

## Source Test Procedure ST-30

### STATIC PRESSURE INTEGRITY TEST UNDERGROUND STORAGE TANKS

(Adopted November 30, 1983)

REF: Regulation 8-7-301, 302

#### 1. APPLICABILITY

- 1.1 This test procedure is used to quantify the vapor tightness of vapor recovery systems installed at gasoline dispensing facilities (GDF) equipped with pressure/vacuum (P/V) valves, provided that the designed pressure setting of the P/V valves is a minimum of 2.5 inches of water column (inches H<sub>2</sub>O). Excessive leaks in the vapor recovery system will increase the quantity of fugitive hydrocarbon emissions and lower the overall efficiencies of both the Phase I and Phase II vapor recovery systems.
- 1.2 Systems equipped with a P/V valve(s) allowed to have a designed cracking pressure less than 2.5 inches H<sub>2</sub>O shall be bagged to eliminate any flow contribution through the valve assembly from the test results. The valve/vent pipe connection, however, shall remain unobstructed during this test.
- 1.3 At facilities not required to be equipped with a P/V valve(s), the vent pipe(s) shall be capped. For those installations, the test may be conducted at the vent pipe(s).

#### 2. PRINCIPLE

- 2.1 The entire vapor recovery system is pressurized with nitrogen to two (2.0) inches H<sub>2</sub>O. The system pressure is then allowed to decay and the pressure after five (5) minutes is compared with an allowable value. The minimum allowable five-minute final pressure is based on the system ullage and pressure decay equations. For the purpose of compliance determination, this test shall be conducted after all back-filling, paving, and installation of all Phase I and Phase II components, including P/V valves, has been completed.
- 2.2 For GDF equipped with a coaxial Phase I system, this test shall be conducted at a Phase II vapor riser. For GDF which utilize a two-point Phase I system, this test may be conducted at either a Phase II riser or a Phase I vapor coupler provided that the criteria set forth in Section 6.10 have been met. If the integrity criteria for two-point systems specified in Section 6.10 are met, it is recommended that this test be conducted at the Phase I vapor coupler.

### 3. RANGE

- 3.1** If mechanical pressure gauges are employed, the full-scale range of the pressure gauges shall be 0-2.0, 0-1.0, and 0-0.50 inches H<sub>2</sub>O column. Maximum incremental graduations of the pressure gauge shall be 0.05 inches H<sub>2</sub>O and the minimum accuracy of the gauge shall be three percent of full scale. The minimum diameter of the pressure gauge face shall be 4 inches.
- 3.2** If an electronic pressure measuring device is used, the full-scale range of the device shall not exceed 0-10 inches H<sub>2</sub>O with a minimum accuracy of 0.5 percent of full-scale. A 0-20 inches H<sub>2</sub>O device may be used, provided the equivalent accuracy is not less than 0.25 percent of full scale.
- 3.3** The minimum total ullage, for each individual tank, shall be 1,000 gallons or 25% of the tank capacity, whichever is less. The maximum total ullage, for all manifolded tanks, shall not exceed 25,000 gallons. These values are exclusive of all vapor piping volumes.
- 3.4** The minimum and maximum nitrogen feed-rates, into the system, shall be one (1) and five (5) CFM, respectively.

### 4. INTERFERENCES

- 4.1** Introduction of nitrogen into the system at flowrates exceeding five (5) CFM may bias the results of the test toward non-compliance.
- 4.2** For vacuum-assist Phase II systems which utilize an incinerator, power to the collection unit shall be turned off during testing.
- 4.3** For vacuum-assist systems which locate the vacuum producing device in-line between the Phase II vapor riser and the storage tank, the following requirements shall apply:
- 4.3.1** A valve shall be installed at the vacuum producing device. When closed, this valve shall isolate the vapor passage downstream of the vacuum producing device.
- 4.3.2** The storage tank side of the vacuum producing device shall be tested in accordance with the procedures outlined in Section 7 of this method. Compliance shall be determined by comparing the final five-minute pressure with the allowable minimum five-minute final pressure from the first column (1-6 affected nozzles) in Table 30-IB or use the corresponding equation in Section 9.2.
- 4.3.3** The upstream vapor passage (nozzle to vacuum producing device) shall also be tested. Methodology for this test shall be submitted to the Source Test Section of the BAAQMD for approval prior to submission of test results or shall be conducted in accordance with the procedures set forth in the applicable California Air Resources Board (CARB) Executive Order.

