# MASSACHUSETTS



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# **INSPECTION UPDATE**

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Winter 2015

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Inspection Update is a publication produced by Massachusetts Vehicle Check; a joint program of the Massachusetts Department of Environmental Protection (MassDEP), the Registry of Motor Vehicles (RMV) and Parsons Environment and Infrastructure Group, Inc.



# **Avon Man Pleads Guilty, Sentenced to Jail and Fined for Counterfeit Motor Vehicle Inspection Scheme**

Attorney General Maura Healey announced in August that an Avon man had pleaded guilty and was sentenced to one year in jail in connection with running a counterfeit motor vehicle inspection scheme out of a Dorchester auto shop.

Jose Sostre, 61, of Avon, pleaded guilty in Suffolk Superior Court to charges of Counterfeiting Motor Vehicle Inspection Stickers (four counts), Uttering or Publishing as True Counterfeit Motor Vehicle Inspection Stickers (four counts), Conspiracy to Counterfeit Motor Vehicle Inspection Stickers, and Conspiracy to Utter or Publishing as True Counterfeit Inspection Stickers.



Judge Mitchell Kaplan sentenced Sostre to one year in the House of Correction, 90 days to serve, followed by a three-year probationary period on the counterfeiting, conspiracy to counterfeit, and uttering counterfeit convictions. Under the terms of his probation, Sostre will be placed on home confinement for an additional 90-day period following his release from jail. Sostre is required to surrender his motor vehicle inspector's license and is not to conduct any motor vehicle inspections for the term of his probation. Judge Kaplan also imposed a \$5,000 fine on Sostre for the Conspiracy to Utter or Publishing as True Counterfeit Inspection Stickers conviction.

"This defendant created and issued counterfeit inspection stickers for vehicles that otherwise would not have passed important emissions checks that serve to protect our air," Attorney General Healey said. "Schemes like this endanger the public and violate laws intended to protect public health and our environment."

"Emission standards are developed by the Commonwealth to promote cleaner air and protect public health and those policies are undercut by anyone who flouts those rules," said MassDEP Commissioner Martin Suuberg.

"The outcome announced today reinforces that the Commonwealth, on behalf of consumers, takes the integrity of the motor vehicle inspection program seriously," said Registrar of Motor Vehicles Erin C. Deveney. "Thank you to our partners for protecting the environment and the health and safety of our residents and roadway users."

As a result of this investigation, Tony's Auto is currently not authorized to provide motor vehicle inspections.

# **New Program Changes Beginning January 1, 2016**

#### Windshield Sticker Changes

- Orange 2016 Vehicle Information Reports (VIR) and windshield stickers began shipping to stations in early December 2015.
- Your first shipment supplied your anticipated vehicle inspection needs for approximately three months. Your station will automatically receive additional sticker shipments when your inventory indicates your station is down to its final book of stickers.
- If your station did not receive the new sticker shipment by December 18 or you have questions about the new orange 2016 stickers, contact the Technical Help Desk at 877-834-4677.
- Keep all new stickers in their unopened, shrinkwrapped packaging and in a secure location until they are needed.
- Always load the workstation with the lowest sticker book number.
- Please set aside all unused blue 2015 stickers in a secure location at year's end. The Massachusetts Department of Transportation Registry of Motor Vehicles Division will come by to collect them.

## ▶ Program Changes

Effective January 1, 2016, all 2001 model year light-duty vehicles are exempt from the on-board diagnostics (OBD) emissions testing requirement. However, these vehicles are still subject to annual safety inspections. In addition, all 2001 model year diesel-powered vehicles over 10,000 pounds gross vehicle weight rating (GVWR) are still subject to the opacity emissions inspection requirement.

