

## Ohio EPA

### Division of Air Pollution Control

#### Engineering Guide #12

The purpose of this Engineering Guide (EG) is to address some questions regarding BAT and the inspection and witnessing of tests for gasoline dispensing facilities (GDFs). This guidance will establish a standardized approach for some on-site test questions and, thereby, maintain consistency Statewide.

#### **Questions and Answers:**

##### **1. How do we handle BAT for GDFs?**

As of August 2, 2006, BAT requirements will no longer be included in permits for new sources that have less than 10 tons per year of controlled emissions. For a Stage I GDF, this emission rate would be equal to approximately 129,000 gallons of throughput per month. For a Stage II GDF, this emission rate would be equal to approximately 538,000 gallons of throughput per month. The existing sections of OAC rules 3745-21-09 (R) and (DDD) are the only limitations applicable to the smaller-throughput GDFs installed after August 2, 2006. Existing BAT requirements in a permit issued prior to August 2, 2006 continue to apply unless the permittee requests a permit modification that would remove the BAT requirements and we agree to remove the requirements from the permit. (Also, the permit-by-rule will not be available for facilities that are not in the counties outlined in OAC rule 3745-31-03.)

##### **2. Are there any times when a dry block can be used for a dynamic test rather than a wet block on a Stage II system?**

No. A wet block is especially important during an initial test or during a test following underground vapor pipe work to repair a leak or past blockage. The dynamic test uses the test requirements under Appendix B of OAC rule 3745-21-10. There are 4 different methods listed. Methods 1 and 2 require 2 gallons to be dispensed into each Stage II riser. Method 3 uses a Torus assembly and involves dispensing fuel into a tank during the test. Method 4 is an additional procedure for vapor recovery systems utilizing an incinerator and involves pouring 5 gallons into the vent lines. Since Methods 1 and 2 are the procedures we most commonly use, a wet block test is required. A wet block test is accomplished by filling the risers with 2 gallons of gasoline. It is required by OAC rule 3745-21-09 (DDD) every 5 years or when new installations and modifications occur to a Stage II system that would affect the system's ability to return gas to the USTs .

**3. What are the proper vent caps to be used for a GDF?**

The proper vent caps for most Stage II systems are the 3-inch W.C. pressure and 8-inch W.C. vacuum caps. 10-inch W.C. and 8-ounce caps are not permitted. A 1.5 inch W.C. vent cap is used on the Healy system vent monitor and is acceptable based on CARB guidance.

**4. What do we do for a reference method when the results of two certified VacuSmart units disagree with each other?**

If two certified VacuSmart units give widely varied readings (not within acceptable tolerances of each other, per CARB rules), the test shall be rescheduled for a later date; and both instruments shall be sent to a manufacturer's approved service center for recalibration prior to the rescheduled test.

**5. When one grade on a side of a dispenser fails an A/L ratio test, do all grades on that side have to be retested? Yes.**

**6. How do we address new products on the market (nozzles, etc.) that are not addressed in the CARB certification?**

Only CARB-approved or equivalent equipment may be used in Ohio.

**7. There has been a question about the reliability of VacuSmart and VacuCheck units for lower A/L ratio range nozzles. Can we accept the results when using these units on the referenced nozzles?**

No. CARB equipment advisory #323 states: "The VacuSmart and VacuCheck units have not been approved and should not be used for the lower A/L ratio range nozzles specified in Executive Order G-70-150-AE." This refers specifically to the following nozzles used on the Gilbarco VaporVac vapor recovery systems: Catlow ICVN, Emco Wheaton A4505, Husky V34 6250, and OPW 12VW. Six months after the issuance of this guidance, Ohio EPA will no longer accept the results from tests where a VacuSmart or VacuCheck unit was used on Gilbarco dispensers equipped with these nozzles.

**8. Is a five-year test required on assist systems that have passed an installation test? Yes.**

**9. After a static leak test, how do we verify the vapor adaptors removed for the test are in compliance?**

After the test has been completed and the adaptor used to introduce nitrogen into the risers is removed, a liquid, such as soap should be applied to the adaptor that was removed for the test to detect any leaks while the system is pressurized.

**10. How do we address full drop out boxes/tanks?**

If the drop out box/tank is full, the test cannot be properly conducted. New installations should have an inspection port for the drop out box/tank. If a correction to the siphon line can be made quickly on site so that the drop out box/tank will again be self-draining, the test can continue. No other method to empty the drop out box/tank in order to continue the test is allowed.

**11. How do we ensure that dry breaks (vapor adaptors) are working properly?**

The vapor adaptor is defective if the center seal will not reseal on its own after it is depressed and released. Recentering the seal with your fingers does not demonstrate compliance. It must seal on its own.

**12. What are the requirements in averaging tests for A/L ratios?**

If the initial reading passes, that test is complete. If the first fails, up to three readings can be performed and the average taken. If this does not result in passing, adjustments must be made, and the tests must be conducted again according to CARB testing procedure T.P. -201.5, section 7.9.

**13. If an adjustment is made for one grade at a dispenser in order to pass an A/L ratio test, after the other grades have already passed the A/L ratio test, must the previously tested grades be retested?**

Yes. Any adjustment at a dispenser that can affect the A/L ratios for the other grades would require the other grades to be retested.

