

NOTICES OF FINAL RULEMAKING

The Administrative Procedure Act requires the publication of the final rules of the state's agencies. Final rules are those which have appeared in the *Register* first as proposed rules and have been through the formal rulemaking process including approval by the Governor's Regulatory Review Council or the Attorney General. The Secretary of State shall publish the notice along with the Preamble and the full text in the next available issue of the *Register* after the final rules have been submitted for filing and publication.

NOTICE OF FINAL RULEMAKING

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 36. DEPARTMENT OF FIRE, BUILDING AND LIFE SAFETY

[R08-213]

PREAMBLE

- 1. Sections Affected**
R4-36-202
R4-36-303
- Rulemaking Action**
New Section
Amend
- 2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**
Authorizing statute: A.R.S. § 41-2146(D)
Implementing statute: A.R.S. §§ 41-2146(D) and 41-2163(C)
- 3. The effective date of the rules:**
August 30, 2008
- 4. List of all previous notices appearing in the *Register* addressing the final rules:**
Notice of Rulemaking Docket Opening: 14 A.A.R. 894, March 28, 2008
Notice of Proposed Rulemaking: 14 A.A.R. 1135, April 11, 2008
- 5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**
Name: Phil Mele
Address: Department of Fire, Building and Life Safety
1110 W. Washington St., Suite 100
Phoenix, AZ 85007
Telephone: (602) 364-1081
Fax: (602) 364-1084
E-mail: Phil.mele@dfbls.az.gov
- 6. An explanation of the rules, including the agency's reasons for initiating the rulemaking:**
The State Fire Safety Committee is making the schedule of fees required under A.R.S. § 41-2146(D) for a permit, plan submission, plan review, or re-inspection related to fire protection.
- 7. A reference to any study relevant to the rule that the agency reviewed and either relied on or did not rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:**
The Office of the State Fire Marshal conducted an internal study to determine the amount of time required to review various kinds of submitted plans, issue permits, and conduct re-inspections. The Office used the time estimates to calculate the cost of providing the services and established fees based on the calculations. A copy of the Fire Protection Permit Fee Report may be obtained by contacting the individual listed in item 4.
- 8. A showing of good cause why the rules are necessary to promote a statewide interest if the rules will diminish a previous grant of authority of a political subdivision of this state:**
Not applicable

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9. The summary of the economic, small business, and consumer impact:

In 2005 the legislature changed A.R.S. § 41-2146(D) to allow the State Fire Safety Committee to adopt a schedule of fees for a permit, plan submission, plan review, and re-inspection. The Office of the State Fire Marshal previously had authority to charge certain fees but never did so. The work of the State Fire Marshal is funded by the state general fund. With this rulemaking, certain activities of the State Fire Marshal will be performed on a cost-recovery basis. There will be an economic impact on those who are required to submit a plan and obtain a permit from the State Fire Marshal. This fee is a cost of doing business, which may be passed to the consumer.

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

The Department made minor, nonsubstantive changes between the proposed and final rules, including the following changes, which are not substantial under the standard at A.R.S. § 41-1025(B), were made to clarify language in the Notice of Proposed Rulemaking:

R4-36-202(A)(1)(b): The words “or each re-review of a previously submitted plan” were added to clarify that a change that requires a previously reviewed plan to be re-reviewed is treated the same as submitting a plan supplement.

R4-36-202(A)(2)(l): The words “by adding” were added to clarify that the only modification of a fire alarm system requiring a permit is the addition of fire alarm devices. A permit holder is allowed to move an existing fire alarm device without a permit.

11. A summary of the comments made regarding the rules and the agency response to them:

The Department received a written comment from the Arizona Automatic Fire Alarm Association. Two employees of the University of Arizona, Department of Risk Management, attended the oral proceeding held on May 12, 2008. The comments and the Department’s analysis and response follow:

COMMENT	ANALYSIS	RESPONSE
Define “supplement” – does it mean revision of a submitted plan; how much revision is allowed; when does a supplement have to be submitted; are there additional review fees?	As defined in a dictionary, “supplement” means something that is added on. Therefore, any change to a submitted plan is “added on” to the original submission and is a supplement. If a supplement is required, it must be submitted before a permit is issued. There is no additional review fee for a plan supplement.	No change
It’s understandable that different systems are charged separately. How would a campus consisting of several buildings that may have several fire alarm control panels networked together be viewed?	If different systems are submitted as a single plan, there is a single plan submission fee. However, each system is charged a review fee and a permit issuance fee. Several fire alarm control panels networked together in multiple buildings would incur one plan submission fee, review fee, and permit issuance fee.	No change
The information regarding how review of a new fire alarm system is charged is understandable for most buildings. But, how is the fee calculated when multiple buildings are included in one plan?	If multiple buildings are included in one plan, the fee is calculated using the total square footage of all buildings plus \$200 for each floor level above ground level regardless of whether the additional levels occur in one or multiple buildings.	No change
Does the word “throughout” as used in R4-36-202(A)(2)(k)(vii) mean the same as “total” or “complete” as used in NFPA 72?	Yes	No change
The \$150 maximum charge to review a plan modification of a fire alarm system could be costly to the Department. It might want to consider an additional fee scale for modifications.	The Department will continually assess the fee schedule to ensure that the fees are covering the cost of providing the review and permitting process. If change is necessary, the Department will amend the fee schedule.	No change
Is it accurate that there is a plan submittal fee, review fee, and permit issuance fee for each system?	There are three fees. There is a submittal fee for a plan regardless of the number of systems included in the plan. There is a review fee and a permit issuance fee for each system included in a plan.	No change

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If a detailed shop drawing is submitted after a permit has been issued for a system, will the submission be considered a separate submission or part of the original submission?	After a permit is issued, the original submission cannot be amended. The detailed shop drawing would be a new submission and incur a plan submittal fee.	No change
Will the fees in the fee schedule have to be paid for projects that are currently under design and for which the fees have not been budgeted?	All plans submitted after the fee schedule goes into effect, which will be around August 30, 2008, will incur fees.	No change
Can fees be paid by billing or invoicing? Will payment be required before a permit is issued?	Payment is expected at the time of submittal. Even if billing or invoicing is done, all fees must be paid before a permit is issued.	No change
What is the estimated plan review turnaround time under this system?	The system has not changed except for the addition of fees. State statute requires that the Department review and approve or disapprove a plan within 60 days of submission.	No change
Is there a grievance process if we believe we are being charged more than is proper?	The Fire Marshal will refund a fee paid that the Fire Marshal determines was erroneous (See R4-36-202(B)).	No change
Is there a procedure for an expedited review?	There is no official procedure for expedited review. However, it has been the Department's policy to expedite reviews as a courtesy when possible. This will not change.	No change
If the Fire Marshal expresses concern during the plan review that requires changes before a permit is issued, will there be a supplemental fee?	No. However, if the plan is redrawn and resubmitted, there will be a supplemental fee.	No change
When a plan is submitted with alternative options and the options are reviewed, is there a charge when a decision is made about which option to use?	No	No change
If everyone approves a plan and then the inspector discovers something that everyone missed and additional work is required, will there be a fee for re-inspection?	Not if the re-inspection is due to an oversight by the plan reviewer.	No change
If a design/build procedure is used in which one system of a building is designed and built while the next system is being designed, will each system incur a submission fee?	Yes. Because the systems are designed and submitted separately, each will incur a plan submission fee.	No change

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

None

13. Incorporations by reference and their location in the rules:

None

14. Were these rules previously made as emergency rules?

No

15. The full text of the rules follows:

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 36. DEPARTMENT OF FIRE, BUILDING AND LIFE SAFETY

ARTICLE 2. ARIZONA STATE FIRE CODE

Section
R4-36-202. Fees

ARTICLE 3. INTERNATIONAL FIRE CODE MODIFICATIONS

Section
R4-36-303. Fees and Permits

ARTICLE 2. ARIZONA STATE FIRE CODE

R4-36-202. Fees

- A.** Under the authority provided by A.R.S. § 41-2146(D), the State Fire Safety Committee establishes the following schedule of fees:
1. Plan submission fees:
 - a. Each plan submitted: \$210, and
 - b. Each plan supplement submitted or each re-review of a previously submitted plan: \$30;
 2. Plan review fees. A separate fee is charged for each system reviewed even if the systems are included in one submitted plan:
 - a. New installation of an automatic fire sprinkler system.
 - i. Servicing less than 10,000 square feet: \$375;
 - ii. Servicing between 10,000 and 50,000 square feet: \$450;
 - iii. For each 50,000 square feet or portion of 50,000 square feet serviced in excess of 50,000 square feet: \$450;
and
 - iv. For each floor level serviced above or below the ground-level floor: \$200;
 - b. Modification of an existing automatic fire sprinkler system.
 - i. System consisting of 1 to 20 sprinkler heads: \$75.
 - ii. System consisting of 21 to 50 sprinkler heads: \$100.
 - iii. System consisting of 51 to 100 sprinkler heads: \$250.
 - iv. System consisting of 101 to 500 sprinkler heads: \$300.
 - v. For each additional 100 sprinkler heads or portion of 100 sprinkler heads in excess of 500: \$100; and
 - vi. For each floor level serviced above or below the ground-level floor: \$200;
 - c. New installation or modification of an extinguishing system using clean agent, halon, dry chemical, carbon dioxide, or other extinguishing material:
 - i. Servicing up to 5,000 square feet: \$200; and
 - ii. For each 5,000 square feet or portion of 5,000 square feet serviced in excess of 5,000 square feet: \$50;
 - d. New installation of one automatic hood extinguishing system: \$150;
 - e. Modification of one existing automatic hood extinguishing system: \$75;
 - f. New installation of a fire pump:
 - i. For the first fire pump: \$250, and
 - ii. For each additional fire pump: \$150.
 - g. Modification of one existing fire pump: \$100;
 - h. New installation or modification of underground fire line and hydrants:
 - i. System consisting of up to 500 lineal feet: \$300, and
 - ii. For each 500 lineal feet or portion of 500 lineal feet in excess of 500 lineal feet: \$175;
 - i. New installation of standpipe system:
 - i. System consisting of up to four standpipes: \$200, and
 - ii. For each four standpipes or portion of four standpipes in excess of four: \$100;
 - j. Modification of standpipe system: \$50;
 - k. New installation of a fire alarm system:
 - i. Servicing up to 1,000 square feet: \$225;
 - ii. Servicing between 1,001 and 2,000 square feet: \$300;
 - iii. Servicing between 2,001 and 10,000 square feet: \$450;
 - iv. Servicing between 10,001 and 50,000 square feet: \$500;
 - v. For each 50,000 square feet or portion of 50,000 square feet serviced in excess of 50,000 square feet: \$200;
 - vi. For each floor level serviced above or below the ground-level floor: \$200; and
 - vii. For smoke detection throughout serviced area: 50% increase in fee calculated under subsections (A)(2)(k)(i) through (A)(2)(k)(vi); and
 - l. Modification of a fire alarm system by adding:
 - i. One to five fire alarm devices: \$100, and
 - ii. Six or more fire alarm devices: \$150;
 3. Permit issuance fees:
 - a. Fire protection permit: \$30 per system permitted.
 - b. Underground liquid fuel storage tank: \$164.
 - c. Tire storage: \$82.

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- d. Above-ground liquid fuel storage tank: \$164.
 - e. Pyrotechnics: \$164.
 - f. Special-event tent: \$164.
 - g. Hydrogen fuel cell: \$164.
 - h. Fair or trade show: \$164.
 - i. Explosives or blasting storage: \$164.
 - j. Compressed gases: \$164.
 - k. Cryogenics: \$164, and
 - l. Liquefied petroleum tank: \$164, and
4. Re-inspection fees: If the State Fire Marshal has to conduct a re-inspection because an entity failed to cancel or was not prepared for a previously scheduled inspection or because the site failed the inspection, the State Fire Marshal shall charge a minimum of \$164 for the re-inspection. The State Fire Marshal shall increase the minimum re-inspection fee by \$82 for each 25 miles or portion of 25 miles in excess of the first 25 miles required to travel to and from the site of the re-inspection.
- B.** The State Fire Safety Committee shall authorize the State Fire Marshal to refund any fee paid under this Section if:
- 1. The permit holder applies for a refund on a form furnished by the State Fire Marshal no more than 180 days after the fee is paid, and
 - 2. The State Fire Marshal determines that the fee paid was erroneous.

ARTICLE 3. INTERNATIONAL FIRE CODE MODIFICATIONS

R4-36-303. Fees and Permits

- A.** Section 105.1.1 is modified to add: The State Fire Safety Committee shall establish a fee schedule on or before May 15 of each fiscal year for the coming fiscal year.
- B.** The State Fire Marshal shall post notice of the established fee schedule on or before June 1 of each fiscal year.
- C.** The fee schedule described in subsection (A) shall include fees for the following services and any person may obtain the fee schedule from the Office of the State Fire Marshal:
- 1. Plan submission;
 - 2. Plan review;
 - 3. Permit issuance; and
 - 4. Reinspection necessitated by failure to cancel, lack of preparation for inspection, or failing the inspection.
- ~~**D.A.**~~ No change
- 1. No change
 - 2. No change
 - 3. No change
- ~~**E.B.**~~ No change
- F.** The State Fire Marshal may authorize the refunding of any fee paid in accordance with this Section that was erroneously paid or collected if the permittee applies for the refund on a form furnished by the State Fire Marshal not later than 180 days after the date of fee payment.
- ~~**G.C.**~~ No change
- 1. No change
 - 2. No change
- ~~**H.D.**~~ No change
- ~~**I.E.**~~ No change
- ~~**J.F.**~~ No change
- ~~**K.G.**~~ No change
- ~~**L.H.**~~ No change
- ~~**M.I.**~~ No change
- ~~**N.J.**~~ No change
- ~~**O.K.**~~ No change
- ~~**P.L.**~~ No change
- ~~**Q.M.**~~ No change
- ~~**R.N.**~~ No change
- ~~**S.O.**~~ No change

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TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR POLLUTION CONTROL

[R08-214]

PREAMBLE

1. Sections Affected

R18-2-1006
R18-2-1009
R18-2-1010
R18-2-1011
R18-2-1019
R18-2-1027

Rulemaking Action

Amend
Amend
Amend
Amend
Amend
Amend

2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing and implementing statutes: A.R.S. §§ 49-104(A)(10); 49-404; 49-425; 49-447; 49-541; 49-542(D), (F)(1)(a), and (Z); 49-543; and 49-546.