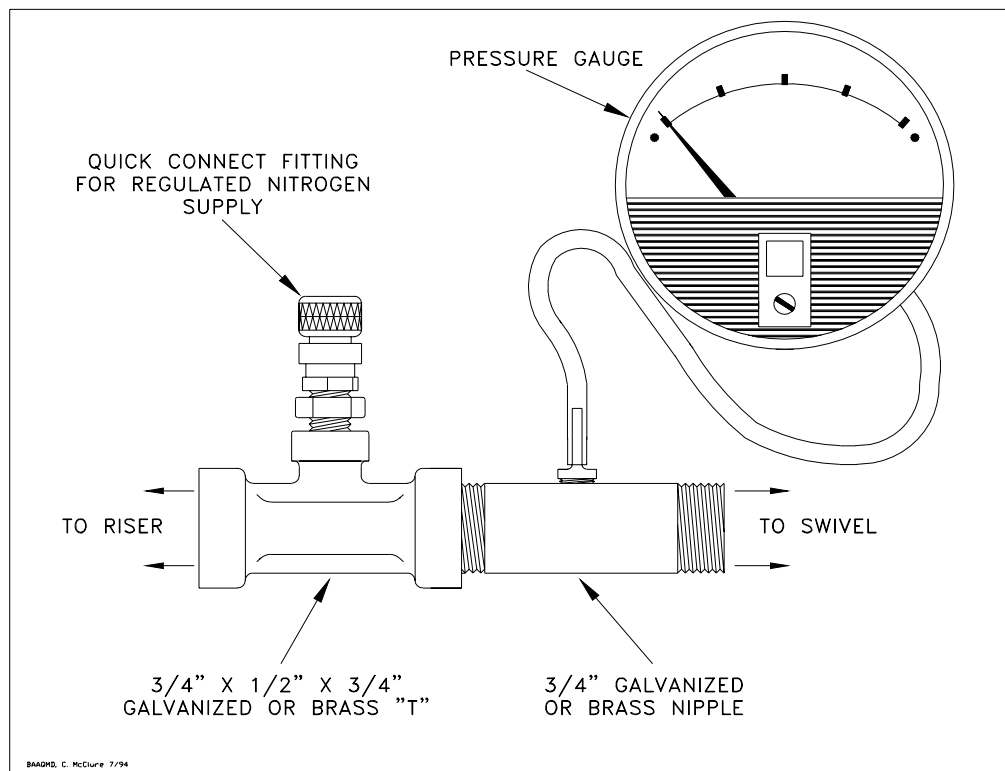
- 4.4** The results of this static pressure integrity test shall not be used to verify compliance if an Air to Liquid Volumetric Ratio Test (TP-201.5 or equivalent) was conducted within 24 hours prior to this test.
- 4.5** Thermal Bias for Electronic Manometers. Electronic manometers shall have a warm-up period of at least 15 minutes followed by a five minute drift check. If the drift exceeds 0.01 inches water column, the instrument should not be used.

## 5. APPARATUS

- 5.1** Nitrogen. Use commercial grade nitrogen in a high pressure cylinder, equipped with a two-stage pressure regulator and a one psig pressure relief valve.