Also beginning in 2016, the Massachusetts Vehicle Check emissions waiver and economic hardship repair extension minimums will increase to the following:

Vehicle Age	Emissions Waiver Spending Minimum	Economic Hardship Repair Extension Estimate Minimum	
Five model years old or newer	\$875	\$1,313	
Six to 10 model years old	\$775	\$1,163	
Greater than 10 model years old	\$675	\$1,013	

# The Year in Review: October 1, 2014 -September 30, 2015

October 2015 marked the seven-year anniversary of the Massachusetts Vehicle Check program. Congratulations to all who contributed to another successful year! The following is a summary of program statistics\* from Year Seven:

Number of vehicle inspections	5,145,616
Number of inspectors receiving initial training	1,682
Number of inspectors re-certified	3,614
Number of active Inspection Stations	
(excluding Motorcycle-only stations)	1,787
Number of active Registered Emissions Repair Shops	188
Number of Motorist Hotline calls	11,418
Number of Technical Helpdesk calls	24,225
Number of registered vehicles in Massachusetts5	5.1 million
Average age of vehicles in Massachusetts	9.0 years
	,

#### Communities with the most registered vehicles:

1.	Boston	342,112
2.	Worcester	115,390
3.	Springfield	93,945

#### Communities with fewest registered vehicles:

1.	Gosnold	_
2.	Monroe	,
3.	Mount Washington59	,

#### Communities with oldest average vehicles:

1.	Aquinnah	14.42 years
2.	Chilmark	14.90 years
3.	Oak Bluffs	13.42 years
3.	Mount Washington	13.06 years

\*Statistics as of September 30, 2014

#### **Motorist Hotline Calls:**



#### **Technical Helpdesk Calls:**



## **Inspection Procedure Reminders**

► Consistent and Repeatable Inspection Procedures are Every Inspector's Responsibility

The Massachusetts Vehicle Check inspection provides a way for the Commonwealth to evaluate its 5.1 million registered vehicles annually to ensure that all of them are safe to operate, are roadworthy, and are emissions compliant. The Registry of Motor Vehicles (RMV) reminds each inspector of the need to have a repeatable inspection routine in order to ensure a thorough evaluation of the entire vehicle for all required emissions and safety inspection items. Here is Part Two of a list of suggestions to develop consistent inspection procedures:

- When a motorist requests an inspection, you are required to inspect the vehicle as presented and complete the test to its conclusion. Do not clear any diagnostic trouble codes (DTCs) to turn off the malfunction indicator lamp (MIL). You will not help your customers by clearing codes because this procedure erases critical on-board diagnostic (OBD) data that is necessary for proper diagnosis. When DTCs are cleared, that OBD data is lost forever. Vehicle OBD software is extremely robust, so once an emissions-related concern is identified and the MIL is turned on, clearing a DTC will not repair the vehicle or make the underlying problem disappear. The OBD software will run the test again and will most likely turn the MIL back on once the concern is identified again. By clearing DTCs, you will just end up
  - prolonging your customer's wait for the necessary repairs and a passing vehicle inspection sticker. You may also limit the motorist's ability to receive help from the Motorist Assistance Centers.
- You must drive the vehicle into the inspection bay and use all of your natural senses and experiences to evaluate the vehicle. For example, combine your senses of touch and hearing by using your hands, feet, and ears to feel and hear the proper brake (both service and parking) operation per regulations. Listen to the exhaust for potential leaks on acceleration. Simultaneously feel and hear how a vehicle performs while being steered into the bay. Look at all of the safety items that can be checked while seated in the driver's seat; this visual evaluation includes recording the correct odometer reading and the GVWR, if needed, for the inspection.

Carefully *read* and *follow* the workstation on-screen prompts as they appear. Because there are several inspection screen prompts that look alike, you need to *be certain* about what the screen is instructing or asking about before proceeding. This reminder applies especially to the OBD inspection when the vehicle fails to communicate with the workstation. Following the workstation screen prompts will give the workstation the best chance to establish a proper communication "handshake" with the vehicle's OBD system. *Note:* Vehicles can and do fail the OBD test for lack of communication with the workstation. When this happens, *please follow* the entire OBD and safety

inspection workstation on-screen prompts to completion. *Do not* abort the inspection before it is completed.

completed.

- Perform all of the required safety inspection items in a consistent, repeatable order. You can use the workstation fields or the safety inspection checklists located at the rear of both the Non-Commercial and Commercial Inspector training manuals as a guide for your workflow. Note: These manuals are required inspection bay equipment.
- One example of a consistent, repeatable order of inspection is to check the required safety items, starting at the front bumper and testing all the required items as you move from the front to the rear bumper of the vehicle. Inspectors are reminded to jack up every vehicle on both sides to look for out-of-specification steering and suspension parts.
- At the conclusion of the inspection, after the Vehicle Inspection Report and windshield sticker are printed, scan both the 1D and 2D barcodes immediately so that the correct sticker is assigned to the vehicle's test record. If there is any confusion at this point in the process, it is imperative that you read all workstation prompts and correctly answer all questions asked by the workstation during the end-of-test process. Any error at this point will likely cause an automatic workstation QA (quality assurance) lockout, which will lead to preventable downtime for you and your facility, and inconvenience your customers.