3. The effective date of the rules:

July 1, 2008

Immediately upon filing with the Secretary of State. ADEQ requests an immediate effective date for these rules under A.R.S. § 41-1032. A.R.S. § 41-1032(A)(1) allows for an immediate effective date to preserve the public health or safety. Ambient ozone concentrations are very near the 1997 air quality standard and exceed the 2008 standard with all current control measures implemented. For this reason, the "liquid fuel leak" emissions control measure provides needed public health protection in the Phoenix and Tucson metropolitan areas. Therefore, ADEQ requests an immediate effective date to ensure implementation of the "liquid fuel leak" test during the 2008 ozone season (April 1 through October 31).

4. A list of all previous notices appearing in the Register addressing the final rules:

Notice of Rulemaking Docket Opening: 14 A.A.R. 426, February 8, 2008

Notice of Proposed Rulemaking: 14 A.A.R. 352, February 8, 2008

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

Name: Bruce Friedl

Address: Department of Environmental Quality
1110 W. Washington St.
Phoenix, AZ 85007

Telephone: (602) 771-2259 (This number may be reached in-state by dialing 1-800-234-5677 and requesting the seven digit number.)

Fax: (602) 771-2366

6. An explanation of the rules, including the agency's reasons for initiating the rules:

Summary:

The Arizona Department of Environmental Quality (ADEQ) is amending a number of rules in Article 10 to incorporate procedures for a "liquid fuel leak" test into the vehicle emissions inspections and maintenance program. Addition of this test is expected to reduce emissions of volatile organic compounds to help the Phoenix and Tucson areas meet the National Ambient Air Quality Standards for ozone. The rule also corrects testing requirements for diesel-powered vehicles owned or leased to holders of a fleet emissions inspection station permit to include tampering inspection procedures.

Background:

EPA research suggests that for some vehicles a significant portion of emissions are the result of evaporation of gasoline from liquid fuel leaks rather than direct vapor leaks. In June 2007, the Arizona Legislature amended Arizona Revised Statutes (A.R.S.) § 49-542 [Arizona Laws 2007, Chapter 292 (Senate Bill 1552)] to require a "liquid fuel leak" inspection for non-diesel vehicles subject to emissions testing under the vehicle emissions inspection program, currently operated in the Phoenix and Tucson metropolitan areas. As required by the legislation, ADEQ is revising a number of rules in Article 10 to add "liquid fuel leak" testing procedures to the vehicle inspections and maintenance

program. This test is designed to reduce emissions of volatile organic compounds from liquid fuel evaporation that contribute to ozone formation and help the Phoenix and Tucson areas attain and maintain the National Ambient Air Quality Standards for ozone.

Ozone is created by a chemical reaction between volatile organic compounds, oxides of nitrogen, and other air pollutants (ozone precursors) in the presence of heat and sunlight. Motor vehicle exhaust, industrial emissions, and gasoline vapors are all sources of ozone precursor emissions that can cause ground-level ozone to form in the air, particularly in the summer months. Breathing ozone can trigger a variety of health problems such as chest pain and throat irritation and can worsen bronchitis, emphysema, and asthma. In harmful concentrations, ozone can reduce lung function and inflame the linings of the lungs. According to current research, repeated exposure may permanently scar lung tissue.

In June 2004, the U.S. Environmental Protection Agency (EPA) designated the Phoenix metropolitan area (portions of Maricopa and Pinal Counties) nonattainment for the 1997 eight-hour ozone standard (69 FR 23858; April 30, 2004). A federally required State Implementation Plan (SIP) revision, developed by the Maricopa Association of Governments in conjunction with the Maricopa County Air Quality Department, Arizona Department of Transportation, and ADEQ, to demonstrate attainment of the 1997 ozone standard by the 2008 ozone season was submitted to EPA in June 2007. With all current emissions control measures implemented, the plan demonstrates attainment of the 1997 eight-hour ozone standard with a very narrow margin of safety. The 1997 standard is 0.08 parts per million (ppm) for a daily maximum eight-hour average (both the primary standard, designed for protection of public health, and the secondary standard, for protection of the environment, were set at the same level). Due to rounding conventions, a concentration 0.085 ppm and above is considered an exceedance of the 1997 standard. Air quality modeling included in the plan shows predicted ambient ozone concentrations of up to 0.084 ppm. Monitored violations of the 1997 standard occur when the three-year average of the annual fourth-highest daily maximum eight-hour average concentration measured at each site is greater than or equal to 0.085 ppm. The maximum value calculated for the period 2004-2006 was 0.083 ppm, very near a violation of the standard.

In July 2007, EPA proposed to strengthen the primary and secondary ozone standards to increase public health protection and prevent environmental damage from ground-level ozone (72 FR 37818; July 11, 2007). On March 12, 2008, subsequent to publication of the "liquid fuel leak" Notice of Proposed Rulemaking, EPA signed a Final Rule that sets the level of both the primary and secondary standards at 0.075 ppm (73 FR 16436; March 27, 2008). The level of the new standard is now specified to the third decimal place. Monitored violations of the standard occur when the three-year average of the annual fourth-highest daily maximum eight-hour average concentration measured at each site is 0.076 ppm or more. States are required to make recommendations to EPA by March 2009 for areas to be designated as meeting or not meeting the new standard. EPA is expected to make final decisions on area designations by March 2010. Based on 2004-2006 and preliminary 2005-2007 monitored air quality information, the Phoenix and Tucson metropolitan areas (portions of Gila, Maricopa, Pima, and Pinal Counties) do not meet the new standard. Yuma County is very near a violation of the 2008 standard.

Although the air quality standards for ozone have been revised, according to EPA's March 27, 2008, Final Rule "... the 1997 standards—and the implementation rules for those standards—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 O₃ [ozone] standards to the 2008 O₃ standards. States are required to continue to develop and implement their State Implementation Plans (SIPs) for the 1997 standards as they begin the process of recommending designations for the 2008 standards." As required, the Maricopa Association of Governments is currently developing a maintenance plan and redesignation to attainment request for the metropolitan Phoenix nonattainment area for the 1997 standard. Inclusion and implementation of the "liquid fuel leak" inspection in the new plan will provide a "safety cushion" above and beyond what is provided by the measures in the submitted June 2007 plan and will result in improved air quality more protective of public health. Implementation of this control measure will also help the Phoenix area meet the more stringent 2008 ozone standard.

The Tucson area is currently meeting the 1997 air quality standard for ozone. As noted above, monitored ozone concentrations document that the Tucson area does not meet the new 2008 ozone standard. Implementation of the "liquid fuel leak" inspection will result in improved air quality more protective of public health and, as in the Phoenix testing area, will help the Tucson area meet the more stringent 2008 ozone standard.

Because On-Board Diagnostics (OBD) technology senses fuel system leaks, the rules exempt OBD equipped vehicles from liquid fuel leak testing. Emissions reduction estimates in the Notice of Proposed Rulemaking, however, included emissions reductions already achieved by OBD systems. Updated analysis estimates that identification and repair of vehicles with liquid fuel leaks may provide an additional 2,625 short tons per year reduction in volatile organic compound emissions in the metropolitan Phoenix vehicle emissions testing area and 1,068 short tons per year emissions reduction in the metropolitan Tucson testing area.

Section by Section Explanation of the Proposed Rules:

R18-2-1006. Emissions Test Procedures. The proposed rule adds liquid fuel leak inspection procedures and defines pass-fail determinations for the Phoenix (area A) and Tucson (area B) vehicle emissions testing areas. The proposed rule also corrects references to renumbered subsections in R18-2-1006.

R18-2-1009. Tampering Repair Requirements. The proposed rule corrects references to renumbered subsections in R18-2-1006.

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R18-2-1010. Low Emissions Tune-up, Emissions and Evaporative System Repair. The proposed rule adds repair procedures and specifies repair costs for vehicles failing the emissions inspection due to a liquid fuel leak.

R18-2-1011. Vehicle Inspection Report. The proposed rule requires the results of the liquid fuel leak inspection to be included on the vehicle inspection report provided to all tested vehicles.

R18-2-1019. Fleet Station Procedures and Permits. The proposed rule corrects subsection (E) to include procedures for a tampering inspection for diesel-powered vehicles owned or leased to a holder of a fleet emissions inspection station permit. The proposed rule also requires the results of the "liquid fuel leak" inspection to be included on fleet vehicle inspection reports and corrects references to renumbered subsections in R18-2-1006.

R18-2-1027. Registration and Inspection of Emissions Analyzers and Opacity Meters. The proposed rule corrects a reference to a renumbered subsection in R18-2-1006.

7. A reference to any study relevant to the rule that the agency reviewed and either relied on or did not rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

"Evaporative Emissions of Gross Liquid Leakers in MOBILE6," EPA420-R-01-024, M6.EVP.009, U.S. Environmental Protection Agency, April 2001. Available for review at the ADEQ Library, First Floor, 1110 W. Washington St., Phoenix AZ 85007.

"Arizona Department of Environmental Quality Spreadsheet, VOC Reductions in Areas A & B from Inspecting Vehicles for Liquid Leaks," prepared by P. Hyde and H. Chen, February 12, 2007, and updated April 29, 2008. Available for review at the ADEQ Library, First Floor, 1110 W. Washington St., Phoenix AZ 85007.

8. A showing of good cause why the rules are necessary to promote a statewide interest if the rules will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. The summary of the economic, small business, and consumer impact:

A. Rule Identification

This rulemaking, mandated by Senate Bill 1552, is codified as R18-2-1006 (see A.R.S. § 49-542). It is known as the "liquid-leak test" rule (see A.R.S. § 49-542).

B. Introduction

The rule implements a visual inspection of a vehicle's components for liquid fuel leaks (visible drop or more of fuel or the formation of a fuel puddle). This will be in addition to the current vehicle emissions inspection (VEI) that is performed on vehicles registered in Area A (Phoenix) and Area B (Tucson) on at least a biennial basis for vehicles manufactured after the 1974 model year, excluding diesel vehicles. Currently, the vehicle inspection includes: anti-tampering, gas cap, and either a loaded/idle or dynamometer exhaust test, and pressure test.

Vehicle inspection facilities, dealers, and repair businesses will be able to identify defects in fuel delivery, metering, and evaporative systems through a quick inspection using a flashlight and a mirror. The goal of the "liquid-leak test" is to identify vehicles that fail the test and have them repaired to eliminate or significantly reduce non-exhaust-related volatile organic compound (VOC) emissions from being emitted into the atmosphere. According to an ADEQ study, the frequency of leaks is positively correlated to the age of the vehicle. This applies to all of the evaporative modes: resting/diurnal, running, and hot soak. Based on analysis of registered vehicles in the Maricopa (Area A) and Pima (Area B) testing areas for model years 1975 through 1995 (1996 and newer model years are On-Board Diagnostics equipped and exempt from liquid fuel leak testing), and an 80-percent inspection effectiveness rate, the additional test is anticipated to eliminate approximately 2,382 metric tons (2,625 short tons) of VOC emissions annually from Area A and 970 metric tons (1,068 short tons) annually from Area B.

This rulemaking also makes a correction to a rule reference that excluded the tampering inspection for diesel fleets. However, because fleet stations already are performing these tampering inspections, no economic impact is created by this amendment.

C. Class of Persons Directly Affected

ADEQ anticipates that this rulemaking will impact private and public vehicle owners whose gasoline-powered vehicles are registered in Areas A and B, ADEQ's VEI facilities, repair businesses, automotive parts vendors, Voluntary Vehicle Repair and Retrofit (VVR&R) Programs in Maricopa County and Pima County, and general public. Vehicle owners include private citizens, dealers, and fleets (e.g., federal, state, county, municipalities, school districts, and special districts).

D. Cost-Benefit Analysis

1. General Public

Environmental regulations are promulgated to reduce the magnitude of the impact of pollutants on public health and the environment. In this case, ADEQ expects the proposed rulemaking to help internalize the damages from VOC emissions which can be classified as a negative externality. When a person's actions impose uncompensated costs on

another, it is called a negative externality. Damage occurs because people and businesses do not pay the true social costs for using resources, and the result is a malfunctioning market.¹ From the society's perspective, externalities result in an undesirable level of pollution, namely, excess VOCs emitted from vehicles in Areas A and B.

Ozone, a metabolic poison and the main cause of eye irritation in photochemical smog, can cause or aggravate bronchitis, asthma, and other lung diseases. Ozone can result in minor restricted activity days, asthma emergency room visits, school absences, asthma attacks, and respiratory hospital admissions. The studies summarized below illustrate these ozone impacts (Hall et al., 2006).

Minor Restricted Activity Days. Minor restricted activity days (MRADs) represent days when various respiratory symptoms reduce normal activities, but not enough to prevent going to work or attending school. The combination of symptoms inducing an MRAD is more restrictive than any individual symptom.

The Ostro and Rothschild study (1989) used a national sample of the adult population (18-65) over a six-year time period (1976-1981) to determine some of the health consequences of ozone and fine particles. The authors found an association between ozone and minor restrictions in activity, after controlling for fine particles which could be used to derive an exponential ozone concentration response function. Using a weighted average of the coefficients reported in the analysis, EPA (2003) developed a best estimate coefficient. An annual baseline number of 7.8 MRADs per person also was derived from the study. Following Ostro and Rothschild, Hall et al., applied this function to the "working" adult portion of the population. EPA (2003) notes that this application is likely to produce a somewhat conservative health outcome estimate, since elderly adults are probably at least as susceptible to ozone pollution as are individuals under 65 years of age.

Asthma Emergency Room Visits. Several studies have established a relationship between increases of ozone and a variety of asthmatic symptoms. Weisel et al. (1995) conducted a five-year retrospective study of the relationship between summer ozone concentrations and asthma-induced emergency room (ER) visits. They examined the relationship between ambient ozone levels and ER visits by asthmatics in central and northern New Jersey (1986-1990). Cody et al. (1992) did a similar study for the same geographical area during the summer months of 1988 and 1989. Although Weisel et al.'s results derive from a single-pollutant equation, the Cody et al. study included SO₂ as a co-pollutant. Multiple linear regression analyses were conducted for each year, generating positive and significant coefficients of daily ER visits with ozone concentrations. From these studies' coefficients, EPA (2003) derived slope coefficients for a linear concentration-response function. Hall et al. (2006) averaged these two linear coefficients, forming the basis for their calculation of reductions in asthma-related ER visits from improved ozone levels.

School Absences. Ozone-related school absence is a health outcome that has been examined in two published health studies. The first, by Chen et al. (2000), considered the association between air pollution and daily elementary school absenteeism in Washoe County, Nevada (1996-1998). Hall et al. (2006) regressed student absenteeism on three air pollutants (ozone, PM₁₀, and CO), weather variables, and other confounding factors, using autoregression analysis. The second, by Gilliland et al. (2001), examined 1996 school absences for 12 southern California communities with differing concentrations of multiple pollutants (ozone, NO₂, and CO).

