

## Inspection Procedure **GDF-06**

### **Gasoline Dispensing Facilities**

#### **LIQUID RETENTION IN NOZZLE/HOSE ASSEMBLY FOR PHASE II BALANCE SYSTEMS**

##### **1. PURPOSE**

- 1.1** This inspection procedure is used to measure the quantity of liquid gasoline present in the vapor passage of a coaxial Phase II balance system hose and nozzle. Excess liquid in the nozzle/hose vapor path causes an increase in the pressure at the nozzle/fillpipe interface. This increase in pressure reduces the collection efficiency of the vapor recovery system.

##### **2. PRINCIPLE AND SUMMARY OF INSPECTION PROCEDURE**

- 2.1** Liquid gasoline in the vapor path of a balance system coaxial hose and nozzle is carefully drained and measured using a funnel and graduated cylinder. For the purpose of this procedure, liquid gasoline in the atmospheric side of the nozzle vapor check valve is not included.

##### **3. BIASES AND INTERFERENCES**

- 3.1.** Spillage of liquid when draining hoses may bias results toward compliance.
- 3.2.** A breach of the inner product hose may introduce additional gasoline into the outer vapor path causing non-compliance.

##### **4. EQUIPMENT**

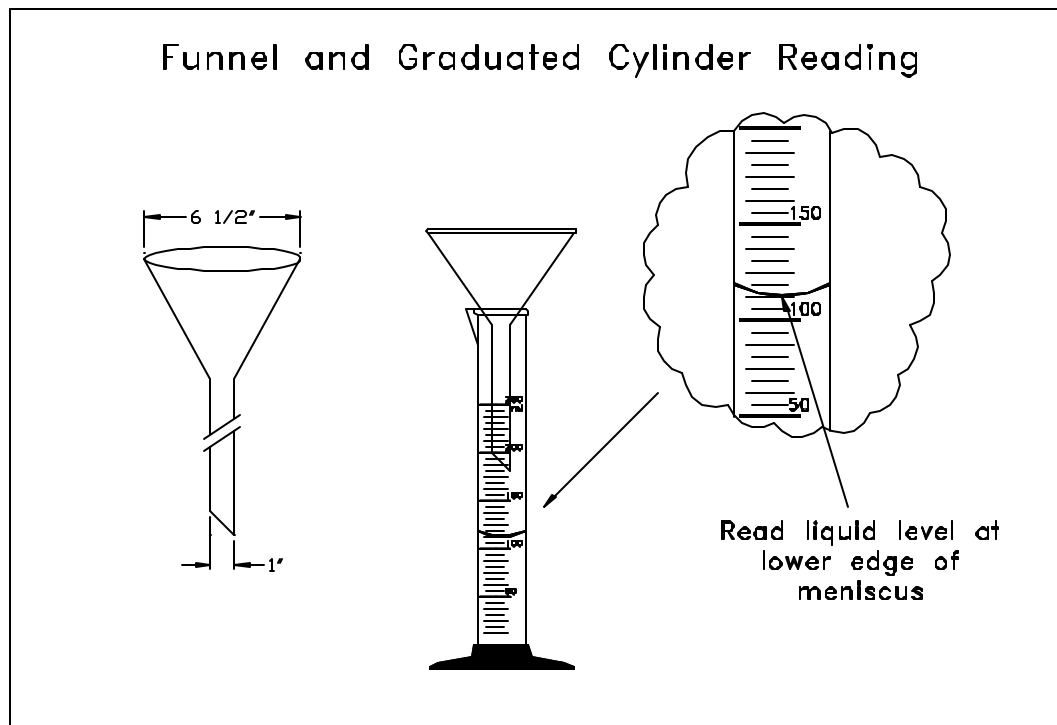
- 4.1** **Funnel.** Gasoline compatible, non-breakable, funnel with dimensions similar to those as shown in Figure 1, or equivalent.
- 4.2** **Graduated Cylinder.** Gasoline compatible, non-breakable, appropriately sized graduated cylinder with stable base plate. The cylinder shall have a capacity of at least 200 ml and not more than 500 ml. To ensure precision, graduated cylinder readings shall be measured at lower edge of the liquid level meniscus as shown in Figure 1.
- 4.3** **Gasoline Can.** Use a portable gasoline can equipped with a tight fitting cap of at least 1.0 gallon capacity.
- 4.4** **Field Data Sheet.** Use a Field Data Sheet similar to the one shown in Form 1 to record the data collected during the inspection.
- 4.5** **Traffic Cones.** Use traffic cones to encircle the area where testing is conducted.

##### **5. INSPECTION PROCEDURES**

- 5.1 Record the following information on a Field Data Sheet similar to that shown in Form 1:
- Dispenser Number
  - Gasoline Grade or Octane
  - Applicable CARB Exhibit Number (Dispenser configuration)
  - Nozzle Make and Model
  - Hose Make and Model
- 5.2 Place the funnel in the graduated cylinder. Remove the nozzle from the dispenser keeping it in an upright position, held at waist height. **Do not compress the bellows.** While maintaining the nozzle at waist height, carefully tilt the nozzle tip and bellows down into the funnel allowing the nozzle and bellows to fully drain into the graduated cylinder. Use caution to avoid spillage. Return the nozzle to the dispenser. Empty the graduated cylinder into the gasoline can. Close the gasoline can.

FIGURE 1

## FUNNEL AND GRADUATED CYLINDER READING



- 5.3 Verify that the graduated cylinder is empty. Position the large funnel into the graduated cylinder.
- 5.4 Remove the nozzle, drained in section 5.1 above, from the dispenser and tilt the spout into the large funnel/graduated cylinder assembly.

- 5.5 Lower the nozzle and funnel/graduated cylinder assembly as close to the ground as reasonably possible. "Walk out" the hose while keeping the spout lowered, and fully extend the hose. The hose should be sloped toward the funnel/graduated cylinder assembly to ensure drainage of all liquid retained in the vapor passage of the hose.
- 5.6 Carefully open the nozzle vapor check valve by compressing the bellows. Allow sufficient time for all liquid to drain. Use caution to avoid spillage.
- 5.7 Return the nozzle to the dispenser and measure the amount of liquid drained.
- 5.8 Record the amount of liquid drained on the Field Data Sheet, Form 1.
- 5.9 Open the lid of the gasoline can and pour in the gasoline from the graduated cylinder. Close the lid on the gasoline can.
- 5.10 Repeat Sections 5.1 through 5.9 for each nozzle to be inspected.

## 6. POST-INSPECTION PROCEDURES

- 6.1 Carefully pour any remaining gasoline from the gasoline can into the product drop tube of the gasoline grade with the lowest octane rating, typically 87 octane. To reduce inspection-related emissions, ensure that no gasoline is spilled during this transfer.

