

# START

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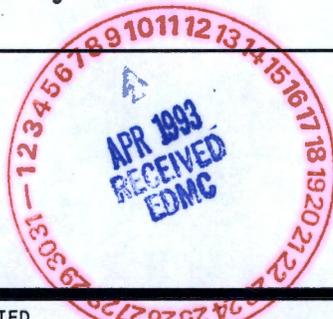
## ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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Station #12

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1	1	Cog. Mgr. MC Haggard	<i>MC Haggard</i>	3/15/93	H6-04	ERC			H6-07			
1	1	QA RL Hand	<i>RL Hand</i>	3/15/93	H4-16	EDMC (2)			H6-08			
		Safety				Central Files (2)			L8-04			
1	1	Env. DJ Moak	<i>RT Coffman</i>	FOR	N3-05							
2		RT Coffman			N3-05							
2		SA Driggers			H6-04							

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SUPPORTING DOCUMENT

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3. Number

WHC-SD-EN-OTP-002

4. Rev No.

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Name: EJ Millikin

*EJ Millikin 3/15/93*  
Signature

Organization/Charge Code 81352/P121A

**APPROVED FOR PUBLIC RELEASE**

*3/24/93 N. Solis*

7. Abstract

Document describes the operational test performed for accepting the 1500 CFM vapor extraction system from the design/builder contractor.

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10. RELEASE STAMP

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*Station #12*

9. Impact Level 3Q

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## OPERATIONAL TEST PROCEDURE

### 1.0 GENERAL

- 1.1 The purpose of this test procedure is to outline various steps to be taken to ensure component design parameters are met. The procedure will also define steps to be taken to simulate various design parameters (e.g., pressure drop, temperature, CCl<sub>4</sub>, etc.). These steps may include temporary mechanical devices or predetermined instrument signals.
- 1.2 Prior to the Operational Test, all available instrumentation, wiring, and controls will have been installed and tested for loop integrity; therefore, the data-logging, trending, and control sequencing will be used to record all the simulated and nonsimulated inputs so described throughout this specification. This record, taken as a hard copy from the color copier and printer, will become part of the acceptance documentation generated on completion of the Operational Test Procedure.

### 2.0 REVIEW TEST PROCEDURE

Review and complete Operational Test Procedure and establish a plan to complete all tasks outlined in the procedure in a timely manner.

### 3.0 REVIEW Q/A TEST DOCUMENTS

- 3.1 Each test document is to include a cover sheet that lists the following:
  - a. Equipment
  - b. Supplier
  - c. Applicable Specification sections
  - d. Test Procedures and Standards
  - e. Disposition of equipment
- 3.2 Test documents will be presented for the following components:
  - a. Water Separators (three required)
    1. Pressure Test
  - b. Pre-Heater Housing
    1. Pressure Test
  - c. CM Bag-Out Housing
    1. Pressure Test (overall)
    2. Pressure Test (seal faces)

- d. Vacuum Blower (three required)
  - 1. Balancing
  - 2. Air Flow Testing
  - 3. Sound Levels
- e. Silencer Assembly (three required)
  - 1. Pressure Test
- f. Discharge Manifold
  - 1. Pressure Test
- g. Cooler
  - 1. Pressure Test
- h. Distribution Manifold
  - 1. Pressure Test
- i. Return Manifold
  - 1. Pressure Test
- j. Piping and Connections from Blower Discharge to Exhaust Stack
  - 1. Pressure Test

#### 4.0 EQUIPMENT SET UP

The units will be set up for performing the Operational Test per the following.

- 4.1 Position units side-by-side approximately 15 ft apart, with the (3) three 6-in. quick-disconnect hose connections, on each unit (for connecting HEPA filter unit to the vacuum blower unit) aligned.
- 4.2 Install (3) three 6-in. hoses between units per Drawing No. D-24000 (Attachment 1.0), sheet 3 of 6.
- 4.3 Raise stack extension section (P/N ES-1551) on vacuum blower unit per Drawing No. D-24002 (Attachment 2.0).
- 4.4 Connect (3) three pairs of GAC canisters to the vacuum blower unit (GAC-C1/C4, GAC-C2/C5, and GAC-C3/C6) per Drawing No. D-24000 (Attachment 1.0), sheet 6 of 6.
- 4.5 Connect (4) four temporary differential pressure gauges downstream of valves HV-1411, HV-1412, HV-1413, and HV-1414 for simulating well differential pressures.

