

**STATE OF NEW HAMPSHIRE**  
**2018**  
**Annual and Biennial Motor Vehicle Inspection Program**  
**Report**  
**July 29, 2019**



**Prepared by**  
**New Hampshire Department of Environmental Services**  
**and**  
**New Hampshire Department of Safety, Division of Motor Vehicles**  
**with the assistance of Gordon-Darby, Inc.**

NHDES Report Number: R-ARD-19-03





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## **1. INTRODUCTION**

This is the 2018 Annual Report for calendar year (CY) 2018 January 1 to December 31, 2018) and the 2017-2018 Biennial Report to the United States Environmental Protection Agency (EPA) on the New Hampshire motor vehicle inspection and maintenance (I/M) program. This report is compiled by the New Hampshire Department of Environmental Services (NHDES) with the assistance of the New Hampshire Department of Safety's Division of Motor Vehicles (DMV) and the state's On-Board Diagnostic (OBD) inspection program vendor, Gordon-Darby Inc. The report includes a narrative description of New Hampshire's OBD program, a summary of program data, and a discussion of goals for program improvements in the coming year.

The annual report is required by Title 40 Code of Federal Regulations Part 51.366 and provides information on the following:

- Emissions test data.
- Quality assurance.
- Quality control.
- Compliance and enforcement.

Additionally, the report includes the 2017-2018 Biennial Report as required by Title 40 Code of Federal Regulations Part 51.366 (e) *Additional Reporting Requirements*. The Biennial Report is to be submitted to EPA every other year and provides information on the following:

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
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.

Guidance from EPA in 2017 indicated that the annual report and biennial report could be packaged together for any future years.

## **2. EXECUTIVE SUMMARY**

In 2018, the OBD portion of New Hampshire I/M program is applicable to Model Year (MY) 1999 and newer light-duty gasoline and diesel vehicles. Inspections are conducted by a decentralized network of licensed inspection stations and are required annually statewide. In 2018, there were approximately 1.8 million registered vehicles in New Hampshire. Of those, 1,354,442 light-duty motor vehicles were 1999 and newer model years requiring an OBD inspection. Inspection results are reported to the state electronically through the State vendor's OBD test stations utilized by licensed inspection stations.

A summary of the CY 2018 motor vehicle I/M program results is as follows:

- OBD tests were conducted on 1,249,890 unique MY99 and newer light-duty vehicles, and a total of 1,329,866 tests, including re-tests were conducted.
- A total of 105 visual test were conducted.
- 6.31% of vehicles subjected to the OBD test failed the initial test.
- The overall OBD failure rate<sup>1</sup> was 7.58% for all MY 1999 to MY 2019 vehicles. This failure rate can be broken down as follows:
  - 15.00% failure rate for MY 1999 through MY 2009 vehicles.
  - 3.09% failure rate for MY 2010 and newer vehicles.
- An overall malfunction indicator lamp (MIL) “On” with DTCs stored rate of 4.18% was recorded.
- 61 economic hardship time extensions were issued in CY 2018 and 52 were used.
- No “Electronic Administrator’s Certificate” were issued in 2018

### **3. PROGRAM OVERVIEW**

#### *3.1 APPLICABILITY OF I/M TO NEW HAMPSHIRE*

New Hampshire is subject to federal I/M requirements due to previously elevated ozone levels in the southern and Seacoast portions of the state that resulted in a nonattainment designation. On January 31, 2013, EPA formally approved NHDES’ State Implementation Plan (SIP) request for re-designation to attainment for the 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS). In that same approval, EPA approved a 10-year maintenance plan for the former non-attainment areas. New Hampshire is also located in the Ozone Transport Region designated under Sections 176A and 184 of the Clean Air Act.

Under strict interpretation of Clean Air Act requirements, New Hampshire is required to implement a Low-Enhanced I/M program in Hillsborough, Rockingham, Merrimack and Strafford counties. However, due to the low volume of vehicles in the state and the high cost of conducting a full tailpipe testing program, New Hampshire submitted an Alternative Motor Vehicle I/M SIP amendment in 1998.

The Alternative I/M SIP demonstrated superior environmental benefits through implementation of an Enhanced Safety Inspection (ESI) program that provided: a) visual anti-tampering inspection for MY 1980 and newer light-duty gasoline and diesel vehicles; b) implementation of an On-Board Diagnostics (OBD) inspection program for MY 1996 and newer light-duty gasoline and MY 1997 and newer diesel vehicles throughout the entire state upon finalization of federal OBD program rules; c) implementation of a roadside diesel opacity testing program for heavy-duty diesel vehicles; and d) permanent emission reductions from a large in-state power plant. The I/M program provisions were codified in state statute RSA 266:59-b by House Bill 1513 in June 1998. In December 1998, the EPA published a notice to approve New

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<sup>1</sup> Including all initial test and re-tests.

Hampshire's Alternative I/M SIP in the Federal Register. Final approval occurred in January 2001.

A legislative revision to the program in 2005 changed the vehicles subject to either the anti-tampering or OBD inspection to those vehicles less than 20-model-years old. Therefore, vehicles previously subject to the anti-tampering inspection are no longer required to pass an emissions-related inspection. They must still undergo a safety inspection.

Since June 2004, Gordon-Darby Inc. has supplied all participating licensed New Hampshire inspection stations with OBD testing hardware, software, technical support and training on the computerized testing/reporting system known as the New Hampshire OBD and Safety Testing program, or "NHOST." Gordon-Darby Inc. was awarded the contract via a competitive bid process in 2004, 2012, and again in 2019. They are currently under a contract extension through December 2019 and the new contract will run from January 2020 through December 2025.

### *3.2 NEW HAMPSHIRE'S VEHICLE FLEET*

In 2018, New Hampshire had 1,807,024 total vehicles registered. Of those, 1,354,442 are MY 1999 or newer light-duty vehicles subject to both the safety and OBD test for inspection. The registration inventory represents all the vehicles registered during the calendar year 2018.

### *3.3 NEW HAMPSHIRE'S I/M PROGRAM*

New Hampshire's vehicle inspection program is administered by the DMV pursuant to Revised Statutes Annotated (RSA) Title XXI, Chapter 266, Section 266:59-b. The prime responsibility for air quality issues and policies falls on NHDES. The two agencies work cooperatively to establish the rules to implement the program, conduct outreach and education activities, and prepare the annual and biennial reports.

The New Hampshire vehicle inspection network is decentralized. As of December 31, 2018, there were 1,860 full-time inspection stations operating 1,968 NHOST units (some of the larger inspection stations have multiple units). All privately owned motor vehicles are subject to an annual safety inspection within the birth month of the primary registered owner. Corporate and fleet vehicles are inspected in specified months; government vehicles are inspected no later than September. The annual light-duty OBD inspections are conducted at the same time as the safety inspection.

Vehicles subject to the OBD test in 2018 include MY99 and newer light-duty vehicles. Light-duty motor vehicles that are more than 20 years old are not subject to an emissions inspection. Per RSA 266:59-B IV, vehicle age is determined by subtracting the model year from the calendar year in which the inspection is taking place. Therefore, New Hampshire's anti-tampering inspection for pre-model year 1998 vehicles is no longer in effect.

New Hampshire's vehicle inspection program is enforced by use of a highly visible windshield sticker. The sticker program consists of a colored sticker with a highly visible expiration date. Failure to pass an annual inspection as evidenced by having a current inspection sticker is a violation that can be enforced by all local and state law enforcement officers. The fine for failing to comply with inspection requirements is \$60 (NH RSA 266:5). DMV may suspend or revoke the registration of an un-inspected vehicle, or may refuse to register it.