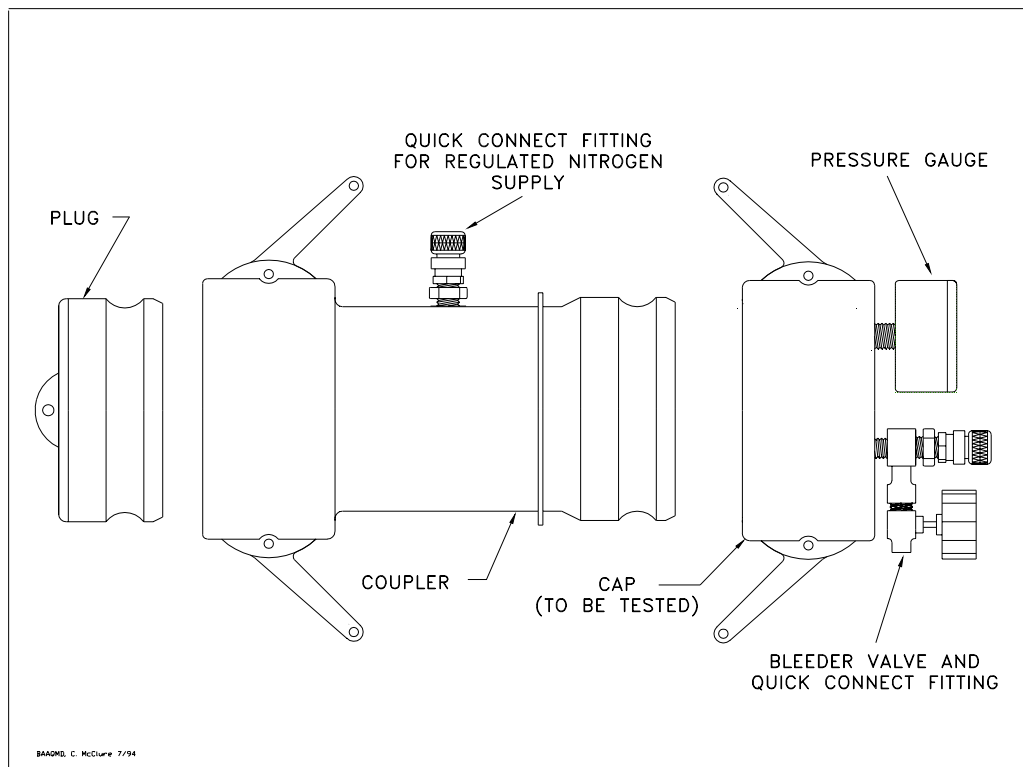
**Figure 30-1**

### "T" Connector Assembly



- 5.2** Pressure Measuring Device. Use 0-2.0, 0-1.0, and 0-0.50 inches H<sub>2</sub>O pressure gauges connected in parallel, a 0-2 inches H<sub>2</sub>O manometer, or an electronic pressure measuring device to monitor the pressure decay in the vapor recovery system. The pressure measuring device shall, at a minimum, be readable to the nearest 0.05 inches H<sub>2</sub>O.
- 5.3** "T" Connector Assembly. See Figure 30-1 for example.

- 5.4** Vapor Coupler Integrity Assembly. Assemble OPW 633-A, 633-B, and 634-A adapters, or equivalent, as shown in Figure 30-2. If the test is to be conducted at the storage tank Phase I vapor coupler, this assembly shall be used prior to conducting the static leak test in order to verify the pressure integrity of the vapor poppet. The internal volume of this assembly shall not exceed 0.1 cubic feet.
- 5.5** Vapor Coupler Test Assembly. Use a compatible OPW 634-B cap, or equivalent, equipped with a center probe to open the poppet, a pressure measuring device to monitor the pressure decay, and a connection for the introduction of nitrogen into the system. See Figure 30-3 for an example.
- 5.6** Stopwatch. Use a stopwatch accurate to within 0.2 seconds.

**Figure 30-2****Vapor Coupler Integrity Assembly**

- 5.7** Flowmeter. Use a Dwyer flowmeter, Model RMC-104, or equivalent, to determine the required pressure setting of the delivery pressure gauge on the nitrogen supply pressure regulator. This pressure shall be set such that the nitrogen flowrate is between 1.0 and 5.0 CFM.
- 5.8** Combustible Gas Detector. A Bacharach Instrument Company, Model 0023-7356, or equivalent, may be used to verify the pressure integrity of system components during this test.

- 5.9** Leak Detection Solution. Any liquid solution designed to detect vapor leaks may be used to verify the pressure integrity of system components during this test.

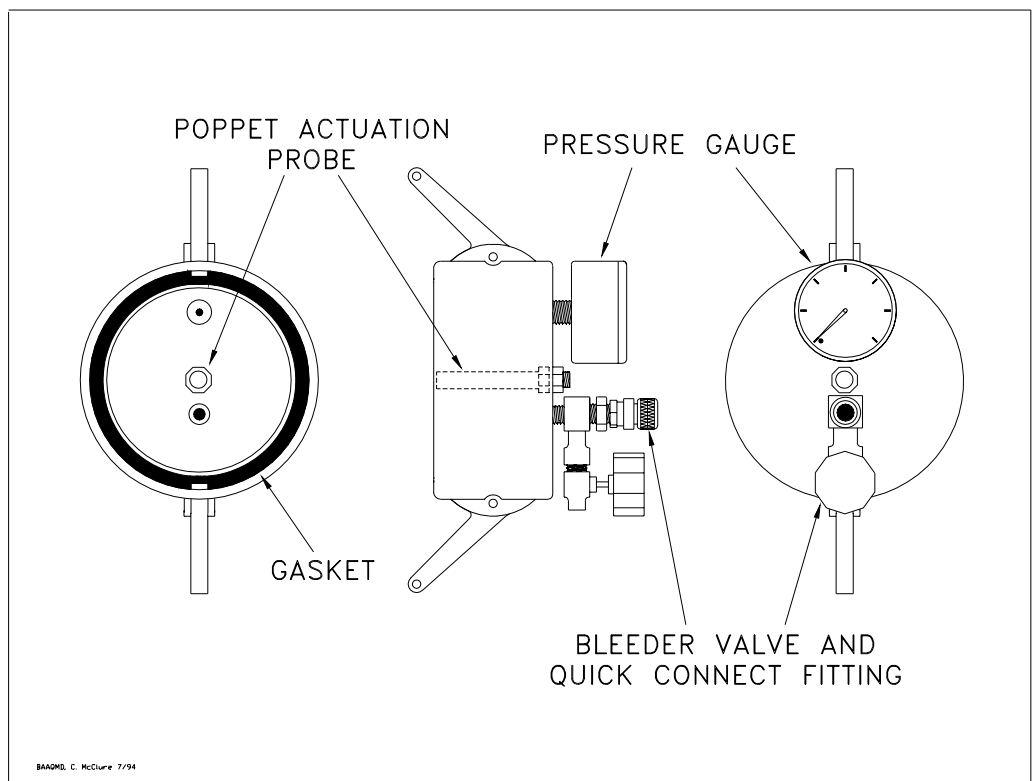
## 6. PRE-TEST PROCEDURES

- 6.1** The following safety precautions shall be followed:

- 6.1.1** Only nitrogen shall be used to pressurize the system.
- 6.1.2** A one psig relief valve shall be installed to prevent the possible over-pressurizing of the storage tank.
- 6.1.3** A ground strap should be employed during the introduction of nitrogen into the system.