NOTE: It is assumed that all conditions (e.g., pressure drop, pressure, flow, etc.) for each well would be the same. One valve will be opened for testing at 500 ft<sup>3</sup>/min (e.g., HV-1411) to simulate conditions for each well at the 500 ft<sup>3</sup>/min test run. For testing at 1,000 ft<sup>3</sup>/min, two valves will be opened, i.e., HV-1411 and HV-1414, then four valves will be opened to test at 1,500 ft<sup>3</sup>/min.

- 4.6 Connect all instrument cables per Johnson Yokogawa drawing.

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- 4.7 Make all electrical supply and interface connections per Drawing No. D-24000 (Attachment 1.0), sheet 3 of 6.
- 4.8 Set up PCS per Johnson Yokogawa Corp. Functional Requirements Document.
- 4.9 Install prefilters and HEPA filters in each filter housing.

**5.0 SYSTEMATIC INSPECTION OF EACH COMPONENT**

- 5.1 After the equipment has been set up, perform a complete system inspection to verify that the installation of all components is according to Drawing No. D-24000 (Attachment 1.0), sheets 5 and 6.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

- 5.2 If the drawings do not represent the actual installation, As-Built the drawings to match installation.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

**6.0 SYSTEM CONFIGURATION**

This portion of the test procedure outlines the system configuration required for establishing flows and for setting the current draw (24 amps) of the blower motors with the blast gate dampers.

Each blower needs to have its blast gate closed when starting and adjusted open until the motor nameplate amperage is achieved. The motor nameplate rating to be achieved for each blower is 24 amps @ 460 V/3PH/60 Hz.

The procedure to do this will require various valve position adjustments and taking amperage readings, using an amp-probe, across motor leads L1, L2, and L3 while the blower is running.

The motor amperage needs to be again checked once the simulated pressure drops are implemented in each respective system.

**6.1 Blower BL-1511 (Start Up)**

- 6.1.1 Close (isolate flow) the following process flow valves: blower inlet valves HV-1512 & HV-1513; 3-way valves FV-1532; FV-1542; FV-1533; FV-1543; water separator WS-1422 and WS-1423 inlet valves (HV-1422 & HV-1423); ambient air inlet valve HV-1420; isolation valves from Well No. 2, No. 3, and No. 4 (HV-1412, HV-1413, HV-1414).

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6.1.2 Open the following valves (full open): blower inlet valve HV-1511; isolation valve HV-1411 from Well No. 1; inlet valve HV-1421 to water separator WS-1421; set FV-1541 to position B for flow to Canister-C1; GAC isolation butterfly valves on inlet and outlet of GAC C1 and C4; and set FV-1531 to position B for flow from Canister-C4.

6.1.3 Start blower BL-1511 and read motor amperage across motor lead L1 and start opening blower blast gate BG-1511 until the motor nameplate rating is achieved (24 amps) and lock valve handle in place. Repeat readings for L2 and L3, record values below, then turn blower off.

L1 \_\_\_\_\_ amps    L2 \_\_\_\_\_ amps    L3 \_\_\_\_\_ amps

Acceptable \_\_\_\_\_ Not Acceptable \_\_\_\_\_

6.2 Blower System BL-1512 (Start Up)

6.2.1 Close (isolate flow) the following valves: blower inlet valve HV-1511 & HV-1513; 3-way valves FV-1531, FV-1541, FV-1533, FV-1543; water separator WS-1421 and 1423 inlet valves (HV-1421 & HV-1423); ambient air inlet valve HV-1420; isolation valves from Well No. 2, No. 3, and No. 4 (HV-1412, HV-1413, HV-1414).

6.2.2 Open the following valves (full open): blower inlet valve HV-1512; isolation valve HV-1411 from Well No. 1; inlet valve HV-1422 to water separator WS-1422; set FV-1542 to position B for flow to Canister-C2; GAC isolation butterfly valves on inlet and outlet of GAC C2 and GAC C5; set FV-1532 to position B for flow from Canister-C5.

6.2.3 Start blower BL-1512 and read motor amperage across lead L1 and start opening blast gate BG-1512 until motor nameplate rating is achieved (24 amps), and lock blast gate handle. Repeat readings for L2 and L3. Record values below, then turn blower off.