New Hampshire law (NH RSA 266:59b) allows motorists 60 days for repairs for OBD failures. Motor vehicles that pass the state's safety inspection, but fail the OBD test receive a temporary permit consisting of an inspection sticker dated with the expiration date 60 days from the date of failure. A vehicle is eligible for only one 60-day temporary permit during each inspection cycle. If a motorist happens to be pulled over they are required to present a copy of their OBD test report that shows they are within their 60-day grace period to avoid a citation. Motorists that exceed the grace period are subject to the fines and consequences noted above.

Pursuant to DMV Administrative Rule Saf-C 3222.08, New Hampshire offers economic hardship time extensions on a case-by-case basis as determined by the DMV. Such extensions are for a single inspection cycle and cannot be re-issued for a given vehicle. The hardship extensions were initiated in CY 2007. A total of 61 time extensions were provided in CY 2018, 52 of the time extensions were used. In 2018, there were no "Electronic Administrator's Certificates" issued per DMV Administrative Rule Saf-C 3222.07 for motor vehicles that were determined by the DMV to have either OBD failures or communications issues for which no definable solution was available.

#### **4. PROGRAM DATA**

Title 40 Code of Federal Regulations, Subpart S, Section 51.365 contains the data collection requirements and Section 51.366 contains the data analysis and reporting requirements for motor vehicle I/M programs. A summary of New Hampshire's program is provided below. Supporting data is included in Appendices A & B of this report.

##### *4.1 SECTION 51.366 - DATA ANALYSIS AND REPORTING*

This report includes data from the entire CY 2018.

##### 51.366(a) TEST DATA REPORT

Complete test data is provided in Appendices A & B.

*(a)(1) The number of vehicles tested by model year and vehicle type.*

In CY 2018, New Hampshire motor vehicle inspection stations inspected 1,249,995 light-duty vehicles ( $\leq 8500$  pounds) that were MY 1999 and newer and subject to an OBD inspection. Of those vehicles, 1,249,890 were OBD tested and 105 were visually inspected. The majority of visual inspections were for model years 2016, 2017 and 2018 vehicles. This uptick in visual inspections for more recent model year vehicles is likely due to inspector error when entering

the fuel for battery electric vehicles, instead of using the “none” option they are using another fuel; however, these vehicles do not require an OBD test as they do not have an OBD system. Additionally, a VIN decoder was installed in the current testing software in 2016, but is not updated yearly with the VINs of new model years so the 2016 and newer vehicle VINs are not in the system. The VIN decoder uses the information provided by the VIN to auto populate certain fields including the fuel type. Under a new contract with Gordon-Darby new equipment will be provided that will update the VIN decoder annually, which should reduce the occurrence of these errors.

*(2)(i)-(iv) The number and percentage of vehicles passing and failing initial tests and retests by model year and vehicle type.*

The passing and failing numbers and rates for initial tests and retests, and overall results on light-duty vehicles, based on MY 1999 and newer vehicles, are summarized in the table below. Also see Appendix A (a)(2) “Calendar Year 2018 – OBD Emissions Test Results.”

<b>Calendar Year 2018 - OBD Emissions Test Results</b>			
<b>Model Years 1999 to 2019</b>			
Test		Number	Percent
Initial Test	Pass	1,170,965	93.69%
	Fail	78,926	6.31%
	Total	1,249,891	
Retests	Pass	62,119	77.67%
	Fail	17,856	28.74%
	Total	79,975	
Overall	Pass	1,233,047	92.72%
	Fail	92,782	7.85%
	Total	1,329,866	

*(a)(2)(v) The number and percentage of vehicles receiving a waiver that initially failed.*

The NH I/M Program does not allow for traditional waivers. Pursuant to DMV Administrative Rule Saf-C 3222.08, New Hampshire offers economic hardship one-year time extensions on a case-by-case basis as determined by the DMV. EPA guidance defines the I/M Waiver Rates as: “percentage of vehicles failing initial I/M test that do not have to pass a retest.” On an annual basis, economic hardship extensions meet the EPA definition of a waiver.

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The I/M waiver rate is expressed as the percentage of the vehicles that fail the I/M program, not as a percentage of the entire fleet. Therefore, for 2018, the NH I/M waiver rate is:

Number of economic hardship extensions (waivers) divided by the number of vehicles failing initial OBD test:  $52/78,926 = 0.07\%$ .

*(a)(2)(vi) The number and percentage of vehicles with no known final outcome (regardless of reason).*

No final outcome (NFO) totals include: 1) vehicles that were initially tested, but not re-tested; and 2) vehicles failing initial tests and all re-tests. Re-tests that occur in different calendar years also affect the NFO totals. See Appendix A (a)(2)(vi) "Calendar Year 2018 – No Final Outcome Vehicles."

Of the 1,249,891 vehicles that underwent OBD testing, 20,620 or 1.65% were vehicles for which no final outcome (NFO) is known. The majority of these unknown outcomes were MY 2001 through 2008 vehicles. It is likely that many of these vehicles were sold to residents of other states, sold for scrap, or indefinitely stored, awaiting repairs or final disposition. EPA calculates the NFO percentage by comparing the number of NFO vehicles not receiving waivers ( $20,620 - 52 = 20,618$ ) and the number of vehicles that initially failed the OBD test (78,926). This would yield a NFO percentage of 26.12%. Research into the increase in NFOs from last year revealed that the NFO data from the vendor is based on test series and not individual vehicles. A new test series is created when DMV resets the test series for a vehicle according to NH business rules. An increase in the number of NFOs is possibly due to inspector inexperience with the new sticker on-demand system.

NHDES, NHDMV, and Gordon-Darby plan to determine the best way to count individual vehicle NFOs for future reports; however, a temporary fix was determined for this reporting period. A total of 1,249,891 vehicles underwent OBD testing in 2018; a total of 1,233,084 passed either the initial test or a subsequent test, which leaves 16,807 individual vehicles that did not pass the initial or subsequent re-test. Although this number is likely imperfect, it is closer to what we have seen for NFOs in previous years and is more accurate than the NFOs reported in the NFO table, which is based on tests not unique vehicles. Using this more accurate number, the percent of vehicles that failed the initial OBD test (78,926) that are NFO vehicles not receiving waivers ( $16,807 - 52 = 16,755$ ) is 21.23%. For reference, last year's NFO percentage was 19.17%.

EPA is concerned with NFO percentages exceeding the national average of 12%, however, it should be noted that New Hampshire issues a low number of waivers in comparison with other states, which would contribute to a higher NFO percentage when compared to the national average. Some of the NFO vehicles are likely sold for scrap and, while the state obtains data from the scrap yards, the DMV does not currently have the resources to correlate that with the OBD testing database.

*(a)(2)(xi)-(xii) The number and percentage of vehicles passing and failing the on-board diagnostic check.*

For calendar year 2018, a total of 1,329,866 OBD inspections, consisting of initial tests and subsequent retests, were conducted on 1,249,891 vehicles. A total of 1,170,965 vehicles, or 93.69%, passed an OBD initial test and 78,926 vehicles, or 6.31%, failed. After initial re-test and subsequent retests, a total of 1,233,084 vehicles, or 92.72%, passed and 96,782, or 7.85%, failed. Test counts may be somewhat higher than the total number of cars tested due to some vehicles undergoing multiple inspection cycles during the calendar year 2018.

See Appendix A (a)(2) “Calendar Year 2018 - OBD Emissions Test Results.”

These numbers include the initial and all subsequent re-tests.