**Figure 30-3**

### Vapor Coupler Test Assembly



- 6.2** Product dispensing shall not occur during the test. There shall have been no Phase I deliveries into or out of the storage tanks within the three hours prior to the test. Product dispensing shall not occur during the thirty minutes immediately prior to the test.
- 6.3** Upon commencement of the thirty minute “no dispensing” portion of this procedure, the headspace pressure in the tank shall be measured. If the

pressure exceeds 0.50 inches H<sub>2</sub>O, the pressure shall be carefully relieved in accordance with all applicable safety requirements. After the thirty minute "no dispensing" portion of this procedure, and prior to introduction of nitrogen, the headspace pressure shall again be lowered, if necessary, to less than 0.50 inches H<sub>2</sub>O.

- 6.4** There shall be no Air to Liquid Volumetric Ratio Test (TP-201.5 or equivalent) conducted within the twenty-four (24) hour period immediately prior to this test.
- 6.5** The test shall be conducted with the station in normal operating mode. This includes all nozzles properly hung up in the dispenser boots and all dispenser cabinet covers in place. The exception to normal operating mode is that dispensing is disallowed as specified.
- 6.6** Measure the gallons of gasoline present in each underground storage tank and determine the actual capacity of each storage tank from facility records. Calculate the ullage space for each tank by subtracting the gasoline gallonage present from the actual tank capacity. The minimum ullage during the test, for all manifolded tanks, shall be 1,000 gallons or 25 percent of the tank capacity, whichever is less. The total ullage, for all manifolded tanks, shall not exceed 25,000 gallons.
- 6.7** For two-point Phase I systems, this test shall be conducted with the dust cap removed from both the product and vapor coupler. This is necessary to determine the vapor tightness of the Phase I vapor poppet. See Section 6.10 if this test is to be conducted at the Phase I vapor coupler.
- 6.7.1** For coaxial Phase I systems, this test shall be conducted with the dust cap removed from the Phase I coupler. This is necessary to insure the vapor tightness of the Phase I vapor poppet.
- 6.7.2** Verify that the liquid level in the storage tank is at least four (4) inches above the highest opening at the bottom of the submerged drop tube.
- 6.8** If the Phase I containment box is equipped with a drain valve, the valve assembly may be cleaned and lubricated prior to the test. This test shall, however, be conducted with the drain valve installed and the manhole cover removed.
- 6.9** If the test is to be conducted at a Phase II vapor riser, disconnect the dispenser end of one vapor recovery hose and install the "T" connector assembly (see Figure 30-1). Connect the nitrogen gas supply (do not use air) and the pressure measuring device to the "T" connector.
- 6.9.1** For those Phase II systems utilizing a dispenser mounted remote vapor check valve, the "T" connector assembly shall be installed on the vapor riser side of the check valve.
- 6.10** If this test is to be conducted at the Phase I vapor coupler on a two-point Phase I system, the procedures set forth in subsections 6.10.1 and 6.10.2 shall be

successfully completed prior to testing. The static pressure integrity test shall not be conducted at the Phase I coupler at facilities equipped with coaxial Phase I systems.

- 6.10.1** Connect the Vapor Coupler Integrity Assembly to the Phase I vapor coupler. Connect the Vapor Coupler Test Assembly. Connect the nitrogen supply to the assembly and carefully pressurize the internal volume of the assembly to two (2.0) inches H<sub>2</sub>O. Start the stopwatch. Record the final pressure after one minute.
- 6.10.2** If the pressure after one minute is less than 0.25 inches H<sub>2</sub>O, the leak rate through the Phase I vapor poppet precludes conducting the static leak test at this location. If the pressure after one minute is greater than or equal to 0.25 inches H<sub>2</sub>O, the static leak test may be conducted at this location. This criteria assures a maximum leak rate through the Phase I vapor poppet of less than 0.0004 cubic feet per minute.
- 6.10.3** Disconnect the Vapor Coupler Integrity Assembly from the Phase I vapor coupler. If the requirements of subsection 6.10.2 were met, connect the Vapor Coupler Test Assembly to the Phase I vapor coupler.
- 6.11** All pressure measuring device(s) shall be bench calibrated using either a reference gauge or incline manometer. Calibration shall be performed at 20, 50, and 80 percent of full scale. Accuracy shall be within two percent at each of these calibration points. Calibrations shall be conducted on a frequency not to exceed 90 days.
- 6.12** Use the flowmeter to determine the nitrogen regulator delivery pressures which correspond to nitrogen flowrates of 1.0 and 5.0 CFM. These pressures define the allowable range of delivery pressures acceptable for this test procedure. Also record the regulator delivery pressure setting, and the corresponding nitrogen flowrate that will be used during the test. As an alternative, the flowmeter may be connected, in-line between the nitrogen supply regulator and Vapor Coupler Test Assembly, during the test.
- 6.13** Use Equation 9.3 to calculate the approximate time required to pressurize the system ullage to the initial starting pressure of two (2.0) inches H<sub>2</sub>O. This will allow the tester to minimize the quantity of nitrogen introduced into those systems which cannot comply with the static leak standards.
- 6.14** Attach the Vapor Coupler Test assembly to the Phase I poppet or the "T" connector assembly to the Phase II vapor riser. Read the initial pressure of the storage tank and underground piping. If the initial pressure is greater than 0.5 inches H<sub>2</sub>O, carefully bleed off the pressure, in accordance with all applicable safety procedures, in the storage tank and underground piping to less than 0.5 inches H<sub>2</sub>O column.