L1 \_\_\_\_\_ amps    L2 \_\_\_\_\_ amps    L3 \_\_\_\_\_ amps

Acceptable \_\_\_\_\_ Not Acceptable \_\_\_\_\_

6.3 Blower System BL-1513 (Start Up)

6.3.1 Close (isolate flow) the following process flow valves: blower inlet valves HV-1511 & HV-1512; valves FV-1531, FV-1541, FV-1532, FV-1542; water separator WS-1421 and WS-1422 inlet valves (HV-1421 & HV-1422); ambient air inlet valve HV-1420; isolation valves from Well No. 2, No. 3, and No. 4 (HV-1412, HV-1413, HV-1414).

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6.3.2 Open the following valves (full open): blower inlet valve HV-1513; isolation valve HV-1411 from Well No. 1; inlet valve HV-1423 to water separator WS-1423; set FV-1543 to position B for flow to Canister-C3; GAC isolation butterfly valves on inlet and outlet of GAC C3 and GAC C6; set FV-1533 to position B for flow from Canister-C6.

6.3.3 Start blower BL-1513 and read amperage of motor lead L1 and start opening blast gate BG-1513 until motor nameplate rating is achieved (24 amps) and lock handle. Repeat readings for L2 and L3. Record values below, then turn blower off.

L1 \_\_\_\_\_ amps    L2 \_\_\_\_\_ amps    L3 \_\_\_\_\_ amps

Acceptable \_\_\_\_\_ Not Acceptable \_\_\_\_\_

7.0 OPERATIONAL TEST

7.1 500 ft<sup>3</sup>/min Test

7.1.1 Configuration for Flow to Canisters C1 and C4

7.1.1.1 Close (isolate) the following valves: blower inlet valves HV-1512 and HV-1513; 3-way valves FV-1532, FV-1542, FV-1533 and FV-1543; inlet valves HV-1422 and HV-1423 to water separators WS-1422 and 1423; well isolation valves HV-1412, HV-1413 and HV-1414; and ambient air valve HV-1420.

7.1.1.2 Open the following valves: well isolation valve HV-1411; water separator inlet valve HV-1421; blower inlet valve HV-1511; 3-way valves FV-1531 to position B and FV-1541 to position B.

7.1.2 Perform Test for Flow Through Canisters C1 and C4

7.1.2.1 Start Blower BL-1511.

7.1.2.2 Adjust valve HV-1411 to create a pressure of 10 in. Hg (136 in. W.C.) at PIT-1511 to simulate system requirements.

7.1.2.3 Recheck amperage draw across motor leads L1, L2, and L3 of BL-1511 (<24 amps).

L1 \_\_\_\_\_ amps    L2 \_\_\_\_\_ amps    L3 \_\_\_\_\_ amps

Acceptable \_\_\_\_\_ Not Acceptable \_\_\_\_\_

7.1.2.4 Record flows: FIT-1411 \_\_\_\_\_, FIT-1531 \_\_\_\_\_, FIT-1542 \_\_\_\_\_, FIT-1550 \_\_\_\_\_

Acceptable \_\_\_\_\_ Not Acceptable \_\_\_\_\_

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7.1.2.5 Record pressures: PIT-1411\_\_\_\_\_, PIT-1421\_\_\_\_\_  
\_\_\_\_\_, PDIT-1441\_\_\_\_\_, PDIT-1451\_\_\_\_\_,  
PDIT-1461\_\_\_\_\_, PIT-1511\_\_\_\_\_, PIT-1520\_\_\_\_\_  
\_\_\_\_\_.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.1.2.6 Well Characterization Test.

7.1.2.6.1 Fully open well isolation valve  
HV-1411.

7.1.2.6.2 Fully open ambient air valve HV-1420.

7.1.2.6.3 Adjust valve HV-1411 on HEPA unit to  
create a flow of 50 ft<sup>3</sup>/min at  
FIT-1411.

7.1.2.6.4 Record flows at FIT-1411\_\_\_\_\_ and  
FIT-1550\_\_\_\_\_.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.1.2.6.5 Record pressures at PIT-1511\_\_\_\_\_  
and PIT-1520\_\_\_\_\_.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.1.3 Perform Simulated Interlock Test, 500 ft<sup>3</sup>/min.

This test will determine the capability of the interlocks to  
shut the blower(s) down when the interlocks are actuated.  
The sensors comprising the interlocks will either be shorted  
out or the ranges changed to simulate the interlock signal.  
Flow will be adjusted back to 500 ft<sup>3</sup>/min to perform this  
test.