*(a)(2)(xiii)-(xviii) The number and percentage of vehicles passing or failing the on-board diagnostic check and/or passing or failing the on-board diagnostic check and passing the tailpipe test.*

These rules are not applicable to the New Hampshire program.

*(a)(2)(xix)-(xxiii) The number and percentage of vehicles with MIL commanded on (or not) and diagnostic codes stored (or not) and readiness status.*

- (xix) 57 vehicles tested had the malfunction indicator lamp (MIL) commanded on with no codes stored, or less than 0.00 %.
- (xx) 55,529 vehicles tested had the MIL not commanded on, and diagnostic trouble codes (DTC) stored, or 4.18%.
- (xxi) 28,589 vehicles tested had the MIL commanded on and DTCs stored, or 2.15%.
- (xxii) 1,132,749 vehicles tested had the MIL not commanded on and no DTCs stored, or 85.18%.
- (xxiii) 64,766 vehicles tested indicated one or more modules supported by the vehicle’s OBD system were not ready for evaluation, or 4.72% of those tested.

See also Appendix A (a)(2) “2018 OBD Test Results – Light-duty Vehicles – All Test Sequences (Initial Tests and Retests)”

*(a)(3)-(4) Initial Test Volume and Failure Rate by Model Year and Test Station.*

The complete data set of test volume and failure rates by station and model year is included with this report as an electronic addendum labeled Appendix B.

#### 51.366(b) QUALITY ASSURANCE REPORT

*(b)(1)(i) The number of inspection stations and lanes operating throughout the year, and; (ii) for only part of the year.*

New Hampshire had 1,548 stations operating throughout the year, and 312 stations operating for only a portion of the year for a total of 1,860 NHOST-equipped stations. A total of 1,662 lanes or testing units operated throughout the year, and 306 lanes or testing units operated for only a portion of the year for a total of 1,968 lanes or testing units.

*(b)(2) The number of inspection stations and lanes operating throughout the year that:*

*(i) Received overt performance audits in the year:*

Beginning in 2012, DMV trained Automotive Equipment Inspectors (AEIs) authorized under the Department of Safety to serve as full-time OBD station inspectors. In 2018 there were seven AEIs who overtly audited all 1,860 inspection stations at least once during 2018.

*(ii) Did not receive overt performance audits in the year:*

There were no NHOST-equipped inspection stations that were not audited at least once in 2018.

*(iii) Received covert performance audits in the year:*

No covert audits were performed. The NHOST system uses sophisticated analyses of all OBD data and various “triggers” (discussed below) to identify anomalies and irregularities that might indicate fraud. This Quality Assurance system allows the DMV to monitor a statewide decentralized system more effectively and efficiently<sup>2</sup>.

*(ii) Did not receive covert performance audits in the year:*

None of the 1,860 stations and 1,968 NHOST units received traditional covert audits in CY 2018.

*(v) That have been shut down as a result of overt performance audits:*

A total of 32 stations and 28 mechanics were investigated because of the Trigger Analysis data and overt auditing. Of those investigations, 37 hearings were held in CY 2018. As a result, two stations had their license revoked, 21 were shut down for 60 days to 1 year and 15 mechanics were suspended 3 months to 1 year.

*(b)(3) Covert audits:*

Straight review of station-specific OBD test data is a relatively inefficient approach to identifying anomalous stations. Instead, DMV worked with Gordon-Darby Inc. to develop and use sophisticated electronic analysis “triggers” to evaluate the performance of the decentralized inspection stations and inspectors that comprise the New Hampshire I/M program network.

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<sup>2</sup> The NH DMV considers the triggers analysis to be a form of overt auditing because station owners submit their inspection data to the DMV electronically with no expectation of privacy.

The triggers-based analytical reports are produced on an on-demand basis by DMV staff to monitor inspections on an ongoing basis and to assist in investigations of specific stations or to search for particular patterns of potential violations or anomalies. For the system-wide reports, those stations flagged for review are submitted to State Police Troop G for follow-up by AEs or troopers. Reports are also run for specific stations when requested by Troopers or AEs as part of their audits of an inspection station. These individual reports are kept with the case files only in the event of successful disciplinary action and are not summarized annually. As a result of this system, copies of *periodic* reports are not available for submittal to EPA, since they were not produced by the data system. However, data regarding the failure rate by station for CY 2018 is available in Appendix B.

OBD triggers analysis was applied to the existing data to conduct remote overt audits of inspection stations to monitor fraud within the decentralized network of inspection stations. The use of trigger analysis maximizes the efficacy of available DMV staff resources in overseeing station/inspector performance. Easy identification of stations and inspectors that appear to have inconsistent test results enables DMV to quickly focus further investigative activities directly on these problem performers. This approach is much more efficient than spending large amounts of time analyzing data from the complete set of 1,860 decentralized inspection stations operating in the New Hampshire I/M program.

The concept of using analysis triggers for identifying questionable station/inspector performance, particularly in decentralized inspection networks, is fairly well known in the I/M industry and to EPA. In fact, personnel now working for New Hampshire's I/M contactor, Gordon-Darby Inc. previously developed a comprehensive triggers best practices report<sup>3</sup> for EPA while working for the air quality consulting firm of Sierra Research. A key element of the triggers analysis method is to compare the performance of each station or inspector in an inspection network against the performance of the other stations/inspectors. By comparing relative performance, these computational methods minimize the impact of possible biases in the test data. Another important element is to ensure that analysis datasets are of sufficient size to ensure statistically significant results; i.e., that station and inspector anomalies are not just occurring because of the small number of tests involved with these stations/inspectors.

The New Hampshire analysis triggers essentially follow the basic approaches and computational methods discussed in the referenced Sierra Research report. Key elements include:

- Use of computational methodologies based on the referenced best practices document. For example, low volume stations or inspectors and those with low subgroup volumes (i.e., for certain model years) are excluded from analysis to ensure statistically valid results.
- Comparison of individual inspection station/inspector performance relative to the rest of the inspection network in order to identify poorly performing outliers.

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<sup>3</sup> "QA/QC Procedures Based on Program Data and Statistical Process Control Methods for I/M Programs," prepared for U.S. Environmental Protection Agency, Certification and Compliance Division, by Sierra Research, Inc., Report No. SR01-10-02, October 2001.

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- Use of certain triggers (e.g., OBD fingerprinting) to compare inspection results to Gordon-Darby, Inc. developed truth tables to identify likely instances of fraudulent testing<sup>4</sup>.
- Standardization of triggers to obtain a standard scale of performance. Lower scores indicate better performance and higher scores reflect poorer performance. This enables comparison of all results on an equal basis as well as meaningful graphical presentations.
- Development of selectable analysis periods, including capability to perform before-and-after analysis of station/inspector performance relative to audits and other enforcement visits.
- Automated functionality that enables quick drill-down and root pattern analysis of inspections conducted by identified poor performers.

Specific triggers programmed into New Hampshire’s automated I/M data system include the following:

- OBD Test Rejection Rate (Failure Rate).
- OBD Communication Protocol.
- OBD Readiness Monitors.
- Safety Defect.
- No Voltage.
- Weighted Trigger Score (WTS).

The listed Safety Defect trigger applies to New Hampshire’s vehicle safety inspection and is therefore not relevant to this discussion of OBD performance triggers. The remaining triggers are applicable. The first of these, OBD Failure Rate, achieves the same objective, but in a much more efficient manner as would a comprehensive analysis of station-specific test results from the entire New Hampshire I/M network, by flagging stations that have either an abnormally high, or abnormally low failure rate.

