORD** on Work Record.

5.2.61 IF standard rotameter not installed, **INSTALL** standard rotameter in the system upstream of installed Totalizer **AND**

**LEAVE** upstream end of standard rotameter open to atmosphere.

5.2.62 **ADJUST** Flow Regulator until desired test flow (2 CFM, 56.6 LPM or equivalent according to standard rotameter scale) is indicated on standard rotameter.

**NOTE** - The needle on the circular gauge will go around twice for each decimal digit increment.

5.2.63 **MEASURE** time required for Totalizer to register 1 cubic meter.

5.2.64 **RECORD** the stopwatch time on the Data Sheet.

5.2.65 **RECORD** Vacuum Gauge reading on Data Sheet.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.66  CHECK that the stopwatch time is within the range specified in Table 1 - Acceptable Gas Meter Operational Time Table for vacuum reading taken in Step 5.2.65.

5.2.67  IF stopwatch time is acceptable, GO TO Step 5.2.69.

5.2.68  IF stopwatch time is less than minimum value on Table 1, PERFORM the following:

   5.2.68.1  CHECK for leaks. (Especially between rotameter and Gasmeter.)

   5.2.68.2  CORRECT any discovered leaks.

   5.2.68.3  GO TO Step 5.2.62 to test Totalizer again,

   OR

   GO TO Step 5.2.70.1.

5.2.69  IF power cord was moved to a un-switched outlet, RETURN to original outlet AND RECORD on Work Record.

5.2.70  IF stopwatch time is greater than maximum value on Table 1, PERFORM the following:

   5.2.70.1  STOP work.

   5.2.70.2  PLACE record sample system in a safe configuration.

   5.2.70.3  NOTIFY FWS of problems encountered AND REQUEST FWS to notify Shift Manager to inform Environmental Compliance of Totalizer failure.

   5.2.70.4  IF directed to replace unit with a calibrated Gasmeter, PERFORM the following:

      a.  RECORD Old Gasmeter reading in the As-Found section of Data Sheet.

      b.  GO TO Step 5.2.60 to calibrate new Gasmeter.
5.2 Primary/Annulus Stack Calibrations/Functional Tests (Cont.)

5.2.71 IF not needed for other activities, REMOVE test equipment.

5.2.72 IF testing complete, GO TO Restoration Section 5.4.

Timer Check

5.2.73 RECORD As-Left Timer reading on Data Sheet.

5.2.74 IF timer is not functional, PERFORM the following:

5.2.74.1 STOP work.

5.2.74.2 PLACE record sample system in a safe configuration.

5.2.74.3 NOTIFY FWS of problems encountered.

5.2.74.4 IF directed to replace unit, VERIFY Timer functions.

5.2.75 IF testing is complete, GO TO Restoration Section 5.4.
5.3 Annulus (WSTA) Pressure Indicator & CAM Flow Switch Calibration

Special Instructions

Pre-and Post-job surveys are required when opening potentially contaminated ventilation system components; radiological survey report (RSR) numbers should be documented in the Work Record.

Vacuum Pump Power Cords can be moved to the un-switched outlet for calibration/testing purposes as many times as needed; returning to original position upon completion of calibration/testing.

NOTE - The following steps shall be repeated as applicable to Data Sheets.

Vacuum Gauge Calibration

NOTE - Calibration may be performed in-place or instrument may be returned to the shop for bench calibration.

5.3.1 CONNECT test equipment to vacuum gauge,

OR

REMOVE gauge AND

CONNECT test equipment.

5.3.2 APPLY test input values specified on Data Sheet AND

RECORD output values in As-Found column of Data Sheet.

5.3.3 IF gauge is within tolerance per applicable Data Sheet and no adjustments are desired, RECORD As-Found values in As-Left column of Data Sheet AND

GO TO Step 5.3.8.

5.3.4 IF gauge is out of tolerance per applicable Data Sheet, SET test input vacuum source to minimum value specified on Data Sheet.

5.3.4.1 IF gauge has no ZERO adjustment, REMOVE pointer from spindle AND

WITHOUT moving spindle, RE-ATTACH pointer so pointer tip indicates minimum value.

5.3.4.2 IF gauge has ZERO adjustment, ADJUST ZERO adjustment until pointer tip indicates minimum value.
5.3 Annulus (WSTA) Pressure Indicator & CAM Flow Switch Calibration (Cont.)