These researchers used a two-stage, time series regression model, controlling for day of the week and temperature to assess whether there were any associations between pollution levels and absences. The studies found ozone to be statistically associated with daily absenteeism. Chen et al. (2000) predicted that for every 50 ppb increase in ozone the overall absence rate increased by 13.01%. In contrast, Gilliland et al. found that a 20 ppb increase in eight-hour average ozone concentrations was associated with a 16.3% increase in the all-absence rate. From these results, Hall et al. (2006) derived exponential values that were averaged together, resulting in an ozone-related school absence concentration-response value of 0.004998. EPA (2003) reports a daily school absence rate of 0.055 that was obtained from the U.S. Department of Education.

Asthma Attacks. In a widely cited study, Whittemore and Korn (1980) examined daily asthma attack diaries from 16 panels of asthmatics living in six communities in southern California during the mid-1970s. They used multiple logistic regression analysis to test for relationships between daily attacks and daily levels of two types of pollutants (photochemical oxidants and total suspended particulates), and a variety of weather variables. Results for the two pollutant models showed significant relationships between daily levels of both pollutants and reported asthma attacks. EPA (2003) adjusted the model's oxidant results so that they could be used with ozone data. A daily incidence rate of wheezing attacks for adult asthmatics of 0.055 was assumed to be the baseline rate, based on an analysis of the 1999 National Health Interview Survey (EPA 2003).

Respiratory Hospital Admissions. For the non-elderly ages (0-64) ozone-related respiratory hospital admissions, Hall et al. used a report by Thurston and Ito (1999), which summarized an extensive literature on hospital admissions that included ozone as one of the explanatory variables. This was the same approach adopted by CARB (2005). In this report, a statistical synthesis of three Canadian studies (Burnett et al. 1994, Thurston et al. 1994, and Burnett et al. 1997) yielded a quantitative estimate of the respiratory hospital admission effect associated with ozone exposures for the non-elderly general population. They calculate a relative risk factor of 1.18 per 100 ppb increase in daily one-hour maximum ozone levels.

To estimate ozone-related avoided incidences of respiratory hospital admissions for patients 65 and older, Hall et al. (2006) generated a pooled value using several health studies referenced by the EPA (2003). All of these studies found significant associations between ozone and various categories of respiratory hospital admissions according to

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Schwartz (1995), who analyzed the relationship between ozone and all respiratory admissions for the cities of New Haven, Connecticut and Tacoma, Washington; and Moolgavkar et al. (1997), Schwartz (1994a), and Schwartz (1994b), who considered pneumonia and chronic obstructive pulmonary disease admissions in Minneapolis and Detroit.

Health benefits resulting from reduced air pollution can be expressed as avoided cases of ozone-related health effects and assigned dollar values. Table 1 shows monetized values of specific adverse health effects. If these health endpoints were avoided, cost-benefit savings could accrue to individuals. The information provided and monetized values are included in this EIS to provide a basis for potential human health benefits from reducing VOCs emitted by vehicles. Although ADEQ cannot provide an estimate of how many individuals will experience fewer of the health endpoints contained in Table 1, ADEQ staff maintain that benefits of this rulemaking will exceed costs.²

Table 1. Monetized Values of Health Endpoints

Health Endpoint (avoided health effect)	Value per Incidence (2005 \$ unless noted)	Notations
Premature Mortality (VSL)	6,500,000	EPA's value of \$5.5 million converted to 2005 dollars
Chronic Bronchitis (onset)	374,000	Estimated in two CV studies (Krupnick and Cooper 1989; Viscusi et al. 1991) updated from the value used by EPA (2003b, 2004, 2005)
Respiratory Hospitalizations (applies to adults and children)	32,000	CA-based value (Chestnut et al. 2006)
Emergency Room Visit	335	Based on two combined COI studies (EPA 2005); excludes time lost at work or school and value of pain avoidance
Work Loss Day (WLD)	141	Daily wage rates in Kern and San Joaquin counties
Work Loss Day (WLD)	123	Daily wage rate in Merced County
Acute Bronchitis (six-day period)	110	Computed from Loehman et al. (1979) values for chest discomfort and cough, and adjusted to 2005 dollars
School Absent Day (SAD)	79	San Joaquin County
School Absent Day (SAD)	65	Tulare County
Minor Restricted Activity Day (MRAD)	61	Based on WTP (Tolley et al. 1986) and reported by EPA 2005 (\$51 in 1999), and converted to current dollars and adjusted for income (CARB 2005)
School Absence Day (SAD)	54	Computed from an indirect cost of 3.6 million school loss days to be \$194.5 million in 1994 dollars (Smith et al. 1997)
Asthma Attack (per event)	50	Adjusted from EPA's peer-reviewed value and updated to current dollars and income; value is based on a 1986 CV study conducted in Los Angeles that estimated WTP to avoid a "bad asthma day" (Rowe and Chestnut)
Upper Respiratory Symptom Day (URS)	32	Adjusted from the value EPA adopted (2005) to account for inflation and income
Lower Respiratory Symptom Day (LRS)	20	Adjusted from the value EPA adopted (2005) to account for inflation and income

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Acute Bronchitis (single day)	18	Computed from Loehman et al. (1979) values for chest discomfort and cough, and adjusted to 2005 dollars
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Source: Hall et al. (2006), pp. 69-71. VSL=value of a statistical life; CV=contingent valuation; WTP= willingness-to-pay; MRAD= minor restricted activity day; COI=cost of illness

Evaporative emissions are a source of VOCs from mobile sources that can negatively impact public health. Table 1 is included to illustrate various health endpoints and the significance of their cost to society and to individuals. Although the impact of reducing liquid leaks is not quantified, repairing these leaks will help reduce some of these adverse health impacts.

Evaporative VOC emissions may be equal in mass to vehicle-tailpipe emissions, representing as much as 50 percent of running losses (ERG 2008).

2. Vehicle Owner Impacts

Although the liquid fuel leak test performed on approximately 30 percent of the vehicle fleet initially represents an added cost to the VEI contracted operator, it is unknown what part, if any, of the cost will be passed on to the individual vehicle owner. The procedure will require a new task order for the VEI contractor, but ADEQ does not know if it will affect the cost of the current emissions testing fee. Even if the cost to ADEQ does increase, the net effect may be negligible.

Private and public vehicle owners that fail the liquid-leak test will have to have their vehicles repaired before the vehicles can be registered. If as many as 40,000 vehicles fail this test annually, and the average repair cost is \$100 per vehicle, the total economic cost to vehicle owners would be \$4 million. Since it is unknown how many vehicles may fail the test, the anticipated cost to vehicle owners could be significantly lower than this example. Since California only recently implemented a liquid-fuel leak procedure and no other states have such a program, costs and failure rates are speculative (ERG 2008).

Research by the California Bureau of Automotive Repair (2001), showed a weighted average repair cost of \$111 (ranging \$30-\$231) with a median repair cost for parts and labor of \$90.80. The repair cost could be close to one-half the weighted average cost for carbureted vehicles. The cost effectiveness was computed at \$2,494-\$3,651 per ton of VOC emissions (ERG 2008).

Fleet owners or vehicle dealers that have vehicles that fail the liquid-leak test will need to have them repaired before they can be registered. This will represent an increased cost of an unknown amount.

Fuel leaks may result in a mileage loss, but there is a paucity of data on loss rates. Repairing fuel leaks will benefit vehicle owners, but this effect cannot be quantified.

3. Environmental Impacts

Ozone, formed from VOCs and other chemicals in the presence of sunlight, has negative effects to trees, native vegetation, and crops. In addition to this direct effect, ozone can indirectly impact the services and functions of ecosystems. The ecosystem components include soils, water, and wildlife, as well as their associated ecosystems goods and services through its effects on vegetation.

Ozone exposure to vegetation produces a wide range of effects, such as growth impairment (biomass loss) in sensitive forest tree species during seedling growth stages and yield losses in important commercial crops. Additionally, ozone exposure has an adverse effect on saplings and mature forest trees, natural vegetation including grasslands. Impacts are cumulative, i.e., they carry over from one year to the next year.

For many, the most obvious effect of ozone in ambient air is visible foliar injury. Visible foliar injury can occur within a growing season at very low levels of ozone exposure. Another adverse effect of ozone exposure is plant stress which predisposes plants and ecosystems to attack by natural enemies. Natural enemies include: disease- and injury-inducing bacteria, fungi, nematodes, viruses, and insects.³ Ozone exposure can decrease resistance of plants to injury and damage by abiotic stress factors such as drought and frost.

Ozone can cause a variety of adverse vegetation effects, starting from individual cells through the hierarchy: whole leaves, plants, plant populations, communities, and entire ecosystems. Hence, adverse effects are more than just whether or not vegetation has experienced injury or damage.⁴ Mechanisms of response to ambient levels of ozone are similar in most cases, regardless of the sensitivity of the species. Once extensive cellular injury has occurred through propagation (at the subcellular, cellular, and whole system levels), larger-scale effects include: reduced carbohydrate production and reallocation, reduced growth and reproduction, visible foliar injury and premature senescence, and reduced plant vigor.

Even without visible evidence of foliar injury, ozone can interfere with photosynthesis and allocation of carbon. Decreased carbohydrate availability means fewer carbohydrates will be available for plant growth, reproduction, and crop yields. Species and varieties of plants; however, differ widely in their susceptibility to ozone, and other photo-

chemical oxidants. Vegetation includes numerous species of crop plants, forest trees, shade trees, ornamental plants, and thousands of other plants (also refer to 72 FR 37890, July 11, 2007).

With the elimination of approximately 3,352 metric tons annually of VOCs emitted into the air in Areas A and B, it is logical that benefits will accrue to trees, native vegetation, and crops, as well as to ecosystems.

4. Small Business Impacts

Statutes require agencies to reduce the impact of a rule on small businesses by using certain methods, when they are legal and feasible, in meeting the statutory objectives of the rulemaking. The following examples show methods that are available to reduce the impacts on small businesses. Under § 41-1055(B)(5)(c)(i) through (iii), the methods that agencies may employ to reduce the impact on small businesses include the following: (1) establish less costly compliance requirements; (2) establish less costly schedules or less stringent deadlines for compliance; and (3) exempt small businesses from any or all requirements.

Under § 41-1035; however, agencies must consider each of the methods set forth in this section and reduce the impact, by using one or more, if the agency finds that the methods are legal and feasible in meeting the statutory objectives of the rulemaking. These methods include: (1) establish less stringent compliance or reporting requirements; (2) establish less stringent schedules or deadlines in the rule for compliance or reporting requirements; (3) consolidate or simplify compliance or reporting requirements; (4) establish performance standards to replace design or operational standards; and (5) exempt small businesses from any or all rule requirements.

Under statute, ADEQ cannot exempt small business owners, or other alternatives to mitigate the impacts, from complying with the rule provisions. ADEQ expects associated impacts to large or small businesses to be minimal. Additionally, the small business repair facilities are expected to benefit from this rulemaking from increased revenues for making repairs.

5. Automotive Parts Vendors and Repair Facilities

ADEQ expects entities (e.g., wholesale suppliers) that supply replacement parts and equipment to repair facilities, as well as repair facilities, to economically benefit from this rulemaking. These entities will benefit from increased revenues, which represent an unknown proportion of the \$4 million in repair costs provided as an example. However, as noted, the illustrated amount of repair costs could be lower, which would result in less revenues for repair facilities and parts vendors.

6. ADEQ

As the implementing agency, the economic impact is expected to be minimal. The liquid-leak test, which is anticipated to take 60 seconds to perform, will be billed on a per vehicle basis and payable monthly to the VEI contracted operator of the Vehicle Inspection Stations. The cost to the contracted operator to perform this visual test cannot be estimated at this time.

Because OBD technology senses fuel system leaks, approximately 70 percent of the vehicle fleet is exempt from liquid fuel leak testing. Therefore, this rulemaking will impact the remaining 30 percent of the vehicle fleet. ADEQ projects that by fiscal year 2015, the proportion of vehicles subject to this test could be as low as 10 percent. Therefore, the overall cost to perform this test is expected to fall each year following the implementation of this rulemaking. The net result may be that the current emissions testing fee will not be impacted.

While the vehicle inspection wait times will decrease under the new contract, the liquid-leak inspection could slightly increase those times. Motorists may or may not face longer wait times.

7. Other State Agencies

No other state agencies are expected to be impacted, other than fleet owners of vehicles registered in Areas A and B.

8. State Revenue Impacts

Other than potential increases in sales tax collected, no changes in state revenues are expected.

9. Political Subdivision Impacts

Except as fleet owners of vehicles registered in Areas A and B, political subdivisions are not expected to be impacted. The Voluntary Vehicle Repair and Retrofit (VVR&R) Programs in Maricopa County and Pima County may be impacted.

10. Probable Impacts on Private/Public Employment and Revenues

Employment is not expected to change much for repair facilities, dealers, or automotive parts vendors. Likewise, employment is not expected to change for ADEQ or the VEI inspection stations.

As indicated revenues are expected to increase for repair businesses and automotive parts vendors, as they provide services and parts to repair vehicles that fail the liquid-leak test. Payrolls are not expected to be impacted unless repair businesses or parts vendors must hire additional employees to meet the increased demand, but that would depend on if excess capacity currently exists, viz., if the current employees can handle the additional demand for repair services or automotive parts.

11. Alternative Rule Provisions

A reasonable alternative has neither been identified nor considered for this rulemaking.

Endnotes.

¹ Environmental pollution is an example of market failure from a neo-classical economic viewpoint. The nature of the problem has been summarized by Theeuwes, 1991, as cited in Button 1993, pp. 65-66: "The perfect competitive free market economy, in which individual consumers maximize their individual utility or welfare levels and private firms maximize their private profits given market prices for all goods and services will, under ideal conditions, reach a Pareto optimal social welfare position. This social welfare property of the free market economy is the exact analytical analogue of Adam Smith's intuitive notion about the blessing of the invisible hand in an economy where agents are only concerned about private welfare. Environmental pollution; however, requires concern about the welfare of others and hence prevents the attainment of an optimal social position in a free market. In this sense the free market fails."

² Human exposure and dose of ozone varies significantly due to a variety of reasons: (1) changes in ambient air concentrations, (2) changes in geographical locations that have different ozone concentrations, (3) general activity level, (4) amount of time spent outdoors, (5) amount of time spent indoors and characteristics of structures (e.g., dwelling units, offices, and buildings). In addition, the ozone dose received by individuals not only is a result of the above-identified reasons, but is directly correlated to the volume of ozone delivered to the lung based on the individual's breathing route and rate of respiration. Individual's airway pressure is negative during inspiration and positive during expiration. As the lung expands, inhibitory impulses are sent from the lung to the apneusis center (located in the lower pons region) via the vagus nerve which increases stimulation of expiration.