7.1.3.1 Fully open well isolation valve HV-1411.

7.1.3.2 Close ambient air valve HV-1420.

7.1.3.3 Adjust well isolation valve HV-1411 to create a  
pressure of 10 in. Hg (136 in. W.C.) at PIT-1511.

7.1.3.4 Check for high system vacuum, >10 in. Hg (136 in.  
W.C.) for 30 seconds at PIT-1511. Verify blower  
shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.1.3.5 Low system vacuum, <5 in. W.C. at PIT-1511.  
Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

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- 7.1.3.6 High system pressure, >162 in. W.C. for 120 seconds at PIT-1520. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.7 Inlet process temperature to HEPA, <20° above dewpoint at DTIT-1431. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.8 High delta pressure >6.0 in. W.C. for 120 seconds across all HEPA filters at PDAH-1471. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.9 High delta pressure >4.0 in. W.C. for 120 seconds across both primary and secondary HEPA filters at PDIT-1451 and PDIT-1461. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.10 Low delta pressure <0.2 in. W.C. for 120 seconds across both primary and secondary HEPA filters at PDIT-1451 and PDIT-1461. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.11 High alpha count (discrete) at RIT-1552A. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.12 High beta count (discrete) at RIT-1552B. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.13 High carbon tetrachloride (>2000 ppm for 120 seconds) upstream of GAC at CT-1530. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.14 High carbon tetrachloride (>100 ppm for 120 seconds) between GAC units at CT-1531. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_
- 7.1.3.15 High carbon tetrachloride (>25 ppm for 120 seconds) after GAC units at CT-1541. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

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7.1.3.16 High carbon tetrachloride (>25 ppm for 120 seconds) out stack at CT-1550. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.1.3.17 High flowrate differential (>10%) between inlet GAC manifold and outlet GAC manifold at FDAH-1531. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.1.3.18 High cooler outlet temperature (>150°F) for 120 seconds at TIT-1522. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.1.3.19 Loss of alarm instrumentation signal. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2 1,000 ft<sup>3</sup>/min Test

7.2.1 Configuration for Flow to Canisters C2-C5 and C3-C6

7.2.1.1 Close (isolate) the following valves: blower inlet valve HV-1511 and HV-1513; 3-way valves FV-1531, FV-1541; inlet valve HV-1421 to water separator WS-1421; well isolation valves HV-1412 and HV-1413; and the ambient air valve HV-1420.

7.2.1.2 Open the following valves: well isolation valves HV-1411 and HV-1414; water separator inlet valves HV-1422 and HV-1423; blower inlet valve HV-1512; 3-way valves FV-1542 to position B and FV-1532 to position B, FV-1543 position B and FV-1533 position B; GAC isolation butterfly valves on inlet and outlet of GAC C2, GAC C5, GAC C3, and GAC C6.

7.2.2 Perform Test for Canisters C2-C5 and C3-C6

7.2.2.1 Start Blowers BL-1512 and BL-1513.

7.2.2.2 Open blower inlet valve HV-1513. NOTE: Operating time with inlet valve HV-1513 closed should be less than 5 minutes.

7.2.2.3 Adjust valves HV-1411 and HV-1414 to create a pressure of 10 in. Hg at PIT-1512 and PIT-1513 to simulate system requirements.

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7.2.2.4 Recheck amperage draw across motor leads L1, L2, and L3 of BL-1512 (<24 amps).

L1\_\_\_\_amps L2\_\_\_\_amps L3\_\_\_\_amps

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.2.5 Recheck amperage draw across motor leads L1, L2, and L3 of BL-1513 (<24 amps).

L1\_\_\_\_amps L2\_\_\_\_amps L3\_\_\_\_amps

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.2.6 Record flows: FIT-1411\_\_\_\_\_, FIT-1414\_\_\_\_\_, FIT-1532\_\_\_\_\_, FIT-1533\_\_\_\_\_, FIT-1543\_\_\_\_\_, FIT-1544\_\_\_\_\_ and FIT-1550\_\_\_\_\_.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.2.7 Record pressures: PIT-1411\_\_\_\_\_, PIT-1414\_\_\_\_\_, PIT-1422\_\_\_\_\_, PIT-1423\_\_\_\_\_, PDIT-1442\_\_\_\_\_, PDIT-1452\_\_\_\_\_, PDIT-1462\_\_\_\_\_, PDIT-1443\_\_\_\_\_, PDIT-1453\_\_\_\_\_, PDIT-1463\_\_\_\_\_, PIT-1512\_\_\_\_\_, PIT-1513\_\_\_\_\_, PIT-1520\_\_\_\_\_.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3 Perform Simulated Interlock Test, 1,000 ft<sup>3</sup>/min.

