applicable for the appropriate model year.

(c) All provisions in this subpart apply to gasoline-fueled and methanol-fueled Otto-cycle heavy-duty engines, methanol-fueled Diesel-cycle heavy-duty engines, new Otto-cycle light-duty trucks, and liquefied petroleum gas-fueled, natural gas-fueled, and methanol-fueled diesel-cycle light-duty trucks.

[59 FR 48536, Sept. 21, 1994, as amended at 60 FR 34376, June 30, 1995]

EFFECTIVE DATE NOTE: At 73 FR 37194, June 30, 2008, §86.1504–94 was removed, effective July 7, 2008.

§ 86.1505–94 Introduction; structure of subpart.

(a) This subpart describes the equipment and the procedures required to perform idle exhaust emission tests on heavy-duty engines and light-duty trucks. Subpart A of this part sets forth the testing requirements, reporting requirements and test intervals necessary to comply with EPA certification procedures.

(b) Four topics are addressed in this subpart. Sections 86.1505 through 86.1515 set forth specifications and equipment requirements; §§86.1516 through 86.1526 discuss calibration methods and frequency; test procedures and data requirements are listed in §§86.1527 through 86.1542 and calculation formulas are found in §86.1544.

[59 FR 48536, Sept. 21, 1994, as amended at 60 FR 34376, June 30, 1995]

EFFECTIVE DATE NOTE: At 73 FR 37194, June 30, 2008, §86.1505–94 was redesignated as §86.1505, effective July 7, 2008.

§ 86.1506–94 Equipment required and specifications; overview.

(a) This subpart contains procedures for performing idle exhaust emission tests on Otto-cycle heavy-duty engines and Otto-cycle light-duty trucks. Equipment required and specifications are as follows:

(1) *Exhaust emission tests.* All engines and vehicles subject to this subpart are tested for exhaust emissions. Necessary equipment and specifications appear in §§86.1509 through 86.1511.

(2) *Fuel and analytical tests.* Fuel requirements for idle exhaust emission testing are specified in §86.1513. Analytical gases are specified in §86.1514.

(b) [Reserved]

[59 FR 48536, Sept. 21, 1994]

EFFECTIVE DATE NOTE: At 73 FR 37194, June 30, 2008, §86.1506–94 was redesignated as §86.1506 and the new §86.1506 was amended by adding paragraph (b), effective July 7, 2008. For the convenience of the user, the added text is set forth as follows:

§ 86.1506 Equipment required and specifications; overview.

* * * * *

(b) Through the 2009 model year, manufacturers may elect to use the appropriate test procedures in this part 86 instead of the procedures referenced in 40 CFR part 1065 without getting advance approval by the Administrator.

§ 86.1509–84 Exhaust gas sampling system.

(a) The exhaust gas sampling system shall transport the exhaust sample from the engine or vehicle to the analysis system in such a manner as to maintain the integrity of the sample constituents that are to be analyzed.

(b) The sample system shall supply a dry sample (i.e., water removed) to the analysis system.

(c) A CVS sampling system with bag or continuous analysis as specified in 40 CFR part 1065 is permitted as applicable. The inclusion of an additional raw carbon dioxide (CO_2) analyzer as specified in 40 CFR part 1065 is required if the CVS system is used, in order to accurately determine the CVS dilution factor. The heated sample line specified in 40 CFR part 1065 for raw emission requirements is not required for the raw (CO_2) measurement.

(d) A raw exhaust sampling system as specified in 40 CFR part 1065 is permitted.

[48 FR 52252, Nov. 16, 1983, as amended at 60 FR 34376, June 30, 1995; 70 FR 40441, July 13, 2005]

EFFECTIVE DATE NOTE: At 73 FR 37194, June 30, 2008, §86.1509–84 was redesignated as §86.1509, effective July 7, 2008.

§ 86.1511–84 Exhaust gas analysis system.