³ See Gaudy, A.F. and E.T. Gaudy, 1988, Chapter 4, for a description of microorganisms.

⁴ Plant injury is defined in Guderian, 1977, as cited in 72 FR 37890; July 11, 2007.

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- 72 FR 37890; July 11, 2007

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

Minor technical and grammatical changes were made in order to improve the rules' clarity, conciseness, and understandability and to conform to the formatting style required by the Secretary of State.

11. A summary of the comments made regarding the rules and the agency response to them:

None

12. Any other matters prescribed by statute that are applicable to the specific agency or to any other specific rule or class of rules:

Not applicable

13. Incorporations by reference and their location in the rules:

Not applicable

14. Was this rule previously made as an emergency rule?

No

15. The full text of the rules follows:

TITLE 18. ENVIRONMENTAL QUALITY

**CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR POLLUTION CONTROL**

ARTICLE 10. MOTOR VEHICLES: INSPECTIONS AND MAINTENANCE

Section

- R18-2-1006. Emissions Test Procedures
R18-2-1009. Tampering Repair Requirements
R18-2-1010. Low Emissions Tune-up, Emissions and Evaporative System Repair
R18-2-1011. Vehicle Inspection Report
R18-2-1019. Fleet Station Procedures and Permits
R18-2-1027. Registration and Inspection of Emissions Analyzers and Opacity Meters

ARTICLE 10. MOTOR VEHICLES: INSPECTIONS AND MAINTENANCE

R18-2-1006. Emissions Test Procedures

- A.** Each vehicle inspected at a state station shall be visually inspected before the emissions test for the following unsafe or untestable conditions:
1. A fuel leak that causes wetness or pooling of fuel;
 2. A continuous engine or transmission oil leak onto the floor;
 3. A continuous engine coolant leak onto the floor such that the engine is overheating or may overheat within a short time;
 4. A vehicle with a tire on a driving wheel with less than 2/32-inch tread, with metal protuberances, unmatched tire size,

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- with obviously low tire pressure as determined by visual inspection, or any other condition that precludes a loaded test for reasons of personnel, equipment, or vehicle safety;
5. An exhaust pipe that does not exit the rear or side of the vehicle to allow for safe exhaust probe insertion;
 6. An exhaust pipe on a diesel-powered vehicle that does not allow for safe exhaust probe insertion and attachment of opacity meter sensor units;
 7. Improperly operating brakes;
 8. Any vehicle modification or mechanical condition that prevents dynamometer operation; and
 9. Any other condition deemed unsafe or untestable by the inspector, including loud internal engine noise or an obvious exhaust leak.
- B.** A vehicle emissions inspection shall not be performed by an official emissions inspection station on any vehicle towing a heavily loaded trailer, carrying a heavy load, loaded with explosives, or loaded with any hazardous material not used as fuel for the vehicle.
- C.** Any vehicle unsafe or otherwise untestable as determined by the visual inspection shall be rejected without an emissions test. The inspector shall notify the vehicle owner or operator of all unsafe conditions found on rejected vehicles. The state station shall not charge a fee if the vehicle is rejected. The contractor shall not conduct an emissions test on a vehicle rejected for a safety reason or any other untestable condition until the cause for rejection is repaired.
- D.** When conducting the emissions test required by this Section, the vehicle emissions inspector shall meet all of the following requirements:
1. The vehicle shall be tested in the condition presented, unless rejected under subsection (A), (B), or (C). The vehicle's engine shall be operating at normal temperature and not be overheating as indicated by a gauge, warning light, or boiling radiator. All of the vehicle's accessories shall be turned off during testing.
 2. A vehicle designed to operate with more than one fuel shall be tested on the fuel in use when the vehicle is presented for inspection, except alternative fuel vehicles, as defined in A.R.S. § 43-1086. The inspector shall test the alternative fuel vehicle on each fuel for which it is intended to operate, using the appropriate emissions test procedure and standards for that vehicle. The alternative fuel vehicle shall:
 - a. Be operated a minimum of 30 seconds before testing, after switching fuels;
 - b. Be rejected if it is not able to operate on both fuels; and
 - c. Be rejected if the vehicle operator cannot switch fuels.
 3. A vehicle operated exclusively on propane or natural gas, as defined in A.R.S. § 1-215, shall be exempt from the gas cap and evaporative pressure testing described in subsection ~~(E)(5)(b)(ii)~~ (E)(6)(b)(ii), ~~(E)(6)(a)~~ (E)(7)(a), and ~~(F)(6)(a)~~ (F)(7)(a).
- E.** In area A, the inspection test procedures for a vehicle other than a diesel-powered vehicle or a vehicle held for resale by a fleet-licensed motor vehicle dealer shall consist of the following:
1. A vehicle manufactured with a model year of 1967 through 1980, a nonexempt vehicle with a GVWR greater than 8,500 pounds, and a reconstructed vehicle, except a motorcycle and a constant 4-wheel drive vehicle, is required to annually take and pass a loaded cruise test and a curb idle test, as follows:
 - a. Loaded cruise test. The vehicle's drive wheels shall be placed on a dynamometer and the vehicle shall be operated according to Table 1 of this Article, in drive for automatic transmission or second or higher gear for manual transmission. Overdrive shall not be used for testing. All vehicles shall be driven by the inspector during testing. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized, or at the end of 90 seconds, whichever occurs first. After exhaust emissions are recorded, engine speed shall be returned to idle for a curb idle test.
 - b. Curb idle test. The test shall be performed with the vehicle in neutral for 1981 and newer vehicles. For 1980 and older vehicles, the test shall be performed in neutral, except that if the vehicle has an automatic transmission, drive shall be used. Engine RPM shall be within ± 100 RPM of the manufacturer's specified idle RPM. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized, or at the end of 90 seconds, whichever occurs first. A CO₂ plus CO reading of 6% or greater shall be registered to establish test validity. A CO₂ plus CO reading of less than 6% shall be proof of exhaust sample dilution and the vehicle shall be rejected from further emissions inspection until repaired, except when tested at a fleet emissions inspection station.
 - c. Exhaust sampling for a vehicle required to take an annual emissions test under subsection (E)(1) shall comply with subsection ~~(F)(7)~~ (F)(8).
 2. A vehicle with a 1981 or newer model year and a GVWR of 8,500 pounds or less, except a motorcycle, a reconstructed vehicle, a 1996 or newer OBD-equipped vehicle or a constant 4-wheel drive vehicle, is required to biennially take and pass a transient loaded emissions test and an evaporative system pressure test as follows:
 - a. The transient loaded emissions test shall consist of 147 seconds of mass emissions measurement using a constant volume sampler while the vehicle is driven by an inspector through a computer-monitored driving cycle on a dynamometer with inertial weight settings appropriate for the weight of the vehicle. The driving cycle shall include the acceleration, deceleration, and idle operating modes described in Table 4. The 147 second sequence

- may be ended earlier using a fast pass or fast fail algorithm. A retest algorithm shall be used to determine if a test failure is due to insufficient vehicle preconditioning. As determined by the retest algorithm, up to two additional tests may be performed on a failing vehicle. Drive shall be used for automatic transmissions and first gear shall be used to begin for manual transmissions. Exhaust emissions concentrations in grams per mile for HC, CO, NO_x and CO₂ shall be recorded continuously beginning with the first second. The inspector shall reject a vehicle with an audible or visible exhaust leak from emissions testing.
- b. The evaporative system pressure test shall consist of the following steps in sequence:
 - i. Connect the test equipment to either the fuel tank vent hose at the canister or the fuel tank filler neck. The gas cap shall be checked to determine that cap leakage does not exceed 60 cubic centimeters of air per minute at a pressure of 30 inches of water gauge;
 - ii. Pressurize the system to 14 ± 0.5 inches of water without exceeding 26 inches of water system pressure;
 - iii. Close off the pressure source, seal the evaporative system, and monitor pressure decay for no more than two minutes.
 - c. For a vehicle requiring a transient loaded emissions test under subsection ~~(a)~~ (E)(2)(a), all testing and test equipment shall conform to "IM240 & Evap Technical Guidance," EPA420-R-98-010, EPA, August 1998, incorporated by reference, and no future editions or amendments, except that the transient driving cycle in Table 4 of this Article shall be used. A copy of the incorporated material is on file with the Department and the Secretary of State, and may be obtained at EPA's National Vehicle and Fuel Emissions Laboratory, 2565 Plymouth Road, Ann Arbor, MI 48105-2498.
3. A vehicle with a 1996 or newer model year and a GVWR of 8500 pounds or less, except a motorcycle or a reconstructed vehicle, is required to biennially take and pass an OBD test and a functional gas cap test as follows:
 - a. The OBD test shall consist of:
 - i. A visual inspection of the MIL function; and
 - ii. An electronic examination of the OBD computer by connecting a scan tool to the data link connector and interrogating the OBD system to determine vehicle readiness status, MIL status, and presence of diagnostic trouble codes.
 - b. The OBD test and test equipment shall conform to "Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program," EPA420-R-01-015, EPA, June 2001, incorporated by reference, and no future editions or amendments. A copy of this incorporated material is on file with the Department and the Secretary of State, and may be obtained at the EPA's National Vehicle and Fuel Emissions Laboratory, 2565 Plymouth Road, Ann Arbor, MI, 48105-2498; and
 - c. The functional gas cap test shall comply with subsection ~~(E)(6)(a)~~ (E)(7)(a).
 4. A motorcycle, or a constant 4-wheel drive vehicle except one requiring an OBD emissions test under subsection (E)(3), shall take and pass only a curb idle test according to subsection (F)(1). An all-terrain vehicle (ATV), as defined in A.R.S. § 28-101, shall be tested as a motorcycle.
 5. A vehicle with a 1975 or newer model year is required to take and pass a liquid fuel leak inspection annually or biennially according to subsections (E)(1) or (2) as follows:
 - a. For purposes of this subsection, "liquid fuel leak" means any fuel emanating from a vehicle's fuel delivery, metering or evaporation systems in liquid form that has created a visible drop or more of fuel on, around, or under a component of a vehicle's fuel delivery, metering, or evaporation system.
 - b. With the engine running, the vehicle emissions inspector shall visually inspect the following components of the vehicle, if they are exposed and visually accessible, for liquid fuel leaks:
 - i. Gasoline fuel tanks;
 - ii. Gasoline fill pipes, associated hoses and fuel tank connections;
 - iii. Gas caps;
 - iv. External fuel pumps;
 - v. Fuel delivery and return lines and hoses;
 - vi. Fuel filters;
 - vii. Carburetors;
 - viii. Fuel injectors;
 - ix. Fuel pressure regulators;
 - x. Charcoal canisters; and
 - xi. Fuel vapor hoses;
 - xii. Any valves connected to any other fuel evaporative component.
 - c. The liquid fuel leak inspection required by this subsection is a visual inspection only. The vehicle emissions inspector is not required to perform any disassembly of the vehicle to inspect for liquid fuel leaks. No special tools or equipment, other than a flashlight and mirror, are required and no raising, hoisting, or lifting of the vehicle is required.
 - d. The vehicle emissions inspector shall indicate on the vehicle inspection report the location of any liquid fuel

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- e. leak. Nothing in this subsection shall prohibit a vehicle emissions inspector from refusing to inspect a vehicle under subsections (A), (B), or (C) or from terminating an inspection if a liquid fuel leak presents a safety hazard.
 - f. A vehicle operated exclusively by compressed natural gas (CNG), liquid natural gas (LNG), or liquid petroleum gas (LPG) shall be exempt from the liquid fuel leak inspection.
- 5-6. The emissions pass-fail determination for a vehicle tested under subsection (E) shall be made as follows:
- a. A vehicle tested under subsection (E)(1), that does not exceed the loaded cruise mode or curb idle mode HC and CO emissions standards listed in Table 2 for the vehicle, ~~comply~~ complies with the emissions standards in Table 2. The loaded cruise test standards in Table 2 apply to a fleet vehicle tested with the 2,500 RPM unloaded fast idle test under R18-2-1019(E).
 - b. A vehicle tested under subsection (E)(2) shall meet the standards in Table 3 and pass the evaporative system pressure test as follows:
 - i. Table 3 Standards. A vehicle shall meet either the composite standard for the whole test or the phase 2 standard for seconds 65 to 146. The Department may implement a testing algorithm for fast pass, fast fail, or both, provided that the algorithm is reliable in accurately predicting the final outcome of the entire cycle. A vehicle not meeting either the composite or phase 2 standard shall fail the emissions test.
 - ii. Evaporative System Pressure Test. A vehicle fails the emissions test if the evaporative system cannot maintain a system pressure above eight inches of water for at least two minutes after being pressurized to 14 ± 0.5 inches of water. Additionally, a vehicle fails the evaporative test if the canister is missing or damaged, if a hose or electrical connection is missing, routed incorrectly, or disconnected, according to the vehicle emissions control information label, or if the gas cap is missing.
 - c. A vehicle that operates on natural gas complies with HC emissions standards if the HC emissions value does not exceed the applicable standard in subsection ~~(E)(5)(a)~~ (E)(6)(a) or (b), if:
 - i. Multiplied by 0.19, when using an analyzer with a flame ionization detector, or
 - ii. Multiplied by 0.61, when using an NDIR analyzer.
 - d. A motorcycle or a constant 4-wheel drive vehicle, except one requiring an OBD emissions test under subsection (E)(3), that does not exceed the curb idle mode HC and CO emissions standards listed in Table 2 on either the first curb idle test or the second curb idle test passes the emissions test.
 - e. A vehicle tested under subsection (E)(3) shall:
 - i. Fail if the data link connector is missing, tampered, or otherwise inoperable during any OBD test;
 - ii. Fail if the MIL does not illuminate at all when the ignition key is turned to the key on, engine off position, or does not illuminate briefly during engine start during any OBD test;
 - iii. Fail if the MIL illuminates continuously or flashes after the engine has been started during any OBD test;
 - iv. Fail if a diagnostic trouble code is present and the MIL status, as indicated by the scan tool, is commanded on during any OBD test.
 - v. Be rejected from an initial OBD test and required to take and pass a transient loaded test under subsection (E)(2) if the number of unset readiness indicators, excluding continuous indicators, is three or more for a model year 1996-2000 vehicle, or two or more for a model year 2001 and newer vehicle.
 - vi. Be rejected from an OBD retest if the number of unset readiness indicators, excluding continuous indicators, exceeds the number allowed in subsection (v).
 - vii. Fail the functional gas cap test if the gas cap does not comply with subsection ~~(E)(6)(a)~~ (E)(7)(a).
 - f. A vehicle tested under subsection (E)(5) shall fail the inspection if a vehicle emissions inspector detects a liquid fuel leak.
 - ~~f.g.~~ A vehicle that exceeds the applicable emissions standards for the tests described in subsections (E)(1) and (E)(2)(a), or fails the OBD test described in subsection (E)(3), fails the emissions test and shall not be reinspected until a low-emissions tune-up is performed as described in R18-2-1010. A vehicle that fails the evaporative system pressure test described in subsection (E)(2)(b) shall not be reinspected until repaired as required in R18-2-1010(D)(1) and (2). A vehicle that fails the functional gas cap test described in subsection ~~(E)(6)(a)~~ (E)(7)(a) shall not be reinspected until repaired as required in R18-2-1009(B). A vehicle that fails the liquid fuel leak test described in subsection (E)(5) shall not be reinspected until repaired as required in R18-2-1010(E).
- 6-7. A vehicle required to take an annual emissions test in area A shall, at the time of the test, undergo a tampering inspection based on the original configuration of the vehicle as manufactured. The applicable emissions system requirements shall be verified by the "VEHICLE EMISSION CONTROL INFORMATION" label. A vehicle that fails any portion of the tampering inspection shall be repaired according to R18-2-1009 before reinspection unless the owner provides the written statement required in R18-2-1008(B). "Original configuration" for a foreign-manufactured vehicle means the design and construction of a vehicle produced by the manufacturer for original entry and sale in the United States. The tampering inspection shall consist of the following:
- a. Any vehicle emissions tested, except one with a vented fuel system, shall have a functional test of the gas cap to determine that cap leakage does not exceed 60 cubic centimeters of air per minute at a pressure of 30 inches of

