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ATTACHMENT A: VAPOR RECOVERY TESTS FOR PHASE I EVR SYSTEMS, PHASE II PRE-EVR SYSTEMS AND VACUUM ASSIST PHASE II EVR SYSTEMS LOCATED AT GASOLINE DISPENSING FACILITIES EQUIPPED WITH UNDERGROUND STORAGE TANKS

	Vapor Recovery System	Pressure Decay	A/L TP-201-5 (April, 1996)	A/L Equivalent Test	V/L Exhibit 5 (VR-201-X/VR-202-X)	V/L Equivalent Test	Additional Required Test
PHASE I	Phil Tite (VR-101-X) ^{1,2}	TP-201.3 ^{3,4}	N/A	N/A	N/A	N/A	Static Torque of Rotatable Phase I Adaptors (TP-201.1B) Pressure Integrity of the Drop Tube/Drain Valve (TP-201.1C/ TP-201.1D) Leak Rate and Cracking Pressure of P/V Relief Vent Valves (TP-201.1E) ⁵
	OPW (VR-102-X) ^{1,2}	TP-201.3 ^{3,4}	N/A	N/A	N/A	N/A	Static Torque of Rotatable Phase I Adaptors (TP-201.1B) Pressure Integrity of the Drop Tube/Drain Valve (TP-201.1C/ TP-201.1D) Leak Rate and Cracking Pressure of P/V Relief Vent Valves (TP-201.1E) ⁵
	CNI (VR-104-X) ^{1,2}	TP-201.3 ^{3,4}	N/A	N/A	N/A	N/A	Static Torque of Rotatable Phase I Adaptors (TP-201.1B) Pressure Integrity of the Drop Tube/Drain Valve (TP-201.1C/TP-201.1D) Leak Rate and Cracking Pressure of P/V Relief Vent Valves (TP-201.1E) ⁵
	Emco Wheaton (VR-105-X) ^{1,2}	TP-201.3 ^{3,4}	N/A	N/A	N/A	N/A	Static Torque of Rotatable Phase I Adaptors (TP-201.1B) Pressure Integrity of the Drop Tube/Drain Valve (TP-201.1C/ TP-201.1D) Leak Rate and Cracking Pressure of P/V Relief Vent Valves (TP-201.1E) ⁵
PHASE II	Balance Systems ^{1,2}	TP-201.3 ^{3,4}	N/A	N/A	N/A	N/A	Compliance Determination of Liquid Removal Rate (TP-201.6C, Option 2) ⁶
	Healy/Franklin System ORVR (G-70-191-XX) ^{1,2}	TP-201.3 ^{3,4}	Yes ⁷	TriTester Version 2.96 ⁷	N/A	N/A	Integrity of Vapor Valve (Exhibit 2)
	Healy EVR System w/o ISD (VR-201-X) ^{1,2,8}	TP-201.3 ^{3,4,9}	N/A	N/A	Yes ¹⁰	TriTester Version 2.01 ¹⁰	Clean Air Separator Integrity Test (Exhibit 4) ¹¹ Nozzle Vapor Valve Integrity (Exhibit 7) Dispenser Vapor Line Integrity Test, Dispensing Vacuum Test and Audible Increase Test (B-3, B-5, B-6, of the Start-Up / New Installation/ Warranty/ Annual Testing Form located in the IOM manual)
	Healy EVR System w/ ISD (VR-202-X) ^{1,2,8,12}	TP-201.3 ^{3,4,9}	N/A	N/A	Yes ¹⁰	TriTester Version 2.01 ¹⁰	Clean Air Separator Integrity Test (Exhibit 4) ¹¹ Nozzle Vapor Valve Integrity (Exhibit 7) Dispenser Vapor Line Integrity Test, Dispensing Vacuum Test and Audible Increase Test (B-3, B-5, B-6, of the Start-Up / New Installation/ Warranty/ Annual Testing Form located in the IOM manual) Operability Test (Exhibit 9/Exhibit 10)

ATTACHMENT A – INSTRUCTIONS AND REQUIREMENTS

X and XX represent the most recent California Air Resources Board (CARB) certification of the applicable vapor recovery system.