7.2.3.1 Check for high system vacuum, >10 in. Hg (136 in. W.C.) for 30 seconds at PIT-1512 and PIT-1513. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.2 Low system vacuum, <5 in. W.C. at PIT-1512 and PIT-1513. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.3 High system pressure, >162 in. W.C. for 120 seconds at PIT-1520. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.4 Inlet process temperature to HEPA, <20° above dewpoint at DTIT-1432 and DTIT-1433. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

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7.2.3.5 High delta pressure >6.0 in. W.C. for 120 seconds across all HEPA filters at PDAH-1472 and PDAH-1473. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.6 High delta pressure >4.0 in. W.C. for 120 seconds across both primary and secondary HEPA filters at PDIT-1452, PDIT-1462, PDIT-1453, and PDIT-1463. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.7 Low delta pressure <0.2 in. W.C. for 120 seconds across both primary and secondary HEPA filters at PDIT-1452, PDIT-1462, PDIT-1453, and PDIT-1463. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.8 High alpha count (discrete) at RIT-1552A. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.9 High beta count (discrete) at RIT-1552B. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.10 High carbon tetrachloride (>2,000 ppm for 120 seconds) upstream of GAC at CT-1530. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.11 High carbon tetrachloride (>100 ppm for 120 seconds) between GAC units at CT-1531. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.12 High carbon tetrachloride (>25 ppm for 120 seconds) after GAC units at CT-1541. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.2.3.13 High carbon tetrachloride (>25 ppm for 120 seconds) out stack at CT-1550. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

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- 7.2.3.14 High flowrate differential (>10%) between inlet GAC manifold and outlet GAC manifold at FDAH-1532 and FDAH-1533. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

- 7.2.3.15 High cooler outlet temperature (>150°F) for 120 seconds at TIT-1522. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

- 7.2.3.16 Loss of alarm instrumentation signal. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

### 7.3 1,500 ft<sup>3</sup>/min Test

The 1,500 ft<sup>3</sup>/min Test will be performed by aligning valves to verify that flow direction can be reversed by each of the 3-way GAC valves to change flow directions in GAC canisters.

#### 7.3.1 Configuration for Flow to Canisters C4-C1, C5-C2, and C6-C3.

- 7.3.1.1 Close (isolate) the following valves: blower inlet valves BL-1512, and BL-1513; ambient air valve HV-1420.

- 7.3.1.2 Open the following valves: well isolation valve HV-1411, HV-1412, HV-1413 and HV-1414; blower inlet valve HV-1511; 3-way valves FV-1531 to position A, FV-1532 to A, FV-1533 to A, FV-1541 to A, FV-1542 to A, FV-1543 to A; inlet valves HV-1421, HV-1422 and HV-1423 to water separators WS-1421, WS-1422 and 1423; GAC isolation butterfly valves on inlet and outlet of GAC C4, GAC C1, GAC C5, GAC C2, GAC C6, GAC C3.

#### 7.3.2 Perform Test for Flow Through Canisters C4-C1, C5-C2, and C6-C3

- 7.3.2.1 Start blowers BL-1511, BL-1512, and BL-1513.

- 7.3.2.2 Open blower inlet valves HV-1512 and HV-1513.  
**NOTE:** Operating time with inlet valves HV-1512 and HV-1513 closed should be less than 5 minutes.

- 7.3.2.3 Adjust valves HV-1411, HV-1412, HV-1413, and HV-1414 to create a pressure of 10 in. Hg (136 in. W.C.) at PIT-1511, PIT-1512, and PIT-1513 to simulate system requirements.

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7.3.2.4 Recheck amperage draw across motor leads L1, L2, and L3 of BL-1511 (<24 amps).

L1\_\_\_\_amps L2\_\_\_\_amps L3\_\_\_\_amps

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.2.5 Recheck amperage draw across motor leads L1, L2, and L3 of BL-1512 (<24 amps).

L1\_\_\_\_amps L2\_\_\_\_amps L3\_\_\_\_amps

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.2.6 Recheck amperage draw across motor leads L1, L2, and L3 of BL-1513 (<24 amps).