The OBD Communication Protocol and Readiness Monitors triggers are powerful tools designed to identify suspected instances of clean scanning, in which a clean vehicle is fraudulently tested in place of the vehicle actually subject to OBD inspection. They compare OBD test results collected from all of the stations to those contained in truth tables developed by Gordon-Darby, Inc. Such “OBD fingerprinting” has been found to be an excellent method for quickly identifying problem OBD test performers.

Trigger analysis results available to New Hampshire DMV from the I/M data system enable DMV staff to efficiently and effectively pursue follow-up investigations and enforcement actions against problem stations and inspectors. All stations are reviewed during trigger audits. Anomalies and outliers are further scrutinized and enforcement action is taken when necessary. Gordon Darby, Inc. continuously develops new triggers as fraudulent motorists and inspectors

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<sup>4</sup> For this analysis, the NH inspection results are run against the Gordon-Darby truth tables and are compared by the software.

develop new ways to “beat the system.” In 2012, five new triggers were implemented. These were: readiness mismatch, protocol mismatch, electronic vehicle identification number mismatch, sticker gap and time between tests.

*(b)(3)(i)-(iv) The number of covert audits conducted with the vehicle set to fail and resulting in a false failing.*

None of the 1,860 NHOST-equipped inspection stations received a covert performance audit.

*(b)(4)(i)-(ii) The number of inspectors and stations that were suspended, fired, or otherwise prohibited from testing.*

A total of 32 stations and 28 mechanics were investigated because of the Trigger Analysis data auditing. Of those investigations, 37 hearings (19 of those for emissions related violations) were held in CY 2018. As a result, two stations had their license revoked, 21 were suspended for 15 days to 1 year and 14 mechanics were suspended 3 months to 1 year.

It is the inspection station’s responsibility to inform the DMV when an inspector leaves the employ of the station. Upon receiving written notice from an inspection station that an inspector no longer works at the station, that inspector’s ability to access the NHOST system is removed by the DMV. The DMV also maintains a “sticker denial” list that prevents inspection stations from purchasing state inspection stickers if they refused to participate in the electronic reporting program or in the event they are suspended as a result of an administrative hearing. This approach is extremely successful in gaining compliance. While specific numbers are not available because the list changes from day-to-day, the average number of stations on the list throughout the year is approximately 50 stations.

*(b)(4)(iii) The number of inspectors and stations that received fines.*

The DMV evaluates circumstances on a case-by-case basis and normally seeks suspensions rather than imposing fines for violations of I/M rules. No inspection stations received a fine as a result of administrative hearings in 2018. Two mechanics received fines as a result of administrative hearings in 2018.

*(b)(5) The number of inspectors licensed or certified to conduct testing.*

In CY 2018, there were 5,275 licensed inspectors performing inspections in New Hampshire.

*(b)(6)(i)-(ii) The number of hearings held to consider adverse actions against inspectors and stations and resulting in adverse actions against inspectors and stations*

In CY 2018, there were a total of 37 hearings, 19 of which were held for emissions-related rules/infractions.

*(b)(7) The total amount collected in fines from inspectors and stations by type of violation.*

In CY 2018, fines totaling \$250.00 were imposed for minor violations resulting from overt audits. It is DMV policy to seek suspensions rather than impose fines for violations of I/M rules in most cases.

*(b)(8) - (9) The total number of covert vehicles and covert auditors available for undercover audits over the year.*

None. As previously discussed, in section (b)(3), the NHOST system analyses of OBD data provides for easy and cost effective identification of stations and inspectors that appear to have inconsistent test results. This enables DMV to quickly focus further investigative activities on these problem performers more efficiently than covert auditing.

#### 51.366(c) QUALITY CONTROL REPORT

*(c)(1) The number of emission testing sites and lanes in use in the program.*

*(c)(2) The number of equipment audits by station and lane;*

*(c)(3) The number and percentage of stations that have failed equipment audits; and*

*(c)(4) Number and percentage of stations and lanes shut down as a result of equipment audits.*

New Hampshire's OBD-based inspection program does not utilize emissions testing equipment subject to equipment quality control audits, such as those specified in sections 51.359(a), (b), (c), and (d). The NHOST system does comply with the performance features and functional characteristics of computerized emission test systems as outlined in 51.538(a) and (b), respectively. The NHOST system also meets the requirements of the following regulations:

§ 85.2207 On-board diagnostics test standards

§ 85.2222 On-board diagnostic test procedures

§ 85.2223 On-board diagnostic test report

§ 85.2231 On-board diagnostic test equipment requirements

The NHOST system continually monitors both individual unit/component performance and overall system operations. Issues with equipment, such as failures and malfunctions, are often dealt with directly by Gordon-Darby, Inc. and the station operators. In 2018, Gordon-Darby Inc. managed a variety of equipment issues, most of which were resolved by merely replacing parts/supplies due to normal wear/usage. All equipment issues were resolved and there were no shut downs as a result of equipment audits. Of the 3,204 issues, 82 were fixed on-site, 1,324 were managed by shipping replacement parts/supplies to the station and 1,798 were fixed by telephone-based troubleshooting.

Accuracy of the vendor's equipment has not been an issue. Because the NHOST system continually monitors individual unit/component performance as well as overall system operations, there were no "failures," but rather, requests for technical support and/or parts

replacement. The vendor is responsible for maintaining and supporting the testing equipment, there were no issues with incompatible testing equipment.

The document security required by paragraph (e) of this section is satisfied by New Hampshire's program. The majority of inspection stations are using on-demand sticker printing. The stations pre-order sticker backers directly from the vendor. A unique number is created during the inspection which is printed out during the inspection process. This unique number is adhered to the backer when it is attached to the vehicle. The stations that do not use on-demand sticker printing, for example stations that do window replacement where a replacement sticker is needed without running a new test, use the old sticker system. The inspection stickers issued during the annual inspection are each identified with a unique serial number and DMV distributes the stickers in a manner in which all stickers can, and are, easily accounted for. Inspection Stations are required to keep unused stickers and backers in a secure area.

#### 51.366(d) ENFORCEMENT REPORT

*(1)(i) An estimate of the number of vehicles subject to the inspection program, including the results of an analysis of the registration data base.*

In CY 2018, all MY 1999 and newer light-duty cars and light-duty trucks are subject to OBD inspection. This results in a fleet of approximately 1,354,442 subject vehicles.

*(1)(ii) The percentage of motorist compliance based upon a comparison of the number of valid final tests with the number of subject vehicles.*

A total of 1,249,890 subject vehicles (MY'99 and newer; < 8,500 lbs) were tested for OBD during 2018. NHDMV records indicate that 1,354,442 subject vehicles were registered in NH resulting in a compliance rate for vehicle OBD tests of 92.28%.

*(d)(1)(iii) The total number of compliance documents issued to inspection stations;*

*(d)(1)(iv) The number of missing compliance documents;*

See: (d)(4)(i) below.

*(d)(1)(v) The number of time extensions and other exemptions granted to motorists*

There were 61 time extensions granted to motorists in 2018, according to the NHOST system 52 of the waivers were used. The other nine waivers were not used either because the car was never inspected again or passed without using it.

*(d) (1)(vi) The number of compliance surveys conducted, number of vehicles surveyed in each, and the compliance rates found.*

No compliance surveys were conducted.

*(d)(2) Registration denial based enforcement programs.*

New Hampshire does not have a registration denial based enforcement program.

*(d)(3) Computer-matching based enforcement programs.*

New Hampshire does not have a computer-matching based enforcement program.

