Ohio Environmental Protection Agency

Ohio E-Check Annual Report 2017

This document is the 2017 Annual Report for the United States Environmental Protection Agency (U.S. EPA) on the Ohio Enhanced Inspection and Maintenance Program (I/M Program) known as E-Check. This report covers January 1 to December 31, 2017.

Ohio Vehicle Inspection and Maintenance Program

Table of Contents

ATTACHMENTS

1 Executive Summary

This document is the 2017 Annual Report for the United States Environmental Protection Agency (U.S. EPA) on the Ohio Enhanced Inspection and Maintenance Program (I/M Program) known as E-Check. This report covers January 1 to December 31, 2017.

This annual report is required by U.S. EPA under 40 CFR 51.366. U.S. EPA requires this report to cover four categories of information:

- emissions test data;
- quality assurance information;
- quality control information; and
- compliance and enforcement actions.

For the benefit of the public, it is worth noting that the statistics in this report directly and indirectly contribute to the maintenance and improvement of the air quality in the area that this vehicle emission testing program is located. The direct benefit is that it identifies and requires the repair of vehicles that fail the emissions test. Most of the benefit may come from the indirect effects. It is documented from actual data from an enhanced I/M program in Phoenix, Arizona that vehicles in an I/M program over a period of time are better maintained with routine maintenance. With the passage of time, the non-I/M verses I/M fleet emission rates diverge from each other with the I/M fleet emission rate being less than the non-I/M fleet emission rate. This difference is often referred to as the overall I/M reduction or I/M benefit. In addition, the State of Oregon conducted a recent study of what the vehicle failure rates were outside of their testing area. They found that the failure rate was 22% outside the testing area verses the 5% inside the testing area. This data shows that vehicle emissions testing programs are effective in promoting and assuring that the fleet of vehicles is better maintained and stays in the normal emitting verses the high emitting category. In addition, mobile source emission modeling indicates that the E-Check program removes 1,317 tons of nitrogen oxides and 1,100 tons of volatile organic compounds per year.

1.1 Major Findings

Emissions Tests Conducted

In 2017, 834,758 vehicle emission tests were performed, including initial tests, retests, and off-cycle tests due to change of ownership/registration. Most of the tests were completed using OBD (98 percent) and 2 percent received a “tailpipe” test. Only 977 of the emission tests performed were opacity tests on diesel-fueled vehicles.

Compliance and Enforcement

In 2017, 16,199 vehicles, or 1.9 percent of the vehicles that were emission tested, received a waiver. Some of the vehicles that initially failed E-Check did not obtain a passing test or waiver.

In 2017, 14 investigations by Ohio BMV's Special Investigations Unit were initiated for E-Check-related vehicle registration violations which resulted in no criminal prosecution. Registration cancelation resulted in 1 of the cases.

Emissions Reductions from Tailpipe Tested Vehicles
In 2017 there were 4,174 vehicles that initially failed the tailpipe test. The number of vehicles that failed the initial tailpipe test and passed later following repairs was 1,938. The repaired vehicles had an average emission improvement of 71 percent for hydrocarbon, 85 percent for carbon monoxide and 63 percent for oxides of nitrogen. Of the 834,758 emissions tests performed in 2017, 98 percent were completed using the onboard diagnostic test and 2 percent received a "tailpipe" test.

Quality Assurance
In 2017, Ohio EPA performed 4,029 site audits to determine if stations are correctly performing all emissions tests and if the station's physical conditions meet all state requirements. As a result of these audits, there were no performance issues identified that warranted shutting down a station.

2 The Ohio I/M Program

2.1 Purpose and Statistics of the Ohio E-Check Program

The northeast Ohio area has been officially designated as attaining the 1997 National Ambient Air Quality Standards (NAAQS) for ground level ozone of 0.08 parts per million (ppm). However, there were areas in northeast Ohio designated nonattainment for the 2008 ozone standard of 0.075 ppm. In 2012, the U.S. EPA designated the Cleveland-Akron metro area as marginal nonattainment. On June 27, 2016, USEPA issued a direct final rule determining the Cleveland area has clean data based upon 2013-2015 air quality data (84 FR 41497, 81 FR 41444). The determination became effective August 26, 2016. On July 6, 2016, DAPC submitted to U.S. EPA the redesignation request and maintenance plan for the Cleveland-Akron-Lorain area. On October 17, 2016 (81 FR 71444) U.S. EPA issued proposed approval of Ohio's request for the Cleveland-Akron-Lorain area. On January 6, 2017, U.S. EPA finalized the redesignation of this area to attainment, effective January 6, 2017 (82 FR 1603).

On October 26, 2015, based on U.S. EPA's review of the air quality criteria for ozone and related photochemical oxidants, the U.S. EPA finalized revisions to the NAAQS for ground-level ozone (80 FR 65292). The rule sets more stringent standards, lowering both the primary (health-based) and secondary (welfare-based) standards from 0.075 ppm to 0.070 ppm, and retained their indicators, forms (fourth-highest daily maximum, averaged across three consecutive years) and averaging times (eight hours).

Ohio's recommended designations were submitted to U.S. EPA on September 30, 2016, and included Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit Counties in the Cleveland-Akron-Lorain, OH designation area. The designations are based on

2013 to 2015 air quality data plus consideration any air quality data available for 2016. At that time, Cleveland (Lake County) had violating monitors. In addition, by the end of August 2016, monitors in the Cleveland (Geauga and Lake Counties) area already had a design value above the standard for 2014-2016. Final designations were effective August 3, 2018.

Ohio EPA administers the vehicle emissions testing program, or E-Check, as authorized by Ohio Revised Code (ORC) 3704.14. The goals of the E-Check program are to identify gross-polluting vehicles for repair and provide a fair and accurate test with minimum inconvenience to Ohio's motorists. In 1996, Ohio contracted with Envirotest Systems to operate the Ohio I/M Program in the Dayton-Springfield, Cincinnati, and Cleveland-Akron metro areas. In 2005, the contract was extended for an additional two years in northeast Ohio with Envirotest Systems. In 2007, the contract was extended for an additional six months in northeast Ohio. Envirotest Systems was awarded a one-year contract in early 2008 to continue providing motor vehicle emission tests to motorists through June 2009. A six-month extension was granted in June 2009. The contract was renewed in October 2009 with Envirotest Systems until the end of June 2011. Beginning July 1, 2011, the contract was extended for one year until June 30, 2013.