L1\_\_\_\_amps L2\_\_\_\_amps L3\_\_\_\_amps

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.2.7 Record flows: FIT-1411\_\_\_\_\_, FIT-1412\_\_\_\_\_, FIT-1413\_\_\_\_\_, FIT-1414\_\_\_\_\_, FIT-1531\_\_\_\_\_, FIT-1532\_\_\_\_\_, FIT-1533\_\_\_\_\_, FIT-1541\_\_\_\_\_, FIT-1542\_\_\_\_\_, FIT-1543\_\_\_\_\_, FIT-1550\_\_\_\_\_

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.2.8 Record pressures: PIT-1411\_\_\_\_\_, PIT-1412\_\_\_\_\_, PIT-1413\_\_\_\_\_, PIT-1414\_\_\_\_\_, PIT-1421\_\_\_\_\_, PIT-1422\_\_\_\_\_, PIT-1423\_\_\_\_\_, PDIT-1441\_\_\_\_\_, PDIT-1451\_\_\_\_\_, PDIT-1461\_\_\_\_\_, PDIT-1442\_\_\_\_\_, PDIT-1452\_\_\_\_\_, PDIT-1462\_\_\_\_\_, PDIT-1443\_\_\_\_\_, PDIT-1453\_\_\_\_\_, PDIT-1463\_\_\_\_\_, PIT-1511\_\_\_\_\_, PIT-1512\_\_\_\_\_, PIT-1513\_\_\_\_\_, PIT-1520\_\_\_\_\_

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3 Perform Simulated Interlock Test, 1,500 ft<sup>3</sup>/min.

7.3.3.1 Check for high system vacuum, >10 in. Hg (136 in. W.C.) for 30 seconds at PIT-1511, PIT-1512, and PIT-1513. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.2 Low system vacuum, <5 in. W.C. at PIT-1511, PIT-1512, and PIT-1513. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

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7.3.3.3 High system pressure, >162 in. W.C. for 120 seconds at PIT-1520. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.4 Inlet process temperature to HEPA, <20° above dewpoint at DTIT-1431, DTIT-1432, DTIT-1433. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.5 High delta pressure >6.0 in. W.C. for 120 seconds across all HEPA filters at PDAH-1471, PDAH-1472, and PDAH-1473. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.6 High delta pressure >4.0 in. W.C. for 120 seconds across both primary and secondary HEPA filters at PDIT-1451, PDIT-1461, PDIT-1452, PDIT-1462, and PDIT-1453, and PDIT-1463. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.7 Low delta pressure <0.2 in. W.C. for 120 seconds across both primary and secondary HEPA filters at PDIT-1451, PDIT-1461, PDIT-1452, PDIT-1462, PDIT-1453, and PDIT-1463. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.8 High alpha count (discrete) at RIT-1552A. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.9 High beta count (discrete) at RIT-1552B. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.10 High carbon tetrachloride (>2,000 ppm for 120 seconds) upstream of GAC at CT-1530. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.11 High carbon tetrachloride (>100 ppm for 120 seconds) between GAC units at CT-1531. Verify blower shut down.  
Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

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7.3.3.12 High carbon tetrachloride (>25 ppm for 120 seconds) after GAC units at CT-1541. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.13 High carbon tetrachloride (>25 ppm for 120 seconds) out stack at CT-1550. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.14 High flowrate differential (>10%) between inlet GAC manifold and outlet GAC manifold at FDAH-1531, FDAH-1532, and FDAH-1533. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

7.3.3.15 High cooler outlet temperature (>150°F) for 120 seconds at TIT-1522. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