- 6.15** Any electronic manometers shall be subject to warm-up and drift check before use; see Section 4.5.

## 7. TESTING

- 7.1** Open the nitrogen gas supply valve and set the regulator delivery pressure within the allowable range determined in Section 6.9, and start the stopwatch. Pressurize the vapor system (or subsystem for individual vapor return line systems) to **at least 2.2 inches H<sub>2</sub>O** initial pressure. It is critical to maintain the nitrogen flow until the pressure stabilizes, indicating temperature and vapor pressure stabilization in the tanks. Check the test equipment using leak detecting solution or a combustible gas detector to verify that all test equipment is leak tight.
- 7.1.1** If the time required to achieve the initial pressure of two (2.0) inches H<sub>2</sub>O exceeds twice the time derived from Equation 9.3, stop the test and use liquid leak detector, or a combustible gas detector, to find the leak(s) in the system. Failure to achieve the initial starting pressure within twice the time derived from Equation 9.3 demonstrates the inability of the system to meet the performance criteria. Repair or replace the faulty component(s) and restart the test pursuant to Section 7.1.
- 7.2** Close and disconnect the nitrogen supply. Start the stopwatch when the pressure has decreased to the initial starting pressure of two (2.0) inches H<sub>2</sub>O.
- 7.3** At one-minute intervals during the test, record the system pressure. After five minutes, record the final system pressure. See the applicable of Tables 30-IA (or Equation 9.1) or 30-IB (or Equation 9.2) to determine the acceptability of the final system static pressure results. For intermediate values of ullage in Tables 30-IA and 30-IB, linear interpolation may be employed.
- 7.4** If the system failed to meet the criteria set forth in Table 30-I (or the appropriate equation in Section 9), repressurize the system and check all accessible vapor connections using leak detector solution or a combustible gas detector. If vapor leaks in the system are encountered, repair or replace the defective component and repeat the test. Potential sources of leaks include nozzle check valves, pressure/vacuum relief valves, containment box drain valve assemblies, and plumbing connections at the risers.
- 7.5** After the remaining system pressure has been relieved, remove the "T" connector assembly and reconnect the vapor recovery hose, if applicable.
- 7.6** If the vapor recovery system utilizes individual vapor return lines, repeat the leak test for each gasoline grade. Avoid leaving any vapor return line open longer than is necessary to install or remove the "T" connector assembly.



- 7.7** If the applicable CARB Executive requires the test to be conducted with and without the containment box cover in place, repeat the test with the cover in place. In these cases clearly specify, on Form 30-1, which results represent the pressure integrity with and without the cover in place.

## 8. POST-TEST PROCEDURES

- 8.1** Use the applicable of Table 30-IA or 30-IB, or the applicable of Equations 9.1 or 9.2, to determine the compliance status of the facility by comparing the final five-minute pressure with the minimum allowable final pressure.
- 8.1.1** For balance Phase II systems use Table 30-IA or the applicable of Equation 9.1 to determine compliance.
- 8.1.2** For vacuum-assist Phase II systems use Table 30-IB or the applicable of Equation 9.2 to determine compliance.

## 9. CALCULATIONS

- 9.1** For Phase II Balance Systems, the minimum allowable five-minute final pressure, with an initial pressure of two (2.0) inches H<sub>2</sub>O, shall be calculated as follows:

[Equation 9-1]

$$P_f = 2e^{\frac{-760.490}{V}} \quad \text{if } N = 1-6$$

$$P_f = 2e^{\frac{-792.196}{V}} \quad \text{if } N = 7-12$$

$$P_f = 2e^{\frac{-824.023}{V}} \quad \text{if } N = 13-18$$

$$P_f = 2e^{\frac{-855.974}{V}} \quad \text{if } N = 19-24$$

$$P_f = 2e^{\frac{-888.047}{V}} \quad \text{if } N > 24$$

Where:

- N** = The number of affected nozzles. For manifolded systems, N equals the total number of nozzles. For dedicated plumbing configurations, N equals the number of nozzles serviced by the tank being tested.
- P<sub>f</sub>** = The minimum allowable five-minute final pressure, inches H<sub>2</sub>O
- V** = The total ullage affected by the test, gallons
- e** = A dimensionless constant approximately equal to 2.718
- 2** = The initial starting pressure, inches H<sub>2</sub>O

- 9.2** For Phase II Vacuum Assist Systems, the minimum allowable five-minute final pressure, with an initial pressure of two (2.0) inches H<sub>2</sub>O, shall be calculated as follows:

[Equation 9-2]

$$P_f = 2e^{\frac{-500.887}{V}} \quad \text{if } N = 1-6$$

$$P_f = 2e^{\frac{-531.614}{V}} \quad \text{if } N = 7-12$$

$$P_f = 2e^{\frac{-562.455}{V}} \quad \text{if } N = 13-18$$

$$P_f = 2e^{\frac{-593.412}{V}} \quad \text{if } N = 19-24$$

$$P_f = 2e^{\frac{-624.483}{V}} \quad \text{if } N > 24$$

Where:

- N = The number of affected nozzles. For manifolded systems, N equals the total number of nozzles. For dedicated plumbing configurations, N equals the number of nozzles serviced by the tank being tested.
- $P_f$  = The minimum allowable five-minute final pressure, inches H<sub>2</sub>O
- V = The total ullage affected by the test, gallons
- e = A dimensionless constant approximately equal to 2.718
- 2 = The initial starting pressure, inches H<sub>2</sub>O

- 9.3** The minimum time required to pressurize the system ullage from zero (0) to two (2.0) inches H<sub>2</sub>O gauge pressure shall be calculated as follows:

$$t_2 = \frac{V}{[1522] F} \quad \text{[Equation 9-3]}$$

Where:

- $t_2$  = The minimum time to pressurize the ullage to two inches H<sub>2</sub>O, minutes
- V = The total ullage affected by the test, gallons
- F = The nitrogen flowrate into the system, CFM
- 1522 = The conversion factor for pressure and gallons

- 9.4** If the policy of the local District requires an allowable tolerance for testing error, the minimum allowable five-minute final pressure, including testing error, shall be calculated as follows:

$$P_{f-E} = 2 - \left[ 1 + \left( \frac{E}{100} \right) \right] \left[ 408.9 - (P_f + 406.9) \right] \quad \text{[Equation 9-4]}$$

Where:

- $P_{f-E}$  = The minimum allowable five-minute final pressure including allowable testing error, inches H<sub>2</sub>O
- E = The allowable testing error, percent
- $P_f$  = The minimum allowable five-minute final pressure calculated in Equations 9-1 or 9-2, inches H<sub>2</sub>O
- 2 = The initial starting pressure, inches H<sub>2</sub>O
- 408.9 = Atmospheric pressure plus the initial starting pressure, inches H<sub>2</sub>O
- 406.9 = Atmospheric pressure, inches H<sub>2</sub>O

## 10. REPORTING

- 10.1** The calculated ullage and system pressures for each five-minute vapor recovery system test shall be reported as shown in Form 30-1. Be sure to include the Phase I system type (two-point or coaxial), the Phase II system type, whether the system is manifolded, and the one-minute pressures during the test.

**TABLE 30-1A**  
**PHASE II BALANCE SYSTEMS**  
**PRESSURE DECAY LEAK RATE CRITERIA**  
**INITIAL PRESSURE OF 2 INCHES OF H<sub>2</sub>O**  
**MINIMUM PRESSURE AFTER 5 MINUTES, INCHES OF H<sub>2</sub>O**