In the summer of 2011**,** the Ohio legislature passed legislation for Ohio to implement a decentralized program by June 30, 2012**.** In January 2012, Envirotest Systems won a three-year contract to implement a decentralized vehicle testing program beginning June 4, 2012. The decentralized program involved adding 37 Lube Stops, 16 independent repair shops and 16 self-service testing kiosks to the 23 existing testing stations. All the new testing options only provide OBDII testing. The existing stations maintained the ability to perform OBDII, dynamometer, idle tail pipe and opacity testing. Effective July 1, 2015, the contract was extended through June 30, 2016. The contract was again extended through June 30, 2017. In May 2017, Envirotest Systems was awarded a two-year contract from July 1, 2017, to June 30, 2019, to continue providing motor vehicle emissions testing.

2.1.1 Ohio I/M Program Summary

40 CFR 51.366 (d) (1) (i) An estimate of the number of vehicles subject to the inspection program, including the results of analysis of the registration database;

In 2017, 835,116 vehicles were expected to undergo emission testing. In 2017, vehicles were exempted from the emissions testing process if they were:

- model year 1992 or older;
- model year 2014 or newer;
- greater than 10,000-pounds gross vehicle weight rating;
- motorcycles, recreational vehicles, and motor homes; or

- vehicles operating on alternative fuels, such as propane or natural gas.

Vehicles are required to have a valid vehicle emission certificate every other year or when transferred to a new owner if not tested within 365 days of the previous test.

2.1.2 Inspection Stations

40 CFR 51.366 (b)(1)(i): The number of inspection stations and lanes operating throughout the year:

In July 2012, an additional 53 OBDII-only inspection stations were added to the existing network of 23 testing stations. A total of 76 stations and 128 lanes conducted emissions tests in 2017. Also, in July 2012, self-serve testing kiosks were installed at 16 of the existing testing locations operated by Envirotest Systems. In 2017, there were 57,196 (7.3%) OBD II tests successfully conducted using the self-serve kiosks.

The 53 OBDII-only inspection stations are operated by a variety of independent businesses while the 23 existing E-Check stations and 16 self-serve kiosks continue to be operated by Envirotest Systems.

2.1.3 Inspectors

40 CFR 51.366 (b) (5) The number of inspectors licensed or certified to conduct testing;

Table 1: Number of Inspectors in 2017

	# of Inspectors
Trained and Licensed to conduct testing in 2017	767

2.1.4 Emissions Tests Administered

The Ohio I/M Program utilizes six different types of emissions tests. Gasoline-fueled vehicles that are not Clean Screened receive the gas cap test and one of the following tests: On-Board Diagnostic (OBD II), transient (tailpipe), or two-speed idle (tailpipe). Diesel-fueled vehicles receive the gas cap test and an OBD II or opacity test. The Clean Screen or “Rapid Screen” testing process started in July 2012 and can remotely test vehicles as they operate under normal driving conditions. Each type of test is described below. All vehicles also are visually inspected to confirm that a gas cap and catalytic

converter are present. If a vehicle fails the visual inspection, it fails the overall test, even if it passed the emissions portion of the test. Fails for vehicles not having a catalytic converter do not receive an emissions test but do receive the gas cap test.

1. Gas cap tests check the vehicle's gas cap pressure to ensure the cap seals tightly and does not allow fuel vapors to evaporate into the air. If the vehicle fails the gas cap test, it fails the overall emissions test, even if the vehicle passed the exhaust portion of the test.

2. On-Board Diagnostics: On-board diagnostics (OBD II) is a complex computer pack installed on 1996 and newer cars and light trucks and 1997 and newer diesel vehicles. The computer continuously tracks and stores information about a vehicle's performance. The on-board computer turns on the "check engine" light if it finds a problem with a vehicle's emission control system. On January 5, 2004, Ohio began testing vehicles equipped with the OBD II systems. During the initial test in a vehicle's test cycle that is 2000 model year or older with 3 or more readiness monitors not set to ready, or vehicles that are 2001 or newer with 2 or more readiness monitors not set, the vehicle may be tested with the tailpipe test. Vehicles that are model year 2005 and newer do not have the option to be tailpipe tested. In 2017, 98 percent of emissions tests were completed using the OBD II system.

3. Transient tailpipe tests are used for most gasoline-powered vehicles that are not equipped with the OBD II equipment. For this test, Acceleration Simulation Mode (ASM 2525) standards are used. Vehicles are placed on a dynamometer, a treadmill-like device that puts resistance against the tires to simulate on-road driving. The vehicles are driven at 25 miles per hour for a minimum of 25 seconds and a maximum of 240 seconds. Tailpipe emissions are then measured and recorded. Readings for hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) are compared to each pollutant's pass/fail points. The pass/fail points vary by vehicle type (car vs truck), model year, and, for trucks, weight category. In 2017, 2 percent of emissions tests were completed using the transient tailpipe test.

4. Two-speed idle (TSI) tests are used for gasoline-fueled vehicles that cannot receive an OBD II or tailpipe test. These vehicles, for the most part, cannot be driven on the dynamometer and are mainly dedicated 4-wheel-drive vehicles. This test measures emissions while the engine is operating at an elevated idle of 2,500 revolutions per minute (rpm) with no load on the engine which is followed with checking the vehicle emissions at idle upon failure of the loaded portion. The test measures HC and CO concentrations. This test does not measure NOx emissions. In 2017, 1.8 percent of emissions tests were completed using the TSI test.

5. Clean Screen tests are used for a small percentage of gasoline-fueled vehicles that operate with exceptionally low emissions. This test measures emissions while the vehicle is operating normally on a public roadway. Clean Screen testing typically takes place at highway on-ramp locations in order to obtain emissions readings as vehicles are accelerating through the test equipment. To ensure accurate and uncontaminated readings, the emissions limits for this type of test are stricter than those of a standard

tailpipe emissions test. Also, a vehicle must record two acceptable Clean Screen readings within a nine-month widow in order to be documented as passing the E-Check requirements. In 2017, 0.84 percent of emissions tests were completed using the Clean Screen test.

6. Opacity tests use opacity meters to determine the "density" of the exhaust emitted from the vehicle's tailpipe. Only diesel vehicles receive an opacity test. In 2017, 0.12 percent of emissions tests were completed using the opacity test.