Being consistently accurate in all of these areas improves your integrity and benefits not only your customers, but the Massachusetts Vehicle Check Program as a whole.

Appendix G Safety Vehicle Check List			
Safety Venice Check List			
1. Visual Overview	Pass Fail		
Certificate of registration	H		
Vehicle Identification Number (VIN)	H		
License plate(s) Decal			
2. Brake Tests	Pass Fail		
Parking brake			
Service brake			
3. Exhaust System	Pass Fail		
Exhaust system components/Muffler			
Visible blue or black smoke			
4. Steering and Suspension	Pass Fail		
Steering wheel and box			
Suspension/front end	H H		
Springs	П П		
Shocks			
5. Horn	Pass Fail		
Sound horn to test for adequate signal			
The horn must be securely fastened to the vehicle	Н Н		
6. Glazing, Glass and Windshield Wipers	Pass Fail		
Windshield			
Windshield wipers and washer			
Windows			
Tint			
7.Rear View Mirror	Pass Fail		
Rear view mirror			
Mirrors (General)			
8. Lighting Devices	Pass Fail		
Head lights			
Hazard lights/directionals/stop/reverse lights/and license plate light(s)			
Reflectors			
9. Tires and Wheels	Pass Fail		
Tires			
Wheels			
Page 1 of 2			

## **Registered Repair Technician Updates**

#### ► Emissions Repair Success Ratings Reminder

For Registered Emissions Repair Shops that have entered repair data, the Third Quarter 2015 Emissions Repair Success Ratings are now available on Vehicle Inspection Reports and on the Repair Shop Locator, found at: <a href="http://www.massvehiclecheck.state.ma.us/find\_emissions\_repair.php">http://www.massvehiclecheck.state.ma.us/find\_emissions\_repair.php</a>.

Each repair shop is responsible for entering its vehicle repair information for any given month by the tenth day of the following month. For more information about repair data entry, visit: <a href="http://www.massvehiclecheck.state.ma.us/inspection-repair data-entry.php">http://www.massvehiclecheck.state.ma.us/inspection-repair data-entry.php</a>

#### ► Fall 2015 Training Recap

In September 2015, the Massachusetts Vehicle Check program offered a Registered Repair Technician ongoing training module titled "European EVAP DTCs." Instructor Jerry "G" Truglia trained a total of 42 Registered Repair Technicians and two non-Registered Repair Technicians who attended the seminars at four Motorist Assistance Centers (MACs).

In November 2015, the Massachusetts Vehicle Check program offered a Registered Repair Technician ongoing training module titled "Variable Valve Timing/Variable Valve Lift Systems." "G" Truglia trained a total of 64 Registered Repair Technicians and eight non-Registered Repair Technicians at four Motorist Assistance Centers (MACs).



On November 16 to 19, 2015, Jerry "G" Truglia provided five repair technicians with OBD diagnostics and repair training

## ▶ 2016 Ongoing Training Courses

All current Registered Emissions Repair Technicians are required to attend one four-hour ongoing training seminar each year to maintain their status in the Massachusetts Vehicle Check Program. Parsons is offering these 2016 quarterly seminars from 6:00 PM to 10:00 PM at Motorist Assistance Centers (MACs) located across the state.

All Training Seminars for Registered Repair Technicians are offered free of charge. The applications for these courses are available at <a href="http://www.massvehiclecheck.state.ma.us/inspection\_ongoing.html">http://www.massvehiclecheck.state.ma.us/inspection\_ongoing.html</a>.

Should you need help registering or have any questions, please contact our Registered Repair Coordinator at (781) 794-2961. Space is limited to 35 technicians per class; please enroll as soon as possible to secure a place.