- water gauge. A vehicle with a vented fuel system shall be checked for the presence of a properly fitting fuel cap.
- b. For a 1975 and newer model year vehicle:
 - i. A visual inspection to determine the presence and proper installation of each required catalytic converter, if applicable;
 - ii. An examination to determine the presence of an operational air pump, if applicable; and
 - iii. A visual inspection to determine the presence of an operational positive crankcase ventilation system and evaporative control system, if applicable.
- F. In area B, the inspection test procedures for a vehicle other than a diesel-powered vehicle shall consist of the following:
1. An area B vehicle with a model year of 1967 through 1980 shall take and pass only a curb idle test. The curb idle test shall be performed with the vehicle in drive for automatic transmissions or in neutral for manual transmissions. Engine RPM shall be within ± 100 RPM of the manufacturer's specified idle RPM. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized, or at the end of 30 seconds, whichever occurs first. A CO₂ plus CO reading of 6% or greater shall be registered to establish test validity. A CO₂ plus CO reading less than 6% shall be proof of exhaust sample dilution and the vehicle shall be rejected from further emissions inspection until repaired, except when tested at a fleet emissions inspection station. If the vehicle fails the curb idle test, and if permitted by the vehicle operator, the vehicle shall be conditioned according to one of the following conditioning procedures:
 - a. Fast-idle conditioning procedure. The vehicle shall be conditioned by increasing engine speed to 2,500, ± 300 RPM, for up to 30 seconds with the transmission in neutral. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized, or at the end of 30 seconds, whichever occurs first. The conditioning procedure standards in Table 2 are for diagnostic and advisory information only. After exhaust emissions are recorded, the engine speed shall be returned to curb idle for a second idle test. The fast-idle conditioning procedure may be used on a vehicle at a state station instead of the loaded conditioning procedure if any of the following occurs:
 - i. The vehicle has a tire on a driving wheel with less than 2/32-inch tread, with metal protuberances, with visibly low tire pressure as determined by visual inspection, or any other condition that precludes loaded conditioning for reasons of personnel, equipment, or vehicle safety;
 - ii. The vehicle is driven by a person who, because of physical incapacity, is unable to yield the driver's seat to the vehicle emissions inspector;
 - iii. The driver refuses to yield the driver's seat to the vehicle emissions inspector; or
 - iv. The vehicle cannot be tested according to Table 1 because of the vehicle's inability to attain the speeds specified.
 - b. Loaded conditioning procedure. For a vehicle other than a motorcycle or a constant 4-wheel drive vehicle, the vehicle's drive wheels shall be placed on a dynamometer and the vehicle shall be operated according to Table 1, in drive for automatic transmission, or second or higher gear for manual transmission. All front wheel drive vehicles shall be driven by the inspector. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized, or at the end of 30 seconds, whichever occurs first. The conditioning procedure standards in Table 2 are for diagnostic and advisory information only. After exhaust emissions are recorded, engine speed shall be returned to curb idle for a second idle test.
 - c. Following one of the conditioning procedures in subsection ~~(a)~~ (F)(1)(a) or (b), the vehicle shall be retested according to the curb idle test procedure in subsection ~~(+)~~ (F)(1).
 2. An area B vehicle with a 1981 or newer model year, except a motorcycle, a constant 4-wheel drive vehicle, or a 1996 and newer vehicle equipped with OBD, shall take and pass a loaded cruise test and curb idle test, as follows:
 - a. Loaded Cruise Test. The vehicle's drive wheels shall be placed on a dynamometer and the vehicle shall be operated according to Table 1, in drive for automatic transmission or second or higher gear for manual transmission. Overdrive shall not be used. All front wheel drive vehicles shall be driven by the inspector. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized, or at the end of 90 seconds, whichever occurs first. After exhaust emissions are recorded, engine speed shall be returned to idle for a curb idle test.
 - b. Curb Idle Test. The test shall be performed with the vehicle in neutral. Engine RPM shall be within ± 100 RPM of the manufacturer's specified idle RPM. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized, or at the end of 90 seconds, whichever occurs first. A CO₂ plus CO reading of 6% or greater shall be registered to establish test validity, except when tested at a fleet inspection station. A CO₂ plus CO reading less than 6% shall be proof of exhaust sample dilution and the vehicle shall be rejected from further emissions inspection until repaired.
 3. A vehicle with a model year of 1996 or newer and a GVWR of 8500 pounds or less, except a motorcycle or a reconstructed vehicle, is required to annually take and pass an OBD test and a functional gas cap test as follows:
 - a. The OBD test shall consist of:
 - i. A visual inspection of the MIL function; and
 - ii. An electronic examination of the OBD computer by connecting a scan tool to the data link connector and

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- interrogating the OBD system to determine vehicle readiness status, MIL status, and presence of diagnostic trouble codes;
- b. The OBD test and test equipment shall conform to “Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program,” EPA420-R-01-015, EPA, June 2001, incorporated by reference, and no future editions or amendments. A copy of this incorporated material is on file with the Department and the Secretary of State and may be obtained at the EPA’s National Vehicle and Fuel Emissions Laboratory, 2565 Plymouth Road, Ann Arbor, MI, 48105-2498; and
 - c. The functional gas cap test shall comply with subsection ~~(F)(6)(a)~~ (F)(7)(a).
4. A motorcycle or a constant 4-wheel drive vehicle, except one requiring an OBD emissions test under subsection (F)(3), shall take and pass only a curb idle test according to subsection ~~(F)(1)~~ (F)(1). An all-terrain vehicle (ATV), as defined in A.R.S. § 28-101, shall be tested as a motorcycle. If the vehicle fails the curb idle test, and if permitted by the vehicle operator, the vehicle shall be conditioned according to the fast idle conditioning procedure required in subsection ~~(F)(1)(a)~~ (F)(1)(a). Following conditioning, the vehicle shall be retested according to the curb idle test procedure in subsection ~~(F)(1)~~ (F)(1).
5. A vehicle with a 1975 or newer model year and annually tested under subsections (F)(1) or (2) is required to take and pass a liquid fuel leak inspection according to subsections (E)(5)(a) through (f).
- ~~5-6.~~ The emissions pass-fail determination shall be made as follows:
- a. A vehicle with a model year of 1967 through 1980, except a motorcycle or a constant 4-wheel drive vehicle, that does not exceed the curb idle mode HC and CO emissions standards in Table 2 on either the first or second curb idle test, complies with the minimum emissions standards contained in Table 2.
 - b. A vehicle with a 1981 or newer model year, except a motorcycle or a constant 4-wheel drive vehicle, that does not exceed the loaded cruise mode or curb idle mode HC and CO emissions standards listed in Table 2, complies with the minimum emissions standards in Table 2. The loaded cruise test standards specified in Table 2 shall apply to fleet vehicles tested with the 2,500 RPM unloaded fast idle test.
 - c. A vehicle that operates on natural gas complies with HC emissions standards if the HC emissions value, as determined by an NDIR analyzer, multiplied by 0.61 does not exceed the applicable standard in subsection ~~(F)(5)(a)~~ (F)(6)(a) or (b).
 - d. A motorcycle or a constant 4-wheel drive vehicle, except one requiring an OBD emissions test under subsection (F)(3), that does not exceed the curb idle mode HC and CO emissions standards in Table 2 on either the first or second curb idle test complies with the minimum emissions standards in Table 2.
 - e. A vehicle that exceeds the applicable emissions standards, or fails the OBD test described in subsection (F)(3), fails the emissions test and shall have a low emissions tune-up as described in R18-2-1010 before reinspection. A vehicle that fails the functional gas cap test described in subsection (F)(3)(c) shall not be reinspected until repaired as required in R18-2-1009(B).
 - f. A vehicle tested under subsection (F)(3) shall:
 - i. Fail if the data link connector is missing, tampered, or otherwise inoperable during any OBD test;
 - ii. Fail if the MIL does not illuminate at all when the ignition key is turned to the key on, engine off position, or does not illuminate briefly during engine start during any OBD test;
 - iii. Fail if the MIL illuminates continuously or flashes after the engine has been started during any OBD test;
 - iv. Fail if a diagnostic trouble code is present and the MIL status, as indicated by the scan tool, is commanded on during any OBD test;
 - v. Be rejected from an initial OBD test and required to take and pass a loaded cruise test and curb idle test under subsection (F)(2) if the number of unset readiness indicators, excluding continuous indicators, is three or more for a model year 1996-2000 vehicle, or two or more for a model year 2001 and newer vehicle;
 - vi. Be rejected from an OBD retest if the number of unset readiness indicators, excluding continuous indicators, exceeds the number allowed in subsection (v); and
 - vii. Fail the functional gas cap test if the gas cap does not comply with subsection ~~(F)(6)(a)~~ (F)(7)(a).
 - g. A vehicle tested under subsection (F)(5) shall fail the inspection if a vehicle emissions inspector detects a liquid fuel leak. A vehicle that fails the liquid fuel leak test shall not be reinspected until repaired as required in R18-2-1010(E).
- ~~6-7.~~ A vehicle required to take an emissions test in area B, except a vehicle required to take an OBD test as described in subsection (F)(3), shall at the time of the test, undergo a tampering inspection based on the original configuration of the vehicle as manufactured. The applicable emissions system requirements shall be verified by the “VEHICLE EMISSION CONTROL INFORMATION” label. A vehicle that fails any portion of the tampering inspection shall be repaired according to R18-2-1009 before reinspection unless the owner provides the written statement required in R18-2-1008(B). “Original configuration” for a foreign manufactured vehicle means the design and construction of a vehicle produced by the manufacturer for original entry and sale in the United States. The tampering inspection shall consist of the following:
- a. Any vehicle emissions tested, except one with a vented fuel system, shall have a functional test of the gas cap to

determine that cap leakage does not exceed 60 cubic centimeters of air per minute at a pressure of 30 inches of water gauge. A vehicle with a non-sealing gas cap shall be checked for the presence of a properly fitting gas cap.

- b. For a 1975 or newer model year vehicle:
 - i. A visual inspection to determine the presence and proper installation of each required catalytic converter, if applicable; and
 - ii. An examination to determine the presence of an operational air pump, if applicable.

7-8. Exhaust sampling in area B shall comply with the following:

- a. All CO and HC emissions analyzers shall have water traps incorporated in the sampling lines. Sampling probes shall be capable of taking undiluted exhaust samples from a vehicle exhaust system.
- b. A vehicle, other than a diesel-powered vehicle, shall be inspected with a NDIR analyzer capable of determining concentrations of CO and HC within the ranges and tolerances specified in Table 5.
- c. A vehicle with multiple exhaust pipes shall be inspected by collecting and averaging samples by one of the following methods:
 - i. Collect separate samples from each exhaust pipe and use the average concentration to determine the test result;
 - ii. Use manifold exhaust probes to simultaneously sample approximately equal volumes from each pipe; or
 - iii. Use manifold exhaust pipe adapters to collect approximately equal volume samples from each pipe.

G. The following apply to all testing under subsection (E) or (F):

- 1. A rotary piston engine shall be inspected as a 4-stroke engine with four cylinders or less;
- 2. A turbine engine shall be inspected as a 4-stroke engine with more than four cylinders; and
- 3. A vehicle in which a diesel engine has been replaced with a gas engine shall be inspected as a gas-powered vehicle of the same vehicle model year. The vehicle shall not pass the inspection unless each catalytic converter, air pump, gas cap, and other emissions control device applicable to the vehicle model year and the same or more recent year engine configuration is properly installed and in operating condition.