2.2 Do the right vehicles get tested?

2.2.1 Overall motorist compliance with testing requirements

> 40 CFR 51.366 (d) (1) (ii): The percentage of motorist compliance based upon a comparison of the number of valid final tests with the number of subject vehicles;

In Ohio, the inspection lane computers determine which test a vehicle will receive based on model year and make information. Table 2 summarizes the 2017 overall compliance rate of the total number of unique vehicles registered in 2017 subjected to the test verses the number of vehicles receiving an I/M test. In 2017, the compliance rate (actual tests versus required tests) was 99.96 percent.

Table 2: Motorist Completing Testing Requirements

	Vehicle Count	Compliance % (actual tests versus required tests)
Overall Testing Compliance		
Vehicles Subject to 2017 Test	835,116	
Vehicles Tested in 2017	790,616	94.67%
Vehicles Tested in 2017 including Clean Screen vehicles	797,578	95.5%

In 2017, 14,506 of the 64,168 vehicles that failed their initial test did not receive a passing test, exemption, extension, or waiver before January 28, 2017.

2.2.2 Motorist Time Extensions

40 CFR 51.366 (d) (1) (v) The number of time extensions and other exemptions granted to motorists;

The E-Check program offers repair waivers to individuals on their vehicle who attempt to repair their vehicle but cannot get it to pass E-Check. In most cases, a waiver will be issued if the vehicle meets the requirements. A waiver will then allow the vehicle to be registered with the State. If an individual spends at least $200 on emissions-related repairs for a 1995 or older vehicle, shows a 30 percent improvement in emissions readings from the initial test readings, and passes a visual anti-tampering inspection he or she may qualify for a conditional pass waiver. There is also a repair cap waiver that allows the motorist to register the vehicle if he or she spends at least $300 on emissions-related repairs, regardless of emissions improvements and passes a visual tampering inspection. When a waiver is issued, the vehicle does not need to test for two years, or the next scheduled E-Check test, whichever comes first.

Ohio EPA offers a variety of extensions and exemptions to individuals who need more time to repair a vehicle or cannot have the vehicle tested at the current time.

- Non-permanent exemptions apply to those individuals who can have their vehicle tested out-of-state, are in the military, are currently a student outside of Ohio, or have a vehicle that will not return to Ohio within one year. The exemption allows a motorist to register the vehicle without receiving an E-Check test.

- Extensions are only available to individuals who need more time to have repairs performed, have difficulty affording repairs for the vehicle or are temporarily located out-of-state in an area that does not have emissions testing and will return within one year. Extensions only extend the period of time that a vehicle has to comply with the program. A motorist has up to six months to comply with the current testing cycle.

- Permanent exemptions from testing are issued for vehicles with a gross vehicle weight rating (GVWR) over 10,000 pounds or operating on an alternative fuel source such as electric power, natural gas, butane, propane, and 100 percent alcohol.

Out-of-state exemptions account for the highest number of exemptions issued. If the motorist is in another state's emissions testing area they must have the vehicle tested in that state. If the motorist is in a non-testing area they can still obtain an out-of-state exemption if the vehicle will not be returning to Ohio before their next registration renewal

date. Motorists can also obtain student and military exemptions which allow them to renew the vehicle's registration without ever receiving a test.

The extensions require that a vehicle receive a test, but more time is provided to have it completed. The category of "other" in Table 3 includes special circumstances such as survivor and trust non-permanent exemptions that would require a vehicle to be tested out of its normal test cycle.

Vehicles that run on electricity or alternative fuel, such as propane or natural gas, may receive a permanent exemption from the emission test requirement. Prior to receiving any permanent exemption, the vehicle must be inspected by authorized Ohio EPA Mobile Source Section personnel. The inspection will include an anti-tampering inspection to ensure that all necessary emission control equipment is correctly installed on the vehicle. Any vehicle that does not pass the necessary inspection will be subject to the vehicle emission testing requirements. Vehicles that are more than 10,000 pounds gross vehicle weight rating and are plated with non-commercial plates also will be subject to inspection by authorized Ohio EPA Mobile Sources Section personnel prior to receiving a permanent exemption from the vehicle emission testing requirement, to be consistent with our rules, specifically OAC 3745-26-12(C)(2).

Table 3: Number of Extensions or Exemptions Issued in 2017

Type of Extensions or Exemptions	Number Issued
Extensions	3,756
Waivers	16,199
Permanent Exemptions	439
Out of State Exemptions	2,889
Student Exemptions	320
Military Exemptions	644
Hardship Extensions	3,449
Other	6
Total Number of Waivers, Extensions and Exemptions Issues	27,702

2.2.3 Registration File Audits and Compliance with Deadlines

40 CFR 51.366 (d)(2)(i) A report of the program's efforts and actions to prevent motorists from falsely registering vehicles out of the program area or falsely changing fuel type or weight class on the vehicle registration, and the results of special studies to investigate the frequency of such activity; and

(ii) The number of registration file audits, number of registrations reviewed, and compliance rates found in such audits.

Ohio EPA works with Ohio Bureau of Motor Vehicles' (BMV) Special Investigations Unit (SIU) to ensure that motorists are not falsely registering vehicles outside of a testing area to circumvent the testing requirements. When Ohio EPA receives a complaint regarding false registrations, Ohio EPA forwards the complaint to Ohio BMV SIU for investigation. Ohio BMV Registrar Offices also will forward any concerns they have about suspicious registrations along to the SIU Division. Overall in 2017, Ohio BMV SIU investigated 14 complaints regarding E-Check compliance. Of the 14 investigations, 1 resulted in registration cancellation, and non-resulted in criminal prosecution.

At this time, no registration file audits are performed to determine compliance with the vehicle emission testing program in northeast Ohio.

3 Is the testing equipment reliable?

40 CFR 51.366 (c) Quality Control Report: The program shall submit … basic statistics on the quality control program for January through December of the previous year, including:
(1) the number of emission testing sites and lanes in use in the program;
(2) the number of equipment audits by station and lane;
(3) the number and percentage of stations that have failed equipment audits; and
(4) the Number and percentage of stations and lanes shut down as a result of equipment audits.

Within the Ohio I/M Program for 2017, there are 76 emission testing stations operating a total of 128 lanes.