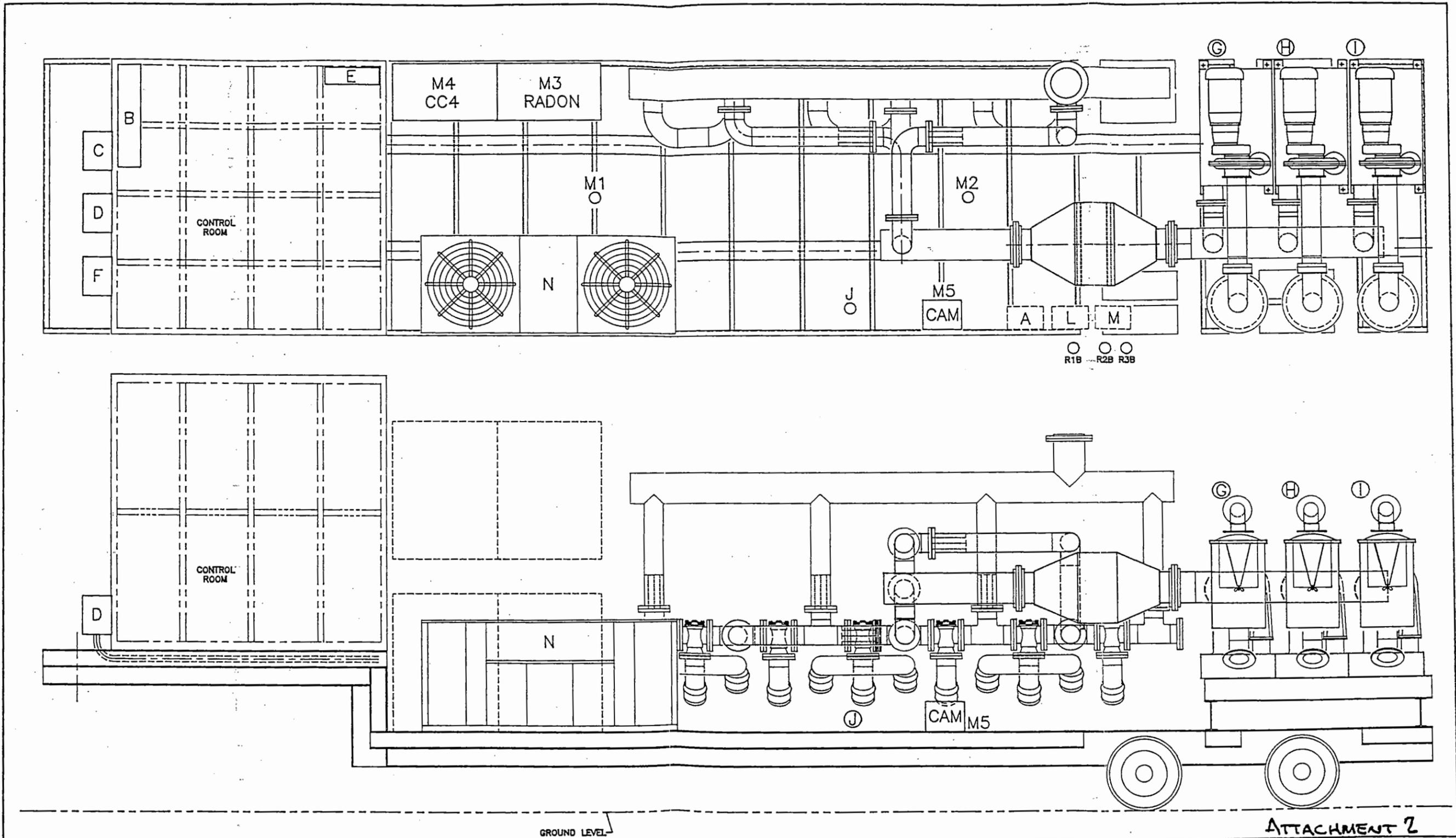
7.3.3.16 Loss of alarm instrumentation signal. Verify blower shut down.