<b><u>ULLAGE, GALLONS</u></b>	<b>NUMBER OF AFFECTED NOZZLES</b>				
	<b><u>01-06</u></b>	<b><u>07-12</u></b>	<b><u>13-18</u></b>	<b><u>19-24</u></b>	<b><u>&gt; 24</u></b>
<b>500</b>	<b>0.44</b>	<b>0.41</b>	<b>0.38</b>	<b>0.36</b>	<b>0.34</b>
550	0.50	0.47	0.45	0.42	0.40
<b>600</b>	<b>0.56</b>	<b>0.53</b>	<b>0.51</b>	<b>0.48</b>	<b>0.46</b>
650	0.62	0.59	0.56	0.54	0.51
<b>700</b>	<b>0.67</b>	<b>0.64</b>	<b>0.62</b>	<b>0.59</b>	<b>0.56</b>
750	0.73	0.70	0.67	0.64	0.61
<b>800</b>	<b>0.77</b>	<b>0.74</b>	<b>0.71</b>	<b>0.69</b>	<b>0.66</b>
850	0.82	0.79	0.76	0.73	0.70
<b>900</b>	<b>0.86</b>	<b>0.83</b>	<b>0.80</b>	<b>0.77</b>	<b>0.75</b>
950	0.90	0.87	0.84	0.81	0.79
<b>1,000</b>	<b>0.93</b>	<b>0.91</b>	<b>0.88</b>	<b>0.85</b>	<b>0.82</b>
1,200	1.06	1.03	1.01	0.98	0.95
<b>1,400</b>	<b>1.16</b>	<b>1.14</b>	<b>1.11</b>	<b>1.09</b>	<b>1.06</b>
1,600	1.24	1.22	1.19	1.17	1.15
<b>1,800</b>	<b>1.31</b>	<b>1.29</b>	<b>1.27</b>	<b>1.24</b>	<b>1.22</b>
2,000	1.37	1.35	1.32	1.30	1.28
<b>2,200</b>	<b>1.42</b>	<b>1.40</b>	<b>1.38</b>	<b>1.36</b>	<b>1.34</b>
2,400	1.46	1.44	1.42	1.40	1.38
<b>2,600</b>	<b>1.49</b>	<b>1.47</b>	<b>1.46</b>	<b>1.44</b>	<b>1.42</b>
2,800	1.52	1.51	1.49	1.47	1.46
<b>3,000</b>	<b>1.55</b>	<b>1.54</b>	<b>1.52</b>	<b>1.50</b>	<b>1.49</b>
3,500	1.61	1.59	1.58	1.57	1.55
<b>4,000</b>	<b>1.65</b>	<b>1.64</b>	<b>1.63</b>	<b>1.61</b>	<b>1.60</b>
4,500	1.69	1.68	1.67	1.65	1.64
<b>5,000</b>	<b>1.72</b>	<b>1.71</b>	<b>1.70</b>	<b>1.69</b>	<b>1.67</b>
6,000	1.76	1.75	1.74	1.73	1.72
<b>7,000</b>	<b>1.79</b>	<b>1.79</b>	<b>1.78</b>	<b>1.77</b>	<b>1.76</b>
8,000	1.82	1.81	1.80	1.80	1.79
<b>9,000</b>	<b>1.84</b>	<b>1.83</b>	<b>1.83</b>	<b>1.82</b>	<b>1.81</b>
10,000	1.85	1.85	1.84	1.84	1.83
<b>15,000</b>	<b>1.90</b>	<b>1.90</b>	<b>1.89</b>	<b>1.89</b>	<b>1.89</b>
20,000	1.93	1.92	1.92	1.92	1.91
<b>25,000</b>	<b>1.94</b>	<b>1.94</b>	<b>1.94</b>	<b>1.93</b>	<b>1.93</b>

**Note:** For manifolded Phase II Balance Systems, the "**Number of Affected Nozzles**" shall be the total of all gasoline nozzles. For dedicated return configurations, the "**Number of Affected Nozzles**" shall be the total of those nozzles served by the tank being tested.

**TABLE 30-1B**  
**PHASE II ASSIST SYSTEMS**  
**PRESSURE DECAY LEAK RATE CRITERIA**  
**INITIAL PRESSURE OF 2 INCHES OF H<sub>2</sub>O**

**MINIMUM PRESSURE AFTER 5 MINUTES, INCHES OF H<sub>2</sub>O**

<b><u>ULLAGE, GALLONS</u></b>	<b>NUMBER OF AFFECTED NOZZLES</b>				
	<b><u>01-06</u></b>	<b><u>07-12</u></b>	<b><u>13-18</u></b>	<b><u>19-24</u></b>	<b><u>&gt; 24</u></b>
<b>500</b>	<b>0.73</b>	<b>0.69</b>	<b>0.65</b>	<b>0.61</b>	<b>0.57</b>
550	0.80	0.76	0.72	0.68	0.64
<b>600</b>	<b>0.87</b>	<b>0.82</b>	<b>0.78</b>	<b>0.74</b>	<b>0.71</b>
650	0.93	0.88	0.84	0.80	0.77
<b>700</b>	<b>0.98</b>	<b>0.94</b>	<b>0.90</b>	<b>0.86</b>	<b>0.82</b>
750	1.03	0.98	0.94	0.91	0.87
<b>800</b>	<b>1.07</b>	<b>1.03</b>	<b>0.99</b>	<b>0.95</b>	<b>0.92</b>
850	1.11	1.07	1.03	1.00	0.96
<b>900</b>	<b>1.15</b>	<b>1.11</b>	<b>1.07</b>	<b>1.03</b>	<b>1.00</b>
950	1.18	1.14	1.11	1.07	1.04
<b>1,000</b>	<b>1.21</b>	<b>1.18</b>	<b>1.14</b>	<b>1.10</b>	<b>1.07</b>
1,200	1.32	1.28	1.25	1.22	1.19
<b>1,400</b>	<b>1.40</b>	<b>1.37</b>	<b>1.34</b>	<b>1.31</b>	<b>1.28</b>
1,600	1.46	1.43	1.41	1.38	1.35
<b>1,800</b>	<b>1.51</b>	<b>1.49</b>	<b>1.46</b>	<b>1.44</b>	<b>1.41</b>
2,000	1.56	1.53	1.51	1.49	1.46
<b>2,200</b>	<b>1.59</b>	<b>1.57</b>	<b>1.55</b>	<b>1.53</b>	<b>1.51</b>
2,400	1.62	1.60	1.58	1.56	1.54
<b>2,600</b>	<b>1.65</b>	<b>1.63</b>	<b>1.61</b>	<b>1.59</b>	<b>1.57</b>
2,800	1.67	1.65	1.64	1.62	1.60
<b>3,000</b>	<b>1.69</b>	<b>1.68</b>	<b>1.66</b>	<b>1.64</b>	<b>1.62</b>
3,500	1.73	1.72	1.70	1.69	1.67
<b>4,000</b>	<b>1.76</b>	<b>1.75</b>	<b>1.74</b>	<b>1.72</b>	<b>1.71</b>
4,500	1.79	1.78	1.77	1.75	1.74
<b>5,000</b>	<b>1.81</b>	<b>1.80</b>	<b>1.79</b>	<b>1.78</b>	<b>1.77</b>
6,000	1.84	1.83	1.82	1.81	1.80
<b>7,000</b>	<b>1.86</b>	<b>1.85</b>	<b>1.85</b>	<b>1.84</b>	<b>1.83</b>
8,000	1.88	1.87	1.86	1.86	1.85
<b>9,000</b>	<b>1.89</b>	<b>1.89</b>	<b>1.88</b>	<b>1.87</b>	<b>1.87</b>
10,000	1.90	1.90	1.89	1.88	1.88
<b>15,000</b>	<b>1.93</b>	<b>1.93</b>	<b>1.93</b>	<b>1.92</b>	<b>1.92</b>
20,000	1.95	1.95	1.94	1.94	1.94
<b>25,000</b>	<b>1.96</b>	<b>1.96</b>	<b>1.96</b>	<b>1.95</b>	<b>1.95</b>