Ohio EPA's equipment audit procedure is designed to verify that the lane equipment is operating within the tolerances specified by federal and State guidelines. Equipment

audits are inspections of emissions testing equipment performed overtly at least two times per year per lane. Ohio EPA's equipment audits are performed by Agency staff and a contractor representative. If a lane fails any one of the audit criteria, the audit result is a fail and the lane is shut down until the issue is resolved.

Envirotest Systems' equipment is required to undergo self-tests on either a per test, hourly, or weekly basis. The computer system will lock-down a lane if a self-test is not performed at the required time. The lane lock-down results in no additional vehicle testing occurring until the test is complete.

In 2017, each testing lane operated by Envirotest Systems was successfully audited. A total of 172 equipment audits resulted in 150 audit passes, 6 audits aborted and only 16 audit failures, or an overall failure rate of 9 percent. The 16 equipment audit failures occurred at 11 unique stations, or 48 percent of the stations, and across 14 unique lanes, or 9 percent of the lanes.

Table 4: Number of Equipment Audits at Each Testing Station in 2017

Facility	Number of Equipment Audits
WESTLAKE	11
BEREA	6
NORTH ROYALTON	6
PURITAS	9
EAST 55TH	13
VALLEY VIEW	10
ST. CLAIR	8
WARRENSVILLE	8
EUCLID	9
WILLOUGHBY	6
PAINESVILLE	7
CHARDON	5
AUBURN	5
ROOTSTOWN	4
KENT	7
TWINSBURG	6
CUYAHOGA FALLS	9
BROWN STREET	10
COPLEY	8
MEDINA	6

SPENCER	4
AMHERST	6
ELYRIA	9

4 Quality Assurance

4.1 Overt and Covert Audits

Ohio EPA performs overt and covert performance audits to assess station and inspector performance. The results of the different types of audits are detailed below.

4.1.1 Overt Audits

> 40 CFR 51.366 (b) (1) (i) The number of inspection stations and lanes operating throughout the year;

For 2017, 76 stations operated 128 emission testing lanes.

> 40 CFR 51.366 (b) (2) The number of inspection stations and lanes operating throughout the year:
> (i) receiving overt performance audits in the year; or
> (ii) not receiving overt performance audits in the year.

During overt performance audits, Ohio EPA staff verifies that Envirotest Systems and the additional contracted private repair shop personnel are performing the emissions test in the proper manner while providing adequate customer service to Ohio's motorists. The performance audit is broken into three sections. The first section is *Test Procedures*, designed to evaluate how well the inspectors perform the emissions test procedures and interact with the motorists. The second section is *Safety Conditions*, designed to evaluate if Envirotest Systems and the other private repair shops provide motorists with a safe testing environment. The third section is *Station Appearance*, designed to evaluate if the stations are being kept in a customer friendly condition. Ohio EPA staff record audit findings on a form and conduct exit interviews with the station manager, informing the station manager of the results.

All 23 full-service stations and all full-service testing lanes operated by Envirotest Systems in 2017 received overt performance audits. Upon arriving at a station, Ohio EPA staff will audit only the lanes that are open for testing during a performance audit. The number of overt audits per lane ranged from 1 to 22 with a total of 432 being performed in 2017. There were 0 overt performance audits completed at the 53 private repair shop

testing locations. It is not feasible for the Ohio EPA auditors to wait significant lengths of time for a vehicle to be tested to conduct performance audits at these locations. Therefore, Ohio EPA relied on the covert audits performed at these locations.

> 40 CFR 51.366 (b) (2) (v) Number of stations and lanes … that have been shut down as a result of overt performance audits;

No station or lane was shut down as the result of an overt performance audit in 2017.

4.1.2 Covert audits

> 40 CFR 51.366 (b) (2) The number of inspection stations and lanes operating throughout the year:
> (iii) receiving covert performance audits in the year; or
> (iv) not receiving covert performance audits in the year.

During covert audits, Ohio EPA staff will verify that Envirotest Systems and the additional contracted private repair shop personnel are performing the emissions test in the proper manner, while providing adequate customer service to Ohio's motorists. The *Test Procedures* section of the covert audit is identical to the *Test Procedures* of the overt audit and is scored as such.

> 40 CFR 51.366 (b) (8) The total number of covert vehicles available for undercover audits over the year; and
> (9) the number of covert auditors available for undercover audits.

Ohio EPA dedicates three vehicles for covert audits. The vehicles are tampered prior to testing to ensure that the vehicle fails the proper emission tests. Typically, a college intern is hired to work during a three-month period to supplement and assist in trying to achieve covert audit goals.

4.1.3 Covert audit results

40 CFR 51.366 (b) (3) The number of covert audits:
(i) conducted with the vehicle set to fail per test type;
(ii) conducted with the vehicle set to fail any combination of two or more tests;
(iii) resulting in a false pass per test type; or
(iv) resulting in a false pass for any combination of two or more test types.

Usually the covert vehicles are set up to fail the OBD test, or, if applicable, not allow the OBD II test to be performed by clearing the readiness monitors. A “false pass” during a covert audit is an inspection pass when the vehicle was set to fail. The audit does not directly indicate whether the false pass was a result of the equipment or the inspector. If a false pass was the result of the improper test being performed on the vehicle, Ohio EPA initiates enforcement action against Envirotest Systems. Most times, Envirotest Systems provides proper test procedures and/or additional training as follow-up action against false passes.

College interns are used to perform the covert audits in the summer because they are not recognizable to the lane inspectors like the regular state program auditors are due to the number of equipment and performance audits they do at the stations. The regular Ohio EPA auditors rotate around during the rest of the year so that they are not recognized. The 23 full-service test stations received 46 covert performance audits and the 53 repair shops received 85 covert performance audits.

Table 5: 2017 Covert Audit Results

Conducted with the vehicle set to fail per test type	
ASM	0
OBD	132
Conducted with the vehicle set to fail any combination of two or more test types	
ASM & OBD	0
Resulting in a false pass per test type	
ASM	0
OBD	0
Resulting in a false pass for any combination of two or more test types	
ASM & OBD	0

As seen in table five, 0 of the 132, or 0 percent, of the covert audits resulted in false passes.

4.2 Inspector Performance

As stated in Section 2.1.3, 767 inspectors were licensed or certified to conduct testing in 2017.

