

APPENDIX B
GASOLINE VAPOR LEAK DETECTION PROCEDURE
BY COMBUSTIBLE GAS DETECTOR

1. PRINCIPLE

A combustible gas detector is used to indicate any incidence of leakage from gasoline truck tanks and vapor control systems. This qualitative monitoring procedure is an enforcement tool to confirm the continuing existence of leak-tight conditions.

2. APPLICABILITY

This method is applicable to determining the leak-tightness of gasoline truck tanks during loading without taking the truck tank out of service. The method is applicable only if the vapor control system does not create back-pressure in excess of the pressure limits of the truck tank compliance leak test. For vapor control systems, this method is applicable to determining leak-tightness at any time.

3. DEFINITIONS

- 3.1 Truck tank. Any container, including associated pipes and fittings, that is used for the transport of gasoline.
- 3.2 Truck tank vapor collection equipment. Any piping, hoses, and devices on the truck tank used to collect and route the gasoline vapors in the tank to the bulk terminal, bulk plant, or service station vapor control system.
- 3.3 Vapor control system. Any piping, hoses, equipment, and devices at the bulk terminal, bulk plant, or service station, which is used to collect, store, and/or process gasoline vapors.

4. APPARATUS AND SPECIFICATIONS

- 4.1 Manometer. Liquid manometer, or equivalent, capable of measuring up to 6250 pascals (25 inches H₂O) gauge pressure with ± 25 pascals (0.1 inch H₂O) precision.
- 4.2 Combustible gas detector. A portable hydrocarbon gas analyzer with associated sampling line and probe.
 - 4.2.1 Safety. Certified as safe for operation in explosive atmospheres.
 - 4.2.2 Range. Minimum range of 0-100 percent of the lower explosive limit (LEL) as propane.
 - 4.2.3 Probe diameter. Sampling probe internal diameter of 0.625 cm (1/4 inch).
 - 4.2.4 Probe length. Probe sampling line of sufficient length for easy maneuverability during testing.
 - 4.2.5 Response time. Response time for full-scale deflection of less than 8 seconds for detector with sampling line and probe attached.

5. TEST PROCEDURE

- 5.1 Pressure. Place a pressure tap in the terminal, plant, or service station control system, as close as possible to the connection with the truck tank. Record the pressure periodically during testing.
- 5.2 Calibration. Calibrate the combustible gas detector with 2.2 percent propane by volume in air for 100 percent LEL response.
- 5.3 Monitoring procedure. During loading or unloading, check the periphery of all potential sources of leakage of the truck tank and of the terminal, plant, or service station vapor collection system with a combustible gas detector.
- 5.4 Probe distance. The probe inlet shall be 2.5 cm from the potential leak source.
Probe movement. Move the probe slowly (2.0 cm/second). If there is any meter deflection at a potential leak source, move the probe to locate the point of highest meter response.
 - 5.3.1 Probe position. As much as possible, the probe inlet shall be positioned in the path of (parallel to) the vapor flow from a leak.
 - 5.3.2 Wind. Attempt as much as possible to block the wind from the area being monitored.
- 5.4 Recording. Record the highest detector reading and location for each incidence of leakage.