**Note:** For manifolded Phase II Assist Systems, the "Number of Affected Nozzles" shall be the total of all gasoline nozzles. For dedicated return configurations, the "Number of Affected Nozzles" shall be the total of those nozzles served by the tank being tested.

# Form 30-1

<b>Distribution:</b>  Firm Permit Services Enforcement Services Technical Services Planning Requester DAPCO	<b>BAY AREA                  AIR QUALITY MANAGEMENT DISTRICT</b>  <i>939 Ellis Street                  San Francisco, California 94109                  (415) 771-6000</i>  <b>Summary of Source Test Results</b>	Report No.: _____  Test Date: _____  <b>Test Times:</b>  Run A: _____  Run B: _____  Run C: _____
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Source Information		Facility Parameters	
<b>GDF Name and Address</b>  _____  _____  _____  <b>Permit Conditions</b>  _____	<b>GDF Representative and Title</b>  _____  _____  <b>GDF Phone No. (    )</b>  <b>Source: GDF Vapor Recovery System</b> BAAQMD GDF # _____ BAAQMD A/C # _____	<b>PHASE II SYSTEM TYPE ( Check One)</b>  Balance <input type="checkbox"/>  Vapor Assist <input type="checkbox"/>  Type: _____  Other <input type="checkbox"/> <b>Identify:</b>  Manifolded? <b>Y</b> or <b>N</b>	
<b>Operating Parameters:</b>  Number of Nozzles Served by Tank #1 _____      Number of Nozzles Served by Tank #3 _____ Number of Nozzles Served by Tank #2 _____      Total Number of Gas Nozzles at Facility _____			
<b>Applicable Regulations:</b> BAAQMD REGULATION 8, RULE 7		FOR OFFICE USE ONLY:	

**Source Test Results and Comments:**

<u>TANK #:</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>TOTAL</u>
1. Product Grade	_____	_____	_____	_____
2. Actual Tank Capacity gallons	_____	_____	_____	_____
3. Gasoline Volume Gallons	_____	_____	_____	_____
4. Ullage gallons (#1 -#3)	_____	_____	_____	_____
5. Phase I System Type	_____	_____	_____	_____
6. Initial Test Pressure Inches H <sub>2</sub> O (2.0)	_____	_____	_____	_____
7. Pressure After 1 Minute Inches H <sub>2</sub> O	_____	_____	_____	_____
8. Pressure After 2 Minutes Inches H <sub>2</sub> O	_____	_____	_____	_____
9. Pressure After 3 Minutes Inches H <sub>2</sub> O	_____	_____	_____	_____
10. Pressure After 4 Minutes Inches H <sub>2</sub> O	_____	_____	_____	_____
11. <b>Final Pressure After 5 Minutes Inches H<sub>2</sub>O</b>	_____	_____	_____	_____
12. Allowable Final Pressure from Table 30-1	_____	_____	_____	_____
13. Test Status [Pass or Fail]	_____	_____	_____	_____

Test Conducted by: _____	Test Company Name _____ Address _____ City _____	Date and Time of Test: _____
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