> 40 CFR 51.366 (b) (4) The number of inspectors and stations:
> (i) that were suspended or fired or otherwise prohibited from testing as a result of covert audits
> (ii) that were suspended, fired, or otherwise prohibited from testing for other causes, and
> (iii) that received fines.

> 40 CFR 51.366 (b) (6) The number of hearings:
> (i) held to consider adverse actions against inspectors and stations; and
> (ii) resulting in adverse actions against inspectors and stations.

Ohio EPA and Envirotest Systems keep records of all fraud and bribery issues occurring at the testing stations. All cases brought to either Ohio EPA or Envirotest Systems are investigated thoroughly. If the situation warrants use of other agencies, such as the Ohio State Highway Patrol, the agencies work together to resolve these cases. Many of the fraud and bribery cases involve customers attempting to bribe an inspector for a passing test. Few cases involve fraud or bribery on the part of a station inspector. The table below summarizes the results of Ohio EPA's enforcement actions against stations and inspectors.

Table 6: Non-Customer Initiated Fraud and Bribery Cases

The number of inspectors and stations	**# inspectors**	**# stations**
That were suspended, fired, or otherwise prohibited from testing as a result of covert audits	1	0
That were suspended, fired, or otherwise prohibited from testing for other causes	0	0

4.3 Fines collected

> 40 CFR 51.366 (b) (4) The number of inspectors and stations: (iii) that received fines;
> 40 CFR 51.366 (b) (7) the total amount collected in fines from inspectors and stations.

Ohio EPA has not collected fines from stations or inspectors.

4.4 Station Compliance Documents

> 40 CFR 51.366 (d) (1) (iii) The total number of compliance documents issued to inspections stations;
> (iv) the number of missing compliance documents; and
> (vi) the number of compliance surveys conducted, number of vehicles surveyed in each, and the compliance rates found.

Ohio EPA works with Envirotest Systems and Ohio BMV to ensure that no false compliance documents may be passed to Ohio BMV, resulting in vehicle registrations being approved. Each compliance document is printed with a specific type of printer, making the print difficult to copy. Furthermore, each compliance document issued contains a code that the BMV will verify prior to registration issuance. If the compliance code on the compliance certificate cannot be verified, Ohio BMV will reject the vehicle registration attempt.

5 Emission Tests Results

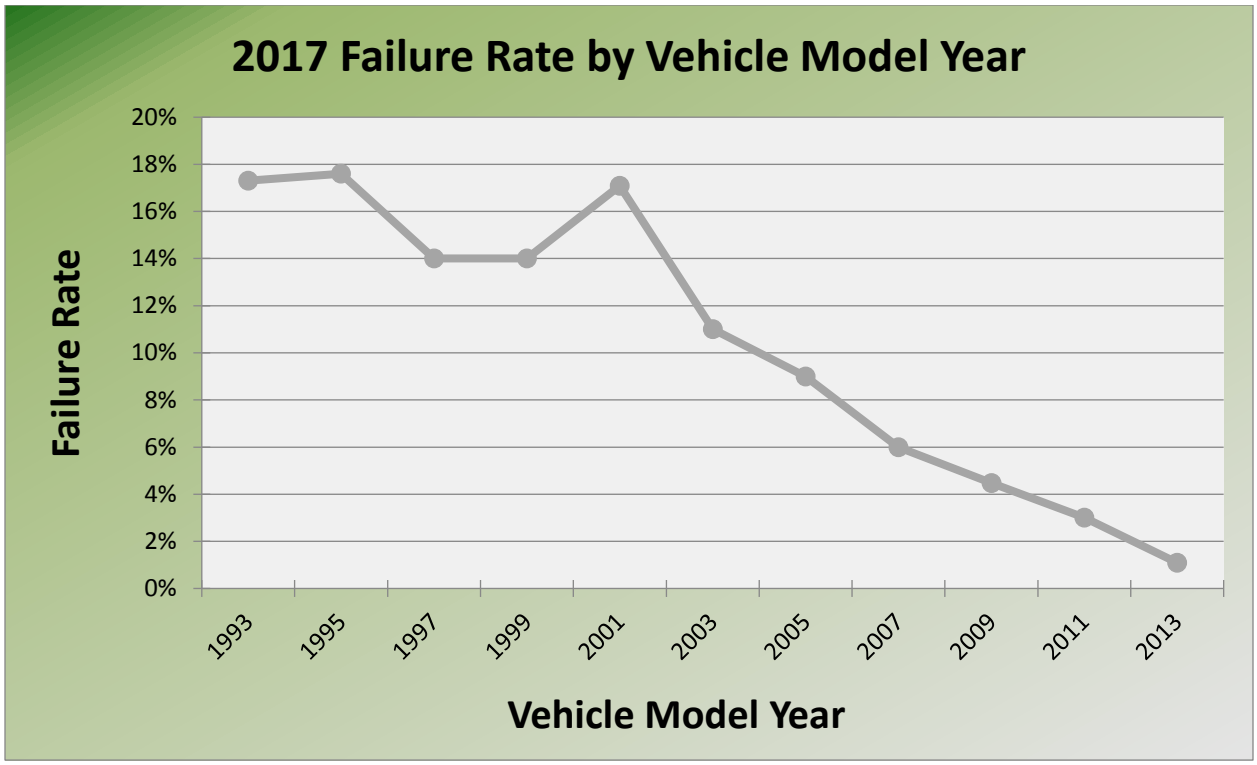
Of the 726,448 unique vehicles that received an emissions test in 2017, 64,168 vehicles, or 8.8 percent, failed their initial test. This does not include 6,962 “clean screened” vehicles. The Ohio E-Check program requires that motorists repair the vehicle and receive a passing test, waiver, or extension prior to the vehicle registration date.

Please note:

- Waivers were issued to vehicles that had repairs performed in excess of $300 and were still unable to pass a retest. In 2017, waivers were granted to 16,199 vehicles, or 25 percent, that initially failed the emissions test.
- Of the vehicles that failed the initial test during 2017, 14,506 vehicles, or 23 percent, had neither passed a retest, obtained a waiver, nor obtained an extension as of January 28, 2018.

Details of all 2017 emission test results are available on the Ohio EPA website at www.epa.ohio.gov/dapc/echeck/whyecheck/annual_reports.aspx

The following figure shows 2017 emission failure rates by model year. As can be seen, the age of a vehicle has a significant impact on failure rate.