Course Name	Locations and Dates
Winter 2016 – Fuel Trim and Air/Fuel Ratio DTCs	Medford MAC - March 14 Fall River MAC - March 15 Shrewsbury MAC - March 21 West Springfield MAC - March 22
<b>Spring 2016</b> – Hybrid Vehicle DTCs	Braintree MAC - June 6 Pocasset MAC - June 7 Shrewsbury MAC - June 8 West Springfield MAC - June 9
<b>Summer 2016</b> – SAE J2534 and OBD Re-Flashing	Medford MAC - September 12 Fall River MAC - September 13 Shrewsbury MAC - September 14 West Springfield MAC - September 15
Fall 2016 – Domestic and Asian EVAP Systems	Braintree MAC - November 7 Pocasset MAC - November 8 Shrewsbury MAC - November 21 West Springfield MAC - November 22

# **Get Local Approval, Notify MassDEP before Heating with Waste Oil**

Waste oil is combustible and may pose a fire hazard if not handled properly. It also can be contaminated with heavy metals, gasoline, chlorinated solvents and other toxics, which is why the Massachusetts Department of Environmental Protection (MassDEP) enforces specific handling, storage, transportation, recycling and disposal requirements. If you are planning to install a space heater that burns waste oil in your business, be sure to choose equipment that meets MassDEP standards and notify the agency before you begin using the system. You will also need to obtain local fire department approval to store waste oil fuel and comply with MassDEP rules for handling it. See the MassDEP fact sheet at <a href="http://www.mass.gov/eea/docs/dep/recycle/laws/spacehtr.pdf">http://www.mass.gov/eea/docs/dep/recycle/laws/spacehtr.pdf</a> for additional information.

# **Inspection Update Profile**

Fred Tilton, Owner
Tilton Automotive, Belchertown, MA





From left to right, Kevin Parent, Fred Tilton, owner, and Michael Dane.

- Q: What services does Tilton Automotive offer?
- A: Tilton Automotive provides expert auto and light truck repair, and maintenance services to customers in the Belchertown area. We offer general and emissions repairs, brake work, exhaust system repairs, and tuneups. We do almost everything except for major engine or transmission replacement.
- Q: What are your roles and responsibilities as owner?
- A: As owner, I handle small and major vehicle repairs and some bookkeeping. My wife Donna assists me with the bookkeeping and general oversight of the staff.
- Q: How many employees do you have? What are their roles?
- A: I have two technicians on staff, Kevin Parent and Michael Dane. Our technicians take the time to explain every job, and always provide customers with an estimate in advance. Our customers can be assured that our technicians have been trained to repair their vehicle (old and new alike). And we always use the right parts for the vehicle we are repairing.
- Q: How did you get your start in the automotive industry? What made you want to open your own business?
- A: My father was a large truck mechanic, so I picked up automotive repair from him while I was in high school. From there, I attended Springfield Technical Community College, where I received my Associates Degree in automotive technology. After graduation, I

- went to work for a shop as a technician for about five to six years.
- Q: Are you a Registered Repair Technician (RRT)? If so, how has being a RRT helped your business?
- A: Yes, I am a RRT, which has brought in some new customers and reinforced the fact to our regular customers that we can properly complete their vehicle repairs. They can have the confidence that they don't have to go back to the dealership. We show our customers that there are capable repair shops like ours that do just as good a job as the dealer.
- Q: Have you attended any of the Ongoing Training? How else do you keep up with changes in vehicle technology and emerging technologies in the Industry?
- A: I have attended the MAC Open Houses in West Springfield, as well as the classes offered by most of the automotive parts stores, such as ACDelco, Standard Motor Products, and Federal-Mogul. I have also completed shop management training with Vin Waterhouse.
- Q: What are some of your most challenging vehicle repairs?
- A: The intermittent repairs are most challenging, because it can be difficult to repeat the problems that our customers describe. We try to gather as much info from the customer as we can to try to recreate the issue, but often it's just a matter of testing. Our goal is to have intermittent repairs diagnosed the same day they are brought in for service.
- Q: What should motorists do to prepare their vehicles for winter?
- A: I recommend checking vehicle batteries, cooling systems and charging systems to prepare for the onslaught of cold winter weather. After that, I recommend a general check of the tires before the cold weather really hits.
- Q: How do you advertise your business?
- A: Most of my advertising is word-of-mouth. We do place some small ads in the local paper and take part in school fundraising, which helps to keep our brand visible. We are fortunate in that most of our customers are repeat and/or family.
- Q: What is your business motto?
- A: Our business motto is simple: To do honest work and fix it right the first time.