Acceptable\_\_\_\_\_ Not Acceptable\_\_\_\_\_

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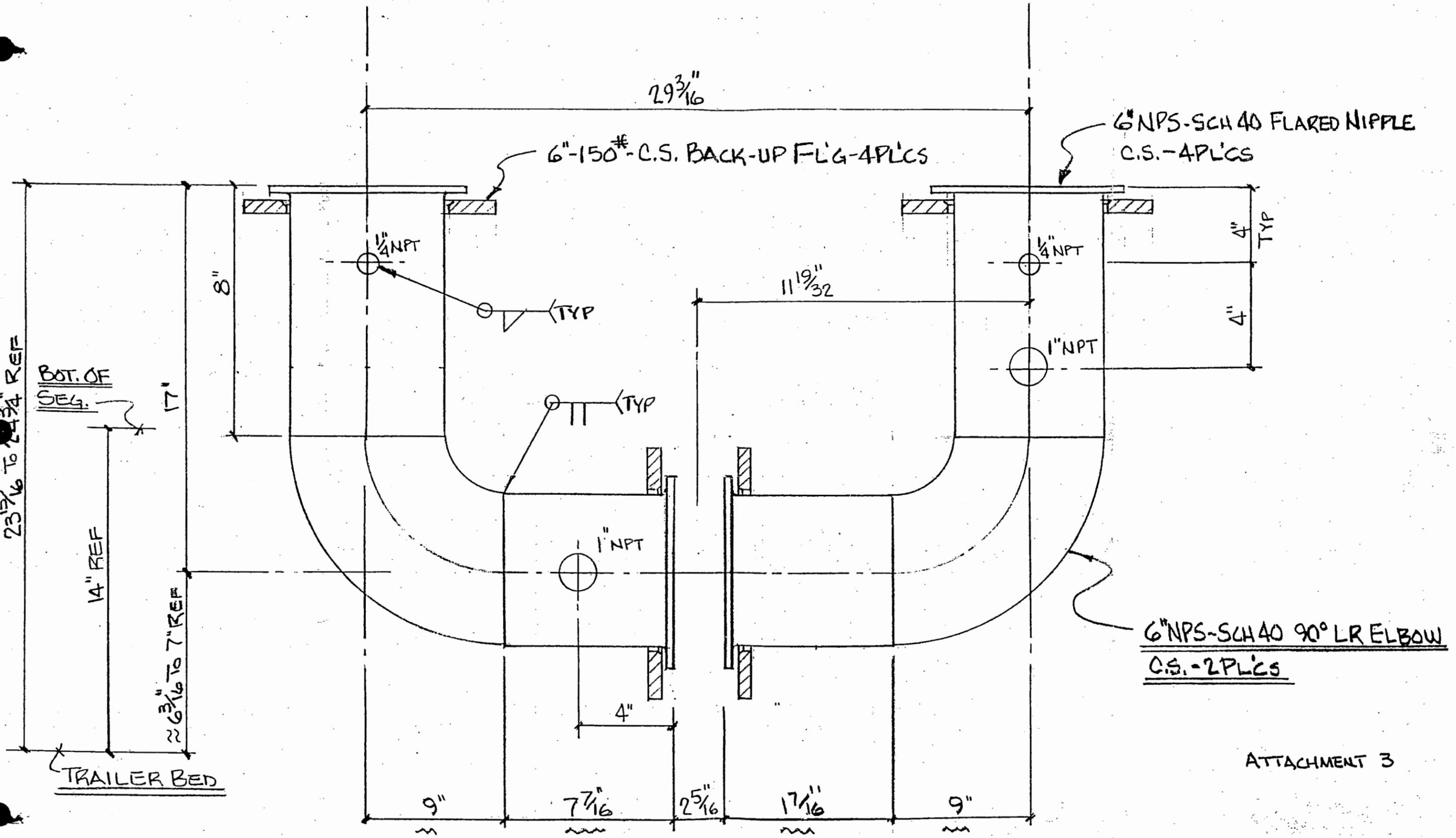


REVISION	DATE	OWN.	CHK'D	APP'D	DESCRIPTION

DRAWN: TJB 1-11-83		<b>BARNEBEY &amp; SUTCLIFFE CORP.</b> PUR AIR Products Division	
CHECKED: [ ]	APPROVED: [ ]	CUSTOMER: WESTINGHOUSE HAMFORD	REG. NO. 001185
EDR: [ ]	TAG: [ ]	TITLE: <b>ELECTRICAL</b>	
TOLERANCES:		TITLE: <b>BLOWER TRAILER PIPING</b>	
FILE: 24002	ORIGIN: 0.0	SCALE: 3/8" = 1'-0"	SIZE: D
PLOT: 31.5,20.5	FACTOR: 1=18	ANGULAR: ± 1/2"	DRAWING NUMBER: 24002
		SHEET 1 OF 18	REV.:

ATTACHMENT 2

93129701317



6"NPS-SCH 40 90° LR ELBOW  
C.S.-2PLCS

ATTACHMENT 3

GAC TEST SPOOL

B-24066

JD 2/16

Complete for all Types of Release

Purpose		ID Number (include revision, volume, etc.) <b>WHC-SD-EN-OTP-002, Rev. 0</b>
<input type="checkbox"/> Speech or Presentation <input type="checkbox"/> Full Paper (Check only one suffix) <input type="checkbox"/> Summary <input type="checkbox"/> Abstract <input type="checkbox"/> Visual Aid <input type="checkbox"/> Speakers Bureau <input type="checkbox"/> Poster Session <input type="checkbox"/> Videotape	<input type="checkbox"/> Reference <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> Thesis or Dissertation <input type="checkbox"/> Manual <input type="checkbox"/> Brochure/Flier <input type="checkbox"/> Software/Database <input type="checkbox"/> Controlled Document <input type="checkbox"/> Other	List attachments. <b>NA</b>
		Date Release Required <b>March 16, 1993</b>

Title <b>Operational Test Procedure for the Westinghouse Hanford Company Mobile Vapor Extraction System</b>	Unclassified Category <b>UC-</b>	Impact Level <b>3Q</b>
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New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input type="checkbox"/> No <input type="checkbox"/> Yes Disclosure No(s).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
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Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Information conforms to all applicable requirements. The above information is certified to be correct.

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