5.1 Emission Reductions from Repaired Tailpipe-tested Vehicles in 2017

40 CFR 51.366 (a) (5) The average increase or decrease in tailpipe emission levels for HC, CO, and NOx after repairs by model year and vehicle type for vehicles receiving a mass emissions test.

U.S. EPA requires states to calculate emissions reductions from vehicles that are repaired after failing a tailpipe test. Approximately 1,938 tailpipe-tested vehicles that failed their initial test were successfully repaired and passed a tailpipe retest. Vehicles showed an average reduction of 71 percent for hydrocarbons (HC), 85 percent for carbon monoxide (CO), and 63 percent for oxides of nitrogen (NOx). A breakdown of average improvement by vehicle model year and type is shown in Attachment B.

Attachment A

Index of Report Pages Relevant to EPA Regulation Sections

40 CFR Part 51 – Subpart S Inspection/Maintenance Program Requirements 51.366 – Data Analysis and Reporting Requirements

Reporting Requirements	Reviewer Comments/Location in State Report
(a) Test Data Report The program shall submit to EPA by July of each year a report providing basic statistics on the testing program for January through December of the previous year, including:	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(1) The number of vehicles tested by model year and vehicle type;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(2) By model year and vehicle type, the number and percentage of vehicles	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(i) Failing initially, per test type;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(ii) Failing the first retest per test type;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(iii) Passing the first retest per test type;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(iv) Initially failed vehicles passing the second or subsequent retest per test type;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(v) Initially failed vehicles receiving a waiver; and	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(vi) Vehicles with no known final outcome (regardless of reason). *(vii)-(x) [Reserved]*	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xi) Passing the on-board diagnostic check;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xii) Failing the on-board diagnostic check;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xiii) Failing the on-board diagnostic check and passing the tailpipe test (if applicable);	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xiv) Failing the on-board diagnostic check and failing the tailpipe test (if applicable);	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx

Reporting Requirements	Reviewer Comments/Location in State Report
(xv) Passing the on-board diagnostic check and failing the I/M gas cap evaporative system test (if applicable);	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xvi) Failing the on-board diagnostic check and passing the I/M gas cap evaporative system test (if applicable);	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xvii) Passing both the on-board diagnostic check and I/M gas cap evaporative system test (if applicable);	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xviii) Failing both the on-board diagnostic check and I/M gas cap evaporative system test (if applicable);	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xix) MIL is commanded on and no codes are stored;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xx) MIL is not commanded on and codes are stored;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xxi) MIL is commanded on and codes are stored;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xxii) MIL is not commanded on and codes are not stored;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(xxiii) Readiness status indicates that the evaluation is not complete for any module supported by on-board diagnostic systems;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(3) The initial test volume by model year and test station;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(4) The initial test failure rate by model year and test station;	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx
(5) The average increase or decrease in tailpipe emission levels for HC, CO, and NOx (if applicable) after repairs by model year and vehicle type for vehicles receiving a mass emissions test.	Visit Ohio EPA's website at http://epa.ohio.gov/dapc/echeck/whyecheck/ar2017sd.aspx

Reporting Requirements	Reviewer Comments/Location in State Report
(b) Quality assurance report The program shall submit to EPA by July of each year a report providing basic statistics on the testing program for January through December of the previous year, including:	
(1) The number of inspection stations and lanes;	Section 2.1.2, page 5
(i) Operating throughout the year; and	Section 4.1.1, page 12
(2) The number of inspection stations and lanes operating throughout the year:	
(i) Receiving overt performance audits in the year;	Section 4.1.1, page 12
(ii) Not receiving overt performance audits in the year;	Section 4.1.1, page 12
(iii) Receiving covert performance audits in the year;	Section 4.1.2, page 13
(iv) Not receiving covert performance audits in the year;	Section 4.1.2, page 13
(v) That have been shut down as a result of overt performance audits;	Section 4.1.1, page 12
(3) The number of covert audits:	
(i) Conducted with the vehicle set to fail per test type;	Section 4.1.3, page 13
(ii) Conducted with the vehicle set to fail any combination of two or more test types;	Section 4.1.3, page 13
(iii) Resulting in a false pass per test type;	Section 4.1.3, page 13
(iv) Resulting in a false pass for any combination of two or more test types;	Section 4.1.3, page 13
(4) The number of inspectors and stations:	
(i) That were suspended, fired, or otherwise prohibited from testing as a result of covert audits;	Section 4.2, page 14
(ii) That were suspended, fired, or otherwise prohibited from testing for other causes; and	Section 4.2, page 14
(iii) That received fines;	Section 4.3, page 15
(5) The number of inspectors licensed or certified to conduct testing;	Section 2.1.3, page 5
(6) The number of hearings;	
(i) Held to consider adverse actions against inspectors at stations; and	Section 4.2, page 14
(ii) Resulting in adverse actions against inspectors and stations;	Section 4.2, page 14

Reporting Requirements	Reviewer Comments/Location in State Report
(7) The total amount collected in fines from inspectors and stations by type of violation;	Section 4.3, page 15
(8) The total number of covert vehicles available for undercover audits over the year; and	Section 4.1.2, page 13
(9) The number of covert auditors available for Undercover audits.	Section 4.1.2, page 13
(c) Quality control report The program shall submit to EPA by July of each year a report providing basic statistics on the quality control program for January through December of the previous year, including:	
(1) The number of emission testing sites and lanes in use in the program;	Section 3, page 10
(2) The number of equipment audits by station and lane;	Section 3, page 11
(3) The number and percentage of stations that have failed equipment audits; and	Section 3, page 10
(4) The number and percentage of stations and lanes shut down as a result of equipment audits	Section 3, page 10
(d) Enforcement report (1) All varieties of enforcement programs shall, at a minimum, submit to EPA by July of each year a report providing basic statistics on the enforcement program for January through December of the previous year.	
(i) An estimate of the number of vehicles subject to the inspection program, including the results of an analysis of the registration database;	Section 2.1.1, page 4
(ii) The percentage of motorists compliance based upon a comparison of the number of valid final tests with the number of subject vehicles;	Section 2.2.1, page 7
(iii) The total number of compliance documents issued to inspection stations;	Section 4.4, page 15
(iv) The number of missing compliance documents;	Section 4.4, page 15
(v) The number of time extensions and other exemptions granted to motorists; and	Section 2.2.2, page 9