# **Motorist Assistance Center Repair Technician's Corner**

## ▶ BMW Diagnostic Module Tank Leakage/Leak **Detection Pump EVAP Systems**

Not everyone understands EVAP systems, especially when it comes to diagnosing and repairing one on a BMW vehicle. We understand that you may have some anxiety about working on different EVAP systems since manufacturers use so many different parts and names for their components. In this article, we will provide a solid overview of the different systems that will make your diagnostic routine easier. Since there are only three types of EVAP systems used, it won't be that difficult to understand. The three systems are Vacuum, Pressure and Natural Vacuum Leak Detection. (See the Fall 2015 MAC Repair Technician Corner article which provided a brief description of each EVAP system.)

Now with the three system explanations are out of the way, let's move on to the BMW Diagnostic Module Tank Leakage (DMTL)/Leak Detection Pump (LDP) system. The evaporative leak detection used by BMW uses pressure to test the system's integrity. BMW started using the DMTL/ LDP back in 1998, so it's far from being a new EVAP system. The components in the system include: the purge valve, liquid vapor separator/rollover valve, charcoal canister, fuel tank, gas cap, and a pump that includes the vent valve and a filter. The system utilizes On-Board Refueling Vapor Recovery (ORVR), as the fuel tank is being filled, fuel tank vapors are sent to the charcoal canister for storage to be burned later when the purge system is activated.

Unlike vacuum decay systems that we are used to seeing on many Domestic and Asian systems, the BMW system does not utilize a fuel tank pressure sensor or stand alone vent valve. The DMTL system includes a vent solenoid built into the DMTL/LDP assembly, there is also a filter for the air entering into the DMTL pump. The vent solenoid is normally open to provide air for normal operation. The vent solenoid is closed when the DMTL system is activated to check for leaks.

The DMTL/LDP contains a spring loaded diaphragm which is moved up and down by engine vacuum. The vacuum is controlled by means of a solenoid inside the pump assembly. When the DMTL/LDP is in this mode, the diaphragm produces a small amount of air pressure that will be used to test for leaks in the fuel storage system. The next step is the normally open vent solenoid is closed so that the pump can generate the proper pressure along with the DME (engine ECU) not activating the purge valve. The system is now sealed.

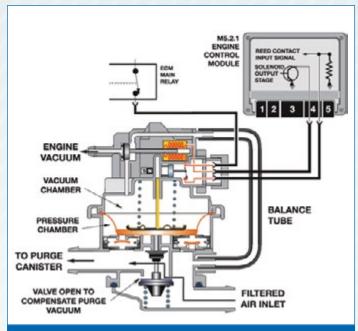


Diagram of BMW's DMTL/LDP system, provided by BMW North America.

As you can see, there is nothing different from the other systems that we presented in the Fall 2015 MAC Repair Technician Corner article. The pump works by pulling in filtered air and then pumps the air through the charcoal canister. If the filter on an LDP is clogged, the system will not be able to achieve the proper pressure, and an EVAP diagnostic trouble code (DTC) will be set.

For the system to achieve a good pressure, the Digital Motor Electronics (DME)/Powertrain Control Module (PCM) vacuum controlled solenoid is pulsed as the pump is operating. The DME/PCM monitors the diaphragm movement via the DMTL/LDP reed valve's feedback and compares it to stored DME /PCM vacuum solenoid frequency.

As the pump operates and the pressure in the system builds, the frequency of the diaphragm will slow down. This slow down is monitored by the DME/PCM via the reed valve signal. The diagnosis of the system is monitored by the DME/PCM when it activates the DMTL and looks for the following:

1. The DMTL (pump) is activated and air is pumped through a restrictor orifice with a diameter of 1.0 mm, which is equivalent to 0.3937 inches, simulating a 0.040" leak, or a restrictor orifice with a diameter of 0.5 mm, which is

(Continued on page 7)

# Motorist Assistance Center Repair Technician's Corner

(Continued from page 6)

equivalent to 0.01969 inches, simulating a 0.020" leak that causes the pump motor to draw a specific amount of amperage. The PCM now knows how much current the pump motor will draw when it has a specific size leak.