¹ Unless otherwise specified by a District’s representative, the tests for the Phase II Vapor Recovery System specified shall be conducted in the following order:

<u>ORVR Healy (G-70-191-XX)</u>	<u>Phase II Exempt OR Pre-EVR Balance Systems</u>	<u>EVR Healy (VR-201-X/VR-202-X)</u>
TP-201.1E	TP-201.1E	Exhibit 4 of VR-201-X/VR-202-X
TP-201.1B	TP-201.1B	TP-201.1E
TP-201.1C or TP-201.1D	TP-201.1C or TP-201.1D	TP-201.1B
TP-96-1 or TP-201.3	TP-96-1 or TP-201.3	TP-201.1C or TP-201.1D
TP-201.5, Version 1996	TP-201.6C option 2, if applicable	TP-96-1 and Exhibit 8 of VR-201-X/VR-202-X OR TP-201.3 and Exhibit 8 of VR-201-X/VR-202-X
Exhibit 2 of G-70-191-XX		B-3, B-5, B-6 of IOM manual for VR-201-X/VR-202-X Exhibit 5 of VR-201-X/VR-202-X Exhibit 7 of VR-201-X/VR-202-X Exhibit 9 OR Exhibit 10 of VR-202-X

² Test results shall be submitted on current District approved test forms located at <http://www.sdapcd.org>.

³ The CARB Test Procedure TP-201.3 (most recent version) shall be conducted between sundown and a half hour after sunrise to minimize interference from solar effects and barometric pressure changes. The San Diego Air Pollution Control District’s TP-96-1 (most recent version) leak detection procedure may be used in lieu of TP-201.3. TP-96-1 can be conducted at any time except when daytime temperatures exceed 100°F, and there is direct sunlight on exposed metal vent pipe(s) and metal manhole cover(s) that are in contact with vapor space of the storage tanks. The District will also accept the results of leak tests based on soap solution, helium detection or vacuums provided that procedures have prior written District approval. Election of any test method (including optional tests) requires compliance with the performance standard for the test method.

⁴ If the equipment is identified as BACT in the equipment description, only TP-96-1 will be accepted by the District.

⁵ Alternate TP-201.1E may be used in lieu of TP-201.1E when specified by the applicable Executive Order. Once the test has started, the same test shall be completed prior to conducting another test on the P/V Vent Valves (i.e. the results of TP-201.1E cannot be used as part of the Alternate TP-201.1E and vice versa).

⁶ The CARB Test Procedure TP-201.6C, Option 2 is applicable to hose configurations per Exhibits 8c, 9c, 10 and 11 of CARB EO G-70-52-AM.

⁷ A CARB certified Healy A/L adapter for 800 ORVR nozzles (Healy Part #8034 or # 8034-1) and for 900 nozzles (Healy Part #8034-1) must be used in order to obtain accurate results (E.O. G-70-191-AA, Exhibit 2, Figure 2C-1 and E.O. VR-201-X or VR-202-X, Exhibit 5, Figure 1)

⁸ Upon any identical dispenser replacement, as defined in District Rule 11, the permittee shall successfully conduct the following performance tests for the new dispenser(s), within 60 days of any dispenser replacement. Any replacement that does not meet the identical definition per District Rule 11 will require an application for an Authority to Construct.

a. Dispenser Vapor Line Integrity Test, Dispensing Vacuum Test, and Audible Increase Test per B-3, B-5 and B-6, respectively, of the Start-Up / New Installation/ Warranty/ Annual Testing Form located in the ARB IOM Manual for VR-201-X and VR-202-X.

b. A Vapor-to-Liquid Ratio (V/L) per Exhibit 5 of ARB E.O. VR-201-X or VR-202-X or an equivalent ARB approved test method.

c. An ISD Vapor Flow Meter Operability Test and, if applicable, an ISD Vapor Pressure Sensor Ambient Reference Test per Exhibit 9 or Exhibit 10 of ARB E.O. VR-201-X or VR-202-X.

The permittee shall promptly record all information relating to the dispenser replacement and performance testing on Attachment I, “Inspection, Maintenance and Repair Log,” or an equivalent form. All test results and maintenance logs shall be maintained onsite for three (3) years from the test date and made available to the District upon request.

⁹ The pressure decay test for this system (TP-201.3 or TP-96-1) shall be conducted in conjunction with Exhibit 8 of ARB E.O. VR-201-X or VR-202-X.

¹⁰ A CARB certified Healy V/L adapter for 900 nozzles (Healy Part #8034-1) must be used in order to obtain accurate results (E.O. VR-201-X or VR-202-X, Exhibit 5, Figure 1).

¹¹ If the station pressure is -2.00” wc or more negative, a vacuum test must be performed followed by a pressure test. If the pressure is less negative than -2.00” wc, a pressure test must be performed. Anytime a vacuum test is conducted a subsequent pressure test shall **also** be conducted immediately after the vacuum test.