Reporting Requirements	Reviewer Comments/Location in State Report
(vi) The number if compliance surveys conducted, number of vehicles surveyed in each, and the compliance rates found.	Section 4.4, page 15
(2) Registration denial-based enforcement programs shall provide the following additional information:	
(i) A report of the program's efforts and actions to prevent motorists from falsely registering vehicles out of the program area or falsely changing fuel type or weight class on the vehicle registration, and the results of special studies to investigate the frequency of such activity; and	Section 2.2.3, page 10
(ii) The number of registration file audits, number of registrations reviewed, and compliance rates found in such audits.	Section 2.2.3, page 10
(3) Computer-matching based enforcement programs shall provide the following additional information:	
(i) The number and percentage of subject vehicles that were tested by the initial deadline, and by other milestones in the cycle;	Not Applicable
(ii) A report on the program's efforts to detect and enforce against motorists falsely changing vehicle classifications to circumvent program requirements, and the frequency of this type of activity; and	Not Applicable
(iii) The number of enforcement system audits, and the error rate found during those audits.	Not Applicable
(4) Sticker-based enforcement systems shall provide following additional information:	
(i) A report on the program's efforts to prevent, detect, and enforce against sticker theft and counterfeiting, and the frequency of this type of activity;	Not Applicable
(ii) A report on the program's efforts to detect and enforce against motorists falsely changing vehicle classifications to circumvent program requirements, and the frequency of this type of activity; and	Not Applicable
(iii) The number of parking lot sticker audits conducted, the number of vehicles surveyed in each, and the noncompliance rate found during those audits.	Not Applicable

Reporting Requirements	Reviewer Comments/Location in State Report
(e) Additional reporting requirements In addition to the annual reports in paragraphs (a) through (d) of this section, programs shall submit to EPA by July of every other year, biennial reports addressing:	
(1) Any changes made in program design, funding, personnel levels, procedures, regulations, and legal authority, with detailed discussion and evaluation of the impact on the program of all such changes; and	None
(2) Any weaknesses or problems identified in the program within the two-year reporting period, what steps have already been taken to correct those problems, the results of those steps, and any future efforts planned.	None

Attachment B

Detailed 2017 Emissions Reduction Test Data

HDGV - Heavy Duty Gas Vehicles GVW >8500
LDGT1 - Light Duty Gas Trucks GVW <6001
LDGT2 - Light Duty Gas Trucks GVW >6000, <8500
LDGV - -Light Duty Gas Vehicles GVW <6001

Post-Repair Emissions Reductions - Year 2017

Vehicle Year	Vehicle Type	Initial Fails (count)	Initial HC ppm (Avg)	Initial CO ppm (Avg)	Initial NOx ppm (Avg)	Retest Pass (count)	Retest HC ppm (Avg)	Retest CO ppm (Avg)	Retest NOx ppm (Avg)	HC Improvement	CO Improvement	NOx Improvement
1993	HDGV	10	305.34	2.11	-	9	38.58	0.58	-	87.4%	72.4%	-
1993	LDGT1	233	101.38	0.90	1495.03	136	39.81	0.15	587.79	60.7%	83.3%	60.7%
1993	LDGT2	74	250.88	1.99	1001.47	47	61.83	0.28	628.58	75.4%	85.8%	37.2%
1993	LDGV	403	116.91	1.01	1368.74	166	41.76	0.16	620.43	64.3%	83.9%	54.7%
1994	HDGV	7	158.14	3.16	-	4	28.90	0.19	-	81.7%	94.0%	-
1994	LDGT1	175	97.19	1.09	1512.86	121	29.58	0.19	364.43	69.6%	82.4%	75.9%
1994	LDGT2	32	243.03	1.23	1249.07	16	74.76	0.34	644.97	69.2%	72.7%	48.4%
1994	LDGV	176	120.47	1.49	1236.22	82	41.79	0.16	502.29	65.3%	89.0%	59.4%
1995	HDGV	45	254.13	2.94	-	32	31.76	0.29	-	87.5%	90.1%	-
1995	LDGT1	244	104.32	0.76	1352.83	125	34.99	0.20	594.76	66.5%	74.1%	56.0%
1995	LDGT2	169	174.83	1.31	1298.45	96	60.79	0.25	746.23	65.2%	81.0%	42.5%
1995	LDGV	464	110.06	1.01	1275.50	227	42.47	0.17	550.34	61.4%	83.5%	56.9%
1996	HDGV	3	40.33	2.06	-	4	29.00	0.06	-	28.1%	97.3%	-
1996	LDGT1	10	38.66	0.37	1309.01	5	21.98	0.04	266.44	43.1%	90.2%	79.6%
1996	LDGT2	1	113.20	1.46	232.10	0	-	-	-	-	-	-
1996	LDGV	45	90.44	1.61	1077.39	10	49.02	0.14	436.47	45.8%	91.2%	59.5%
1997	HDGV	23	459.57	1.64	#DIV/0!	12	26.70	0.10	-	94.2%	93.9%	-
1997	LDGT1	72	82.14	0.88	1143.96	27	20.09	0.09	352.18	75.5%	89.4%	69.2%
1997	LDGT2	17	146.60	1.85	838.11	9	69.42	0.30	622.32	52.6%	83.7%	25.7%
1997	LDGV	129	81.68	0.78	1094.72	41	33.63	0.13	384.31	58.8%	83.7%	64.9%
1998	HDGV	0	-	-	-	0	-	-	-	-	-	-
1998	LDGT1	38	145.92	0.82	1285.89	18	25.93	0.13	370.48	82.2%	84.5%	71.2%
1998	LDGT2	7	442.89	2.20	1251.53	3	64.40	0.50	624.40	85.5%	77.4%	50.1%
1998	LDGV	60	157.43	1.22	955.39	25	31.35	0.14	251.85	80.1%	88.5%	73.6%
1999	HDGV	5	482.48	1.12	-	2	60.10	0.60	-	87.5%	47.1%	-

HDGV - Heavy Duty Gas Vehicles GVW >8500
LDGT1 - Light Duty Gas Trucks GVW <6001
LDGT2 - Light Duty Gas Trucks GVW >6000, <8500
LDGV - -Light Duty Gas Vehicles GVW <6001