H. In area A, the inspection test procedure for a diesel-powered vehicle is as follows:

- 1. A diesel-powered vehicle with a GVWR greater than 8,500 pounds shall be tested with a procedure that conforms to Society of Automotive Engineers standard J1667, February 1996, incorporated by reference and on file with the Department and the Secretary of State. This incorporation by reference contains no future editions or amendments. A copy of this referenced material may be obtained at Society of Automotive Engineers, 400 Commonwealth Dr., Warrendale, PA 15096-0001. The procedure shall utilize the corrections for ambient test conditions in Appendix B of J1667 for all tests. The test results shall be reported as the percentage of smoke opacity. Emissions pass-fail determinations are as follows:
 - a. A vehicle powered by a 1991 or later model year diesel engine fails if the J1667 final test result is greater than 40%, unless the engine family is exempted from the 40% standard under subsection ~~(e)~~ (H)(1)(e);
 - b. A vehicle powered by a pre-1991 model year diesel engine fails if the J1667 final test result is greater than 55%, unless the engine family is exempted from the 55% standard under subsection ~~(e)~~ (H)(1)(e);
 - c. The engine model year is determined by the emission control label. If the emission control label is missing, illegible, or incorrect, the test standard shall be 40%, unless a correct, legible, emission control label replacement is attached to the vehicle within 30 days of the inspection;
 - d. A vehicle that exceeds the opacity standard in subsection ~~(a)~~ (H)(1)(a) or (b) fails the emissions test. Before reinspection, the vehicle shall have a low emissions tune-up as described in ~~R18-2-1010(G)~~ R18-2-1010(H);
 - e. The Director shall exempt any engine family from the standards in subsections ~~(a)~~ (H)(1)(a) or (b) if the engine manufacturer demonstrates either of the following:
 - i. The engine family exhibits smoke opacity greater than the standard when in good operating condition and adjusted to the manufacturer's specifications. The Director shall identify a technologically appropriate less stringent standard based on a review of data obtained from engines in good operating condition and adjusted to manufacturer's specifications; or
 - ii. The engine family is exempted from an equivalent standard based on J1667 by the executive officer of the California Air Resources Board (CARB). The Director shall allow the engine family to comply with any technologically appropriate less stringent standard identified by the executive officer of CARB; and
 - f. A demonstration under subsection ~~(e)(i)~~ (H)(1)(e)(i) shall be based on data from at least three vehicles. Data from official inspections under subsection (H)(1) showing that vehicles in the engine family meet the standard may be used to rebut the demonstration. The Director shall implement any new standard resulting from each exemption as soon as practicable for all subsequent tests and provide notice at all affected test stations and fleets.
- 2. A diesel-powered vehicle with a GVWR greater than 4,000 pounds and less than or equal to 8,500 pounds shall be tested by a loaded dynamometer test by applying a single load of 30 HP, \pm 2 HP, while operated at 50 MPH. A diesel-powered vehicle with a GVWR of 4,000 pounds or less shall be tested by a loaded dynamometer test by applying a single load of between 6.4 - 8.4 HP while operated at 30 MPH. For all diesel-powered vehicles with a GVWR less than or equal to 8,500 pounds:

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- a. The emissions pass-fail determination shall be made as follows:
 - i. The opacity reading for a period of ~~ten~~ 10 consecutive seconds with the engine under applicable loading shall be compared to the opacity standard in R18-2-1030(B). A vehicle that does not exceed the applicable opacity standard in R18-2-1030(B) complies with the minimum emissions standards.
 - ii. A vehicle that exceeds the applicable opacity standard fails the emissions test. Before reinspection, the vehicle shall have a low emissions tune-up as described in R18-2-1010.
 - b. Exhaust sampling shall comply with the following:
 - i. For a diesel-powered vehicle equipped with multiple pipes, separate measurements shall be made on each exhaust pipe. The reading taken from the exhaust pipe that has the highest opacity reading shall be used for comparison with the applicable emissions standard.
 - ii. A vehicle shall be inspected with either a full-flow or sampling-type opacity meter. The opacity meter shall be a direct reading, continuous reading light extinction-type using a collimated light source and photo-electric cell, accurate to a value within $\pm 5\%$ of filter value.
- I. In area B, the inspection test procedure for a diesel-powered vehicle is as follows:
1. A diesel-powered vehicle with a GVWR greater than 26,000 pounds or having tandem axles shall be tested according to one of the following methods:
 - a. The vehicle shall be tested on a chassis dynamometer beginning with no power absorption by selecting a gear ratio that produces a maximum vehicle speed of 30-35 MPH at governed or maximum rated RPM. If the vehicle has a manual transmission or an automatic transmission with individual gear selection, the engine shall be operated at governed or maximum rated engine RPM, at normal operating temperature under a power absorption load applied to the dynamometer until the loading reduces the engine RPM to 80% of the governed speed at wide-open throttle position. If the vehicle has an automatic transmission and automatic gear kickdown, the engine shall be loaded to a speed just above the kickdown speed or 80% of the governed speed, whichever is greater. If the chassis dynamometer does not have enough horsepower absorption capability to lug the engine down to these speeds, the vehicle's brakes may be used to assist the dynamometer.
 - b. If a chassis dynamometer is not available, the vehicle shall be tested by being lugged by its own brakes by selecting a gear ratio that produces a maximum speed of 10-15 MPH at governed engine RPM or maximum rated RPM and then loading the engine by applying the brakes until the engine RPM is lugged down to 80% of the governed or maximum rated RPM at wide-open throttle position. If the vehicle does not have a tachometer, the vehicle may be loaded to 80% of governed or maximum rated speed.
 2. A diesel-powered vehicle without tandem axles and having a GVWR greater than 10,500 pounds and less than or equal to 26,000 pounds shall be tested according to one of the following methods:
 - a. The vehicle shall be tested on a chassis dynamometer beginning with no power absorption by selecting a gear ratio that produces a maximum vehicle speed of 30-35 MPH at governed or maximum rated RPM. If the vehicle has a manual transmission or an automatic transmission with individual gear selection, the engine shall be operated at governed or maximum rated engine RPM, at normal operating temperature under a power absorption load applied to the dynamometer until such loading reduces the engine RPM to 80% of the governed speed at wide-open throttle position. If the vehicle has an automatic transmission and automatic gear kickdown, the engine shall be loaded to a speed just above the kickdown speed or 80% of governed speed, whichever is greater. If the chassis dynamometer does not have enough horsepower absorption capability to lug the engine down to these speeds, the vehicle's brakes may be used to assist the dynamometer;
 - b. The vehicle shall be tested by applying a single load of 30 HP, ± 2 HP, while operated at 50 MPH; or
 - c. The vehicle shall be tested by being lugged by its own brakes by selecting a gear ratio that produces a maximum speed of 10-15 MPH at governed engine RPM or maximum rated RPM and then loading the engine by applying the brakes until the engine RPM is lugged down to 80% of the governed or maximum rated RPM at wide-open throttle position. If the vehicle does not have a tachometer, the vehicle may be loaded to 80% of governed or maximum rated speed.
 3. A diesel-powered vehicle with a GVWR of greater than 4,000 pounds and less than or equal to 10,500 pounds shall be tested by a loaded dynamometer test by applying a single load of 30 HP, ± 2 HP, while operated at 50 MPH.
 4. A diesel-powered vehicle with a GVWR of 4,000 pounds or less shall be tested by a loaded dynamometer test by applying a single load of between 6.4 - 8.4 HP while operated at 30 MPH.
 5. The emissions pass-fail determination shall be performed:
 - a. The opacity reading during a period of ~~ten~~ 10 consecutive seconds with the engine under applicable loading specified in subsections ~~(1)~~ (1)(1) through (4) shall be compared to the opacity standard specified in R18-2-1030(B). A vehicle that does not exceed the opacity standard in R18-2-1030(B) complies with the minimum emissions standards.
 - b. A vehicle that exceeds the standard in R18-2-1030(B) fails the emissions test. Before reinspection, the vehicle shall have a low emissions tune-up as described in R18-2-1010.
 6. Exhaust sampling shall comply with the following:

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- a. For a diesel-powered vehicle equipped with multiple exhaust pipes, separate measurements shall be made on each exhaust pipe. The reading taken from the exhaust pipe that has the highest opacity reading shall be used for comparison with the standard in R18-2-1030(B).
 - b. A vehicle shall be inspected with either a full-flow or sampling-type opacity meter. The opacity meter shall be a direct reading, continuous reading light extinction-type using a collimated light source and photo-electric cell, accurate to a value within $\pm 5\%$ of filter value.
- J. All diesel-powered vehicles shall undergo a tampering inspection under subsection ~~(E)(6)~~ (E)(7).

R18-2-1009. Tampering Repair Requirements

- A. If a vehicle fails the visual inspection for properly installed catalytic converters, the converters shall be replaced with new or reconditioned OEM converters or equivalent new aftermarket converters. The Department shall provide names of acceptable aftermarket converters at the time of inspection on the repair requirement list.
- B. If a vehicle fails the functional gas cap pressure test described in ~~R18-2-1006(E)(6)(a) or (F)(6)(a)~~ R18-2-1006(E)(7)(a) or (F)(7)(a), the gas cap shall be replaced with one that meets those specifications. If a vehicle designed with a vented system fails a visual inspection for the presence of a gas cap, a properly fitting gas cap shall be installed on the vehicle.
- C. If a vehicle fails the visual inspection for the presence of an operational air pump, a new, used, or reconditioned, operational air pump shall be properly installed on the vehicle.
- D. If a vehicle fails the visual inspection for the presence or malfunction of the positive crankcase ventilation system, the system shall be repaired or replaced with OEM or equivalent aftermarket parts.
- E. If a vehicle fails the visual inspection for the presence or malfunction of the evaporative control system, the system shall be repaired or replaced with OEM or equivalent aftermarket parts.

R18-2-1010. Low Emissions Tune-up, Emissions and Evaporative System Repair

- A. A low emissions tune-up on a nondiesel-powered vehicle consists of the following procedures:
 - 1. Emissions Failure Diagnosis. For a computer-controlled vehicle, the on-board-diagnostics shall be accessed and any stored trouble codes recorded. For a model year 1996 or newer vehicle equipped with an OBD system, a compatible scan tool shall be used to access and record diagnostic trouble codes. The following instruments or equipment are required to complete a low emissions tune-up:
 - a. Tachometer;
 - b. Timing light;
 - c. Engine analyzer or oscilloscope, and
 - d. A HC/CO NDIR analyzer to make final A/F adjustments, if specified by the manufacturer.
 - 2. Adjustment. All adjustments shall be made according to the manufacturer's specifications and procedures. Final adjustment shall be made on the vehicle engine only after the engine is at normal operating temperature.
 - 3. Inspection of Air Cleaner, Choke, and Air Intake System. A dirty or plugged air cleaner, stuck choke, or restricted air intake system shall be replaced or repaired as required.
 - 4. Dwell and Basic Timing Check. Dwell and basic engine timing shall be checked and adjusted, if necessary, according to manufacturer's specifications.
 - 5. Inspection of PCV Valve. The PCV valve shall be checked to ensure that it is the type recommended by the manufacturer and is correctly operating. Free flow through the PCV system passages and hoses shall be verified. Repair or replace as required.
 - 6. Inspection of Vacuum Hoses. The vacuum hoses shall be inspected for leaks, obstruction, and proper routing and connection. Repair or replace as required.
 - 7. Perform a visual inspection for leaking fuel lines or system components. Repair or replace as required.
 - 8. Idle Speed and A/F Mixture Check. The idle speed and A/F mixture shall be checked and adjusted according to manufacturer's specifications and procedures. If the vehicle is equipped with a fuel injection system or an alternate fuel (LPG or LNG), the manufacturer's recommended adjustment procedure shall be followed.
- B. A vehicle that fails reinspection does not qualify for a waiver unless a low emissions tune-up and diagnosis is performed on the vehicle.
- C. If the maximum required repair cost in subsection ~~(E)~~ (F) or ~~(F)~~ (G) is not exceeded after a low emissions tune-up described in subsection (A), then the following procedures apply:
 - 1. CO failure.
 - a. If a vehicle fails CO only, the vehicle shall be checked for:
 - i. Proper canister purge system operation,
 - ii. High float setting,
 - iii. Leaky power valve, and
 - iv. Faulty or worn needles, seats, jets or improper jet size.
 - b. If applicable, the following shall also be checked:
 - i. Computer,
 - ii. Engine and computer sensors,

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- iii. Engine solenoids,
 - iv. Engine thermostats,
 - v. Engine switches,
 - vi. Coolant switches,
 - vii. Throttle body or port fuel injection system,
 - viii. Fuel injectors,
 - ix. Fuel line routing and integrity,
 - x. Air in fuel system including line and pump,
 - xi. Fuel return system,
 - xii. Injection pump,
 - xiii. Fuel injection timing,
 - xiv. Routing of vacuum hoses, and
 - xv. Electrical connections.
- c. The items in subsections ~~(a)~~ (C)(1)(a) and (b) shall be repaired or replaced as required.
2. HC, or HC and CO failure.
- a. If a vehicle fails HC, or HC and CO, the vehicle shall be checked for:
 - i. Faulty spark plugs and faulty, open, crossed, or disconnected plug wires;
 - ii. Distributor module;
 - iii. Vacuum hose routing and electrical connections;
 - iv. Distributor component malfunctions including vacuum advance;
 - v. Faulty points or condenser;
 - vi. Distributor cap crossfire;
 - vii. Catalytic converter efficiency air supply;
 - viii. Vacuum leaks at intake manifold, carburetor base gasket, EGR, and vacuum-operated components.
 - b. The items in subsection ~~(a)~~ (C)(2)(a) shall be repaired or replaced as required.
3. NOx failure.
- a. If a vehicle fails NOx, the vehicle shall be checked for:
 - i. Removed, plugged, or malfunctioning EGR valve, exhaust gas ports, lines, and passages;
 - ii. EGR valve electrical and vacuum control circuitry, components, and computer control, as applicable;
 - iii. Above normal engine operating temperature;
 - iv. Proper air management;
 - v. Lean A/F mixture;
 - vi. Catalytic converter efficiency; and
 - vii. Over-advanced off-idle timing.
 - b. The items in subsection ~~(a)~~ (C)(3)(a) shall be repaired or replaced as required.
4. OBD failure. If the vehicle fails the OBD test, the vehicle shall be repaired for the items indicated on the Vehicle Emissions Report as causing the failure. If the failure results from Diagnostic Trouble Codes (DTCs) that caused the Malfunction Indicator Lamp (MIL) to be illuminated, the components or systems causing the DTCs shall be repaired or replaced. After repair of a DTC failure, and before reinspection, the vehicle shall be operated under conditions recommended by the vehicle manufacturer for the OBD computer to evaluate the repaired system.
- D.** For Evaporative System Failures, the following procedures apply:
1. If a vehicle fails the evaporative system pressure test, the vehicle shall be checked for leaking or disconnected vapor hoses, line, gas cap, and fuel tank.
 2. If a vehicle fails a visual inspection of the evaporative system, the vehicle shall be checked for a missing or damaged canister, canister electrical and vacuum control circuits and components, disconnected, damaged, mis-routed or plugged hoses, and damaged or missing purge valves. Repair or replace as necessary.
- E.** If a vehicle fails the liquid fuel leak inspection, the vehicle shall be checked for leaking or disconnected fuel delivery, metering, or evaporation system components including those listed in R18-2-1006(E)(5)(b). Repair or replace as necessary.
- E.F.** The maximum required repair cost for a vehicle in area A, not including cost to repair the vehicle for failing an evaporative system pressure test due to tampering, or other tampering repair cost, is:
1. For a diesel-powered vehicle with a GVWR greater than 26,000 pounds or a diesel-powered vehicle with tandem axles; \$500; and
 2. For a vehicle that is not a diesel-powered vehicle with a GVWR greater than 26,000 pounds and is not a diesel-powered vehicle with tandem axles:
 - a. ~~Two hundred dollars for a vehicle manufactured~~ Manufactured in or before the 1974 model year: \$200;
 - b. ~~Three hundred dollars for a vehicle manufactured~~ Manufactured in the 1975 through 1979 model years: \$300;
 - and
 - c. ~~Four hundred fifty dollars for a vehicle manufactured~~ Manufactured in or after the 1980 model year: \$450.