**14. Regarding the exemption for independent marketers (less than 50,000 gallons of throughput per month) and GDFs less than 10,000 gallons of throughput per month, is the dealer allowed to remove the Stage II controls if the GDF throughput drops below the exemption level?**

The exemption in OAC rule 3745-21-09 (DDD)(4) states the exemption shall cease to apply if a facility exceeds the exemption threshold in any calendar month after November 15, 1992. The rule further states that the exemption does not apply to a GDF that installed a Stage II system and the throughput subsequently drops below the exemption threshold.

**15. What are the Stage I vapor control system requirements, and how are the systems tested?**

Stage I facilities are covered under OAC rule 3745-21-09(R). OAC rule 3745-21-09(R) states that the vapor balance system shall be kept in good working order, and the owner or operator of the facility shall repair, within fifteen days, any leak from the vapor balance system or vapor control system which is employed to meet the requirements of paragraph

(R)(1) of OAC rule 3745-21-09 when such leak is equal to or greater than 100 percent of the lower explosive limit as propane, as determined under paragraph (K) of OAC rule 3745-21-10. If during a facility inspection, a problem is discovered (e.g., a vent cap is missing or damaged, a vapor adaptor and cap are damaged, etc.), this would indicate a leak from the vapor balance system. The facility can then perform repairs and/or prove that the leak is less than 100 percent of the lower explosive limit as propane by conducting the test as described in paragraph (K) of OAC rule 3745-21-10.

#### **16. When can Phase I coaxial systems be used?**

All Stage I drop tubes shall be CARB-certified. Coaxial Phase I systems shall not be used with new installations. Replacement of underground storage tanks at existing facilities is considered a new installation. Coaxial Phase I systems that are CARB-certified after January 1, 1994, may be allowed if the system is poppeted and capable of demonstrating compliance with the static pressure decay test.

#### **17. What are the criteria for requiring the replacement of nozzles?**

The very first part of a nozzle inspection involves ensuring that the proper nozzle is installed on the vapor recovery system. The listing of all CARB-certified equipment is under Exhibit 1 in each system's executive order and in the CARB approval letters. Next, the physical condition of each nozzle should be assessed. Nozzles must be replaced when they have a loose or broken spout, excessive damage to the ECD (vapor shroud), less than the minimum number of unblocked vapor holes, or a defective vapor check valve. The amount of allowable damage to the ECD and the minimum number of unblocked holes are listed in the CARB executive orders. A defective vapor valve, for vapor valve type nozzles only, must be identified by the nozzle vapor valve test. The test procedure is to have the nozzle authorized to dispense gasoline and then to observe that the dispenser readout does not move or creep. If the nozzle fails this test, perform it a second time because nozzles which haven't been used for long periods of time will creep a little when first used.

Gilbarco/MCS dispensers installed before August 1, 2000 may use either a vapor valve or a non-vapor valve type nozzle such as OPW 12 VW or the OPW 11VAI-27. On multi-hose dispensers, all three nozzles on each side must be of the same type, either vapor valve or non-vapor valve. They may be from different manufacturers, but they must be the same type. Gilbarco/MCS dispensers installed after August 1, 2000 must use a vapor valve type nozzle.

Gilbarco/MCS dispensers manufactured after August 1, 2000 will only list a OPW 12VW nozzle on their approved equipment placard. If it is a multi-hose dispenser, all nozzles on each side may be of different manufacturers as long as the allowable A/L values are the same.

The OPW 12 VW may not be used on the Tokheim Max Vac. OPW has not received a CARB certification for the use of OPW 12 VW on the Tokhiem system.

High hose dispensers utilizing a Hasstech vapor control system must use the OPW 11VAI-37 "slurpee" nozzle (CARB certification date August 1995). This nozzle removes liquid from the vapor path.

The Richards nozzle, manufactured by Catlow, carries the same CARB certification as the Catlow ICVN nozzle.

**18. How do we handle facilities with drop out tanks that do not have an operating system to return liquid to the tank?**

Per CARB Vapor Certification Procedure CP-201, amended February 1, 2001:

"4.13 Liquid Condensate Traps - Liquid condensate traps (also known as knockout pots and thief ports) are used to keep the vapor return piping clear of liquid when it is not possible to achieve the necessary slope from the dispenser to the underground storage tank.

4.13.1 Liquid condensate traps shall be used only when the minimum slope requirements of 1/8" per foot of run cannot be met due to the topography.

4.13.2 When condensate traps are installed, they shall be:

- (a) certified by CARB;
- (b) maintained vapor tight;
- (c) accessible for inspection upon request;
- (d) capable of automatic evacuation of liquid; and
- (e) equipped with an alarm system in case of failure of the evacuation system."

Automatic evacuation of the liquid is accomplished through the use of a siphon pump, which turns on as needed. To make sure it is in an operable condition, an alarm system is required. CARB estimates 1 to 2 gallons of condensate will collect in the vapor recovery piping for every 10,000 gallons of product pumped. Additional liquid will accumulate from topping off or overfilling the vehicle fuel tanks at the dispenser. No one can accurately estimate how much fuel will accumulate in a specific period of time; hence, the requirement for an automatic evacuation system.

BH/JO/EF

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