5.3.5 APPLY inputs per Data Sheet AND
CHECK output values for tolerance.

5.3.6 IF values are within tolerance per Data Sheet, RECORD As-Left values on Data Sheet AND
GO TO Step 5.3.8.

5.3.7 IF values are not within tolerance per Data Sheet, REPEAT Steps 5.3.4 through 5.3.6 until values are within tolerance.

5.3.7.1 IF unable to bring gauge into tolerance, PERFORM the following:

a. STOP work.

b. PLACE system in a safe configuration.

c. NOTIFY FWS for resolution.

5.3.8 IF not needed for other activities, REMOVE test equipment.

5.3.9 RETURN gauge to service.

5.3.10 IF testing is complete, GO TO Restoration Section, 5.4.

NOTE - AN Farm has no local control room alarms.

5.3.11 IF local stack cabinet and control room alarms exist, CONFIRM that local stack cabinet and control room alarms are Clear/Not Lit.

5.3.12 INSTALL standard rotameter in the system upstream of the installed system flow switch AND
LEAVE upstream end of standard rotameter open to atmosphere.
5.3 Annulus (WSTA) Pressure Indicator & CAM Flow Switch Calibration (Cont.)

5.3.13 INSPECT flow switch for mechanical integrity with attention to the following conditions:
- No missing or loose fasteners or tubing supports.
- No evidence of crimped or damaged sensing lines.
- No evidence of damage to the switch housing.
- No evidence of corrosion or foreign material build up on the flow switch housing.

5.3.13.1 IF evidence of any of the above conditions are met, NOTIFY FWS for resolution.

5.3.14 IF Vacuum Pump is off, MOVE power cord to the un-switched outlet AND RECORD on Work Record.

5.3.15 IF the flow switch contacts are not closed, ADJUST flow regulator above trip point.

5.3.16 ADJUST Flow Regulator until flow switch contacts open.

5.3.17 RECORD the As-Found flow switch reading on the Data Sheet.

5.3.18 CONFIRM that local stack cabinet and control room alarms are Activated AND RECORD status on the Data Sheet.

5.3.19 IF the As-Found set-point is within the tolerance range specified by the Data Sheet, PERFORM the following:

5.3.19.1 RECORD As-Found flow reading in the As-Left section of Data Sheet.

5.3.19.2 GO TO Step 5.3.23.
5.3 Annulus (WSTA) Pressure Indicator & CAM Flow Switch Calibration (Cont.)

5.3.20 IF the As-Found set-point is not within the tolerance range specified by the Data Sheet, **ADJUST** flow switch per Data Sheet.

5.3.21 IF flow switch cannot be adjusted within range specified by the Data Sheet, **PERFORM** the following:

5.3.21.1 **DISASSEMBLE AND CLEAN** flow switch.

5.3.21.2 **REASSEMBLE AND ADJUST** flow switch per Data Sheet.

5.3.22 IF flow switch set point is not within the tolerance range specified by the Data Sheet and cannot be corrected by cleaning, **PERFORM** the following:

5.3.22.1 **STOP** work.

5.3.22.2 **PLACE** system in a safe configuration.

5.3.22.3 **NOTIFY** FWS of problems encountered.

5.3.23 **ADJUST** flow regulator to the mid-point value of flow rate in East or West Daily CAM and Record Sampler Data Sheet of TF-OPS-005, DST Daily CAM and Record Sampler Inspections for sample location being tested.

5.3.24 IF power cord was moved to a un-switched outlet, **RETURN** to original outlet **AND**

**RECORD** on Work Record.

5.3.25 **REMOVE** test equipment.

5.3.26 **CONFIRM** that local stack cabinet and control room alarms are Clear/Not Lit **AND**

**RECORD** status on the Data Sheet.
5.4 Restoration

5.4.1 IF Loop has an AMS-4 CAM installed, PERFORM the following:

5.4.1.1 SET AMS-4 fixed flow rate to 0 CFM.

5.4.1.2 RECORD As-Left fixed flow rate value on Data Sheet.

5.4.2 ENSURE vacuum pump power cords were returned to their original outlet AND RECORD on Work Record.

5.4.3 IF As-Left Timer reading is not recorded on Data Sheet, RECORD reading in As-Left column of Data Sheet.

5.4.4 IF testing satisfactorily completed, NOTIFY Shift Manager that testing is satisfactorily completed.

5.4.5 IF testing fails, NOTIFY Shift Manager AND REQUEST the Shift Manager to notify Environmental.

5.4.6 RECORD measuring and test equipment and calibration status on Data Sheet.

5.4.7 DISPOSE of all waste per TO-100-052, Perform Waste Generation Segregation, and Accumulation.

5.5 Acceptance Criteria

Acceptance Criteria has been met when steps in this procedure have been satisfactorily performed and As-Left values meet the specifications and tolerance(s) per the Data Sheet.
5.6 Review