*(d)(4)(i) - (ii) Sticker-based enforcement systems shall provide the following additional information on enforcement: (regarding sticker security and vehicle classification fraud)*

New Hampshire's I/M program is enforced via clearly visible inspection stickers on the windshield of each registered vehicle, of which, as of October 1, 2018, is now administratively in the lower left of the windshield. The majority of inspection stations are using on-demand sticker printing. The stations pre-order sticker backers directly from the vendor. A unique number is created during the inspection which is printed out during the inspection process. This unique number is adhered to the backer when it is attached to the vehicle.

The new on-demand system requires a vehicle to pass inspection on the NHOST prior to being issued a number. The sticker will not print until the vehicle has passed a full safety and emissions test and is matched with the backer provided by the vendor before being attached to the vehicle. These stickers can be easily tracked and therefore is a major deterrent for fraud.

Administrative rules require all inspection stations to keep inspection sticker booklets/backers secured at all times. The rules also require every inspection station to immediately notify the local police and the DMV in the event that they discover or suspect that any inspection stickers may have been lost or stolen. The serial numbers of any stickers/backers that have been reported lost or stolen are entered into the DMV's database and State Police representatives are assigned to investigate all such incidents. All safety inspection stickers/backers contain a variety of security features, which are specifically designed to prevent counterfeiting. The serial number of each inspection sticker/backer, which is affixed to a vehicle after it has passed the annual safety inspection, is reported to the DMV by the inspection station issuing the sticker/backer. Inspection sticker data for all OBD-required inspections are automatically reported electronically and entered into the Vehicle Inspection Database (VID). This facilitates system wide compliance, quality assurance, and reduces the time and resources necessary to investigate and prosecute inspection sticker fraud and counterfeiting.

The stations that do not use on-demand sticker printing, for example stations that do window replacement where a replacement sticker is needed without running a new test, use the old sticker system. Additionally, stations that inspect motorcycles and some municipalities and fleet inspection stations for vehicles not requiring emissions testing use the old sticker system. The inspection stickers issued during the annual inspection are each identified with a unique serial

number and DMV distributes the stickers in a manner in which all stickers can, and are, easily accounted for. The rules identified in the paragraph above apply to sticker booklets as well.

The old stickers are accounted for either as sold to an inspection station or as returned to the DMV. The Department of Safety’s mainframe IDMS database codes sticker inventory records as sold, returned-used, returned-unused, or reported stolen, damaged, or lost. The old sticker inventory and distribution is controlled and monitored by the DMV, and the NHOST system vehicle inspection database provided by the current vendor, Gordon-Darby. In October 2017, The Department of Safety’s mainframe IDMS database converted over to “Vision.” As a result of the overwhelming amount of sticker books returned in 2018 due to most stations switching over to on demand stickers, the figures of returned inspection stickers is incomplete.

For CY 2018, the inspection sticker database showed the following:

Total Stickers issued by DMV:	86,962
Motorcycles:	55,500
Automobiles:	31,462

*(d)(4)(iii) Sticker-based enforcement systems shall provide the following additional information regarding parking lot surveys.*

In CY 2018, State Police representatives did not conduct any parking lot sticker surveys. In New Hampshire uninspected vehicles are not illegal unless they are being operated on a public way. The windshield compliance sticker used to identify vehicles with a valid safety and OBD inspection is routinely looked for by both State and local law enforcement officials. Therefore, routine traffic enforcement detects the majority of un-inspected vehicles if they are being driven on the state’s roadways.

Although New Hampshire does not conduct parking lot sticker surveys, the New Hampshire State Police uses data from the Gordon-Darby Inc. NHOST system’s VID (Vehicle Inspection Database) to closely monitor compliance by both inspection stations and individual motorists. A secure Internet portal to the NHOST system’s VID is accessible to only authorized personnel. Custom software, included as part of Gordon-Darby’s service to the State of New Hampshire, analyzes all inspection data on all vehicles and all inspection stations to identify anomalies and inconsistencies that might indicate fraud. By employing a sophisticated system of triggers and trends analysis, the NHOST system is able to flag individual tests, inspection stations, or even individual mechanics as being worthy of further scrutiny. DMV staff is also able to run ad hoc queries against the VID to analyze data from any desired perspective and to scrutinize individual tests, inspection stations, mechanics, or vehicles.

In addition to the visual enforcement program discussed above, New Hampshire’s program effectively prevents motorists from changing the fuel type or the weight class on the vehicle registration or from falsely registering a vehicle out of the program area as the program is statewide. The proprietary software that is used throughout the New Hampshire OBD program

is designed to recognize the OBD “fingerprint” of every vehicle tested. This is accomplished by decoding the VIN, analyzing the various engine system readiness monitors and other factors, and then comparing these results to the expected profile of the vehicle being tested. In CY 2018, New Hampshire State Police representatives utilized this and other high-tech applications for monitoring and enforcement of the State's I/M program.

51.366(e) ADDITIONAL REPORTING REQUIREMENTS

The biennial report for 2017-2018 is included below.

**5. PROGRAM CHANGES - 51.366 (e) (1)**

*5.1 Program Design*

New Hampshire’s current vendor contract with Gordon-Darby Inc. expires in December 2019. Prior to that a collaborative work group including members from the Department of Safety, Department of Information Technology, and Department of Environmental Services worked together to create a request for proposal (RFP) for a new vendor. The RFP was released in May 2018 and responses were due in June 2018. Gordon-Darby, Inc. was selected in the evaluation process and a new contract will run from January 2020 through December 2025.

On-demand stickers were introduced in the fall 2017 and are now displayed in the lower driver side of the windshield. The stations pre-order sticker backers directly from the vendor. A unique number is created during the inspection which is printed out during the inspection process. This unique number is adhered to the backer when it is attached to the vehicle.

*5.2 Funding*

The NH OBD vehicle emission inspection program is self-funded. Licensed inspection stations pay the State a biennial annual administrative fee of \$50 per station type and \$3.25 per inspection sticker, of which \$0.25 is transferred to the motor vehicle pollution abatement fund (RSA 125-S:3) to support NHDES efforts to control air pollution from motor vehicles. The remainder of the sticker fee is available to NHDMV to draw upon for all expenses related to program administration and enforcement. Inspections stations also pay the Vendor directly, a minimum fee of \$60.00 per month or \$3.38 per test, whichever is greater. The Vendor supplies all equipment needed to complete the OBD test and electronically report the results; there is no capital investment needed by the station.

*State of New Hampshire – 2018 Annual and Biennial Motor Vehicle I/M Report*

The 2012 – 2017 contract with Gordon-Darby established a pricing schedule as follows:

<u>Cost per test</u>	\$3.38
Minimum Monthly Fee	\$60.00

Options – Additional per-test fees:

Base Covert Audit – Trigger Data Analysis	\$0.07*
On-Demand Stickers	\$0.22
Education & Outreach	\$0.27
Medium Duty (< 14,000 lbs.) Testing	\$0.03
Voluntary Recall Notification	\$0.10

\*New triggers and triggers analyses were implemented in 2012, and the \$0.07 is included in the per test fee of \$3.38. The remaining options were not exercised by the State during this reporting period.

*5.3 Personnel Levels*

A NHDMV administrator manages the OBD program and the contract with Gordon-Darby. There are seven full-time Automotive Equipment Inspectors (AEIs) performing overt inspections based on triggers analyses and conducting routine inspections of licensed inspection stations. The AEIs are all NH-certified inspectors thoroughly familiar with OBD test procedures. AEIs are civilian employees of NH State police and are empowered to enforce State regulations related to New Hampshire’s I/M Program. There are 14 state troopers assigned to assist the AEI’s. The full-time Enforcement Officers have inspected each of New Hampshire’s 1,860 stations at least once a year.

NHDES has a full-time Transportation Analyst position that supports the data analysis and reporting, as well as outreach and education activities of the I/M program, along with other duties not related to the I/M program.