- 2. Next the internal vent valve is energized to seal the system and deliver air pressure to the complete EVAP system. **Note:** This is an important step. Changes in amperage readings are used for EVAP system diagnostics.
- 3. A large leak in the system is diagnosed when the amperage draw is lower than the calibrated value recorded in Step 1. The pump isn't working hard because it is not trying to push air into a sealed system.
- 4. A small leak in the system is diagnosed when the amperage draw is the same as the previously learned value in Step 1.
- 5. No leak is diagnosed when the amperage is higher than the specific range of the restrictor orifice size. The pump is working harder trying to push air into a sealed off system.

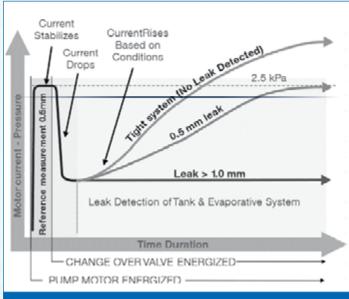


Diagram of BMW's DMTL/LDP amperage draw or current over time, provided by BMW North America.

6. All of the above test results for amperage draw are checked after 45 and 270 seconds.

In other words, the BMW EVAP system is not all that different from the Chrysler LDP system. This same basic information can be used for all LDP pumps

# **Information for Owners of Volkswagen, Audi, and Porsche Diesel Vehicles**

During fall 2015, the U.S. Environmental Protection Agency (EPA) issued two notices of violation to Volkswagen Group of America for model year 2009 – 2015 diesel cars equipped with 2.0 liter engines and model year 2009 – 2016 cars and sports utility vehicles equipped with 3.0 liter engines for having either software or hardware known as a "defeat device" installed that circumvents the EPA emissions standards for nitrogen oxides (NOx).



EPA expects to order Volkswagen, Audi, and Porsche to issue recalls in the future to reduce the emissions impacts of these diesel vehicles. Owners will be notified of the recalls once Volkswagen, Audi, and Porsche have developed remedial plans and EPA has approved the plans. Manufacturers are given a reasonable amount of time to develop plans to complete repairs, including both procedures and manufacture of any needed parts. Depending on the complexity of repairs and the lead time needed to obtain the necessary components, it could take up to one year to identify corrective actions, develop a recall plan, and issue recall notices.

These vehicles are still subject to annual on-board diagnostics (OBD) emissions tests in Massachusetts. It is unlikely that the presence of this software will cause these vehicles to fail, because the software was specifically designed to ensure that vehicles would pass inspection.

To learn which vehicles are affected and the latest facts about this issue, please visit <a href="http://www2.epa.gov/vw">http://www2.epa.gov/vw</a>. More information about VW, Audi and Porsche diesel vehicles may be released at any time, so please refer anyone who would like the most current information to EPA's website.



# Inspection Update Massachusetts Vehicle Check Program 55 Messina Drive, Unit C Braintree, MA 02184

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VW, Audi and Porsche Diesel Owner Information and 2016 Program Changes Inside!

# **Massachusetts Vehicle Check Program At A Glance**

Program at a Glance	Count	Failure Rate	Enforcement Statistics	Count
Non-Commercial Safety Inspections	1,293,791	4.3%	Violations Issued to Inspectors	58
Commercial Safety Inspections	44,667	5.1%	Violations Issued to Stations	77
7D Safety Inspections	558	2.8%	Inspector Privileges Revoked	1
OBD Emissions Inspections	1,014,568	5.5%	Inspector Required to Retrain	0
Opacity Emissions Inspections	26,849	1.8%	Inspectors Suspended	18
Emissions Waivers Issued	0		Stations Suspended	22
Repair Hardship Extensions Issued	12		Penalties Assessed	\$5,000
Hotline and Training Statistics	Count		Licensed Stations	Count
Motorist Calls Received	3,029		Class A Stations	1,185
Inspection Station Calls Received	6,251		Class B Stations	194
Initial Non-Comm. Inspectors Trained	334		Class C Stations	30
Initial Commercial Inspectors Trained	75		Class D Stations	314
Initial 7D Inspectors Trained	23		Class E Stations	9
Initial Motorcycle Inspectors Trained	14		Reg. Emissions Repair Shops	188

For period 7/1/2015 through 9/30/2015