(a) Analyzers used for this subpart shall meet the following specifications:

(1) The analyzer used shall conform to the accuracy provisions of 40 CFR part 1065, subparts C, D, and F.

(2) The resolution of the readout device(s) for the range specified in paragraph (a)(1) of this section shall be equal to or less than 0.05 percent for the CO analyzer.

(3) For the range specified in paragraph (a)(1) of this section, the precision shall be less than ±3 percent of full-scale deflection. The precision is defined as two times the standard deviation of five repetitive responses to a given calibration gas.

(4) For the range specified in paragraph (a)(1) of this section, the mean response to a zero calibration gas shall not exceed ±3 percent of full-scale deflection during a 1-hour period.

(5) For the range specified in paragraph (a)(1) of this section the drift of the mean calibration response shall be less than ±3 percent of full scale during a 1-hour period. The calibration response is defined as the analyzer response to a calibration gas after the analyzer has been spanned by the electrical spanning network at the beginning of the 1-hour period.

(6) The analyzer must respond to an instantaneous step change at the entrance to the sampling system with a response equal to 90 percent of that step change within 15 seconds or less on the range specified in paragraph (a)(1) of this section. The step change shall be at least 60 percent of full-scale deflection.

(7) The interference gases listed shall individually or collectively produce an analyzer reading less than ±2 percent of full scale on the range specified in paragraph (a)(1) of this section.

Interference gas	Concentration	Applicable analyzer
CO_2	14 percent	CO
C_3H_8	1 percent	CO
H_2O	Saturated vapor at 100° F	CO
NO_X	1,000 ppm	CO
O_2	5 percent	CO

(8) The analyzer shall be able to meet the specifications in paragraph (a) of this section under the following conditions:

(i) After a 30 minute warm-up from the prevailing ambient conditions;

(ii) Between 0 to 85 percent relative humidity; and

(iii) During variations of ±50 percent of nominal sample flow.

(b) The inclusion of a raw CO_2 analyzer as specified in 40 CFR part 1065 is required in order to accurately determine the CVS dilution factor.

[48 FR 52252, Nov. 16, 1983, as amended at 60 FR 34377, June 30, 1995; 70 FR 40441, July 13, 2005]

EFFECTIVE DATE NOTE: At 73 FR 37194, June 30, 2008, § 86.1511–84 was redesignated as § 86.1511, effective July 7, 2008.

§ 86.1513–94 Fuel specifications.

The requirements of this section are set forth in 40 CFR part 1065, subpart H, for heavy-duty engines and in § 86.113–94 for light-duty trucks.

[70 FR 40441, July 13, 2005]

EFFECTIVE DATE NOTE: At 73 FR 37194, June 30, 2008, § 86.1513–94 was redesignated as § 86.1513, effective July 7, 2008.

§ 86.1514–84 Analytical gases.

(a) The final idle emission test results shall be reported as percent for carbon monoxide on a dry basis.

(b) If the raw CO sampling system specified in 40 CFR part 1065 is used, the analytical gases specified in 40 CFR part 1065, subpart H, shall be used.

(c) If a CVS sampling system is used, the analytical gases specified in 40 CFR part 1065, subpart H, shall be used.

[48 FR 52252, Nov. 16, 1983, as amended at 51 FR 24613, July 7, 1986; 60 FR 34377, June 30, 1995; 70 FR 40441, July 13, 2005]

EFFECTIVE DATE NOTE: At 73 FR 37194, June 30, 2008, § 86.1514–84 was redesignated as § 86.1514, effective July 7, 2008.

§ 86.1516–84 Calibration; frequency and overview.

(a) Calibrations shall be performed as specified in §§ 86.1518–84 through 86.1526–84.

(b) At least monthly or after any maintenance which could alter calibration, check the calibration of the CO analyzer. Adjust or repair the analyzer as necessary.

(c) Water traps, filters, or conditioning columns should be checked before each test.