Post-Repair Emissions Reductions - Year 2017												
Vehicle Year	Vehicle Type	Initial Fails (count)	Initial HC ppm (Avg)	Initial CO ppm (Avg)	Initial NOx ppm (Avg)	Retest Pass (count)	Retest HC ppm (Avg)	Retest CO ppm (Avg)	Retest NOx ppm (Avg)	HC Improvement	CO Improvement	NOx Improvement
1999	LDGT1	115	86.44	1.01	1267.41	54	22.66	0.10	389.31	73.8%	90.0%	69.3%
1999	LDGT2	29	269.21	1.71	1208.02	7	69.44	0.51	722.42	74.2%	70.0%	40.2%
1999	LDGV	246	99.18	1.23	916.60	97	28.21	0.14	246.96	71.6%	88.5%	73.1%
2000	HDGV	4	1124.85	1.71	-	1	45.60	0.08	-	95.9%	95.3%	-
2000	LDGT1	34	80.71	0.64	1204.04	20	21.71	0.11	389.19	73.1%	83.0%	67.7%
2000	LDGT2	7	112.16	1.20	1310.81	5	46.84	0.41	665.60	58.2%	65.4%	49.2%
2000	LDGV	83	79.81	0.97	927.08	40	19.67	0.10	269.82	75.4%	89.7%	70.9%
2001	HDGV	10	446.66	1.19	-	6	27.33	0.15	-	93.9%	87.3%	-
2001	LDGT1	128	77.57	1.15	925.73	58	17.07	0.10	331.06	78.0%	91.4%	64.2%
2001	LDGT2	30	174.54	1.17	1247.23	17	40.59	0.21	564.26	76.7%	81.9%	54.8%
2001	LDGV	284	72.02	0.96	844.64	124	19.53	0.12	175.61	72.9%	87.2%	79.2%
2002	HDGV	4	361.40	1.21	-	1	4.60	0.00	-	-	-	-
2002	LDGT1	54	79.43	1.06	1113.22	23	16.38	0.06	334.29	79.4%	94.1%	70.0%
2002	LDGT2	11	186.70	0.70	1290.23	2	23.80	0.21	993.40	87.3%	69.8%	23.0%
2002	LDGV	125	88.75	0.91	972.92	47	19.54	0.10	216.71	78.0%	89.5%	77.7%
2003	HDGV	10	566.58	0.79	-	4	8.15	0.14	-	98.6%	82.5%	-
2003	LDGT1	126	100.57	1.11	982.71	47	19.55	0.15	184.37	80.6%	86.7%	81.2%
2003	LDGT2	39	238.08	1.08	1509.29	13	41.37	0.23	688.11	82.6%	78.4%	54.4%
2003	LDGV	266	68.80	0.89	1113.35	103	15.48	0.11	183.11	77.5%	88.0%	83.6%
2004	HDGV	2	933.60	0.19	-	1	1.60	0.00	-	99.8%	100.0%	-
2004	LDGT1	35	90.02	0.85	1001.96	8	14.13	0.02	190.58	84.3%	98.2%	81.0%
2004	LDGT2	7	87.21	1.43	1353.88	4	21.05	0.19	513.83	75.9%	86.5%	62.0%
2004	LDGV	79	87.28	1.15	990.59	37	21.40	0.15	130.71	75.5%	87.0%	86.8%
2005	HDGV	0	-	-	-	0	-	-	-	-	-	-
2005	LDGT1	0	-	-	-	0	-	-	-	-	-	-

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Post-Repair Emissions Reductions - Year 2017

Vehicle Year	Vehicle Type	Initial Fails (count)	Initial HC ppm (Avg)	Initial CO ppm (Avg)	Initial NOx ppm (Avg)	Retest Pass (count)	Retest HC ppm (Avg)	Retest CO ppm (Avg)	Retest NOx ppm (Avg)	HC Improvement	CO Improvement	NOx Improvement
2005	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2005	LDGV	4	89.08	3.25	1062.08	2	9.20	0.02	98.25	89.7%	99.4%	90.7%
2006	HDGV	0	-	-	-	0	-	-	-	-	-	-
2006	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2006	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2006	LDGV	0	-	-	-	0	-	-	-	-	-	-
2007	HDGV	0	-	-	-	0	-	-	-	-	-	-
2007	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2007	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2007	LDGV	0	-	-	-	0	-	-	-	-	-	-
2008	HDGV	0	-	-	-	0	-	-	-	-	-	-
2008	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2008	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2008	LDGV	0	-	-	-	0	-	-	-	-	-	-
2009	HDGV	0	-	-	-	0	-	-	-	-	-	-
2009	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2009	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2009	LDGV	0	-	-	-	0	-	-	-	-	-	-
2010	HDGV	0	-	-	-	0	-	-	-	-	-	-
2010	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2010	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2010	LDGV	0	-	-	-	0	-	-	-	-	-	-
2011	HDGV	0	-	-	-	0	-	-	-	-	-	-
2011	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2011	LDGT2	0	-	-	-	0	-	-	-	-	-	-

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Post-Repair Emissions Reductions - Year 2017												
Vehicle Year	Vehicle Type	Initial Fails (count)	Initial HC ppm (Avg)	Initial CO ppm (Avg)	Initial NOx ppm (Avg)	Retest Pass (count)	Retest HC ppm (Avg)	Retest CO ppm (Avg)	Retest NOx ppm (Avg)	HC Improvement	CO Improvement	NOx Improvement
2011	LDGV	0	-	-	-	0	-	-	-	-	-	-
2012	HDGV	0	-	-	-	0	-	-	-	-	-	-
2012	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2012	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2012	LDGV	0	-	-	-	0	-	-	-	-	-	-
2013	HDGV	0	-	-	-	0	-	-	-	-	-	-
2013	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2013	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2013	LDGV	0	-	-	-	0	-	-	-	-	-	-
2014	HDGV	0	-	-	-	0	-	-	-	-	-	-
2014	LDGT1	0	-	-	-	0	-	-	-	-	-	-
2014	LDGT2	0	-	-	-	0	-	-	-	-	-	-
2014	LDGV	0	-	-	-	0	-	-	-	-	-	-
Total		**4,174**	**116.49**	**1.09**	**1180.87**	**1,938**	**33.83**	**0.16**	**439.92**	**71.0%**	**85.0%**	**62.7%**