*5.4 Procedures*

The NH IM program design and procedures did not change in CY2017 or CY2018.

*5.5 Program Authority (Legislation and Regulations)*

DMV revised their OBD rules (SAF-C 3200) in 2016 and NHDES submitted a SIP revision on June 7, 2016. EPA approved the revision effective 10/25/2018 (83 FR 48385). The rule revisions added a few new definitions; altered the application process to become an inspection station; changed the testing procedure for mechanics; added rules for disqualification of “official inspection stations” and “approved mechanics”; established additional rules concerning

operating hours to allow for random inspections; and modified the rules on the safekeeping of inspection stickers. For more detailed information, see Appendix C.

## **6. PROGRAM ISSUES - 51.366 (e) (2)**

No significant program issues arose during the timeframe of this report. New Hampshire's I/M program includes several communication pathways through which problems can be identified and addressed.

The State's OBD Vendor maintains a "Help Line" and a website to assist both motorists (1-800-295-5276; [www.nhinspect.com](http://www.nhinspect.com)) and licensed inspection station staff (1-800-383-4124; [www.nhostservices.com](http://www.nhostservices.com)). Through their combined manual/automated system the Vendor is able to effectively respond to questions and concerns from both inspection stations and the general public.

NHDMV also maintains a customer assistance phone line (1-603-227-4120) and website (<https://www.nh.gov/safety/divisions/dmv/>) to provide program information and receive input regarding programmatic issues. Both the Vendor and NHDMV received very few reports of problems over the biennial reporting period.

New Hampshire has a legislatively established OBD Advisory Committee tasked with reviewing and making recommendations on state OBD contracts and any necessary statutory or rule changes (*NHRSA 266:59-b VII*). The Committee met two times in 2017 to discuss input from the commission on any proposed changes in the program to be included in the request for proposal for a new vendor. Additionally, in 2017 the Committee discussed the idea of providing an exemption for new model year vehicles from the OBD testing requirement, but decided not to move forward with this exemption. In 2018 the Committee discussed the proposed rule changes to NHDMV rules and the option of providing a low mileage waiver for vehicles was discussed. No further action on a low mileage waiver was recommended.

In July and August, 2017, NHDMV and NHDES held eight public "listening sessions" throughout the state (Portsmouth, Nashua, Manchester, Laconia, Keene, Bethlehem, and two in Concord). The purpose of these sessions was to provide inspection station owners and inspectors the opportunity to provide comments and suggestions or voice complaints regarding the NH I/M program. Additionally, these sessions were a time to get information out about the upcoming on-demand stickers and to answer questions. A total of 824 stations were represented and provided input as follows:

- a. The majority of attendees wanted to know about the on-demand stickers.
- b. Questions were asked about how the new stickers would affect certain types of inspections (antiques, motorcycles, government vehicles, RVs, etc.).
- c. Many participants asked questions about the timeline for the sticker roll-out.
- d. Many of the other questions were about the general procedure and operation of the new sticker program.

Attendance at the listening sessions was very high due to the pending on-demand stickers. Overall, very few complaints about either the program or the equipment were heard.

## **7. GOALS FOR 2019 AND 2020**

### *7.2 EDUCATION AND OUTREACH*

Education and outreach remain an ongoing goal of the program. DMV, Gordon-Darby, and NHDES plan to do public listening sessions in the fall of 2019.

### *7.3 GORDON-DARBY CONTRACT*

A new contract with Gordon-Darby Inc. will start in January 2020 and run through 2025 with an option for a two-year extension. The goal for the remainder of 2019 and into 2020 is to roll-out the new contract, which includes new equipment, smoothly. NHDES, NHDMV, and Gordon-Darby, Inc. plan to collaborate as the new system is developed and rolled out to make sure the reporting guidelines are met.

### *7.4 MEDIUM-DUTY VEHICLE AND DIESEL OBD TESTING*

The EPA revised the NAAQS for ozone in 2015, reducing the 8-hr level from 0.075 ppm to 0.07 ppm. Preliminary data from 12 monitoring locations throughout the state indicate that New Hampshire is meeting the design value for 2013-2015. However, should any portion of the state fail to attain the NAAQS, NHDES will be required to submit a new ozone SIP detailing actions the State will take to achieve the necessary emissions reductions to achieve attainment. Although strategies affecting all major emissions sources will be addressed, transportation emissions reductions, if needed, could be accomplished through the addition of medium-duty vehicles or heavy-duty diesel vehicles into the OBD testing program. These strategies will continue to be explored in 2019 and beyond.

**Appendices**

Appendix A: Anti Tampering and OBD Inspection Data Report Tables (attached hard copy)

Appendix B: Initial Test Volume and Failure Rate by Model Year and Test Station (accompanying data files)

Appendix C: Summary of SAF-C 3200 Revisions (attached hard copy)



## STATE OF NEW HAMPSHIRE

**2018**

# Annual Motor Vehicle Inspection Program Report

## Appendix A

### Anti-tampering and OBD II Inspection Data

**June 2019**

Prepared by

**New Hampshire Department of Environmental Services**

**New Hampshire Department of Safety, Division of Motor Vehicles**

with the assistance of Gordon-Darby NHOST Service, Inc.



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**4.1.1 - 51.366(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:

(a)(1) The number of vehicles tested by model year and vehicle type.

<b>Calendar Year 2018 – Number and Type of Vehicles Tested</b>				
<b>Model Year</b>	<b>Vehicle Type</b>	<b>OBD</b>	<b>Visual</b>	<b>Grand Total</b>
2020	L	22	0	22
2019	L	15,802	0	15,802
2018	L	109,862	18	109,880
2017	L	104,613	11	104,624
2016	L	108,521	34	108,555
2015	L	118,961	7	118,968
2014	L	92,971	3	92,974
2013	L	84,737	3	84,740
2012	L	75,401	3	75,404
2011	L	67,639	2	67,641
2010	L	60,335	1	60,336
2009	L	47,701	2	47,703
2008	L	61,282	2	61,284
2007	L	57,620	1	57,621
2006	L	51,426	2	51,428
2005	L	48,267	3	48,270
2004	L	42,103	3	42,106
2003	L	32,746	2	32,748
2002	L	25,125	2	25,127
2001	L	18,487	1	18,488
2000	L	14,848	1	14,849
1999	L	11,421	4	11,425
<b>Grand Total</b>		<b>1,249,890</b>	<b>105</b>	<b>1,249,995</b>

(a)(2) By model year and vehicle type, the number and percentage of vehicles:

- (i) Failing initially, per test type;
- (ii) Failing the first retest per test type;
- (iii) Passing the first retest per test type;
- (iv) Initially failed vehicles passing the second or subsequent retest per test type;
- (v) The number and percentage of vehicles receiving a waiver that initially failed - The NH I/M Program does not allow for waivers.