¹² The permittee and/or designated contractor shall not clear alarm conditions upon any ISD alarm unless, at minimum, the applicable troubleshooting tests and inspections listed below have been successfully conducted in

See Notes on Attachment A-1 for continued instructions and requirements regarding Attachment A.



**ATTACHMENT A-1
INSTRUCTIONS AND REQUIREMENTS
CONTINUED**

order to verify the cause of the ISD alarm and recorded in the maintenance and repair log. Other tests and/or inspections may be performed in lieu of those cited below provided the same ISD alarm does not occur within the next consecutive assessment period after resetting the alarm. All test results shall be maintained onsite for three (3) years from test date and made available to the District upon request.

<i>ISD Alarms for Veeder-Root and INCON Systems</i>					
<i>Displayed Message</i>		<i>ISD Monitoring Category</i>	<i>Veeder-Root Indicator Light</i>	<i>Cause</i>	<i>Troubleshooting Tests/Inspections*</i>
<i>Veeder-Root</i>	<i>INCON</i>				
<i>ISD VAPOR LEAKAGE WARN</i>	<i>Weekly Ullage Pressure Leak Test (Warning)</i>	<i>Containment</i>	<i>Yellow</i>	<i>7-Day Vapor Leakage Detection test warning</i>	<i>TP-201.3, TP-201.1E, TP-201.1C or TP-201.1D, as applicable</i>
<i>ISD VAPOR LEAKAGE FAIL</i>	<i>Weekly Ullage Pressure Leak Test (Failure)</i>	<i>Containment</i>	<i>Red</i>	<i>7-Day Vapor Leakage Detection test - 8th consecutive failure</i>	
<i>ISD GROSS PRESSURE WARN</i>	<i>Weekly Ullage Pressure (Warning)</i>	<i>Containment</i>	<i>Yellow</i>	<i>7-Day Gross Over Pressure test warning</i>	<i>The following test procedures are listed in ARB E.O. VR-202-X: B-3 Dispenser Vapor Line Integrity Test (IOM), Exhibit 4, Exhibit 5, Exhibit 9 or Exhibit 10 (pressure sensor only), check the CAS ball valve positions, or Flow Rate Verification (Section 1.2.3 (IOM); Inspect boots for damage</i>
<i>ISD GROSS PRESSURE FAIL</i>	<i>Weekly Ullage Pressure (Failure)</i>	<i>Containment</i>	<i>Red</i>	<i>7-Day Gross Over Pressure test -8th consecutive failure</i>	
<i>ISD DEGRD PRESSURE WARN</i>	<i>Monthly Ullage Pressure (Warning)</i>	<i>Containment</i>	<i>Yellow</i>	<i>30-Day Degradation Over-Pressure test warning</i>	
<i>ISD DEGRD PRESSURE FAIL</i>	<i>Monthly Ullage Pressure (Failure)</i>	<i>Containment</i>	<i>Red</i>	<i>30-Day Degradation Over-Pressure test - 30th consecutive failure</i>	
<i>Hnn: GROSS COLLECT WARN</i>	<i>Daily Vapor Collection (Warning)</i>	<i>Collection</i>	<i>Yellow</i>	<i>1-Day Gross A/L Test warning</i>	<i>Veeder-Root: Exhibit 5 of ARB E.O. VR-202-X, Exhibit 9 (vapor flow meter only), inspect boots for damage</i>
<i>Hnn: GROSS COLLECT FAIL</i>	<i>Daily Vapor Collection (Failure)</i>	<i>Collection</i>	<i>Red</i>	<i>1-Day Gross A/L Test failure - 2nd consecutive failure</i>	
<i>Hnn: DEGRD COLLECT WARN</i>	<i>Weekly Vapor Collection (Warning)</i>	<i>Collection</i>	<i>Yellow</i>	<i>7-Day Degradation A/L Test warning</i>	<i>INCON: Not Required; however, it is recommended to look through the flow meter site glass to see if air is flowing; and/or TP-201.3</i>
<i>Hnn: DEGRD COLLECT FAIL</i>	<i>Weekly Vapor Collection (Failure)</i>	<i>Collection</i>	<i>Red</i>	<i>7-Day Degradation A/L Test - consecutive failure</i>	

* Troubleshooting Tests and Inspections also includes, but is not limited to, the list referenced in the Veeder-Root ISD Troubleshooting Manual P/N 577013-819 located at www.veeder.com or for the INCON ISD System, the Vapor Recovery Monitoring Troubleshooting and Diagnostics Guide located at www.franklinfueling.com.