5.6.1 INFORM FWS test is complete.

5.6.2 FWS must REVIEW AND ENSURE the following:
- Completed Data Sheets meet the acceptance criteria.
- Comments sections are filled out appropriately.
- Any work requests needed as a result of this procedure are identified and generated.
- RSR number(s) for pre- and post-job surveys are documented in the Work Record.
- Work request number(s) of any work documents generated as a result of this procedure, are recorded in the Comments/Remarks section of the Data Sheet, as applicable.

5.7 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
### Table 1 - Acceptable Gas Meter Operational Time Table

<table>
<thead>
<tr>
<th>Vacuum Gauge Reading in Hg</th>
<th>Acceptable Stopwatch Time</th>
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<td></td>
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Figure 1 – How the Trap Works

1. Gas/Air enters through the top slot which goes into the chamber.
2. Dirt and Moisture particles are collected in the chamber, which is visible through the clear transparent glass window.
3. Then Gas/Dry Air goes into the centre slot where it enters the instrument.
Figure 2 – Negative Pressure Connection
Figure 3 – Positive Pressure Connection
Attachment 1 – Water Trap/Pressure M&TE

**Water Trap with Potentially Contaminated Liquid**

1. If potentially contaminated liquid gets into Water Trap, Suspend the work.
2. Notify the FWS.
3. When provided approval from the FWS proceed as follows.
4. Remove Pressure M&TE from field.
5. Return to a RMA.
6. Disassemble the Water Trap.
7. Allow trap to dry overnight.
8. Survey disassembled trap components in accordance with Radcon survey plan.
9. If the Water Trap can be released return it to tool crib.
10. If the Water Trap cannot be released, dispose of it per waste planning checklist.

**Water Trap with Clean Liquid (NOT Contaminated)**

1. If clean liquid gets into Water Trap, disassemble the Water Trap.
2. Allow Water Trap to dry overnight.
3. Re-assemble the Water Trap.
4. Return the Water Trap to the tool crib.
Attachment 1 – Water Trap/Pressure M&TE (Cont.)

**M&TE with Potentially Contaminated Liquid**

1. If potentially contaminated liquid gets past water trap and inside Pressure M&TE, Suspend the work.
2. Notify FWS.
3. Wait for further directions.

**M&TE with Clean Liquid (NOT Contaminated)**

1. If clean liquid gets past the water trap disassemble and dry out Pressure M&TE per manufacturers direction.
2. Return the M&TE to the tool crib.
3. Request the M&TE to be returned to NIST calibration lab for recalibration.
Attachment 2 – Calibration Instruction

**Positive pressure calibrations:**

Note: Vent Valve assembly is required on all positive pressure calibrations to ensure MT&E is not contaminated by venting potential process air back through MT&E.  
Install vent valve assembly Per Figure 3  
Ensure IV is open and VV is closed  
Proceed with calibration per work package  
- Whenever venting is required during calibration steps, vent stored pressure as follows.  

NOTE - Valve IV can remain open when reading is required via M&TE.  
Ensure IV valve is closed  
Ensure VV valve is opened  
Repeat sequence as necessary to complete the calibration.  
After all steps are completed for the calibration, perform RCT survey release plan XXX  

**Negative pressure calibrations:**

Note: use of surrogate filter is required for negative pressure calibrations to ensure MT&E is not contaminated by pulling process air into MT&E while drawing Vacuum.  
Negative calibrations should be performed as Follows.  
Ensure surrogate filter holder has media installed.  
Connect filter in-line per Figure 2  
Ensure IV is Open  
Pull a representative vacuum into MT&E through filter  
Ensure IV is Closed  
Vent through VV  
RCT to perform survey of the media.  
IF no contamination found remove surrogate filter holder/manifold and proceed with calibration.
Comment Sheet

RECORD ANY COMMENTS ENCOUNTERED DURING PERFORMANCE OF THE CALIBRATION BELOW

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