Calendar Year 2018 – OBD Emissions Test Results*						
Year	Type	TEST SEQUENCE	PASS	FAIL	Total	% Fail
2020	L	1. INITIAL TEST	22	0	22	0.00%
	L	2. FIRST RE-TEST	0	0	0	0.00%
	L	3. SUBSEQUENT RE-TEST	0	0	0	0.00%
2019	L	1. INITIAL TEST	15,785	17	15,802	0.11%
	L	2. FIRST RE-TEST	10	0	10	0.00%
	L	3. SUBSEQUENT RE-TEST	0	0	0	0.00%
2018	L	1. INITIAL TEST	109,709	153	109,862	0.14%
	L	2. FIRST RE-TEST	132	1	133	0.75%
	L	3. SUBSEQUENT RE-TEST	1	3	4	75.00%
2017	L	1. INITIAL TEST	104,351	262	104,613	0.25%
	L	2. FIRST RE-TEST	311	3	314	0.96%
	L	3. SUBSEQUENT RE-TEST	2	0	2	0.00%
2016	L	1. INITIAL TEST	106,617	1,905	108,522	1.76%
	L	2. FIRST RE-TEST	1,347	236	1,583	14.91%
	L	3. SUBSEQUENT RE-TEST	196	63	259	24.32%
2015	L	1. INITIAL TEST	115,704	3,258	118,962	2.74%
	L	2. FIRST RE-TEST	2,395	478	2,873	16.64%
	L	3. SUBSEQUENT RE-TEST	407	131	538	24.35%
2014	L	1. INITIAL TEST	90,114	2,858	92,972	3.07%
	L	2. FIRST RE-TEST	2,187	416	2,603	15.98%
	L	3. SUBSEQUENT RE-TEST	337	157	494	31.78%
2013	L	1. INITIAL TEST	81,598	3,140	84,738	3.71%
	L	2. FIRST RE-TEST	2,336	423	2,759	15.33%
	L	3. SUBSEQUENT RE-TEST	367	143	510	28.04%
2012	L	1. INITIAL TEST	71,957	3,444	75,401	4.57%
	L	2. FIRST RE-TEST	2,554	502	3,056	16.43%
	L	3. SUBSEQUENT RE-TEST	417	172	589	29.20%
2011	L	1. INITIAL TEST	63,905	3,734	67,639	5.52%
	L	2. FIRST RE-TEST	2,741	541	3,282	16.48%
	L	3. SUBSEQUENT RE-TEST	454	193	647	29.83%

Calendar Year 2018 – OBD Emissions Test Results* (cont.)						
Year	Type	TEST SEQUENCE	PASS	FAIL	Total	% Fail
2010	L	1. INITIAL TEST	56,626	3,709	60,335	6.15%
	L	2. FIRST RE-TEST	2,709	531	3,240	16.39%
	L	3. SUBSEQUENT RE-TEST	436	202	638	31.66%
2009	L	1. INITIAL TEST	44,081	3,620	47,701	7.59%
	L	2. FIRST RE-TEST	2,595	541	3,136	17.25%
	L	3. SUBSEQUENT RE-TEST	455	181	636	28.46%
2008	L	1. INITIAL TEST	55,633	5,648	61,281	9.22%
	L	2. FIRST RE-TEST	3,918	811	4,729	17.15%
	L	3. SUBSEQUENT RE-TEST	663	308	971	31.72%
2007	L	1. INITIAL TEST	51,460	6,161	57,621	10.69%
	L	2. FIRST RE-TEST	4,174	949	5,123	18.52%
	L	3. SUBSEQUENT RE-TEST	739	391	1,130	34.60%
2006	L	1. INITIAL TEST	44,802	6,623	51,425	12.88%
	L	2. FIRST RE-TEST	4,316	1,102	5,418	20.34%
	L	3. SUBSEQUENT RE-TEST	828	454	1,282	35.41%
2005	L	1. INITIAL TEST	41,338	6,929	48,267	14.36%
	L	2. FIRST RE-TEST	4,409	1,180	5,589	21.11%
	L	3. SUBSEQUENT RE-TEST	889	476	1,365	34.87%
2004	L	1. INITIAL TEST	35,136	6,967	42,103	16.55%
	L	2. FIRST RE-TEST	4,388	1,210	5,598	21.61%
	L	3. SUBSEQUENT RE-TEST	909	499	1,408	35.44%
2003	L	1. INITIAL TEST	26,614	6,131	32,745	18.72%
	L	2. FIRST RE-TEST	3,671	1,101	4,772	23.07%
	L	3. SUBSEQUENT RE-TEST	784	472	1,256	37.58%
2002	L	1. INITIAL TEST	20,074	5,051	25,125	20.10%
	L	2. FIRST RE-TEST	2,887	983	3,870	25.40%
	L	3. SUBSEQUENT RE-TEST	727	469	1,196	39.21%
2001	L	1. INITIAL TEST	14,199	4,288	18,487	23.19%
	L	2. FIRST RE-TEST	2,362	889	3,251	27.35%
	L	3. SUBSEQUENT RE-TEST	661	556	1,217	45.69%

Calendar Year 2018 – OBD Emissions Test Results* (cont.)						
Year	Type	TEST SEQUENCE	PASS	FAIL	Total	% Fail
2000	L	1. INITIAL TEST	12,074	2,773	14,847	18.68%
	L	2. FIRST RE-TEST	1,633	402	2,035	19.75%
	L	3. SUBSEQUENT RE-TEST	272	150	422	35.55%
1999	L	1. INITIAL TEST	9,166	2,255	11,421	19.74%
	L	2. FIRST RE-TEST	1,245	389	1,634	23.81%
	L	3. SUBSEQUENT RE-TEST	255	148	403	36.72%
		<b>Initial Tests Totals</b>	1,170,965	78,926	1,249,891	6.31%
		<b>Overall Test Totals</b>	1,233,084	96,782	1,329,866	7.58%

\*Test counts may be somewhat higher than reported under table '51.366(a)(1)' due to some vehicles undergoing multiple inspection cycles during calendar year 2018. Reported counts in this table reflect all 2018 tests whereas table '51.366(a)(1)' reports counts of unique vehicles inspected during the calendar year.

**NOTE:** Due to the timing of OBD tests/re-tests, there is no direct relationship between Initial Test failures and Re-test counts (i.e. Initial Tests and Re-tests may have occurred for a particular vehicle during different calendar years).

- (a)(2) By model year and vehicle type, the number and percentage of vehicles:  
 (vi) Vehicles with no known final outcome (regardless of reason).

Calendar Year 2018 - No Final Outcome Vehicles				
Model Year	Type	NFO Total	Total tested	Total %
2020	L	0	22	0.00
2019	L	3	15,802	0.02%
2018	L	14	109,862	0.01%
2017	L	25	104,613	0.02%
2016	L	315	108,522	0.29%
2015	L	535	118,962	0.45%
2014	L	529	92,972	0.57%
2013	L	610	84,738	0.72%
2012	L	661	75,401	0.88%
2011	L	723	67,639	1.07%
2010	L	774	60,335	1.28%
2009	L	750	47,701	1.57%
2008	L	1,325	61,281	2.16%
2007	L	1,512	57,621	2.62%
2006	L	1,780	51,425	3.46%
2005	L	1,972	48,267	4.09%
2004	L	2,034	42,103	4.83%
2003	L	2,029	32,745	6.20%
2002	L	1,710	25,125	6.81%
2001	L	1,496	18,487	8.09%
2000	L	995	14,847	6.70%
1999	L	828	11,421	7.25%
<b>Totals</b>		20,620	1,249,891	1.65%

**NOTE:** NFO totals above include: 1) Vehicles that were initially tested, but not re-tested; and 2) Vehicles failing Initial Tests & all Re-tests. This date reflects any re-tests within 5 months of initial failure even if the re-test occurred in the subsequent calendar year.