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3. Subsection ~~(E)~~ (F) does not prevent a vehicle owner from authorizing or performing more than the required repairs. A vehicle operator who has a vehicle reinspected shall have the repair receipts available when requesting a certificate of waiver.

F-G. The maximum required repair cost for vehicles in area B, not including tampering repair cost, is:

1. For a diesel-powered vehicle with a GVWR greater than 26,000 pounds or a diesel-powered vehicle with tandem axles; \$300; and
2. For a vehicle that is not a diesel-powered vehicle with a GVWR greater than 26,000 pounds and is not a diesel-powered vehicle with tandem axles:
 - a. ~~Fifty dollars for a vehicle manufactured~~ Manufactured in or before the 1974 model year; ~~\$50;~~
 - b. ~~Two hundred dollars for a vehicle manufactured~~ Manufactured in the 1975 through 1979 model years; ~~\$200;~~ and
 - c. ~~Three hundred dollars for a vehicle manufactured~~ Manufactured in or after the 1980 model year; ~~\$300.~~
3. Subsection ~~(F)~~ (G) does not prevent a vehicle owner from authorizing or performing more than the required repairs. A vehicle operator who has a vehicle reinspected shall have the repair receipts available when requesting a certificate of waiver.

G-H. A low emissions tune-up on a diesel-powered vehicle consists of the following procedures:

1. Inspect for dirty or plugged air cleaner, or restricted air intake system. Repair or replace as required.
2. Check fuel injection system timing according to manufacturer's specifications. Adjust as required.
3. Check for fuel injector fouling, leaking, or mismatch. Repair or replace as required.
4. Check fuel pump and A/F ratio control according to manufacturer's specifications. Adjust as required.
5. If the vehicle fails the J1667 procedure, check smoke-limiting devices, if any, including the aneroid valve and puff limiter. Repair or replace as required.

H-I. Any available warranty coverage for a vehicle shall be used to obtain needed repairs before an expenditure can be counted toward the cost limits in subsection ~~(E)~~ (F) and ~~(F)~~ (G). If the operator of a vehicle within the age and mileage coverage of section 207(b) of the Clean Air Act presents a written denial of warranty coverage from the manufacturer or authorized dealer, warranty coverage is not considered available under this subsection.

R18-2-1011. Vehicle Inspection Report

A. A vehicle inspected at a state station shall be provided a uniquely numbered vehicle inspection report of a design approved by the Director that contains, at a minimum, the following information:

1. License plate number;
2. Vehicle identification number;
3. Model year of vehicle;
4. Make of vehicle;
5. Style of vehicle;
6. Type of fuel;
7. Odometer reading to the nearest 1000 miles, truncated;
8. Emissions standards for idle and loaded cruise modes, if applicable;
9. Emissions measurements during idle and loaded cruise modes, if applicable;
10. Opacity measurements and standards, if applicable;
11. Emissions standards and measurements for the transient loaded test, and the evaporative system pressure test, if applicable;
12. Results of OBD test including all diagnostic trouble codes that commanded the illumination of the malfunction indicator lamp;
13. Tampering inspection results;
14. Liquid fuel leak inspection results;
- ~~14-15.~~ Repair requirements;
- ~~15-16.~~ Final test results;
- ~~16-17.~~ Repairs performed;
- ~~17-18.~~ Cost of emissions-related repairs;
- ~~18-19.~~ Cost of tampering-related repairs;
- ~~19-20.~~ Name, address, and telephone number of the business or person making repairs;
- ~~20-21.~~ Signature and certification number of person certifying repairs;
- ~~21-22.~~ Date of inspection;
- ~~22-23.~~ Test results of the previous inspection if the inspection is a reinspection;
- ~~23-24.~~ Inspection station, lane locators; and
- ~~24-25.~~ Test number and time of test.

B. A vehicle failing the initial inspection shall receive an inspection report supplement approved by the Department containing, at a minimum, the following:

1. Diagnostic and tampering information including acceptable replacement units, and
2. Applicable maximum repair costs.

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- C. The inspection report shall provide a 3-inch by 5-inch tear-out section that may be used as a certificate of compliance for vehicles passing the inspection or as a certificate of waiver, if applicable.
1. The tear-out section shall be a certificate of compliance when the word “compliance” appears in the appropriate location on the printout.
 2. The tear-out section shall be a certificate of waiver when the word “waiver” appears in the appropriate location on the printout.
 3. The tear-out section shall contain all of the following information:
 - a. License plate number,
 - b. Vehicle identification number,
 - c. Final results,
 - d. Serial number of the inspection report,
 - e. Date of inspection,
 - f. Model year,
 - g. Make,
 - h. Date of initial inspection, and
 - i. Inspection fee.
- D. At the time of registration or reregistration, the certificate of compliance or certificate of waiver may be submitted to the Arizona Department of Transportation Motor Vehicle Division as evidence of meeting the requirements of this Article.

R18-2-1019. Fleet Station Procedures and Permits

- A. The following requirements apply to issuance of fleet station permits:
1. An owner or lessee of a fleet of 25 or more nonexempt vehicles whose place of business is located in area A or B may apply to the Director for a permit to establish a fleet station. A dealer’s business inventory of vehicles held for resale, counted cumulatively over the previous 12 months at the time of application review by the Department shall be used to determine compliance with this subsection. A newly established dealer shall certify that it will comply with the 25 nonexempt vehicles requirement.
 2. An application form for a fleet station permit shall be obtained from the Department. All completed applications shall be submitted to the Department. An application shall be considered administratively complete when:
 - a. The Department receives a completed application form and fleet agent designation form;
 - b. The applicant or designated employee successfully completes the fleet agent examination; and
 - c. The Department conducts a site inspection.
 3. Before an application for a fleet station permit may be approved, a state inspector shall inspect the premises to determine compliance with subsections (B) and (C).
 4. A fleet station permit shall not expire.
 5. A fleet station permit shall only be applicable to the fleet’s inspection facility located at the address shown on the fleet station permit. If a fleet owner or lessee requests a permit for inspection facilities at more than one address, the fleet owner or lessee shall apply for a permit for each facility.
 6. A fleet station permit issued by the Director is non-transferable.
 7. If the name or address of the permitted fleet facility changes and the name or address change does not involve a change of ownership, the permit shall be returned to the Department for cancellation and a new permit application shall be submitted. The Director shall cancel the returned permit and issue a new permit.
 8. In the event of loss, destruction, or mutilation of the permit, the person to whom it was issued may obtain a duplicate upon furnishing satisfactory proof of loss, destruction, or mutilation. If a fleet owner or lessee obtains a duplicate permit and then finds the original, the fleet owner or lessee shall immediately surrender the original permit to the Department.
- B. A fleet station permit applicant or fleet station permit holder, or its employees, shall own or lease the following equipment for testing and repair of a fleet vehicle, and maintain the equipment in good working condition:
1. If the permit is for the inspection of a vehicle required to take an idle only, or an idle plus 2500 RPM unloaded test:
 - a. An NDIR CO and HC emissions analyzer that complies with the requirements of ~~R18-2-1006(F)(7)~~ R18-2-1006(F)(8) to conduct the emissions inspection;
 - b. Pressure test equipment for the functional gas cap test that complies with the requirements of ~~R18-2-1006(E)(6)(a)~~ R18-2-1006(E)(7)(a); and
 - c. An ignition-operated tachometer.
 2. If the permit is for the inspection of a vehicle required to take a steady-state loaded test:
 - a. An NDIR CO and HC emissions analyzer that complies with the requirements of ~~R18-2-1006(F)(7)~~ R18-2-1006(F)(8) to conduct the emissions inspection;
 - b. Pressure test equipment for the functional gas cap test that complies with the requirements of ~~R18-2-1006(E)(6)(a)~~ R18-2-1006(E)(7)(a);
 - c. A dynamometer to operate the vehicle under load; and
 - d. An ignition-operated tachometer.

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3. If the permit is for the inspection of a vehicle required to take a transient loaded test:
 - a. Equipment to perform a transient loaded emissions test as required in R18-2-1006(E)(2);
 - b. Equipment to perform the evaporative system pressure test as required in R18-2-1006(E)(2)(b);
 - c. Equipment to perform the maintenance and quality control requirements of R18-2-1006(E)(2) and "IM240 and Evap Technical Guidance;" and
 - d. Pressure test equipment for the functional gas cap test that complies with the requirements of ~~R18-2-1006(E)(6)(a)~~ R18-2-1006(E)(7)(a).
4. If the permit is for the inspection of a vehicle required to take an OBD test:
 - a. A scan tool used to perform the OBD test that complies with the Society of Automotive Engineers Recommended Practice J1979, September 1997, incorporated by reference and no future editions or amendments. A copy of this referenced material is on file with the Department and the Secretary of State and may be obtained at Society of Automotive Engineers, 400 Commonwealth Dr., Warrendale, PA 15096-0001; and
 - b. Pressure test equipment for the functional gas cap test that complies with the requirements of ~~R18-2-1006(E)(6)(a)~~ R18-2-1006(E)(7)(a).
5. If the permit is for the inspection of a vehicle required to take a diesel test:
 - a. Opacity meter: A meter used in area A shall comply with the requirements of R18-2-1006(H) for the applicable test procedure. A meter used in area B shall comply with the requirements of R18-2-1006(I)(6)(b); and
 - b. A dynamometer for testing any light-duty diesel vehicle in area A or for testing any diesel vehicle in area B.
- C. A fleet's inspection facility shall comply with the following requirements:
 1. The facility shall include space devoted principally to maintaining or repairing the fleet's motor vehicles. The space shall be large enough to conduct maintenance or repair of at least one fleet motor vehicle.
 2. The facility shall be exclusively rented, leased, or owned by the permit applicant or permit holder.
- D. A fleet owner or lessee shall employ the following personnel:
 1. If the facility is for the repair of nondiesel-powered vehicles, at least one person to perform tune-ups of engines and replacement or repair of fuel system and ignition components.
 2. If the facility is for the repair of diesel-powered vehicles, at least one person to perform tune-ups and replacement or repair of diesel fuel systems in the vehicle fleet.
 3. A licensed vehicle emissions inspector who will perform the necessary inspections. This inspector may be the same person required by subsection ~~(I)~~ (D)(1) or (2).
 4. A fleet agent, who shall be in charge of the day-to-day operation of the fleet and who demonstrates proficiency by passing a Department-administered examination annually, with a score equal to or greater than 80%, on the statutes and rules governing the operation and administration of a fleet emissions inspection station. The fleet owner or lessee shall designate the fleet agent on a form obtained from the Department.
- E. Unless inspected at a state station, a vehicle owned by or leased to a holder of a fleet emissions inspection station permit shall be inspected according to R18-2-1006(D) through ~~(I)~~ (J), except as follows:
 1. A dealer fleet vehicle in area A held for resale and an area B fleet vehicle, with a model year of 1981 or newer, and other than diesel-powered, shall be required to take and pass both the curb idle test specified in R18-2-1006(F)(2)(b) and a 2,500 RPM unloaded fast idle test as follows:
 - a. The vehicle's engine shall be operated at 2,500, ± 300 RPM, for no more than 30 seconds with the transmission in neutral.
 - b. HC and CO exhaust emissions concentrations shall be recorded after readings have stabilized or at the end of 30 seconds, whichever occurs first, and compared to the loaded cruise standards in Table 2. The curb idle test standards in Table 2 shall apply for the idle test.
 2. A dealer fleet vehicle in area A held for resale, and an area B vehicle, with a model year of 1980 or older and other than diesel-powered, shall be required to take and pass a curb idle test as specified in R18-2-1006(F)(1). The curb idle test standards in Table 2 shall apply.
 3. A dealer fleet vehicle in area A held for resale with a model year of 1975 or newer and other than diesel-powered, shall be required to take and pass a tampering inspection as specified in ~~R18-2-1006(E)(6)~~ R18-2-1006(E)(7).
 4. A dealer fleet vehicle in area B held for resale with a model year of 1975 or newer and other than diesel-powered, shall be required to take and pass a tampering inspection as specified in ~~R18-2-1006(F)(6)~~ R18-2-1006(F)(7).
 5. A consignment vehicle shall be tested at a state inspection station according to R18-2-1005(A)(3).
- F. The vehicle emissions inspector shall complete and process the forms for vehicle inspection as follows, except a government entity fleet shall issue and process each government vehicle certificate of inspection under R18-2-1017:
 1. A certificate of inspection shall be processed as follows:
 - a. A certificate of inspection shall be completed and signed by the vehicle emissions inspector performing the inspection at the time the vehicle passes inspection. The vehicle emissions inspector who performed the inspection may correct a certificate by drawing a single line through the mistake, writing the correct information directly above the mistake, and initialing and dating the correction. Each certificate shall be issued in numerical order;

