

Executive Order VR-204-E
VST Phase II EVR System Including Veeder-Root ISD

Exhibit 3
Performance Standards and Specifications

Part I - VST Manufacturing Performance Standards and Specifications

The VST Phase II EVR System including Veeder-Root ISD and all components shall be manufactured in compliance with the performance standards and specifications in CP-201 (amended May 25, 2006), as well as the requirements specified in this Executive Order. All components (Exhibit 1) shall be manufactured as certified; no change to the equipment, parts, design, materials or manufacturing process shall be made unless approved in writing by the Executive Officer or Executive Officer delegate. Unless specified in Exhibit 2 or in the **ARB Approved Installation, Operation and Maintenance Manual**, the requirements of this section apply to the manufacturing process and are not appropriate for determining the compliance status of a gasoline dispensing facility.

1. NOZZLES

Every nozzle shall be tested at the factory. Every nozzle shall have affixed to it a card or label stating the performance specifications listed below, and a statement that the nozzle was tested to, and met, the following specifications.

- a. The nozzle vapor valve leak rate shall not exceed 0.07 cubic feet per hour (CFH) at a pressure of +2 inches water column (WC) when tested in accordance with the latest version of TP-201.2B.
- b. The nozzle automatic shut off feature is tested at all service clip settings as well as handheld in accordance with Underwriters Laboratories (UL) Standard 842.
- c. The nozzle's primary and secondary shut-off mechanism shall be identical to the design that passed the California Department of Food and Agriculture, Division of Measurement Standards Article 2 (DMS 6-6-97).
- d. The nozzle is manufactured to the specifications that passed all tests conducted during the ARB certification for the following:

TP-201.2C	- Spillage from Phase II Systems
TP-201.2D	- Post Fueling Drips from Nozzles
TP-201.2E	- Gasoline Liquid Retention and Spitting in Nozzles and Hoses
TP-201.2J	- Nozzle Pressure Drop
- e. The nozzle vapor collection boot is manufactured such that the force necessary to compress the nozzle bellows 0.5 inches is in the range of 10-16 pounds force.
- f. The terminal end of each nozzle shall be manufactured in accordance with the specifications referenced in Section 4.7.3 of CP-201.

2. COAXIAL HOSES

- a. Every coaxial hose is tested for continuity and pressure tests in accordance with UL Standard 330.
- b. Every coaxial hose is manufactured to the standards and specifications that passed all tests conducted during the ARB certification for the following:
 - Exhibit 5 - Liquid Removal Test Procedure (for curb hoses)
 - TP-201.2J - Hose Pressure Drop (for curb and whip hoses)

3. BREAKAWAY COUPLINGS

- a. Every breakaway coupling is tested for continuity and pressure tests in accordance with UL Standard 567.
- b. Every breakaway coupling is manufactured to the standard that passed all tests conducted during the ARB certification for the following:
 - TP-201.2J - Breakaway Pressure Drop

4. ECS MEMBRANE PROCESSOR

- a. Every ECS Membrane Processor is subjected to a VST Pressure Decay Test to verify pressure integrity.
- b. Every ECS Membrane Processor is subjected to a VST Heat Trace Cable Continuity Test to ensure proper connections.
- c. Every ECS Membrane Processor is subjected to a VST operability test to ensure proper rotation and operation of the blower motor and vacuum pump.

Part II – Veeder-Root Manufacturing Performance Standards and Specifications

The Veeder-Root Vapor Polisher and all components shall be manufactured in compliance with the performance standards and specifications in CP-201 (amended May 25, 2006), as well as the requirements specified in this Executive Order. All components (Exhibit 1) shall be manufactured as certified; no change to the equipment, parts, design, materials or manufacturing process shall be made unless approved in writing by the Executive Officer or Executive Officer delegate. Unless specified in Exhibit 2 or in the ***ARB Approved Installation, Operation and Maintenance Manual***, the requirements of this section apply to the manufacturing process and are not appropriate for determining the compliance status of a gasoline dispensing facility.

1. VEEDER-ROOT VAPOR POLISHER

- a. The pressure drop across the Veeder Root Vapor Polisher is measured at a fixed flow rate.