- (a)(2) By model year and vehicle type, the number and percentage of vehicles:  
 (xi) Passing the on-board diagnostic check;  
 (xii) Failing the on-board diagnostic check;  
 (xix) MIL is commanded on and no codes are stored;  
 (xx) MIL is not commanded on and codes are stored;  
 (xxi) MIL is commanded on and codes are stored;  
 (xxii) MIL is not commanded on and codes are not stored;  
 (xxiii) Readiness status indicates that the evaluation is not complete for any module supported by on-board diagnostic systems;

2018 OBD Test Results – Light Duty Vehicles - All Test Sequences (Initial Tests & Retests)																
Year	OBD Test Results				MIL Commanded On				MIL Not Commanded On				Vehicles Not Ready			
	Fail	%	Pass OBD	%	No DTCs stored	%	DTCs stored	%	No DTCs stored	%	DTCs stored	%	No DTCs stored	%	DTCs stored	%
2020	0	0.00%	22	100.00%	0	0.00%	0	0.00%	17	77.27%	0	0.00%	0	0.00%	0	0.00%
2019	17	0.11%	15,795	99.89%	0	0.00%	4	0.03%	8,455	53.47%	40	0.25%	0	0.00%	0	0.00%
2018	157	0.14%	109,842	99.86%	0	0.00%	58	0.05%	74,275	67.52%	471	0.43%	0	0.00%	0	0.00%
2017	265	0.25%	104,664	99.75%	0	0.00%	137	0.13%	100,543	95.82%	1,009	0.96%	0	0.00%	0	0.00%
2016	2,204	2.00%	108,159	98.00%	0	0.00%	246	0.22%	106,810	96.78%	1,320	1.20%	1,782	1.61%	33	0.03%
2015	3,867	3.16%	118,505	96.84%	0	0.00%	431	0.35%	116,664	95.34%	1,912	1.56%	3,163	2.58%	52	0.04%
2014	3,431	3.57%	92,637	96.43%	1	0.00%	598	0.62%	90,453	94.16%	2,261	2.35%	2,588	2.69%	55	0.06%
2013	3,706	4.21%	84,300	95.79%	0	0.00%	839	0.95%	81,651	92.78%	2,714	3.08%	2,659	3.02%	52	0.06%
2012	4,118	5.21%	74,928	94.79%	0	0.00%	986	1.25%	72,057	91.16%	2,931	3.71%	2,865	3.62%	70	0.09%
2011	4,468	6.24%	67,100	93.76%	0	0.00%	1,047	1.46%	64,318	89.87%	2,841	3.97%	3,172	4.43%	52	0.07%
2010	4,442	6.92%	59,771	93.08%	0	0.00%	1,178	1.83%	56,825	88.49%	3,008	4.68%	3,038	4.73%	50	0.08%
2009	4,342	8.44%	47,131	91.56%	1	0.00%	1,214	2.36%	44,336	86.13%	2,842	5.52%	2,906	5.65%	65	0.13%
2008	6,767	10.10%	60,214	89.90%	3	0.00%	1,989	2.97%	55,885	83.43%	4,395	6.56%	4,451	6.65%	87	0.13%
2007	7,501	11.74%	56,372	88.26%	14	0.02%	2,359	3.69%	51,584	80.76%	4,847	7.59%	4,788	7.50%	98	0.15%
2006	8,179	14.07%	49,946	85.93%	12	0.02%	2,650	4.56%	44,943	77.32%	5,055	8.70%	5,139	8.84%	138	0.24%
2005	8,585	15.55%	46,636	84.45%	5	0.01%	2,796	5.06%	42,063	76.17%	4,638	8.40%	5,399	9.78%	113	0.20%
2004	8,676	17.67%	40,433	82.33%	9	0.02%	2,869	5.84%	36,004	73.31%	4,470	9.10%	5,345	10.88%	172	0.35%
2003	7,704	19.87%	31,069	80.13%	7	0.02%	2,536	6.54%	27,715	71.48%	3,386	8.73%	4,745	12.24%	170	0.44%
2002	6,503	21.54%	23,688	78.46%	1	0.00%	2,273	7.53%	20,945	69.37%	2,738	9.07%	3,885	12.87%	143	0.47%
2001	5,733	24.97%	17,222	75.03%	1	0.00%	1,838	8.01%	15,253	66.45%	1,945	8.47%	3,622	15.78%	114	0.50%
2000	3,325	19.22%	13,979	80.78%	2	0.01%	1,395	8.06%	12,405	71.69%	1,578	9.12%	1,742	10.07%	52	0.30%
1999	2,792	20.75%	10,666	79.25%	1	0.01%	1,146	8.52%	9,548	70.95%	1,128	8.38%	1,477	10.97%	54	0.40%
<b>Total</b>	<b>96,782</b>	<b>7.28%</b>	<b>1,233,079</b>	<b>92.72%</b>	<b>57</b>	<b>0.00%</b>	<b>28,589</b>	<b>2.15%</b>	<b>1,132,749</b>	<b>85.18%</b>	<b>55,529</b>	<b>4.18%</b>	<b>62,766</b>	<b>4.72%</b>	<b>1,570</b>	<b>0.12%</b>

(a)(3) The initial test volume rate by model year and test station.

*Documentation provided electronically in Excel file.*

(a)(4) The initial test failure rate by model year and test station.

*Documentation provided electronically in Excel file.*

## **Appendix B: Initial Test Volume and Failure Rate by Model Year and Test Station**

Initial Test Volume and Failure Rate by Model Year and Test Station (see data files)

## **Appendix C: Summary of SAF-C 3200 Revision**

- PART Saf-C 3201 APPLICABILITY - no changes
- PART Saf-C 3202 DEFINITIONS - Adds, or makes minor revisions to some definitions
- PART Saf-C 3203 GENERAL INSPECTION INFORMATION - Changes government fleet inspection from March to September
- PART Saf-C 3204 APPLICATION FOR OFFICIAL INSPECTION STATION - Makes minor revisions to the application and approval process for inspection stations and inspectors
- PART Saf-C 3206 INSPECTION AREA AND EQUIPMENT - Makes minor revisions to inspection area and equipment requirements. (Note Saf-C 3206.01 – 3206.03 are not in approved SIP)
- PART Saf-C 3207 INSPECTION STATIONS - Makes minor revisions to days and hours of operation of inspection stations. (Note Saf-C 3207.02 – 3207.07 are not in approved SIP)
- PART Saf-C 3208 – not in approved SIP
- PART Saf-C 3209 OBTAINING INSPECTION STICKERS - Makes minor revisions to requirements for obtaining inspection stickers
- PART Saf-C 3210 INSPECTION OF VEHICLE REGISTRATION AND TIME FOR INSPECTION - Makes minor revisions to requirements for inspection of vehicle and time for inspection
- PART Saf-C 3211 to 3217 are not in approved SIP
- PART Saf-C 3218 EXHAUST SYSTEM - Makes minor revisions to exhaust system requirements
- PART Saf-C 3219 FUEL SYSTEM – is not in approved SIP. Makes minor changes to fuel system requirements, including a requirement that alternative fuel vehicle fuel systems must be installed in accordance with federal or California vehicle conversion requirements
- PART Saf-C 3220 EMISSIONS REQUIREMENTS – Revises Saf-C 3220.06 to clearly specify which replacement parts are affected.
- PART Saf-C 3221 VEHICLE BODY OR CHASSIS – not in approved SIP
- PART Saf-C 3222 ON-BOARD DIAGNOSTIC SYSTEM – makes minor revisions to reporting requirements; adds falsely reporting results to the definition of “tamper with” (this section of the rule is not part of the approved SIP); requires the signature of the mechanic who performed the inspection on the test report; and revises the list of vehicles that shall not be

rejected for readiness issues by eliminating specific make and model year vehicles and incorporating by reference Vehicles with known readiness issues, as identified in the Environmental Protection Agency's "OBD Readiness Testability Issues," EPA-420-B-12-044, June 2012.

- PART Saf-C 3223 through PART Saf-C 3248 are not part of the approved SIP