

California Environmental Protection Agency



## Vapor Recovery Test Procedure

Proposed TP-204.3

Determination of  
Leak(s)

Adopted: April 12, 1996  
Amended: [Date of Amendment]

**Note:** ~~Strikeout text is deleted text which was provided in 4/3/98 staff report.~~  
Underlined text is new text which was provided in 4/3/98 staff report.  
*~~Italicized strikeout text is deleted text proposed after 4/3/98 staff report.~~*  
Double underlined text is new text proposed after 4/3/98 staff report.  
Sections of the text not shown remain unchanged as proposed in 4/3/98 staff report.

## 8 TEST PROCEDURE

### 8.1 Pressure

Place a pressure tap in the terminal or bulk plant vapor control system, as close as reasonably possible to the connection with the cargo tank and before any check valves in the terminal or bulk plant recovery system. Connect the manometer. Record the pressure periodically during testing.

### 8.2 Calibration

Calibrate the combustible gas detector with 2.1 percent by volume (21,000 ppm) propane in air for 100 percent LEL response. Calibration gas shall be traceable to NIST-SRM.

### 8.3 Monitoring Procedure - Vapor Leaks

During loading, check the periphery of all potential sources of leakage of the cargo tank and of the terminal or bulk plant, vapor collection system with a combustible gas detector.

#### 8.3.1 Probe Distance

For a mobile leak source (e.g. cargo tank) the detector probe inlet shall be 2.5 cm from the potential leak source. The distance can be maintained during monitoring by putting a 2.5 cm extension on the probe tip.

For a stationary leak source (e.g. loading rack) the *detector probe inlet tip* shall be *1 cm from the potential leak source*. placed at the surface of the suspected leak interface except for a moving part, such as a rotating shaft, for which the probe tip distance shall be 1 cm. The distance can be maintained during monitoring by putting a 1 cm extension on the probe tip.

#### 8.3.2 Probe Movement

Move the probe slowly (approximately 4 cm/sec). If there is any meter deflection at a potential leak source, move the probe to locate the point of highest meter response.

#### 8.3.3 Probe Position

The probe inlet shall be positioned in the path of the vapor flow from a leak so as to maximize the measured concentration.

#### 8.3.4 Wind

Attempt to block the wind from the area being monitored.

### 8.3.5      Detector Response Time

The detector response time must be equal to or less than 30 seconds and the detector shall not probe any potential leak source for longer than twice the detector response time.

### 8.3.5.6      Recording

Record the highest detector reading and location for each leak being monitored.

## 8.4      Monitoring Procedure - Liquid Leaks

Check cargo tank and bulk plant or terminal system for liquid leaks. Count the number of drops for two minutes.

### 8.4.1      For Liquid Leaks during Disconnect

Capture liquid lost upon disconnect and measure the volume using graduated cylinder.

### 8.4.2      Recording

For liquid leaks, record location and number of drops per minute. For liquid leaks during disconnect, record location (loading arm, recovery arm), cargo tank and volume for each consecutive disconnects.

## 9      DETERMINATIONS OF COMPLIANCE AND VIOLATION

Determinations of certain modes of compliance with and violation of certification specifications are outlined below.

**Note:** Regarding liquid leaks from cargo tanks, and regarding vapor and liquid leaks from bulk plant and terminal equipment; the compliance status determined by this procedure is the final determination. Regarding vapor leaks from cargo tanks, the final determination of compliance status depends upon the application of all of the applicable requirements of CP-204.

The compliance status determined by this procedure shall not supersede any compliance status determination by TP-204.1 or TP-204.2.

For convenience, the performance standards shall be specified below as they appear in CP-204 § 4.2:

### **Vapor and Liquid Leak Performance Standards**

The performance standards for leak(s) from any cargo tank is that no liquid leak or vapor leak shall occur from any cargo tank according to the following definitions:

**Note:** A cargo tank shall not be required to comply with any leak criteria or performance standards except those that relate directly to the cargo tank; such leaks are "cargo tank leaks"; examples of leaks which are not cargo tank leaks are:

- (1) leaks involving bulk plant or terminal equipment including
- (2) leaks from couplings between cargo tank equipment and bulk plant or terminal equipment, unless the coupling was brought into the bulk plant or terminal facility on the cargo tank vehicle..

Leaks of types (1) and (2) are not evidence of non-compliance of the cargo tank per this procedure.

### (1) Vapor Leak

A vapor leak is defined to be any source of gasoline vapors which causes a combustible gas detector meter reading exceeding 100 percent of the LEL when measured at a distance of: one inch (2.5 cm) for a mobile leak source (e.g. cargo tank) or 1 cm for a stationary leak source (e.g. loading rack). A marginal vapor leak may be verified by conducting a pressure/vacuum leak test. A vapor leak does not include any vapor resulting from liquid spillage or leakage.

#### *(a) Probe Distance*

~~*For a mobile leak source (e.g. cargo tank) the detector probe inlet shall be 2.5 cm from the potential leak source. The distance can be maintained during monitoring by putting a 2.5 cm extension on the probe tip.*~~

~~*For a stationary leak source (e.g. loading) the detector probe inlet shall be 1 cm from the potential leak source. The distance can be maintained during monitoring by putting a 1 cm extension on the probe tip.*~~

#### *(b) Probe Movement*

~~*Move the probe slowly (approximately 4 cm/sec). If there is any meter deflection at a potential leak source, move the probe to locate the point of highest meter response.*~~

#### *(c) Probe Position*

~~*As much as possible, the probe inlet shall be positioned in the path of the vapor flow from a leak so as to maximize the measured concentration.*~~

#### *(d) Detector Response Time*

~~The detector response time must be equal to or less than 30 seconds and the detector shall not probe any potential leak source for longer than twice the detector response time.~~

## (2) Liquid Leak

A liquid leak is defined to be the dripping of liquid organic compounds at a rate in excess of three (3) drops per minute from any single leak source other than the liquid fill line and vapor line disconnect operations. A liquid leak from liquid fill line and vapor line disconnect operations is defined to be:

- (1) more than two (2) milliliters liquid drainage per disconnect from a top loading operation; or
- (2) more than ten (10) milliliters liquid drainage from a bottom loading operation.

Such liquid drainage for disconnect operations shall be determined by computing the average drainage from three consecutive disconnects at any one permit unit.

## Other Performance Standards

Other performance standards may be required at the applicant's request or based on evaluation by the ARB Executive Officer.

### 9.1 Vapor Leak Performance Standard

#### 9.1.1 Determination of Compliance

Compliance is determined if no vapor leak is recorded (§ 8.3.5) which exceeds the performance standard.

#### 9.1.2 Determination of Violation

Violation is determined if a vapor leak is recorded (§ 8.3.5) which exceeds the performance standard.

### 9.2 Liquid Leak Performance Standard

#### 9.2.1 Determination of Compliance

Compliance is determined if no liquid leak is recorded (§ 8.4.2) which exceeds the performance standard.

#### 9.2.2 Determination of Violation

Violation is determined if a liquid leak is recorded (§ 8.4.2) which exceeds the performance standard.