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- b. For an inspection that does not include a biennial test, the expiration date shall be one year from the date the vehicle passes the mandatory vehicle emissions inspection. For a vehicle required to pass a biennial test, the expiration date shall be two years after the pass date;
 - c. All copies of a certificate of inspection shall be legible;
 - d. Unless inspection data is electronically transmitted under A.R.S. § 49-542(Q), the original completed certificate shall be presented to MVD for processing the vehicle's application for title and registration or the Arizona registration card. MVD may accept a signed certificate of inspection as evidence that the vehicle is a fleet-inspected vehicle and meets the inspection requirements of this Article;
 - e. The vehicle emissions inspector shall forward the second copy of each completed certificate of inspection, along with the second copy of the "Fleet Vehicle Inspection Report/Monthly Summary," to the Department monthly, not later than two weeks after the last day of the month in which the inspection is conducted;
 - f. The third copy of each completed certificate of inspection, along with the original "Fleet Vehicle Inspection Report/Monthly Summary," shall be retained for two years from the date of inspection;
 - g. Vehicle emissions certificates shall be purchased from the Department in lots of 25. Excess certificates may be returned to the Department for refund or may be used in subsequent years;
 - h. The fee for a certificate of inspection shall be fixed by the Director according to A.R.S. § 49-543, and shall be based upon the Director's estimated costs to the state of administering and enforcing the provisions of this Article as they apply to issuance of a certificate of inspection. Payment for certificates shall be included with an application for certificates. Checks shall be made payable to the Department of Environmental Quality.
 - i. Only the Department shall sell or otherwise transfer a certificate of inspection. This subsection does not apply to the submission of a certificate of inspection to MVD for the purpose of vehicle registration;
 - j. The fleet station owner shall be responsible for the security and accountability of the fleet's certificates and fleet vehicle emissions inspection records. Certificates and fleet vehicle emissions inspection records shall be maintained at the fleet station and shall be made available for review by a state inspector during normal business hours of the fleet station;
 - k. If any certificate is discovered lost or stolen, the fleet station owner shall notify the Department in writing within 24 hours, indicating the number of certificates lost or stolen and each serial number. The Department may revoke a fleet station permit for refusal or failure to report a lost or stolen certificate within 24 hours;
 - l. In the event of loss, destruction, or mutilation of an original completed certificate of inspection, a Director's certificate may be obtained from the Department by hand-delivery of the following:
 - i. The second or third copy of the lost, destroyed, or mutilated certificate of inspection;
 - ii. The original of the "Fleet Vehicle Inspection Report/Monthly Summary;"
 - iii. A cover letter from the fleet agent explaining the situation that caused the loss, destruction, or mutilation of the original certificate of inspection; and
 - iv. Payment of a fee to cover the cost of issuance of the Director's certificate. The fee for a Director's certificate shall be fixed by the Director according to A.R.S. § 49-543, and shall be based upon the Director's estimated cost to the state of administering and enforcing the provisions of this Article as they apply to issuance of a Director's certificate. Checks shall be made payable to the Department of Environmental Quality; and
 - m. If an original certificate of inspection is voided by a fleet station, the original of the voided certificate shall be matched to the corresponding third copy of the certificate and retained at the fleet station for two years from the date of inspection.
2. The fleet agent or vehicle emissions inspector shall obtain the "Fleet Vehicle Inspection Report/Monthly Summary" form from the Department. The vehicle emissions inspector performing the inspection shall record the following information on the form at the time of inspection:
- a. The VIN of the vehicle passing inspection;
 - b. The vehicle's license number, if applicable;
 - c. The HC content of the undiluted exhaust recorded at idle, if applicable;
 - d. The CO content of the undiluted exhaust recorded at idle, if applicable;
 - e. The HC content of the undiluted exhaust recorded at 2,500 rpm, if applicable;
 - f. The CO content of the undiluted exhaust recorded at 2,500 rpm, if applicable;
 - g. Results of a tampering check, if applicable;
 - h. Liquid fuel leak inspection results:
 - ~~h-1.~~ The vehicle model year;
 - ~~i-1.~~ The vehicle make;
 - ~~j-1.~~ The GVWR for a vehicle certified under federal truck standards;
 - ~~k-1.~~ The date of inspection;
 - ~~l-1.~~ The license number of the vehicle emissions inspector conducting the inspection;
 - ~~m-1.~~ The signature of the inspector making the entry;
 - ~~n-1.~~ The serial number of the certificate of inspection, recorded in numerical order;

- ~~o-p.~~ For a vehicle required to take the transient loaded emissions test, the inspector shall record the total HC, CO, CO₂ and NO_x measured in grams/mile, and the evaporative system pressure test result, if applicable;
- ~~p-q.~~ The registration number of the registered analyzer or opacity meter used to perform the inspection;
- ~~q-r.~~ For a light-duty diesel vehicle, the inspector shall record opacity rather than undiluted HC and CO;
- ~~r-s.~~ For a heavy-duty diesel vehicle, instead of undiluted HC and CO:
- i. The time of the inspection;
 - ii. The ambient temperature;
 - iii. The corrected barometric pressure;
 - iv. The relative humidity at the time of inspection;
 - v. The engine year and cubic inch or liter displacement;
 - vi. The GVWR;
 - vii. The diameter of the exhaust stack; and
 - viii. The corrected opacity reading.
- ~~s-t.~~ For a vehicle required to take an OBD test, the inspector shall record the OBD results rather than HC, CO, and NO_x.
3. A certificate of waiver may be issued by a fleet vehicle emissions inspector unless the fleet owner or lessee is an auto dealer licensed to sell used motor vehicles under A.R.S. Title 28 ~~of the Arizona Revised Statutes~~. The certificate of waiver may be issued according to the following procedure if the requirements of R18-2-1008(A), R18-2-1009, and R18-2-1010 are met:
- a. A certificate of waiver shall be completed and signed by the vehicle emissions inspector performing the inspection after completion of a fleet inspection waiver report. The report shall be forwarded to the Department within three business days from the date of issuance of the certificate of waiver. A fleet inspection waiver report shall be provided by the Department with the purchase of each certificate of waiver. The report shall contain a description of the vehicle, test results, and repairs performed.
 - b. The expiration date of the certificate of waiver shall be two years from the date that the waiver is issued for a vehicle required to take the transient loaded emissions test, and one year for all other vehicles.
 - c. All information required on the certificate of waiver shall be legible.
 - d. The vehicle emissions inspector issuing the certificate of waiver shall initial all corrections.
 - e. Only the vehicle emissions inspector performing the inspection may sign or initial a certificate of waiver.
 - f. Unless inspection data is electronically transmitted under A.R.S. § 49-542(Q), the original completed certificate shall be presented to MVD for processing of either the vehicle's application for title and registration or the Arizona registration card. MVD may accept the signed certificate of waiver as evidence that the vehicle is a fleet inspected vehicle and meets the inspection requirements of this Article if the certificate is complete and the expiration date has not passed.
 - g. The second copy of each completed certificate of waiver shall accompany the completed fleet inspection waiver report.
 - h. The third copy of each completed certificate of waiver, along with a copy of the fleet inspection waiver report, shall be retained by the fleet station owner for two years from the date of inspection.
 - i. The fee for a certificate of waiver shall be fixed by the Director according to A.R.S. § 49-543, and shall be based upon the Director's estimated cost to the state of administering and enforcing the provisions of this Article as they apply to issuance of a certificate of waiver. Payment for certificates shall be included with an application for certificates. Checks shall be made payable to the Department of Environmental Quality.
 - j. Only the Department shall sell or otherwise transfer a certificate of waiver. This subsection does not apply to the submission of a certificate of waiver to MVD for the purpose of vehicle registration.
 - k. The fleet station owner shall be responsible for the security and accountability of the fleet's certificates.
 - l. If a certificate is discovered lost or stolen, the fleet station owner shall notify the Department in writing within 24 hours and indicate the number of certificates lost or stolen and each serial number. The Department may revoke a fleet station permit for refusal or failure to report a lost or stolen certificate within 24 hours of discovery.
 - m. In the event of loss, destruction, or mutilation of an original completed certificate of waiver, a Director's certificate may be obtained from the Department by hand delivery of the following:
 - i. The second or third copy of the lost, destroyed, or mutilated certificate of waiver;
 - ii. The original of the "Fleet Vehicle Inspection Report/Monthly Summary;"
 - iii. A cover letter from the fleet agent explaining the situation that caused the loss, destruction, or mutilation of the original certificate of waiver; and
 - iv. Payment of a fee to cover the cost of issuance of the Director's certificate. The fee for a Director's certificate shall be fixed by the Director according to A.R.S. § 49-543, and shall be based upon the Director's estimated cost to the state of administering and enforcing the provisions of this Article as they apply to issuance of a Director's certificate. Checks shall be made payable to the Department of Environmental Quality.
 - n. In the event an original certificate of waiver is voided by a fleet station, the original of the voided certificate shall

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be matched to the corresponding third copy of the certificate and retained by the fleet for two years from the date of inspection.

4. Upon request, a state inspector shall be allowed access to and shall be permitted to photocopy, on or off the premises, any original "Fleet Vehicle Inspection Report/Monthly Summary," the second copy of a certificate of inspection, and any other related documents.

G. The fleet shall comply with the following general operating requirements:

1. The fleet station permit and the licenses of all inspectors employed at the station shall be prominently displayed at the fleet's inspection facility.
2. A fleet station shall only certify a vehicle owned by or leased to the holder of the fleet station permit.
3. The inspection equipment shall be operated, calibrated, and maintained as follows:
 - a. All test equipment and instrumentation shall be maintained in accurate working condition as required by the manufacturer. An instrument requiring periodic calibration shall be calibrated according to instructions and recommendations of the instrument or equipment manufacturer. An NDIR emissions analyzer shall be registered and calibrated according to R18-2-1027. Calibration records for each instrument, except an NDIR emissions analyzer, shall be maintained by the fleet station. The calibration records shall be signed and dated by the technician performing each calibration.
 - b. The instrument calibration records shall be available for review by the Department.
 - c. Working gases used by the fleet station shall be subject to analysis and comparison to the Department's standard gases at any time.
 - d. Fleet station equipment shall be subject to both scheduled and unscheduled checks for accuracy and condition by the Department.
4. A fleet emissions inspection station that is unable to test at least 25 vehicles according to R18-2-1006 and subsection (A) shall surrender its permit.
5. A motor vehicle dealer with a fleet station permit shall comply with A.R.S. § 49-542.03.
6. If a fleet station fails to meet any requirement of subsection (B), (C), or (D), it shall immediately cease operating as a fleet station until the requirement is met. If the fleet is cited for failure to have the necessary equipment under subsection (B), it shall not resume operation as a fleet emissions inspection station until compliance is verified by the Department.
7. A fleet station shall notify the Department in writing within seven days of the end or start of employment of any vehicle emissions inspector. The written notification shall include the name and license number of the vehicle emissions inspector, a statement declaring the employment change, and the effective date of the employment change. A fleet station that does not employ a vehicle emissions inspector shall immediately cease operating as a fleet station and notify the Department immediately by telephone and within seven days in writing. All unused vehicle certificates of inspection shall be returned to the Department for a refund within seven days after operations cease.
8. A fleet station that does not employ a fleet agent, as described in subsection (D)(4), shall immediately cease operating as a fleet station and shall notify the Department immediately by telephone and within seven days in writing. The written notification shall include the name and license number of the fleet agent, a statement declaring the employment change, and the effective date of the employment change. The fleet station may resume fleet station operation after the permit applicant or other designated employee takes and passes the examination required in subsection (D)(4), if the responsibility of the day-to-day operation of the fleet station and a fleet agent designation form has been filed with the Department.

H. A fleet's activities shall be governed by the following compliance and enforcement rules:

1. Subsections (B) through (G) apply at all times after the issuance of a fleet station permit. In addition, subsections (B), (C), and (D) apply before a permit can be issued or removed from suspension.
2. The Director may suspend or revoke a fleet station permit according to A.R.S. §§ 49-546(F) and A.R.S. Title 41, Chapter 6, if the permittee, or any person employed by the permittee:
 - a. Violates any provision of A.R.S. Title 49, Chapter 3, Article 5 of the Arizona Revised Statutes or any provision of this Article;
 - b. Misrepresents a material fact in obtaining a permit;
 - c. Fails to make, keep, and submit to the Department records for a vehicle tested as a permittee; or
 - d. Does not provide a state inspector access to the information required by this Article.
3. If a fleet station permit is surrendered, suspended or revoked, all unused vehicle certificates of inspection shall be returned to the Department for a refund.
4. A fleet vehicle is subject to inspection by a state inspector.
5. Surrender of a permit under subsection (A)(8) or (G)(4) shall not prevent the Department from carrying out an investigative or disciplinary proceeding against the permit holder for a violation before surrender.

R18-2-1027. Registration and Inspection of Emissions Analyzers and Opacity Meters

- A.** An automotive repair facility may apply to the Department at no charge for registration of NDIR HC and CO analyzers, and opacity meters. NDIR emission analyzers and opacity meters used by fleet inspection stations shall be registered for

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the fleet station permit approval. Application forms for analyzer or opacity meter registration are available from the Department. Completed application forms shall be submitted to the Department. For purposes of ~~Chapter 1 of this Title 18 A.A.C. 1,~~ the application components for registration of an analyzer or opacity meter are:

1. The Department receives a completed application form;
 2. The applicant or employee successfully completes the "Certified Technician" examination described in R18-2-1028(A)(2); and
 3. The Department inspects the analyzer.
- B.** A registered analyzer shall be calibrated at least monthly, by a certified technician, with calibration gases approved by the Department. A registered opacity meter shall be calibrated according to manufacturer's specifications before performing the first vehicle emissions inspection in any month.
- C.** A registered analyzer shall meet the requirements of ~~R18-2-1006(F)(7)(a)~~ R18-2-1006(F)(8)(a). Calibration shall be verified by a state inspector before the analyzer is registered. The analyzer shall read the value of the calibration gases within the following tolerances:
1. Plus 0.50% CO to minus 0.25% CO in the range from 0 to 2% CO;
 2. Plus 1.00% CO to minus 0.50% CO in the range from 2% to 10% CO;
 3. Plus 60 PPM HC to minus 30 PPM HC in the range from 0 to 500 PPM HC when read as N-HEXANE; and
 4. Plus 200 PPM HC to minus 100 PPM HC in the range from 500 to 2,000 PPM HC when read as N-HEXANE.
- D.** Each registered opacity meter and analyzer shall have a unique registration number assigned by the Department. The technician shall maintain a repair and calibration log for each registered opacity meter and analyzer on a form provided by the Department. The log shall be made available to a state inspector on request.
- E.** A state inspector shall tag a registered opacity meter or analyzer if the opacity meter or analyzer does not meet the requirements of this Section. A tagged opacity meter or analyzer shall not be used for the purposes of R18-2-1010 or R18-2-1019 until the tag is removed by a state inspector or an emission analyzer repair person certified under R18-2-1028 after accuracy is verified.
1. The tag shall be in the form of a U.S. postcard and contain the following information:
 - a. Analyzer registration number or opacity meter registration number_;
 - b. Brief statement that the analyzer does not meet state operating requirements for registered analyzers_;
 - c. Reason for tagging_;
 - d. Date the analyzer was tagged and the signature of state inspector issuing the tag_;
 - e. Details of repairs performed to correct the failure_;
 - f. CO and HC concentrations of calibration gases used to verify analyzer accuracy_; and
 - g. Analyzer readings when gases were introduced into the analyzer sampling probe_; and
 - h. Repair person's certificate number and signature or signature of state inspector removing the tag and date accuracy is verified.
 2. The tag shall be returned to the Department within two business days after accuracy is verified.
- F.** An owner of a registered emission analyzer or opacity meter shall notify the Department within seven business days of the retirement, resignation, or termination of any licensed vehicle emissions inspector or certified technician. The Department shall revoke the registration of an emission analyzer or opacity meter if the owner of the analyzer or meter does not employ an inspector licensed under R18-2-1019 or a technician certified under R18-2-1028.