- b. The Veeder-Root Vapor Polisher is tested for leaks.
- c. The Veeder-Root Vapor Polisher Vapor Valve Smart Sensor communication is tested using Veeder-Root Smart Sensor control protocol.
- d. The Veeder-Root Vapor Polisher Vapor Valve Smart Sensor electro-mechanical valve open and close operation is tested.
- e. The Veeder-Root Vapor Polisher Vapor Valve Smart Sensor electro-mechanical valve feedback control loop is tested for accurate reporting of the valve position.

Part III – Veeder-Root ISD Manufacturing Performance Standards and Specifications

The Veeder-Root ISD System and all components shall be manufactured in compliance with the performance standards and specifications in CP-201 (amended May 25, 2006), as well as the requirements specified in this Executive Order. All components (Exhibit 1) shall be manufactured as certified; no change to the equipment, parts, design, materials or manufacturing process shall be made unless approved in writing by the Executive Officer or Executive Officer delegate. Unless specified in Exhibit 2 or in the ***ARB Approved Installation, Operation and Maintenance Manual***, the requirements of this section apply to the manufacturing process and are not appropriate for determining the compliance status of a gasoline dispensing facility.

1. TLS CONSOLE

- a. Every Veeder-Root TLS Console equipped with MAG Series Tank Inventory Probe Sensor is built, tested and manufactured as an Automatic Tank Gauge System. The TLS Console has been third-party tested by Midwest Research Institute as a UST fuel leak detection system meeting Volumetric Tank Tightness Testing Method standards.
- b. Every Veeder-Root TLS Console has been designed and manufactured to have an Operating Temperature Range of 32°F to 104°F (0°C to 40°C) and Storage Temperature Range of -40°F to 162°F (-40°C to +74°C).
- d. Every Veeder-Root TLS Console system including software, sensors and modules have been designed and is Underwriters Laboratories (UL), Canadian Standards Association (CSA), and Canadian Underwriters Laboratories (cUL) approved for operation near potentially hazardous fuel storage tanks.
- e. Every TLS Console system including software, sensors and modules have been designed and tested in accordance with ISO-9001 manufacturing quality standards.

2. ISD SOFTWARE

- a. Every Veeder-Root TLS Console with ISD software is manufactured to the specifications that passed the operational test and is compliant with CP-201 ISD performance standards and specifications.

- b. Every Veeder-Root TLS Console with ISD software has been designed, manufactured and tested to continually monitor the connectivity and operability status of all ISD sensors and modules. All TLS Console ISD software has been designed, manufactured and tested to issue a visual, audible as well as printed notification upon failure of the connectivity or operability status of ISD sensors and modules.

3. VAPOR FLOW METER

- a. Every Veeder-Root ISD Vapor Flow Meter is designed, tested and manufactured to interface to the TLS Console system. The ISD Vapor Flow Meter has been designed and tested for measuring flow between 2 - 40 GPM in HC concentrations between 0 – 100% saturation across a –40°F to 150°F (-40°C to 65°C) operating range.

4. VAPOR PRESSURE SENSOR

- a. Every Veeder-Root ISD Vapor Pressure Sensor is designed, tested and manufactured to interface to the TLS Console system. The ISD Vapor Pressure Sensor has been designed and tested for measuring vapor pressure between –5 to +5 IWC in HC concentrations between 0 – 100% saturation across a –40°F to 150°F (-40°C to 150 °C) operating range.

5. TANK INVENTORY PROBE SENSOR

- a. Every Veeder-Root MAG Series Tank Inventory Probe Sensor is designed, tested and manufactured to interface to the TLS Console System. The MAG Series Tank Inventory Probe Sensor has been designed and tested to have an Operating Temperature Range of 32°F to 104°F (0°C to 40°C) and Storage Temperature Range of –40°F to 162°F (-40°C to +74°C).

6. TLS CONSOLE MODULES

- a. Every Veeder-Root TLS Console system module has been designed and tested to interface to the TLS Console System. The TLS Console system modules have been designed, tested and manufactured to have an Operating Temperature Range of 32°F to 104°F (0°C to 40°C) and Storage Temperature Range of –40°F to 162°F (-40°C to +74°C).